



OASI News

The newsletter of the Orwell Astronomical Society



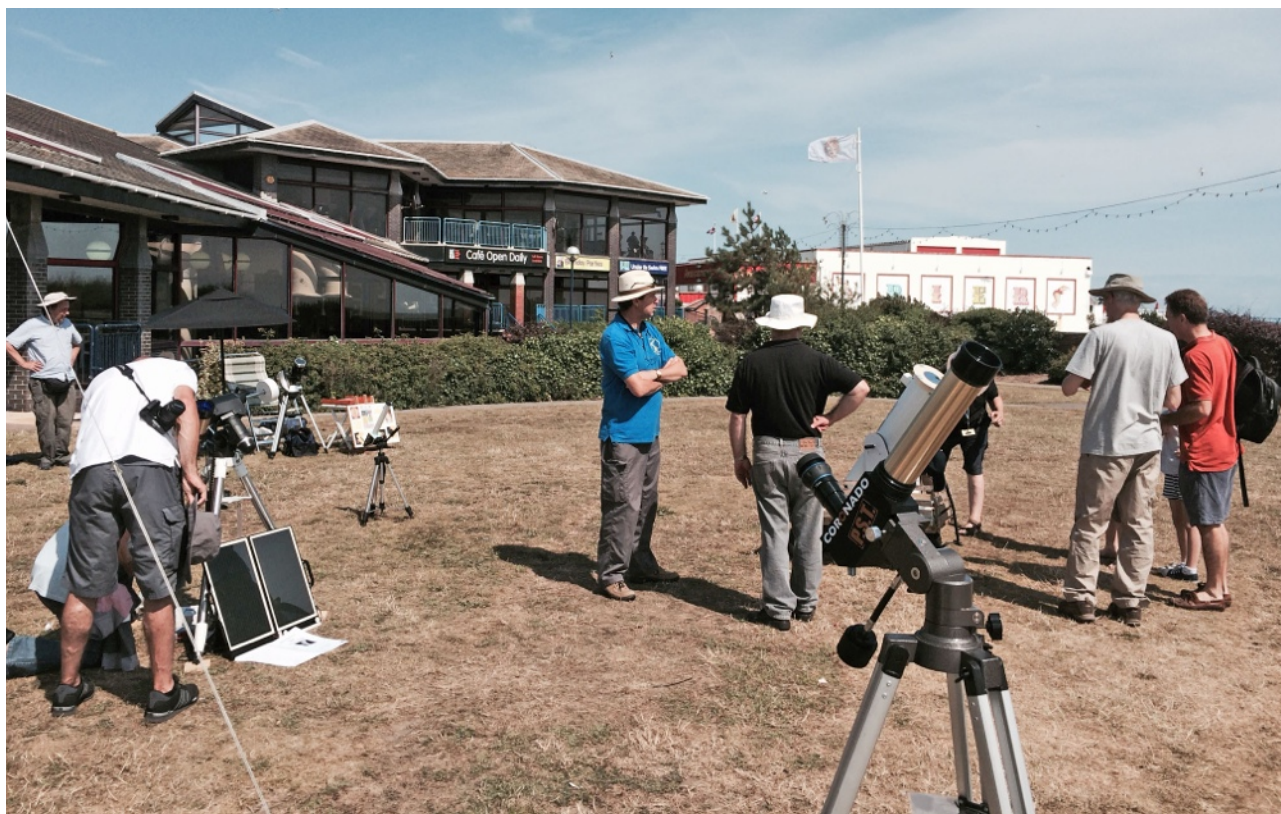
*Greetings from sunny
Felixstowe!*

Solar observing at Felixstowe on 3 August

The array of scopes: 3 H α , 2 projection, 2 Baader filtered and a spectroscope.

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

Sun Day at Felixstowe



John's H α + Baader filtered scopes & Bill's Projection scope



The Sky At Night Spectroscope

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Society Contact details

Observatory (meeting nights only)
07967 519249

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

Twitter: @OASlpswich

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, 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

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

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 and from the editor's Dropbox.

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
- 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

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

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

Society Notices

Committee Meeting Tuesday 9th September

Venue Shepherd and Dog, Nacton

Time: 20:00 to 22:00

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

Welcome to New Members

Amanda Saxon

Contacts

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

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

Society Events Diary

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

Google Calendar

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/OASlpswich>

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 31 August	Bentley Playing field	David Murton	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	Public access event. Telescopes and talk evening. Details TBC.
Monday 22 September 19:00	Newbourne Village Hall	Mike Norris Mike O'Mahony	Newbourne Observing Group.

