No. 488 Registered Charity 271313 Aug/Sept 2013

The Newsletter

Summer BBQ at Newbourne

www.oasi.org.uk

OASI Committee Contacts and Responsibilities

Neil Morely	Chairman	[redacted]	Chair committee meetings. Represent OASI to external bodies.
Roy Gooding	Secretary		Respond to enquiries. Press & publicity Outreach meetings Open days
Paul Whiting FRAS	Treasurer		Finance Visits from outside groups
James Appleton	Committee		Minutes of committee meetings. Web site.
Bill Barton FRAS	Committee		Safety & security
Martin Cook	Committee		Membership Tomline refractor maintenance
Tina Hammond	Committee		Librarian
Peter Richards	Committee		Lecture meetings Email distribution lists
Eric Sims	Committee		Newsletter
John Wainwright	Committee		Equipment curator
Mike Whybray	Committee		Workshops

Apologies to Neil & Tina for getting their email addresses wrong in previous issues [MRH].

Trustees

Mr Roy Adams

Mr David Brown

Mr David Payne

Honorary President

Dr Allan Chapman D.Phil MA FRAS

The OASI mailing list

OASI has an email distribution list which all which all OASI members can join to keep in touch. If you want to join the list please send an email to

[redacted]

The email needs to Include your name (as you gave It on your membership application). Including your name is essential so we can confirm you are an OASI member (particularly If you have a cryptic email username:-).

Please note that the "oasi-subscribe" address above is not the actual email list.

Society Notices

by Roy Gooding

Committee Meeting

8:00pm Saturday 28th September 2013

Venue: Museum Street Methodist Church Hall

All members are invited to attend the next Committee meeting.

Access into the School Grounds and Observatory Tower

Please use the third gate into the school grounds. The code for the gate is on the back of your membership card. If the black door entrance at the base of the observatory tower is locked, please phone the observatory mobile [redacted] during meeting hours.

The Newsletter

To receive the electronic version of the newsletter (which you can also print in A4 or A5 booklet format) you will have to be a members of the oasi yahoo group. To subscribe to this group please email

[redacted]

Newsletters will still continue to be printed by Eric and mailed to those who have expressed a preference for the printed version.

Welcome to New Members

John Praite Jonathan Clark Claire Lee

Society Events

Events Programme for 2013

This provisional event list will be updated throughout the year.

Meeting	Venue	Date
Perseids Meteor Watch	"The Dip" Felixstowe	Saturday 10 August
Autumn Equinox Sky Camp	Kelling Heath, Norfolk	30 Sept – 11 October Main weekend 4–6 October
SPA Convention	Cambridge Institute of Astronomy	12 October
FAS Convention	Cambridge Institute of Astronomy	19 October
Open Weekend	Orwell Park Observatory	Friday 22 & Saturday 23 September
Christmas Meal	TBC	December

Events Programme for 2014

Meeting	Venue	Date
National Astronomy Week	Events TBA	1 – 8 March

Outreach Meetings 2013 in Holywells Park

Autumn Star Party

Option 1: Saturday 7 September

Option 2: Saturday 14 September

Entrance by the Myrtle Road gate

Follow the path till you get to the grass area

Our area is where the X is.

Outreach Meeting 2013 Minsmere RSPB Reserve

This event has now been cancelled.

Comet ISON

This may be very bright (-16! this may be over optimistic) is visible before and after Christmas and may require more outreach meeting(s). I have spoke to Sam Pollard about running Star Parties before and after Christmas in Christchurch Park. The latter one should coincide with the BBC's Stargazing Live 2014.

Open Weekend 2013

The Open Weekend this year will be Friday 22nd and Saturday 23rd of November. These two dates coincide with a long week in the school's autumn term. The Pupils will be away from the school.

Doors open for the public at 19:30

Set up time from 18:30

As usual as much help as possible is required to make this another successful fund raising Open Weekend.

Help is required in five areas

- Car parking
- Reception desk
- Telescopes on the balconies
- Tomline refractor
- Telescopes in the field

If you are only available to help for a short time your presence will still be appreciated.

Accommodation for the itinerant astronomer?

Spotted by James Appleton on the north coast of Sicily, summer 2013.

