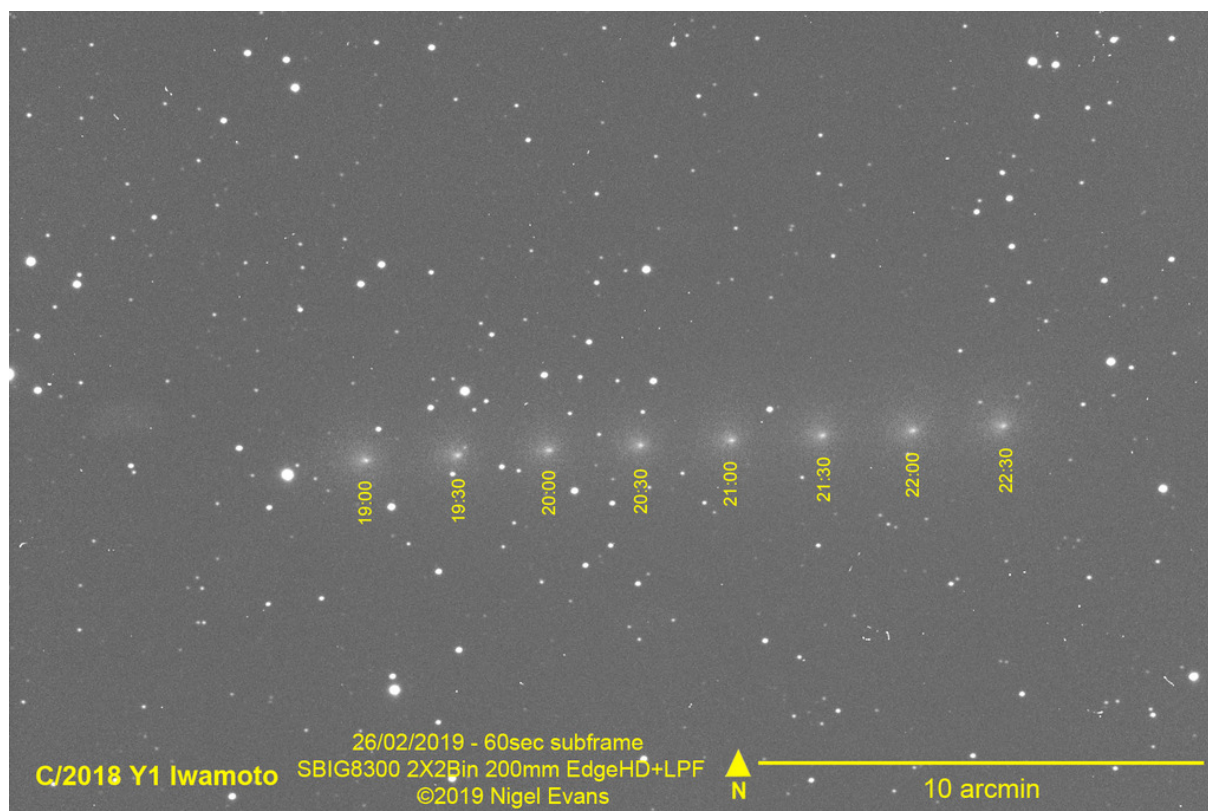




OASI News

The newsletter of the Orwell Astronomical Society



Comet – C/2018 Y1 Iwamoto

Photo by Nigel Evans

Trustees:

Mr Roy Adams

Mr Neil Morley

Mr David Payne

Honorary President:

Dr Allan Chapman D.Phil MA FRAS

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Society Notices

Society Contact details

Observatory (meeting nights only)

07960 083714

Email queries: info@oasi.org.uk

Facebook: Orwell Astronomical

Twitter: @OASIpswich

<https://groups.io/g/OASI>

Members-only message board

Other contact details will be issued to members on a separate printed list.

**Please send material for the OASI
web site and newsletter
e.g. observations, notices of events,
general interest articles, to
news@oasi.org.uk**

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.

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, 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."*?

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

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

Reproducing articles from OASI News

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

Committee 2020

Chairman	Andy Gibbs	Set overall agenda for OASI, Chair committee meetings, Press and publicity,
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, Outreach activities.
Committee	James Appleton	Committee meeting minutes, Web site
	Martin Cook	Membership, Tomline refractor maintenance & user testing
	Matt Leeks	Safety & security
	Peter Richards	Lecture meetings, Email distribution lists
	John Wainwright	Equipment curator
	Mike Whybray	Astronomy Workshops, Child protection officer, Orwell Park School Astronomy Club.
	Andy Wilshire	Librarian
	Avtar Nagra	OASI @ Newbourne

Assistants

Martin Richmond-Hardy Newsletter, OASI @ Newbourne

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.

Annual General Meeting

This was held on **Friday 17 January 2020**, 8pm at Horley Spiritualist Church, 345 London Rd, Ipswich IP2 0BG.

Committee Meeting

This will be held on **Friday 22 May**, 8pm at Horley Spiritualist Church, 345 London Rd, Ipswich IP2 0BG.

Welcome new & returning members

Mark Stansfield

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 (bottom right of the calendar) 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

Key:

OASI public events

BAA & SPA events

Other events

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
Sat 29 Feb. 19.30 to 22.00, set-up from 19.00 Kirton Recreation Ground	Andy Gibbs chairman@oasi.org.uk Martin Richmond-Hardy newbourne@oasi.org.uk	Star Party on Kirton Recreation Ground in support of KATCAG https://www.kirtontrimleycag.com/blog
7 March 10:00–17:30 Cottingham, near Hull	https://britastro.org/meetings/2020	<i>BAA Back to Basics Workshop.</i>
9 March Newbourne VH	Martin Richmond-Hardy newbourne@oasi.org.uk	OASI @ Newbourne.
14 March from 6pm	Paul Whiting FRAS treasurer@oasi.org.uk	Gainsborough Library Outreach Clapgate Ln, Ipswich IP3 0RL
14 March Sheffield, The Diamond	https://britastro.org/meetings/2020	<i>BAA Deep Sky Section Meeting,</i>
15-23 March (TBC)		Haw Wood Spring Star Party
23 March Newbourne VH	Martin Richmond-Hardy newbourne@oasi.org.uk	OASI @ Newbourne. 19:30 Sky Notes + talk at 19:45 by Andy Gibbs on “Poppy” Northcott (former NASA flight controller).

Date, Time & Location	Contact	Event
25 March 17:00–20:00 Institute of Physics, 37 Caledonian Road, London, N1 9BU	https://britastro.org/meetings/2020	<i>BAA Special General Meeting.</i> Grant Privett “Monitoring Variable Nebulae” Dr Andreu Font Ribera “Studying the expansion of the Universe across time” Sky Notes: Richard McKim
Fri 27 Mar 2020, 19:30-21:00 Easton & Otley College, Otley Campus.	Roy Gooding secretary@oasi.org.uk	Public access event. Star Party. Booking not necessary. NB: This event has been postponed from 06 January. The new date is TBC.
Mon 13 Apr from 19:00 Newbourne Village Hall	Martin Richmond-Hardy newbourne@oasi.org.uk	OASI @ Newbourne.
Tue 14 Apr 20:15 Orwell Park Observatory	Paul Whiting, FRAS tour@oasi.org.uk	Public access event. Observatory tour. Booking essential.
25th & 26th April		Kelling Heath Spring Star Party
Mon 27 Apr from 19:00 Newbourne Village Hall	Martin Richmond-Hardy newbourne@oasi.org.uk	OASI@Newbourne. Talk by Bill Barton on the night sky.
Mon 4 May from 19:00 Newbourne Village Hall	Martin Richmond-Hardy newbourne@oasi.org.uk	OASI@Newbourne. NOTE CHANGE FROM USUAL DATE.
Fri 22 May 2020, 20:00 Horley Spiritualist Church, 345 London Road, Ipswich, IP2 0BG	Andy Gibbs chairman@oasi.org.uk	Committee meeting. All members are encouraged to attend.
Mon 25 May from 19:00 Newbourne Village Hall	Martin Richmond-Hardy newbourne@oasi.org.uk	OASI@Newbourne. Talk by Bill Barton on the night sky.
Mon 8 June from 19:00 Newbourne Village Hall	Martin Richmond-Hardy newbourne@oasi.org.uk	OASI@Newbourne.

Date, Time & Location	Contact	Event
Sunday 14 June 09:30 – 16:00 Kirton Recreation Ground, Back Rd, Kirton IP10 0PW	Martin Richmond-Hardy newbourne@oasi.org.uk	East Suffolk Wireless Revival Public access event (small admission charge). Solar observing.
Mon 22 June from 19:00 Newbourne Village Hall	Martin Richmond-Hardy newbourne@oasi.org.uk	OASI@Newbourne. Talk by Bill Barton on the night sky.
Saturday 27 June	Pete Richards lectures@oasi.org.uk	Summer BBQ, open to members of OASI and their guests. Barbecue lighting time: 3.00pm. Bring your own drinks and food to barbecue; in case of bad weather, bring picnic food to eat in the hall. Solar observing (if the sky is clear!)