Date and Time	Location	Contact	Event
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 www.hawwoodfarm.co.uk	www.brecklandastro.org.uk/	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
Saturday 4 October 19:00 to 2:00	Bentley Playing field	David Murton	Bentley Village Star Party Option 1 (option 2 is 29 Nov)
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.
Saturday 01 November Time TBA	TBA	James Appleton	Field trip to observe grazing lunar occultation of the magnitude 7.1 star Hip 109637.
Tuesday 4 November	Orwell Park Observatory	Paul Whiting, FRAS	Public access event. Observatory tour. Places must be booked. Further info and book a place.
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
Friday 21 November 2014, 20:00	<u>Methodist Church Hall,</u> Black Horse Lane, Ipswich	Pete Richards	Lecture Meeting. 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.

Date and Time	Location	Contact	Event
Saturday 29 November 19:00 to 20:00	Bentley Playing field	David Murton	Bentley Village Star Party Option 2
Tuesday 2 December	Orwell Park Observatory	Paul Whiting, FRAS	
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 Time TBS	TBA	James Appleton	Field trip to observe grazing lunar occultation of the magnitude 6.6 star 88 Psc.
2015			
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 web site and p15
Tue 17 March 2015 20:00	Orwell Park Observatory	Gerry Pilling	Small Telescope Observing Night
Tue 07 April 2015 20:00	Orwell Park Observatory	Gerry Pilling	Small Telescope Observing Night

Newbourne Observing Group

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

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

The Newbourne Observing Group (The NOGs) is a good place to start for beginners. If you are thinking of buying a scope or binoculars, come and try before you buy and talk to owners about the strengths and weaknesses of particular models. If you've already splashed the cash, bring your new scope along to use or for advice on setting-up and adjustment.

September Meetings on Monday 8th & 22nd September from 7pm.

All welcome, with or without telescopes.

David Murton, OASI Chairman

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

8pm Friday 24th October 2014

Professor Ralph Spencer (University of Manchester)
Black Swans - black holes in the constellation of Cygnus

8pm Friday 21st November 2014

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

Outreach Meetings for 2014

Contact: Roy Gooding

Bentley Playing Field

A solar event. The playing field is at the bottom of Case Lane. There is parking in the field..Location to be arranged on the day. It will probably be down the left hand side of the field.

<https://www.google.co.uk/maps/@51.9916497,1.0696197,17z>

The Bentley Family Fun Day is on Sunday 31st August at 11am till 3pm.

Set up time is any time after 09:30

Bentley Star Parties

Option 1 : Saturday 4th October 19:00 to 21:00. Set-up from 18:00

Option 2 : if 4 Oct is cloudy :Saturday 29th November 19:00 to 21:00

The star parties will be open any villagers who wish to come along.

If you have any questions about the above outreach meetings please contact Roy.

Westbourne Library

Friday 12 September. Time TBC

Sherrington Rd

Ipswich, Suffolk IP1 4HT

[Googlemaps link](#)

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 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

OASI Discussion Forum

A web-based forum for general discussions and some initial specialist areas.

OASI members can join this forum at 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

Some Astronomy Guides

The One Minute Astronomer

Stargazers lounge

Society for Popular Astronomy

UK Astronomy Directory

Meteor Watch

S.P.A.M. Meteor Detection Group

Heavens Above (satellites, astronomy & time data)

Metcheck forecast

Weatherweb

Astronomy weather forecast

Lightning

ISS

oneminuteastronomer.com/

stargazerslounge.com/

www.popastro.com/index.php

www.uk-astronomy.co.uk/directory/

www.meteorwatch.org/

<http://www.merriott-astro.co.uk/About.htm>

heavens-above.com/

uk.metcheck.com

www.weatherweb.net

clearoutside.com/forecast/52.06/1.15

www.lightningmaps.org/realtime?lang=en

<http://www.isstracker.com/>

The Night Sky in September

Roy Gooding

Moon

1st Quarter

02 Sept

Full Moon

09 Sept

Last Quarter

16 Sept

New Moon

24 Sept

Times are BST (UTC+1) at Orwell Park Observatory.

Sun and planets

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

Object	Date	Rise	Set	Mag.	Notes
Sun	1	06:16	19:52		
	30	07:04	18:45		
Mercury	1	08:11	20:23		Mercury is too close to the sun to see this month.
	30	09:38	19:01		
Venus	1	04:51	19:32	-3.8	Venus is still a prominent object low down in the early morning sky.
	30	06:23	18:41		
Mars	1	13:23	21:54	0.7	Mars starts the month in Libra close to Saturn, but moves into Scorpius by months end
	30	13:18	20:54		
Jupiter	1	03:31	18:56	-1.7	Jupiter is visible in the early morning sky.
	30	02:09	17:15		
Saturn	1	12:45	22:08	0.7	Saturn is visible in the western sky for a short time after sunset
	30	11:04	20:19		
Uranus	1	20:48	09:55	5.7	Uranus is in Pisces, and will be visible in the evening sky
	30	17:47	07:55		
Neptune	1	19:42	06:08	7.8	Neptune remains in Aquarius
	30	17:47	04:10		

Meteor Showers

Source: BAA Handbook 2014 p95-7

Shower	Limits	Maximum	ZHR
Piscids	Sept - October	Sept 9	10
		Sept 21	5
		Oct 13	?

