NEWSLETTER

Dec. 2017 -Feb. 2018 Issue 181

CAS member (Stephen Webber) and Flight Dynamics Officer during the Apollo flights, Jerry Bostick

Contents

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Editorial John Richards

Welcome to the first newsletter of 2018. I hope you enjoyed indulging over the Christmas period, and that Santa brought you lots of astronomical festive treats. I'm hoping that 2018 promises some treats of its own, with a probably test launch of a Falcon Heavy in the first quarter of 2018, to possible unmanned test flights of manned capsules by SpaceX and Boeing. This will lead the way to allowing America to once again launch its own astronauts from its own country. This of course hasn't been possible since the retirement of the Shuttle fleet in 2011.

In the night sky, May sees Jupiter at its closest approach to Earth, with its disc fully illuminated by the Sun. This should make the giant planet a sight to behold in the late spring sky. For those intrepid explorers, South America and Northern Europe each have a partial solar eclipse during 2018. Finally, the Perseids in August rarely fail to produce a summer spectacle, if you like your night sky observing dark and warm(ish).

As some of you may have noticed, this edition is appearing a little later than normal. I am currently studying an astronomy and planetary science degree with the Open University and along with a full time job, I'm finding as the study is getting more complicated, my ability to devote enough time to Society duties is becoming a problem. It is therefore with a heavy heart that I announce this will be my last editorship of the newsletter. I have immensely enjoyed the time I have edited the newsletter, and wish the next editor every success in the future. I'd like to take this opportunity to thank Theresa Cooper, who regularly proofreads the newsletter prior to publication, to chock my spilling and provide words of encouragement.

Contact Details

Have you changed your email address or other contact details recently? If so, you could be missing out on receiving important Society information. Please keep us up to date with any changes. Send your revised details to either our Membership Secretary (membership.secretary@cardiff-astronomical-society.co.uk) or Secretary (secretary@cardiff-astronomical-society.co.uk).

Visit CAS on the web at
http://www.cardiff-astronomical-society.co.uk
General enquiries can be sent to:
info@cardiff-astronomical-society.co.uk
As a CAS member you can use the **Members Area** of the web site to view Society handbooks, committee minutes, newsletters, CIO documents and other Society material of note.

CAS is now on twitter, to follow us, follow **CardiffAS**

CAS is also on facebook at
http://www.facebook.com/CardiffAS

Star Event St. Fagan's November 18th

Theresa Cooper

In short, a very enjoyable evening meeting up with some old friends from the National Museum of Wales, Astro Cymru and Usk Astronomical Society, plus over 200 members of the public of all ages, wanting to talk about our favourite subject of stargazing.

This seemed a different event to last year's evening at St. Fagans – then we had the warm cosy atmosphere of the Oakdale Working Man's 'Stute', such an historical building which brought back memories of my upbringing in the warm community of a coal mining village which did not suffer from light pollution – hence all those stars to find out about. This year we had the new front building and the HUGE Atrium with the glass frontage, balconies, state of the art lecture theatres, and so much space to inflate into. Intentional pun!

The events staff had everything scheduled, arrangements made for

security lights to be switched off, car parking for unloading close by, all tickedy boo!

The CAS outreach team soon had all our stuff unloaded and were setup and running well before time – which was fortunate as the first visitors from a wide geographical area arrived nearly an hour early for this fully booked event.

Bob Love, Kath, Feras, and Bob Biss talked and educated people about equipment. Kayleigh and Spencer informed people about CAS. I helped people to get started, with and without batteries, advising them to take their time looking at patterns through the year and Phill and the juniors present (Owen and Sam) blew up the solar system!! *{Not Star Wars style I hope (ed)}*

As usual Mike Foley had a crowd around his table for the whole evening having engaged them in looking at some wonderful photographs. He also wins the prize for the best dressed member of the night. Perhaps all our chaps should wear shirts with matching bow ties!

A warm welcome and thanks to new volunteer **Michael Boniface**, who pitched in with everyone else and said he very much enjoyed himself. Cheers Michael, good to have you on the team!

