



OASI News

The newsletter of the Orwell Astronomical Society



The whole of the Veil Nebula 12 October from Haw Wood.
William Optics 71ED scope on HEQ5 mount. Canon 60Da camera. 15x480 second exposures at iso 800.

Photo: David Murton

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

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Society Contact details

Observatory (meeting nights only)
07967 519249

Email queries: info@oasi.org.uk

Yahoo group: <https://groups.yahoo.com/neo/groups/oasi/info>

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

Twitter: @OASlpswich

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

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."*?

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 2017

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, Twitter
	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, Facebook
Co-opted	Andy Willshire	Librarian

Society Notices

Welcome new members

Basim Majeed Michael Florey Peter Butler

Committee Meeting

The next committee meeting will be on **Tuesday 21 November 2017**, Black Horse Public House, starting 8.15pm. Car park accessed off Elm St is free after 8pm.

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.

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.

The AGM

Details will be notified by the Secretary.

Please keep an eye on the web site for further information.

OASI and BAA Events

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

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



For other astronomy news and astro pictures try our

Twitter feed <https://twitter.com/OASIpSwich>

Facebook page <https://www.facebook.com/pages/Orwell-Astronomical/158256464287623>

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

Date and Time	Location	Contact	Event
Weekly, every Wednesday, 20:15–22:00	Orwell Park Observatory	Martin Cook, Roy Gooding	General observation (weather permitting) using a variety of telescopes. Entry via the third gate left. NOT the main gate
Wednesday 25 Oct	Burlington House, Piccadilly	https://britastro.org/meetings	Annual General Meeting and Ordinary Meeting
Wednesday 25 Oct	Location TBD	James Appleton info@oasi.org.uk	Field trip to observe the graze of V4190 Sgr. More info.
Saturday 28 Oct	Birmingham & Midland Institute	https://societyforthehistoryofastronomy.com	SHA AGM & Autumn Conference
Monday 13 Nov 20:00	Orwell Park School observatory	Paul Whiting treasurer@oasi.org.uk	Public access event. Observatory tour. Booking essential.
Monday 13 Nov 19:00	Newbourne Village Hall	Avtar Nagra nog@oasi.org.uk	Newbourne Observing Group
Friday 17 Nov 19:55	Museum Street Methodist Halls,	Pete Richards lectures@oasi.org.uk	Steve Hubbard and Malcolm Brown will be "Talk with ET? We think not."
Tuesday 21 Nov 20:15	The Black Horse, 29 Black Horse Lane, Ipswich, IP1 2EF.	Roy Gooding secretary@oasi.org.uk	Committee meeting
Saturday 25 Nov	Birmingham and Midland Institute, Birmingham B3 3BS	https://britastro.org/meetings	Historical Section Meeting 2017
Monday 27 Nov 19:00	Newbourne Village Hall	Avtar Nagra nog@oasi.org.uk	Newbourne Observing Group + Sky Notes + Workshop

Date and Time	Location	Contact	Event
Saturday 09 Dec 05:30	Location TBD	James Appleton info@oasi.org.uk	Field trip to observe the graze of ZC1522. More info.
Saturday 09 Dec 13:45 for 14:30	King's College London , The Strand, London, WC2R 2LS	https:// britastro.org/ node/8000	BAA Ordinary Meeting and Christmas Lecture
Monday 11 Dec 20:00	Orwell Park School observatory	Paul Whiting treasurer@oasi.org.uk	Public access event. Observatory tour. Booking essential.
Monday 11 Dec 19:00	Newbourne Village Hall	Avtar Nagra nog@oasi.org.uk	Newbourne Observing Group +Sky Notes
Wednesday 13 Dec 20:00	Newbourne Fox	Roy Gooding secretary@oasi.org.uk	Christmas Meal <i>See page 16</i>
2018			
Tuesday 9 January 20:00	Orwell Park School observatory	Paul Whiting treasurer@oasi.org.uk	Public access event. Observatory tour. Booking essential.
Monday 15 Jan 19:00	Newbourne Village Hall	Avtar Nagra nog@oasi.org.uk	Newbourne Observing Group + Skynotes
Saturday 20 January	Burlington House, Piccadilly	https:// britastro.org/ meetings	BAA Ordinary Meeting
Monday 29 Jan 19:00	Newbourne Village Hall	Avtar Nagra nog@oasi.org.uk	Newbourne Observing Group
Monday 12 Feb	Newbourne Village Hall	Avtar Nagra nog@oasi.org.uk	Newbourne Observing Group. + Sky Notes, followed by observing (weather permitting). Informal talks if weather unsuitable.
Tuesday 13 Feb 20:00	Orwell Park School observatory	Paul Whiting treasurer@oasi.org.uk	Public access event. Observatory tour. Booking essential.
Monday 26 Feb	Newbourne Village Hall	Avtar Nagra nog@oasi.org.uk	Newbourne Observing Group.
Tuesday 13 March	Orwell Park School observatory	Paul Whiting treasurer@oasi.org.uk	Public access event. Observatory tour. Booking essential.