Occultations during September

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
04 Sep	21:10:12	D	0.76+	-21	17	6.6	ZC 2755
05 Sep	23:25:06	D	0.86+	-31	15	7.2	Hip 98488

Visible ISS passes $\geq 20^\circ$ max altitude

Martin RH

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

September is for those who can't sleep or on night shift. October brings some evening passes.

Date	Mag.	Start			Highest point			End		
		Time	Alt.	Az.	Time	Alt.	Az.	Time	Alt.	Az.
16 Sep	-1.8	05:18:03	13°	SSW	05:20:35	29°	SSE	05:23:32	10°	E
17 Sep	-1.4	04:31:24	20°	SSE	04:32:00	21°	SE	04:34:35	10°	E
18 Sep	-2.7	05:17:34	20°	SW	05:19:37	50°	SSE	05:22:52	10°	E
19 Sep	-2.4	04:30:48	37°	SSE	04:30:56	38°	SSE	04:34:04	10°	E
20 Sep	-3.3	05:16:52	24°	WSW	05:18:43	74°	SSE	05:22:03	10°	E
21 Sep	-3.1	04:30:03	61°	SSE	04:30:03	61°	SSE	04:33:16	10°	E
21 Sep	-3.3	06:03:17	10°	W	06:06:38	85°	S	06:09:59	10°	E
22 Sep	-0.8	03:43:13	20°	E	03:43:13	20°	E	03:44:28	10°	E
22 Sep	-3.3	05:16:05	26°	W	05:17:50	86°	S	05:21:11	10°	E
23 Sep	-3.2	04:29:15	75°	ESE	04:29:15	75°	ESE	04:32:23	10°	E
23 Sep	-3.2	06:02:24	10°	W	06:05:44	70°	SSW	06:09:03	10°	ESE
24 Sep	-0.7	03:42:26	20°	E	03:42:26	20°	E	03:43:34	10°	E
24 Sep	-3.3	05:15:19	28°	W	05:16:56	81°	S	05:20:16	10°	E
25 Sep	-3.0	04:28:31	66°	ESE	04:28:31	66°	ESE	04:31:27	10°	E
25 Sep	-2.8	06:01:29	10°	W	06:04:42	46°	SSW	06:07:55	10°	SE
26 Sep	-3.2	05:14:40	33°	W	05:15:56	59°	SSW	05:19:13	10°	ESE
27 Sep	-2.4	04:28:00	45°	ESE	04:28:00	45°	ESE	04:30:27	10°	ESE
27 Sep	-2.0	06:00:54	11°	W	06:03:31	26°	SSW	06:06:22	10°	SSE
28 Sep	-2.6	05:14:19	34°	SW	05:14:48	36°	SSW	05:17:53	10°	SE
29 Sep	-1.3	04:27:51	22°	SE	04:27:51	22°	SE	04:29:15	10°	SE

OASI BBQ in Days of Yore

chez Alan Smith



1999 – the hair!



Solar observing



The Barbie



The shorts...

The OASI sky condition survey 2014/15

After last year's project to prove the speed of light using Romer's method was such a success, the committee has now decided on this winter's society project, which has been chosen as it will be easy for all members to take part and requires no equipment.

The constellation of Pegasus is the 7th largest constellation in the sky covering 1,121 square degrees of sky. During the autumn it is a dominant feature for naked eye observers. The most prominent part of the constellation is the famous "Great Square of Pegasus" which is made up of reasonably bright stars between 2nd and 3rd magnitude.

The four stars that make up the square are (clockwise from NW corner):

- Scheat (β Peg) mag. 2.44
- Markab (α Peg) mag. 2.49
- Algenib (γ Peg) mag. 2.83
- Alpheratz (α And) mag. 2.07

Not all of the four stars that make up the square actually are in Pegasus, the NE star and brightest of the four Alpheratz lies in neighbouring Andromeda, however it is generally accepted as being part of both constellations.

Inside the Square

As I have said, the square of Pegasus is large and the four corner stars easily identifiable. Despite this, there are few easily visible naked eye stars inside the square, but there are many stars on the fringe of naked eye visibility. Consequently counting the total number of stars you can see inside the square is an excellent guide to how dark / good your night skies are.

The OASI winter project

What we would like is for all members to carry out some observations of the stars inside the square (not including the four forming the square itself), without any visual aids and record the results on the attached form. These observations can be from as many sites within the East Suffolk area and as often as you wish. As conditions change all the time, the more reports we get the more accurate the results will be so please give as many as you can.

These results will then be collated to form a database and map of viewing conditions around Ipswich this winter. This information will provide us with valuable information to plan future events, form an important snapshot of present conditions for historical records and give us important evidence to help combat light pollution.

