



# OASI News

The newsletter of the Orwell Astronomical Society



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



Not too much solar observing at Woodbridge Tide Mill on 11 May



Mark Norris at the Breckland Star Party

Will this become the Newbourne Observing Group's tipple of choice?

Thanks go to John Wainwright for spotting this.



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## Society Contact details

Observatory (meeting nights only)  
07967 519249

Email queries: [info@oasi.org.uk](mailto:info@oasi.org.uk)  
facebook.com/pages/orwell-astronomical [\*]

Twitter: @OASlpswich

Forum: [forum.oasi.org.uk/index.php](http://forum.oasi.org.uk/index.php)

[\*] Please note that there is a hyphen in the Facebook url (which has been missing for the past year!)

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.

**Please send material for the OASI  
web site and newsletter**

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

**[news@oasi.org.uk](mailto:news@oasi.org.uk)**

## 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, 07967 519249 during meeting hours.

We now have a key to the toilets in the school gym. It 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](mailto:news@oasi.org.uk)

**The CLOSING date is the 15th day of the month**

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

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

Spreadsheets: xls, xlsx, OpenOffice/LibreOffice, Numbers

Images: tiff, png, jpg

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

## The Newsletter

The society is trying to move from paper newsletters to electronic.

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 available from the OASI Yahoo group.

To receive the electronic version of the newsletter (which you can also print in A4 or A5 booklet format) you may either:-

- Subscribe to the OASI Yahoo group by emailing [oasi-subscribe@yahoogroups.com](mailto:oasi-subscribe@yahoogroups.com)
- Or, for those who don't like Yahoo, a Dropbox link will be emailed to those who have expressed a wish to receive the e-version. Email [membership@oasi.org.uk](mailto:membership@oasi.org.uk)

## Newsletter archive on DVD

James Appleton

The electronic archive of OASI *Newsletters* is complete from edition 1 (February 1972) to edition 484 (April 2013) inclusive. The archive contains a scan of every non-blank page of the *Newsletter* and an index. The spreadsheet facilitates locating articles by keyword searches using the Excel *Find* function. The archive can now be searched online at [www.oasi.org.uk/NL/NL\\_form.shtml](http://www.oasi.org.uk/NL/NL_form.shtml)

A DVD containing the archive is in the OASI library for loan to members. Anybody wanting their own copy, please let me know what format you require - DVD or your own memory stick.

## Committee 2014

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

## New members

None this month

## Society Notices

### An open invitation to all OASI members

from David Murton, OASI Chairman.

Dear Members

On behalf of your committee I should like to invite you to come along to the Nacton village hall on Sunday 15<sup>th</sup> June at 2pm to meet the committee and other members with tea and nibbles.

Although aimed primarily at our newer members for them to put a face to a name and find out more about OASI and what we offer, all members are welcome to attend.

We would especially like to see those members who we very rarely see, to find out if there is anything we could be offering them that we presently don't, or what we offer that they don't like. I can't promise that we can give a positive answer, but we will consider all points that are raised with a positive outlook.

The committee are making positive moves to offer more to members this year, including solar outreach events this summer, more dark sky observing this winter, including some more "sidewalk astronomy", a member's forum, and great website. We are also addressing the problem of new members feeling "lost" with them being pointed towards the Newbourne meetings where it is much easier for them to be integrated into society life.

You will also find that committee members will now be wearing badges at society events so that you shouldn't have any problems finding one of them to ask anything you want to know about OASI, or to introduce yourself to as a new member.

All members are welcome to participate in OASI events; no matter how new you are and what equipment you may or may not have. Although our outreach events are designed to introduce astronomy and OASI to the general public, they are also great opportunities for members to socialise and observe as a group so please come along to as many as you can.

Don't forget that if you join the OASI Yahoo group you will get regular emails about club events, etc. and this is the best way to right keep up to date. Email Pete Richards at [lectures@oasi.org.uk](mailto:lectures@oasi.org.uk) to arrange to join.

Also don't forget that all members are eligible to join the OASI forum on our website where you can find useful information, discuss relevant topics, post and view your pictures and buy and sell equipment and that we have twitter and Facebook accounts for those who use such things.

On the afternoon/evening of Saturday 19<sup>th</sup> July we will be holding our annual summer barbeque at Newbourne village hall. I am sure that Paul will be having one of his excellent quizzes and there will be some solar scopes set up. The usual format is that people bring their own burgers, etc. to cook on the barbeques we have set up. All members and their families are invited to come along and I look forward to seeing you there.

I can also confirm that I, along with several other East Anglian astronomy society chairmen, am looking to set up closer links between our societies in order to share our resources, have mutual invitation to each other's events, etc.

If anyone needs to contact me about OASI, don't forget you can email me at [chairman@oasi.org.uk](mailto:chairman@oasi.org.uk) or ring me on 07522113387.

Good Skies!

David Murton

## OASI Discussion Forum

A web-based forum for general discussions and some initial specialist areas. OASI members can join this forum at <http://forum.oasi.org.uk/index.php>

- OASI General
- Newbourne Observing Group
- Observing - Night Sky
- Observing - Solar
- Events
- Imaging
- Small Telescopes Observing Nights
- For Sale / Wanted
- Equipment

## OASI Constitution revised

The EGM held at Newbourne Village Hall on Monday 19th May approved the proposed changes to the Constitution as published in the May OASI News.. There were 14 people present of whom 13 were voting members.

Mike Whybray proposed the amendments be adopted, seconded by Martin Cook. 12 voted for the changes and one abstained. None against.

The amended sections of the Constitution are as follows.

