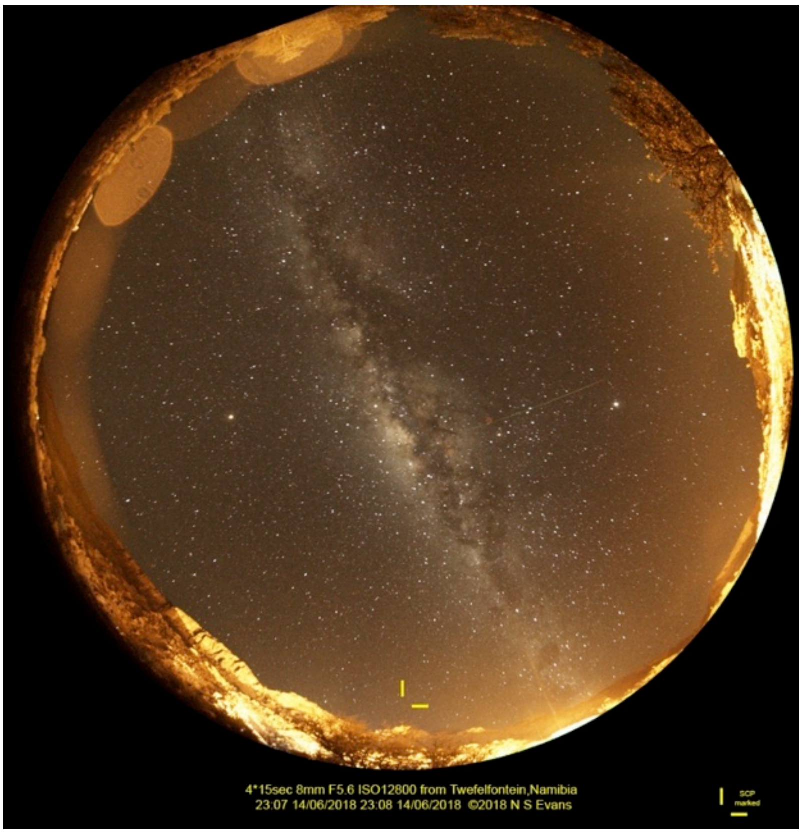
OASI News

The newsletter of the Orwell Astronomical Society



The Milky Way from Twefelfontein, Namibia. *Photo by Nigel Evans*

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Society Notices

Society Contact details

Observatory (meeting nights only)
NB new number! 07960 083714

Email queries: info@oasi.org.uk

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

Twitter: @OASIpswich

The OASI Facebook pages are 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, **07960 083714** during meeting hours. ***Kindly check/amend the number shown on your 2018 membership card.***

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

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, rtfd, 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.”*?

Newsletter archive 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 2018

Chairman	Paul Whiting FRAS	Set overall agenda for OASI, Chair committee meetings, Press and publicity, Visits by outside groups, Observatory tours, 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.
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, OASI @ Newbourne
	John Wainwright	Equipment curator
	Mike Whybray	Astronomy Workshops, Child protection officer, Orwell Park School Astronomy Club.
	Matt Leeks	Safety & security
	Andy Gibbs	
	Andy Wilshere	Librarian

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.

Next Committee Meeting

Friday 7 September at Museum St Methodist Church rooms, Black Horse Lane.

Welcome New Member

Nadia Myerscough

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 or use this address to access this calendar from other calendar applications.

https://calendar.google.com/calendar/ical/1jhs9db71ncki4sojo7092vfvc%40group.calendar.google.com/public/basic.ics

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, 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
Mon 13 Aug 2018, 19:00-late Newbourne Village Hall	Martin Richmond-Hardy newbourne@oasi.org.uk	OASI@Newbourne. 19:30 Talk by Bill Barton on the night sky. Book swap: bring any books or DVDs concerning astronomy, space-travel, sci-fi or popular science and swap them for something different. Cash donations accepted if you want to take something but don't have an item to swap. NB: items not swapped must be taken home! Observing or informal talks, depending on the weather. Bring your telescope to our dark-sky site.
Mon 27 Aug, 19:00-late Newbourne Village Hall	Martin Richmond-Hardy newbourne@oasi.org.uk	OASI@Newbourne. Bring your telescope to our dark-sky site. (Talks on astronomy if weather unsuitable for observing.)
Mon 03 Sep, 02:30 Location TBD	James Appleton info@oasi.org.uk	Field trip to observe the graze of H 21630. More info.
Fri 07 Sep – Sun 9 Sep Christchurch Junior School, Clarendon Road, Christchurch BH23 2AA	http://britastro.org/node/11256	*BAA Weekend Meeting, Christchurch, Dorset.* *'Cosmology: Theories and observations of the Universe'* *Closing date for this meeting is 24th August - please book early to avoid disappointment*

Date, Time & Location	Contact	Event
Sun 09 Sep 2018, 10:00-16:00 Bentley Village playing field (bottom of Case Lane).	Roy Gooding secretary@oasi.org.uk	**Public access event.** Solar observing. Booking not necessary.
Mon 10 Sep, 19:00-late Newbourne Village Hall	Martin Richmond-Hardy newbourne@oasi.org.uk	OASI@Newbourne. 19:30 Talk by Bill Barton on the night sky. Book swap: bring any books or DVDs concerning astronomy, space-travel, sci-fi or popular science and swap them for something different. Cash donations accepted if you want to take something but don't have an item to swap. NB: items not swapped must be taken home! Observing or informal talks, depending on the weather. Bring your telescope to our dark-sky site.
Thurs, Sep 20 – Sun 23 Sep ExCeL, London, E16 1DR	https://britastro.org/node/14072	*New Scientist Live – A 4 day festival of science*
Fri 21 Sep 2018, 20:00 St Augustine's Church Hall	Pete Richards lectures@oasi.org.uk	Lecture Meeting. Dr Lorne Whiteway, Honorary Research Associate at University College London, *Can the World's Largest Digital Camera Answer Cosmological Questions?*
Mon 24 Sep 2018, 19:00-late Newbourne Village Hall	Martin Richmond-Hardy newbourne@oasi.org.uk	OASI@Newbourne. 19:45 Workshop – Nigel Evans: "The Summer Sky from The Canaries and Namibia" Book swap. Bring your telescope to our dark-sky site. (Talks on astronomy if weather unsuitable for observing.)
Fri 28 Sep 2018, 19:00-late Broomhill Library	Paul Whiting, FRAS chairman@oasi.org.uk	Talk (Martin RH) and telescopes evening.
Sat 29 Sep 10:00 to 17:30 Burlington House, Piccadilly, London, W1J 0DU	http://britastro.org/node/11257	*BAA Observers' Workshop - Variable Stars, Photometry and Spectroscopy.*

Date, Time & Location	Contact	Event
Mon 8 Oct from 19:00 Newbourne VH	Martin Richmond-Hardy newbourne@oasi.org.uk	OASI@Newbourne. 19:30 Skynotes by Bill Barton. Book swap. Bring your telescope to our dark-sky site. (Talks on astronomy if weather unsuitable for observing.)
Mon 22 Oct, 10:00-16:00 Norwich Science Festival, Astronomy Day.	Roy Gooding secretary@oasi.org.uk	**Public access event.** OASI display. Booking not necessary.
Mon 22 Oct from 19:00	Martin Richmond-Hardy newbourne@oasi.org.uk	OASI@Newbourne. Bring your telescope to our dark-sky site. (Talks on astronomy if weather unsuitable for observing.)
Fri 26 Oct 2018, 20:00 St Augustine's Church Hall	Pete Richards lectures@oasi.org.uk	Lecture Meeting. Dr Matt Bothwell, Institute of Astronomy, University of Cambridge, *Monsters in the Dark: Searching for the Most Massive Galaxies in the Universe*.
Mon 12 Nov from 19:00 Newbourne VH	Martin Richmond-Hardy newbourne@oasi.org.uk	OASI@Newbourne. 19:30 Skynotes by Bill Barton. Book swap. Bring your telescope to our dark-sky site. (Talks on astronomy if weather unsuitable for observing.)
Fri 23 Nov 2018, 20:00 St Augustine's Church Hall	Pete Richards lectures@oasi.org.uk	Lecture Meeting. Martin Lewis, *Imaging with a Dobsonian*.
Mon 26 Nov from 19:00 Newbourne VH	Martin Richmond-Hardy newbourne@oasi.org.uk	OASI@Newbourne. Bring your telescope to our dark-sky site. (Talks on astronomy if weather unsuitable for observing.)
Tue 27 Nov 2018, 04:00 Location TBD	James Appleton info@oasi.org.uk	Field trip to observe the graze of 85 Gem. More info.
Tue 27 Nov 2018, 22:15 Location TBD	James Appleton info@oasi.org.uk	Field trip to observe the graze of δ Cnc. More info.

Outreach meetings

Other meetings in planning

Holywells Park Family Day - usually the first Wednesday in August.

Broomhill Library, 28 September. Paul Whiting is not available to attend, so Martin RH will attend and give a presentation aimed at children.

Norwich Science Festival Astronomy Day, 22 October.

Lecture Meetings

Contact: Peter Richards
lectures@oasi.org.uk

We have an exciting and interesting set of lectures by guest speakers for the Autumn.

