



OASI News

The newsletter of the Orwell Astronomical Society



Auroral glow from Bucklesham on 7 March

Photo by David Murton

Trustees:

Mr Roy Adams

Mr David Brown

Mr David Payne

Honorary President:

Dr Allan Chapman D.Phil MA FRAS

Moon

by David Murton



Moon taken on 17th January, skywatcher 200PDA + 4x powermate + qhy5 'll camera

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Society Contact details

Observatory (meeting nights only)
07967 519249

Email queries: info@oasi.org.uk

Facebook: <https://www.facebook.com/groups/445056098989371/>

Twitter: @OASlpswich

The OASI Forum has been decommissioned as usage had dwindled to just one contributor

The OASI Facebook pages are now proving very popular. Several non-members are active contributors.

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 by the gym.

Areas out of Bounds

Access to the Observatory is **only via the black door** at the foot of the Observatory tower, which leads to the staircase and thence to the spiral staircase up to the Observatory. If the black door is locked, please phone the observatory mobile, 07967 519249 during meeting hours.

Please do NOT explore other routes. When in doubt, ask or call the Observatory mobile.

Remember this is a school and straying into the main part of the school where the pupils reside would cause the society big problems and could see us losing the use of the observatory. Any member found to be anywhere other than the approved access route or the observatory area will face serious sanctions up to and including expulsion from OASI.

Please note that access time for all observatory member nights is after 20:15

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

Articles for OASI News

News, pictures and articles for this newsletter are always welcome. Please send them to news@oasi.org.uk

The CLOSING date is the 15th day of the month

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

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

Spreadsheets: xls, xlsx, OpenOffice/LibreOffice, Numbers

Images: tiff, png, jpg

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

If you don't feel up to writing a major article, perhaps you might write a short note for OASI News along the lines of *"This month I have mostly been observing/constructing/mending/reading/etc."*?

Articles win points! See page 19.

The full colour version is available from the OASI web site.

[Newsletter archive www.oasi.org.uk/NL/NL_form.shtml](http://www.oasi.org.uk/NL/NL_form.shtml)

Authors, please note that your articles will now be publicly available worldwide!

Reproducing articles from OASI News

If you plan to reproduce an article exactly as per OASI News then please contact the [Editor](#) – otherwise, as a matter of courtesy, please seek permission from and credit the original source/author. You may not reproduce articles for profit or other commercial purpose.

Committee 2016

Chairman	David Murton	Set overall agenda for OASI, Chair committee meetings, Press and publicity, Public appreciation of astronomy, Outreach activities.
Secretary	Roy Gooding	Outreach meetings (jointly with Chairman), observatory decoration.
Treasurer	Paul Whiting FRAS	Finance, Supervision of applications for grants, Visits by outside groups, Observatory tours, Public appreciation of astronomy (jointly with Chairman).
Committee	James Appleton	Committee meeting minutes, Web site
	Martin Cook	Membership, Tomline refractor maintenance & user testing
	Peter Richards	Lecture meetings, Email distribution lists
	Martin Richmond-Hardy	Newsletter
	John Wainwright	Equipment curator
	Mike Whybray	Astronomy Workshops, Child protection officer, Orwell Park School Astronomy Club.
	Avtar Nagra	Newbourne Observing Group
	Matt Leeks	Safety & security
Co-opted	Andy Willshire	Librarian

Society Notices

Contacts

A printed list of Committee and other activity contacts is available from the Secretary or the Observatory. Email links are available in the A4 pdf version of this newsletter.

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

Next Committee Meeting

Monday 11 April 2016, Newbourne Village Hall, starting 8.00pm.

Signing in and out

Please ensure you sign in and out when visiting the Observatory and/or Newbourne. This is for fire safety precautions and also provides an historic record.

Membership Renewal was due on January 1st

Subscription rate remains at £20 for the year which includes immediate family.

Please return the form, sent out by me in January, with subscription and any amendments necessary as instructed on the reverse of the form.

Martin Cook, Membership Secretary

OASI and BAA Events

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

There's a Google Calendar on the OASI web site with the latest dates (and corrections!). If you want to easily add OASI Events to your own computer/ phone/tablet calendar application click this button on the website Events page



[Download the OASI 2016 year planner](#) from the web site. An A3 printer is advised.

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>

Subscribe to the OASI Yahoo group by emailing oasi-subscribe@yahoogroups.com

Date and Time	Location	Contact	Event
Weekly, every Wednesday, 20:15	Orwell Park Observatory	Martin Cook , Roy Gooding	General observation (weather permitting) using a variety of telescopes.
Monday 28 March From 19:00 Workshop 20:00	Newbourne Village Hall	Avtar Nagra nog@oasi.org.uk	Newbourne Observing Group Workshop: Solar Eclipse March 2016 Reports by Paul Whiting FRAS
Wednesday 30 March, 17:30 – 20:00	Burlington House, LONDON W1J 0DU	https:// britastro.org	BAA Ordinary Meeting & Special General Meeting
Friday - Sunday 1-3 April	Sparsholt College, Winchester SO21 2NF	https:// britastro.org	BAA Winchester Weekend
Tuesday 05 April 20:15	Orwell Park Observatory	Paul Whiting FRAS treasurer@oasi.org.uk	Public access event. Observatory tour. Places must be booked. Further info and book a place.
Monday 11 April From 19:00	Newbourne Village Hall	Avtar Nagra nog@oasi.org.uk	Newbourne Observing Group OASI Committee Meeting 8pm
Monday 25 April From 19:00	Newbourne Village Hall	Avtar Nagra nog@oasi.org.uk	Newbourne Observing Group
Saturday 30 April, 10:00 – 17:30	Broomfield, Nr Chelmsford	https:// britastro.org	BAA One Day Spring Meeting See page 15
Monday 09 May, 11:00	Orwell Park Observatory	Martin Cook membership@oasi.org.uk James Appleton info@oasi.org.uk	Observation of the Transit of Mercury See page 14 for details.
Monday 16 May From 19:00	Newbourne Village Hall	Avtar Nagra nog@oasi.org.uk	Newbourne Observing Group Bring & Buy Sale
Saturday 21 May	Quaker Meeting House, Liverpool	https:// britastro.org	BAA Historical Section Meeting

Date and Time	Location	Contact	Event
Sat 21 and 22 May 11:00-16:00	Christchurch Park, Reg Driver Centre	Roy Gooding secretary@oasi.org.uk	Public access event. Observing the sun safely. (Will postpone to 28 May if weather unsuitable.) Booking not necessary.
Wednesday 25 May	Burlington House, LONDON W1J 0DU	https://britastro.org	BAA Ordinary Meeting & George Alcock Memorial Lecture
Monday 13 June From 19:00	Newbourne Village Hall	Avtar Nagra nog@oasi.org.uk	Newbourne Observing Group
Saturday 18 June, 10:00 – 17:30	Institute of Astronomy, Cambridge	https://britastro.org	BAA Webb Deep Sky Society AGM
Sunday 26 June	UCS, Ipswich	David Murton chairman@oasi.org.uk	International SUN Day
Monday 27 June From 19:00	Newbourne Village Hall	Avtar Nagra nog@oasi.org.uk	Newbourne Observing Group
Saturday 02 July 11:00	York	https://britastro.org	BAA Summer Meeting
Sun 10 July Time TBC	Area outside Spa Pavilion, Felixstowe	David Murton chairman@oasi.org.uk	Public access event. Observing the sun safely. Booking not necessary. (If weather is poor, will reschedule to 17 July.)
Monday 11 July From 19:00	Newbourne Village Hall	Avtar Nagra nog@oasi.org.uk	Newbourne Observing Group
Saturday & Sunday 23–24 July	Jimmy's Farm	David Murton chairman@oasi.org.uk	Science Section at Jimmy's Farm Sausage and Beer Festival,
Monday 25 July From 19:00	Newbourne Village Hall	Avtar Nagra nog@oasi.org.uk	Newbourne Observing Group
Monday 08 August From 19:00	Newbourne Village Hall	Avtar Nagra nog@oasi.org.uk	Newbourne Observing Group
Monday 22 August From 19:00	Newbourne Village Hall	Avtar Nagra nog@oasi.org.uk	Newbourne Observing Group
Friday–Sunday 9 –11 September	Dundee	https://britastro.org	BAA Autumn Weekend Meeting <i>Stars: Theory, Physics and Effects.</i>
Friday – Sunday 9 –11 September	Horncastle, Lincolnshire	https://britastro.org	Horncastle Astronomy Weekend
Monday 19 Sept, 23:30	TBA	James Appleton info@oasi.org.uk	Field trip to observe graze of 87 Cet. More info.
Saturday 24 Sept, 10:00 – 17:30	Burlington House, LONDON W1J 0DU	https://britastro.org	BAA Observers' Workshop <i>Asteroids & Remote Planets</i>

