CARDIFF ASTRONOMICAL SOCIETY NEWSLETTER

Issue 186 March 2019

Hello members!

Welcome to our new and updated version of the society's newsletter. I hope you enjoy the new layout and the content. It is a work in progress and I expect it to keep changing until I am happy with its presentation!

After some careful thought and discussions, it has been decided that the newsletter will be reducing in publication to a few times a year. This will keep our information relevant to the society and concise.

We have been very busy this year already….so please read on to find out more and what the society has in store for the coming months.

Thanks for reading!

Katrin Raynor-Evans, Publications Officer

LUNAR ECLIPSE JANUARY 2019

2019 started with an astronomical treat. If you were trying to watch the lunar eclipse from somewhere in South Wales then unfortunately unless you had driven to the coast or quite frankly, driven some considerable distance to other locations then like me, you wouldn't have seen a blasted thing. I stupidly passed up the opportunity to see the eclipse with Dark Sky Wales. Allan Trow offered me a lift to Rhossili where he was running an event but I said 'no', thinking it would be a wasted trip. I was wrong. The lunar eclipse was visible in West Wales and the photos looked stunning!

A total lunar eclipse occurs when the Moon passes directly behind the Earth and into its shadow. It can only happen when the Earth, Moon and Sun are very closely aligned and the Moon is full. The reddish colour we see on the Moon is caused by light reflecting from the surface and being refracted through Earth's atmosphere.

"There is a partial lunar eclipse visible in the UK in July 2019"

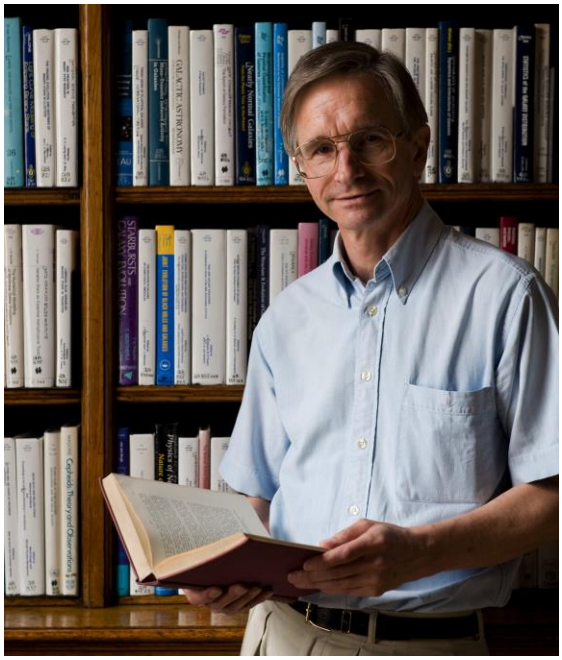
Total lunar eclipses do not happen every year of course and the next one visible in the UK will not be until the 16th May 2022. There is however a partial lunar eclipse visible in the UK in July in 2019. During a partial lunar eclipse, the Sun, Earth and Moon aren't quite perfectly aligned but it is still an event worth watching.

If you have any photos to share from the total lunar eclipse then please send them to me and I can print them in the next newsletter.

An Interview with Ian Ridpath

Katrin Raynor-Evans

Hello Ian! Thank you so much for agreeing to be an interviewee for our newsletter. I have been excited to interview you and I hope you find the questions fun and interesting…let's get started.



First of all, please tell us a little bit about yourself and how you came to develop a passion for astronomy. You have achieved so much in your career. What has been your highlight so far?

My interest in astronomy started in junior school when a classmate told me that light took many years to reach us from the stars. That was a mighty impressive thought to someone aged only about 8 at the time. In my early teens I joined the Junior Astronomical Society (now called the Society for Popular Astronomy) and when I was 18 started up the Northeast London Astronomical Society (NELAS). I began writing articles for newspapers when I worked as an assistant in the lunar group at the University of London Observatory, Mill Hill, in the mid 1960s. In those days there were very few science journalists so the field was quite open. After a brief period on a magazine that attempted to be a schools' equivalent to New Scientist (but failed) I went freelance in 1972 and have remained so ever since.