There is a new venue for lectures this year which is:

St Augustine's Church Hall
Bucklesham Road
Ipswich IP3 8TH.

The start time for all talks will be 8pm and, as usual, the talks will be held on Friday evenings.

OASI Guest Speaker Lectures for 2018

Friday 21st September	"Can the World's Largest Digital Camera Answer Cosmological Questions?" Dr Lorne Whiteway, University College London,
Friday 26th October	"Monsters in the Dark: searching for the Universe's most massive galaxies" Dr Matt Bothwell, Institute of Astronomy, University of Cambridge.
Friday 23rd November	"Imaging with a Dobsonian" Martin Lewis, Lunar and Planetary Imager.

OASI @ Newbourne

Martin Richmond-Hardy newbourne@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).

OASI @ Newbourne 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.

There are also **Stagazers' Guide (Sky Notes), Astronomy Workshops and the Book Swap.**

On 7 July (cloudy) we were pleased to welcome a visitor from the USA on 7 July – Gillian Carney – who has kindly provided a group photo. Other visitors that evening were Colin & Margaret Ranson who brought a telescope for evaluation.

In addition to Bill Barton's monthly Sky Notes, we were given a demo and impromptu lecture on cosmic radiation detection by George Francis. His arm has been twisted to provide an article for this magazine.

Newbourne 7 July 2018

L-R: John Wainwright, Andy Gibbs, Graham Brundle, Paul Whiting, George Francis, Mike Nichols, Colin & Margaret Ranson, Mike Whybray, Martin RH, Iain Hastie. A few others had already left before the photo opportunity. *Photo by Gillian Carney*

Joe Startin measures while George Francis looks on.

Note "Old Knurly", an ex-military eyepiece containing thorium glass, and the carton of low-sodium table salt. *Photo by Gillian Carney*

Stargazer's guide

On the first meeting each month Bill Barton FRAS 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.

OASI@Newbourne Meetings in 2018

13 Aug (S+B)	27 Aug	10 Sept (S+B)	24 Sept (W+B)
8 Oct (S+B)	22 Oct	12 Nov (S+B)	26 Nov

We open up for all meetings at 7pm. Star Guide (S) at 7:30pm and Workshops (W) at 7:45pm.
B = Book Swap night (see below).

Astronomy Workshops

Contact Mike Whybray **Location: Newbourne Village Hall IP12 4NP**

Doors open at 7:00pm. **Workshops start at 7:45pm**

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 – 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

24 Sept	**Nigel Evans: "The Summer Sky from The Canaries and Namibia"**
TBA	**Martin Cook on Tomline Refractor Training (at the Observatory)**

Astronomy Book Swap

Pete Richards

If you are anything like me you'll have a bookcase or two full of astronomy books and no room for any more but you know the next time you are at an astronomy event you'll be tempted again. OASI will be hosting an astronomy book swap event at Newbourne on a Monday evening help you to clear some space or maybe you can provide a home for someone else's unwanted books.

If you bring any books and they are not taken you will need to take them home again as OASI has no spare storage space for books.

You can take away any books you are interested in but if you have not provided any books yourself you might like to make a small cash donation to OASI.

Any cash donations will help towards running OASI @ Newbourne.

The books can be on any area of astronomy, or space exploration, or related subjects. They can be factual or works of fiction including space related science fiction. As well as books you could bring DVDs on similar subjects, or maybe you have an astronomical jigsaw puzzle you'd like to give away or exchange.

The book swap will be held at Newbourne Village Hall on Monday Star Guide/Workshop nights (a normal oasi @ newbourne night). **The next event will be held on 9 July.**

Other local astronomy society meetings

Athaneum Astro Soc

www.3a.org.uk/index.htm

We meet fortnightly on Thursdays, from 7.30pm, at our dark-sky site in the Walled Garden at Nowton Park, just outside Bury St Edmunds. If you're planning on joining us for the first time, please contact us in advance, just to make sure the meeting is going ahead. We recommend that you wear warm clothing (even summer nights can be chilly, especially when the skies are clear!) and bring a flask, or insulated mug, for a warm drink. We have tea and coffee-making facilities on-site. Events are listed here http://www.3a.org.uk/events.htm

Thursday, 2 August	How stars make elements: Richard
Thursday, 16 August	Basic optics: Phil
Thursday, 30 August	Variable stars:Richard

LYRA Lowestoft & Yarmouth Regional Astronomers

www.lyra-astro.co.uk

LYRA Programme and Local Events 2018 – All talks (unless other wise stated) will commence at 7.30pm in the Coach House Room at Parkhill Hotel, just outside Oulton Village on the B1375 (Oulton Broad to Gt. Yarmouth Road) NR32 5DQ

All Talks £2.50 For Non Members

14 Aug	Summer Social Evening at Parkhill Hotel
11 Sept	Talk by Jonathan Gale, Webb Society Committee “Observing Astronomical Asterisms”
25 Sept	LYRA Observing/Practical night at Barn Car Park, Parkhill Hotel from 7:30pm
9 Oct	Talk by Dr John Rogers, BAA Jupiter Section Director “Jupiter and the Juno mission”
23 Oct	LYRA Observing/Practical night at Barn Car Park, Parkhill Hotel from 7:30pm
13 Nov	Talk by Bob Argyle, President of the Webb Society “Observing Double Stars Past & Present”
27 Nov	LYRA Observing/Practical night at Barn Car Park, Parkhill Hotel from 7:30pm

DASH Astro

Darsham And Surrounding Hamlets

http://dash-astro.co.uk

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.

Note these are now on Sundays.

11 Aug	(Saturday) DASH Summer Social Irene’s confirmed. (Members and Guests only)
09 Sept	Dash Observing Session (Sunset 19:23 Moonset 19:39 0.2% Moon)
23 Sept	Meeting – Bob Greef. Title tbc.
07 Oct	Dash Observing Session (Sunset 18:17 Moonset 18:04 4% Moon)
21 Oct	Meeting – S.Hubbard / D.Gwynn: Colliding Neutron Stars ... evidence?
11 Nov	Dash Observing Session (Sunset 16:06 Moonset 18:59 16% Moon)
25 Nov	Meeting – Dave Green: Distances to Stars and Galaxies. How do we measure?
08 Dec	(Saturday) DASH Christmas Social – Irene’s confirmed (Members and Guests only)

Mars

Mike O'Mahoney

Tried my hand at Mars last night (1/8/2018) t midnight, see attached. Rather featureless:-is this me, the Martian dust storm, or the less interesting face of the planet?

A hint of the polar ice cap is visible -checked it was in the right place :-)

01/8/2018, 11:44 (BST

SCT 235 mm set coupled to Canon 60 Da set in movie mode

Frame exposure 1/200" @ ISO 200; 1000 stacked frames

Mars altitude 12 degrees.

HERE COMES THE PERSEID METEOR SHOWER

Source: BAA-ebulletin 01013

With the generally fine, clear weather that we have been experiencing across much of the British Isles, observers are reporting increasing Perseid meteor activity. The Perseids are one of the most reliable showers of the year, producing an abundance of fast, bright meteors, many with persistent trains.

This year observing conditions are ideal because there will be no

interference at all by moonlight, with New Moon occurring on August 11 only two days before the peak, and the maximum occurs mainly over a weekend which is very convenient.

Video meteor observer David Dunn (Livarot, Calvados, Normandy, France) recorded his first Perseid meteor on July 16 and rates are now rising slightly night-by-night. The shower will continue to be active until about August 24. The shower's activity displays a marked 'kick' around August 8-9 and steadily increasing observed rates are likely from then until the peak, which is expected at around 01h UT (02h BST) on Monday, August 13 this year..

This means that the three nights of Saturday night to Sunday morning (August 11-12), Sunday night to Monday morning (August 12-13) and Monday night to Tuesday morning (August 13-14)should all be highly productive for observers in the British Isles.

Observers watching after 2100h UT on August 12-13 should experience increasing activity towards midnight and in the pre-dawn hours of August 13, as the shower radiant at RA 03h 11m, Dec. +58° (near the Double Cluster, on the Perseus-Cassiopeia border) climbs higher in the eastern sky. Activity should be starting to decline by the time darkness falls on Aug 13-14.

It is hoped that, weather permitting, observers will cover shower activity on the nights to either side of the maximum, including the Friday night to Saturday morning (August 10-11) the first night of the peak weekend. The Perseids are an ideal target for digital imaging due to the relative abundance of bright meteors, although exposures will need to be kept quite short if you are imaging from a site with any light pollution.

The best observed rates are found when the Perseid radiant is highest in the sky during the pre-dawn hours, but even in the mid-evening from 2100h the radiant is already at quite a favourable elevation above the horizon. Under cloudless skies, from a dark site, observers can expect to see between 40 and 60 meteors each hour near the peak. Even in towns or cities observed rates may still be around 10 to 20 an hour in the early morning hours when the radiant is high.

Observations in recent years have revealed noticeable variations in activity from year to year and there was a brief but well recorded outburst in Perseid rates in 2016 (see J. Brit. Astron. Assoc. 126(5), 264-265). No such enhancements are expected in 2018, but there may possibly be an encounter with an accumulation of dust grains in a mean-motion resonance at around 20h UT on August 12, although whether this will be detectable is uncertain.

We shall just have to wait and see what is in store for us in 2018.