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).

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 **Stargazers' Guide (Sky Notes), Astronomy Workshops and the Book Swap.**

OASI@Newbourne Meetings

9 March	23 March (T+S+B)	13 April	27 April (S+B)
4 May[*]	25 May (B/H) (S+B)	8 Jun	22 Jun (S+B)

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).

* 1st Monday due to Parish Council meeting on 2nd Monday

Stargazer's Guide

On the last meeting each month Bill Barton FRAS will give a short presentation of what can be viewed in the following 4 weeks plus a reminder of OASI events.

Astronomy Workshops/Informal talks

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.

- 23 March: Andy Gibbs: *Frances "Poppy" Northcutt (former NASA flight controller)*.
- Paul Whiting: *War-time Astronomy*, date 13 July TBC.

Paul Whiting, Bill Barton and James Appleton have offered to lead workshops as follows:

- Paul Whiting: *Galaxy Collisions*, date TBA.
- Bill Barton: *Celestial Coordinates*, date TBA. New members at Newbourne have requested this workshop; Bill is willing to lead it but will defer if anyone else would rather do so.
- James Appleton: *Update on OASI All-Sky Meteor Cameras*, date TBA.

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

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.

Friday 25th September

Nik Szymanek

"Adventures in Deep Sky Astrophotography"

Friday 23rd October

Sonali Shukla

"Brown dwarfs: Linking stars and planets"

Stars and planets are fundamentally different astronomical objects yet the formation processes for each of these types of objects are heavily intertwined. Brown dwarfs straddle the realm of both stars and planets, exhibiting characteristics of both but not fully fitting into either category. I will explore the history, discovery and latest results from our study of brown dwarfs and relate them to our lowest mass dwarf stars and biggest known planets. Understanding brown dwarfs can lead us to better understand how stars and planets form in tandem, both in our solar system and beyond.

Friday 20th November

Matt Bothwell:

"Big bangs to big rips: a history of 20th century cosmology"



OASI Outreach

Kirton Star Party

OASI – Orwell Astronomical Society (Ipswich) – will be holding a Star Party on Kirton Recreation Ground on **29 February** from 7:30pm. This is in support of [KATCAG](#) and the concern over light pollution from planned industrial development in adjacent Trimley.

If the evening is cloudy there will be talks and demonstrations of astronomy kit in the Pavilion.

Given a clear sky you can view the Moon, Venus, the Dog star (Sirius), a lion (Leo), a red giant, double stars, nebulae and galaxies through our telescopes.

If you have binoculars or a telescope, please bring them along.

Remember to wrap up warm!

OASI members: Please can you let us know, if you are willing to help out, with or without a telescope.

Other local astronomy society meetings

Athaneum Astro Society

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>

LYRA Lowestoft & Yarmouth Regional Astronomers

www.lyra-astro.co.uk

LYRA Programme and Local Events 2019 – 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

DASH Astro

Darsham And Surrounding Hamlets <http://dash-astro.co.uk>

Meetings are held at New Darsham Village Hall and 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 from 7:30 pm. on Sundays

Note * Guest Speaker Evenings - Admission Fees:- Members Free, Non Members £ 2:00

Meetings are now on Sundays.

08 March* Meeting:- Dr. Paul Whiting – Galaxy Collisions

22 March Dash Observing Session (Sunset 18:10 Moonset 15.59 3.5% Moon)

05 April Meeting:- Talk T.B.C.

26 April Dash Observing Session (Sunset 20:11 Moonset 23:57 11.3% Moon) Late one?

10 May* Meeting:- AGM plus talk by Amy Rankine from I of A, Active Galactic Nuclei

24 May Solar Observing - Location TBA

14 June Outreach:- International SUNDAY - Location Dunwich Heath

25- July (Saturday) DASH Summer Social (Members and Guests only)

06 Sept Meeting:- Ian Lomas - Quantum Mechanics for Beginners

13 Sept Dash Observing Session (Sunset 19:14 Moonset 17:46 21.5% Moon)
19&20 Sept Outreach:- Henham Steam Rally. Solar Observing and Displays
04 Oct* Meeting:- Stewart Moore – Globular Clusters
18 Oct Dash Observing Session (Sunset 17:50 Moonset 18:57 4.7% Moon)
01 Nov Meeting:- Talk T.B.C.
15 Nov Dash Observing Session (Sunset 15:59 Moonset 16.21 0.2% Moon)
29 Nov Meeting:- Talk T.B.C.
12- Dec (Saturday) DASH Christmas Social (Members and Guests only)

BAA news

BAA meetings in March – April

7 March	10:00–17:30 Back to Basics Workshop, Cottingham, near Hull
14 March	Deep Sky Section Meeting, Sheffield, The Diamond.
25 March	17:00–20:00 Special General Meeting, Institute of Physics, 37 Caledonian Road, London, N1 9BU. Grant Privett “Monitoring Variable Nebulae” Dr Andreu Font Ribera “Studying the expansion of the Universe across time” Sky Notes: Richard McKim
3 April	19:00 The 2020 Winchester weekend at Sparsholt College, Winchester
25 April	One Day Spring Meeting - Nottingham

For full details of all meetings please go to <https://britastro.org/meetings>

For Sale

FOR SALE on behalf of member's widow:

Meade DS-2114S 114mm reflector, drive, tripod and autostar controller.

2x Barlow, 6.4mm, 4mm, 9mm & 25mm eyepieces.

Unopened packet Baader solar filter film.

2 solar eclipse viewers.

£100 the lot.

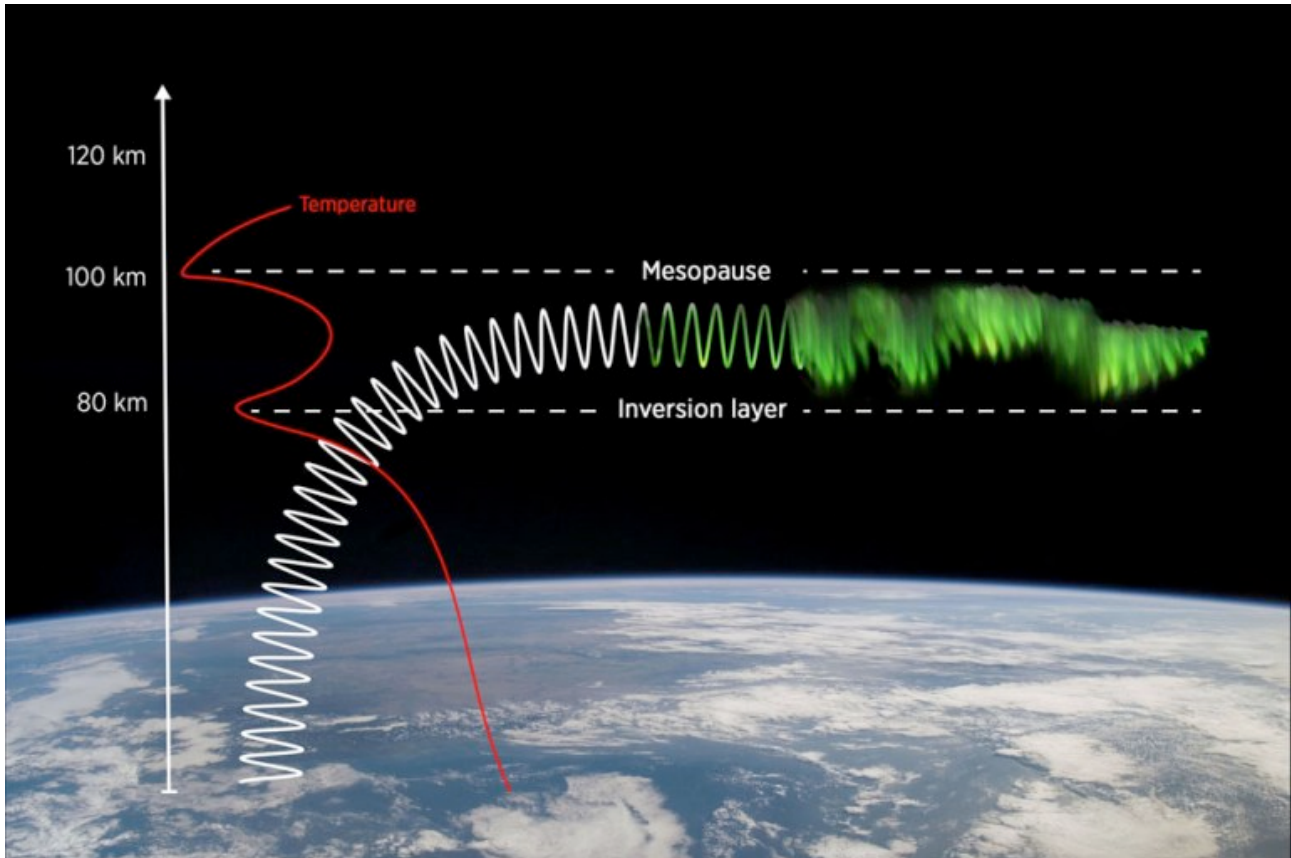
Contact Paul Whiting

From the Interweb

Amateur Astronomers Discover New Variety Of Northern Lights

First it was [STEVE](#). Now it's "dunes". That's the name given to a newly recognized form of aurora that resembles rippled sand dunes at a beach or spreading cirrus clouds.

