No. 507 Registered Charity 271313 April 2015

OASI News

The newsletter of the Orwell Astronomical Society

The 2015 eclipse from Svalbard

Photo by Paul Whiting FRAS

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

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

Hoping for the eclipse in Ipswich

Photos by David Murton and Mike Nicholls

Setting up

The crowds are gathered

See also http://www.eadt.co.uk/news/cloud_spoils_views_of_solar_eclipse_for_ipswich_skygazers_1_4001613

Contents

Click the page number to take you there. Click the filename in the page footer to return to Contents.

Cover picture: The eclipse from Svalbard 1
Inside cover pics: Hoping for the eclipse in Ipswich 2
Society Contact details 4
- Access into the School Grounds and Observatory Tower 4

Articles for OASI News 4
Ipswich Community Radio 4
The Newsletter 5
- Reproducing articles from OASI News 5

Committee 2015 5
Society Notices 5
- Contacts 5
- Welcome to New Members 5
- AGM minutes 5

2015 Outreach Meetings 6
- Astronomy in the Park (annual solar event) 6
- International Sun Day 6
- Debenham Street Fair 7
- Nowton Park, Bury St Edmunds 7
- Holywells Family Day 7
- Landguard Fort Solar Event (TBC) 7
- Bentley Village Family Day 7

Society Events Diary 8
DASH Astro Events – April 10
Newbourne Observing Group 10
- Newbourne Dates for 2015 10

Small Telescope Observing Nights (STONs) 11
Astronomy Workshops 11
- The March 2015 Solar Eclipse 11

Lecture Meetings 12
- Saturday 7th November: 12

Telescope Training 12
Total Lunar eclipse 12
The Night Sky in April 13
- Moon 13
- Sun and planets 13
- Meteor Showers 13
- Visible ISS passes ≥15° max altitude 14
- Occultations during April 2015 15
- Paul's Astronomy Podcast for April 15

AGM Draft Minutes 15
Azimuth scale for an Alt-Az goto mount 26
OASI Activity pictures 27
- The Binoculars Workshop 27
- At Jimmy's Farm 27

Aurora from Norway 28

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.

Areas out of Bounds

Access to the Observatory is **only via the black doo**r 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, 07967 519249 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 now after 20:15

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

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.

Ipswich Community Radio

Wanted: a member of OASI to take over from Neil Morley / Mike Norris on the weekly Ipswich Community Radio night sky slot. Could be a job share?

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 2015

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
	vacant	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
	Avtar Nagra	Newbourne Observing Group
	Kevin Fulcher	Newbourne Observing Group
Co-opted	Pete Richards	Lecture co-ordinator

Society Notices

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.

Welcome to New Members

Terence Cole Dr. Clare Symes

AGM minutes

See page 15.

2015 Outreach Meetings

Contact: Roy Gooding or David Murton

Astronomy in the Park (annual solar event)

Option 1

Saturday / Sunday 16th / 17th May

Venue: Reg Driver Centre

Set up time from 10:00

Open to public form 11:00 to 16:00

Option 2

Saturday / Sunday 23rd / 24th May

Same times as for option 1

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 this 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.

The Guest Speaker is Dr Helen Mason OBE

Reader in Solar Physics at the Department of Applied Mathematics and Theoretical Physics

Dr Helen Mason is a Reader in Solar Physics at the Department of Applied Mathematics and Theoretical Physics. She has been based at Cambridge University for over 35 years. She obtained a BSc (First Class Honours) and PhD at the University of London. She has taught at Cambridge University, London University and for the Open University. She has been a Tutor at StEds for many years and was Senior Tutor from 2006-2011. She has also served on most of the College committees.

Helen's field of research is solar physics, in particular the ultraviolet and X-ray spectrum of the Sun. She has worked on many joint UK, NASA, ESA and Japanese space projects including Skylab, the Solar Maximum Mission, Yohkoh, SoHO (Solar and Heliospheric Observatory), Hinode and SDO (Solar Dynamics Observatory). Recent solar space observations have completely changed our view of the Sun. In 2010, the CHIANTI team, of which Helen is a founder member, was awarded the Royal Astronomical Society's Group Achievers' Award for Geophysics.

Helen has always been keen to convey her passion for solar physics to the general public and to school students. She has given many lectures to schools, and has even worked at summer music festivals, including Glastonbury. In 2013 she gave one of the Friday Evening Discources at the Royal Institution, which can be found on Youtube
http://www.youtube.com/watch?v=vbI6TDHCfe4

She has written articles for science magazines and participated inseveral radio and TV programmes, most recently the BBC4 program 'Seven Ages of Starlight'.

Helen is keen to promote education in developing countries. She has visited South Africa twice to work on astronomy projects with teachers and students in the former townships. She has also worked in India, with schools in the rural areas of Tamil Nadu.

She has produced an educational web site for teachers and students (11-16 year old) called Sun|trek (www.suntrek.org) which is used extensively in the UK, USA and worldwide. Her outreach work was recognised in 2010 when she was nominated as one of the six 'Women of Outstanding Achievement'.

Her portrait now hangs in the London headquarters of the Institute of Physics.

In 2014, Helen was awarded an OBE for her services to Higher Education and to Women in Science, Engineering and Technology.

Debenham Street Fair

Sunday 28th June. More details to follow, but should be the same as in 2014

Nowton Park, Bury St Edmunds

11 July (12th if cloudy)	Solar Day
19 September	Stargazing

Holywells Family Day

Wednesday 5th August

Landguard Fort Solar Event (TBC)

Venue Landguard Fort (the Fort's moat will probably be our location)

Date 15 or 16 August (depends on which day has the best weather)

Time 11:00 to 16:00 Setup time from 10:00

Bentley Village Family Day

Sunday 12th September (date to be confirmed)

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

Date and Time	Location	Contact	Event
Weekly, every Wednesday, 20:15	Orwell Park Observatory	Martin Cook, Roy Gooding	General observation (weather permitting) using a variety of telescopes.
Friday, 27 March Saturday 28 March 19:30	Orwell Park Observatory	Roy Gooding	**Public access event** OASI Open evenings
Saturday 28 March 19:00	TBD	James Appleton info@oasi.org.uk	Field trip to observe graze of Hip 37685 and possibly ZC 1183. More info.
Sunday 29 March 02:00			**British Summer Time begins**
Monday 6 April (Bank Holiday)	Newbourne Village Hall	Kevin Fulcher & Avtar Nagra, email both via nog@oasi.org.uk	Newbourne Observing Group.
Tuesday 7 April 20:15	Orwell Park Observatory	Paddy O'Sullivan & Dave Robinson email both via ston@oasi.org.uk	Small Telescope Observing Night
Friday, 10–12 April	Sparsholt College, Hampshire	http://britastro.org/meetings	BAA Winchester Weekend
Tuesday 14 April 20:15	Orwell Park Observatory	Paul Whiting, FRAS treasurer@oasi.org.uk	**Public access event.** Observatory tour. **Places must be booked.** Further info and book a place.