### 3. Membership

Membership of the Society is at the discretion of the committee. There are two classes of membership:

1. Member
2. Honorary Member - invited by the committee to enjoy free membership for services rendered.

***The immediate family of a member (partner, children, parents) are entitled to attend OASI meetings and events, however only the member may vote at meetings. For child protection purposes, all children (under 18s) must be accompanied at meetings and events by a parent/guardian.***

The committee is empowered to disqualify a member whose actions bring the Society into disrepute or damage relationships with the School. The committee must meet in order to progress a disqualification; the member in question is entitled to attend the meeting and may ask one of the Trustees of the Society to speak on his/her behalf.

### 4. Subscriptions

Subscriptions are payable on the first day of January. Subscriptions are not refundable except in exceptional circumstances at the discretion of the committee. Membership fees will be agreed at the AGM.

***Subscriptions not paid by the end of February will be assumed to mean resignation.***

### 6. Management Of The Society

The Society will be managed by a management committee consisting of the three elected officers and eight other members. The committee shall be elected annually at the AGM of the Society. All nominations for committee membership shall be in writing and be in the hands of the Secretary before the start of the AGM.

The management committee shall meet as required. Six committee members must be present to form a quorum, which must include at least one of the elected officers. The committee shall be empowered to fill any vacancy in its membership arising during the year, until the next AGM, from members of the Society.

The committee shall be empowered to appoint sub-committees for any purpose.

***The management committee and any sub-committees may co-opt additional members from the Society, and they will have voting rights on the committee they join.***

***Each member of the Society shall have one vote in the ballot for each post at the AGM.*** A simple majority shall decide those elected. If there is a tie for any post the outcome shall be decided by further votes. Postal votes or proxy votes are not eligible. The committee shall take office from the date of the AGM to the date of the following AGM.

## Issues with DropBox

Some of you may have been having trouble using the DropBox links to download OASINews. This is due to the following:

"Dropbox provided details on their blog about a web vulnerability that affects shared links to documents containing hyperlinks. This issue isn't exclusive to DropBox, and we haven't seen any exploitation of the vulnerability. However, as a precautionary measure, we've disabled shared links that were created before May 5 to file types (such as PDF or Word docs) that might contain a hyperlink."

I have now re-enabled the links.

Martin RH

## OASI Field trip to see the Northern Lights (hopefully)

By Paul Whiting FRAS

I am still taking names for the Aurora Field Trip that will take place in February 2015. There are still a few spare places.

Depart: Wednesday 11 February 2015 [next year!]

Return: Monday 16 February 2015

This will include 3 nights on board ship, followed by 2 nights in Tromsø, a total of 5 nights at or above 70° North.

Details of the initial itinerary are below, and may be found on the website. Flights will be from Gatwick. I need to know names, numbers of cabins (single / double, inside / outside).

Costs will be: £1247 outside twin (per person) £1495 outside single. Cheaper inside cabins available.

There will be an opportunity to add excursions later. I will need an initial 20% deposit.

Paul

[trip@oasi.org.uk](mailto:trip@oasi.org.uk)

### Itinerary

Day 1 Tromsø, the gateway to the Arctic  
Day 2 Honningsvåg and the North Cape  
Day 3 Kirkenes, the voyage turning point  
Day 4 Hammerfest and Tromsø  
Day 5 Day in Tromsø  
Day 6 Depart

## Society Events

For the latest event details, please see [www.oasi.org.uk/Events/Events.shtml](http://www.oasi.org.uk/Events/Events.shtml)

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>

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.
Sunday 1 June 11:00-16:00	Needham Lakes	David Murton	<b>Public access event.</b> Observing the sun safely. Booking not necessary.
Monday 09 June, 20:00	Newbourne Village Hall	Mike Norris Mike O'Mahony	Newbourne Observing Group.
Sunday 15 June, 14:00	Nacton Village Hall	David Murton	Opportunity for new (and not-so-new) members of OASI to meet the committee and office bearers for informal conversations about any aspects of running the Society. "Nibbles" will be provided...
Sunday 29 June, 12:00 - 17:00	Debenham High Street	David Murton	Debenham Street Party Solar event
July 9 - 12	New Wolsey Theatre, Ipswich	<a href="http://www.wolseytheatre.co.uk/shows/galileo">www.wolseytheatre.co.uk/shows/galileo</a>	The World Premiere of <i>Galileo</i> by Martin Waddington - specially developed for the Gallery Players.
Saturday 12 July	Newbourne Village Hall		OASI Summer Barbecue
Monday 14 July, 20:00	Newbourne Village Hall	Mike Norris Mike O'Mahony	Newbourne Observing Group.
Saturday 19 July Time TBC	Newbourne Village Hall	Pete Richards	Summer BBQ
3 August Time TBC	Felixstowe Leisure Centre		<b>Public access event.</b> Observing the sun safely. Booking not necessary.
Friday 8 August 19:30	Suffolk Wildlife Trust, Foxburrow Farm	Roy Gooding	<b>Public access event.</b> Astronomy evening. Details TBC.