<http://astrobob.areavoices.com/2020/02/04/amateur-astronomers-discover-new-variety-of-northern-lights/>



The dune-like aurora may form when a gravity wave, created by a disturbance in the lower atmosphere rises up in the atmosphere and gets caught between the mesopause — the boundary between the middle and high atmosphere — and an inversion layer that sometimes forms below the mesopause. A duct created between the two layers channels gravity waves similar to how a heating duct in your home “ducts” heat through the house. Gravity waves surging through the channel create the feathery northern lights.

Jani N rhi / University of Helsinki

The Night Sky in March 2020

Martin RH

All event times (**UTC**) are for the location of Orwell Park Observatory
52.0096°N, 1.2305°E.

NB British Summer Time begins on 29 March.



Moon

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

New Moon	1st Quarter	Full Moon	Last Quarter
	02 March 19:57	09 March 17:48	16 March 09:34
24 March 09:28	01 April 10:21		

Sun, Moon and planets

Source: <http://heavens-above.com/PlanetSummary.aspx> Times are GMT (UTC) until March 29.

Object	Date	Rise	Set	Mag.	Notes
Sun	1	06:09	18:16		Equinox Mar 20, 03:49
	31	06:01	18:07		
Moon	1	10:58	23:21		March 03, 17:20 – 18:20 Moon moves in front of the Crab Nebula.
	31	11:22	23:48		
Mercury	1	06:08	16:46	3.5	Max. western elongation March-24 Aphelion March-27
	31	06:06	16:42	0.2	
Venus	1	07:52	21:49	-4.1	Perihelio March-20 Max. eastern elongation March-24
	31	07:42	00:02	-4.3	
Mars	1	04:13	11:42	1.1	
	31	04:27	12:30	0.8	
Jupiter	1	04:46	12:35	-1.8	March 18 ~05:00 Crescent moon next to Jupiter & Mars.
	31	04:03	12:02	-2	
Saturn	1	05:12	13:21	0.7	March 19 dawn. Saturn lies above crescent moon.
	31	04:21	12:36	0.7	
Uranus	1	08:18	22:24	5.8	
	31	07:22	21:35	5.9	
Neptune	1	07:03	18:03	8	Superior conjunction Mar-08
	31	06:07	17:11	8	

Occultations during March 2020

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.

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
01 Mar	20:43:11	D	0.40+	-29	35	6.8	ZC 581
03 Mar	18:19:54	D	0.59+	-7	60	6.9	ZC 843
03 Mar	20:16:17	D	0.60+	-25	55	6.4	ZC 851
04 Mar	19:52:37	D	0.70+	-21	61	7.0	ZC 1014
04 Mar	20:41:48	D	0.70+	-28	58	7.4	Hip 31667
05 Mar	00:04:50	D	0.72+	-44	34	6.8	ZC 1033
05 Mar	20:34:43	D	0.80+	-27	60	7.0	ZC 1152
05 Mar	23:06:35	D	0.81+	-42	49	7.1	Hip 37579
05 Mar	23:18:38	D	0.81+	-43	48	6.3	ZC 1167
06 Mar	21:36:56	D	0.89+	-34	58	6.7	ZC 1304
18 Mar	05:13:16	R	0.31-	-8	8	5.4	49 Sgr, χ 3 Sgr
29 Mar	19:22:55	D	0.24+	-10	38	3.5	74 Tau, ϵ Tau
	20:31:10	R		-19	28		
29 Mar	21:41:13	D	0.25+	-27	18	7.5	Tyc 1274-0566-1
30 Mar	22:50:32	D	0.34+	-32	17	4.9	114 Tau
	23:26:32	R		-33	12		

Meteor showers

Source: BAA Handbook 2020 p100-101

Shower	Normal limits	Maximum	ZHR at Max	Notes
None this month				

For radio observation, use reflections from Graves radar on 143.050MHz or the Brams transmitter in Belgium on 49.97MHz.

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>

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

Martin RH

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

Times are UTC. Predictions are approximate (25Jan) due to craft adjustments. Check the day before.

Date	Bright -ness (mag)	Start			Highest point			End		
		Time	Alt.	Az.	Time	Alt.	Az.	Time	Alt.	Az.
01 Mar	-2.5	04:14:49	38°	ESE	04:14:49	38°	ESE	04:17:23	10°	E
01 Mar	-3.7	05:47:46	12°	W	05:50:48	85°	S	05:54:12	10°	E
02 Mar	-0.7	03:28:56	14°	E	03:28:56	14°	E	03:29:36	10°	E
02 Mar	-3.8	05:01:52	37°	WSW	05:03:05	80°	S	05:06:29	10°	E
03 Mar	-3.1	04:15:57	54°	ESE	04:15:57	54°	ESE	04:18:44	10°	E
03 Mar	-3.7	05:48:54	11°	W	05:52:08	82°	S	05:55:32	10°	E
04 Mar	-1	03:30:01	18°	E	03:30:01	18°	E	03:31:00	10°	E
04 Mar	-3.8	05:02:57	32°	W	05:04:24	86°	S	05:07:47	10°	E
05 Mar	-3.5	04:17:00	69°	E	04:17:00	69°	E	04:20:02	10°	E
05 Mar	-3.5	05:50:03	10°	W	05:53:23	61°	SSW	05:56:44	10°	ESE
06 Mar	-1.2	03:31:03	20°	E	03:31:03	20°	E	03:32:16	10°	E
06 Mar	-3.8	05:04:00	27°	W	05:05:39	74°	SSW	05:09:01	10°	ESE
07 Mar	-3.8	04:18:04	77°	SE	04:18:04	77°	SE	04:21:16	10°	E
07 Mar	-2.9	05:51:21	10°	W	05:54:30	37°	SSW	05:57:39	10°	SE
08 Mar	-1.4	03:32:10	22°	E	03:32:10	22°	E	03:33:30	10°	E
08 Mar	-3.4	05:05:06	24°	W	05:06:48	49°	SSW	05:10:04	10°	SE
09 Mar	-3.6	04:19:15	60°	S	04:19:15	60°	S	04:22:24	10°	ESE
10 Mar	-1.4	03:33:27	20°	ESE	03:33:27	20°	ESE	03:34:39	10°	ESE
10 Mar	-2.6	05:06:24	21°	WSW	05:07:47	28°	SSW	05:10:43	10°	SSE
11 Mar	-2.8	04:20:42	34°	S	04:20:42	34°	S	04:23:14	10°	SE
12 Mar	-1.8	05:08:05	14°	SW	05:08:34	14°	SW	05:10:28	10°	S
13 Mar	-1.5	04:22:40	14°	S	04:22:40	14°	S	04:23:29	10°	SSE