Date and Time	Location	Contact	Event
Monday 03 October From 19:00	Newbourne Village Hall	Avtar Nagra nog@oasi.org.uk	Newbourne Observing Group
Saturday 08 October	Nowton Park, Bury St Edmunds	David Murton chairman@oasi.org.uk	Public access event. Star party to mark International Observe The Moon Night . Book a place via the West Suffolk website .
Friday 14 October 20:00	Methodist Church Hall Black Horse Lane, Ipswich	Pete Richards lectures@oasi.org.uk	Lecture Meeting. Roger Pickard (Director of Variable Star Section of the BAA), <i>Why Observe Variable Stars?</i>
Saturday 15 October	Chichester	https://britastro.org	BAA Back to Basics Workshop
Monday 17 October From 19:00	Newbourne Village Hall	Avtar Nagra nog@oasi.org.uk	Newbourne Observing Group
Friday 21 October 23:30	TBA	James Appleton info@oasi.org.uk	Field trip to observe graze of 20 Gem or 21 Gem. More info .
Wednesday 26 October, 17:30 – 20:00	Burlington House, LONDON W1J 0DU	https://britastro.org	BAA Annual General Meeting
Monday 31 October From 19:00	Newbourne Village Hall	Avtar Nagra nog@oasi.org.uk	Newbourne Observing Group
Friday 4 November	Felixstowe Golf Club	David Murton chairman@oasi.org.uk	
Monday 14 November From 19:00	Newbourne Village Hall	Avtar Nagra nog@oasi.org.uk	Newbourne Observing Group
Monday 28 November From 19:00	Newbourne Village Hall	Avtar Nagra nog@oasi.org.uk	Newbourne Observing Group
Monday 12 December From 19:00	Newbourne Village Hall	Avtar Nagra nog@oasi.org.uk	Newbourne Observing Group
Wednesday 14 Dec	TBD but probably The Newbourne Fox.	Roy Gooding secretary@oasi.org.uk	Christmas Meal.
Monday 22 December 06:36	TBA	James Appleton info@oasi.org.uk	Field trip to observe graze of Hipparcos 63099. More info.
2017			
Saturday 29 July	UCS, Ipswich	David Murton chairman@oasi.org.uk	OASI 50th Anniversary
21 August	USA	www.greatamericaneclipse.com	Total solar eclipse

Public Solar & Star Parties organised by OASI in 2016

Setting up for the Holywells Park star party on Saturday 12 March

Unbelievable evening in Holywells park. At least 500 people with queues 50 deep all evening for each scope.

Roy says it's the biggest crowd he has seen at an event since Halley's comet.

Big thanks to those who helped and to our visitors we hoped that you enjoyed it. Sorry about the queues!

We had the following scopes and helpers:

MartinRH : 200mm Newtonian on Dob mount

David Murton : 200mm Newtonian on EQ mount

Jeremy Startup : Bresser 152/760 refractor on an exos 2 goto mount

Roy Gooding : Refractor on EQ mount

Mike Nicholls : Bins

Joe Walsh : 200mm Newtonian

Richard Gruber

Christchurch Park Solar Party Saturday & Sunday 21, 22 May

International Sun Day 26 June

Solar observing outside UCS Ipswich by the “?”. Booking not necessary.

Solar Observing near Felixstowe Spa Pavilion Sunday 10 July

Public access event. Observing the sun safely. Booking not necessary. If weather is poor, will reschedule to 17 July.

Debenham

There will be no event at Debenham this year. [*Bound to be a sunny day. Ed.*]

Bentley Family Day – Sunday 4th September.

Nowton Park Star Party – Saturday 8 October

<https://www.whatsonwestsuffolk.co.uk/whats-on/event/2794/the-nowton-park-star-party>

International Observe the Moon night (InOMN) is an annual worldwide public event that encourages observation, appreciation, and understanding of our Moon and its connection to NASA planetary science and exploration. Everyone on Earth is invited to join the celebration by hosting or attending an InOMN event — and uniting on one day each year to look at and learn about the Moon together.

The moon will be waxing gibbous on the night and become a Supermoon on 16 October.



Other Star Parties that OASI members may be attending

Kelling Heath Star Party – 8–10 April and 30 Sept – 2 Oct

The Spring Star Party at Kelling Heath is organised by the Norwich Astronomical Society. The star party was initially purely an observing event aimed more at the experienced observer. However it is gaining popularity with over 200 pitches booked at the 2015 event and a number of trade stands present.

Whether you are a veteran of the star party and looking forward to meeting up with old friends or a total newcomer, you will find this event a welcoming and fun way to enjoy the dark skies that North Norfolk has to offer.

See <http://www.starparty.org> for the Spring Star Party

See <http://starparty.las-astro.org.uk/index.php> for the Autumn Equinox Sky Camp.

Haw Wood Star Party Friday – 28–31 October

Haw Wood is a [Dark Sky Discovery](#) site. Naked eye visibility is magnitude 5.73; with averted vision, 5.99; best SQM reading 21.75.

Haw Wood Farm Caravans and Camping

[Haw Wood Farm](#)

Hinton

Saxmundham IP17 3QT

Newbourne Observing Group

Avtar Nagra nog@oasi.org.uk

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

The Newbourne Observing Group (The NOGs) is a good place to start for beginners. If you are thinking of buying a scope or binoculars, come and try before you buy and talk to owners about the strengths and weaknesses of particular models. If you've already splashed the cash, bring your new scope along to use or for advice on setting-up and adjustment. All welcome, with or without telescopes.

Newbourne Observation Group Stargazer's guide

On the first meeting each month Bill Barton will give a short presentation of what can be viewed in the following 4 weeks. The first presentation will be on 16th April at 7.30 p.m. Useful for newbies and some old hands.

There will also be a "Bring & Buy" evening on 16th May. Bring your surplus astro kit to sell or see what bits you pick up on the night."

For armchair stargazers (on those cloudy nights) there is a small branch of the OASI Library held at Newbourne and a copy of the full catalogue. See page 19.

NOG Meetings in 2016

Please note there is only 1 meeting in May because of Bank holidays.

28 March (W)	11 April	25 April
16 May	13 June	27 June
11 & 25 July	8 & 22 August	5 & 19 Sept
3, 17 & 31 Oct	14 & 28 Nov	12 & 19 Dec

We open up for all meetings at 7pm. Workshops (W) start at 8pm.