Newbourne Observing Group

Avtar Nagra nog@oasi.org.uk

We normally meet at Newbourne Village Hall, Mill Lane, IP12 4NP on the 2nd and 4th Mondays (with a few exceptions, like December and January).

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. We would like visitors to join OASI to enjoy the full benefits of membership.

The car park at Newbourne Village Hall has recently been much enlarged. OASI donated £100 towards this much-needed improvement.

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. 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.

NOG Meetings in 2017-18

13th Nov 27th Nov (S*) 11th Dec

* 27 November (seven weeks to cover Xmas/New Year)

2018

15th Jan (S)	29th Jan	12th Feb (S)	26th Feb
12th March (S)	26th March	9th April (S)	23th April
14th May	28th May	11th June	25th June
9th July	23th July	13th Aug	27th Aug
10th Sept	24th Sept		

We open up for all meetings at 7pm. Star Guide (S) and 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!

Given a clear night, we can make use of the field for a workshop or continue afterwards with some observing.

27 November: American Eclipse report-back

After Bill Barton's Sky Notes slot at 8pm, we will have a session for anyone who made it to the 'American' Eclipse in August to share their photos, video and memories of the event with the rest of us. **Paul Whiting** has volunteered to start this off but this is an open invitation to anyone else to chip in as well. You can either let Paul or myself know in advance so we can co-ordinate running order etc. or just turn up on the night armed with a USB stick.

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

Lecture Meetings

Contact: Peter Richards lectures@oasi.org.uk

These take place in [Museum Street Methodist Halls](#), Upstairs room, Black Horse Lane, Ipswich

Free car parking at venue is 1st-come-first-served so arrive early and allow enough time to go to an alternative car park.

Please arrive on time because the hall is likely to be locked before the lecture commences (at the request of the venue care taker).

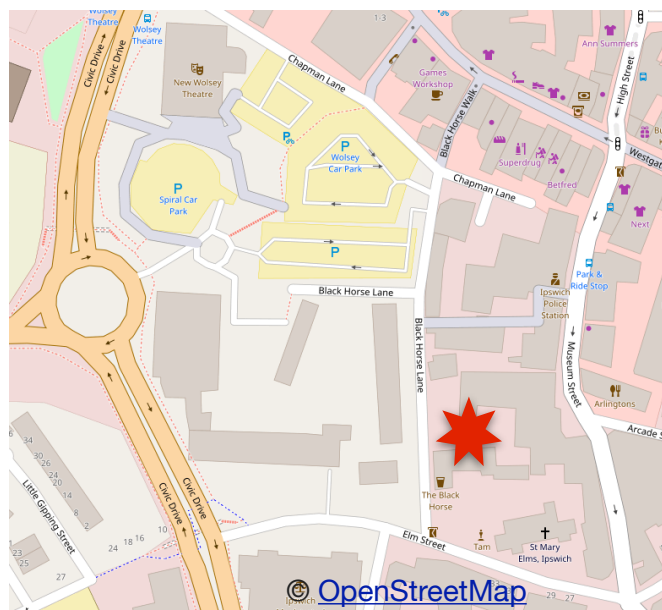
17 November NB 19:55 start

Steve Hubbard and Malcolm Brown "Talk with ET? We think not."

Parking

Please arrive early to ensure entry to the lecture venue. At the request of the venue's management we will lock the main entrance door before the start of the talk. The lock is a front door latch-type so it will be easy to leave the building (in an emergency for example) but you will not be able to get in.

There is fairly ample car parking at the venue and you can park in any of the marked bays except for the row with numbers painted on the ground, outside the house on the North end of the car park (the left hand side as you look form the road). Just in case you can't find a suitable parking space you can find alternative car parks at the end of Black Horse Lane and in Elm Street. These alternative car parks charge: at the time of writing; the Elm Street car park is cheaper. In both cases remember to select the night rate option at the ticket machine.



DASH Astro Events – 2017

See <http://dash-astro.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



Date Event

October

28 International Observe the Moon Night - Westleton Village Hall, Moon set 00:17 (29th) 68%

November

11 Meeting - Paul Webb - Beginners Equipment - with Q&A "Ask the Panel"

18 Dash Observing / Workshop Session - Westleton Common / Westleton Village Hall

The Yearbook of Astronomy 2018

This will be published on 30 November 2017 and is available at a discounted price (with free delivery within the UK) to Astronomical Societies who wish to order 4 or more copies.