Meteor observing should be viewed, first and foremost, as a source of enjoyment for the observer(s). Whatever the approach and specific techniques applied, meteor observing can still produce unexpected results, and the only way to make sure you don't miss out is to go out and observe!

The Night Sky in August

Martin RH

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

Times are in BST unless otherwise stated

Moon

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

New Moon	1st Quarter	Full Moon	Last Quarter
		27 July 21:20	04 Aug 19:18
11 Aug 10:58	18 Aug 08:49	26 August 12:56	

Sun, Moon and planets

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

Object	Date	Rise	Set	Mag.	Notes
Sun	1	05:17	20:45		
	31	06:05	19:45		
Moon	1	22:52	09:56		Perigee 358,078 km on10 August 19:07 Apogee 405,746 km on 23 August 12:23
	31	22:03	11:15		
Mercury	1	06:54	20:35	2.8	Maximum western elongation on Aug-26
	31	04:27	19:11	-0.6	
Venus	1	09:41	22:04	-4.1	Maximum eastern elongation on Aug-17
	31	10:38	20:33	-4.3	
Mars	1	21:13	04:08	-2.8	Mars was at opposition on Jul-27
	31	18:58	01:51	-2.1	
Jupiter	1	14:22	23:39	-2	
	31	12:42	21:47	-1.8	
Saturn	1	18:37	02:22	0.2	
	31	16:36	00:19	0.4	
Uranus	1	23:13	13:18	5.8	
	31	21:14	11:19	5.7	
Neptune	1	21:56	08:51	7.8	
	31	19:57	06:49	7.8	

Paul's Astronomy Podcast for August

Paul Whiting FRAS Podcast, August 2018 www.oasi.org.uk/2018_08_pod.mp3

Occultations during August 2018

James Appleton

The table lists occultations during the month under favourable circumstances. The data relates to Orwell Park Observatory, but will be similar at nearby locations.

The events 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.

Only one lunar occultation occurs during July under favourable circumstances, detailed below.

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(°)	Star Alt(°)	Mag	Star
05 Aug	00:06:28	D	0.47-	-21	9	5.9	ZC 444
	00:59:10	R		-20	17		
21 Aug	22:49:28	D	0.82+	-24	11	5.9	ZC 2704
22 Aug	21:01:17	D	0.89+	-16	17	7.0	Hip 95577
22 Aug	23:45:24	D	0.89+	-26	10	6.1	ZC 2851
23 Aug	00:21:33	D	0.89+	-26	7	7.3	Hip 96021

Meteor showers

Source: BAA Handbook 2018 p97-99

Shower	Maximum	Normal limits	ZHR at Max	Notes
α-Cygnids	Jul 21 Aug 21	Jul – Aug	5	Weak, apparently stationary radiant, producing steady activity throughout the northern summer.
Capricornids	Jul 9 Jul 16 Jul 26	Jul – Aug	5	Bright yellow-blue meteors. May have three maxima and multiple radiant. Favourable in first half of July.
δ-Aquarids	Jul 29 Aug 6	Jul 15 – Aug 20	20 10	Fine southern shower with double radiant.. S component is the richer. Meteors tend to be faint.
α-Capricornids	Aug 2–3	Jul 15 – Aug 20	5	Long slow fireballs are often seen.
ι-Aquarids	Aug 6	Jul – Aug	8	Rich in faint meteors. Double radiant. Favourable.
Perseids	Aug 13 01:00	Jul 23 – Aug 20	80+	Rich shower of fast meteors. High proportion of bright events leaving persistent trains. Very favourable.

Visible ISS passes ≥15º max altitude

Martin RH

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

Times are BST. Predictions are approximate due to craft adjustments. Check the day before.

Date	Mag	Start			Highest point			End		
		Time	Alt.	Az.	Time	Alt.	Az.	Time	Alt.	Az.
01 Aug	-3.4	22:00:13	10°	W	22:03:23	47°	SSW	22:05:45	16°	SE
01 Aug	-1.3	23:37:37	10°	WSW	23:38:24	12°	WSW	23:38:24	12°	WSW
02 Aug	-2.1	22:45:10	10°	W	22:47:41	20°	SW	22:48:17	19°	SSW
03 Aug	-2.6	21:53:03	10°	W	21:55:59	29°	SSW	21:58:12	14°	SSE
04 Aug	-1.3	22:38:58	10°	WSW	22:40:02	11°	SW	22:40:48	11°	SSW
05 Aug	-1.7	21:46:07	10°	W	21:48:23	17°	SW	21:50:38	10°	ESE

Iridium flares

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

Iridium flares to cease by end of 2018 | BBC Sky at Night Magazine

Astronomy on the radio

Bill Barton's Radio Broadcast

ICRFM (Ipswich Community Radio) 105.7 MHz at about 08:25 in the morning of the first Wednesday of each month. I aim to cover 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 and there is a listen again option on their website. http://www.icrfm.com

David Murton's Radio Broadcast

On 1st Tuesday of the month, 1.40pm on the Lesley Dolphin show on BBC Radio Suffolk – now digital (channel 10c) and FM 103.9 (Ipswich), 104.6 (west Suffolk), 95.5 (Lowestoft), 95.9 (Aldeburgh) and the internet. https://www.bbc.co.uk/radiosuffolk

BAA news

29th September 2018 - Observer's Workshop - Variable Stars, Photometry and Spectroscopy.

September

Friday 7 September - 19:00

BAA Weekend Meeting, Christchurch, Dorset

Thursday, 20 September (All day)

New Scientist Live A 4 day festival of science

Saturday 29 September - 10:00

Observers' Workshop - Variable Stars, Photometry and Spectroscopy.

Burlington House, Piccadilly, W1J 0DU. Details to be released soon.

October

Saturday 6 October - 10:00

Back to Basics Workshop, Bexleyheath

Saturday13 October (All day)

'The Astronomer' magazine Annual General Meeting

Annual meeting of TA, open to all BAA members

Wednesday 31 October 31 - 17:30

BAA Annual General Meeting and Ordinary Meeting

Next year – Practical Astronomy Show

Venue:	Kettering Conference Centre, Thurston Drive, Kettering, Northamptonshire, NN15 6PB
Date:	Saturday 9 March 2019 - 09:30

The Practical Astronomy Show is a free one-day event at the Kettering Conference and Exhibition Centre.

There will be free talks about the practical aspects of astronomy, with an emphasis on using and getting the best out of astronomy products.

The show caters for all levels of practical astrophotography and visual astronomy.

Organisations involved in astronomy education, outreach and tourism will be available to meet and greet the general public.

Please note the Practical Astronomy Show is not run by the BAA, but the BAA will be present as an exhibitor.

From the Interweb

Discovery of an Apparent Nova in M31

Source: http://www.astronomerstelegram.org/?read=11904

We report the discovery of an apparent nova in M31 on a co-added 1260-s R-band CCD frame taken on 2018 Aug. 2.087 UT with the 0.65-m telescope at Ondrejov.

The object designated PNV J00424214+4114457 is located at R.A. = 0h42m42s.14, Decl. = +41o14'45".7 (equinox 2000.0), which is 24.6" west and 82.8" south of the center of M31 (see link to discovery image below).

The following R-band magnitudes were obtained using the 0.65-m telescope at Ondrejov:

2018 Jul. 29.905 UT, [20.2; Aug. 1.102, 19.0 ± 0.3 (prediscovery); 1.955, 17.7 ± 0.1 (prediscovery); 2.087, 17.5 ± 0.1.

First detection of fast radio bursts between 400 and 800 MHz by CHIME/FRB

Source: http://www.astronomerstelegram.org/?read=11901

The Canadian Hydrogen Intensity Mapping Experiment (CHIME; www.chime-experiment.ca) is a transit radio telescope consisting of four 20m x 100m cylindrical reflectors oriented North/South, plus a powerful F-X correlator, located at the Dominion Radio Astrophysical Observatory near Penticton, British Columbia, Canada. The CHIME Fast Radio Burst (FRB) Project (CHIME/FRB Collaboration, ApJ, in press, arXiv:1803.11235) forms 1024 independent stationary intensity beams with 1-ms time sampling and 16k frequency channels over a range of 400 - 800 MHz. CHIME/FRB is a uniquely fast survey instrument that can search for FRBs over an instantaneous field of view of ~200 square degrees in real time.

During its ongoing commissioning CHIME/FRB detected FRB 180725A on 2018 July 25 at 17:59:43.115 UTC (topocentric, at 400 MHz). The automated pipeline triggered the recording to disk of ~20 seconds of buffered raw intensity data around the time of the FRB. The event had an approximate width of 2 ms and was found at dispersion measure 716.6 pc/cm^3 with a signal-to-noise ratio S/N ~20.6 in one beam and 19.4 in a neighbouring beam. The centres of these, approximately 0.5 deg wide and circular beams, were at RA, Dec = (06:13:54.7, +67:04:00.1; J2000) and RA, Dec = (06:12:53.1, +67:03:59.1; J2000). However, precise localisation of the source and a flux estimate await further commissioning and calibration. The expected maximum Galactic line-of-sight dispersion measure in the source's direction is 69 pc/cm^3 (from the NE2001 model) or 81 pc/cm^3 (from the YMW16 model). The observed DM is far in excess of these values, even after accounting for the systematic uncertainties in the Galactic-DM models, confirming the identification of this event as an FRB. The event is clearly detected at frequencies as low as 580 MHz and represents the first detection of an FRB at radio frequencies below 700 MHz.