Please check the web site diary for any changes during the year.

Astronomy Workshops

Contact Mike Whybray

Location: Newbourne Village Hall IP12 4NP

Doors open at 7:00pm.

Workshops start at 8:00pm

If you are a new OASI member, or haven't been to one of these informal workshops before, they are a mixture of events of different characters including beginners talks, interactive workshops, films, etc., suitable for all. They are also a chance to chat with other members over a cup of tea and a biscuit, in a venue rather warmer than the observatory dome on a winter's night!

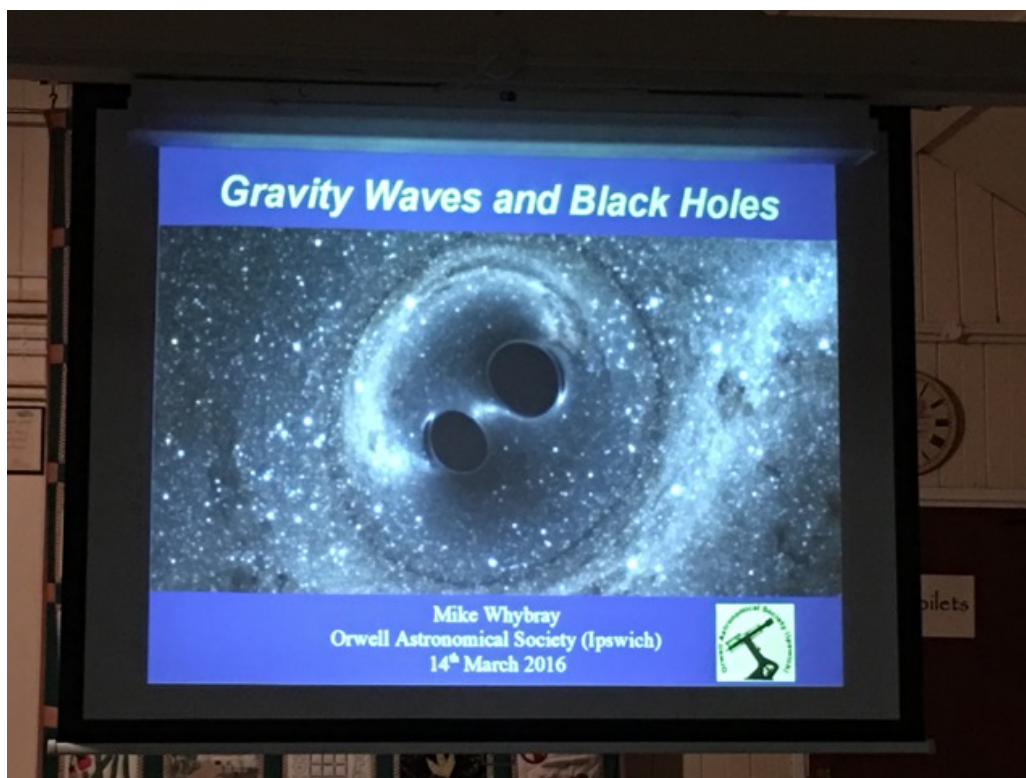
Newbourne Village Hall is our new location for occasional workshops, which will be held on dates booked for normal NOG (Newbourne Observing Group) meetings. If you aren't interested in the workshop you can still just use the hall facilities and the field for observing – but please be quiet so as not to disturb the workshop!

Given a clear night, we can make use of the field for a workshop or continue afterwards with some observing – something not possible at the previous venue, Nacton village hall.

Do you have a subject you could workshop? You could do a short one, or share the effort with a partner. Drop Mike Whybray a line! workshops@oasi.org.uk

Gravity Waves and Black Holes

Mike Whybray, bravely suffering from the after effects of a bad cold, gave a fascinating and thought-provoking talk to a large group of members and some non-members. We covered Kepler's laws, Lorentz transformation, Special and General Relativity – and that was the first five minutes!



Then it was time for audience participation...

This video may help understand <https://www.youtube.com/watch?v=jlTVIMOix3I>

(Thanks to Adam Honeybell for the link)



The curved spacetime simulator (aka a sheet of spandex and two rubber balls).

28th March 8pm: Solar Eclipse March 2016 Reports

There was a total solar eclipse on 9th March which Paul Whiting will have been observing, and probably other members of OASI. Paul will present his own experiences of the event, and any other members who went are also welcome to show and talk about their experience, either informally on the night, or contacting Mike Whybray or Paul Whiting in advance to co-ordinate input to the workshop.

Small Telescope Observing Nights (STONs)

Contact: Paddy O'Sullivan and Dave Robinson Email: ston@oasi.org.uk

These evenings enable members to gain hands-on experience of using the society's telescopes and to practice locating astronomical objects. They are organised by Paddy O'Sullivan and David Robinson and currently take place at Orwell Park Observatory. They are held on the first Tuesday of the month, starting at 20:15, *but only when there is a demand from members*. To ensure there will be an organiser in attendance, members should email the above address.

If members cannot gain access due to lack of Fob, etc., please ring the observatory telephone number **07967 519249**.

Lecture Meetings

Contact: Peter Richards

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

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

Friday 14 October: Roger Pickard "Why observe variable stars?"

Roger is director of the variable stars section of the BAA.

DASH Astro Events – 2016

See <http://dash.moonfruit.co.uk> for the latest details.

All DASH Astro observing sessions will take place at WESTLETON COMMON. ASOG observing sessions and locations may be arranged at the time of observation.

Unless stated all group meetings will take place at WESTLETON VILLAGE HALL from 7:30 pm

Observing sessions:

Nights: 5 March, 2 & 30 April,
4 June, 1 & 29 Oct, 26 Nov

Solar observing: 2 July, 6 Aug, 3 Sept

Date Event

16 April Dave Murton - Beginners' guide to night sky Naked eye observations



How our Moon behaves

Bill Barton FRAS

The Moon moves eastward away from the Sun in the sky, even though when the Moon has passed the opposite point in the sky (when the Moon is 'full') it is, in fact, moving back toward the Sun.

When the Moon is NEW it is close to the Sun in the sky, rising at SUN-RISE, is south at MID-DAY and sets at SUN-SET. It is therefore dark all night long.

When the Moon is at FIRST QUARTER it follows the Sun across the sky, rising at MID-DAY, is south at SUN-SET and sets at MID-NIGHT. It is therefore dark AFTER mid-night.

When the Moon is FULL it is opposite the Sun in the sky, rising at SUN-SET, souths at MID-NIGHT and sets at SUN-RISE. It is therefore light all night long. Good for people who work outdoors after dark, but bad for astronomers trying to study faint nebulae or count faint meteors.

When the Moon is at LAST QUARTER it leads the Sun across the sky, rising MID-NIGHT, souths at SUN-RISE and sets at MID-DAY. It is therefore dark BEFORE mid-night.

Having said that the full Moon and Sun are opposite, when the Sun is 'low' in the mid-winter sky the Moon will be 'high' and vice versa.

Generally our Moon rises (or souths or sets) an hour later each day. As the last quarter Moon rises around mid-night there is, therefore, a calendar day associated with that phase without a Moon-rise. Similarly there is a day associated with the first quarter Moon without a Moon-set.

A complete set of phases takes $29\frac{1}{2}$ days, as most months have 30 or 31 days a phase occurring soon after the beginning of a month will be repeated at the end of the same month. When this happens with a full Moon it is said to be 'blue'.