Much appreciation was received from the Museum staff, but perhaps more importantly grateful thanks also came from the public. Our aim ultimately is to inspire, and to demonstrate the wonder of the heavens. Hopefully we have instilled an interest in some who will follow it up or perhaps ignited a spark in a child who will keep looking up and asking questions.

As always, we always welcome any new member willing to assist in these events. So, if like Michael, you'd like to volunteer at the next event, please come and see me before or after a meeting. You will be very welcome!

Visit of Jerry Bostick – August 2017

'In the trench' Stephen Webber

If you are a member of the society, over a certain 'vintage', and the topic of the Apollo program is discussed, we are easily able to quote the names of some of our heroes from the program. Armstrong, Aldrin, Lovell, Young and Cernan fall off the tongue easily. However, there is another list of names that are not so well known but just as key to its success; the 'guys on the ground'. Perhaps one of the best known is Gene Krantz, made famous by the portrayal of him in the film Apollo 13 by the actor Ed Harris. Gene was one of the leaders of a team whose job it was to monitor every second of each flight to ensure the safety of the crew. Their training before a flight was as meticulous as the astronauts' and ensured they were as well prepared as they could be for any eventuality that may occur during the mission. *(continued on page 10)*

Up-coming CAS Public Events

Date	Time	Event	Venue
13th Jan.	10:00am - 4:00pm	Star Attractions	National Museum of Wales, Cathays Park, Cardiff

Further details of these , and other upcoming events can be found on the CAS web site

CAS Lectures January - March

Date	Title	Lecturer
18th Jan.	Gaia: the billion star surveyor	Professor Paul Roche,Cardiff University
1st Feb.	Citizen Science	Alice Sheppard, University College, London
15th Feb.	Meteors and Fireballs - what can we learn from observing them?	Professor Iwan Williams, Queen Mary University,London
1st March	Mary Fairfax Somerville	Dr Allan Chapman, Oxford University
15th March	The Large Hadron Collider	Professor Maurizio Piai, Swansea University
29th March	Broadband, Narrowband - from a city	Nick Hart, CAS

Observing Sessions

Date	Day	Time	Venue
12th or 13th Jan.	Fri or Sat	20:00 - 00:00	Dyffryn Gardens
19th or 20th Jan.	Fri or Sat	20:00 - 00:00	Dyffryn Gardens
9th or 10th Feb.	Fri or Sat	20:00 - 00:00	Dyffryn Gardens
16th or 17th Feb.	Fri or Sat	20:00 - 00:00	Dyffryn Gardens
16th or 17th March	Fri or Sat	20:00 - 00:00	Dyffryn Gardens
23rd or 24th March	Fri or Sat	20:00 - 00:00	Dyffryn Gardens

NOTE:- Where two dates are given we will attempt to hold the session on the first date, weather permitting, otherwise we will try again on the subsequent date. All dates are subject to weather conditions. For confirmation of any session please check on the CAS Web site or the CAS Observing line 07546 107 657 for more information. **Please note this is a NEW observing line number.**

Almanac Compiled by John Richards

Sun Rise/Set & Twilight

Date	Astronomical Twilight Begins	Sun Rise	Sun Set	Astronomical Twilight Ends
1st January	06:14	08:18	16:13	18:17
8th January	06:14	08:16	16:21	18:24
15th January	06:11	08:11	16:31	18:32
22nd January	06:06	08:04	16:43	18:41
29th January	05:59	07:55	16:55	18:51
1st February	05:56	07:51	17:00	18:56
8th February	05:46	07:40	17:13	19:07
15th February	05:35	07:27	17:26	19:18
22nd February	05:22	07:13	17:39	19:30

Meteor Showers

Date	Meteor Shower	RA	DEC	ZHR
4th Jan	Quadrantids	15h 28m	50^0	80

Star Party and Observers Club Meetings

Date	Day	Time	Venue
19th Jan.	Friday	19:30 - 21:00	Dyffryn Gardens
16th Feb.	Friday	19:30 - 21:30	Dyffryn Gardens
16th March	Friday	20:00 - 22:00	Dyffryn Gardens