Detection of the gravitational redshift in the orbit of the star S2 near the Galactic centre massive black hole

https://arxiv.org/abs/1807.09409

The highly elliptical, 16-year-period orbit of the star S2 around the massive black hole candidate Sgr A* is a sensitive probe of the gravitational field in the Galactic centre. Near pericentre at 120 AU, ~1400 Schwarzschild radii, the star has an orbital speed of ~7650 km/s, such that the first-order effects of Special and General Relativity have now become detectable with current capabilities. Over the past 26 years, we have monitored the radial velocity and motion on the sky of S2, mainly with the SINFONI and NACO adaptive optics instruments on the ESO Very Large Telescope, and since 2016 and leading up to the pericentre approach in May 2018, with the four-telescope interferometric beam-combiner instrument GRAVITY. From data up to and including pericentre, we robustly detect the combined gravitational redshift and relativistic transverse

Doppler effect for S2 of z ~ 200 km/s / c with different statistical analysis methods. When parameterising the post-Newtonian contribution from these effects by a factor f, with f = 0 and f = 1 corresponding to the Newtonian and general relativistic limits, respectively, we find from posterior fitting with different weighting schemes f = 0.90 +/- 0.09 (stat) +\- 0.15 (sys). The S2 data are inconsistent with pure Newtonian dynamics.

The pioneer of pulsars pops into Parkes

https://blog.csiro.au/pioneer-pulsars-pops-into-parkes/

In 1967, as a 24-year-old PhD student at Cambridge University, Dame Jocelyn Bell Burnell made one of the most significant scientific discoveries of the 20th Century when she identified and precisely analysed the first pulsar.

The International Astronomical Union Observatory List

Paul Whiting FRAS

For well over 150 years lists have been maintained of the various observatories around the world in almanacs and astronomical ephemeris, and since 1919 the International Astronomical Union (IAU – the world's "governing body" of astronomy) has maintained a formal list of recognised observatories throughout the world. The list is a living document with observatories being added and deleted all the time. As at May 2018 the list contained 2087 entries with a numbering scheme starting from 000 to ZZZ. The list is currently maintained by the IAU Minor Planet Center:

minorplanetcenter.net/iau/info/ObservatoryCodes.html

Given Orwell Park Observatory is entry number 582, I thought it might be interesting to list a few equally famous observatories:

Alston Observatory, UCLan	989
Durham University Observatory	995
Herstmonceux Observatory	501
Hubble Space Telescope	250
Institute of Astronomy, Cambridge	503
Mount Palomar Observatory	261
New Horizons Spacecraft	C54
Orwell Park Observatory	582
Paris Observatory	005
Royal Greenwich Observatory	000
Royal Observatory Cape of Good Hope	051
Royal Observatory Edinburgh	277
Siding Springs Observatory	413

Five Go Mad at Latitude

Paul Whiting FRAS

Out of the blue I received a request for OASI to provide a number of telescopes for the Latitude Festival at Henham to support a talk by Professor Chris Lintott of Sky at Night fame. Never having been to Latitude before I didn't know what to expect. I immediately thought of drug fuelled hippies and ageing rockers trying to recapture their youth. OK I was quite wrong, it had a very pleasant, family friendly atmosphere – albeit loud and at times "blue". In fact it has been termed the thinking man's festival.

So having got some volunteers we then had to sort the logistics of getting to the site. Five people, 4 telescopes, 3 cars and one car pass! We managed to shrink to 2 cars and luckily at the last minute they relented and provided a second car pass. So we were set. The convoy formed at Martlesham Park and Ride and for our journey up the A12 we kept in contact by amateur radio. The much anticipated traffic jams that usually snarl up the A12 around Blythburgh at this time of the year had evaporated, we managed to drive straight there without interruption. OK we were going to the performer entrance rather than the public. After a mile of driving through undergrowth and sand tracks on the estate we arrived at the backstage car park, where one of the cars could park. The other had to unload and then drive to the public car park 45 minutes' walk away.

So it was now 11:30am and we were on at 10pm. Only 10 hours to wait. Mike and Pete were happy as Larry and found lots of things to do. Andy also found a few things to visit. Meanwhile Bill and I sat in the car most of the time! OK I did manage to see the very end of a recording of QI (that blasted klaxon is still ringing in my ears), I almost asked a question at a recording of Gardeners Question Time and nearly bought a glass of prosecco (till I saw the price).

The comedians on the comedy stage were mostly B-list and (to me) not very good. There was one exception, a lady from Bristol who finished her act with a very funny yet professional performance of Nessun Dorma, singing both tenor and soprano parts superbly.

Chris Lintott was due to speak from the Speak Easy stage and we were to set up our telescopes in front of this tent right next to a mobile bookshop called Dylans. More of this shortly!

Earlier in the day the Speak Easy held panel discussions and roundtable debates. I sat in for one of them. The conversation followed along the lines of "What do we think of the dichotomy between market forces and actual customer requirements?" "Well I think the changing paradigm in Silicon Valley …..". A bit heavy for me so I wandered off.

This proved a mistake. I had a "performer" wrist band and the other guys had "performer's friend" wrist bands. Pete had discovered that these wrist bands gained access to the green room at the Speak Easy. Free booze and grub[1] all day. If I had stayed I would have bumped into Pete and discovered this facility. Alas all I found were the VIP loos.

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[1] Pete says he didn't see any free grub at the Green Room. Chairman's wishful thinking? [Ed]

While we were waiting in the car park a swarm of film cameras and sound people suddenly appeared. They were filming someone but we couldn't work out who it was. Then we noticed Richard Curtis (Blackadder etc.). Andy suggested that it might be the new popstar biopic film they are currently filming around Suffolk. If so Danny Boyle should be around – ah there he is! For over an hour they filmed the same scene of this couple walking down the dirt track past the car park lugging a large amount of kit. After "cut" an assistant appeared with a sack barrow and shifted the kit back up the path ready for the "talent" to do the take again. This was repeated over and over from different camera angles. At one point a runner came up to us and said we were about to be in shot. We could either move out or give our permission to be filmed. I'm not sure we were actually filmed but watch out when the film comes out next year!

All set up at Latitude ***Photo: Adam Honeybell***

So 9.45pm arrived and we were all due to meet up at Dylan's Bookmobile ready to start carting the telescopes (where was Danny Boyle's sack barrow operative when you needed him?). A lady from the production company who had invited us came up and asked the usual question. "Are you the astrological society?" After some patient explanations we were given a couple of their roadies to help carry the kit. Chris started talking at 10pm. I had hoped to sit in on it but fate had other ideas. We were supposed to be up and ready by the end of the talk at 11pm. Unfortunately there was a lot of passing traffic who were plaguing the guys with questions as they were trying to set up. So I tried to head them off. At the same time the book shop people were recording a movie of their own about the bookshop on tour and wanted to include a lot of footage of the OASI telescopes. I had to do 5 minutes to camera followed by 30 minutes of recording us setting up and the public looking through the scopes.

Chris had changed his talk about to tie in with us. He started his tour of the universe far out and then moved closer to home over the course of the hour. He ended up with Mars, Jupiter and Saturn – having asked us previously what we would be looking at.

At lunch time there was solid cloud over head. Slowly during the afternoon the patches of blue sky got larger and by 10pm had totally dissipated. So we had excellent views of Jupiter and Saturn. Strangely Jupiter occasionally just disappeared. There must have been some patchy cloud but it wasn't obvious. There was a lot of dust above the site and a low mist formed and so there might have been some smog effects. Later Mars appeared incredibly brightly. In fact Chris asked me why I thought it was so bright. I suggested that apart from being at its closest to Earth and hence will appear larger, there is also a raging sand storm on the surface, which may increase the albedo or reflective power making it appear brighter to us.

After showing around 200 members of the public, Chris Lintott and Robin Ince the planets, it was suggested that we pack up around midnight. This was to allow us the use of the roadies again. Alas they knocked off at midnight. So we were left to help ourselves. Luckily we were joined by OASI member Adam and wife who helped us cart the load back to the car park. We were getting tired by now, so Bill managed to pack all the telescopes in the back of his van and arranged to hand them over at the Club's BBQ the following day. Bill and I managed to drive straight off the site and arrived back in Ipswich by 1.15am. The others had the 45 minute walk back to the other car, so they were a little later returning home!

A good day, albeit a little long. Chris said to me that it was good to work with us and that he hoped to do it again, so perhaps next year?

Moon and Venus

Crescent Moon & Venus over Kirton on Sunday 15 July ***Photo: Martin RH***

The OASI BBQ

Paul Whiting FRAS

We enjoyed a fantastic BBQ today. There were so many things happening. At first Martin R-H, Nicky and Pete R helped clear the undergrowth and tree branches from our proposed site at Newbourne for the storage container. Mike W was then able to dispose of all the trimmings this evening. Thanks to all four for their hard work today.

Then the BBQ itself. Thanks to Martin C for the BBQ itself and to him, Smithy and John W for the ballistic entertainment. They were crow scarers, honest.

Novel solar-powered BBQ-lighting apparatus.