If we round up the $29\frac{1}{2}$ day cycle to 30 days, and having said that the Moon takes this period to move around the whole sky (360° circle), we can say

$$360^\circ \div 30 \text{ days is } 12^\circ \text{ per day.}$$

The Moon is $\frac{1}{2}^\circ$ in diameter and there are 24 hours a day so to achieve the 12° required, the Moon has to move by its own diameter in one hour of time against the background stars.

Transit of Mercury 2016

On 09 May 2016, a transit of Mercury will take place. Circumstances of the phenomenon (for the location of Orwell Park) are as follows:

Contact	Time BST	Altitude of Mercury (°)	Azimuth of Mercury (°)
1 st	12:12:23	55	344
2 nd	12:15:35	55	345
3 rd	19:37:21	7	110
4 th	19:40:33	7	110

The Observatory will be open from 11:00 onwards for members of OASI to observe the phenomenon. Martin Cook and James Appleton are coordinating arrangements, which are summarised below; if you have any queries, please contact Martin or James directly.

The Tomline refractor will be set up in solar projection mode, as used so successfully during the transit of Venus in 2004. Smaller telescopes will be on use on the balconies off the Belvedere.

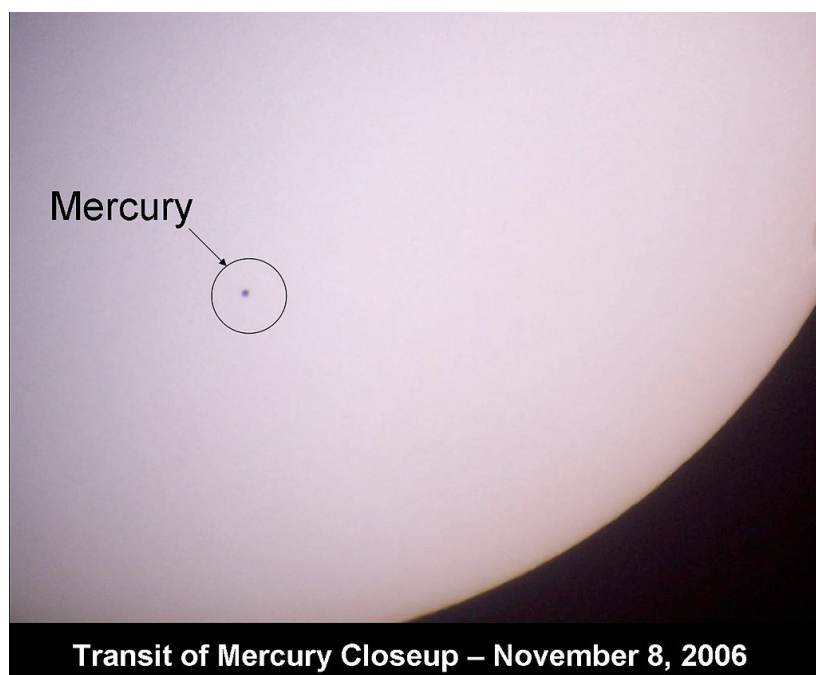
The day of the transit falls during term-time and we have been asked by the Bursar to take all steps to minimise disturbance to Orwell Park School.

Access to the Observatory will therefore be provided only at the following fixed times: 10:00, 11:00, 13:00, 14:00, 15:00, 16:00, 17:00, 18:00. Arrive as usual in the car park behind the school gym, at one of the above times - once people have gathered, the Observatory will be opened to enable ingress. **Note that there will be no opportunity to arrive at the Observatory at noon or 19:00 due to proximity to 1st/2nd and 3rd/4th contact respectively.**

Any member of OASI intending to attend Orwell Park for the transit must book in advance, stating their intended arrival time, via email to transit@oasi.org.uk or in person directly to Martin or James.

Note: all times above are stated in BST. (During May, UT will be one hour behind BST.)

James Appleton & Martin Cook



Source: https://en.wikipedia.org/wiki/Transit_of_Mercury

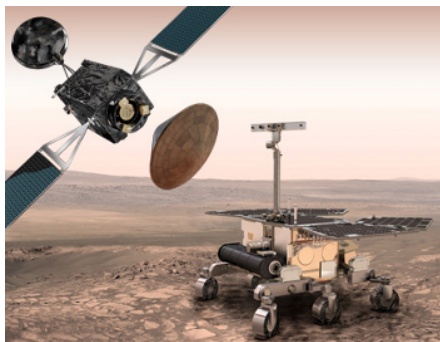
See also www.hou.usra.edu/meetings/lpsc2015/pdf/1327.pdf [hat tip to Mike O'Mahoney]

BAA One Day Spring Meeting

Robotic exploration of the Solar System

Venue: Chelmer Valley High School, Chelmsford, Essex, CM1 7ER (click to see map)

Date: Saturday, 2016, April 30 - 10:00 to 18:00



We are living in a golden age of Solar System exploration. In 2015 the New Horizons spacecraft flew past Pluto, Rosetta continued its extraordinary exploration of comet 67P, there are rovers and orbiters exploring Mars, the Cassini spacecraft is still making its audacious tour of the Saturnian system and Dawn is in orbit around Ceres. All of these missions and more are returning amazing data. In 2016 we will see many other exciting developments including a planned “landing” of Rosetta on its comet, the Grand Finale of Cassini, the launch of the first of Europe’s Exomars spacecraft and NASA’s Juno arriving at Jupiter. Many other missions are planned.

With the rapid evolution of the Internet amateurs can follow these missions in greater detail than ever before and can even participate in generating science, both through analysing data products from the spacecraft and through supporting observations from the ground. The objective of this meeting is to discuss current and future mission plans and how amateurs can play a part.

Doors open at 09:30 for registration with the programme getting underway at 10:15.

The complete programme is:

- Dr. Jeremy Shears (BAA President) - Introduction and welcome
- Prof. Mark McCaughrean (ESA) - ESA’s Solar System exploration programme
- James Canvin - Amateur use of Solar System spacecraft data
- James Hannan - An introduction to the NEAS
- Dr. Geraint Jones (MSSL/UCL) - The ESA JUICE mission to the icy moons of Jupiter
- David Morris (e2V) - Designing cameras for deep space missions
- Nick James - Ground-based amateur observation in support of planetary missions
- Dr. John Mason - New Horizons, science at the edge of the Solar System

This is a joint meeting with our hosts, the [North Essex Astronomical Society](#) and it will take place at Chelmer Valley High School, Chelmsford, Essex, CM1 7ER. The city of Chelmsford is closely associated with these missions, from developing on-board cameras to providing ground station systems. The school has its own observatory which should allow us to observe the Sun if it is clear. Chelmsford railway station has frequent trains from London, Liverpool Street and buses run from the station to within a short walk of the venue. There is parking on site.

The entry cost is £3 (members of the BAA/NEAS and affiliated societies¹), £5 (non-members) and £2 (accompanied children under 16). This includes tea and coffee. An optional buffet lunch is available for £9 if booked in advance.

Booking information

Advance booking is recommended for this meeting. Booking will close on 2016 April 20.

- Booking through the [BAA online shop](#).
- Printing out our [Broomfield Booking.pdf](#) and return it to the BAA office before 2016 April 20.
- Contacting the BAA office on 0207 734 4145 (staffed 9am to 5pm, Mon-Fri).

¹ OASI is affiliated to the BAA

The Night Sky in April

Martin RH

All event times given are for the location of Orwell Park Observatory 52.0096°N, 1.2305°E
British SummerTime (BST) began on 27 March.

Other than for occultations, times are now in BST.