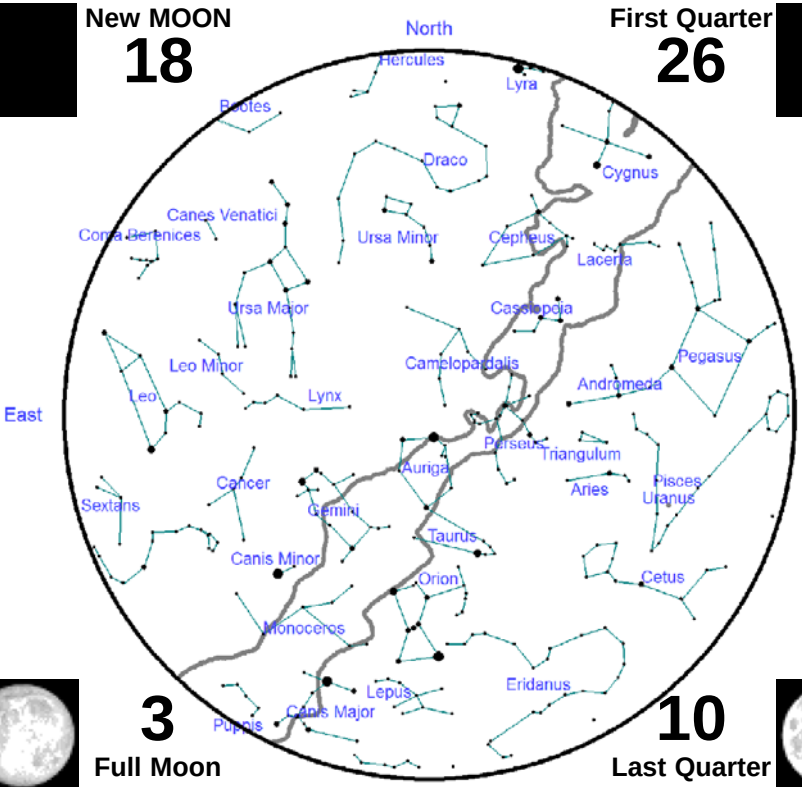
Publication Dates

The CAS newsletter is published at the first Society meeting of September, December, March & June. The deadline for submissions is 4 weeks before the publication date, and is 6th February for issue 182. **Why not attach your article, to an email and send it to me, the Editor at *Publications.Officer@cardiff-astronomical-society.co.uk.***

Almanac December

New MOON
18

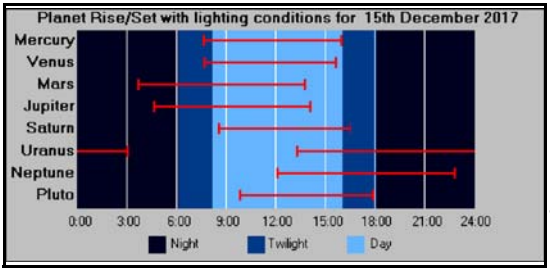
First Quarter
26



3
Full Moon

10
Last Quarter

	Constellation	R.A	Dec	Rises	Sets	Mag.
Mercury	Ophiuchus	17h11m20s	-20°42'58"	07:35	15:56	+3.9
Venus	Ophiuchus	17h04m08s	-22°36'43"	07:41	15:36	-3.9
Mars	Virgo	14h06m35s	-11°45'21"	03:39	13:44	+1.6
Jupiter	Libra	14h46m54s	-15°01'01"	04:37	14:06	-1.7
Saturn	Sagittarius	17h57m18s	-22°31'07"	08:33	16:30	+0.6
Uranus	Pisces	01h32m27s	+9°02'00"	13:17	02:58	+5.7
Neptune	Aquarius	23h03m33s	-07°01'06"	12:10	23:04	+8.0
Pluto (Dwarf)	Sagittarius	19h28m27s	-21°30'44"	09:57	18:07	+14.3