Date	Bright -ness (mag)	Start			Highest point			End		
		Time	Alt.	Az.	Time	Alt.	Az.	Time	Alt.	Az.
19 Mar	-1.8	19:31:05	10°	S	19:32:32	15°	SSE	19:32:32	15°	SSE
20 Mar	-2.2	20:18:29	10°	SW	20:20:14	26°	SSW	20:20:14	26°	SSW
21 Mar	-2.8	19:30:51	10°	SW	19:33:51	30°	SSE	19:34:46	26°	ESE
21 Mar	-1.1	21:07:01	10°	WSW	21:07:44	15°	WSW	21:07:44	15°	WSW
22 Mar	-2.3	18:43:23	10°	SSW	18:46:03	22°	SSE	18:48:44	10°	E
22 Mar	-3.6	20:19:08	10°	WSW	20:22:05	59°	SSW	20:22:05	59°	SSW
23 Mar	-3.6	19:31:17	10°	WSW	19:34:33	53°	SSE	19:36:19	24°	E
23 Mar	-1.5	21:07:54	10°	W	21:09:16	23°	W	21:09:16	23°	W
24 Mar	-3.1	18:43:30	10°	SW	18:46:39	40°	SSE	18:49:51	10°	E
24 Mar	-3.9	20:19:56	10°	W	20:23:17	84°	S	20:23:23	82°	SE
25 Mar	-3.8	19:31:58	10°	WSW	19:35:19	77°	S	19:37:26	21°	E
25 Mar	-1.8	21:08:43	10°	W	21:10:21	26°	W	21:10:21	26°	W
26 Mar	-4	20:20:44	10°	W	20:24:06	84°	S	20:24:20	75°	ESE
27 Mar	-3.8	19:32:45	10°	W	19:36:07	87°	S	19:38:17	20°	E
27 Mar	-1.8	21:09:32	10°	W	21:11:12	26°	W	21:11:12	26°	W
28 Mar	-3.8	20:21:30	10°	W	20:24:51	65°	SSW	20:25:07	62°	SSE
29 Mar	-3.8	20:33:30	10°	W	20:36:51	77°	S	20:39:01	20°	ESE
29 Mar	-1.6	22:10:23	10°	W	22:11:56	21°	WSW	22:11:56	21°	WSW
30 Mar	-3.1	21:22:17	10°	W	21:25:27	40°	SSW	21:25:50	39°	S
31 Mar	-3.3	20:34:13	10°	W	20:37:30	53°	SSW	20:39:44	18°	SE
31 Mar	-1.2	22:11:37	10°	WSW	22:12:40	14°	WSW	22:12:40	14°	WSW

Starlink passes

<https://heavens-above.com/AllPassesFromLaunch.aspx>

Comets with magnitude brighter than 10

Comet	Brightness	Date of peak	Angular separation from Sun	Altitude	Azimuth	Constellation
C/2017 T2 PANSTARRS	9.0	May 12	91°	54.6°	53° (NE)	Perseus

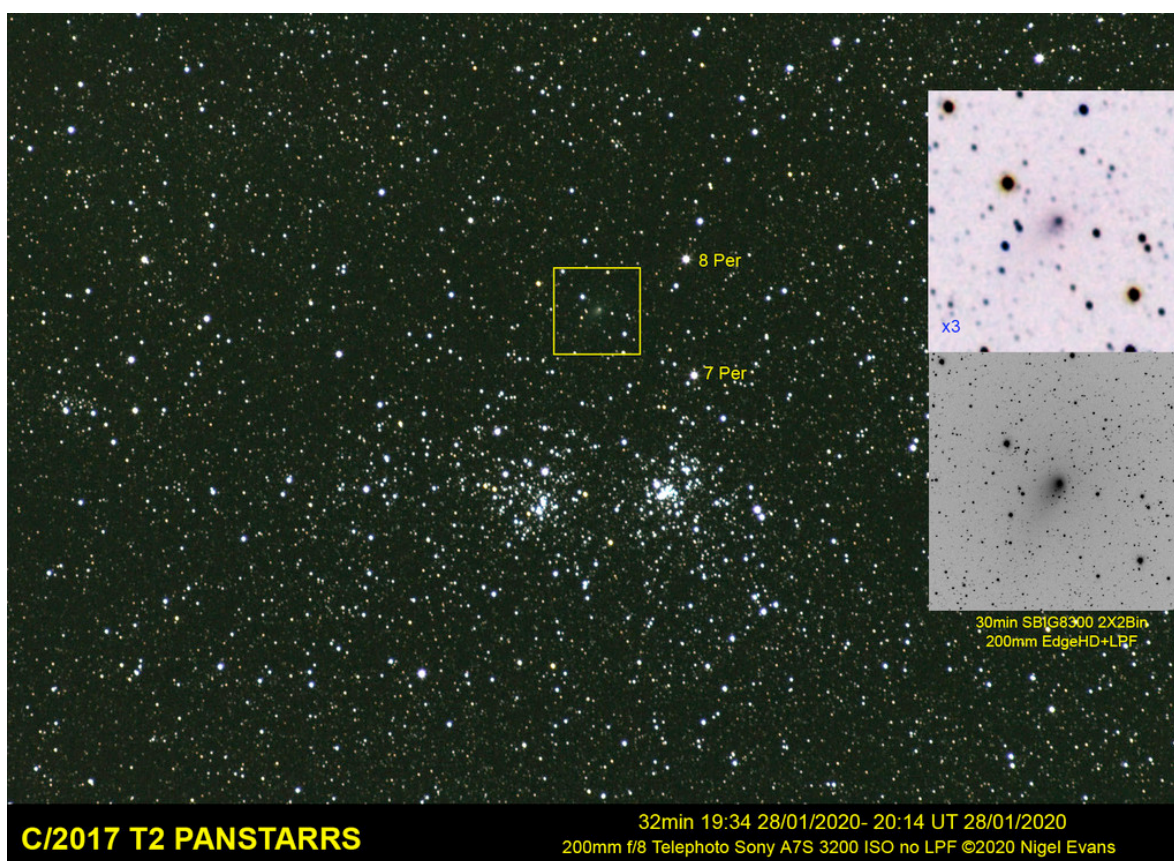
Comet C/2017 T2 PANSTARRS

Nigel Evans



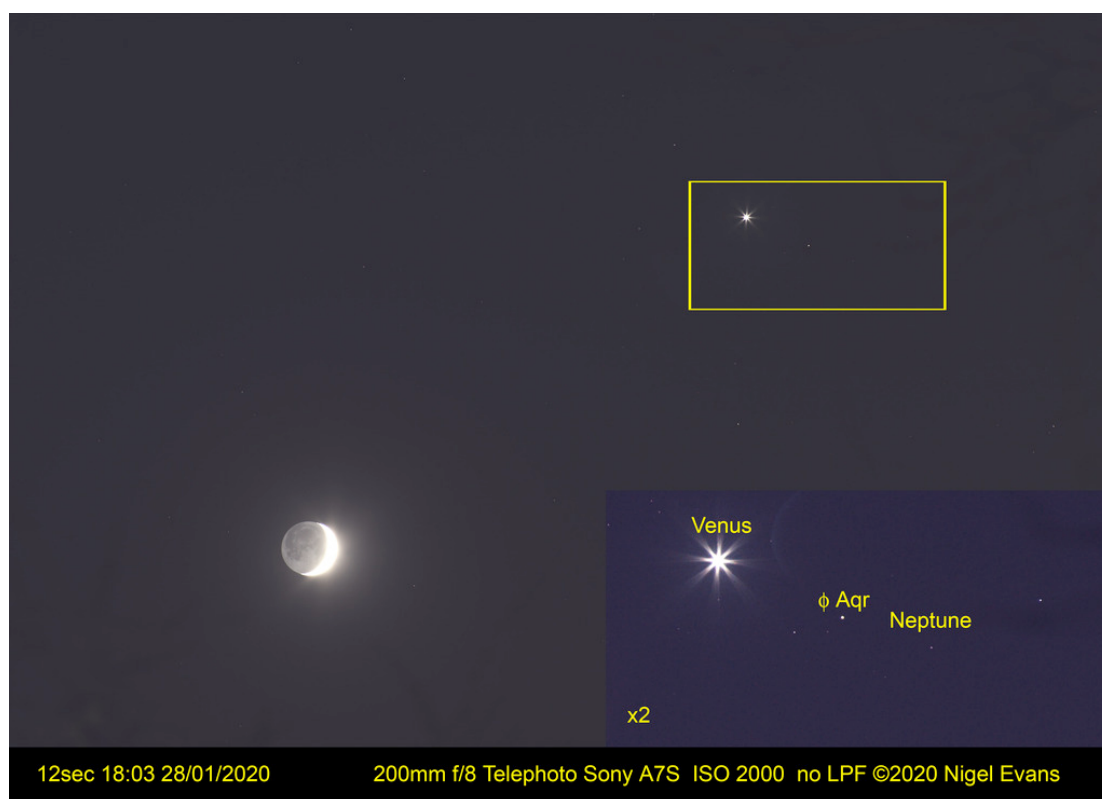
C/2017 T2 PANSTARRS

The field of view of a Celestron 8 EdgeHD was too narrow to show the comet in proximity to the Double Cluster in Perseus last week – that's a job for a telephoto lens. The comet was very high up (~75 degrees), but I am in town, so light pollution is a big problem and I have no LP filter for that lens. Much of the energy was used in recording the glow instead of what I wanted. The result is singularly unimpressive - the comet is bright but the tail is small and faint. The simultaneous image through the Celestron just has sharper stars. Dark skies don't actually improve the view that much, as show in <https://apod.nasa.gov/apod/ap200130.html> , but that is a much nicer picture!