Career highlights have included covering space and astronomy for BBC Breakfast Time (now just called BBC Breakfast) at the birth of breakfast television. A current highlight is accompanying northern lights tours to Norway. Some of the recent displays have been astonishing, even though it is solar minimum. I am always at pains to point out that sunspots and flares don't cause aurorae, despite popular myth.

You have written several books. How did you become an author and which was the first book you wrote?

My first book of any consequence was called Worlds Beyond, published in 1975, which looked at the possibilities of extraterrestrial life, interstellar travel, and SETI. At the time I was very influenced by Carl Sagan. One consequence of this interest was that I started to investigate UFOs and soon became a total sceptic.

Are you working on any books at the moment?

I am working on a tenth edition of The Monthly Sky Guide, a month-by-month guide to the night sky first published in 1987, due for publication next summer.

You and I both share a love for astronomy themed stamps. How many do you have in your collection and which is/are your most treasured one(s)? You are the Chairman of the Astro-Stamp Society. When was this founded and do you have many members?

My interest in collecting astro stamps started in the early 1990s when I wrote a children's book for Philip's called Atlas of Stars & Planets. It was the companion to a Children's Atlas from the same publisher. The authors of the children's atlas used stamps from around the world as illustrations, and I adopted the idea for my own book. I have no idea how many stamps I now have! My favourites include the GB Halley's Comet

set from 1986, particularly the one which depicts a bewigged Edmond Halley looking much like his Comet (see illustration below).

Which book on astronomical history could you recommend for our library?

Astronomical history covers thousands of years and an incredible cast of fascinating characters so my answer would vary depending which branch you are most interested in. Am I allowed to mention my own book on the history of the constellations, Star Tales?

WOULD YOU LIKE TO CONTRIBUTE TO THE NEWSLETTER?

I am always after new articles, stories and photographs to add to the newsletter. Do you have an interesting story, update or some astrophotography snaps you would like to share with us? Please get in touch at publications.officer@cardiff-astronomical-society.co.uk

You have been cited as a UFO sceptic. You famously investigated and explained the Rendlesham Forest Incident in 1980. How did you get involved with the investigation and what were your conclusions? Do you believe that there is a scientific explanation for all unidentified lights in the sky?

My interest in the Rendlesham Forest UFO case started when it hit the headlines in October 1983. It seemed qualitatively much better than any report I had seen before. However it didn't take me long to realize that it, like so many other reports, was a combination of misidentifications spiced with a good deal of wishful thinking on the part of UFO believers.

Experience has shown that in every UFO sighting for which there is enough reliable evidence a rational explanation can be found.

One of my favourite astronomy topics to research is our Moon. Do you think, one day that we will go back to the Moon? Can we successfully colonise the Moon and Mars and do you think it will be beneficial to humanity?

I think it is inevitable that we will go back to the Moon, and set up colonies there. Colonizing Mars I am much less certain about — I can't see it happening this century. As with all exploration, the benefits are unforeseeable.

And finally, you are being sent on a yearlong mission to space. If you could choose anyone to be your partner on the mission who would you pick and why?

It would have to be my current partner, Sheelagh, who just happens to be from Cardiff!

Society Social's

If you would like to organise a social event whether it be down at the local pub, meeting at the museum or a day trip out, then send your ideas to the committee for distributing. Don't forget, a small group of us meet in the canteen of the School of Physics and Astronomy for a meal and a catch up before the fortnightly talks. Why not come along and join in!

Our next programme of talks 2019-2020

Following the retirement of Michael Foley, who we will miss dearly as our secretary, committee members have been busy putting together the programme of talks for the 2019-2020 season. It really has been challenging but interesting and I don't think we all realised how much effort goes into arranging our speakers. I am excited to announce that Ian Ridpath will be opening our 2019-2020 season as the first speaker in September! The programme is now nearly full and we are looking forward to announcing the talks to you all in a few months' time. Thank you to Michael for all of his hard work. If any of our members would like to talk at a future meeting then please get in touch.

Notable Achievements by CAS Members

Fellowship to the Royal Astronomical Society, London

Since our last newsletter, Ian McLean, Theresa Cooper and Dr. Jane Clark have successfully been elected Fellows of the Royal Astronomical Society. Congratulations to you all! We are now awaiting the outcome of Maddy Erato's application.