For further details contact Tara Moran, Marketing Executive at Pen and Sword Books
psmarketing@pen-and-sword.co.uk

Individual copies of the 2018 edition can be pre-ordered by following this link:

www.amazon.co.uk/Yearbook-Astronomy-2018-Brian-Jones/dp/1526717417

The Night Sky in November

Martin RH

All event times given are for the location of Orwell Park Observatory
 52.0096°N, 1.2305°E

NB GMT returned on Sunday 29 October

Times are UK clock time (GMT) on the given date



Moon

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

New Moon	1 st Quarter	Full Moon	Last Quarter
18 Nov 11:42	27 Oct 23:22 26 Nov 17:03	04 Nov 05:23	10 Nov 20:36

Sun, Moon and planets

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

Object	Date	Rise	Set	Mag.	Notes
Sun	1	06:50	16:26		
	30	07:40	15:48		
Moon	1	15:42	02:50		Perigee 361,438 km 06 Nov 00:11
	30	14:32	02:54		
Mercury	1	08:24	16:42	-0.4	Maximum eastern elongation 24 Nov
	30	09:39	16:41	0	
Venus	1	05:13	15:58	-3.8	
	30	06:48	15:18	-3.8	
Mars	1	03:41	15:28	1.8	
	30	03:32	14:04	1.7	
Jupiter	1	06:26	16:17	-1.5	
	30	05:07	14:36	-1.6	
Saturn	1	10:54	18:39	0.5	
	30	09:14	16:57	0.5	
Uranus	1	15:58	05:38	5.7	
	30	14:02	03:38	5.7	
Neptune	1	14:46	01:23	7.9	
	30	12:51	23:25	7.9	

Asteroids

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

Asteroid	Brightness	Altitude	Constellation
4 Vesta	7.8	40.7°	Virgo
1 Ceres	8.8	28.8°	Cancer

Paul's Astronomy Podcast for November

Paul Whiting FRAS Podcast, November 2017 www.oasi.org.uk/Podcasts/201711_pod.mp3

December's podcast will be available via the website.

Bill's Radio Broadcast

ICRFM (Ipswich Community Radio) 105.7 MHz at about 08:25 in the morning of the first Wednesday of each month. What there is to see in the sky and then a little bit on something topical. ICRFM is also available to listen to over the Internet www.icrfm.com

David's Radio Broadcast

On the 1st Tuesday of the month, 1.40pm on the Lesley Dolphin show on BBC Radio Suffolk.

Meteor Showers during November

Source: BAA Handbook 2017 p97-99

Shower	Limits	Maximum	ZHR at Max	Notes
Taurids	Oct 20 – Nov 30	Nov 5, Nov 12	10	Slow meteors. Double radiant. Broad peak $\lambda_{\odot} = 220^{\circ} - 230^{\circ}$. Sometimes more fireballs as in 2015.
Leonids	Nov 15–20	Nov 17 ^d 19 ^h	20?	Very fast meteors, many with persistent trains. Enhanced activity unlikely until the late 2020s, but observations still important. Very favourable

Occultations during November 2017

James Appleton

The table lists occultations during the month under favourable circumstances. The event should be readily visible in small telescopes or binoculars. The first two columns list the date and time (UT) of the occultation. Column three gives the phenomenon: 'D' denotes a disappearance and 'R' a reappearance. The table lists circumstances of disappearances and reappearances as dictated by the visibility of each phenomenon (determined by altitude, lunar phase, etc). Column four details the lunar phase ('+' for waxing and '-' for waning). Columns five and six give the altitude of the Sun and the star, both in degrees. (A negative solar altitude means that the Sun is below the horizon.) Columns seven and eight provide the star's magnitude and catalogue number. The data relates to Orwell Park Observatory, but will be similar at nearby locations.

Please note that times are shown in UTC.