Planet Events

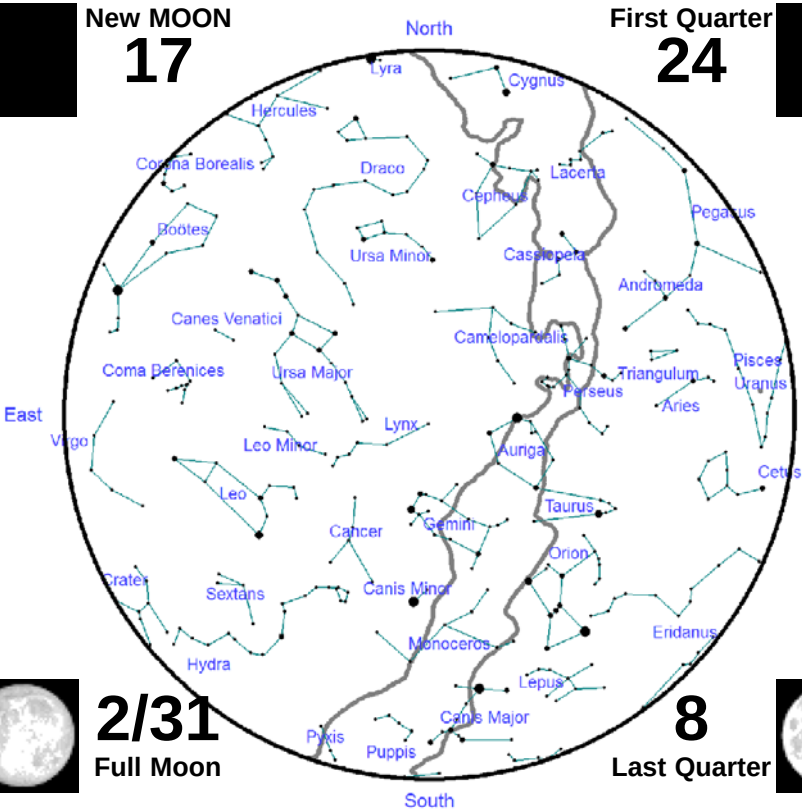
12th Mercury at Perihelion (0.31 A.U.).
13th Mercury at Inferior Conjunction.
21st Saturn at Conjunction.

The data presented here is for the 15th December positional data is at 00:00 GMT/UT

Almanac January

New MOON
17

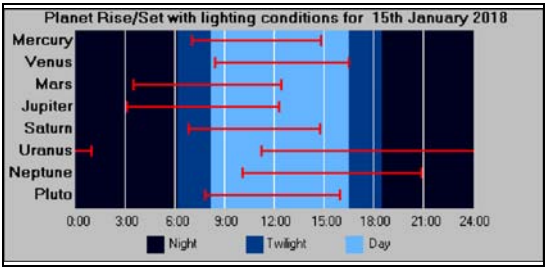
First Quarter
24



2/31
Full Moon

8
Last Quarter

	Constellation	R.A	Dec	Rises	Sets	Mag.
Mercury	Sagittarius	18h22m31s	-23°19'09"	07:02	14:47	-0.3
Venus	Sagittarius	19h53m19s	-21°51'11"	08:23	16:28	-3.9
Mars	Libra	15h22m45s	-17°42'51"	03:27	12:24	+1.4
Jupiter	Libra	15h07m57s	-16°28'17"	03:05	12:17	-1.9
Saturn	Sagittarius	18h12m58s	-22°30'53"	06:47	14:43	+0.6
Uranus	Pisces	01h32m07s	+09°01'13"	11:14	00:56	+5.8
Neptune	Aquarius	23h10m01s	-06°24'08"	10:11	21:12	+8.0
Pluto (Dwarf)	Sagittarius	19h35m28s	-21°48'24"	08:04	16:10	+14.3