Night Sky in August

Sun and planets

Roy Gooding

Object	Date	Rise	Set	Mag.	Notes
Sun	1	05:17	20:45		
	31	06:05	19:45		
Mercury	1	03:40	19:40	-1.2	Mercury is well placed to observe in the early morning sky this month
	31	06:37	20:03		
Venus	1	08:22	21:56	-3.9	Venus lies low doen the the evening twiight sky this month.
	31	09:52	20:48		
Mars	1	02:49	19:30	1.6	Mars is a few degrees below Jupiter this month
	31	02:35	18:34		
Jupiter	1	02:34	19:06	-1.8	Jupiter is well placed to observer in the pre-dawn sky this month
	31	01:04	17:30		
Saturn	1	13:24	23:34	0.8	Saturn is in the evening twilight sky this month
	31	11:36	21:39		
Uranus	1	22:34	11:27	5.8	Uranus remains in Pisces
	31	20:35	09:25		
Neptune	1	22:34	07:51	7.8	Neptune is at opposition on the 27th, and is in Aquarius
	31	19:32	05:49		

Moon in August

New Moon	1st Quarter	Full Moon	3rd Quarter
6th 21:51	14th 10:56	21st 1:45	28th 9:35

Meteor Shower

Source: BAA Handbook p98

Shower	Limits	Maximum	ZHR
α–Capricornids	July 15th to August 20th	August 2nd/3rd	5
ι-Aquarids	July to August	August 6th	8
Perseids	July 23rd to August 20th	August 12th 10:00	80

Occultations during August

James Appleton

The table lists lunar occultations which occur during the month under favourable circumstances. The data relate 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
14 Aug	20:23:16	G	0.54+	-9	12	5.4	41 Lib
15 Aug	20:42:42	D	0.66+	-12	14	6.3	ZC 2394
17 Aug	21:13:33	D	0.86+	-16	18	6.3	V4405 Sgr
17 Aug	22:50:38	D	0.86+	-23	15	6.9	Hip 92266
17 Aug	23:27:21	D	0.86+	-25	12	6.8	ZC 2733
20 Aug	21:23:25	D	1.00+	-18	22	6.0	47 Cap
29 Aug	00:06:02	R	0.44-	-29	14	6.0	ZC 718

Note that the occultation on 14 August will appear (skies permitting!) from Orwell Park as very nearly a graze, with the south pole of the moon skimming a mere 1% of the lunar diameter above the star.

Night Sky in September

Sun and planets

Roy Gooding

Object	Date	Rise	Set	Mag	Notes
Sun	1	06:07	19:42		
	30	06:55	18:35		
Mercury	1	06:44	20:02		Mercury is too close to the sun to be observe this month
	30	09:20	19:02		
Venus	1	09:55	20:45	3.9	Venus is low down in the evening twilight sky this month
	30	11:22	19:45		
Mars	1	02:35	18:32	1.6	Mars is a morning sky object this month
	30	02:24	17:21		
Jupiter	1	01:01	17:26	-1.8	Jupiter is also a mormning sky object this month
	30	23:25	15:47		
Saturn	1	11:33	21:35	0.8	Saturn is visible in the evening twilight sky
	30	09:55	19:46		
Uranus	1	20:31	09:21	5.8	Uranus remains in Pisces
	30	18:35	07:21		
Neptune	1	19:28	05:45	7.8	Neptune is in Aquarius
	30	17:32	03:47		

Moon in September

New Moon	1st Quarter	Full Moon	3rd Quarter
5th 11:36	12th 17:08	19th 11:13	27th 3:55

Meteor Showers

Source: BAA Handbook p98

Shower	Limits	Maximum	ZHR
Piscids	September to October	Sept 8th Sept 21st Oct. 13th	10 5 ?

Occultations during September

James Appleton

The table lists lunar occultations which occur during the month under favourable circumstances. The data relate 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
13 Sep	20:06:09	D	0.63+	-17	16	7.5	Hip 90230
15 Sep	21:08:36	D	0.83+	-26	23	7.3	Hip 100785

John Wainwright & Mike Norris with an array of solar scopes at the Newbourne Fun Day

The Future of Small Telescope Observing Nights at the Observatory – STONs

As one of the organisers of the above nights at Orwell Park Observatory, it would seem to me that they have become somewhat superseded by the Newbourne Observing Group (NOGS) activities especially as they are planned to be held twice a month in the winter 2013/4 season. I myself often take two telescopes to these activities when inclement weather is not forecast although indoor talks and discussions are held if this should occur.