Date and Time	Location	Contact	Event
Monday 20 April	Newbourne Village Hall	Kevin Fulcher & Avtar Nagra, email both via nog@oasi.org.uk	Newbourne Observing Group.
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
Sunday 21 June Time TBC	Minsmere visitor centre	David Murton chairman@oasi.org.uk	**Public access event.** OASI, DASH, LYRA and Breckland AS combined event to mark International Sun Day.
Sunday 28 June	Debenham Street Fair	Roy Gooding	**Public access event.** Observing the sun safely during village street fair street party. Booking not necessary.
Sunday 11 July or 12th if cloudy	Nowton Park, Bury St Edmunds	David Murton chairman@oasi.org.uk	**Public access event.** Observing the sun safely.
Wed 5 August	Holywells Park, Ipswich	David Murton chairman@oasi.org.uk	**Public access event.** Observing the sun safely during Holywells Park Families Day. Booking not necessary.
15 or 16 August 11:00 – 16:00	Landguard Fort	Roy Gooding	Public Solar Event (TBC)
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"

Date and Time	Location	Contact	Event
Saturday 19 Sept	Nowton Park, Bury St Edmunds	David Murton chairman@oasi.org.uk	**Public access event.** Star party for International Observe the Moon Night". Booking not necessary.
Monday 28 Sept from 00:11			Total Lunar eclipse. See p12 for timings
Fri 02 Oct, 01:00	Location TBD	James Appleton info@oasi.org.uk	Field trip to observe graze of ZC 618. More info.
Sat 07 Nov, 19:00	Methodist Church Hall	Pete Richards lectures@oasi.org.uk	**Public access event.** Lecture Meeting. Damien Peach: *The Giant Planet Jupiter*. DATE AND TIME To BE CONFIRMED.
Thu 17 Dec, 18:00	Location TBD	James Appleton info@oasi.org.uk	Field trip to observe graze of Tycho 5248-0249-1. More info.

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

DASH Astro Events – April

How to build an observatory – Jim Slight and Roy Birnie	28 March
DASH observing session	11 April
Thinking About Astronomy – A Century Of Change And Continuity – Dr Steve Hubbard and Dr Malcolm Brown	25 April

See http://dash.moonfruit.co.uk/events-calendar/4585090668 for the latest details.

For a pdf DASH Events 2015

Newbourne Observing Group

michael.norris17@btopenworld.com omahony.mike@gmail.com Kevin Fulcher Avtar Nagra

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.

All welcome, with or without telescopes.

Newbourne Dates for 2015

April 6th (Bank Holiday) & 20th. May 4th. & 18th. June 8th & 22nd.

July 13th. & 27th August 10th. & 24th

Suggest we open up for all meetings at 7PM. Although we have light evenings this might give opportunities for some evening solar observing and it seems most members enjoy an early cuppa!.

Small Telescope Observing Nights (STONs)

Contact: Paddy O'Sullivan and Dave Robinson

These currently take place at Orwell Park Observatory on the most moonless Tuesday in the month, starting at 20:15.

2015 Apr 7

These are organised by Paddy O'Sullivan and Dave Robinson.

If the weather looks unsuitable those wishing to attend may need to check with Paddy or Dave as the evening may possibly be abandoned.

If members cannot gain access due to lack of Fob, etc., please ring the observatory telephone number found in the Newsletter.

Astronomy Workshops

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!

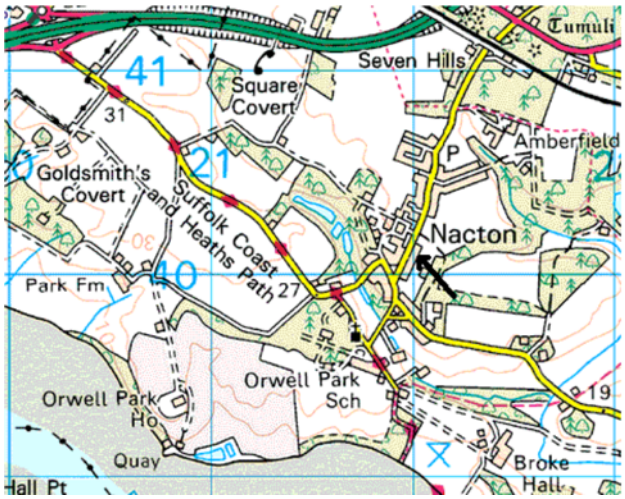
Nacton Village Hall is next to the small village school, just below and left of the N in Nacton on the map. Please park on the same side of the road as the hall, but avoid parking on the white lines which mark clear spaces for various driveways and passing places. The police do occasionally check up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

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

The March 2015 Solar Eclipse

Paul Whiting FRAS and Bill Barton FRAS

1 April in Nacton Village Hall IP10 0EU



There was a solar eclipse on 20th March. For us in Suffolk it was partial [*and invisible! Ed.*], but a few dedicated members have travelled to see the totality. This workshop is for anyone who'd like to, to report back on what they saw and share the experience in whatever format you like e.g. presentation, digital images, video, verbally...

Paul and Bill have agreed to put something together on their experiences but please bring yours along too.

Also – Paul will report on the OASI Sky Condition Survey 2014/15 project. See here http://www.oasi.org.uk/Obsvns/sky_cond_svy/sky_cond_svy.pdf to add your observations.

Lecture Meetings

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

Saturday 7th November:

Damian Peach

"The Giant Planet Jupiter"

7pm start – earlier than usual

Members – free Non-members £2-00

There is some parking at the venue but if there is no space at the venue you can drive to the end of Black Horse Lane and turn left to find a pay and display car park which charges (at the time of writing) £2 for parking between 6pm and 6am. There is also the spiral car park by the New Wolsey theatre.

Read about planetary photographer, Damian Peach, here:

www.damianpeach.com/about.htm

Telescope Training

Bill Barton

Anyone one interested in being trained to use the Tomline Refractor please contact me on barton.bill@hotmail.com or ask me at Newbourne or any other club event so I can set up another training schedule.