If you are unsure where to find the great square, Bill Barton will be hosting some Mk 1 eyeball observing sessions during the Newbourne meetings in the coming months, so come along and he will point you in the right direction!

It is important that the results are accurate, so please be honest in what you see, give your eyes time to become dark adapted before observing and most importantly, don't use any telescopes or binoculars!

Paul Whiting will be collating the results so please let him have your reports via treasurer@oasi.org.uk

Limiting Magnitude	Number of naked eye stars visible in the square	Seeing
6.5	35	Exceptional
6.25	21	Excellent
6	13	Superb
5.75	9	Very good
5.5	7	Good
5.25	5	Above Average
5	4	Average
4.75	3	Below Average
4.5	1	Poor
≤ 4.00	0	Very Poor

Report form

Town/Village	
Street	
Date	
Time	
Number of stars seen	
General conditions report	
Your name	

The First Edition

You may have noticed that we are at Edition 500 of OASI News. Time to look back to the 1st Edition, 42 years ago. More back-issues are available from www.oasi.org.uk/NL/NL_form.shtml

Journal of the Orwell Astronomical Society

Volume. 1.

Number 1

February, 1972

Editor:

C.F.Radley,

Wherstead, Ipswich IP2 SNQ.

(Telephone - Ipswich

Editorial. It is hoped that Members of the Society will try to submit articles for publication in this Newsletter.

Advertisements are also welcome.

Talk by Patrick Moore Cancelled.

At a Meeting of the O.A.S. Committee on Saturday, January 15th 1972, the Secretary (Mr. Martin Topple) telephoned Mr. Patrick Arthur Moore, the famous Astronomer who appears on the BBC Radio and Television. some time previously, Mr. Moore had offered to give a talk to the Society; however, when the Secretary telephoned him Mr. Moore said that he was not well enough to travels so far as Ipswich (he lives in Sussex), and so a Talk by him will have to be postponed indefinitely.

Telescope out of Action

The 10-inch refractor of the Orwell Park School Observatory is temporarily out of action since the shutter is broken. Please would nobody open the shutter on the dome or it is liable to jam shut, or worse jam open, or worse still fall off. Notification will be given when the Telescope is working again.

Apollo 16

Apollo 16 was originally scheduled to be launched in March, however, it has been postponed until the next launch window on April 16th 1972. The reasons for the postponement are to modify the Lunar Module's batteries, to modify the spacecraft docking collar jettison mechanism which is thought to be faulty, to modify the L.M. Pilot's Space suit and to allow the L.M.Pilot to recover from an illness. The crew for the mission are Charles Duke (L.M. Pilot), Thomas 'Ken' Mattingay (C.M. Pilot) and John Young (Commander).

NASA has selected a mountainous highland region North of the crater Descarte. at Selenographic Latitude 9° East, Longitude 16° South. The site provides two distinct primary sampling objectives which are expected to provide material from which gaps in lunar surface models presently developed can be filled. 'W The first sampling objective, on which the Commander (Young), and the L.M.P. (Duke) will land in the highlands basin fill – a volcanic appearing material flooding many of the large old highland craters; geological evidence indicates that this material is older than Apollo 11 and 12 landing sites, but younger than Imbrium basin ejecta samples by Apollo 14. Studies of the Descarter site, when combined with Apollo 15 samples from Hadley Apennine will help develop lunar evolution theories more fully.

Near the landing site are two young craters about 0.8 km across where the astronauts will acquire documented samples. The Second sampling objective is a hilly grooved and furrowed area thought to be volcanic of similar age but of different composition to the highlands basin fill. This uplands volcanic terrain may yield data on interior composition of highlands material. Lunar Roving Vehicle - 2 (LRV-2) will be used by Young and Duke to explore the landing site; And Apollo Lunar Surface Experiments Package (ALSEP) will be deployed, containing an active seismic experiment, a far Ultra violet camera - spectroscope, a comic-ray detector, a portable magnetometer and other instruments. The Command Module will also carry orbital sensors in studies of lunar environment, including cameras, geochemical indicators etc.,

Apollo 16 will follow very much the lines of Apollo 15. Apollo 15 was the first fully operational Apollo, using the up-rated version of the Saturn 5 rocket, uprated version of the Lunar Module, and L.R.V., and a Scientific Instruments Bay (Sim-bay) in the Service module. Apollo J is the name for these uprated Apollos. Apollo 16 and Apollo 17 (due to be launched in December 1972 or January 1973) will also be Apollo J missions. It is hoped to include a timetable of the mission in the March or April Edition of the Journal.

Grand Tour Cancelled.

The USA hoped to launch a probe called the Grant Tour in 1977, followed by a second Grand Tour in 1979. GT (Grand Tour) It would have gone past Jupiter, Saturn and Pluto. GT 2 would have gone past Jupiter, Uranus and Neptune. However, for financial reasons, this exiting project has been cancelled. Another opportunity far this long journey would not occur for another 180 years. It is unfortunate that NASA has cancelled Grand Tour, but it is very likely that the USSR will try to launch a Grand Tour probe.