Date	Time (UT)	D/ R	Lunar Phase	Sun Alt (d)	Star Alt (d)	Mag	Star
05 Nov 2017	19:47:58	R	0.96-	-32	17	3.7	54 Tau, Γ Tau, Hyadum I
06 Nov 2017	02:39:47	D	0.95-	-39	52	0.9	87 Tau, α Tau, Aldebaran
	03:26:39	R		-33	48		
08 Nov 2017	23:58:18	D	0.70-	-55	30	6.8	ZC 1151
	00:11:57	R		-54	32		
09 Nov 2017	03:48:41	D	0.69-	-30	56	4.9	81 Gem, γ Gem
	05:02:57	R		-19	56		
25 Nov 2017	19:01:50	D	0.41+	-28	20	7.2	Hip 107088
25 Nov 2017	20:13:38	D	0.41+	-39	13	6.0	45 Cap
28 Nov 2017	19:12:11	D	0.71+	-30	35	6.7	ZC 20
28 Nov 2017	20:14:45	D	0.71+	-40	34	7.4	Hip 1033
28 Nov 2017	21:31:55	D	0.71+	-50	30	6.6	Hip 1192
29 Nov 2017	00:24:03	D	0.72+	-58	10	7.0	Hip 1587
29 Nov 2017	19:48:07	D	0.80+	-36	39	6.1	26 Cet
29 Nov 2017	22:33:47	D	0.81+	-57	34	6.4	29 Cet
30 Nov 2017	00:25:09	D	0.82+	-59	21	6.0	33 Cet
30 Nov 2017	01:04:35	D	0.82+	-56	15	6.6	35 Cet

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

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

Times are UTCT. Predictions are approximate (data taken on 17 October) due to craft adjustments. Check the day before.

Date	Mag	Start			Highest point			End		
		Time	Alt.	Az.	Time	Alt.	Az.	Time	Alt.	Az.
02 Nov	-2.3	05:28:37	10°	SW	05:31:34	33°	SSE	05:34:34	10°	E
03 Nov	-1.8	04:38:29	20°	S	04:39:15	22°	SSE	04:41:53	10°	E
03 Nov	-3.5	06:12:07	10°	WSW	06:15:22	67°	SSE	06:18:36	10°	E
04 Nov	-3.2	05:21:04	22°	SW	05:22:55	51°	SSE	05:26:06	10°	E
05 Nov	-2.5	04:30:53	35°	SE	04:30:53	35°	SE	04:33:31	10°	E
05 Nov	-3.8	06:03:32	10°	W	06:06:46	83°	S	06:10:02	10°	E
06 Nov	-3.8	05:13:15	40°	WSW	05:14:15	72°	SSE	05:17:30	10°	E
07 Nov	-2.1	04:22:55	33°	E	04:22:55	33°	E	04:24:58	10°	E
07 Nov	-3.8	05:55:33	15°	W	05:58:10	86°	S	06:01:25	10°	E
08 Nov	-4	05:05:10	65°	WSW	05:05:36	85°	S	05:08:52	10°	E
09 Nov	-1.5	04:14:45	25°	E	04:14:45	25°	E	04:16:17	10°	E
09 Nov	-3.8	05:47:24	21°	W	05:49:27	76°	SSW	05:52:43	10°	ESE
10 Nov	-3.9	04:56:57	83°	SE	04:56:57	83°	SE	05:00:10	10°	E
11 Nov	-1	04:06:31	19°	E	04:06:31	19°	E	04:07:34	10°	E
11 Nov	-3.6	05:39:09	27°	W	05:40:42	57°	SSW	05:43:54	10°	ESE
12 Nov	-3.2	04:48:43	54°	SE	04:48:43	54°	SE	04:51:22	10°	ESE
12 Nov	-2.3	06:21:30	10°	W	06:24:17	26°	SSW	06:27:03	10°	SSE
13 Nov	-3	05:30:56	30°	WSW	05:31:48	37°	SSW	05:34:51	10°	SE
14 Nov	-2.2	04:40:32	30°	SE	04:40:32	30°	SE	04:42:26	10°	ESE
14 Nov	-1.7	06:13:12	10°	WSW	06:15:12	15°	SW	06:17:12	10°	S
15 Nov	-2.3	05:22:49	23°	SSW	05:22:49	23°	SSW	05:25:25	10°	SSE
16 Nov	-1.2	04:32:31	15°	SSE	04:32:31	15°	SSE	04:33:15	10°	SE

Date	Mag	Start			Highest point			End		
		Time	Alt.	Az.	Time	Alt.	Az.	Time	Alt.	Az.
29 Nov	-1.9	17:46:33	10°	S	17:48:36	18°	SSE	17:48:36	18°	SSE
30 Nov	-1.8	18:28:59	10°	SW	18:30:37	25°	SW	18:30:37	25°	SW

NB: Passes in December are too far ahead to predict. Please refer to the heavens-above web site.