If any members of CAS would like to be elected for Fellowship please speak to any of the Fellows already mentioned above for further information. Election is free and requires a written reference but once accepted there is an annual membership fee of £125 which includes a whole host of exciting benefits including a copy of their bi-monthly Astronomy and Geophysics magazine.

Talks at other societies

Katrin Raynor-Evans and Ian McLean have been asked to attend the Newtown Astronomical Society meeting in April next year to talk to the society. Katrin is hoping to present a talk on astrophilately (of course!) and Ian's talk is yet to be confirmed. He still has his thinking hat on!

Bill Sutherland Award

It is that time of year again when the committee members will be nominating a hard working member of the society for the award. The winner will be announced at our AGM in April. If you would like to nominate someone please check out our website for further information.

The Spaceguard Centre, Knighton

Ian McLean (our Vice Chairman) and a couple of members of CAS paid a visit to the Knighton Observatory. Ian writes about the day.

For those of you who are interested in comets, asteroids and meteors, then a visit to Knighton Observatory is truly a must. The National Near Earth Objects Information Centre or The Spaceguard Centre as it is more commonly known, is situated remotely in a dark sky area near Knighton, very close to Offa's Dyke in the Welsh Marches. The deceptively long 80 mile (1 hour 50 minutes) drive from Cardiff may not seem worthwhile at first, but a visit does not disappoint those who make the effort!

It is the only organisation in Britain dedicated to addressing the hazard of Near Earth Objects. NEOs are objects that come close to and sometimes collide with Earth, which can have devastating effects on our planet. Indeed, you only have to know what happened to the dinosaurs to understand the dangers these objects can pose!

Spaceguard's aims are to provide information to the public, the press and the media regarding any NEOs that could in the future come again within striking distance of our planet. It also aims to provide education on the threat of asteroidal and cometary impacts, and the ways in which we can predict and deal with them.

The excellent and informative one and a half hour tour given by Jonathan Tate, the Centre's Director, is well worth the £7.00 entrance fee. He gives a very detailed talk on the origins of these objects, right through their long life cycle, to what happens when they finally impact a planet or a moon within our solar system.

There are also excellent meteorite exhibits to be seen; with as expected, very detailed explanations of their geology, which astronomers and geologists have used to determine their origin from within our solar system. Also included in the tour is the mini-dome planetarium, an orrery, an explanation on Project Drax and the various on-site telescopes.

When Project Drax is completed, it will provide the observatory and Wales with its largest telescope, measuring 24 inch (61 cm) and fitted with a Schmidt Camera. It will be used to conduct a wide field sky survey to detect NEOs and other transient phenomena. As well as these on-site telescopes, the Spaceguard Centre is linked via the Internet to the Liverpool Telescope and both Faulkes Telescopes.

This would make an excellent trip for a CAS day out!

For more information on visiting the observatory, please visit this link: https://spaceguardcentre.com

Star Attractions Day at Cardiff Museum

Theresa Cooper

WE NEED YOU!

Are you interested in helping or volunteering at an event? We are always looking for helpers to man the table and to promote the society. If you are skilled in using telescopes or giving talks then you would be welcome to help out at our star parties and outreach events. We always need more people!

Everything was prepared: big stock of goodies ready and waiting to be handed out, new merchandise purchased by Ann Bennett and a team of volunteers waiting to man the CAS table, man a telescope, engage with the public on how to get started, and promote astronomy.

CAS was just one of many organisations present entertaining the public some of whom had come quite far which is very humbling. Great to meet up with old friends and colleagues and ideas and experiences swapped. And good to see past Chairman Roger Butler who contributed a lot to the Society.

Philip Wallace, our current Chairman, had produced two new talks for those who enjoy some science fiction in their science (or vice versa) and specifically for fans of Star Trek in all its forms (me!) and/or Doctor Who. That covers just about everyone then! These were popular and had good audiences with plenty of questions.

"The final count was an amazing 7,000 people!"