Total Lunar eclipse

Date for the diary: 2015 September 28 total lunar eclipse

P1	00:11:46 UT (first penumbral contact)
U1	01:07:12 UT (first umbral contact)
U2	02:11:11 UT (beginning of totality)
U3	03:23:07 UT (end of totality)
U4	04:27:06 UT (last umbral contact)
P4	05:22:23 UT (last penumbral contact)

Bill Barton

The Night Sky in April

Martin RH

Times are now **BST** at Orwell Park Observatory 52.0096°N, 1.2305°E

Moon

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

Full Moon	Last Quarter	New Moon	1st Quarter
04 April 13:06	12 April 04:45	18 April 19:57	26 April 00:55

Sun and planets

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

Object	Date	Rise	Set	Mag.	Notes
Sun	1	06:31	19:28		
	30	05:28	20:18		
Mercury	1	06:33	18:27	-1.0	Superior conjunction 10-April
	30	06:01	22:15	-0.4	
Venus	1	07:39	22:57	-3.8	Perihelion 18 April
	30	07:14	00:14	-4.0	
Mars	1	07:11	21:11	1.5	
	30	05:59	21:19	1.6	
Jupiter	1	13:39	04:57	-2.1	
	30	11:49	03:04	-1.9	
Saturn	1	00:15	08:45	1.0	
	30	22:09	06:47	0.9	
Uranus	1	06:48	19:45	5.9	
	30	04:57	18:00	5.9	
Neptune	1	05:47	16:10	8.0	
	30	03:54	14:20	7.9	

Meteor Showers

Source: BAA Handbook 2015 p97-99

Shower	Limits	Maximum	ZHR	Notes
Viginids	Apr 6-17	Apr 11-12	5	The two most prominent of several radiants in Virgo. Slow, long paths.
Lyrids	Apr 18-25	Apr 22	10	Normally rather moderate activity. Favourable.
α-Scorpiids	Apr 20 - May 19	Apr 28, May 13	5	Part of the Scorpio-Sagittarius complex. Several weak radiants. April-July
η-Aquarids	Apr 24-May 6	May 5-6	40	Fine southern shower, poorly seen from the UK. Broad maximum and multiple radiant.

Visible ISS passes ≥15º max altitude

Martin RH

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

Some late evening passes this month. Click on the date to get a star chart and other details.

NB predictions are approximate.

Date	Mag	Start			Highest point			End		
		Time	Alt.	Az.	Time	Alt.	Az.	Time	Alt.	Az.
04 Apr	-1.3	21:23:04	10°	SSW	21:24:03	16°	SSW	21:24:03	16°	SSW
05 Apr	-1.6	20:30:13	10°	S	20:32:19	16°	SE	20:33:31	14°	ESE
05 Apr	-1.2	22:05:03	10°	WSW	22:06:08	19°	SW	22:06:08	19°	SW
06 Apr	-2.8	21:11:34	10°	SW	21:14:38	39°	SSE	21:15:16	34°	SE
07 Apr	-2.2	20:18:14	10°	SSW	20:21:02	27°	SSE	20:23:51	10°	E
07 Apr	-3.2	21:53:53	10°	WSW	21:56:44	62°	SW	21:56:44	62°	SW
08 Apr	-3.3	21:00:12	10°	WSW	21:03:24	58°	SSE	21:05:24	21°	E
08 Apr	-1.4	22:36:27	10°	W	22:37:58	25°	W	22:37:58	25°	W
09 Apr	-3.5	21:42:39	10°	W	21:45:55	85°	S	21:46:28	59°	E
10 Apr	-3.4	20:48:50	10°	WSW	20:52:05	76°	S	20:54:51	14°	E
10 Apr	-2.2	22:25:11	10°	W	22:27:24	40°	W	22:27:24	40°	W
11 Apr	-3.4	21:31:18	10°	W	21:34:34	85°	S	21:35:41	39°	E
11 Apr	-0.5	23:07:42	10°	W	23:08:14	14°	W	23:08:14	14°	W
12 Apr	-3.4	20:37:24	10°	W	20:40:40	86°	S	20:43:53	10°	E
12 Apr	-2.8	22:13:46	10°	W	22:16:26	49°	WSW	22:16:26	49°	WSW
13 Apr	-3.4	21:19:49	10°	W	21:23:05	74°	S	21:24:36	29°	ESE
13 Apr	-0.7	22:56:20	10°	W	22:57:08	15°	W	22:57:08	15°	W
14 Apr	-3.3	20:25:51	10°	W	20:29:07	84°	S	20:32:23	10°	E
14 Apr	-2.6	22:02:15	10°	W	22:05:14	40°	SSW	22:05:14	40°	SSW
15 Apr	-3.1	21:08:12	10°	W	21:11:25	56°	SSW	21:13:19	21°	SE
15 Apr	-0.7	22:45:06	10°	W	22:45:51	13°	WSW	22:45:51	13°	WSW
16 Apr	-1.9	21:50:42	10°	W	21:53:29	26°	SSW	21:53:55	25°	SSW
17 Apr	-2.4	20:56:29	10°	W	20:59:32	38°	SSW	21:01:58	14°	SE
18 Apr	-1.1	21:39:19	10°	WSW	21:41:24	16°	SW	21:42:33	13°	SSW
19 Apr	-1.6	20:44:45	10°	W	20:47:28	24°	SSW	20:50:09	10°	SSE

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 April 2015

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
22 Apr 2015	21:20:05	D	0.20+	-18	16	7.0	ZC 858
23 Apr 2015	21:11:41	D	0.29+	-17	25	7.5	Hip 31503
24 Apr 2015	23:36:48	D	0.40+	-25	9	6.6	67 Gem
24 Apr 2015	23:40:10	D	0.40+	-25	9	5.3	68 Gem
25 Apr 2015	22:49:56	D	0.49+	-23	22	7.3	ZC 1256
27 Apr 2015	21:04:23	D	0.68+	-15	42	7.0	ZC 1454
28 Apr 2015	22:47:33	D	0.77+	-22	33	5.8	35 Sex
29 Apr 2015	21:50:26	D	0.84+	-18	37	7.2	ZC 1661

James Appleton

Paul's Astronomy Podcast for April

Paul Whiting FRAS

Podcast, April 2015 www.oasi.org.uk/2015_04_pod.mp3

AGM Draft Minutes

Annual General Meeting – Saturday 24th January 2015

Present

Bill Barton	Merlyn Adams	Roy Adams	Eric Sims	Avtar Nagra	Mike Nicholls
John Barbrook	James Appleton	David Murton	Ian Hastie	Mike O' Mahoney	Paul Whiting
Mike Norris	John Wainwright	Nicky Richards	Pete Richards	Martin Cook	Dave Payne
Kevin Fulcher	Andy Gibbs	Martin Richmond-Hardy		Roy Gooding	

1 Apologies

David Brown Tina Hammond Joe Startin

2 Minutes of Last Meeting

The minutes form the 2014 AGM were read and approved

Proposed by Paul Whiting Seconded by Bill Barton

3 Matters Arising

James Appleton mentioned the constitutional change of removing the clause of members under the age of 18.