Iridium flares

Too many to list but see <http://heavens-above.com/IridiumFlares.aspx>

Iridium Satellites Keep the Fireworks Coming ... but Not Forever – Astro Bob

The Night Sky in December

Martin RH

All event times given are for the location of Orwell Park Observatory
52.0096°N, 1.2305°E

Times are UK clock time (GMT)

Moon

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

New Moon

1st Quarter

Full Moon

Last Quarter

18 Dec 06:30

26 Dec 09:20

03 Dec 15:47

10 Dec 07:51



Sun, Moon and planets

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

Object	Date	Rise	Set	Mag.	Notes
Sun	1	07:41	15:47		Winter solstice Dec 21, 16:28 Sunrise 08:01 Sunset 15:45
	31	08:03	15:53		
Moon	1	15:00	04:13		
	31	14:46	05:41		
Mercury	1	09:35	16:40	0.1	Perihelion 12 Dec
	31	06:16	14:24	-0.2	
Venus	1	06:51	15:17	-3.8	
	31	08:04	15:32	-3.8	
Mars	1	03:31	14:01	1.7	
	31	03:21	12:40	1.5	
Jupiter	1	05:04	14:33	-1.6	
	31	03:38	12:47	-1.7	
Saturn	1	09:11	16:54	0.5	
	31	07:28	15:11	0.5	
Uranus	1	13:58	03:34	5.7	
	31	11:59	01:34	5.8	
Neptune	1	12:48	23:21	7.9	
	31	10:50	21:25	7.9	

Asteroids

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

Asteroid	Brightness	Altitude	Constellation
4 Vesta	7.9	35.2°	Virgo
1 Ceres	8.7	42.9°	Cancer

Occultations during December 2017

James Appleton

The table lists occultations during the month under favourable circumstances. The event should be readily visible in small telescopes or binoculars. The first two columns list the date and time (UT) of the occultation. Column three gives the phenomenon: 'D' denotes a disappearance and 'R' a reappearance. The table lists circumstances of disappearances and reappearances as dictated by the visibility of each phenomenon (determined by altitude, lunar phase, etc). Column four details the lunar phase ('+' for waxing and '-' for waning). Columns five and six give the altitude of the Sun and the star, both in degrees. (A negative solar altitude means that the Sun is below the horizon.) Columns seven and eight provide the star's magnitude and catalogue number. The data relates to Orwell Park Observatory, but will be similar at nearby locations.

Please note that times are shown in UTC.

Date	Time (UT)	D/R	Lunar Phase	Sun Alt (d)	Star Alt (d)	Mag	Star
01 Dec 2017	00:39:19	D	0.90+	-58	30	6.8	ZC 306
02 Dec 2017	04:16:29	D	0.96+	-31	10	6.0	ZC 462
03 Dec 2017	03:04:44	D	0.99+	-42	32	6.0	ZC 608
23 Dec 2017	18:48:58	D	0.24+	-27	16	5.3	42 Aqr
27 Dec 2017	17:46:21	D	0.64+	-17	39	7.4	Hip 7156
28 Dec 2017	19:24:21	D	0.75+	-31	46	4.3	73 Cet, ξ ² Cet
28 Dec 2017	22:59:26	D	0.76+	-59	34	7.5	Tyc 639-0227-1
29 Dec 2017	17:19:22	D	0.84+	-13	33	7.3	Hip 15565
29 Dec 2017	19:10:00	D	0.84+	-29	46	6.0	ZC 491
29 Dec 2017	19:47:10	D	0.84+	-35	49	7.4	Hip 15928
29 Dec 2017	20:55:17	D	0.85+	-45	51	6.3	ZC 498
29 Dec 2017	23:02:57	D	0.85+	-59	43	4.1	5 Tau, f Tau
30 Dec 2017	03:09:13	D	0.87+	-44	10	6.7	ZC 526
30 Dec 2017	17:06:59	D	0.92+	-11	26	3.7	54 Tau, Γ Tau, Hyadum I
	18:03:08	R		-19	34		
30 Dec 2017	21:22:04	D	0.92+	-49	54	5.0	75 Tau
30 Dec 2017	22:46:02	D	0.93+	-58	52	4.8	ZC 677
31 Dec 2017	01:13:29	D	0.93+	-58	37	0.9	87 Tau, α Tau, Aldebaran
	02:00:31	R		-53	30		
31 Dec 2017	21:27:24	D	0.98+	-49	53	4.3	119 Tau, CE Tau
31 Dec 2017	22:08:20	D	0.98+	-54	56	5.7	120 Tau, V960 Tau

On 09 December at 06:27 there is a southern limit graze of the magnitude 6.8 star ZC1522. Details are on the OASI website: http://www.oasi.org.uk/Occs/Occ_summary_2017.php. An observing trip will be organised if weather conditions are favourable: details will be provided via the OASI email list.