Then thanks to all who presented their feedback to the Chairman's Summer Challenge. Finally it was great to see so many telescopes allowing us fantastic views of the Sun (still spotless), Venus, Jupiter and Saturn. Mars was too late rising for us!

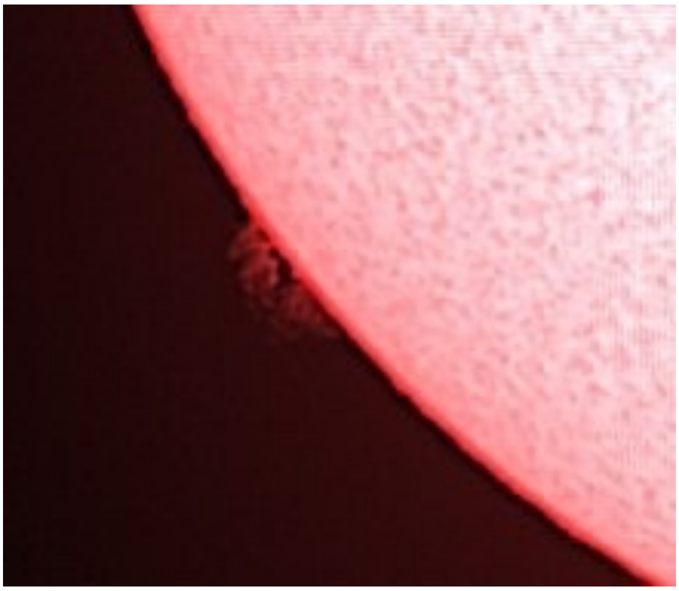
I would also like to thank Bill, Mike W, Pete and Andy for helping provide telescopes and expertise for Professor Chris Lintott at Latitude yesterday. We all had a grand day out topped by 200 festival goers looking through our scopes. Chris didn't have enough praise for our presence there, and hoped to work with us again – perhaps next year?

Pete after a late night at Latitude

He did wake up later for some food.

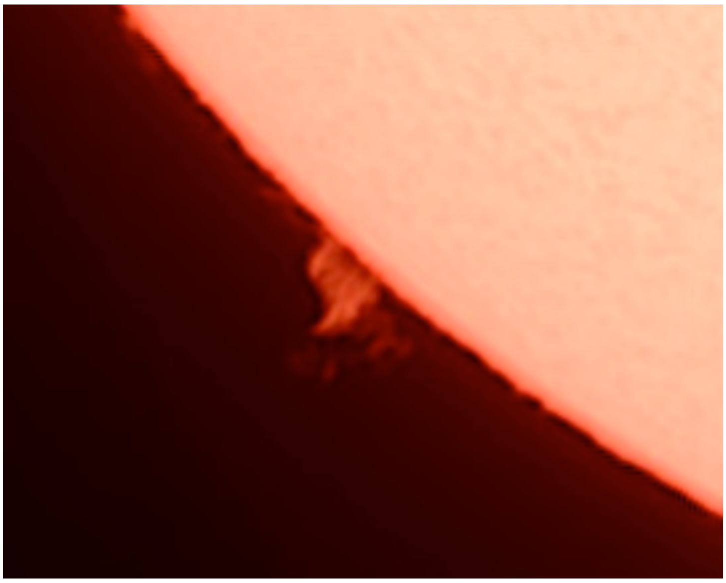
Photo Martin Cook

Solar flares



One of the flares on the Sun on 14 July through a H Alpha scope.

Photo: Martin Cook



The Sun on the 5/8/2018 at about 13:00Hr

Lunt LS50THa B600PT H-alpha Solar Telescope.

2X Barlow

QHY5L-II Colour camera.

No sunspots so went for this flare.

Photo: Martin Cook

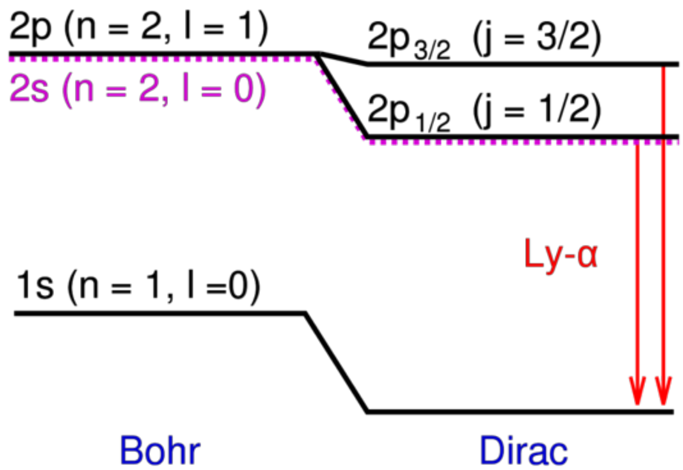
Library thoughts: Is it useful to use the Lyman- alpha emission line in primary Astronomical observation?

from Andy Willshere

Several months ago I wrote a short piece about the galaxy EGS8p7 which was found to be more than 13.2 billion years old. This faint galaxy was found to have a Lyman-alpha line at a redshift of z=8.68 (spectrographic redshift) obtaining light from over 13.2 billion years ago, which is 95.6% of the way back to the big bang. I thought for this small article I would try to illuminate what the Lyman-alpha series is and how efficient astronomers are in using it.

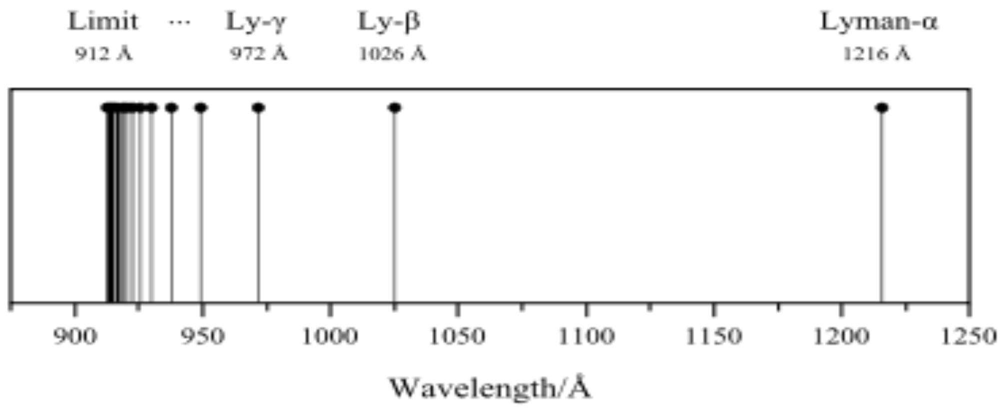
Atomic hydrogen's emission spectrum is comprised of several spectral series, the wavelengths of which are given by the Rydberg formula. The spectral lines noted are formed by the electron making transformations between two energy levels in an atom.

The Lyman-alpha line is a spectral line produced by the unconstrained decay from the first excited state to its ground state.



Picture credit: https://en.wikipedia.org/wiki/Lyman_series

The equation for this is (n=2 > 1), where n=the principle quantum number, which describes the size of the orbital. An orbital with n=2 is larger than one with n=1. Electrons having a negative charge are attracted to the nucleus of the atom. As n increases the number of electronic shells increases and the electron moves further away from the nucleus. This leaves it at a higher potential energy but less secured to the nucleus. In hydrogen its wavelength of 1.21567 * 10^{-7} m, which matches a frequency of 2,47* 1015 Hertz, puts the Lyman-alpha line in the ultraviolet vacuum area of the electromagnetic spectrum. Air tends to absorb this and so Lyman-alpha astronomy in the main is performed using satellite -borne facilities. One exception to this is very distant sources whose redshifts will allow the hydrogen line to make its way through the atmosphere.



Picture credit: https://en.wikipedia.org/wiki/Lyman_series

Lyα is used to recognize high-redshift (z) star developing galaxies using either spectroscopic procedures or narrowband filter monitoring. It is also used to check redshifts of other possible galaxies by other procedures. So useful has Lyα become that many new telescopes have the facility built in.

Thus, although utilising the Lyman-alpha emission line with its high inherent luminosity, and easily obtainable rest-frame wavelength provides astronomers with a good starting point, several problems still exist. One of these is the resonant transition of Lyα which causes the scattering of photons in the neutral hydrogen constituent of the interstellar medium making escape paths much longer, and in some cases their sensitivity to being absorbed by interstellar dust is increased, especially in the far U.V. This depends upon the distribution of the neutral hydrogen component. If this happens, there will be a reduction or even total suppression.

Recently a group of scientists lead by Matthew Hayes of the Observatoire Astronomique de l'Université de Genève reported that the average escape fraction of Lyα and Hα at redshift z=2.2 is about 5%. This demonstrated that almost 90% of star forming galaxies do not radiate enough Lyα to be observed by standard choice criteria. In order to perform this survey, they used the ESO very large telescope (VLT), and a specialist custom built filter, which measured Lyman-alpha light using standard protocols for these surveys. Another VLT unit telescope with a HAWK-I (High Acuity, Wide field K-band Imaging), which is a 0.9 μm - 2.5 μm wide field near infrared imager, was then used to re-survey the same space area for light of a different wavelength, known as the H-alpha line. They mainly looked at galaxies whose redshift was at least 2.2 (10 billion years) in the area known as the GOODS (Great Observatories Origins Deep Survey) South field. The data acquired from the GOODS programme traces galaxy configuration and evolution across cosmic time, and maps the expansion of the universe by using high redshift supernova.