Moon

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

Full Moon	Last Quarter	New Moon	1st Quarter
22 April 2016 06:24	30 April 2016 04:29	7 April 12:24	14 April 2016 04:59

Sun, Moon and planets

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

Object	Date	Rise	Set	Mag.	Notes
Sun	1	06:29	19:30		
	30	05:27	20:19		
Moon	1	03:04	12:12		Perigee 07 April 18:36, 357,164 km
	30	02:23	12:11		Apogee 21 April 17:06, 406,352 km
Mercury	1	06:49	20:17	-1.4	Perihelion 05 April
	30	05:46	21:34	2.3	
Venus	1	06:15	17:39	-3.8	
	30	05:21	19:10	-3.8	
Mars	1	00:33	08:41	-0.5	Advanced notice: Mars will be at opposition on May-22
	30	22:43	06:42	-1.3	
Jupiter	1	16:44	06:00	-2.3	
	30	14:39	04:02	-2.1	
Saturn	1	01:14	09:18	1.1	Observing after midnight. Advanced notice: Saturn will be at opposition Jun-03
	30	23:11	07:20	1.0	
Uranus	1	06:52	20:04	5.9	Not visible at night
	30	05:01	18:19	5.9	
Neptune	1	05:48	16:19	8.0	Rises just before dawn
	30	03:55	14:30	7.9	

Meteor Showers

Source: BAA Handbook 2016 p97-99

Shower	Limits	Maximum	ZHR	Notes
Virginids	March–Apr Apr 6–17	Apr 11–12	5	The two most prominent of several radiants in Virgo, active March–April. Slow, long paths.
Lyrids	Apr 18–25	Apr 21 22h	810	Normally rather moderate activity, but fine displays in 1803, 1922, 1982. Unfavourable.
η Aquarids	Apr 24 – May 20	May 5–6	40	Fine southern shower, poorly seen from the UK. Broad maximum and multiple radiant
α -Scorpiids	Apr 20 – May 19	Apr 28	5	Part of the Scorpiid-Sagittarius complex. Several weak radiants. April–July.

Occultations during April 2016

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.

Please note that **times are shown in UTC** not BST.

Date	Time (UT)	D/R	Lunar Phase	Sun Alt(°)	Star Alt(°)	Mag	Star
10 Apr	20:02:33	D	0.16+	-12	22	3.8	theta 1 Tau
	20:59:10	R		-19	14		
10 Apr	20:06:36	D	0.16+	-12	22	3.4	theta 2 Tau
	20:58:21	R		-19	14		
10 Apr	20:20:49	D	0.16+	-14	20	6.6	ZC 672
10 Apr	21:00:35	D	0.16+	-19	14	4.8	ZC 677
10 Apr	21:02:05	D	0.16+	-19	14	6.5	ZC 680
10 Apr	21:29:09	D	0.16+	-22	10	6.0	85 Tau
11 Apr	19:54:43	D	0.25+	-11	33	5.8	117 Tau
	20:48:24	R		-17	25		
12 Apr	22:08:44	D	0.36+	-25	22	7.5	Tycho 1332-1682-1
13 Apr	20:11:05	D	0.46+	-12	45	7.1	Hip 35875
14 Apr	22:23:55	D	0.58+	-25	33	7.3	ZC 1257
21 Apr	00:12:41	D	0.99+	-26	31	4.4	theta Vir

Visible ISS passes $\geq 15^\circ$ max altitude

Martin RH

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

Some nice evening passes in the first half of this month passes this month.

NB predictions are approximate due to craft adjustments. Check the day before.

Times are BST.

Date	Mag	Start			Highest point			End		
		Time	Alt.	Az.	Time	Alt.	Az.	Time	Alt.	Az.
01 Apr	-2.6	21:11:27	10°	SW	21:14:20	34°	SSE	21:14:20	34°	SSE
02 Apr	-2.0	20:19:20	10°	SSW	20:22:01	24°	SSE	20:24:24	12°	E
02 Apr	-2.3	21:54:52	10°	WSW	21:57:04	38°	WSW	21:57:04	38°	WSW
03 Apr	-3.2	21:02:21	10°	WSW	21:05:33	53°	SSE	21:06:55	29°	E
03 Apr	-0.8	22:38:39	10°	W	22:39:34	18°	W	22:39:34	18°	W
04 Apr	-2.7	20:09:55	10°	SW	20:12:59	38°	SSE	20:16:05	10°	E
04 Apr	-3.5	21:46:00	10°	W	21:49:15	83°	SSW	21:49:15	83°	SSW
05 Apr	-3.4	20:53:21	10°	WSW	20:56:37	73°	SSE	20:58:49	19°	E
05 Apr	-1.5	22:29:46	10°	W	22:31:27	27°	W	22:31:27	27°	W
06 Apr	-3.5	21:37:05	10°	W	21:40:22	86°	S	21:40:54	60°	E
07 Apr	-3.4	20:44:22	10°	W	20:47:39	85°	S	20:50:17	15°	E
07 Apr	-2.0	22:20:48	10°	W	22:22:55	35°	W	22:22:55	35°	W
08 Apr	-3.4	21:28:04	10°	W	21:31:20	75°	SSW	21:32:15	44°	ESE
09 Apr	-3.3	20:35:18	10°	W	20:38:35	84°	S	20:41:32	12°	E
09 Apr	-2.1	22:11:47	10°	W	22:14:09	34°	WSW	22:14:09	34°	WSW
10 Apr	-3.1	21:18:58	10°	W	21:22:12	56°	SSW	21:23:26	32°	SE
11 Apr	-3.2	20:26:09	10°	W	20:29:26	71°	SSW	20:32:41	10°	ESE
11 Apr	-1.8	22:02:48	10°	W	22:05:18	25°	SW	22:05:18	25°	SW
12 Apr	-2.4	21:09:50	10°	W	21:12:53	36°	SSW	21:14:34	21°	SSE
13 Apr	-1.1	21:54:05	10°	WSW	21:56:03	15°	SW	21:56:27	15°	SSW
14 Apr	-1.5	21:00:46	10°	W	21:03:24	23°	SSW	21:05:44	12°	SSE

There's an app for that: Try [ISS Spotter](#) for iPad/iPhone, which alerts you to impending passes of the ISS. For Android-based phones/tablets there's [ISS Detector](#). If you use Twitter @twisst or @ISS_spotter will send you a tweet when the ISS will be visible at your location.

Iridium flares

Too many to list but see [Iridium Flares http://heavens-above.com/IridiumFlares.aspx](http://heavens-above.com/IridiumFlares.aspx)

Paul's Astronomy Podcast for April

Paul Whiting FRAS

Podcast, April 2016 www.oasi.org.uk/2016_04_pod.mp3

OASI Member of the Year Competition

- Open to any non committee member (at time points earned)
- Runs from 1st September to 31st August each year
- Winner gets a free membership for the following year
- It is the members responsibility to check that they have been credited the points for a particular event

Activity	Points	Activity	Points
Helping at an OASI outreach event	10	Writing a newsletter article (per page)	3
Giving a workshop	20	Introducing a new member	5

NAME	2015 total	Jan News	SGL	Feb News	March News	HW Park	Nowton Park	Apr News			Total
Pete Richards	20										20
Nicky Richards	30										30
Mike Nicholls	10		10	3		10		3			36
Bill Barton	38			3	6		10	3			60
Mike O'Mahoney	10		10								20
Joe Startin	13		10								23
Charlie Green	20										20
Alan Smith	12			18	33			3			66
Mike Norris	3										3
Neil Short	3										3
Andy Gibbs			10	3	9		10				32
Jeremy Startup			10			10					20
Richard Gruber						10					10
Joe Walsh						10					10

Library Information

Andy Willshire

The library resides in the redundant lift shaft at the Orwell Park Observatory, dedicated to John Isaac Plummer (1845-1925), the professional astronomer to Colonel Tomline.