In way of compromise, NASA will launch a single probe in 1977 to fly past Jupiter and Saturn only, but it still means that badly needed information on Uranus, Neptune and Pluto (about which we know almost nothing compared with the rest of the solar system) will not be obtained.

Although Grand Tour will be cancelled, preparations are still going on for the launch of the first probe to Jupiter, Pioneer F, details of which will follow in the next Edition of the Journal. Launch date for Pioneer F is set for February 27th 1972. Pioneer G will be launched towards Jupiter in March 1973.

Astronomy Notes for February and March

The Planet Mercury will be visible in the West for about an hour after sunset around the end of February and early March. It is well worth looking for it with binoculars; it will be the only bright star in the area. Do not mistake it for Venus! Venus is very brilliant this month, visible high in the South-west after sunset, the most brilliant object in the sky (other than the sun and moon). The moon will be visible in the West as a crescent after sunset on February 16-19th.

First Quarter occurs on February 21st, and Full Moon on February 29th; Last Quarter will be on March the 8th, though by then the moon will not rise until midnight. The Planet Mars is in the constellation of Aries, moving into Taurus; it is distinctive from its red colour, and dims from magnitude + 1.0 to + 1.5 during February/March. Jupiter is a Morning star, visible in the East in the dark to twilight sky before dawn in the constellation of sagittarius. The Planet Saturn is an evening star in Taurus and is a beautiful object to observe. It is a bright yellowish star underneath the Pleiades. All five naked-eye planets will be visible in early March.

Recent Probes to Mars.

The USSR landed 2 Capsules on Mars in November 1971, and the USA orbited their Mariner -9 probe about the planet. The USSR also orbited two Spacecraft around Mars. The three orbiters are still functioning and yielding a great amount of data. It is hoped to serialise information on these probes in future Editions of the journal.

Society Meetings.

Meetings of the British Astronomical Association (BAA) are held on the last Wednesday of each month usually - meetings should take place on the 23rd February and 29th March at 23, Saville Row, London W.1. at 17.00 hours G.M.T. in the Scientific Societies Lecture Theatre, Civil Service Commission Building; it should be well worth attending these if you happen to be in London at the time; There is usually an illustrated talk and interesting discussions at these meetings.

Meetings of the Norwich Astronomical society will be held on the 19th February, 18th March and 15th April at The Lads Club, King Street, Norwich at 7.30 p.m.,

Section meetings of the Orwell Astronomical Society are weekly.

Lunar Section Meetings are on Wednesdays usually, The Lunar Section Director is Mr. R.M.Cheeseman of , Ipswich

People wishing to learn more about astronomy should attend the Tuition or Learners Section.

Tuition Section or Learners Section

Tuition Section Meetings held at The Orwell Park School.

For Meeting details contact the Directors: Mr. Martin Topple, (Telephone Kirton XXX), and Mr. Spencer Bourden of XXX, Felixstowe.

Meetings of the Planetary Section are held on alternate Thursday evenings at the Orwell Observatory. For details telephone the Director, Mr. David Bearcroft at Ipswich XXX.

If you own a telescope, or binoculars of any size, or a telescope, I would like you to fill in the coupon enclosed with this Volume and send it to me. The information is for publication in a Prospectus of the Society.

The 500th Edition

With this anniversary edition, it is a good time to recognise the hard work put in by some members in producing such a marvellous publication for the rest of us. It is one of those thankless tasks, which most of us take for granted only noticing it when it's not there.

Special thanks must go to Eric Sims for his steadfast work as editor for many years, producing excellent newsletters by hand in the days before computerised publishing programmes and electronic distribution. The editorship has now passed to Martin Richmond-Hardy who is carrying on the tradition of first rate newsletters but with a publication suitable for the electronic age.

Of course the editor is only the tip of the iceberg when it comes to producing a great journal. There are many others who have helped in the past and some who still do, whether it is printing and collating, writing articles or distribution (Eric and Alan Smith) and we should also give them our thanks.

Newsletters do not write themselves. There is a constant need for more articles of any kind to ensure that standards do not slip. We cannot expect the editor to write it all himself. So, don't complain if some issues lack a bit of substance (although thanks to the editors this rarely happens), make the effort to write something whether it's a technical article, report on a trip, observing report, review of some equipment, etc. As it was said in Issue 1:

It is hoped that Members of the Society will try to submit articles for publication in this Newsletter

Our newsletter is the envy of many and I sure that, with our continued support, it will go from strength to strength.

David Murton
Chairman OASI

Breckland Star Party

Next month sees the Breckland Society's autumn star party at Haw Wood Farm campsite between Westleton and Darsham. The event is held over the long weekend of 19th to the 21st of September and the venue is a very dark site that is excellent for observing. Three of us attended the spring star party there and can testify that these are great events. Being much smaller than the Kelling event the week after, they are all the better for it, as the reduced scale makes for a much more social atmosphere with the opportunity to spend the weekend chatting to other astronomers and looking through some great scopes (24" Dob anyone!).