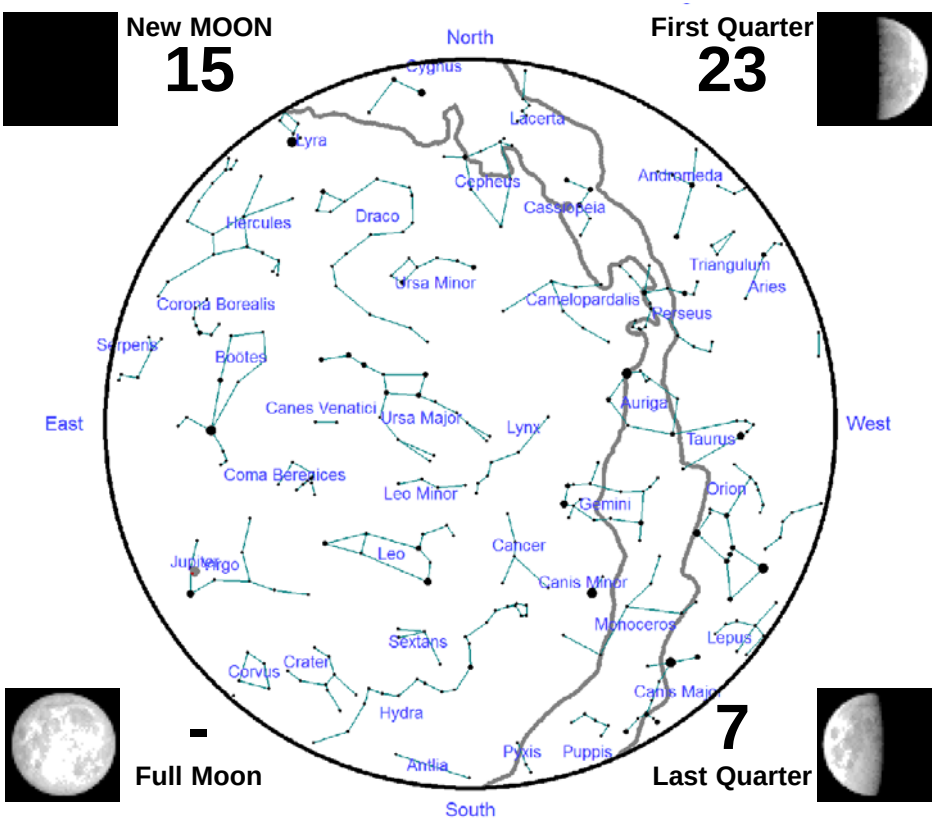


Planet Events

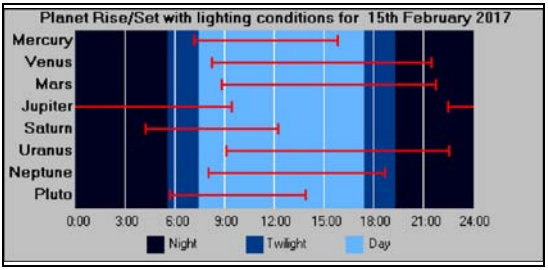
3rd Earth at Perihelion (0.98 A.U.).
9th Venus at Superior Conjunction.
23rd Venus at Aphelion (0.73 A.U.).
25th Mercury at Aphelion (0.47 A.U.).

The data presented here is for the 15th January, positional data is at 00:00 GMT/UT

Almanac February



	Constellation	R.A	Dec	Rises	Sets	Mag.
Mercury	Capricornus	21h49m06s	-15°22'25"	07:36	17:01	-1.4
Venus	Aquarius	22h29m42s	-11°01'18"	07:53	18:06	-3.9
Mars	Ophiuchus	16h41m43s	-21°43'46"	03:09	11:16	+1.0
Jupiter	Libra	15h21m29s	-17°16'44"	01:21	10:23	-2.1
Saturn	Sagittarius	18h26m41s	-22°24'58"	04:58	12:56	+0.6
Uranus	Pisces	01h34m50s	+09°18'06"	09:14	22:54	+5.9
Neptune	Aquarius	23h10m09s	-06°23'15"	08:09	19:10	+8.0
Pluto (Dwarf)	Sagittarius	19h35m34s	-21°48'16"	06:03	14:09	+14.3



Planet Events

17th Mercury at Superior Conjunction.

The data presented here is for the 15th February, positional data is at 00:00 GMT/UT

Jerry Bostick 'In the trench' (continued from page 4)

So the men and women of mission control were as important to the program's success as the crew. These people rarely get the recognition they deserve. The glory goes to the spacemen who were brave enough to sit on top of a rocket and entrust their lives to the men and women 'in the trench'.

Jerry Bostick was one of these people. I, along with a village hall full of people,who had travelled from all over the country,were fortunate to attend a talk he gave in the small village of Llanwddyn in North Wales. His story is as interesting as that of anyone who was involved in the US space program. His involvement started with the Mercury missions and continued to the Apollo era and beyond. In his later years he even became a consultant on the film that made his boss famous, Apollo 13 (but more of that later).