Edward Cooper, our UKMON Co-ordinator, compiled a video about the ISS, Soyuz and Tim Peake and another one with details about the upcoming lunar eclipse. Mike Foley, our Committee Secretary, produced a new set of booklets for juniors, some more photographs and as per usual kept the public entranced and fully engaged with science.

During the morning and up until after lunchtime everything went extremely well; a steady stream of visitors to our stand, cardboard Buzz was very busy for photographs, we signed up some new members, answered lots of questions, gave out loads of advice to beginners (don't buy a telescope etc. try these binoculars) and many juniors came for project books and posters. School teachers went away with information on resources and where to obtain them.

The team were briefed that we should expect to be busy as this event consistently attracts about 3,000 through the door. At about 2 p.m. it suddenly felt as if the Hall in the Museum was the one place in Cardiff where everyone wanted to be. We looked round to find that the CAS stand now appeared to be in the queue for the Soyuz exhibition as the crowds started to snake around the Hall from the Soyuz exhibition entrance

at one end to the telescopes and stairs at the other end. And we worry about queues at telescopes on stargazing evenings.

We didn't have to wait for people to come to our stand - we helped and entertained them as they stood in the queue! It was a lovely problem to have! It was all very good-natured, and perhaps we achieved more of our aims and objectives than we would have otherwise.

Cardboard Buzz was enlisted by Museum Security staff to mark the end of the queue when they decided enough was enough. One of them had been trying to keep a manual count of people walking through the doors using a clicker tally and although some visitors were undoubtedly missed, the final count was an amazing 7,000 people!

This event was always guaranteed to be successful, but it exceeded any expectations we might have dreamt of. During the packing- up everyone declared themselves shattered, intent on a day of recovery the next day but very happy. We all had a tremendous day! Why not join us next time? Please come and see me, you will be very welcome!

Forthcoming events

Star Attractions day is one of the biggest events in the society's calendar but don't forget we have some exciting days ahead in 2019 which CAS will be hosting or taking part in.

- Saturday 22nd June 2019 – Solar Observing at the Brecon Beacons National Park Visitor Centre.
- Tuesday 25th June 2019 – CAS at St David's Hall where the Philharmonia Orchestra are performing The Planets by Holst. Please look at www.stdavidshallcardiff.co.uk for more details.
- Saturday 20th July 2019 – 50th Anniversary of the Apollo 11 moon landing at National Museum, Cardiff.
- Friday 18th October 2019 – Dark Sky Wales and CAS at Brecon.

Not only do members of the society represent CAS at these main events but we are busy throughout the year working with and visiting scout groups, schools and of course holding regular events at the observatory in Dyffryn. If you would like to get involved please get in touch.

Cruel Probabilities: A Cold and Uncaring Universe

A science fiction tale from our Chairman, Philip Wallace

The universe is a vast place. Endless expanses of nothingness filled haphazardly with small oases of heat and light that many species called galaxies. Within the galaxies were yet more vast gulfs of empty space, punctuated occasionally by stars, huge self-sustaining fusion explosions spreading light and heat to the tiny rocks that hurried around in their orbits.

The universe is filled with unimaginable wonders; vast clouds of gas and dust lit up by starlight in wondrous colourful patterns called nebulae; the collected swathes of stars forming huge arms of galaxies and bands of beauty across the sky. And on some of those small planets life emerged.

On one world in particular life had emerged and grown and diversified in a bewildering dance lasting a billion years. The dominant species spread out all across the world and then, after a long delay and vicious warfare, united and spread out to the other worlds surrounding their star. But there was a problem. The universe, being a vast place, is not just filled with unimaginable wonders, but indescribable horrors and cruelty as well. This particular species had come to the conclusion that there was no comfort or caring presence amongst the stars, just cold probabilities and the occasional apocalypse.

One such apocalypse had come to this species. Their star, their sole source of heat and warmth for their various worlds, was dying. The fusion reaction was weakening, day by day and year by year. In a century at most the reaction would end and with no outward force to counter its gravity the star would collapse. The consequences of that, no-one knew for certain.