The opportunity to leave a scope up all weekend and use it all night without complaint is to be jumped at. I intend to stay for the weekend and hopefully we can get a good group of OASI members together for a good social weekend's astronomy. If you are interested in coming let me know and I will give you more details.

David Murton

Oasi_chairman@outlook.com

Listening to meteors

Martin Richmond-Hardy

At Newbourne around Perseid peak night two radio hams (Paul Whiting G4YQC and myself G8BHC) turned up with radios and VHF antennas, perhaps in anticipation of the usual clouds.

Down in eastern France, on a decommissioned airfield near Broye-lès-Pes, there is a radar station [GRAVES](#) (Grand Réseau Adapté à la Veille Spatiale) which is a French radar-based space surveillance system. It has, allegedly, upset the Americans by detecting one of their spy satellites.

GRAVES is a [bistatic radar](#) system using Doppler and directional information to derive the orbits of the detected satellites. Its operating frequency is 143.050 MHz.

We pointed our aerials towards France, tuned the radios to that frequency, using CW (Carrier Wave mode - normally used for listening to Morse Code) and waited.

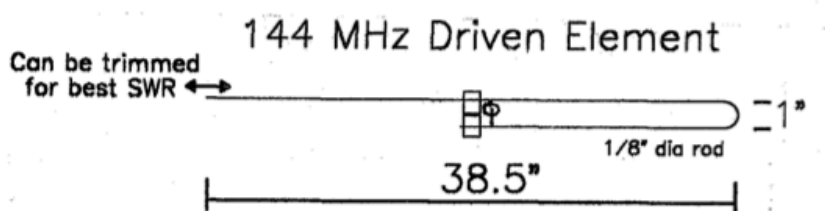
An incoming meteor (over France) vapourises and also ionises the atmosphere, which reflect the radar signal. The speed and direction of the meteor gives rise to a whistle caused by the beat frequency between the radio's fixed oscillator and that of the Doppler-shifted signal. The whistle may be a constant frequency tone or rising/falling tone.

If you have a scanner radio then all you need is a suitable Yagi aerial. The "rubber duck" antenna that came with your scanner is probably not sensitive enough.

You can build your own 3 or 4-element Yagi. <http://www.wa5vjb.com/yagi-pdf/cheapyagi.pdf>

144 MHz

Driven Element: All versions



		Ref	DE	D1	D2	D3	D4	
3 Element	Length	41.0		37.0				All Dimensions in inches.
	Spacing	0	8.5	20.0				
4 Element	Length	41.0		37.5	33.0			All Elements 3/16" dia.
	Spacing	0	8.5	19.25	40.5			

The 144MHz version is dimensionally close enough. Mine was made from 8mm central heating tubing on a length of 2x1" planed softwood.

Examples of-frequency/amplitude plots are at <http://www.merriott-astro.co.uk/spam3D.htm>

And a How It Works at <http://www.merriott-astro.co.uk/how.htm>

If you want to know more, there is also a paper available on the BAA web site

http://www.britastro.org/radio/projects/Detection_of_meteors_by_RADAR.pdf

PS We heard several meteors but only saw/missed 2 – and the sky was clear!