<b>Date and Time</b>	<b>Location</b>	<b>Contact</b>	<b>Event</b>
Monday 11 August 20:00	Newbourne Village Hall	Mike Norris Mike O'Mahony	Newbourne Observing Group.
Sunday 24 August 11:00 - 16:00	Alnesbourne Priory	Mike Norris	<b>Public access event.</b> Observing the sun safely. Booking not necessary.
Sunday 29 August	Bentley Playing field		Solar event at Bentley Families Day
Monday 8 September 19:00	Newbourne Village Hall	Mike Norris Mike O'Mahony	Newbourne Observing Group.
Friday 12 September	Westbourne Library	Paul Whiting, FRAS	<b>Public access event.</b> Telescopes and talk evening. Details TBC.
Monday 22 September 19:00	Newbourne Village Hall	Mike Norris Mike O'Mahony	Newbourne Observing Group.
Friday - Monday 19-22 September or, if poor skies in Sept: Friday-Monday 24-27 October	Haw Wood Farm Caravan Park, Hinton, Saxmundham IP17 3QT <a href="http://www.hawwoodfarm.co.uk">www.hawwoodfarm.co.uk</a>	<a href="http://www.brecklandastro.org.uk/">www.brecklandastro.org.uk/</a>	Breckland Astronomical Society Autumn Star Party
22Sept - 3 Oct Main weekend 26-28 Sept	Kelling Heath	starparty.las- astro.org.uk	Autumn Equinox Sky Camp
Tuesday 7 October	Orwell Park Observatory	Paul Whiting, FRAS	Public access event. Observatory tour. Places must be booked. Further info and book a place.
Monday 13 October 19:00	Newbourne Village Hall	Mike Norris Mike O'Mahony	Newbourne Observing Group.
Tuesday 21 Oct	Orwell Park Observatory	Gerry Pilling	Small Telescope Observing Night
Friday 24 October, 20:00	Methodist Church Hall, Black Horse Lane, Ipswich	Pete Richards	Lecture Meeting. Prof Ralph Spencer: Black Swans - Black Holes in the Constellation Cygnus. [postponed from May]
Monday 27 October 19:00	Newbourne Village Hall	Mike Norris Mike O'Mahony	Newbourne Observing Group.
Monday 10 November 19:00	Newbourne Village Hall	Mike Norris Mike O'Mahony	Newbourne Observing Group.
Tuesday 18 Nov	Orwell Park Observatory	Gerry Pilling	Small Telescope Observing Night

Date and Time	Location	Contact	Event
Friday 21 November 2014, 20:00	<u>Methodist Church Hall</u> , Black Horse Lane, Ipswich	Pete Richards	<b>Lecture Meeting.</b> Alan McGuire - Using the Sloan Digital Sky Survey to Study Quasars and the Early Universe.
Monday 24 November 19:00	Newbourne Village Hall	Mike Norris Mike O'Mahony	Newbourne Observing Group.
Monday 8 December 19:00	Newbourne Village Hall	Mike Norris Mike O'Mahony	Newbourne Observing Group.
Wednesday 10 December	TBC		Christmas meal
Tuesday 16 Dec	Orwell Park Observatory	Gerry Pilling	Small Telescope Observing Night
Monday 22 December 19:00	Newbourne Village Hall	Mike Norris Mike O'Mahony	Newbourne Observing Group. Christmas Meeting
Monday 29 December		James Appleton	Field trip to observe grazing lunar occultation of the magnitude 6.6 star 88 Psc.
<b>2015</b>			
Tuesday 20 Jan	Orwell Park Observatory	Gerry Pilling	Small Telescope Observing Night
Wednesday 11 February 2015	North Norway	Paul Whiting, FRAS	OASI aurora observing field trip to northern Norway, 11-16 February 2015. Further details on <a href="#">web site</a> and p15
Tuesday 17 February	Orwell Park Observatory	Gerry Pilling	Small Telescope Observing Night
Tuesday 17 March	Orwell Park Observatory	Gerry Pilling	Small Telescope Observing Night
Tuesday 7 April	Orwell Park Observatory	Gerry Pilling	Small Telescope Observing Night

## Google Calendar

There's a Google Calendar on the OASI web site. if you want to easily add OASI Events to your own computer/phone/tablet calendar application use this link. It's a long url!

<https://www.google.com/calendar/embed?src=1jhs9db71ncki4sojo7092vfv%40group.calendar.google.com&ctz=Europe/London>

so [click here](#) if you are reading the e-version of OASI News.

## Newbourne Observing Group

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

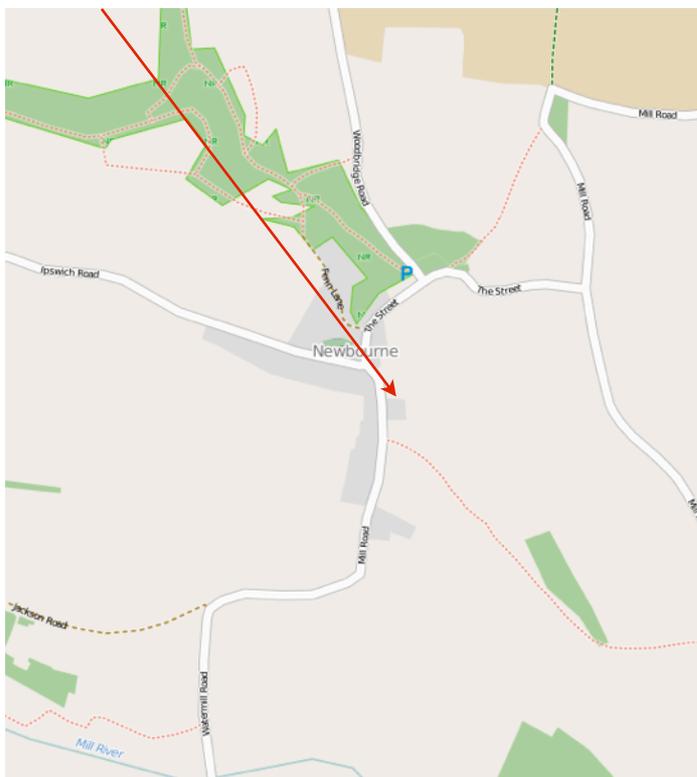
We meet at The Newbourne Village Hall, Mill Lane, Newbourne, IP12 4NP

The Newbourne Observing Group (The NOGs) are 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 strength and weaknesses of particular models. If you've already splashed the cash, bring your new scope along to use or for advise on setting-up and adjustment.