4 Chairman's Report

I have had a meeting with the manager of the Suffolk Coast and Heaths AONB, together the Chairman of the Darsham society, about measures that can be taken to preserve our night skies. Its early days yet but he has shown great interest and intends to consider what they can do, including, possibly as a long term aim going for dark skies status. He is already trying to alleviate some light pollution problems caused by the repairs to Sizewell and is to contact Suffolk County Council regarding the replacement of their street lights with new LED ones, which if not done correctly could cause more light pollution than the old ones. To help in these aims OASI has purchased a sky quality meter to measure the darkness of the sky.

During 2014 we introduced a series of solar outreach events in surrounding towns including Felixstowe, Needham Market, Woodbridge and The Debenham Street Fair along with our usual Christchurch Park event. These regularly attracted over 250 to 300 people a day with 500 looking through a scope at Felixstowe and will be repeated this year with an additional event in Bury St Edmunds.

We also organised several night sky outreach events and again, these will be repeated this year with an additional event at Bury St Edmunds. We also had an OASI first, with sidewalk astronomy events at Gainsborough Library which went very well and is something I hope will be repeated at other locations.

All in all our outreach events programme has been considerably expanded with, on average one per month. These have all been well supported by members who appear to enjoy them as much as the public does.

We have been trialling a new observing site at Bentley village field to the south of Ipswich. This promises to be an excellent location and the villagers have made us very welcome.

I have procured some new banners and business cards to use during our public events.

The society now has two new sets of eyepieces. Some 11/4" ones for the smaller scopes and some lovely 2" William Optics ones for the Tomline. These are all to remain in the observatory and are not available for loan to members.

During the year I have made three radio appearances on the James Hazell show on Radio Suffolk on the Saturday mornings and one on the Etholle George show last Wednesday morning. These were before our events to publicise them. James is very interested in astronomy and hopefully these will be repeated this year.

I attended Nacton parish council annual meeting on behalf of OASI to give a presentation on our involvement with the village and they seem very pleased that we have a presence there.

I have endeavoured to created stronger links with the neighbouring societies, Darsham and Breckland including meetings with their Chairmen and a visit by some committee officers to the Breckland observatory to discuss how it was obtained and how they run it.

Look out for an upcoming article in the East Anglian Daily Times on OASI and March's solar eclipse.

I am pleased to report that the Newbourne meetings have gone from strength to strength. Attendances are well up and a regular supply of new members is being generated. The focus of these events is shifting slightly from a principally observing evening, to an observing and social one. This has caused an increase in the work involved in the day to day running and I would like to thank Mike Norris for all he has done this year. We will be discussing Newbourne further later in the meeting so I will leave it at that for now.

Attendance at our open evenings last year by both visitors and members were disappointing due to date clashes with Halloween, Guy Fawkes Night and a lunar graze. Therefore we have decided to try again at the end of March which hopefully won't clash with anything else. These are one of our major sources of income so all members please help in some way if you can.

There seems to have been a lot more involvement this past year from newer members in society events this year which I welcome wholeheartedly. One of my aims this coming year is to convince all members that they really can get involved, no matter how much of a beginner they are!

Unfortunately there was an incident at the school when one of our members made a genuine mistake and entered a school corridor while trying to access the observatory. This has led to the school imposing a change to the access hours from 8.00pm to 8.15pm. The committee are trying to organise a meeting with the school to review this as it could cause the attendance on a Wednesday evening to drop. Meanwhile ALL members are reminded that we must ONLY access the permitted areas and ONLY at the permitted times. Further transgressions will be looked up seriously and will be acted upon.

The school is still not showing any desire to carry out repairs to the fabric of the observatory.

We have successfully implemented the changes to the constitution and membership categories required by the introduction of our child protection policy. Many thanks to Mike Whybray for all his hard work in drawing this up.

I am looking forward to our solar eclipse event at Isaacs in March which presents us with an enormous opportunity to promote OASI. Also the International Sun Day event at Minsmere in June which is being organised in conjunction with DASH, LIRA and Breckland and is being attended by Dr Lucy Green will be hopefully the first of many co-operations with other societies.

I would like to give my thanks to Bill Barton as he leaves the committee after many years' service.

Finally, thanks to the other committee members for all their hard work and helping to implement the changes I have introduced during the year. Hopefully none of them has been too painful and they have moved OASI forward. The number of committee meetings has increased considerably and I thank you all for giving up the time to attend. The fact that things run so smoothly is a testament to their hard work behind the scenes. The move of committee meeting venue to the Shepherd and Dog has been a great success and has saved us a significant amount of money. My thanks to John Wainwright for organising this change.

This report was proposed as correct by Paul Whiting and seconded by Bill Barton.

5 Secretary's Report

The Observatory Opening

The observatory was opened 106 times in the year. This can be broken down into:

9 Visits (445 people)

7 Taster evenings (445 people)

3 OPS open days and events

The remaining meetings were normal OASI ones

Newbourne Observers Group (NOGs)

Newbourne Observing Group hosted 19 meetings in the year

Public Outreach observational meetings

Star Parties:

Christchurch Park BBC Star Gazing Live

Gains borough Library

Westbourne Library

Suffolk Wildlife Trust Foxborrow Farm

Bentley Village

Solar events

Christchurch Park

Debenham

Needham Lakes

Felixstowe

Woodbridge

Holywells Park

London Road Spiritual church

Alnesbourne Priory

Bentley Village

Out Reach Lecture Meetings

Paul Whiting has continued with his public Outreach lectures during the year.

3 talks at various Orwell Park School events

4 talks at OASI outreach events

2 talks at various school's

4 talks at various adult groups

8 week astronomy course given at Ipswich Institute

Lecture Meetings

21st February	Building the Solar System	Greg Smye-Rumsby
24th October	Black Swans (black holes in Cygnus)	Professor Ralph Spencer
21st November	Using the Sloan Digital Sky Survey to Study Quasars and the Early Universe	Alan Mcguire

Committee meetings

There were 9 committee meetings, One AGM and 7 normal committee meetings

A special committee meeting was held in June at Nacton village hall for new members to meet the committee

Astronomy Workshops

4 workshop meetings were held in the year. I will leave it to Mike Whybray to give a more detailed account of these.