What was clear was that the species could no longer stay in the star system that birthed them. But the universe and its laws conspired against them; nothing could travel faster than light, and even light would take years or decades to reach a new habitable world. It was also tragically apparent that not everyone could be saved; not even a fraction of a fraction of the one hundred billion sentient beings could possibly escape the coming darkness.

A plan was created; a vast colony ship was designed and built. Ten million of the best and brightest among the population would be placed in hibernation, to sleep away the millennia-long voyage. Everything needed for the new colony was carried; seeds, tools, half a billion frozen embryos for artificial gestation upon arrival and a vast network of computers, holding the sum total of the species knowledge. This was overseen by a powerful Artificial Intelligence to control and pilot the ship.

The database also contained messages from the billions left behind.

The ship was completed, the supplies loaded, the colonists placed into their long slumber. The day came for the ship to launch, accelerating away from its construction yard around one of the outer planets and building up speed for the five thousand year period of coasting through the void between the stars.

CAS Library

A reminder that CAS holds an impressive collection of books, which is available to all members. The catalogue is listed on the main website and there is no limit to the books you can take out! Please make use of this important resource as we are adding to the collection each year. If there are any books you would like to see on the shelves then please come and talk to one of us. We have a few signed books from previous speakers including Allan Chapman and Ian Morison. Please speak to Theresa Cooper or Katrin Raynor-Evans at the fortnightly talks if you wish to borrow a book.

A hundred years after the ship left, all contact with the home system was lost. The last reports received by the AI told of a final, apocalyptic war as factions fought for the resources to build a second colony ship, and who would be sent aboard it.

A thousand years after the ship left, the on-board telescopes registered the death of the home star in a sudden flash of radiation. The AI noted this in the record of the species' history and continued its voyage.

Five years before the ship expected to arrive at its destination, the AI began preparing for the long deceleration into orbit of the target world. One year before arrival, the ship turned on its axis and the huge engines, dormant for so long, flared into life and began bleeding off the ships colossal velocity.

Once again the universe showed its uncaring nature. It was not malice or cruelty, simply indifference and probability. The engines had been silent for millennia and despite the best efforts of the finest engineers the home system had ever produced, something went wrong. Something very small, a single valve failing.

The AI recognised the problem and tried to correct it as best it could. The engines continued to fire and the ship continued to slow. But it was not enough. The colony ship entered the target world's atmosphere at a relative speed comparable to large meteors. It impacted the ground with stupendous force, enough to vaporise it in the blink of an eye and blast a crater hundreds of kilometres across from the earth. Seismic shockwaves spread throughout the planet, letting every living thing feel the final death spasm of this once proud species.

The impact had devastating consequences for the target world. The impact, the seismic shock and the vast amount of soil and rock thrown into the atmosphere combined to destroy almost every species then living on the surface. It was a mass extinction that touched every corner of the world. Only tiny traces of the colony ship survived; a thin layer of metal from its obliterated hull that eventually fell back to the surface.

As brutal as the extinction was, some species survived as they always do. Eventually, the dust clouds parted and the star shone again on the surface. Slowly, gradually, life began to recover.

Sixty five million years later, a new dominant species calling itself Homo sapiens would find traces of the colony ship's hull, the crater wrought by its impact and fossils of the countless species rendered extinct by the event. They spent decades wondering about what happened before eventually settling on the theory of a large asteroid impact. The idea that it had been a spaceship or the remnants of another civilisation was dismissed as farcical, fictional nonsense.