He started off studying civil engineering in Mississippi State University, before NASA was even created. He worked on a project developing collapsible antennae. He worked on it for a few months but asked questions like "What was it for?", "Who would use it?"-questions that helped in the design and development. The answers he received were "We don't know", because that is what development was like. This didn't appeal to him as he preferred to know for what purpose something was being made. This was what made civil engineering appealing to him.

He had been successful in securing a future job with Boeing when he eventually graduated and had no interest in this new space agency. It was a conversation he had with one of the lecturers in college that changed the course of his career. He agreed to be one of the candidates the college was putting forward to NASA for upcoming job interviews. Interest was low, so he agreed to help make up the numbers. The interview didn't go well because he didn't seem to have the skills NASA was looking for. On his way out of the interview he bumped into Chris Kraft, and they had an informal conversation. Chris Kraft was impressed enough to bring Jerry on board for this new venture.

He described some of the primitive nature of the technology they were working with at the time. When you compare what they had to

today's technology it is incredible to think what they achieved with it. He described how, as part of his job in the trench (a phrase Chris Kraft used to describe the controllers in the front row of mission control) was to monitor some of the readings from the space craft. These were not displayed on fancy colour touch screens, but were lines plotted by pen on rolls of paper. These rolls had to be changed frequently and stored. That tells you a lot about how hard it must have been to monitor and check readings from the space craft.

He also talked about the sadness that everyone at mission control felt over the death of the crew on Apollo 1. He felt the loss of Ed White very personally as Ed was a friend and they used to read passages from the bible in church together.

He discussed Apollo 7 and its mission commander Wally Schirra. Jerry described him a tough man to please but the feeling was that Wally was so meticulous to ensure the testing of Apollo was completed successfully, as much for the memory of his friend Gus Grissom as it was for NASA's aim to getting to the moon.

He also talked about being tasked, along with a few other well-respected mission controllers to spend a weekend assessing the feasibility of sending Apollo 8 around the moon. It was all secret and covert, but at the end of the week, the recommendation of the group was that going to the moon at that stage was risky but not reckless.

Earth Rise - Image Courtesy of NASA

As we now know, it was a success and produced one of the greatest images of the entire program, the picture called 'EarthRise'.

Perhaps one of Jerry's greatest triumphs was his involvement in Apollo 13, sometimes called 'The successful failure.' A mission which he later helped

Ron Howard make into a successful movie.

When I attended the talk I was wearing a t-shirt with one of the movie's quotes "Failure is not an option." I didn't think anything about it at the time, but when talking to Jerry before his talk, he complimented me on my taste of attire, and explained how the quote came about. He was talking to Ron Howard and explained that after the accident the mission controllers laid all the options out on the table to talk about, but failing simply wasn't one of them. Ron Howard took this and put it into the mouth of Gene Krantz and it since become one of the greatest movie quotes of all time.

Jerry said Mission Control worked hard to get the crew of Apollo 13 back to the point of re-entry but had no idea if the heat shield would protect them on the way back in through the atmosphere. He described the control room as feeling very low during re-entry interface, as if all that hard work would fail to save the crew. We know the blackout period was longer than the usual 3 minutes due to its trajectory, so this could only have added to the feeling of dejection the team had. However, when contact to the Odyssey was re-established, the room erupted with happiness and joy.

In the movie Apollo 13, when Ron Howard was filming the scene, he said to Jerry – "You have to direct this scene". Jerry asked him what did he mean; Jerry wasn't a film director, but Ron Howard said to him that Jerry was the only person on set that day who was actually in the room when it happened. So he tried to get over to the cast the elation the mission controllers felt. If you watch the movie, you can see the effect of that because it is a very emotional scene and one, for once, Hollywood gets right.

In his retirement he has acted as consultant on other movies too, including Armageddon,but Apollo 13 is perhaps his greatest personal movie triumph.

It was a pleasure to hear his story and meet one of the people in the trench during one of the greatest periods of space exploration. He should be regarded as much a hero of the space progamme as anyone who went to the moon.