Our June meetings are on Monday 9th June from 8pm. All welcome, with or without telescopes.

David Murton, OASI Chairman

**Wanted: We are on the lookout for a cheap, (free!) simple scope for use by newcomers at Newbourne if anyone has one laying about they don't want.**



## Small Telescope Observing Nights (STONs)

By Gerry Pilling

These will resume in October at Orwell Park Observatory.

Oct 21 2014

Jan 20 2015

Nov 18 2014

Feb 17 2015

Dec 16 2014

March 17 2015 (St Paddy's Day!)

Apr 7 2015

## Lecture Meetings

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

### "Spring" Lecture – 8pm Friday 24th October 2014

(postponed from 9 May)

Professor Ralph Spencer (University of Manchester)

Black Swans - black holes in the constellation of Cygnus

### Autumn Lecture – 8pm Friday 21st November 2014

Alan McGuire

Using the Sloan Digital Sky Survey to study Quasars and the early Universe

## Outreach Meetings for 2014

### Debenham Street Party

This is a new event Sunday 29<sup>th</sup> June from 12:00 - 17:00.

We have been asked if we would like to take part. This would be a solar event.

The address of the event is the High Street, Debenham, IP14 6QL. The post code is for the Angel Inn which is in the middle of the High street. Debenham is located on the B1077 going North out of Ipswich via Westerfield.

The road will be closed from 10:00 - 18:30 and the event duration is 12:00 - 17:00. We ask exhibitors to have stall/stand ready by 11:30 with all vehicles off the high street. There will be a car park provided on the day.

I am still making final arrangements with Richard Sharp for this event

### Suffolk Wildlife Trust event

The Suffolk Wildlife Trust event is at Foxburrow Farm in Melton on Friday 8th August. I will have more details later in the year.

### Bentley Playing Field

We have been invited to use the Bentley village playing field as a dark field site. The village will be having a Families day of Sunday 29th August. I have offered to run a solar event for them.

A Star Party will be arranged for the autumn. This event will be open to all villagers.

### Westbourne Library

Friday 12 September details TBC

### Sutton Hoo

Through our Twitter feed @OASIpSwich we have received an invitation from the National Trust at Sutton Hoo. to stage an event. Basil Brown was also an astronomer.

## Darsham

Some members of the Darsham society, DASH Astro <http://dash.moonfruit.co.uk>, have set up a serious observing email group. The intention is to arrange observing sessions at local dark sky sites such as Walberswick and Shingle Street, etc. If you are interested in joining, let me have your email address and I will get you added to the list.

David Murton

## Some Astronomy Guides

The One Minute Astronomer	<a href="http://oneminuteastronomer.com/">oneminuteastronomer.com/</a>
Stargazers lounge	<a href="http://stargazerslounge.com/">stargazerslounge.com/</a>
Society for Popular Astronomy	<a href="http://www.popastro.com/index.php">www.popastro.com/index.php</a>
UK Astronomy Directory	<a href="http://www.uk-astronomy.co.uk/directory/">www.uk-astronomy.co.uk/directory/</a>
Meteor Watch	<a href="http://www.meteorwatch.org/">www.meteorwatch.org/</a>
Heavens Above (satellites, astronomy & time data)	<a href="http://heavens-above.com/">heavens-above.com/</a>
Metcheck forecast	<a href="http://uk.metcheck.com">uk.metcheck.com</a>
Weatherweb	<a href="http://www.weatherweb.net">www.weatherweb.net</a>

## Night Sky in June

Roy Gooding

### Moon

1st Quarter

5th

Full Moon

13th

Last Quarter

19th

New Moon

27th

### Sun and planets

Object	Date	Rise	Set	Mag.	Notes
Sun	1	04:41	21:06		
	30	04:39	21:19		
Mercury	1	05:57	22:49		Mercury is very low down in the north western sky at the start of the month. Inferior conjunction is on the 19th
	30	04:12	19:44		
Venus	1	03:25	17:28	-4.0	Venus is very well placed to observe in the early morning sky
	30	02:51	18:47		
Mars	1	15:08	02:40	-0.5	Mars is still well place to observed on the evening sky but is now fading
	30	14:03	00:54		
Jupiter	1	07:34	23:54	-1.8	Jupiter is now setting before midnight and can be seen in the western sky
	30	06:13	22:19		
Saturn	1	18:38	04:08	0.3	Saturn is visible for most of the night
	30	16:36	02:10		
Uranus	1	02:44	15:46	5.9	Uranus remains in Pisces
	30	00:51	13:56		
Neptune	1	01:41	12:09	7.8	Neptune is in Aquarius
	30	23:43	10:14		

See [in-the-sky.org/risesetcharts.php](http://in-the-sky.org/risesetcharts.php) for some nice graphs

### Meteor Shower

Source: BAA Handbook 2014 p95-7

Shower	Maximum	Limits	ZHR
Shower	Limits	Maximum	ZHR
Ophiuchids	May 19th to July	June 10th - June 20th	5

## Occultations during June

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
03 Jun	21:45:57	D	0.32+	-11	15	5.4	2 Leo
09 Jun	23:52:58	D	0.87+	-15	15	7.4	Hip 70011
15 Jun	00:14:56	D	0.95-	-15	17	3.9	44 Sgr
	01:18:10	R		-13	20		

## Breckland Star Party Report

David Murton

25th March saw OASI's three intrepid star party goers heading up to the Breckland Society's spring star party at Haw Wood farm near Halesworth. At least the weather was kinder than last time with light winds and sun making it much easier for Mike Norris and I to put his huge tent up.

We were joined during the evening by Michael Atkins with his venerable TAL reflector but unfortunately the weather remained cloudy all evening, only clearing about 2am when we were long asleep!