It can therefore be seen that by using contrasting experimental methods, with light emitted at different wavelengths throughout the universe, only a partial picture can be formed. The more light we can observe the better the universal picture becomes.

References:

1 Pirard, J.-F., HAWK-I: A new wide-field 1- to 2.5-μm imager for the VLT. SPIE, 5492, 1763

2 https://en.wikipedia.org/wiki/Hydrogen_spectral_serieshttps://archive.org/details/arxiv-1002.4876 Escape of about five per cent of Lyman-alpha photons from high-redshift star-forming galaxies by Matthew Hayes; Goran Ostlin; Daniel Schaerer; J. Miguel Mas-Hesse; Claus Leitherer; Hakim Atek; Daniel Kunth; Anne Verhamme; Stephane de Barros; Jens Melinder

Astronomy Course at Ipswich Institute

Paul Whiting FRAS

Once again Paul will be running an evening astronomy course at the Ipswich Institute starting 9th October running for 10 weeks. If interested please contact the Ipswich Institute directly:

http://www.ipswichinstitute.org.uk/course.php?id=212&cat=5

With Astronomy featuring more and more on our TV screens have you ever wondered what it is all about? This course will introduce this interesting science and hobby. You do not need a telescope to take part (although you will probably want to get one afterwards!). You just need an enquiring mind. There will be an optional visit to Orwell Park Observatory on Thursday 6 December at a small extra cost.

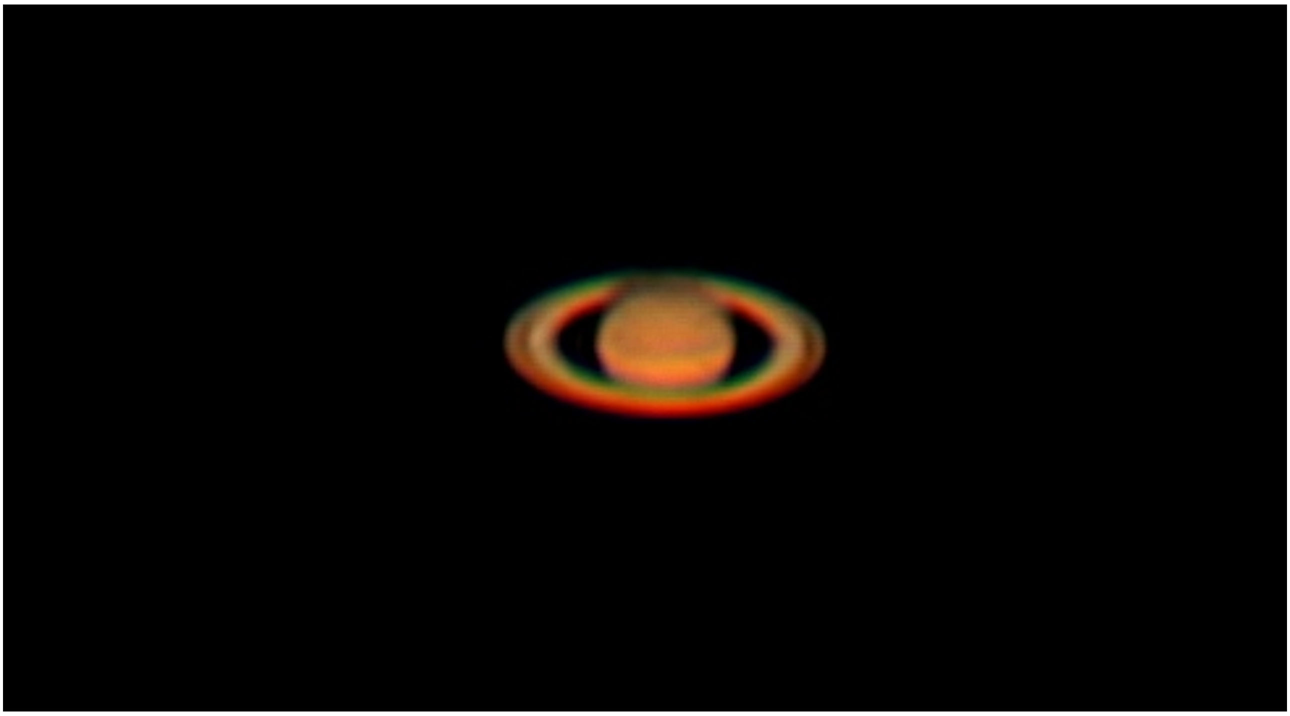
Terms & Conditions

Course Tutor: Paul Whiting
Course Duration: 10
Course dates: 09 Oct – 11 Dec
Half Term: n/a
Price: £80
Members Price: £52
Concessions*: £60
Additional Information:
Optional visit to Orwell Park Observatory on Thursday 6 December at a small extra cost.

*The concessionary rate is available to anyone in receipt of means-tested benefits.

Saturn

Mike O'Mahoney



Saturn at 22:00 BST on 25/07/2018

Altitude 14 degrees

Canon 60Da (movie mode) + SCT 235 mm

Stacked and sharpened in Lynkeos

Red colour:- atmospheric dispersion +Saharan dust ? enhanced by lack of camera red filter

A Weekend of Astronomy in Cambridge

Pete Richards

A great way to increase your knowledge of astronomy while having fun is to do a weekend astronomy course. A number of institutions run astronomy courses in various parts of the country. Having attended an Astronomy weekend course at the Department for Continuing Education at Oxford a number of times over the years (which we did again this year) I thought we should give Cambridge a go this year. So we booked a weekend course on the "The Age of the Universe"at University of Cambridge Institute of Continuing Education. I was very pleased to have booked this course because the course itself was excellent, with a great tutor and other speakers, and the venue was wonderful. The University of Cambridge Institute of Continuing Education is based at Madingley Hall which feels like a combination of country house hotel, stately home and Oxbridge college. Although it is not in the city, it is only a few miles out and is close to a park and ride if you want to pop in to Cambridge to see the sights. Actually most of the time we enjoyed exploring the grounds of the hall with its topiary garden, walled gardens, lake and woods. Whereas some people attending the course stayed in nearby hotels we stayed in the very nice accommodation at the hall. The food there was excellent and the staff welcoming.

The Oxford weekend usually has a different speaker for each talk who is an expert in their field and drawn not just from Oxford but from many other institutions. Our particular course at Cambridge was given by Cambridge University based people which also worked out extremely well. We had a brilliant tutor (Dr Sonali Shukla) and two other speakers one of whom - Dr Matt Bothwell - is coming to give as a talk at OASI in the Autumn. In the Cambridge course we had something which I've never had before at an astronomy weekend course which was a Friday evening observing session in the grounds with a local amateur astronomer and a practical exercise on the Saturday afternoon. The practical session on the Saturday afternoon involved making our own calculations of the Hubble Constant from actual images and spectra from galaxies. All us attendees managed to get reasonable values for the Hubble Constant in the range from 50 to 100. These practical aspects made the course particularly enjoyable and different from anything I'd ever done before.

I can highly recommend the astronomy courses at both Oxford and Cambridge but from the excellence of the setting and the convenience for anyone travelling from Suffolk, Cambridge has the edge. Up to July 2019 there are no more whole weekend courses on astronomy at the University of Cambridge ICE but no doubt there will be at some future date. but in the meantime they have some very interesting one day astronomy courses (running on weekends) and weekend courses on other sciences (and many other subjects besides). If time and money allowed I'd like to do a lot of the Cambridge and Oxford continuing education courses!

For Continuing Education at the University of Cambridge see: https://www.ice.cam.ac.uk/

For Continuing Education at the University of Oxford see: https://www.conted.ox.ac.uk/

A Trip to Namibia – June 2018

Nigel Evans

This summer we took a break to Namibia. This time of year is their dry season, with clear skies being normal. The trip was primarily an animals-by-day safari but, as the areas we visited were between 19° and 25° south, there was an excellent opportunity to look at the sky at night, particularly as the centre of the galaxy in Sagittarius would be overhead at around midnight. I was hoping to take the opportunity to record some undriven sequences, as well some driven pictures on an Astrotrac of things I don't see from the UK, but only with ordinary camera lenses, not a telescope.

The weather

We had stunningly clear skies both day and night for the entire trip, except when we were at Swakopmund on the coast - here a coastal fog is an issue making the day look like a hazy UK morning in November, but much warmer. Here I thought I might catch the thin-crescent Moon setting into the sea one evening - I could not even see the Sun! But we accepted the Swakopmund was not an astro site (at least at this time of year).

The South Celestial Pole

It is incredibly difficult to find. I did try the routine of aligning the camera with the polarscope in the day then using the camera view to find the pole (a few seconds exposure with the camera records far for than you can see through the scope). I also tried levelling the tripod, setting the Astrotrac for the correct latitude, then wandering in azimuth until I found the right stars (better). This was still made difficult by there being other lights about, either artificial or, later on, the Moon. Sigma Octantis is f***ing faint!