MartinRH

The Science Practical Session

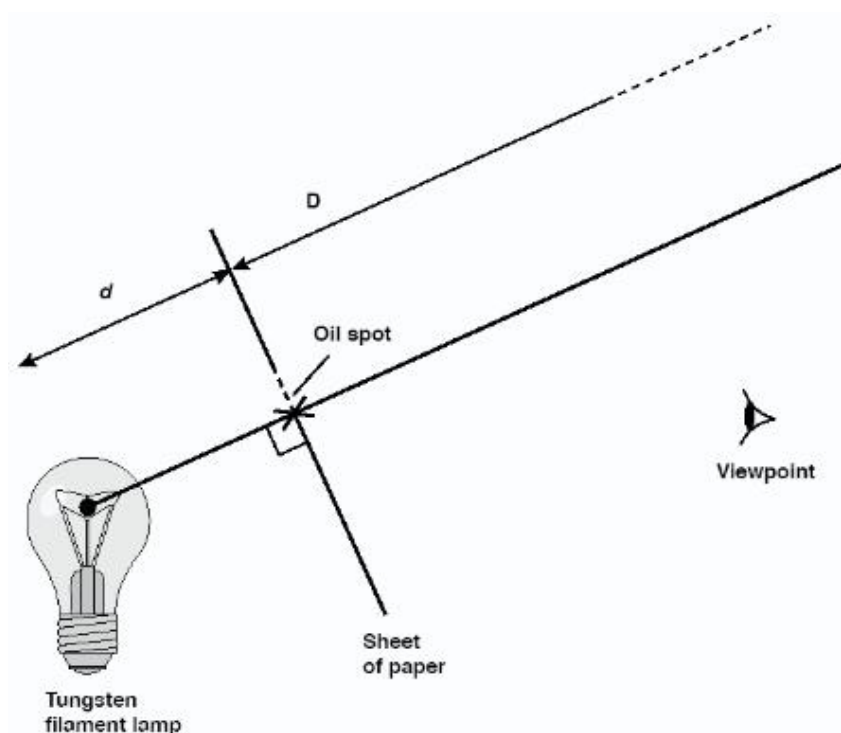
or The OASI BBQ 2014

Paul Whiting FRAS

The traditional scientific bent of the annual OASI BBQ is usually a whole host of solar telescopes of differing types and capabilities. Hydrogen alpha (never Calcium K unfortunately!), white light filters and projection techniques of all sorts. However as we have already attended quite a number of sidewalk solar astronomy events this summer, I thought that this year we should try something different. Time to recreate two great experiments of yesteryear.

Experiment 1

Firstly an attempt to measure the luminosity of the Sun by comparing it to that of a known wattage light bulb. Our own Victorian astronomer, John Isaac Plummer used the same technique in 1876 to attempt to measure the luminosity of Venus compared to that of a candle.



Make a small (5mm diameter) grease spot on a sheet of white paper. Illuminate one side of the spot by the light bulb, in our case 100W. Illuminate the other side by the Sun. Move the spot until it “disappears”, that is, the apparent illumination from both sides is equal. Measure the distance from the spot to the filament of the lamp.

The picture shows Abi Lee and me making this measurement – 7.5cm.

The maths makes the assumption that total luminosity from an object per unit area of a sphere, radius r , surrounding the object is given by

$$L_r = L_0 / 4\pi r^2$$

Figure 1: the experimental layout

where L_0 is the total object luminosity. So, at the point where the grease spot disappears

$$L_{\text{sun}} / 4\pi D^2 = L_{\text{bulb}} / 4\pi d^2$$

where D is the distance to the Sun and d is the measured distance between the spot and the bulb filament. Rearranging and substituting values

$$L_{\text{sun}} = L_{\text{bulb}} D^2 / d^2$$

$$L_{\text{sun}} = 100 (1.5 \times 10^{11} / 0.075)^2$$

This gives a very good estimation of 4.00×10^{26} W, compared to the accepted value of 3.90×10^{26} W.

Experiment 2

The second experiment involved demonstrating a measurement first performed in 235 BC by Eratosthenes. This practical concerned the measurement of the radius of the Earth by comparing shadow lengths at spatially separated observing sites. Unfortunately we only had one observation site and so rather than a formal practical demonstration this was a theoretical demonstration of Eratosthenes' technique by using one actual measurement and one simulation.

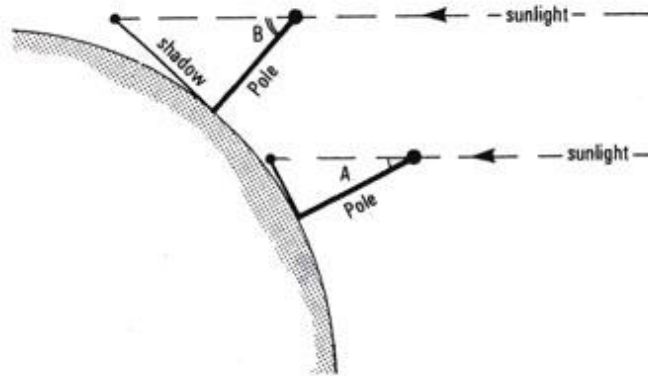


Figure 3: shadows at two sites on a N-S line

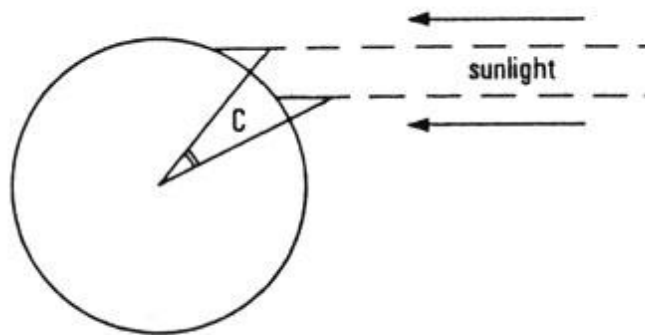


Figure 2: the angle subtended at the Earth's centre

The theory involves measuring the shadow length, at the same moment at two observing sites of known N-S separation. Eratosthenes used the shortest shadow to synchronise the time between the two stations, accurately measuring the control station by placing the pole down a well.