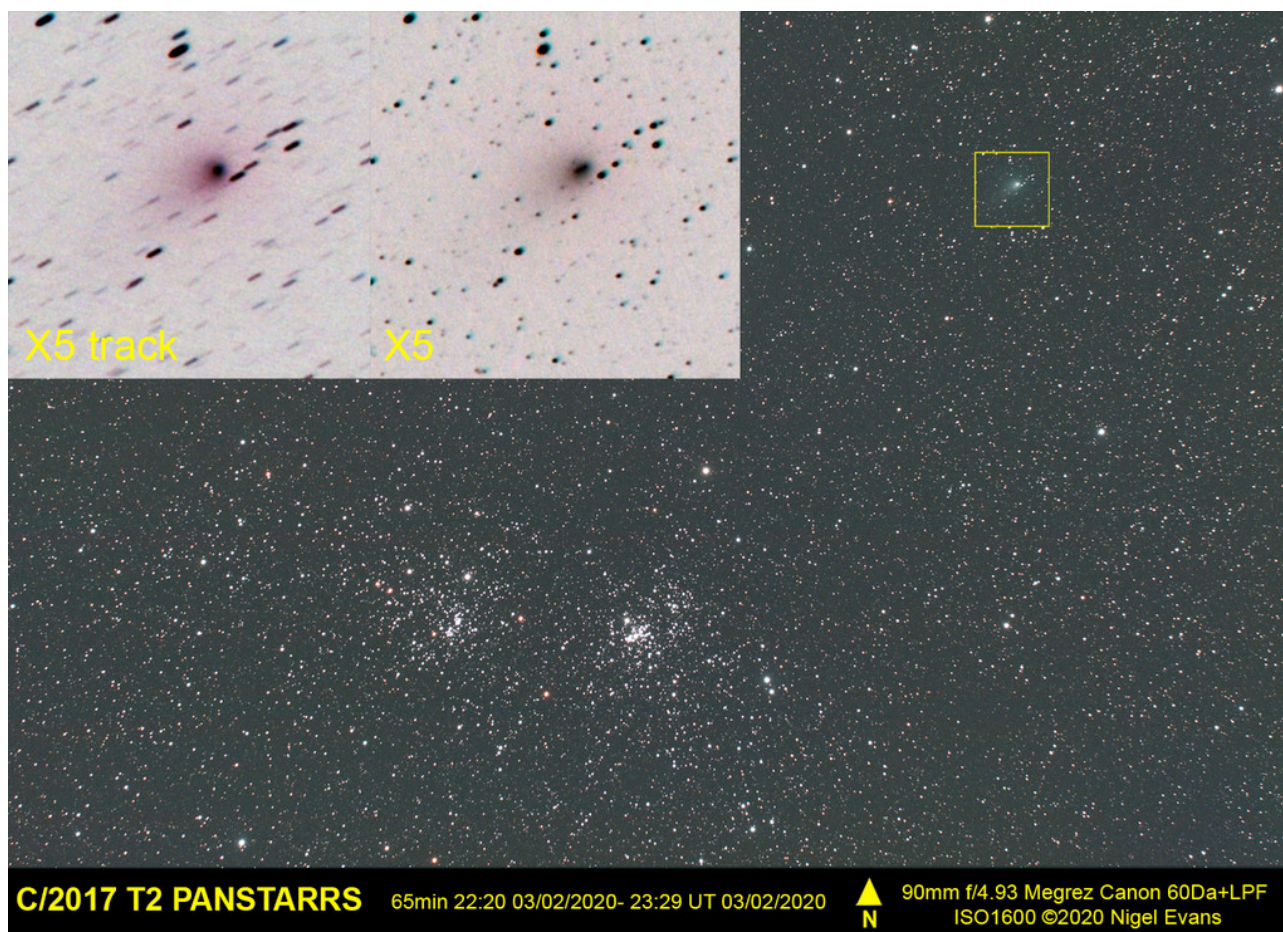


The comet in proximity to the Double Cluster in Perseus

On Jan 27 there was a close conjunction between the brightest planet, Venus, and the faintest, Neptune. Unfortunately it was cloudy that day, but the following evening they were still quite close together, along with a 4-day old Moon



The clear skies on 3 Feb provided another opportunity to record C/2017 T2 Panstarrs. This time I used a small telescope, a Megrez 90mm, to capture both the Perseus Double cluster and the comet in the same field-of-view. This time I had the benefit of a Light Pollution filter, but now the first quarter Moon is contributing to the overall sky brightness.



Antarctic Log 9th January 2020 to 30th January 2020

Paul Whiting FRAS

Thursday 9th January

A relative straightforward journey to Heathrow, ready for a civilised flight-time (22:00) to Santiago, Chile. I'm used to this flight as this was the third time that I had used it. Previous times were for the eclipse last year and before that a visit to the Atacama observatories. I am also booked on the same flight next December for the next eclipse.

Friday 10th January

Arrived on time at Arturo Merino Benítez International Airport, Santiago. The usual formalities were quite quickly processed and we were off to the Intercontinental Hotel, downtown. We boarded a bus that bore more than a passing resemblance to a Tesco delivery truck. It was standing room only, although some kind American offered me his seat – one of the few perks of getting old!! However instead of the 45-minute journey to the hotel we were told to get off after about 5 minutes at the periphery of the airport to transfer on to another slightly less crowded bus / truck. At least the seat was a bit more comfortable. The hotel was good (as you would expect from an international chain), complete with pool. Day at leisure (= sleep).

Saturday 11th January

Time to explore Santiago. We visited the highest building in South America – the Gran Torre Santiago, which happened to be just down the road. A Saturday in mid-Summer it was bound to be crowded. Not a bit of it – there must have been at least 10 visitors, including us! Magnificent views were afforded from the Andes on one side to the coastal mountains on the other, with Santiago nestling in between. The pisco sours and pisco (don't ask) were wonderful, as were the empanadas they served there. That evening we went to a Japanese restaurant. We ordered a few items off the menu, assuming UK portion size. Imagine our horror when a whole procession of waiters brought in piled plate after piled plate. We had most of it and packed up to go, bearing in mind we had to get up at 6am the following morning to fly down to Punta Arenas.

Sunday 12th January

6am. Having suffered indigestion all night as a result of grossly overeating. Threw packed up food from last night away, and declined the offer of an early packed hotel breakfast. "I'm never going to eat again" I said. Caught bus to airport.

Caught plane to Punta Arenas, nearly refused on board catering, but succumbed. So much for never eating again!

We landed around 10am, we could not board the boat until 3pm. 5 hours of a city tour that no-one wanted, with nothing actually to see - bearing in mind we had been up since 5am! The guide was embarrassingly aware of our feelings. We visited the town cemetery followed by the town museum. Both of which were interesting for about 5 minutes. 5 hours later we boarded the ship.



Figure 1: MS Roald Amundsen

A brand-new polar expedition vessel – still with new boat smell, the MS Roald Amundsen, of the Hurtigruten fleet. We all had to line up in front of the ship's doctor with our medical forms, and permission slips from our doctors to travel to Antarctica, 48 hours from the nearest hospital. It reminded me of the Doctor at Sea series.

Monday 13th January – Day 1 of cruise

Punta Arenas to Ushuaia to Puerto William - a straightforward cruise. We paused briefly at Port William to complete Chilean formalities and off we go ...

Tuesday 14th January – Day 2 – Cape Horn

We landed at Cape Horn to walk up the 175 steps to the Albatross monument, that I had photographed 10 years earlier when I last rounded Cape Horn. Of course, I didn't climb the 175 steps, I managed about 20. They were steep and slippery. One lady had to be brought down these steps on a stretcher and taken back to the ship. The doctor had to come and attend. In fact, she was taken back to Port William by speed boat, and we turned around and started sailing back there as well, with the intention of picking her up from there. However, she was quite serious and was moved to Ushuaia hospital, so we left her behind and returned to Cape Horn.

Wednesday 15th January – Day 3 – at sea

This was the crossing we all dreaded, the notorious Drake Passage. Last time I crossed it was like a mill pond, and this time was no different. I'm beginning not to believe all these tails of the world's worst storms and boats sinking.

Lots of sea birds, including various types of skua, petrel and albatross. Also the first sighting of a humpback whale.

Thursday 16th January – Day 4 – Half Moon Island 62°36' S 59°55' W

This Island is part of Livingstone Island, itself part of the South Shetlands. Our first Antarctic landing, but not yet on the continent of Antarctica. Lots of chinstrap penguins and two gentoo penguins – obviously exchange students! All around us were swarms (!) of penguins swimming in the sea but leaping out as they went along, like dolphins. There was also the odd elephant seal.

Just by our landing site was an Argentinian summer base. Their crew were invited on board to use the ship's internet to contact home. There was also a Greenpeace survey vessel in harbour, but they kept to themselves.