Lights

Our accommodation was usually in a chalet-bungalow at a Lodge in the middle of nowhere. So you have a stunningly dark site that is then lit up like a Christmas tree so guests can find their way about :-(At the end of the trip the Moon was starting to become quite bright.

Animals

Most of the places we stayed were in some sort of park, often with a watering hole that can be used at night to which the animals have open access. I wanted to leave cameras running overnight, with the faint risk of them being trampled by that herd of wildebeest that had never been seen before. Late one afternoon a troupe of baboons passed our lodge…

Trees

Some of the lodges were fenced off with lots of trees within, with no clear view of a large part of the sky and no realistic prospect of either going outside, or to leaving kit to run unattended.

Dust

The country at this time of year is bone dry and many of the roads in Namibia and lodge carparks are gravel or compacted dirt, generating with copious amounts of dust when disturbed. And at night it would be illuminated by the lights!

So how did I get on?

What with trees and lights some sites were really hard work. On 3 evenings I tried to take of series of un-driven wide-angle pictures that would be stitched together to make a movie of the galaxy rolling overhead. For 2 of these evenings I had to set up during the day as the landscape was quite rocky - it would be too dangerous to venture out at night (from falling/tripping over, rather than the wildlife!). This meant I did not realise the whereabouts of the lights – especially the carpark! Other mishaps included recording one night in jpeg rather than RAW format.

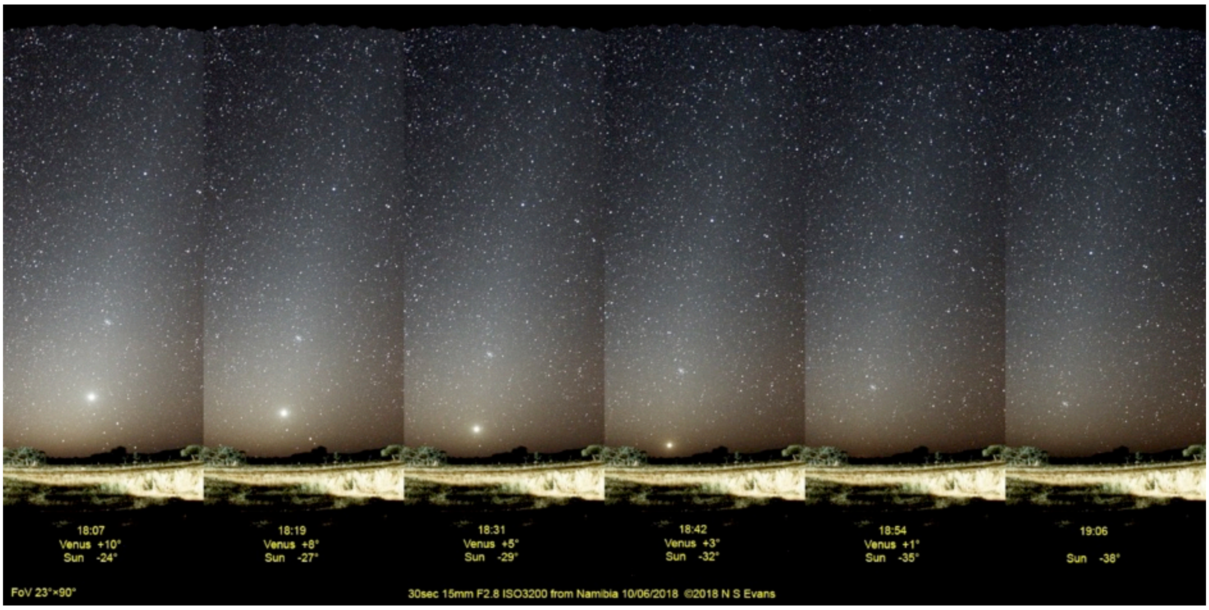
Driven pictures were more successful, a selection are shown later. As we had a full schedule during the day, including moving to the next base, I could not stay up all night, so I only recorded evening objects. The Magellanic Clouds were close to the southern horizon at this time.

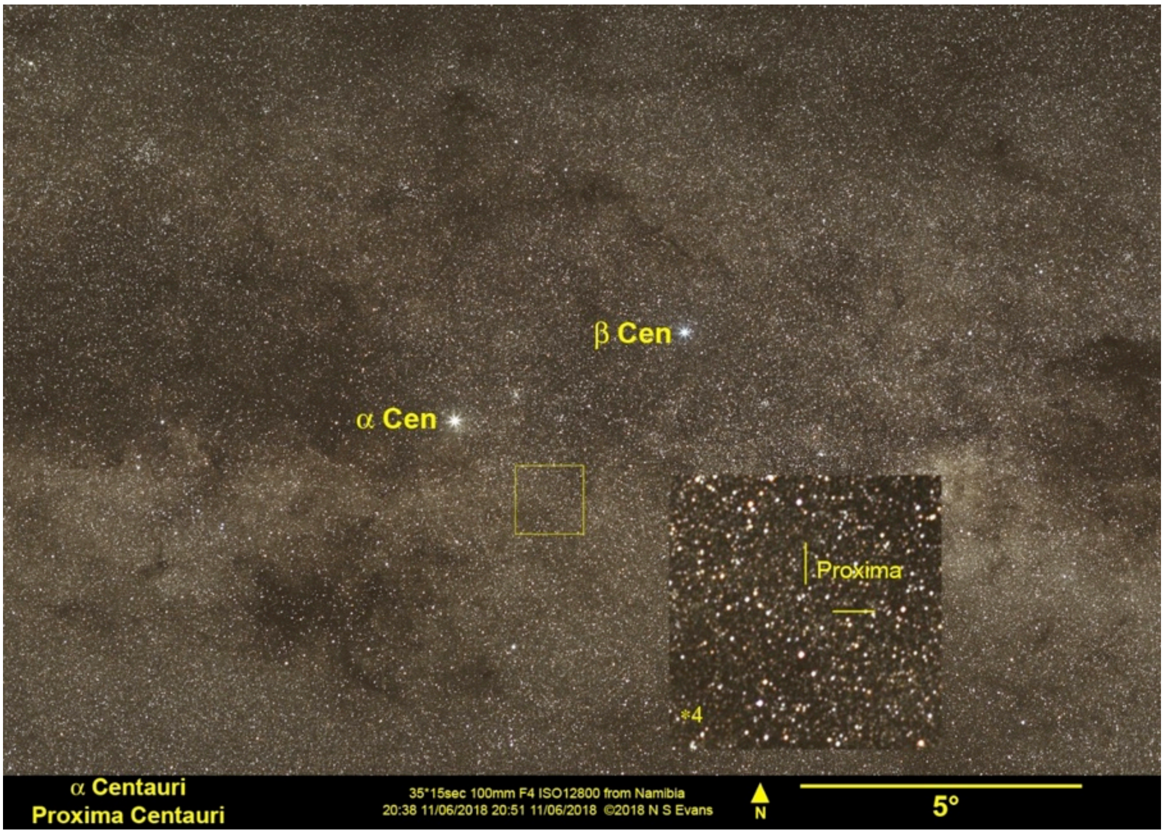
So what did I SEE?

Our guide was also an amateur astronomer and he brought his 11" Celestron and a Lunt Halpha. Through the Celestron I did see Alpha Centauri as a double star, the globular cluster Omega Centauri, as well as Jupiter and its distinctive Red Spot. It is a lot easier to see when it was 80+° high! With the Lunt there were very few sunspots to see, but some nice prominences. One evening we were returning to base and there were no lights whatsoever. Looking towards the northwest we could the Zodiacal Light poking up from the horizon like a beacon, with a brilliant Venus as well. I have never seen it as clear (even the non-astronomers could find it!). Finally there was just the privilege of sitting outside and looking straight-up at the centre of the galaxy.

On my return home, to the heatwave and clear skies, my first view of the evening sky made me think "Gosh, look how LOW Venus, the Moon and Jupiter are!"