We have recently checked all the books at the library and have updated the data base. We have 424 on the shelves. All the books can be found in seventeen sections and appear in book and author format, both being in alphabetic order. A list of all books is to be found at present in the library, but work is continuing to have the list available on the OASI web site.

We have also started a small sub-section of the library at the Newbourne Observing Group, which holds its meetings two Mondays each month. The books available are specifically for beginners, but if interest blossoms, we can provide a comprehensive cross section.

Books can be borrowed by all members, with completion of a simple form. This is available at each venue. Books are on loan for 1 month at Newbourne, and for 2 months at the main library.

From the Editor

Here is a sample to whet your reading appetite – the works of the late Sir Patrick Alfred Caldwell-Moore CBE, FRS, FRAS.

Care to do a book review for the magazine?

The works of the late Sir Patrick Moore CBE, FRS, FRAS

Author(s)	Title	Date	Category
Moore, Patrick (Sir)	A-Z of Astronomy	1977	Reference
Moore, Patrick (Sir)	The Amateur Astronomer	1978	Reference
Moore, Patrick (Sir)	Astronomer's Stars	1987	Stars and our Sun
Moore, Patrick (Sir)	Astronomy for 'O' Level	1978	Younger readers
Moore, Patrick (Sir)	The Astronomy of Birr Castle	1981	History, and Astronomers
Moore, Patrick & Watson, John	Astronomy With a Budget Telescope	2003	Astrophotography
Moore, Patrick	Astronomy With Small Telescopes	2001	Astrophotography
Moore, P. & Hunt, G.	Atlas of the Solar system	1990	Solar System
Moore, Patrick (Sir)	Atlas of the Universe	1998	Reference
Hunt, G. & Moore, P.	Atlas of Uranus	1989	Solar System
Moore, Patrick (Sir)	The Boys Book of Astronomy	1964	Younger readers
Moore, Patrick (Sir)	The Boys Book of Space	1954	Younger readers
Moore, Patrick (Sir)	Eyes on the Universe	1997	Telescopes and optics
Moore, Patrick (Sir)	Guide to the Moon	1976	Moon
Moore, Patrick (Sir)	Guide to the Planets	1971	Solar System
Moore, Patrick (Sir)	Into space - A Journey Through the Solar System and Beyond	1997	Solar System
Moore, Patrick (Sir)	Light Pollution, Response and Remedies	2002	Observing
Moore, Patrick	Mission To the Planets	1990	Space flight
Moore, Patrick (Sir)	The Modern Amateur Astronomer	1995	Observing
Moore, Patrick (Sir)	Moon Flight Atlas	1969	Younger readers
Moore, Patrick (Sir)	The Observational Amateur Astronomer	1995	Observing
Moore, Patrick (Sir)	The Observer's Book of Astronomy	1967	Observing
Moore, Patrick (Sir)	The Observer's Year	1998	Observing
Moore, Patrick (Sir)	Patrick Moore on Mars	1998	Solar System
Moore, Patrick (Sir)	Patrick Moore on the Moon	2001	Moon
Moore, Patrick (Sir)	Patrick Moore: The Autobiography	2005	History, and Astronomers
Moore, Patrick (Sir)	Patrick Moore's New Guide to the Planets	1993	Solar System
Moore, Patrick (Sir)	Philip's Guide to Stars and Planets	1980	Observing
Moore, P. and Mason, J.	The Return of Halley's Comet	1985	Comets & Asteroids
Moore, Patrick (Sir)	Seeing Stars	1970	Younger readers
Moore, Patrick (Sir)	The Sky at Night 4	1972	History, and Astronomers
Moore, Patrick (Sir)	Teach Yourself Astronomy	1995	Reference
Moore, Patrick (Sir)	TV Astronomer	1987	History, and Astronomers
Moore, Patrick (Sir)	Yearbook of Astronomy		Yearbook

The return of Comet 1P (Halley)

Alan Smith and Martin Cook

As you are probably aware, Comet Halley [1] takes an average of 76 years to orbit the Sun, covering 11,500 million kilometres in the process. In practice the intervals between successive returns can be a few years longer or shorter than this. Measured from one perihelion to the next, its quickest return was after 74.4 years, from November 1835 to April 1910, while the longest interval was 79.25 years, from June 451 to September 530.

On 5th October 1985 Alan Smith and Martin Cook, used the 10" Tomline refractor to get the first glimpse of Comet Halley since it was last observed using that telescope in 1910. A 10 minute exposure on film developed to about 3200 ASA just about showed the nucleus! At that time the comet was at about magnitude 12.5 and around 250 million km from Earth. Although photography was well understood, and used astronomically in the early years of the 20th century, we are not aware of any other photo's taken of Comet Halley with the Tomline.

At about the same time, five spacecraft from Russia, Japan, and the European Space Agency were sent to rendezvous with the comet. The ESA's Giotto probe, captured close-up colour pictures of Halley's nucleus showing jets of solar-heated debris spewing into space.

Given that the next return was predicted to be around 2061, it was unlikely that either of the photographers are going to get a second chance!

In 1989, Boris Chirikov and Vitaly Vecheslavov performed an analysis of 46 apparitions of Halley's Comet taken from historical records and computer simulations. These studies showed that its dynamics were chaotic and unpredictable on long timescales. Halley's projected lifetime could be as long as 10 million years. More recent work suggests that Halley will evaporate, or split in two, within the next few tens of thousands of years, or will be ejected from the Solar System within a few hundred thousand years. Observations by D.W. Hughes suggest that Halley's nucleus has been reduced in mass by 80–90% over the last 2000–3000 revolutions

Now, a Finnish observer Lööf Lirpa, has seeming made a startling discovery [3]. It seems that Halley has encountered either a large, massive, previously unobserved body (unlikely) or has been impacted by another comet or similar body, (possible) whilst in the outer reaches of the Oort cloud. This has had the effect of throwing the comet into a different orbit. It appears that comet Halley will now virtually retrace its' path and return to the sun in 'only' another 30 years.

As of August 2015 Comet 1P (Halley) was 34 astronomical units (AU) from the Sun -- a bit over 5 billion km out. As seen from the Earth, it would be in the constellation of Hydra. Now it's 'somewhat' closer and is likely to reach perihelion (closest point to the Sun) around 01 April 2046. Perhaps we will just about be able to climb the stairs and screw a more up to date imaging device to the Tomline and repeat the observation.

References

1. Halley's Comet <http://ow.ly/ZiicX>
2. Boris Chirikov <http://ow.ly/Zijkz>
3. Similar observations <http://ow.ly/ZihOf>

Ipswich Philosophical Society

Bill Barton FRAS

Material held in the Suffolk Record Office describing the astronomical interest at the Ipswich Philosophical Society.

Suffolk Record Office Holdings

HD2272/153/6/31/1 Programme November 1850 - May 1851

HD2272/153/6/31/2 Programme November 1851 - May 1852 (Robert Ransome, Esq. President, W. H. Alexander, Esq. Vice-President, W. H. B. Webster Secretary)

HD2272/153/6/31/3 Programme January 1852 - December 1852 (W. H. Alexander, Esq. President, R. D. Alexander, Esq. Vice-President, Mr. Charles Wise, Treasurer, W. H. B. Webster Secretary)

The above are cards giving dates of meetings in the periods defined, no other information is given.