Figure 2: Squabbling Chinstrap Penguins



Figure 3: Adélie Penguin swimming

Friday 17th January – Day 5 – Brown Bluff 63°32' S 56°55' W

At last, a landing on the Northern tip of the Antarctic continental peninsular, even though it meant getting up at 6am. Mainly [Adélie penguins](#) swimming, diving and walking along the penguin “highways”. However again there were a few gentoos living among them. Another couple of whale sightings, possibly humpbacks.

As it was such a nice day we moved further along the coast and did some “scenic” boat rides. But as this meant changing back into the “landing gear”, comprising of at least 6 or 7 layers of clothing plus tight fitting wellie boots, probably give this “opportunity” a miss. We can see just as well from the warmth of the boat. It was supposed to be -1C outside, well it is mid-Summer.

However, we did succumb to the lure of whales dancing in front of the ship, and donned our costumes. Our little boat guide, who had just completed a PhD in glaciology, was telling us about icebergs. We kept asking her about whales. Such as what was the one we had just seen. A big one she replied! Apparently, we saw humpbacks and Minke whales today. And more penguins swimming and performing aquabatics for us.

While we were out it snowed. Just a bit. And the flakes were mostly perfect hexagonal stars.

Saturday 18th January – Day 6 – Astrolabe Island 63°17' S 58°42' W

A spectacular little island with high, snow-capped sheer cliffs one side and more moderate hills the other. We landed on a small beach amongst the cliffs and were expected to climb over a 60m pass to get to the other side and then return. I stayed on the beach and tried to listen to radio effects from the aurora australis with my E-field receiver. I had to listen for this as we were too far north and too much in to the season of 24-hour light, to be able to see anything.

Today was seal day, with several species being spotted on and around the beach. Elephant, Weddell, leopard and fur varieties. More humpback whales were seen too.

The icebergs are starting to get more spectacular too.



Figure 4: Impressive Iceberg

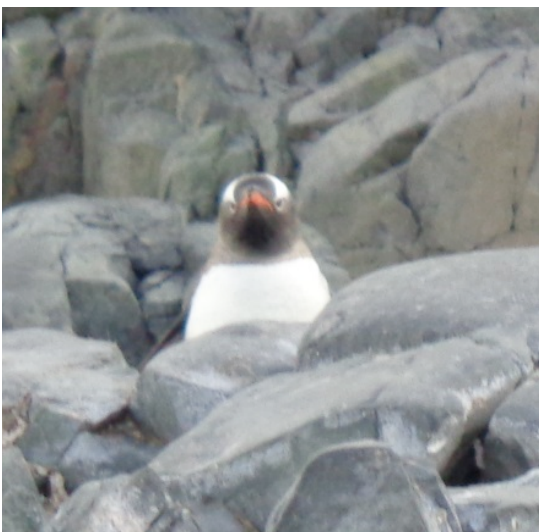
Sunday 19th January – Day 7 – Orne Harbour 64°37' S 62°32' W

The day started with some whale watch cruising around Wilhelmina Bay, optimistically called Whale-mina Bay. Only about 20 humpbacks on show!

Another lovely calm day, even with blue sky and sun. The occasional snow shower only lasts for seconds. Got involved in NASA cloud watching citizen science today, followed by some science experiments with ice. Had to explain what an astrolabe¹ was to science leader.

Late landing today, again on the continent itself. "Moderate" climb up icy hill, so I stayed on the beach.

A number of people wanting to camp overnight in Antarctica went ashore this evening. We may see them again tomorrow



!



Figure 5: A Gentoo playing hide-and-seek

¹ If you fancy a play with one, go here <http://www.astrosurf.com/spheres/as/astrolabe-en.htm> [Ed]

Monday 20th January – Day 8 – Damoy Point 64°49' S 63°31' W

After picking up the survivors of the camping trip, we off-loaded a passenger from the British Antarctic Survey (BAS) who had hitched a ride. He was going to Port Lockroy for 4 weeks to survey historic British Antarctic base huts.

We also picked up and played host on board to the most southerly Post Office in the world, based at the former British base at Port Lockroy – now a post office and museum run by BAS and Antarctic Heritage Trust. This was the subject of a 2014 BBC documentary called the Penguin Post.

At the landing point today, there were nesting gentoos, complete with young chicks between their legs. Skuas were circling overhead looking for a quick feed of any young left unattended.

Another sunny day, with positive (just) temperatures, but a brisk wind. This was to be our furthest point south. Just 1°51' or 111 nautical miles short of the Antarctic circle.



Figure 6: Gentoo with Chick

Tuesday 21st January – Day 9 – Pendulum Cove, Deception Island 62°56' S 60°36' W

Back to a familiar area from 10 years ago! A still active volcanic caldera, that last erupted in 1973, albeit subsurface. Swimming is again encouraged here, as the water is about 40 degrees in the first metre or so from the shore line, rapidly returning to zero thereafter. The remnants of an old Chilean base may be seen, before it was caught in a mudslide and they had to evacuate over the mountain to the British base on the outer north-west side of the volcanic atoll.

A pleasant little walk on the flat, but stony beach. No penguins visible but a couple of Weddell seals and plenty of Arctic Skuas.

A few crazy people went into the sea for a swim, but given the historic seal fur trade and whaling factory ships that were based here, and the fact they left the rotting carcasses in the bay to rot and smell, I don't think I fancied going swimming! OK it was 90 years ago.

There is also the remains of the original landing strip that was made here.

Wednesday 22nd January – Day 10 – Cape Valentine & Point Wild, Elephant Island 62°56' S 60°36' W

No landing today, just a "scenic" sail past. The most easterly part of the South Shetlands, where Shackleton left most of his men to go and get help, on a small spit of land, Point Wild.

Mal de mer, so missed the parade of seals and whales that apparently went past the ship whilst I was indisposed.



Figure 7: Point Wild. 22 men survived here in an upturned boat for over 4 months

Thursday 23rd January – Day 11 – at sea

Lots of lectures and a bridge tour. A few albatrosses seen flying around us.

Friday 24th January – Day 12 – Stanley, Falkland Islands 51° 42' S 57° 49' W

Arrived at the Falklands on time, but very strong wind prevented us from landing on time. Lots of black-browed albatrosses flying around enjoying the wind. The wind was gusting at 60 knots (force 11 – violent storm). The captain said we could do it, but the Stanley pilot said no. We did it, albeit 3 hours behind schedule.

A pleasant little trip around the town in an old school bus, taking in the island brewery (new since I was last there) and the Falklands War memorial and the bust of Margaret Thatcher. They celebrate Thatcher Day on 10th January every year as a public holiday.

There is a nice little museum that I didn't get a chance to go round last time.



Figure 8: Bust of Margaret Thatcher



Figure 9: Stanley Post Office

Back on board ready for a towel folding demonstration by the stewards.

Finally, tonight – our first clear night. Southern Cross clearly on show, together with the Large Magellanic Cloud. I didn't manage to spot the Smaller one. Even Orion appeared, upside down.

**Saturday 25th January – Day 13 – West Point Island,
Falklands 51° 20' S 60° 41' W**

A day at leisure exploring this private island. The owner, who lives in Stanley, was given it by his mother as a birthday present, having bought it for £10,000 in 1959. The sheep farm on it is now run by tenants, who make most of their income now from tourist boats, especially from visits by Hurtigruten. For this reason, they were most welcoming and even hoisted a Norwegian flag under the Falklands flag on their flagpole. The tenant and his friend from the next island (two-and-a-half-hour drive and 30-minute boat ride away) drove the incapable (like me!) up the 1.5-mile hill climb to see the black brow albatross colony and rock hopper penguin colony on the other side of the island.

On the way back we were dropped off at the farmhouse for tea and cake, hand made by the respective wives of our hosts. The weather was perfect – sunny, no wind and around 13 degrees. Perfect for sunbathing.



Figure 12: The welcome at West Point Island

Also seen were the American turkey vulture and the dark-faced ground tyrant (a sort of flycatcher), although for all the world it looked like a thrush to me.



Figure 10: Rockhopper Penguin



Figure 11; american Turkey Vulture

Sunday 26th January – Day 14 – New Island, Falklands 51° 43' S 61° 18' W

The wind returned today, gusting at 30 knots (force 7), but soon calmed down as we landed. Another lovely warm, sunny day. A pleasant walk of about 2 miles on the flat-ish, with a gift shop half way! Two permanent inhabitants on the island, plus a range of scientists who come and go throughout the year.

Lots of rock-hopper penguins and their fat little chicks. Also, geese and albatross nesting in the tussock grass. More dark-faced ground tyrants seen sleeping on the old settlement house roofs. Weather and sea conditions a bit choppy this evening, so early to bed. Shame we missed the ship staff concert! However, around midnight the sky was at its clearest, and Orion could be seen in all its glory from my balcony. Sirius was so bright it left an after image in your eyes.