Open Weekend

The Open weekend this year was held on Friday 31st October , Saturday 1st November

Field trips

Three graze occultation field trips was organised in the year.

Society Social Events

The society's social events are now well supported. As usual, we held two, one in the summer and one on the winter. The Summer Barbecue was held again at Newbourne Village Hall 19th July

The year's last event was the annual Christmas meal, was held at The Shepherd and Dog on December 17h

Other Events and Meetings Attended

Various members attended a number of outside astronomical meetings or conventions

Astrofest

Autumn Star Party at Kelling Heath.

International astronomy show, Warwick

SHA meetings

BAA meetings

RAS Meeting

Over seas Visits

Paul Whiting visited 6 Chilean observatories (Atacama Desert)

In 2015 we held 184 Meetings, of various types. This keeps up to other year's averages of 3.5 meetings a week. I would like to thank all members who organised these events. I am sure we are probably the most active astronomical society meetings wise, in the country.

5 Treasurer's Report

2014 has once again been a good year financially, despite some major purchases, but the balance did decrease by about £1000 as a result of these purchases.

Income continued to be healthy. This was helped by the usual tax refund and the continued income from visit donations.

The Gift Aid tax reclamation facility continued to be a major income source. We reclaimed a tax refund from eligible membership subscriptions this year, in addition to the new ability to claim a tax refund on non-specific, anonymous donations. We received the sum of £984.53, and should receive a similar amount next year.

In summary visits and donations raised £1012.68 for the club.

The biggest single income was again from the open weekend, last year raising £217, way down on last year. Nevertheless, thanks to all who volunteered their time.

So what did we spend our money on this last year? We continued to pay the licence fee of £100 to the School. There was the usual expenditure on memberships, magazines, periodicals and book purchases. Also general running costs such as room hire, speakers, insurance and the newsletter.

Hall bookings were a major expenditure; however the expenditure of £770 was quite well down on last year, thanks to using free locations for committee meetings. However I still believe this expenditure is well worth it.

There were a couple of major purchases in the year, amounting to some £3000 on astronomical equipment.

Notwithstanding this expenditure, once again the Society did not touch its reserve account at all during the year, and despite falling interest rates, it attracted over £6.59 in interest. We have however received notification that the current account will no longer receive interest, resulting in an annual loss of some 60p.

Current Account		**The 586 Fund**	
Brought forward	6392.56	Brought forward	965.40
2014 adjust	-1380.66	2014 adjust	160.00
Carry forward	5011.90	Carry forward	1125.40
Reserve Account			
Brought forward	1184.16		
2014 adjust	6.59		
Carry forward	1190.75		
Cash in Hand			
Brought forward	102.63		
2014 adjust	90.92		
Grand Total	**6396.20**		**1125.4**0

[A detailed breakdown is available from the Treasurer]

6 Trustee's Report

Inspection on 9th January 2015 By Roy Adams and David Brown between 12:05 & 15:20

Lower level

By main entry door, under bottom of spiral staircase, 'old Art room' and the Lift Shaft floor off it:

The amount of stuff in this area as a whole has further increased, to the point that some should really be cleared to elsewhere or/and some provision, possibly by means of 'shallow' extra filing boxes, if findable. Or maybe they could be made or shelves. The fluorescent lighting tube over the existing cabinets should not be obscured for this or floor space would b shadowed. In any case a good stool or pair of steps rather than the stepladders already in the room would expectedly be more convenient, though to reach filing drawers atop the sets already there would need a 3-step 'piece', which, as for a 2-step unit or single-step stool, itself would take up valuable floor space, which at the moment is very 'cluttered', as are filing cabinet tops.

A curtain in front of the under stairs and Millennium Telescope with other 'gear' would be presenting a tidier and less distracting 'image' to visitors. It might be debated whether this is the best place, even temporarily, in the future for the Millennium Telescope and protective

'containers' for parts of it? with rather some rusty chairs in close proximity, (likely useful for work?) We also noted there was a new Dobsonian 'scope in the 'doorway' .In the lift shaft, lots of planks and other equipment were stored with a folding table, big cardboard boxes and a 'tripod' that could not be 'folded'.The window of the lift shaft has its top casement bottom bar slightly sagging but otherwise it seems to have had some attention. A further stepladder and big 'suitcase' and 'film' & other 'projection' screen was also in there. As we found with some other parts of the interior, some cobwebs show the need for a clean.

The stairs-bottom fire-extinguisher was very recently 'in-date'.

Spiral Staircase:

The 'fire exit ' sign is still a bit misleading - as it's not meaning 'out of the window' right by it (or forgive the Christmas 'pun' - down the nearby chimneys)..Over, between the Ken Goward and David Payne chairman photos, a brownish staining of water marks 'tracking' is visible, and by the old bell-crank in-wall inset box, there's a small vertical 'crack' with spalling; vertically (approximately) there are other cracks near the top of the stairs which seem in places to be wider than before, that have been under monitoring (three of them). It would be good to know a bit more about these. The 'staining' appears on either side of the Belvedere Room entry door, near the wall, to the extent of about 4 steps up and 4 steps down.

One thing more, notable through an upper window on the stairs, is that water is standing on a small section of 'roof' or wide 'flashing', the drain from which obviously is still blocked. Has this had the attention / unblocking shown to be needed previously?

Belvedere Room:

The fire extinguishers were also found to be 'in date' here - just 'done'.

Among other things, not very good for an impression on visitors, indeed for anyone - is the overfull litter etc. big bins immediately at left on entry, symptomatic of a lack, we're sorry to say, of general 'housekeeping' , and complete with a tidy pile of sweepings 'adjacent '. We guess that folk have such busy lives both outside OASI activities and concerning them, with the much-increased frequency of meetings away from the Observatory itself, to carry a large, strong container (even perhaps more than one) 'carrier' bags, and transport it home, if easier, (than somewhere by the School), to deposit it safely elsewhere, (a nice 'Santa sack' may do)..