Surprise Astronomy Stamps

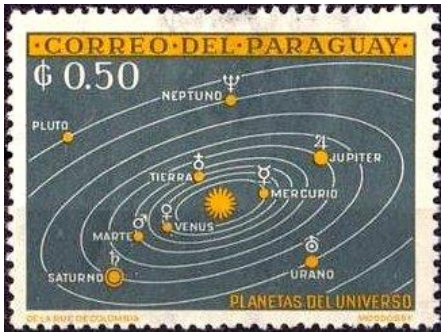
Katrin Raynor-Evans

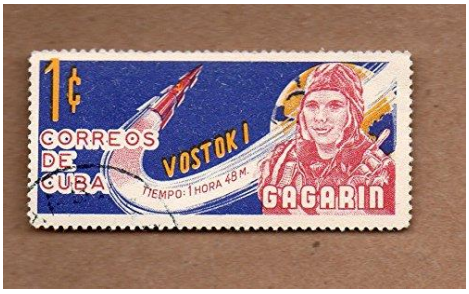
I was lucky enough to receive two very nice second-hand astronomy stamp albums towards the end of last year. One was from Jeff Dugdale, the editor of the Astro Space Stamp Society magazine and the other was from my father which he gave to me at Christmas. My father buys a lot of stamps from a local auction house located outside Dundee and these boxes are often full of surprises. There is an opportunity to rummage in the boxes before a bid is made but I am assuming he didn't rummage deep enough to see what was inside. His last trip to the auction house saw him purchasing a box of mixed first day covers and lo and behold a thin hard back album, which was hiding at the bottom of the box. What was inside? A mixture of global space stamps which he kindly donated to me.

All of the stamps are hinged and used. There is a great mixture ranging from Rwanda, the United States, Hungary, Poland and Russia and they all seem to be from the 1960's. There is no order to the stamps, but I am certainly not prepared to peel these hinges off and re-arrange! Some of them are of unusual shape which I haven't seen before. The ones that stand out for me are the rhombus type shaped stamps depicting Yuri Gagarin and John Glenn issued in Romania. They were issued in 1964 as a set of 10 stamps celebrating 'Space Navigation'. Unfortunately, I have only 2 out of the 10 stamps but I think the set is cheap enough to buy so I will look to add to my collection.

There is a rather wonderful set of stamps issued in 1969 from Yemen depicting the conquest of the moon by the Americans during JF Kennedy's presidency. The illustrations vary from a rocket launch at Cape Kennedy, to the crew of Apollo 8 – Frank Borman, James Lovell and William Anders to the landing on the moon and to what I can only assume a variety of stamps showing samples being taken by the Apollo 11 crew.

Within the album there are a couple of rather small stamps from South America including Cuba and Paraguay. The Cuban stamps issued by Correos de Cuba celebrate the launch of Sputknik 1 in 1967 and the successful mission completed by Yuri Gagarin, the first man in space in 1961. The Paraguayan stamp is a lovely orange and grey colour and illustrates the planets in our universe. It was issued in 1962 and appears to be part of set which also includes the famous cosmonauts Nicolaiev, Popovich and Titov.





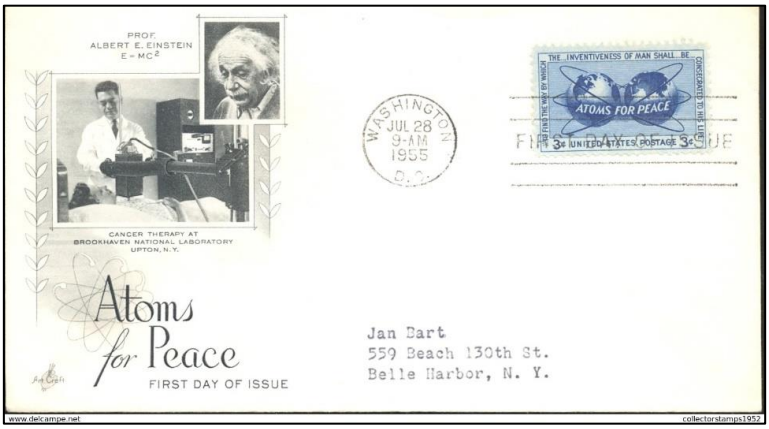
The parcels which Jeff very kindly gave me were stuffed full of stamps including a full album and astronomy related magazines. There are far too many to write about! The most interesting magazine is the technical memorandum to Mariner IV, part of the Mars Project of 1964-1965 which was issued by JPL, the Jet Propulsion Laboratory in California. It provides informative text and photographs about Mars and the Mariner project. It is available for free to download on the internet and I recommend that anyone with an interest in Mars and the history of space flight has a read.