Monday 27th January – Day 15 – at sea to Punta Arenas

Back to where we started, but on route we saw amazing aerobatic displays by various massive seabirds. Not sure whether they were wandering albatrosses or great southern petrels (I sound like I know what I'm talking about here!!).

Tuesday 28th January – Day 16 – Punta Arenas to Santiago

Relatively easy flight back to Santiago, but a massive wait at the airport for the bus to the overnight hotel.

Wednesday 29th January – Day 17 – Santiago to home

Which was nothing compared to the queues faced at Santiago airport on the way home. First the queue for the boarding pass. You would think travelling club class would save this interminable wait, but no. Then the fast track security check. Fast track.! This took 30 minutes for about 30 people to pass through, whereas the normal "slow track" was cleared in about 30 seconds per person. So no time in the club lounge and missed lunch. 0/10 for SCL!

From Moon to Mars with the Inherent Hazards of Human Spaceflight

Andy Willshire

In the not too distant future people may be calling both our Moon and Mars home. In order to make this a possibility, NASA has been working with International partners and several United States companies to consider how to put a small colony of humans on the Moon and then to send a percentage of them from the Moon to Mars. The Moon colony would be instituted as a permanent base, fully established within the next ten years. The earliest mission is designed to take place in 2024.

In order to accommodate the Moon colony base, NASA has decided to build a small spaceship which will be positioned in an elliptical almost rectilinear halo orbit, which will range within 3,000km around the lunar north-pole at perihelion and 70,000km above the lunar south-pole. This ship will be known as 'The Lunar Gateway', which will act as an information and telecommunications focus. It will also be designed to provide a basic scientific laboratory, and to provide all astronauts heading for the Moon with temporary accommodation allowing both humans and robot missions the ability to visit more widespread areas on the Moon than if just placed in one base. Transportation will be by re-usable crafts, simply acting as a taxi service between the two points.



The Lunar Gateway

Picture credit: <https://i.ytimg.com/vi/K4YMFP9O-as/maxresdefault.jpg>

This enterprise forms an important capability within NASA's Artemis program, which is designed for crewed lunar exploratory missions, as well as the staging phase for Mars missions. This would be a crewed mission lasting up-to 1,000 days, and would comprise two basic parts; an Orion capsule and a propelled living module.

Having reached this point of heading for Mars, what are the problems that may occur to humans flying through space? The first of these obstacles is radiation, which can be described as the movement of energy such as high speed particles and electromagnetic waves. Ionizing radiation has enough energy to strip electrons from orbits of atoms culminating in charged particles. This is primarily a major headache for humans in space. We can't see it and have to rely on electronic apparatus. It is also quite deadly. On Earth we have a tremendous volume of confirmation data that shows that if humans are exposed to considerable periods of radiation above 100 milliseverts the likelihood of contracting a cancer is quite great. This fact may change marginally depending upon fitness, diet and populations. Is the radiation a constant output, and can risk assessment unpredictability be fully quantified? At present projection models give only basic data, leaving only the first hand practical experience to illuminate fundamental biological processes whilst in space. Research in the control of charged particles is essential to the understanding of intrinsic carcinogenesis.

A major problem for the human body is radiation exposure to the central nervous system, causing alterations to both motor function and nervous system conditions. Practical data about radiation effects on the human body in space is sparse, so it falls to laboratory research using both animal and cellular structures to provide data, which can be extrapolated to suggest the effects on humans. However neither this data nor computer simulations, can give definitive answers upon which outer space projects can be selected.

Terrestrial origins of ionizing radiation may cause cardiovascular disease, which decrease the flow of blood to the heart. It is therefore considered that enduring a long spaceflight through solar particle and cosmic ray incidents may be possible precursors to deterioration of both the vascular and cardiac systems of the humans on board. If a catastrophe occurs, immersing the astronauts in space radiation, intense radiation sickness and death would occur. Radiation shielding is of paramount importance and dose monitoring essential.

Leaving radiation, we ask what happens when you pack a small area with people over a long time period? Behavioural problems that can occur have been well documented on Earth. It has been found that no matter how well you try to integrate the mission members issues will inevitably develop. On a trip to Mars add isolation to the cramped conditions, as well as sleep dysfunction, then practical and mental performance reduces and the mission aims become jeopardized.

Another facet to consider is how far the spaceship is travelling from home. On average the astronauts on Mars will be 225×10^6 km from Earth, and may have taken three years to get there. Although we have amassed a great deal of data from the International Space Station it isn't necessary congruous. Getting home to earth from the ISS could take a matter of a few days; Mars is a whole new ball game. There is no swift resupply. Astronauts will therefore have to acquire a group symmetry which allows them to understand the rationale of self-sufficiency, pre-planning and the ability to tackle diverse situations swiftly without the help of scientists back on Earth.

Gravity will also induce the human body to adapt to gravitational changes. The surface gravity on Mars is approximately 38% of that on Earth. Astronauts will have to adapt to this for at least 2 years, as well as the period of weightlessness between the Moon and Mars. At present we have a great deal of knowledge about the effect of gravitational changes and the human body, but the stresses and strains due to this type of engagement would be partially theoretical at best. NASA is working with medical agencies to provide therapies that would counter the body's trauma. Finally astronauts will be existing within the confines of a machine, and will by necessity have to make sure that all functions work well. A failure of any one feature may cause a breakdown of the human system. NASA has a large human resources program that is dedicated to detecting techniques and procedures that will allow astronauts to encounter space safely.

The next ten years may be one of the most exciting in Space travel.

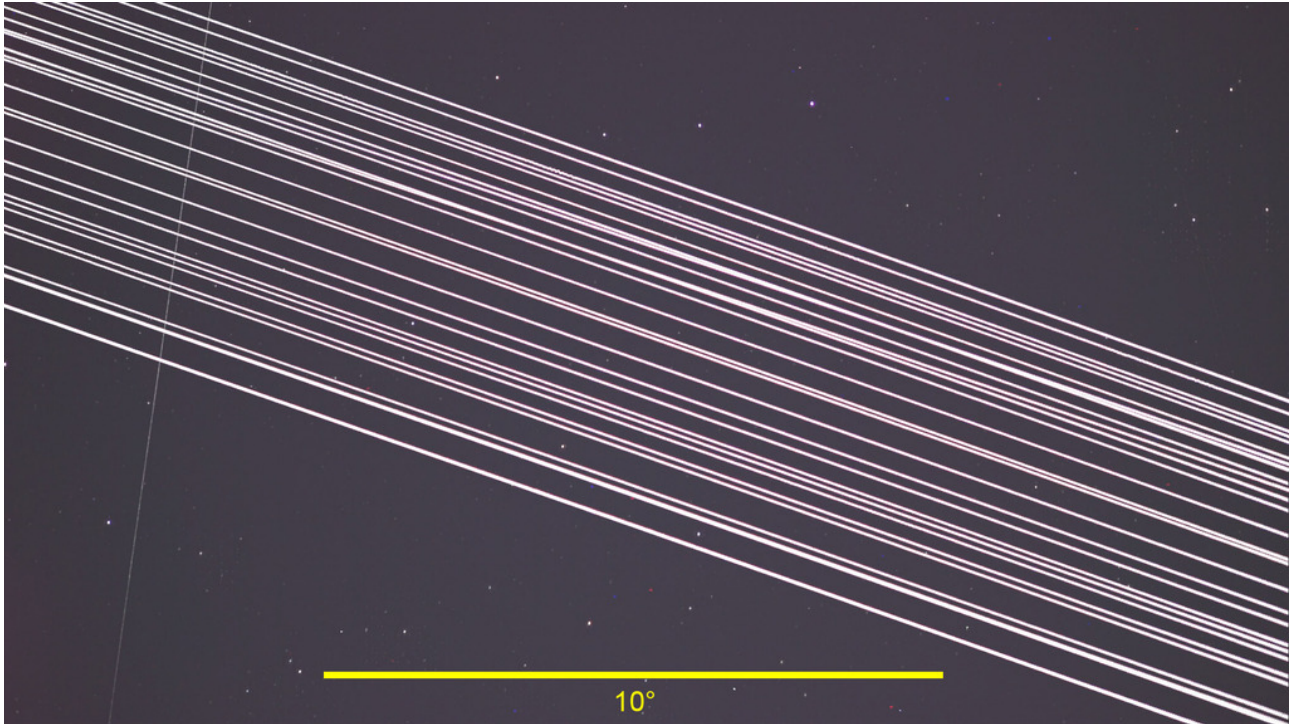
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Starlink

Nigel Evans

The shape of things to come!