The reason for the greater popularity of NOG evenings may be due to a number of factors, including ease of access and facilities not least of which is the ability to have comfort breaks and hot drinks (important to some of us old F!!!s). Using your own scope and comparing it with others as well as helping each other in a group environment is an important aspect of the NOG evenings.

It seems to me though, from some of the chat that has occurred at NOGs that the NEED for the STONs has not ceased. They were originally set up to give new or less experienced members the opportunity to learn where many observable objects are located in the sky, gain some experience of the society's smaller telescopes and to compare their pros and cons. This latter point is pertinent as several people have asked for assistance in using a newly acquired computer aided 敵GOTO telescope as they lacked the basic astronomical knowledge to set up for observing. Some have been surprised of the need for 8” or 10” telescopes to see dimmer deep sky objects. Try before you buy has always been my advice here. Smart phone applications are a great help, but they ruin your night vision for quite a few minutes after you have used them.

As a consequence of NOGs greater frequency this year it is proposed that STONs are only held once a month in 2013/4 and it was decided last year that as a result of car park issues all future STONS would be held on TUESDAY evenings (hopefully co-ordinated with NOG evenings).

If you would like STONs to continue, then please put a comment on the OASI group web ring or call me at the number on the back page of the newsletter. If anybody would like to suggest a different format for STONs and are prepared to do the leg work, their input would be quite welcome.

For the avoidance of doubt, a NIL response will be interpreted by me as no interest in further STONs.

Gerry Pilling

Bill Barton & John Wainwright with mount at Newbourne

How to build a Barn Door Tracker

By **David Murton**

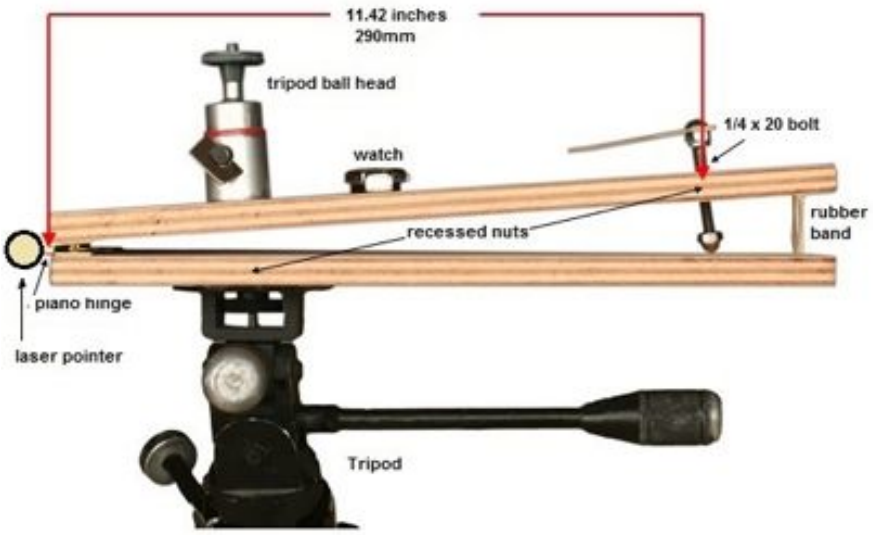
A barn-door tracker is a very simple, home-made, device for taking long exposure photographs of the night sky. Sitting on top of a standard photographic tripod, it will allow you to shoot longer exposures and track the stars to compensate for the Earth's rotation without using an equatorial mount. It is possible to buy automatic electronic trackers such as the Vixen Polarie but these can cost around £400. Obviously these are much better at following the sky, but are a major investment.

Two pieces of wood (I used ¾" ply) are joined by a piano hinge. The hinge points at the north celestial pole near Polaris. The hinge acts as the right ascension axis of an equatorial mount. The bottom piece is fixed to your tripod. Your camera and lens is mounted on the top piece with a ball and socket head. A bolt raises the top piece of wood at the same rate that the Earth turns.