Saturday morning dawned sunny but it soon clouded over and started to rain. After a great breakfast at the new co-op shop and café just up the road we returned to a very wet site with everyone sheltering in their tents and caravans. The rain carried on until mid afternoon when it stopped just in time for the barbeque that Breckland had organised. This gave everyone an opportunity to chat and talk astronomy for a couple of hours, during which the sun came out and the clouds started to clear.

We were able to get the Coronado pst out and gave several of those present their first views of the sun using a H-alpha scope and by the time that had gone down Jupiter had appeared and it was into night sky observing. Jupiter was followed by Mars and then Saturn although a covering of light high level cloud, largely from contrails of passing airliners, meant that light pollution was a bit of a problem with fainter objects.

The biggest problem though was dew with most people having problems after a couple of hours. Even my 1000mm focal length Newtonian with long dew shield had its main mirror mist up and after giving it a warm with the lady next doors hairdryer only cleared it for another half hour we gave up and went off to look at the 24" push-to Dobsonian belonging to and built by Andrew Robertson. This beautifully constructed beast has a mirror ground over a three month period by the man who recently reconfigured the Tomlin's lens and requires climbing a step ladder to look through the eyepiece. Andrew specialises in looking at faint deep sky objects and gave us a tour of some of these, culminating in the "intergalactic wanderer" cluster, which is the furthest object ever seen through a telescope.

All in all a worthwhile weekend. The weather may not have been very cooperative but the chance to meet the chairmen from several other local clubs was very productive and has led to an agreement on better communication and cooperation which will hopefully bear fruit during the coming months and years.

Many thanks to Mike Norris and Michael Atkins for their company. There will be another star party at the same venue later in the year. Give it a go, it's a perfect opportunity to observe at a really dark site while meeting other astronomers and having the opportunity to see and use some terrific scopes.

David Murton

## BAA Radio Astronomy Group Annual Meeting

Martin Richmond-Hardy

I attended this meeting on 17 May 2014 at the National Space Centre, Leicester. There was also a demonstration/exhibition area, trade stand and BAA bookstall.

### Paper synopses

The following synopses have been provided by the various speakers. A few suggested sources of information may be found after the last synopsis, identified by the corresponding letter (e.g. /A/). The talks were not in alphabetical order but are listed in the final programme order.

#### **/D/ Modelling galactic topology: project update**

Gordon Dennis

The Hydrogen Line Observing Group (HLOG) is attempting to construct a three dimensional image of a part of our Milky Way galaxy by observing the "brightness / temperature" and the Doppler shift of radiation from neutral Hydrogen that resides in the spiral arms. The 3.7 metre telescope at Redenham Observatory is operated on-line by a dispersed team of observers with various backgrounds and experience. All data collected will be available to all participants to use as they wish. The core team is using the data to construct the "3D" map and plans to write a paper for publication in the amateur astronomy press, describing the project. This paper presents a progress report and summarises both the science behind the project, the equipment and software, and the organisation required to run the project.

#### **/B/ Cosmic explosions at radio wavelengths: the afterglows of gamma-ray bursts**

Dr Klaas Wiersema, University of Leicester

New radio telescope technology now allows us to explore the "transient" radio Universe. Radio transients (new sources that are detectable for a short time before fading away forever) come in a wide variety: from the mysterious milli-second duration "fast radio bursts", to the energetic afterglows of gamma-ray bursts (GRBs), which are sometimes visible for years. This talk will show how we observe these GRB afterglows at radio wavelengths, and how we use these observations to understand the physics of these transients. Finally, we will show how new technology, particularly the LOFAR observatory and new instruments on the venerable WSRT, allow us to study afterglows and other transients in a completely new way.

#### **/F/ Making and analysing observations with Starbase**

Dr Laurence Newell

The Starbase software observatory has been developed by RAG members primarily for radio astronomy applications, but has a variety of uses in data collection, analysis and display. The presentation will give a brief introduction to the facilities available in the virtual observatory, and then concentrate on how it can be used with external hardware (and other software) to make some simple (simulated) observations. Finally examples of real observations will be shown, e.g. from a VLF Receiver and a Magnetometer, illustrating the various ways in which these data may be exported and published.



The use of Lego is optional.

### **/G/ Some limitations of Amateur Radio Astronomy**

Dr David Morgan, OBE

This paper briefly covers the basic equations for antenna gain and beam width and considers some of the implications arising when using small diameter antennas with HPBW of 5 to 10 degrees to detect radio astronomical objects. The problems in detecting SNRs and extra-galactic objects against a diffuse radio background with such beams are explored. The desirability of access to >10m diameter class antennas is expressed - and the possibility of a collaborative effort to achieve this by UK amateur radio astronomers is considered.

### **/A/ Solar super-storms: a storm in a teacup, or danger for the nation and the world?**

Prof Paul S Cannon, OBE, FREng, Univ. of Birmingham

Solar super-storms generate X-rays and solar radio bursts, accelerate solar particles to relativistic velocities and cause detrimental effects to the electricity grid, satellites, avionics, air passengers, signals from satellite navigation systems, mobile telephones and more. Since the start of the space age, there has been no true solar super-storm and consequently our understanding is limited. Mitigation of such storms necessitates a number of technology-specific approaches which boil down to engineering out as much risk as is reasonably possible, and then adopting operational strategies to deal with the residual risk. Forecasting a solar storm is a challenge, and contemporary techniques are unlikely to deliver actionable advice. Irrespective of forecasting ability, space and terrestrial sensors of the Sun and the near space environment provide critical space situational awareness, an ability to undertake post-event analysis, and the infrastructure to improve our understanding of this environment.