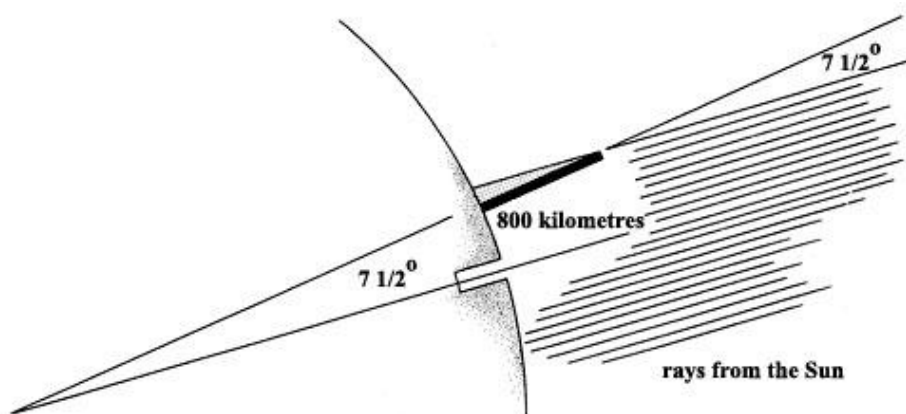


Figure 4: Eratosthenes' original experiment

The theory goes like this:

- $\tan A = \text{shadow length I} / \text{pole length I}$
- $\tan B = \text{shadow length II} / \text{pole length II}$
- $C = B - A$
- $R_E \approx D / \sin C$

where D is the N-S separation.

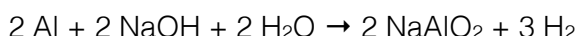
Our simulation provided a value of the Earth's radius of 6414 km, compared to the actual average figure of 6371 km.

Now from physics to chemistry. Will the safety officer please leave the field.

There is currently a lot of interest in gas production (as opposed to hot air on club nights I presume). Pete and Nicky Richards started off by mixing baking powder (sodium bicarbonate) with vinegar (acetic acid) to produce carbon dioxide.



Now, at a safe distance, Martin Cook and Kevin Fulcher started a production line of Hydrogen, using I believe a concoction of sodium hydroxide and copious amounts of aluminium foil. At least they realised that this is an extreme exothermic reaction (gives off lots of heat) and so they were using a pressure vessel (sparkling wine bottle) in a water bath.



DO NOT TRY THIS AT HOME!

Having produced these gases there followed a set of balloon filling experiments. The following results were noted;

- Hydrogen filled balloons, if filled to capacity will float away, never to be seen again.
 - ★ H_2 is lighter than air
- Hydrogen filled balloons that fail to float go pop quite nicely when ignited.
 - ★ H_2 is flammable
- CO_2 filled balloons float like bricks and do not go pop when ignited.
 - ★ CO_2 is heavier than air and not flammable

So has this set a theme for next year's BBQ?

Paul

Paul's podcast for September can be heard here http://www.oasi.org.uk/2014_09_pod.mp3

Newbourne Video Library

Do you have any astro/cosmos/space DVDs you would be willing to donate/lend for those cloudy nights at Newbourne?

Contact Mike Norris, David Murton, Kevin Fulcher.



Figure 5: Abi & Paul measuring the Sun's luminosity



Figure 6: Kevin and his concoctions

Sun Day at Felixstowe

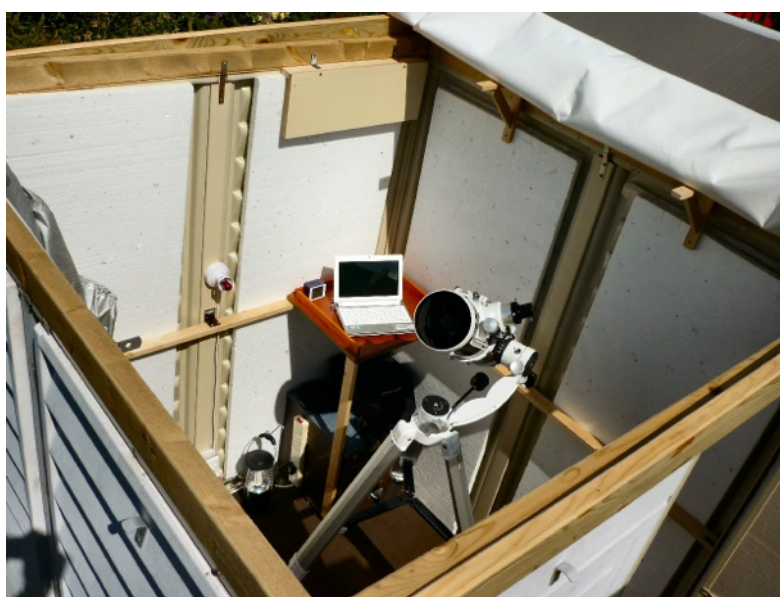


Roy loses count of the number of visitors



MartinRH finds Sol with homemade finder (off-cut of square drainpipe with 1.5mm pin-hole)

Observatory Construction



Mike Norris's new roll-top observatory