There are now (when we went up) eight tripods/mounts and seven 'scopes around the 'ring' area inside the Belvedere area. Isn't this rather too many since there are at least two balconies that cannot be accessed or at least one imperatively. Which leads to the very disappointing, unavoidable truth Balcony 2 is now taped with duct tape but hardly effectively as the elements can still come through the rotted-away door frame between lower part and its window…

Balcony 4 (numbering order anticlockwise) has some shallow puddling in it by the balustrade, and the balconies generally need a clearing of small spalling and wind-blown leaf detritus etc. and drain-poking, but no more, we'd say, than at last year's 'showing'.

The Belevdere Annexe first aid box still has no contents list in it but the contents appears to be complete.

The 'Emergency' 'phone could not be used for outgoing calls (or anything) as, 'it' told us a credit card input was necessary. So how does one do that?! Unable to check it..In the Library, all appeared reasonably clean and tidy

Equatorial Room (Dome level):

Up here in the main area around the 10-inch telescope, the main concerns were: The five windows - particularly the second going round anti-clockwise, the glass of which was found to be unheld on the outside on the right and bottom, where the bottom frame member was without beading and detached from the right-hand frame member (as looking from inside), a big gap of at least 13mmx80mm existed for the elements to come in or air to blow out, with the threat that a strong enough current could remove the glass. The bottom frame member was rotted. The window behind the old fly-ball governor box was moveable by light finger pressing, ½ mm on one edge. We dared not try the 2nd window by pressing it!

Mastic placed around in places had hardened but also was likely to become detached due to shrinkage/expansion of wood as well as of the mastic. The presence still of very unsightly hard deposits on the glass in places probably has not been remedied owing to fear of glass being damaged or being pushed out. Something must be done about all this, urgently, all five windows and frames need some attention and checking and first aid! If the stuff so hard on the mainly one window could be of the same sort used & connected to a mesh on a bar well secured from the inside, that MAY help but of course, a proper seeing-to is needed.

As for the 10" telescope's drive main 3-foot approx. diameter gear wheel and its worm screw - we were astounded to find that both were absolutely dry all round. For how long has this ungreased / unoiled situation been going on? There must be some suitable lubricating grease or oil even something such as sewing machine oil or best quality 'cycle oil without pollutant which in the long-term might be 'damaging' to some extent, for this which we are sure, again, is paramountly imperative for this irreplaceable (surely!?) such an important pair of items on the telescope!

This is a good place in this Report to list the torques at the main gear wheel, of approximately 450mm radius, derived from pulling by hand tests using a spring balance as we have done for many years on our inspections, at approximate 'compass' intervals of pointing of the 10-inch.

The relevant clockwise torques are as below, with comparative 'backward' (counter-clockwise) figures (aside), for five sample pointing directions with spring balance hooked at a 'point' on the eyepiece end, with declination - pointing roughly to the celestial equator, or factored for such a Declination-pointing where, as ENE and WNW pointings it is hard to get a reading perching high up on the observing steps:

POINTINGS (Going 'round' clockwise)

In comparison	Approx. Torque in kg (lb) at 1.5m (5 feet)	Approx. Torque in kg (lb) at 0.45m (1'6")
CCLW 5.5kg	ENE CLW 6.5kg (14.3lb)	21 kg (46.2lbs)
CCLW 5.5kg	ESE-S CLW 4.5kg (9.9lb)	14.5kg (31.9lbs)
CCLW 7kg	S CLW 3.5kg (7.7lb)	11.5kg (25.3lbs)
CCLW 6kg	SW-WSW CLW 4.5kg (9.9lb)	14.5kg (14.5lbs)
CCLW 7kg	WNW CLW 6.0kg (13.2lb)	20 kg (44.0lbs)

SPRING BALANCE ONLY, OF COURSE SPRING BALANCE GEAR WHEEL & WORM

The approximately 21 kg (46 lb), possibly rather more tangentially on the main gear (and worm) with no lubrication means, we believe, these gears' teeth are being strained not only unnecessarily but at very near and at possibly over a safe limit for them - never mind the worm shaft friction and drive additional load, if indeed it will start up and continue at any part of the 'celestial circle'. This is not forgetting that gearing's age, etc., and the firm possibility of abuse at times, in it's history and that the contact area between the gears is quite small.

Also the main shafts and bearings might well do with a thinner grease or oil and maybe more use.

While on the subject of lubrication, the dome ring support wheels axle and bearings and boxes can also do with some.

The Dome support rack track segments lay rather unevenly at ends and though the shutter/roof wheel can be turned - needing a 'run' at least one point near the main entry door, all wheels appear essentially to remain in contact with the doom ring underneath.

The 10 inch o.g. is rather misty, a gentle wipe could help on occasions.

The Transit Room the north vertical shutter portion has a big gap and seems jammed - needs attention.

Lastly, the computer room and equipment there is fine and seemingly A.O.K.

8 Other Reports

8.1 Membership

The member ship for 2014 was 164, which includes the honorary member.

The membership types are now adult and family.

The number of members receiving their newsletter by email continues to increase.

8.2 Workshop

Workshops continue to be run at Nacton Village Hall. There have been only four since the last AGM:

29th Jan	The Equation of Time	Joe Startin and Matthew Robertson
12th March	Exo-planets	Paul Whiting
22nd Oct	Astronomical Software and Android Applications	David Murton
10th Dec	Rømer Revisited Reprised	James Appleton

All had pretty good attendance - typically 20 plus people. So there appears to be an appetite for these still as a 'non-observing' type of event than can go into considerable depth on a particular topic. However, as with the previous year it has been difficult finding people willing to organise and run them – volunteers welcome!

Three more coming in January, March and April covering comets, aligning binoculars, and report-back from the March solar eclipse respectively.

Orwell Park School Astronomy Club

This year has been similar to last year – running the club 6:45 to 7:45pm on Tuesday in term time during the winter and spring, but only if there is a good prospect of clear skies. Usual attendance is about a dozen children from the school, usually a mix of new children and ones who have been up to the observatory before.

We normally run with Paul & Bill, and myself & Eric as teams, but would welcome anyone else who would like to volunteer to help. However, everyone assisting at these events needs to have a current DBS or CRB check (which OASI can help arrange). Nick Matthews who arranges these nights from the school end has asked if could run on Thursday instead of Tuesday – or even on a mix of these days, arranged week by week. Having consulted with Paul over possible clashes, it seems we should be OK as long as the children are out of the way before 8pm.

My grateful thanks to members who have helped with both the workshops and the school astronomy club. And particular thanks to Pete and Nicky Richards for refreshments at workshops.

8.3 Library

I have sold a book for £6, plus a small donation, to OASI. Cheque forthcoming.

I see no reason not to dispose of the BAA handbooks: literature pertaining to a certain time span quickly becomes obsolete. If any members would like them that is fine.