### **/E/ The state of flux: an Arduino based magnetometer**

Jonathan Rawlinson

The Arduino is a multipurpose, open-source micro-controller platform that is used by amateurs and professionals alike in a wide range of areas. Here a combination of Arduino and Raspberry Pi is used to create a system that is capable of taking data from a wide range of sources, logging the data to a safe area and uploading the data to the user's website. For the purposes of this presentation the system is connected to a FGM-3 flux-gate magnetometer in a setup designed to detect fluctuations in the geo-magnetic field. This will allow the user to detect and monitor solar events and other magnetic disturbances. All software and hardware for this project are easily available; the name of the software is "PyDat". The system was designed with three major criteria in mind: simple deployment, high level of reliability, and extendibility. This presentation will discuss the system in detail, how it can be used and what related developments are planned.

### **/H/ The Harold Clayton Observatory: RA and Geophysics amongst the sheep**

Dr Dave James

This paper describes the recent programme to develop a new, private RA and Geophysics observatory in the rural S West. Different measurement types from static H-field, including proton precession and flux-gate magnetometers, through ELF, VLF, HF, VHF, UHF through L-band sensors are described. The practical issues addressed include quiet site selection, data link, solar and wind power, coping with the elements, on-site EMC, local planning approval, time stamping, interferometer design, security and RFI - and co-existence with the landlord farmer's haylage and sheep rearing needs. Also mentioned are measures taken to allow extension to larger antennas and higher frequencies, possible collaboration with other amateurs, and local outreach.

### **/I/ Development of the East Anglian Amateur Radio Observatory (EAARO)**

Jason Williams

EAARO (the East Anglian Amateur Radio Observatory) is a scientific and educational charitable company establishing a new radio observatory and ground station near Cambridge, UK, to undertake meaningful research projects, support satellite missions, and encourage young people to pursue STEM (science, technology, engineering and mathematics) subjects and careers. Scheduled to commence initial operations in early 2014, we will report on our current progress

and future plans, and discuss the results of EAARO's first major project in support of the KickSat satellite mission.

### **/C/ An ultra-low cost hydrogen line radio telescope using the RTL TV dongle**

Peter East, OBE FREng

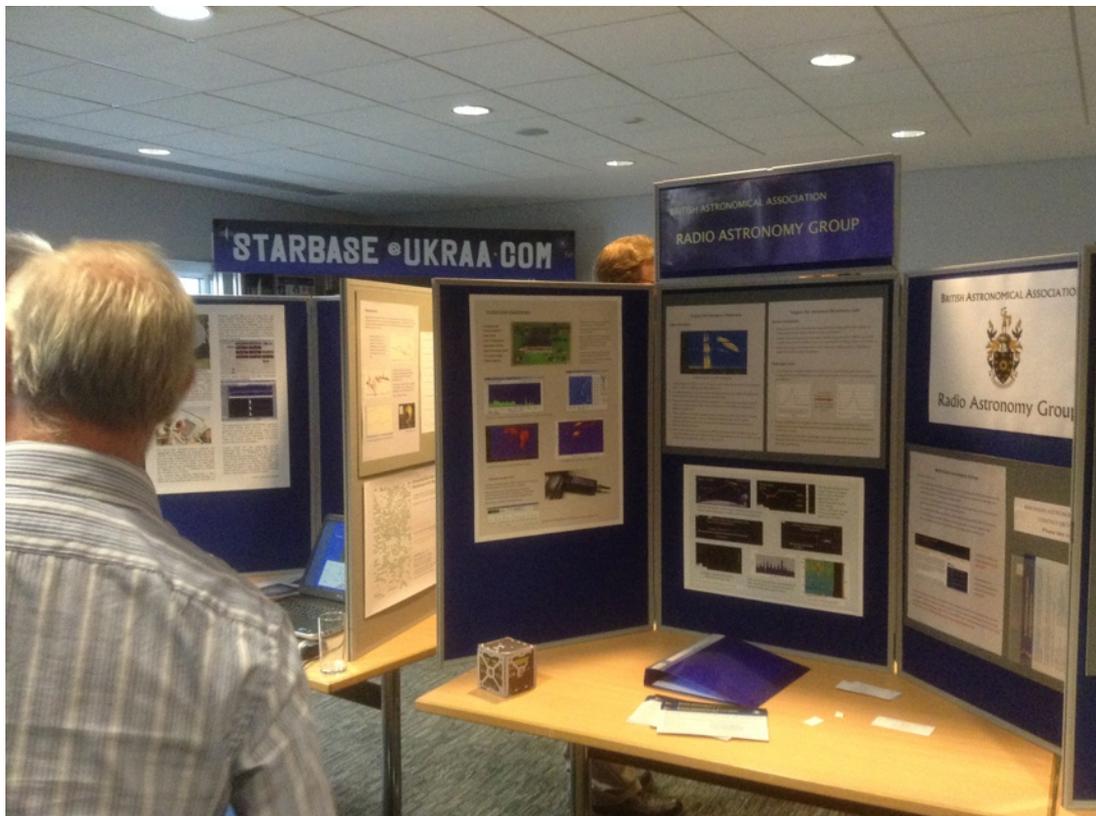
Detecting the hydrogen line in the arms of our galaxy using modern available technology is now made easy. With a home-made Yagi, a couple of modest amplifiers, a cheap RTL 2832U TV dongle, some free software and a bit of effort, for well less than £200 you can measure the velocity and positions of the spiral arms, some tens of thousands of light years away. Of course a 5m dish gives a lot more signal and resolution, but that can be another project - and you've already got the receiver ! The paper describes what to buy and how to build so that you can soon collect and analyse your first hydrogen line data as shown.