HD2272/153/6/31/4 Ipswich Philosophical Society Laws, Regulations and Catalogue of the Library dated March 1852.

In the list of library books owned by the Society amongst other volumes are:-

Greenwich Magnetic and Meteorological Observations 1840-49

Herschell's Outlines of Astronomy 1849

Herschell's Observations at the Cape of Good Hope 1834-38

Magnetic and Meteorological Observations at St. Helena 1840-43

Ditto at Toronto 1840-43

Narrien's Astronomy 1845

Nichol's Architecture of the Heavens 1850

Sabine's Days of Unusual Magnetic Disturbances 1840-41

Nowton Park, Saturday 19 March

Martin Richmond-Hardy

In spite of total cloud cover, on the plus side we were greeted by the most beautiful carpet of daffodils as we entered the park.

We assembled in one of the greenhouses and David Murton gave a talk on *What to see in the night sky*. After the break (and a welcome hot beverage) Paul Whiting gave a talk on Pluto and NASA's New Horizons mission. Helpers also present were Bill Barton, Andy Gibbs, Roy Gooding, Mike Whybray and me. Thanks to our Nowton Park host, Will Hardy (no relation!).



In the greenhouse



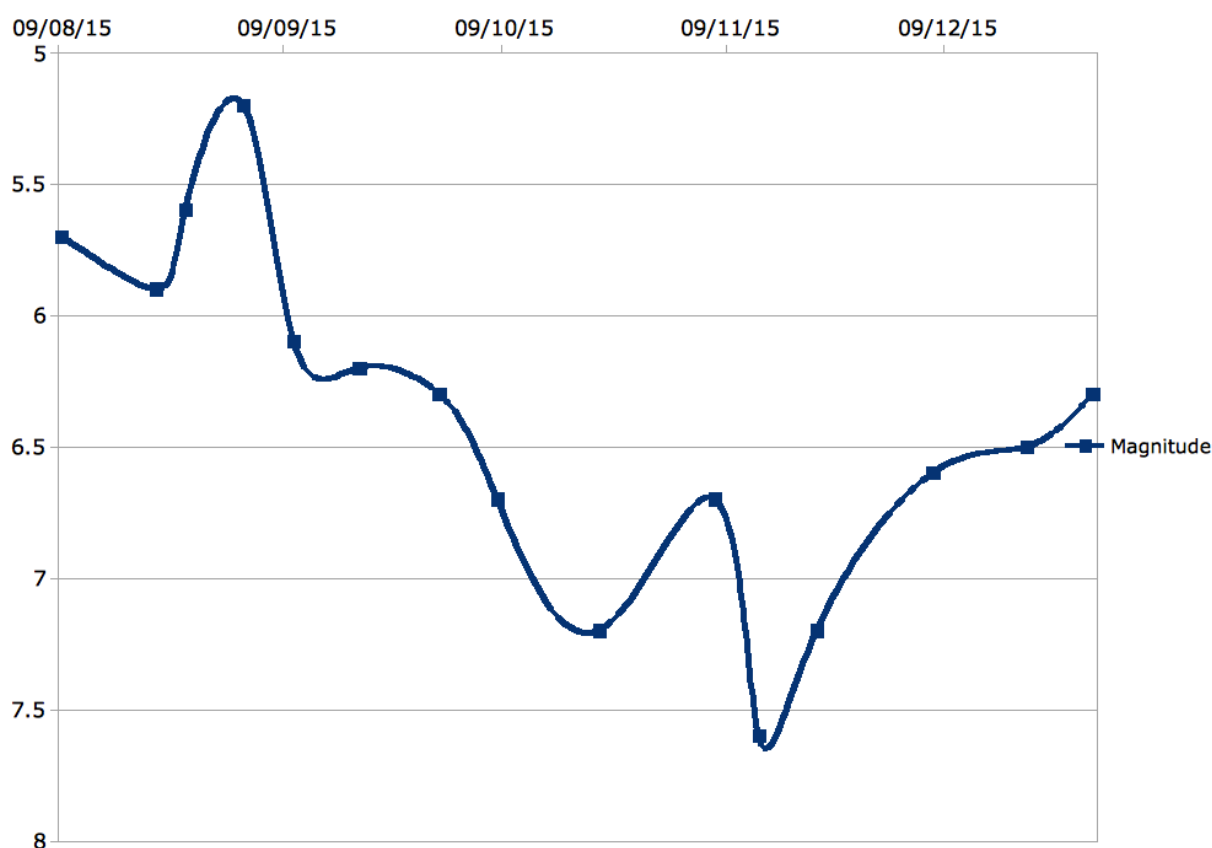
OASI display

Variable Stars – W-Cygni

Mike Nicholls

The accompanying graph and table show the light curve for the star W Cygni during the last five months of 2015. This star is a member of the semi-regular class of variable stars. These are pulsating stars with small magnitude variation and approximate period(s). W Cygni is a red giant and varies by around two to three magnitudes. It has three oscillating periods of 1000, 227 and 127 days although there is some disagreement among experts as to these values. My results do not show an obvious full cycle but there is some suggestion of the 227 day period. These results agree fairly well with the results shown on the AAVSO website; examination of this site will also show the large variation in magnitude estimation between different observers. Bright red variables are notorious for this phenomenon. The trend in variation, however, is easily seen.

Date	Magnitude
09/08/15	5.7
22/08/15	5.9
26/08/15	5.6
03/09/15	5.2
10/09/15	6.1
19/09/15	6.2
30/09/15	6.3
08/10/15	6.7
22/10/15	7.2
07/11/15	6.7
13/11/15	7.6
21/11/15	7.2
07/12/15	6.6
20/12/15	6.5
29/12/15	6.3



Total Solar Eclipse – 9th March 2016

The Sultan's Palace, Tidore, Maluku Islands, Indonesia

0° 39' 07" N 127° 26' 35"E

Paul Whiting FRAS

What a difference a year makes: Svalbard 2015, near the North Pole, at minus 24 Celsius to Tidore, on the equator, at plus 38 Celsius. This eclipse proved to be probably the best atmospheric eclipse I've seen with the interaction of the local community – but more of that later.

We set off from Heathrow Indonesia-bound at the end of February to allow some sight-seeing around Java before the eclipse. Never having been there before, I wondered what to expect. The first thing to hit you (apart from the heat and humidity) was the friendliness of the Javanese people. This was also the case on Bali where we ended up, and also on the small islands from where we actually saw the eclipse. Being an organised tour there were plenty of early starts and long days. We visited many (many) temples, which I must admit began to lose their appeal after a while. However the week of Java exploration soon came to an end and we all descended on the Sanur Beach Hotel in Bali. When all the individual groups had arrived we set off on our own chartered flight to the island of Ternate, which was to be our base for the eclipse. Ternate is one of the smaller Spice Islands in the Maluku group famous for Clove and Nutmeg trees. Western tourism is sparse in Ternate, with perhaps 100 visitors per year if that. Suddenly they had something like 4000 eclipse chasers descending on them. Our hotel was billed as the most luxurious on the island ... but actually wasn't that bad. The service left a bit to be desired but I think understandable given the vast numbers that suddenly descended upon them. Language difficulties were the main problem, for example I asked for something off the snack menu and got a plate of Cadbury's Smash look-a-like instead. It took me right back to my childhood!

For the eclipse we got up early (of course!) to catch a ferry to the neighbouring island of Tidore, where the Sultan had offered us the use of his front garden. The ferry was actually a roll-on roll-off so our buses went with us. In the ferry lounge we found the most unlucky gold fish in the world. It was all alone swimming around in a battered, broken fish tank with about 3 inches of green water in it. It did have an aerator in it though.