Meteor Showers during December

Source: BAA Handbook 2017 p97-99

Shower	Limits	Maximum	ZHR at Max	Notes
Puppids-Velids	Nov 27 – Jan	Dec 9 Dec 26	15	Two of several radiants in Puppids, Vela and Carina from November to January
Geminids	Dec 8–17	Dec 14 ^d 02 ^h	100+	Richest of the annual showere, with slow meteors and a good proportion of bright events. Very Favourable.
Ursids	Dec 17–25	23.5	10?	Under-observed shower which has produced outbursts in 1945, 1982, 1986 and 2014. Favourable.

BAA News

BAA Diary Dates

25 October	17:30–20:00	Annual General Meeting and Ordinary Meeting in Burlington House, Piccadilly. The season starts again. Put this one in your diary for later.
25 November		Historical Section Meeting 2017 Birmingham and Midland Institute, Margaret St, Birmingham B3 3BS
09 December	14:30–1800	Ordinary Meeting and BAA Christmas Lecture BAA MEMBERS & MEMBERS OF BAA AFFILIATED SOCIETIES and under 16's BOOKED BEFORE 20TH NOVEMBER – FREE NON-MEMBERS and anyone booking thereafter £5.00
20 January	14:30–1800	Ordinary Meeting. William Stewart: Meteors – 'Advances in observation & analysis. Robin Leadbeater: 'Using low resolution spectroscopy to confirm supernova discoveries'. Sky Notes: Dr David Arditti
10 March	10:00–17:30	Back to Basics Workshop – Bristol
28 March	17:30–20:00	Ordinary Meeting & Special General Meeting Dr Richard McKim: 'Long term studies of Venus' Mike Foulkes: 'Amateur observations of Neptune' Sky Notes: Dr David Arditti
6–8 April		BAA Winchester Weekend, Sparsholt College, Winchester, SO21 2NF

For full details of all meetings please click -<https://britastro.org/meetings>

Snippets from the Royal Astronomical Society

Supernova simulations reveal mysteries of dying stars

An international team of astronomers have created the longest consistent 3D model of a neutrino-driven supernova explosion to date, helping scientists to better understand the violent deaths of massive stars. The research, conducted using supercomputers in Australia, Germany, and the [DiRAC](#) facility in the UK, is published in the journal [Monthly Notices of the Royal Astronomical Society](#).

New supernova analysis reframes dark energy debate

The accelerating expansion of the Universe may not be real, but could just be an apparent effect, according to new research published in the journal [Monthly Notices of the Royal Astronomical Society](#). The new study—by a group at the [University of Canterbury](#) in Christchurch, New Zealand—finds the fit of [Type Ia supernovae](#) to a model universe with no dark energy to be very slightly better than the fit to the standard dark energy model.

[Dark energy](#) is usually assumed to form roughly 70% of the present material content of the Universe. However, this mysterious quantity is essentially a place-holder for unknown physics.

Snippets from the Interweb

NASA's Missions Suggest New Picture of Sun's Interaction with Galaxy

New data from NASA's Cassini mission, combined with measurements from the two Voyager spacecraft and NASA's Interstellar Boundary Explorer, or IBEX, suggests that our sun and planets are surrounded by a giant, rounded system of magnetic field from the sun — calling into question the alternate view of the solar magnetic fields trailing behind the sun in the shape of a long comet tail.

Largest lunar image

www.jb.man.ac.uk/astronomy/nightsky/

To mark International Year of Astronomy, a team of British astronomers have made the largest lunar image in history and gained a place in the Guinness Book of Records! The whole image comprises 87.4 megapixels with a Moon diameter of 9550 pixels. This allows details as small as 1km across to be discerned! The superb quality of the image is shown by the detail below of Plato and the Alpine Valley. Craterlets are seen on the floor of Plato and the rille along the centre of the Alpine valley is clearly visible. The image quality is staggering! The team of **Damian Peach, Pete Lawrence, Dave Tyler, Bruce Kingsley, Nick Smith, Nick Howes, Trevor Little, David Mason, Mark and Lee Irvine with technical support from Ninian Boyle** captured the video sequences from which 288 individual mosaic panes were produced. These were then stitched together to form the lunar image.

Please follow the link to the [Lunar World Record](#) website and it would be really great if you could donate to Sir Patrick Moore's chosen charity to either download a full resolution image or purchase a print.

Christmas is coming – Track Santa

NORAD's web site <http://www.noradsanta.org> was not up at the time of writing but here's Google's alternative

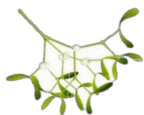
<https://santatracker.google.com/village.html>

OASI Christmas Meal 2017

Date: 13th December
Cost £22.95 Deposit £5.00

Venue: Newbourne Fox Inn
Deposits and menu choices to Roy ASAP please.