### **A few selected additional sources of information, contacts etc.**

(letter codes correspond to the synopses above)

- /A/ [en.wikipedia.org/wiki/Solar\\_storm\\_of\\_1859](http://en.wikipedia.org/wiki/Solar_storm_of_1859) Carrington event  
[spaceweather.com/](http://spaceweather.com/)  
[www.metoffice.gov.uk/research/areas/data-assimilation-and-ensembles/space-weather](http://www.metoffice.gov.uk/research/areas/data-assimilation-and-ensembles/space-weather)  
“The Cambridge Encyclopedia of the Sun” - Lang, CUP, 2001
- /B/ [www.transientskp.org/](http://www.transientskp.org/)  
[www.skatelescope.org/science/radio-transients/](http://www.skatelescope.org/science/radio-transients/)  
[fermi.gsfc.nasa.gov/science/mtgs/explosive\\_transients/](http://fermi.gsfc.nasa.gov/science/mtgs/explosive_transients/)
- /C/ [www.funcubedongle.com/](http://www.funcubedongle.com/)  
[www.moetronix.com/spectravue.htm](http://www.moetronix.com/spectravue.htm)  
[www.sdrsharp.com/index.php/downloads](http://www.sdrsharp.com/index.php/downloads)  
[rtlsdr.org/softwarewindows](http://rtlsdr.org/softwarewindows)  
[sdr.osmocom.org/trac/wiki/rtl-sdr#](http://sdr.osmocom.org/trac/wiki/rtl-sdr#)  
[www.y1pwe.co.uk/RAProgs/index.html](http://www.y1pwe.co.uk/RAProgs/index.html) author site
- /D/ “Radio Astronomy Projects” - Lonc, Radio-Sky Pub, 2006  
“An Introduction to Radio Astronomy” - Burke and Graham-Smith, CUP, 2010
- /E/ [helios.gsfc.nasa.gov/magnet.html](http://helios.gsfc.nasa.gov/magnet.html)  
[en.wikipedia.org/wiki/Geomagnetic\\_storm](http://en.wikipedia.org/wiki/Geomagnetic_storm)  
[www.qsl.net/m/m0zjo/](http://www.qsl.net/m/m0zjo/) author site  
[www.speakesensors.com/products.htm](http://www.speakesensors.com/products.htm) sensors  
“Introduction to Geomagnetic Fields” - Campbell, CUP, 2003
- /F/ [www.ukraa.com/www/starbase#](http://www.ukraa.com/www/starbase#)
- /G/ [radiosky.com/radioeyesishere.html](http://radiosky.com/radioeyesishere.html)  
[www.cv.nrao.edu/course/ast534/AntennaTheory.html](http://www.cv.nrao.edu/course/ast534/AntennaTheory.html)
- /H/ [www.haroldclayton.org/](http://www.haroldclayton.org/) (WIP !) author site  
[www.leturbines.com/](http://www.leturbines.com/) wind power  
[www.engeniustech.com/](http://www.engeniustech.com/) 5GHz P-P, P-MP  
[www.tenvis.com/](http://www.tenvis.com/) webcam w/acceptable clocking freq.  
“Tools of Radio Astronomy” - Wilson et al, Springer, 2009
- /I/ [www.eaaro.org.uk/](http://www.eaaro.org.uk/)

Some of the displays at BAARAG meeting



Spot the FunCube satellite

## Solar observing in Christchurch Park

Saturday 17 May we had over 250 people come to look through our scopes and with the forecast for Sunday we expected even more. We were not disappointed - another great day, perfect weather and over 250 visitors again.

Thanks to all those members who managed to find time to come along during the weekend.

We had lots of positive feedback and I hope you had a good time.

David Murton.



You may not have a book inside you but there's probably an article

Here's a space for it.

Don't be shy.

## Arthur Woolsey Blacklock (1840 - 1934)

By Bill Barton

In his 1987 article on the Ipswich Section of the Chaldaean Society Roy Gooding refers to a founding meeting held in Ipswich on 1921 August 4. He gives the names of those present and includes a Mr. Blacklock, a name I had vaguely heard of before. I set out to find as much as I could about this astronomer.

'Blacklock' isn't exactly a common name, but enquiries at the Royal Astronomical Society and the British Astronomical Association proved no members with this name for either group.

Where else to look? Well, Allan Chapman in the 'Victorian Amateur Astronomer' mentions Blacklock in passing as the person who taught, by correspondence, the Devon Station master, Roger Langdon how to build and use telescopes.

Anything more? Well in the SAO/NASA ADS (Smithsonian Astrophysical Observatory/National Aeronautics and Space Administration's Astrophysics Data System) website contains scanned copies of the 'Astronomical Register', a magazine of astronomy that ran from 1863 January to 1886 December (an independent forerunner to the Journal of the British Astronomical Association?). Blacklock is the author of six items between 1867 and 1870. Each contribution comes from a different address, ranging from the 'Old Stiene' in Brighton to Oxford Street, Manchester to Aberdeen and Godalming. The subject areas covered are planetary observation, the aurora and telescopes.

To go back to the beginning, Arthur was born in Brighton on 1840 October 14. His father was Joseph Davidson (or Davison) Blacklock who ran two druggists shops at 32 Old Stiene and 109 Kings Road. His mother was Charlotte who died four just years after later (maybe in child-birth?). Joseph re-married in 1851 to an Emma Walton. This second marriage produced four children:-

Philip, born in 1853

Anne Maria, 1854

William, 1855

And lastly Charlotte in 1857

Charlotte later achieved fame as a Suffragette and was awarded the WSPU (Women's Social and Political Union) Hunger Strike Medal in 1912. Following Joseph's death in 1876 Emma took over the chemist business, and ran it with Philip till she died in 1892 aged 76. Later census returns mention them as 'soda water' suppliers.