You can turn the bolt by hand, or if you want to, you can use a motor to turn it. A rubber band around an eyelet in the end of each board on the side opposite the hinge can stop the mount from coming apart accidentally if the weight of the camera is unbalanced. A round head nut is used at the end of the drive bolt for smoother movement, and a thin piece of ply is used as a lever at the top of the drive bolt to make turning it easier.

A ¼ x 20 UNC recessed nut in the top of the lower board is used to mount the tracker to a tripod. The drive bolt is held by two nuts recessed in the top and bottom of the upper board. A 3/8" UNC bolt is used to secure the ball head to the top board although some do come with ¼ UNC threads so check before you buy. The watch is held in place by Velcro.

When choosing a tripod head to mount the camera, ensure that you get a ball type not a dual axis one as you will not be able to adjust the later due to the proximity of the top board. It also helps if the head has a quick release plate for the camera as this enables the camera to be put on and off swiftly without lots of twirling of the mounting screw. I picked one up from Amazon for £12.



A 1/4" - 20 bolt is placed at exactly 11.42 inches, or 290mm, from the centre of the hinge pin. When this bolt is turned at one rotation per minute, the camera will track the stars as they move across the sky. The tripod's adjustments are used to aim the axis of the hinge pin at the north celestial pole.

The distance from the hinge to the screw and the number of threads on the screw determine the rate the bolt needs to be turned at. This spacing is critical. The easiest method is to use a 1/4" - 20 UNC bolt. Place it at exactly 11.42 inches (290mm) from the centre of the pin of the hinge. Alternatively, a 10-32 bolt can be used at a distance of 7.14 inches (181mm) from the centre of the hinge pin, but the resulting tracker will be quite small and cramped. As these bolt sizes are American they can be difficult to obtain locally so I got mine from www.westfieldfasteners.co.uk. I can't fault their service but watch you order UNC **not** UNF!

Using these dimensions, the bolt needs to be turned at one revolution per minute. This is an easy task to accomplish by simply mounting an old-fashioned watch with a second hand next to the bolt. The bolt is then turned at the same rate of sweep as the watch's second hand. This will track the stars at the sidereal rate.

When you set up the barn-door tracker you simply sight along the hinge and aim it at Polaris. You can use the altitude and azimuth adjustments of your tripod to aim the hinge. To aid sighting I fixed an old cut down bic tube just below the hinge and also stapled two elastic strips between the top and bottom boards so that a laser pointer can be placed alongside the hinge.

Then aim your camera and lens at the constellation or section of sky you want to photograph. Focus on infinity and open the shutter. Then turn the bolt at the correct rate. Be sure to turn it in the correct direction (clockwise) though!

Obviously any vibration has the possibility of blurring the image so be very careful when turning the bolt, try to use the most substantial tripod you can and use a remote shutter release.

Apparently with a wide angle lens these trackers can give good results for exposures of at least 10 minutes if not longer, but the accuracy will drift as the boards open and the angle of the bolt to the lower board changes. I think the accuracy of the polar aligning will probably be the limiting factor however. Apparently some people put polar aligning scopes or red dot finders on barn doors, but to my mind getting too technical is going against the basic principle behind them. My aim is to see what I can achieve without spending too much money. So far its set me back less than £20 (not including the tripod it sits on and the laser pointer).

David Murton

Newbourne Observing Group

We meet at The Newbourne Village Hall, Mill Lane, Newbourne, IPl2 4NP Start 7:00pm

It was very nice to welcome three friends of members to our July meeting so that by 11pm there were eighteen observers on the field and nine telescopes. Darkness arrives particularly slowly when you are waiting so the gold star goes to Jennie Wood who was the first to see Arcturus emerging from a still bright sky and was also the first to line up with Saturn. Young eyes and simple equipment – a winning combination!

Andrew Gibbs managed to collimate his 12" Orion Dob with his cheshire eyepiece before looking at Saturn, Alberio and M13. He thought it would be easier to collimate in the dark with a laser although a cheshire was more accurate in daylight. He hopes to borrow a laser to make a further comparisons.