I am having huge problems with the library catalogue.

When I took it over there were 357 books/magazines in it. However, just before I lost my driving licence and was still able to attend the Observatory on a regular basis, donations had shot up and the list had 468 items on it. Indeed, the shelves were virtually groaning under the weight, and books were stored on the top of the bookcase in black boxes.

Upon my return to the Observatory two years later, the shelves contained neatly aligned books with no books on books, no double banking, and no boxes of books on top of the bookcase (so far as I could see).

I would very much like to know what has happened to the books. Has anybody culled the library and not notified me? As the current situation stands, I have no option but to check the

list against each book individually to ascertain which ones are no longer there, and this is a very daunting prospect.

Any light that can be shed upon this matter would be very much appreciated.

I have met Monica Lusitg and relieved her of the magazines and information she has (mainly on the 2004 transit of Venus). The AN magazines - which we already have unwanted copies of! - we agreed to donate either to charity, or to a small Astro group in Stutton, with the TOV material to go to the OASI library.

8.4 Web Site

The society web site servers two functions, a historical archive and a shop window for the group. The web site is now about 4G in size. The site is now receiving over 100,000 hits a month. A request for more items for the site was requested both pictures and articles.

8.5 Newsletter

12 editions were produced in 2014.

September was the 500th edition

128 members subscribe to the electronic edition which is now available on the web site

80 paper copies are still printed

Thanks were given to all members contributing articles

8.6 Safety

Bill Barton decided to stand down from the 2015 committee.

8.7 Visits

Prospective new members are now directed to the Newbourne meetings

There were 22 outside group visits in 2014

Taster evenings are still being run at the observatory

8.8 Lectures

There were 3 lectures held in 2014

3 lectures are planned for 2015

Pete Richards was thanked for organising the lecture meetings

Pete Richards decided to stand down from the 2015 committee. He will carry on as lecture organiser.

8.9 Equipment

A new equipment inventory is being written

3 telescopes were donated in 2014

Pat Gondris donated a 100mm Celestron Nexstar. Thanks were given to her. It was proposed to give here honorary membership and to send her a hamper.

Martin Cook and John Wainwright will be installing emergency lighting in the observatory stairwell.

The 250mm Dobsonian telescope has been refurbished.

8.10 Newbourne

Of the 20 meetings booked for 2014, 16 winter meetings and 4 summer meetings, only 19 were held as one meeting the 10th February was cancelled due to the muddy condition of the parking area.

According to our signing in book there was a total 377 attendees with 15 visitors although the number of visitors is probably understated. As the tendency is now to direct initial enquiries from prospective members to Newbourne there might be a case for us to have a better strategy so that we are able to know how many of these visits result in membership and agree how we can encourage these members to take a full and active role in the society.

As has already been reported to the OASI committee the character of Newbourne meetings has to some extent shifted away from just 'observing' to a more general club evening and we need to understand what should be provided for these evenings while still not neglecting the needs of those members who attend to carry out observing.

Thanks to the efforts of John Wainwright and Kevin Fulcher we now have an audio/visual set up at Newbourne. We can show films and lectures and with members now producing excellent astro images we have the platform to display and discuss these.

While it is generally agreed that the hall at Newbourne is an ideal location as a club venue the exterior does present some problems for observing in terms of a degree of light pollution from Felixstowe Docks, a field often muddy to set equipment upon and issues with parking. We continue to have good relations with the trustees of the hall who might be open to any propositions to improve these in the future if the society felt it justified and practical.

However the regular numbers attending Newbourne does indicate that it is popular with members and the committee needs to agree how this success can be built on for the future.

Newbourne Committee:

Mike Norris Mike O'Mahony Kevin Fulcher Avtar Nagra

Mike Norris decided to stand down from the committee for 2015

Thanks were given to Mike Norris for running the Newbourne meetings. Mike asked for additional help to run the meetings in 2015.

9 Election of Officers for 2015

Chairman

Bill Barton proposed David Murton, seconded by Mike O'Mahony and passed unanimously

Secretary

Andy Gibb proposed Roy Gooding, seconded by James Appleton and passed unanimously.

Treasurer

Mike Norris proposed Paul Whiting, seconded by John Wainwright and passed unanimously

10 Election of Committee for 2015

The committee for 2015 is

Martin Cook
James Appleton
John Wainwright
Mike Whybray
Martin R-H
Tina Hammond
Kevin Fulcher
Avtar Nagra

Pete Richards was cooped as the lecture coordinator

11 Ipswich Community Radio Broadcasts

Mike Norris has been doing this broadcast for several months and said he would like to stand down.

The broadcast is on Tuesday, once a month at 08:25 and usually lasts 20 to 30 minutes. Some preparation is required before each broadcast.

12 Changes to the Newbourne Observing Group Meetings

Newbourne has provided a successful alternative meeting place.

The parking has been a problem in wet conditions. The area is prone to becoming very muddy.

Netting could be used to cover the parking area. Other uses of the hall should be contacted for their opinions.

Newbourne's proximity to the river Deben can cause misty conditions.

An alternative meeting with beater car parking will be considered.

Mike O'Mahony suggested trying the village hall at Bentley. This has a good hard car park and costs £15 to hire

Alan Smith suggested the village hall at Clopton might be considered.

13 Events

The programme of events for 2015 is now very extensive, A full list is on the web site.

A new Outreach meeting at Bury st Edmunds is in the planning stage.

Spring Open Weekend 27th and 28th March.

14 Observing Projects for 2015

Star counting in the square of Pegasus

3 graze occultations on 28th March, 2nd October and 17th December

Partial eclipse of the moon on March 20th

15 Wish List Equipment and Acquisitions for 2015

The observatory computer requires an upgrade

Mike Whybray mentioned should it be a desktop or laptop PC

Paul Whiting said he will have a look at what is available.

The society PST telescope could do with a driven mount.

16 Any Other Business

Bill Barton suggested that the OASI Facebook should have its own Facebook group.

Kevin Fulcher mentioned that he could set up such a group and be the administrator for the site.

Mike O'Mahony asked who was now running the STONS evenings. Paddy O'Sullivan and Dave Robinson are now running the meetings.

John Wainwright asked for vote of thanks for the manager “Alex” from the Shepherd and Dog. The pub will be under new management in 2015.