The early schooling of Arthur is unknown, but he graduated as a MB (Bachelor of Medicine) in 1870 and MD (Doctor of Medicine) in 1872 from the University of Aberdeen.

Arthur had no fixed address while not studying at University. W. F. Denning (the Bristol meteor observer) organised a search for a supposed inter-Mercurial planet in early 1868, Blacklock observed during March using a 4 inch reflector from Long Bennington, Lincolnshire.

His address in July 1868 and during 1869 is in Manchester. Whereas the census taken in 1871 June has him as assistant to Doctor William Parsons in Godalming, Surrey.

Arthur married twice, first in 1874 to Eliza Clarke Keeton of Belper, Derbyshire (who died in 1893) and again in 1906 to Annie Letitia Page, when he was 66 and his bride was 34! His second wife outlived him and died in 1960.

By 1875 he had settled in Gateshead and according to the 1881 Census Arthur is living at 26 Mulgrave Terrace, with his wife, two daughters (Mary Charlotte, born 1876 and Lilian Marguerite, born 1881 who died at 6 months of age) and two servants. Blacklock was practicing medicine at the Northern Counties Hospital for Diseases of the Chest, 50 Blakett Street, Newcastle. By 1891 a son (Robert, aged nine, so maybe, only just missed the previous census) was added to the family. They cannot be found for the 1901 census and the 1911 return is rather strange, it has Arthur staying as the guest of a theatrical manager living in Chesterfield, but without his wife.

Blacklock's connections with Ipswich are not well recorded but he appears to have been here from the early years of the 20th century as the 1905 calendar of his alma mater gives his

address as 'The Gables, 35 Henley Road'. Presumably he was practicing at the nearby Anglesea Road Hospital.

Blacklock turns up in a 1944 edition of 'Sky & Telescope' Magazine where According to Charles Anthony Federer Dr. A. Woolsey Blacklock who, in a letter written in 1876, suggested that a third mirror could be used to turn the beam from the Cassegrainian secondary to the side of the tube, to avoid having to perforate the primary mirror. (Isn't this 'the Nasmyth focus?'). There is also passing reference to Blacklock in 'Amateur Telescope Making' vol 1 where he discusses the ideal focal ratio of a reflecting telescope.

At various times Blacklock was a committee member of the Observing Astronomical Society and President of the Gateshead Camera Club. The latter demonstrates his interest in photography which he combined in a short piece in the 'Amateur Photographer' of 1897 July, and to quote him directly

"I would suggest that the maximum exposure with a fixed telescope is half a second, if the image is intended to be enlarged to 2 ½ inches, and it ought to bear this. The angular diameter of the moon may be taken roughly as half a degree, and it moves the same distance in two minutes, or 240 half-seconds, therefore if the final image is intended to be 2 ½ inch diameter, or 250/100ths of an inch, it will practically move 1/100th inches in half a second, and a longer exposure will cause blurring. This exposure is ample for the full moon in winter, but scarcely enough for the craters near the terminator at the quarters."

Blacklock died on 1934 May 30 of an unknown cause. The local connection is proved by the fact that he is buried in Ipswich Cemetery, Old Municipal Section H, with his wife, sister-in-law and other members of the Page family. The attached photographs show his grave.

Thus I am reasonably sure that the 'Blacklock' mentioned by Roy was Arthur. As he was 80 years old and retired from practicing I'm guessing he would have dropped his 'doctor' title.

According to Mike Frost (BAA Historical Section Director) there 'hundreds and hundreds' of pieces by him in the 'English Mechanic' (the 'EM' ran from 1865 March to 1926 October), although I have yet to follow up this avenue.

I would like to thank Roger Jones (of the Society for the History of Astronomy) for contributions to this article.

There is an 'Arthur Blacklock' who made 15 appearances playing cricket for Wellington, New Zealand in the 1885-6 season, but the relationship is purely coincidental.



The Blacklock memorial in Ipswich cemetery



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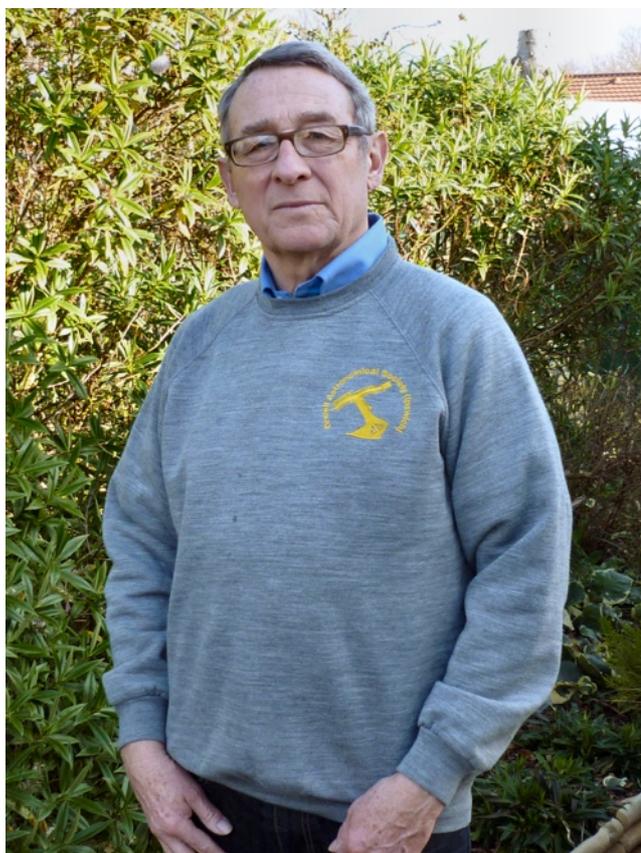
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