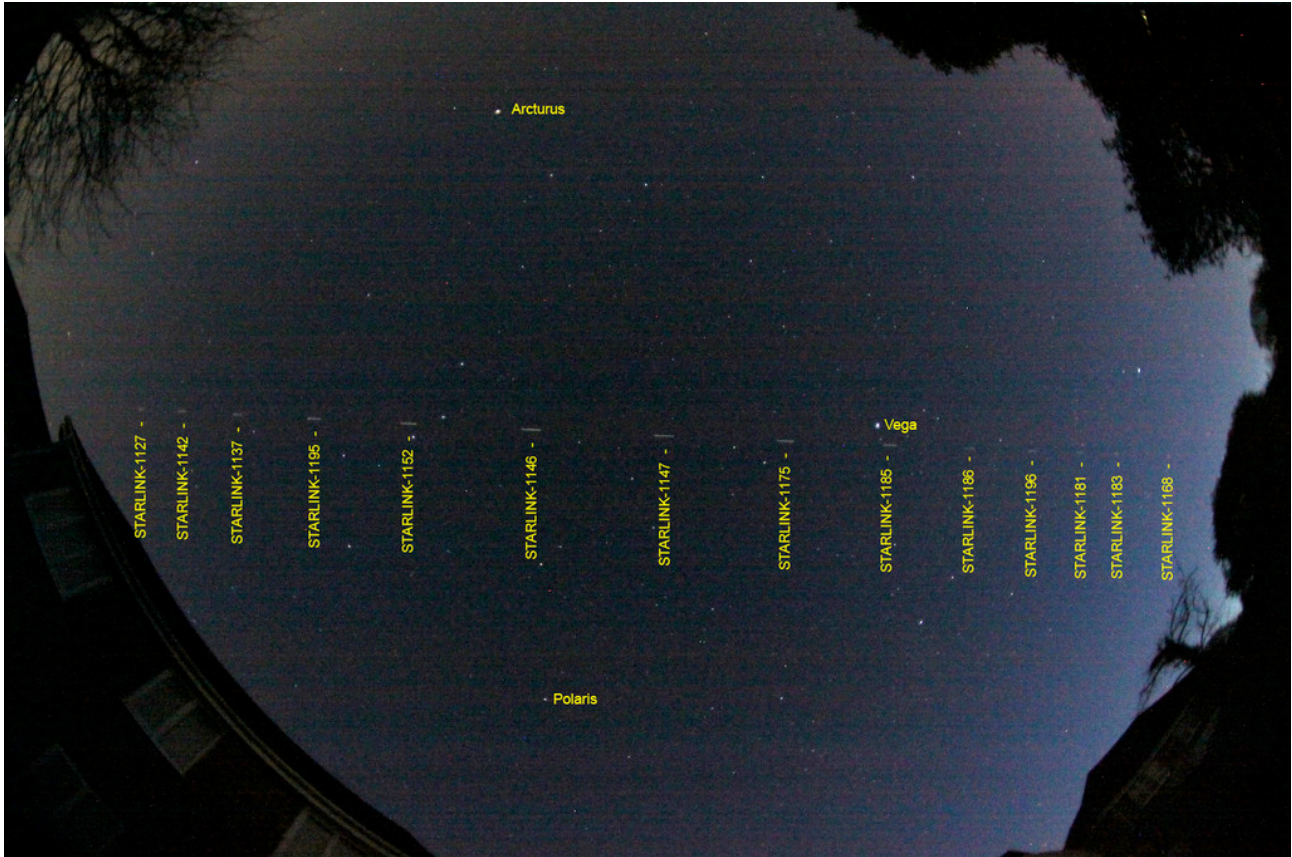
The satellites from the latest Starlink launch (29 Jan 2020) have now rotated into visibility in the mornings. Yesterday morning (12 Jan), although very cold, presented an opportunity. The satellites came out of the Earth's shadow at an altitude of about 20 degrees fairly close to the moon. The main group consisted of 31 satellites, all in a line with a typical spacing of about 12 seconds. It was possible to see at least 10 satellites at the same time - it was quite surreal to see 10 "stars", all moving as one, relative to all the others. Towards the end of the pass, one of the satellites was moving visibly faster than the others and actually overtook another satellite. Currently most of the satellites are in an orbit of about 340 km by 340 km, orbiting the Earth 15.75 times a day, climbing up towards an operational altitude of 500 to 550 km. Starlink-1179 is in a lower orbit of 279 by 291 km, circling the Earth 15.95 times a day, so appearing to be some 1+% faster.

I had a go at trying to video their passage through the Corona Borealis - Serpens border. Video files can be enormous so some speeding up of the event was needed. The satellites are nominally in the same orbit, but our rotating perspective from underneath gives the impression of them sweeping over a band of the sky. The impact of all these satellites, flashing through the fields-of-view of the telescopes around the world, as shown in the jpeg, remains to be seen.

20 February

Yesterday morning it was clear and I took the opportunity to record the passage virtually overhead of the Starlink3 constellation (4th launch -29 Jan). This is not the latest set, launched on 17 February - they will not become visible here until early march.

This time I used a wide angle fish-eye lens to record the passage. Although they are launched in groups of 60 satellites into a low earth orbit, they do start to spread out as they propel themselves into their working orbit at 550 km. The main group contained 28 satellites that passed by in about 8 minutes. In the still frame 14 satellites can be seen simultaneously.



Starlink satellites at about 05:47:11

Mars Encounter in November will give best view of Mars until 2033

A National Astronomy Week (NAW) will be held in the UK from Saturday 14 November to Sunday 22 November 2020. The aim of the week is to celebrate the close approach of Mars, and to give members of the public the chance to see the Red Planet in close-up through a telescope.

Amateur and professional astronomers around the country will be holding observing events during the week. As seen through a telescope magnifying about 100 times, Mars will appear as a pale orange disc, with its markings clearly visible. It will be 80 million km away.

Although Mars is at its closest to Earth a month earlier, at that time it is only high enough in the sky to be viewed quite late in the evening. By November it is well up in the sky during the early evening, allowing younger schoolchildren a unique opportunity to get a good view of the planet. It will not be as close again until 2033. And on that occasion it will be very low in the sky as seen from the UK.

'We are excited that National Astronomy Week will give thousands of children and their parents the chance to see Mars in close-up' said Lucinda Offer, chairperson of National Astronomy Week and Executive Director of the Mars Society. 'Several space missions are being launched towards the planet this year and we are looking forward to getting some amazing results.'

British scientists are among those who are involved in experiments aboard spacecraft, in particular ESA's ExoMars mission to put a rover, named Rosalind Franklin, on the planet next year.

As well as Mars, Jupiter, Saturn and the Moon will be on show during National Astronomy Week. Details of observing events will be posted on the NAW website, astronomyweek.org.uk. During the last

NAW, over 200 events were organised around the UK, and the organisers are calling upon astronomical societies, observatories and university departments to arrange even more events this time.

A vertical poster for National Astronomy Week. At the top, a silhouette of a person stands on a hill, looking through a telescope at a starry night sky with a bright blue nebula. Below this, the text 'National Astronomy Week' and '14-22 November 2020' is displayed in white. A large, detailed image of the reddish-orange planet Mars is shown in the center. Below the planet, the text 'Get ready for a Mars Encounter' is written in a large, stylized font. The website 'www.astronomyweek.org.uk' is listed below. At the bottom, there are logos for the Royal Astronomical Society, the FAS (Federation of Astronomical Societies), a QR code, the BAA (British Astronomical Association), and the Society for Popular Astronomy. Social media icons for Facebook, Instagram, Twitter, and YouTube are also present, along with the text 'Tag us at #NAW2020:'.

About National Astronomy Week

This will be the eighth NAW. The first, held in 1981, celebrated the 200th anniversary of the discovery of Uranus from Bath by William Herschel. Others have celebrated Halley's Comet in 1986, the very close approach of Mars in 2003 and the 400th anniversary of the first astronomical use of the telescope by English observer Thomas Harriot in 1609.

The week is supported by leading UK astronomical groups and organisations. For more information about the event please visit astronomyweek.org.uk.

To contact the NAW organisers please email info@astronomyweek.org.uk

Martin Baker

Webmaster Federation of Astronomical Societies

Yet Another Comet! – C/2018 Y1 Iwamoto

Nigel Evans

When I take (lots of) photos of an astronomical object, I then process them to get a final version, usually a single picture. All the original files are then pretty worthless, so I delete them to clear out disk space. Recently I found a directory where this had not been done - because I had not processed them. I knew when they were taken (26 Feb 2019), but not what it was of, other than it was a fairly unimpressive comet.

So what next? I created a median image and fed it into an online astrometry site

<http://nova.astrometry.net/>

It did not take long before it replied with the coordinates of where it was (in Auriga) along with image scale and orientation. I found I had been looking at C/2018 Y1 Iwamoto.

I suppose I ought to keep better notes :-(The thing I found most impressive was the ability to feed some random picture of the sky, with no detail as to scale, field-of-view or orientation, and the reply just tells you!