Time: 20:00



The Fox Inn

Christmas Menu 2017

To Start

Tuscan Winter Vegetable Soup**
topped with shaved parmesan and served with focaccia bread

Ham Hock Terrine**
with a soft boiled egg, celeriac chips and a Stoke's mustard mayonnaise

Smoked Haddock Fish Cake **
with a baby leaf salad and served with Tartare sauce

Deep Fried Brie
with a roasted pear, cranberry and walnut salad

Smoked Chicken and Mango Salad **
with roasted cashews and a lime and coriander dressing

The Main Event

Roast Norfolk Turkey **
with fresh cranberry and sage stuffing, pigs in blankets, roast potatoes, a Yorkshire pudding, seasonal vegetables and a rich gravy

Shepherd's Pie**
Pulled lamb shoulder, topped with cheddar mash and served with seasonal vegetables

Roast Sirloin of Black Angus**
freshly carved and served with roast potatoes, a wild mushroom, shallot & pancetta sauce and seasonal vegetables

Salmon Fillet **
topped with king prawns and served with rice, stir fry vegetables and a Thai green curry sauce

Pappardelle Pasta
with butternut squash, sage and topped with parmesan

Something Sweet

Christmas Pudding**
From the Ultimate Plum Pudding Company, served with a brandy sauce

Chocolate Tart
served with Mandarin ice cream

Sticky Toffee Pudding
with vanilla bean ice cream

Honey Jack Daniels Panna Cotta **
Served with honeycomb pieces

A Trio of English Cheeses **
with oatcakes and chutney

2 Courses £17.95

3 Courses £22.95

£5 deposit per person to secure your booking

** Gluten free or Gluten free alternative available

Another delve into the annals of the OASI library.

"The First Detection of Blue Straggler Stars in the Milky Way Bulge."

Andy Willshere.

Blue Straggler Stars are considered as aged hydrogen-burning stars, whose temperature and luminescence have increased by accretion and can now be found in a section of the colour magnitude diagram, (CMD: The **galaxy colour–magnitude diagram** shows the relationship between absolute **magnitude** (a measure of luminosity) and **mass** of galaxies.) which is usually where much younger stars are found. They are stars that remain on the main sequence longer than anticipated. The colour of a star denotes the magnitude of its temperature and mass, with blue stars being larger and hotter than red ones. The larger a star is, the faster the hydrogen is used up and therefore blue stars spend less time on the main sequence than the red ones.

The CMD of a globular cluster for example should show that all of the stars bluer than a specific value will have dropped off the main sequence. This is known as the 'turnoff point', and can be used to calculate the age of the cluster. Blue stragglers are seen in a cluster along the main sequence past this turnoff point and an explanation for them may be the result of stellar collisions, or mass transference from one star to another. This may demonstrate how a cooler red star idling on the main sequence could acquire extra mass and turn bluer making astronomers think that they are younger than they really are. It has been estimated that at least 50% of the stars in globular clusters' central regions may have experienced at least one collision over the last 13 billion years.

Stellar collisions therefore appear to be the main channel for the development and configuration of Blue Straggler stars first discovered by Sadage (1953), and now considered of great use for diagnostic assessment of the effects of energetic correlations inside star clusters.

They have been found in almost every stellar system except within the milky way bulge, although suspected. This was mainly due to pollution from disk stars that are found in the same CMD area. If detected these blue stragglers would be of significance for galactic structure formation. Now, Clarkson (Indiana University and UCLA) who led this latest study, suggests that this has now been amended. During 2006 he led a team using the SWEEPS (Sagittarius Window Eclipsing Extrasolar Planet Search) program over a period of seven days. 1.8×10^5 stars were investigated in the central bulge of our galaxy. This area is approximately 2.6×10^4 light years away. They were looking specifically for hot Jupiter class planets orbiting close to their parent stars, but also found a total of 42 strange blue stars with the brightness and temperature of much younger bulge stars. Using SWEEPS they could discriminate the motion of stars in the specific research area, with bulge stars orbiting around the galactic centre at different speeds to the foreground ones.



The Hubble Telescope captures blue straggler stars in the Milky Way bulge

Credit: NASA, ESA, W. Clarkson (Indiana University and UCLA), and K. Sahu (STScI)

It is considered that most stars in the bulge of the Milky Way formed ~10Gy ago. (Freeman 2008), and the level that this star formation spreads over time has been only weakly controlled. (Kuijken & Rich 2002). Evaluations of development of the young stellar population of the bulge and its size are therefore a bonus of the constraints on the Blue Straggler star subdivision. The distribution of galactic bulge stars either exists in an area that is either spheroidal or bar shaped and unlike the disc is not exponential.