Observing is the primary purpose at Newbourne and will always take priority but we do need other options when the weather conspires against us. We will be obtaining a free standing display board so we can show members images and projects and your suggestions and ideas are always welcome.

We now have a full programme of dates taking us through to December which are listed below so make a note of these in your diary.

Summer

Monday 12th August start at 8pm

Autumn & Winter – 7pm start

Monday 9th & Thursday 26th September,

Monday 14th & Thursday 24th October,

Monday 11th & Thursday 28th November,

Monday 9th & Thursday 19th December

The BBQ – picture by Steve

Forthcoming BAA Meetings

Weekend Meeting – in Bristol

The date for this event is Friday 6th – Sunday 8th September

I would like to remind you that the weekend meeting of the BAA will be at Bristol Grammar School, University Road, Bristol, BS8 1SR

The theme of our weekend is The New, the Old and the Ancient and starts with a talk on Friday evening by Dr John Mason followed by a full day of talks on Saturday. Saturday speakers include Prof David Southwood, Lee

Macdonald, Prof Mark Birkinshaw, Dr Mark Kidger

On Saturday evening our hosts are holding a star party for us. The weekend will conclude on Sunday with a tour of the Herschel Centre in Bath.

The cost for Friday and Saturday is £16 for BAA members and £20 for non-members, accompanied children under 16, £8. This cost includes tea/coffee on Friday & Saturday at registration and in the afternoon, plus a cold buffet lunch. The cost for Sunday will be £6 for the Herschel Centre plus £8 for the coach from Bristol to Bath. Depart Bristol 10:30 return at 15:00 approx.

More details can be found on the BAA website www.britastro.org/bristol2013.

Booking form will be included in the August Journal

Hope to see you there

Hazel Collett
Meeting Secretary

Back to Basics Workshop in Bexhill

I would like to remind you that the Back to Basics Workshop of the BAA will be on Saturday October 12th 2013 at St Mary's School & College, Wrestwood Road, Bexhill on Sea, East Sussex, TN40 2LU hosted by the East Sussex Astronomical Society.

The cost of this event is £10.00 to BAA members and £12.50 to non-members (price includes all refreshments, vegetarian option available) Children under 16 £5.00.

The day starts at 10:30 with registration and finishes at 17:30.

The day covers an introduction with practical help on what equipment to use, observing the sun, moon and planets plus radio astronomy.

More details can be found on the BAA website www.britastro.org/bexhillb2b.

Booking form will be included in the August Journal

Hope to see you there

Hazel Collett
Meeting Secretary

Knowledge Observatory

UnLtd Award Winner

Igniting Passions, Inspiring Minds, Transforming Futures

Who's Who

Some new members (and older members!) may not be able to put names to faces.

Bill Barton

Safety & Security

John Wainwright

Equipment curator

Mike Norris

Newbourne Observing Group

Martin Cook

Membership

Tomline refractor maintenance

Committee members: Mugshots, please! to [redacted]

Diary for August/September

Small Telescopes Observing Nights at the observatory Paddy O'Sullivan Gerry Pilling Dave Robinson	**STONs** From 8:00pm STONS start again in October See Gerry's article on p8.
Observatory Club Nights Observing with the Tomline refractor and other telescopes if skies are clear Martin Cook Roy Gooding	**Wednesdays** From 8:00pm
OASI Members Group Observing Evenings Newbourne Village Hall, Mill Road, Newbourne. Summer programme – see web site for details	**Monday 12 Aug, 9 Sept.** from 8pm during May - August 7pm from September. See www.newbourne.org.uk
OASI Workshop Nacton Village Hall Mike Whybray	**Wednesdays** Nothing arranged until later this year
Observatory visits by local community groups Paul Whiting FRAS	Nothing booked
Committee Meeting Venue: Methodist Church Hall, Blackhorse Lane, Ipswich	Saturday 28 September 8:00pm
Holywells Park – Autumn Star Party	7 or 14 September
Open Weekend	22 & 23 November

Society Contact details

See page 2 for Committee contact details.

Observatory (meeting nights only)

Email queries: info@oasi.org.uk

Facebook.com/orwell astronomical

Twitter: @OASIpswich

Please send material for the OASI web site and newsletter

e.g. observations, notices of events, general interest articles, to

info@oasi.org.uk