17 Date of Next Committee Meeting

Tuesday 24th February from 20:00 at the Shepherd and Dog. [now OPS]

Azimuth scale for an Alt-Az goto mount

Martin Richmond-Hardy

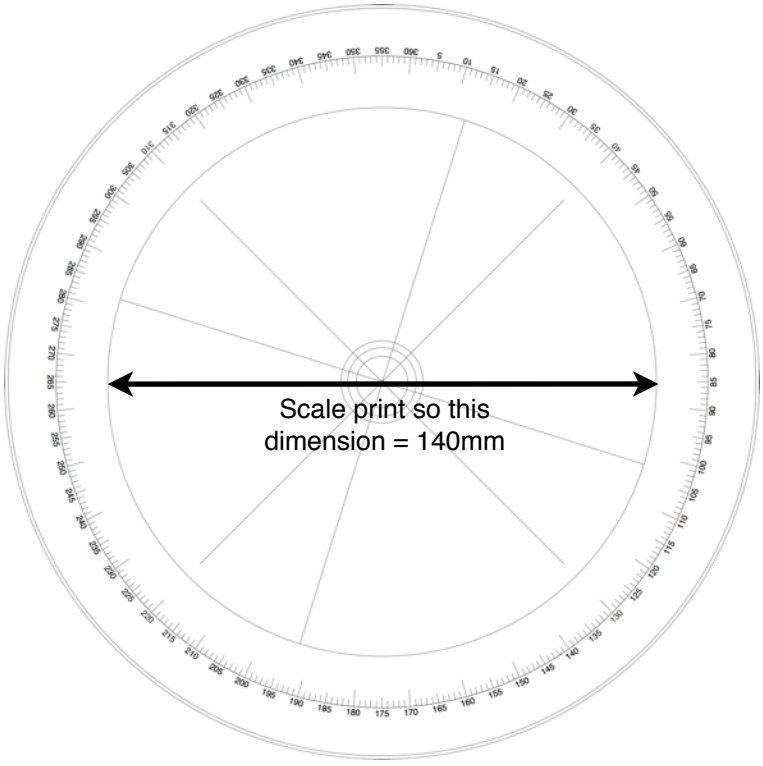
Alert: Purists look away now!

My Skywatcher 127 GoTo mount demands alignment (you can just use it without aligning but this entails fiddling with the drive rate). Alignment can be a bit tricky in daytime due to lack of visible stars, so for yesterday's eclipse event I made a protractor to provide an azimuth scale. All you need is a laminator and a compass paper cutter (but scissors will do).

- Print the referenced pdf on A4 paper, scaled to 45% (see below – it may be different for your printer).
- Trim around the edge.
- Laminate.
- Trim around the edge of the laminated scale leaving a ~5mm (¼") border of clear laminate.
- Cut out a central hole corresponding to the diameter of your mount's drive unit (125mm / 5").
- Fit it between the drive unit and the tripod but don't tighten the clamping screw. Adjust the scale to align the 360° mark with the tripod leg you use as North reference – mark a pointer on the cover of the drive unit.
- Clamp the drive unit to the tripod.
- Align your scope in the usual way. You still need to know where true north is in order to position the tripod. For 2-star alignment choose Polaris (52° N, 0°E is close enough) and any other "visible" star, i.e. one above the horizon at the time you are setting up. The hand control unit will tell you the Alt-Az values. Check the readings on the Alt and new Az scales, tweak the control as necessary and accept (Enter).

Yes it's a bodge but gets you close and stops the hand control fretting that you haven't aligned.

Source: www.jim-easterbrook.me.uk/astro/scope/dob/azimuth_scale.pdf



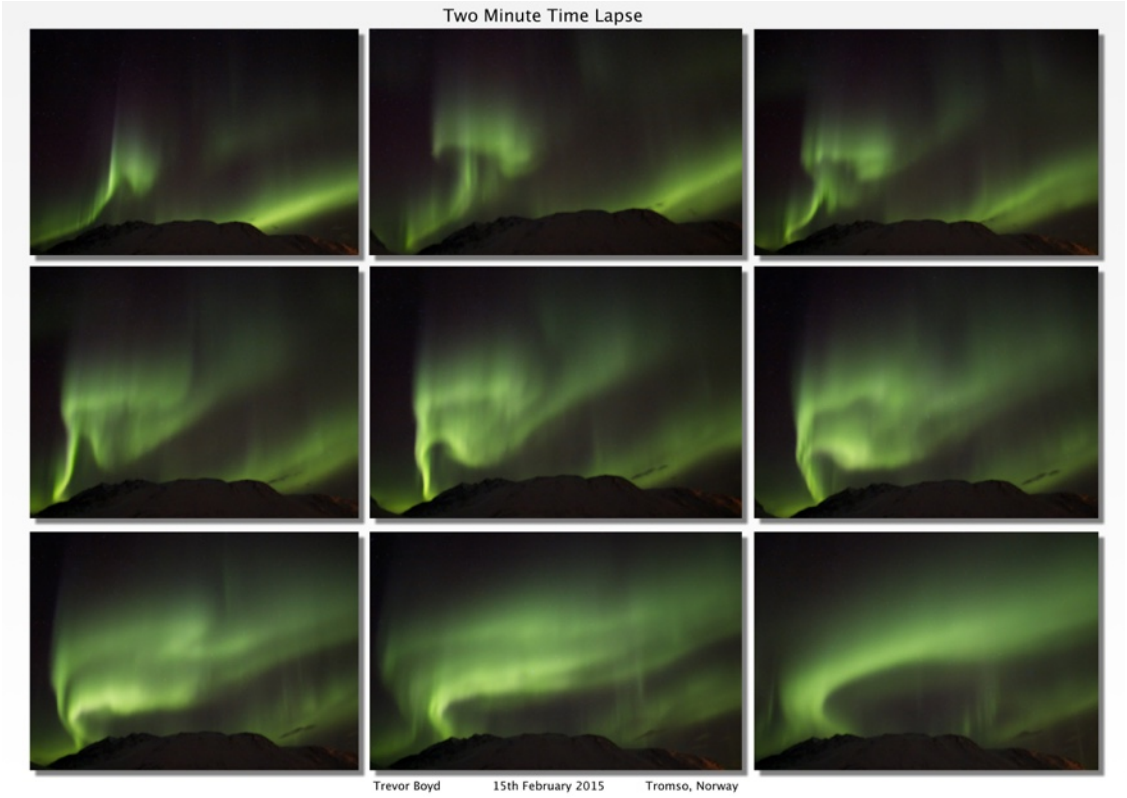
OASI Activity pictures

The Binoculars Workshop

At Jimmy's Farm

Aurora from Norway

Trevor Boyd



Two minute time lapse collage

Aurora Collage