Nigel Evans

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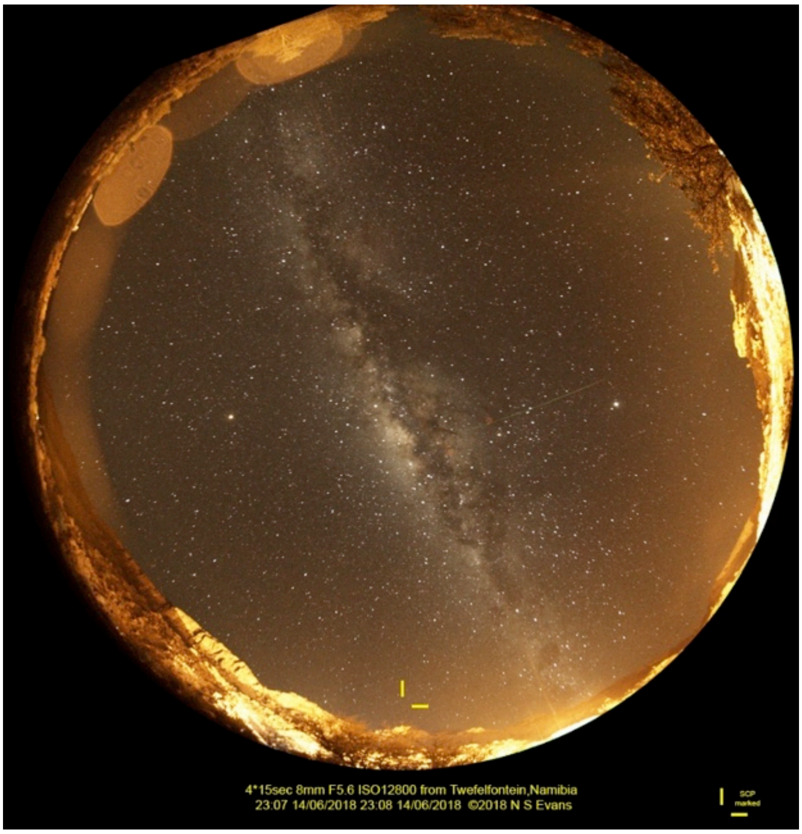
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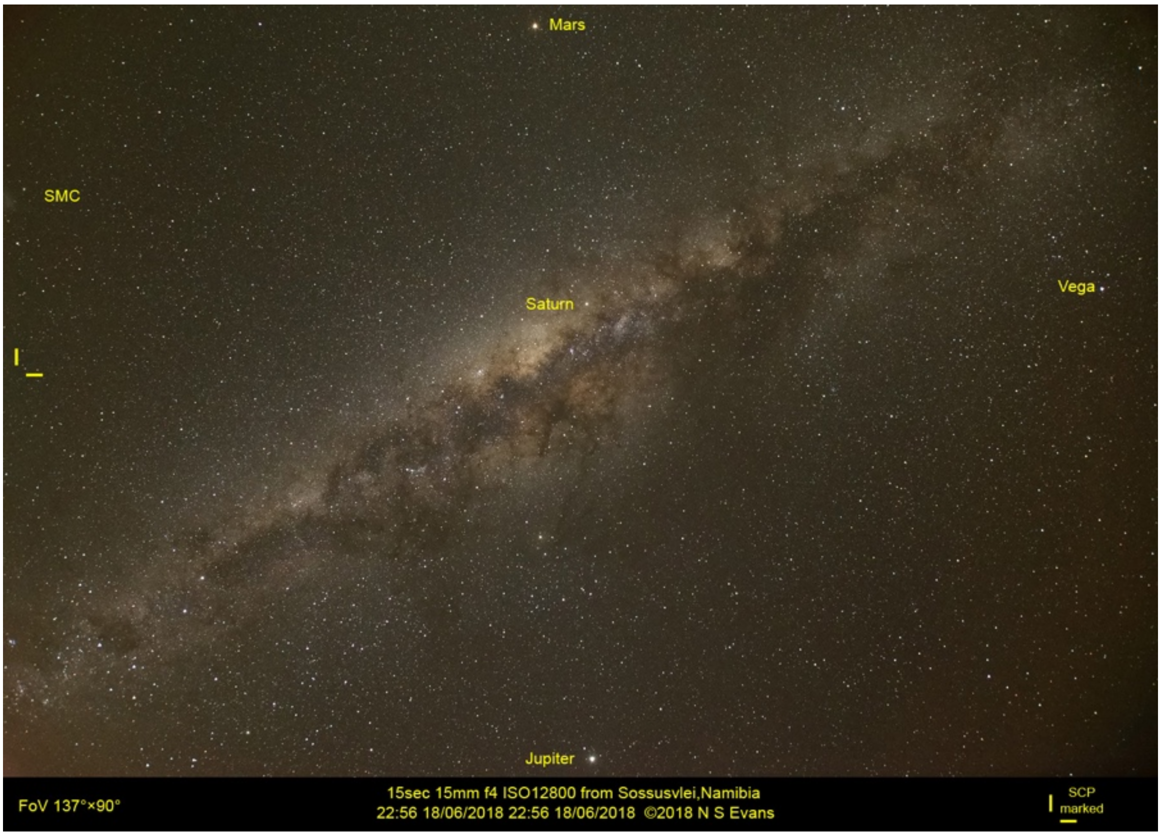

Workshop at Newbourne on 24 September "The Summer Sky from The Canaries and Namibia"

Chairman’s Summer Challenges

Paul Whiting FRAS

Summer 1

YOUR NAME						**Summer 1**
Observation Methods Used*	**Naked Eye**		**Binoculars**		**Notes**	
**Tick as appropriate*						
	Telescope		**With GoTo?**		**Notes**	

Name	Constellation	Type	Best Seen Through	Rating	Seen	Remarks
Napoleon's Hat	Bootes	Asterism	Binoculars	Easy		
Golf Putter & Ball	Andromeda	Asterism	Binoculars	Easy		
Kemble's Kite	Cassiopeia	Asterism	Binoculars/ Telescope	Moderate		
Delphinus Minor	Pegasus	Asterism	Binoculars/ Telescope	Moderate		
Zig Zag	Hercules	Asterism	Binoculars/ Telescope	Moderate		
beta Cephei STF2806A "Alfirk"	Cepheus	Multiple Star	Binoculars/ Telescope	Easy		
Zeta CrB STF1965	Corona Borealis	Multiple Star	Binoculars/ Telescope	Easy		
61 Cygni STF2758AB "Piazzi's Flying Star"	Cygnus	Multiple Star	Binoculars/ Telescope	Easy		
gamma STF2727	Delphinus	Multiple Star	Binoculars/ Telescope	Easy		
57 Pagasi HD218634	Pegasus	Multiple Star	Binoculars/ Telescope	Difficult		
Hercules	Constellation		Naked Eye	Easy		

Thanks to Norman Lockyer Observatory.

Summer 2

YOUR NAME						**Summer 2**
Observation Methods Used*	**Naked Eye**		**Binoculars**		**Notes**	
**Tick as appropriate*						
	Telescope		**With GoTo?**		**Notes**	

Name	Constellation	Type	Best Seen Through	Rating	Seen	Remarks
M11 "The Wild Duck Cluster"	Scutum	Open Cluster	Binoculars	Easy		
M39 / NGC7092	Cygnus	Open Cluster	Binoculars	Easy		
NGC7160	Cepheus	Open Cluster	Binoculars	Moderate		
IC4665 "The Summer Beehive Cluster"	Ophiuchus	Open Cluster	Binoculars	Moderate		
Collinder 464	Camelopardalis	Open Cluster	Binoculars	Difficult		
NGC7023/ Caldwell 4 "The Iris Nebula"	Cepheus	Reflection Nebula	Binoculars/ Telescope	Easy		
M20/NGC6514 "the Triffid Nebula"	Sagittarius	Emission Nebula	Binoculars/ Telescope	Moderate		
NGC6960/ Caldwell 34 "The Veil Nebula - West"	Cygnus	Supernova Remnant	Telescope	Moderate		
NGC6992/ Caldwell 33 "The Veil Nebula - East"	Cygnus	Supernova Remnant	Binoculars/ Telescope	Moderate		
NGC6974 "The Veil Nebula - Central"	Cygnus	Supernova Remnant	Telescope	Difficult		

Thanks to Norman Lockyer Observatory.

Summer 3

YOUR NAME						**Summer 3**
Observation Methods Used*	**Naked Eye**		**Binoculars**		**Notes**	
**Tick as appropriate*						
	Telescope		**With GoTo?**		**Notes**	

Name	Constellation	Type	Best Seen Through	Rating	Seen	Remarks
M92	Hercules	Globular Cluster	Binoculars/ Telescope	Easy		
M71/NGC6838	Sagitta	Globular Cluster	Binoculars/ Telescope	Easy		
M3/NGC5272	Canes Venatici	Globular Cluster	Binoculars/ Telescope	Easy		
M2/NGC7089	Aquarius	Globular Cluster	Binoculars/ Telescope	Easy		
M22/NGC6656	Sagittarius	Globular Cluster	Binoculars/ Telescope	Easy		
M27/NGC6853 "The Dumbbell Nebula"	Vulpecula	Planetary Nebula	Binoculars/ Telescope	Moderate		
M57 "The Ring Nebula"	Lyra	Planetary Nebula	Binoculars/ Telescope	Moderate		
NGC7009 "The Saturn Nebula"	Aquarius	Planetary Nebula	Binoculars/ Telescope	Moderate		
NGC7293 "The Helix Nebula"	Aquarius	Planetary Nebula	Telescope	Difficult		
NGC6826/ Caldwell 15	Cygnus	Planetary Nebula	Telescope	Difficult		

Thanks to Norman Lockyer Observatory.

Summer 4

YOUR NAME						Summer 4
Observation Methods Used*	**Naked Eye**		**Binoculars**		**Notes**	
**Tick as appropriate*						
	Telescope		**With GoTo?**		**Notes**	

Name	Constellation	Type	Best Seen Through	Rating	Seen	Remarks
M33/NGC598	Triangulum	Fuzzy Blob	Binoculars/ Telescope	Easy		
M101/ NGC5457 "Pinwheel Galaxy"	Ursa Major	Fuzzy Blob	Binoculars/ Telescope	Moderate		
NGC7331/ Caldwell 30	Pegasus	Fuzzy Blob	Binoculars/ Telescope	Moderate		
NGC7814/ Caldwell 43	Pegasus	Fuzzy Blob	Telescope	Difficult		
NGC6822 "Barnards Galaxy"	Sagittarius	Fuzzy Blob	Telescope	Difficult		

Thanks to Norman Lockyer Observatory.