So we arrived in Tidore a slightly larger Spice Island that gets even fewer visitors. In all this part of Indonesia, those bits under the totality track, this was a big thing. Advertising hoardings everywhere saying things like "Welcome Foreigners"; a bank holiday had been declared and all the school children were made to go up to we foreigners and practice their English. Our coach procession proceeded to the Palace. I should just add a word here about the coaches. They had obviously scratched around for anything that held 20 or so people. A few were modern luxury coaches (with air conditioning), but most were police buses normally used to ferry the local Bill around the island. This proved handy when driving through crowded areas - the blues and twos did help our progress through the traffic. There were a lot of cars in Indonesia, but each inhabitant seemed to own at least one motor cycle, quite often carrying a family of five. Only adults seemed to wear helmets, children bounce obviously!

At the Sultan of Tidore's Palace we were greeted by the man himself. Over the course of the day he did do us right royally proud. Nibbles and drinks on hand throughout and plenty of seats and cover from the mid-30s heat. After the eclipse we had some dancing by the local children followed by speeches and then a splendid buffet – again laid on by the Sultan. With some time before the return ferry, we then had a tour of the island and ended up at a beach party where we were given a coconut to drink – superb!

So to the eclipse itself: a member of Saros 130, repeating the eclipse of 1998 that we saw in Antigua. Given that was my first eclipse I have now completed my first Saros repeat. A Saros is the time between successive eclipses formed when the Sun-Moon-Earth system returns to nearly the same geometry every 18 years 11 days 8 hours roughly.

We were worried about cloud. The forecast was so-so at best and expectations were not high. There was plenty of cloud about but at the critical time of totality the area around the Sun cleared (apart from some occasional thin high level cloud, which usually adds to photographs). I was taking my usual shade temperature readings from before first contact to after fourth contact [figure 3]. I took a risk that my batteries wouldn't freeze this time! After the battery failure in Svalbard last year, this year I was delighted with my first attempt at software driven photography during totality, freeing me up to watch the eclipse. Initial results can be found below [figures 1 and 2].

The corona showed the standard close-in configuration with some exciting streamers appropriate for a just post solar maximum eclipse. The corona tends to become more extended and stretched later in the solar cycle. The photograph below shows some strong magnetic activity off to the right hand side. For the second eclipse running there was a huge pink flare visible to the naked eye [figure 1].

I didn't see any shadow bands this time, but others did see them albeit very briefly just around 2nd contact. Venus and Mercury were clearly visible during totality.



Figure 1: 300mm lens f/5.6 ISO200 1/1000 sec



Figure 2: 300mm lens f/5.6 ISO200 1/8 sec

Being in the tropics the wildlife was particularly exotic, particularly the insects: butterflies the size of birds and hundreds of large dancing dragonflies. From our vantage point in the Bamboo Beach Bar in Bali we looked out over the white sandy beach to the Indian Ocean. Just in front of the beach there was an animal highway of exotic birds and flying squirrels (more accurately leaping squirrels jumping from tree to tree). By night the aviation display was taken over by pipistrelles and long-eared bats lured by the myriad flying insects. Geckos also made an appearance at night along with sand crabs and a Balinese frog. In fact in one of our Javanese hotels I was lucky enough to share a room with my own pet gecko – I wasn't troubled by mosquitos at all there. So another successful eclipse despite the weather odds being against us. Roll on the US eclipse in 2017.

2016 March 09 Eclipse Shade Temperature

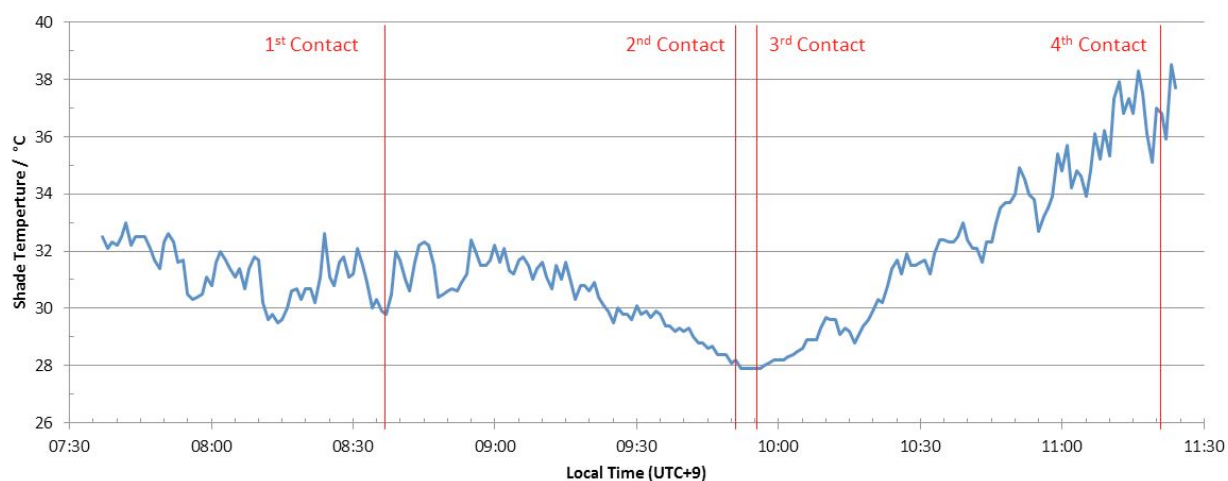


Figure 3: Shade temperature measured during eclipse



Figure 4: The line of police coaches

Jupiter

Here is my take of Jupiter earlier this week. I find Jupiter quite a difficult subject, it is bright and large so I always feel I should get a much sharper image than I ever achieve.

SCT 235 mm f/10; Canon 60 Da (movie crop mode); 150 frames stacked in Lynkeos.

Time 22:00 16/2/16

I haven't fiddled with this much and the GRS seemed redder than I remembered from last year-must check my photos.

Mike O'Mahoney



Jupiter 19 February, morning. Jupiter shows Europa with its shadow transiting with Io further out.

The original videos were taken at 05:08 & 05:15am. The left hand blob is the shadow of Europa. What looks like another one next to it is part of the lower cloud belt. Io is the spot further out to the left and it transited after it had got light.

NB Although Io orbits closest to the planet, this is an optical illusion resulting from the relative positions of the moons.

Skywatcher 200PDS and Altair GPCAM + 4x powermate.

David Murton



NGC2237 - The Rosette Nebula

David Murton



NGC 2237 – the Rosette Nebula taken before the clouds came in (1 Feb) therefore only 4 frames.

Skywatcher 200PDS and Canon 60Da camera. 4x360 seconds at ISO 400.

OASI Beginner's Astrophotography Workshop

Date: A Newbourne OASI meeting night in the spring, actual date to be decided depending upon clear nights! Please let me have an email address to contact when a date is set. Oasi_chairman@outlook.com

Venue: Newbourne village Hall

Equipment required: A camera, lens and method of support (normal fixed tripod, bean bag, rolled up coat, etc).

Format: A short talk on the basics, then a practical session outside with guidance from myself and Mike O'Mahony.

Who is it aimed at: Anyone who thinks that photographing the night sky is difficult or requires specialist equipment.

Following on from this workshop I will be holding a competition for the best night sky image taken between the workshop and 1st October. The competition will be judged by myself and two other judges.

It will be open to any OASI member using just a camera and lens on a fixed mount. No tracking mounts! (We will be able to check using the data embedded in the picture!)

First prize will be the opportunity to use the equipment in my observatory for a night next winter to take your own photos.