Clarkson suggests from his research that these anomalies exist and that they have much to divulge to astronomers about the development and configuration of stars and in particular the Galactic bulge.

References:

<https://www.google.co.uk/search?q=freeman+2008+formation+of+galaxy&client=firefox-b&dcr=0&tbn=isch&tbo=u&source=univ&sa=X&ved=0ahUKEwje0aGsktzWAhUEbVAKHepKBn0QsAQIJQ&biw=1366&bih=635>

The First Detection of Blue Straggler Stars in the Milky Way Bulge William I. Clarkson (1 and 2), Kailash C. Sahu (3), Jay Anderson (3), R. Michael Rich (2), T. Ed Smith (3), Thomas M. Brown (3), Howard E. Bond (3), Mario Livio (3), Dante Minniti (4 and 5), Alvio Renzini (6), Manuela Zoccali (4) ((1) Indiana University, Bloomington, (2) UCLA, (3) STScl, (4) Pontifica Universidad Catolica de Chile, (5) Vatican Observatory, (6) INAF - Osservatorio di Padova)

<http://www.skyandtelescope.com/astronomy-news/oddball-stars-in-the-milky-ways-heart/>

Venus over Haw Wood

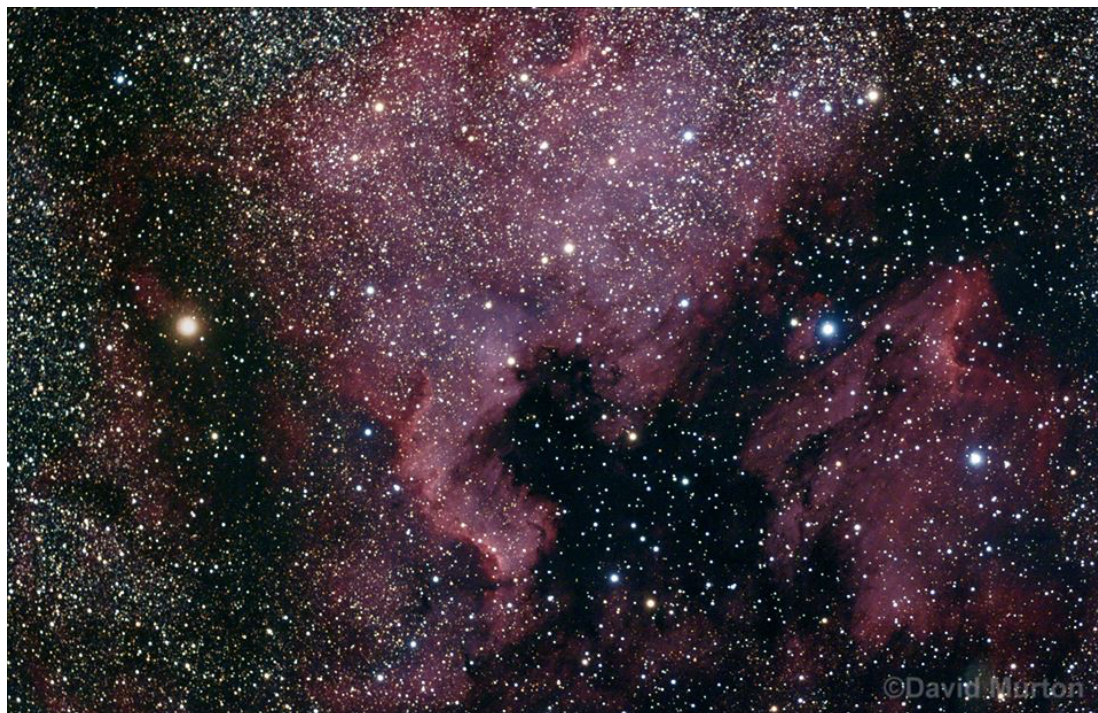
photo by David Murton



Astrophotographs:

by David Murton

Great night at Haw Wood again last night (14 Oct). 7 hours of imaging!



**First NGC 7000 the North America nebula and IC 5070 the Pelican nebula .
This has 21x480 second frames at iso 800.**



**Then M31 the Andromeda galaxy with M110 and M32 nearby.
This time just 10x480 second exposures at iso 800..**

Both taken with a Canon 60Da telescope on a William Optics 71ED scope with 0.8 focal reducer.
Mounted on a skywatcher HEQ5 mount.