"Stamps really are a joy, no matter what part of the world they come from"

I am a huge fan of stamp booklets mainly because although the information presented with in them is very concise, you can learn a lot from these short snippets of information. I was delighted to find one in the parcel. It was issued by the European Space Agency in 2009 and dedicated to 'The Universe – Yours to Discover' as part of the International Year of Astronomy from that year. Royal TNT Post in the Netherlands issued these stamps not only as part of the IYA but to commemorate the launch of two ESA spacecraft, Planck and Herschel. The stamps form part of the images of each spacecraft and there is a short description of them and their purpose. Included at the back are three more stamps; Mars and Earth in orbit, Cosmic Vision 2015-2025 and a stamp issued with 'The Universe- Yours to Discover' logo. They are presented on a nicely illustrated page of our solar system.

Another stamp booklet of interest from the same year comes from Canada. Celebrating the IYA it is a small booklet pane containing 10 self-adhesive stamps of two designs along with some wonderful envelope sticker seals. I hadn't seen envelope seals within a stamp booklet before, so this was really interesting. The small seals, 10 in total are designed with various nebulas and galaxies. The stamps themselves illustrating the Horse Head Nebula and Eagle Nebula each have an observatory associated with it; the Canada-France-Hawaii telescope located in Hawaii and the Dominion Astrophysical Observatory situated in British Colombia.

Contained within the parcel, The ‘Atoms for Peace’ FDC which was issued in Washington in 1955 caught my eye as something special. The FDC is a particular favourite as the illustration depicts Professor Albert Einstein and his famous ‘E=MC2’ equation. I am in the process of writing an article on black holes and gravitational waves for the Society for Popular Astronomy magazine, so it was of real interest to me given Einstein’s work in this field. However, Einstein is also famous for his connection to the atomic bomb. He wrote to President Roosevelt in 1939 outlining concerns that the Germans, who had just discovered how to split a Uranium atom were using this to build a bomb.



Following the destruction of Hiroshima and Nagasaki in the 1940’s, President Eisenhower addressed the United Nations in 1953 in a speech calling for nuclear power to be used for peace rather than destruction. The border of the blue, 3¢ stamps on the FDC includes a famous line from Eisenhower’s speech, ‘to find the way by which the inventiveness of man shall be consecrated to his life’. In the centre of the stamps, there are two spheres illustrating each side of the globe surrounded by the orbital lines that are symbolic with atomic energy. I think this is a really powerful, thought provoking stamp issue and current that even over 50 years later, the world is still vulnerable to such threats.

There are certainly far too many stamps from these albums and packages to write about in one article but I am sure I will be using them to write more interesting articles for years to come. Stamps really are a joy, no matter which part of the world they have come from. There is always something new to research and understand in our human and astronomical history.

If you would like to join the Astro Space Stamp Society, then please visit www.astrospacestampsociety.com

---

Dark Sky Wales

Don’t forget our friends at Dark Sky Wales run many events throughout the year so why not join them on the nights that you aren’t at observing sessions with CAS! Check out their events page at https://gostargazing.co.uk/event-organiser/52/

Notable Events in Astronomy News

'Look up at the stars and not down at your feet. Try to make sense of what you see, and wonder about what makes the universe exist. Be curious.'

The 14th March 2019 marked the 1st anniversary of Professor Stephen Hawking's death. I am 100% sure that all of you have heard of him and certainly read some of his papers and books. He was an astounding theoretical physicist and cosmologist who changed the way we thought about our universe. He showed that Einstein's General Theory of Relativity implied space and time would have a beginning in the Big Bang and an end in black holes. He had won an impressive number of medals and awards throughout his career including the Eddington Medal which Cardiff University's very own, Professor Bernard Schutz will be receiving in June at the annual National Astronomy Meeting.

Hawking's ashes were interred at Westminster Abbey in 2018 and a simple, slate stone marks his resting place. The stone depicts a series of rings, surrounding a darker central ellipse and ten characters of Hawking's equation which express his idea that black holes in the universe are not entirely black but in fact emit a glow, which is known as Hawking's radiation. A perfect tribute to such an eminent scientist.

China Moon

China have successfully landed a probe on the far side of the Moon. Chang'e-4 was launched from Xichang Satellite Launch Centre on the 7th December 2018. On the 3rd January 2019, the Chang'e-4 probe touched down and will explore this mysterious side of the moon analyzing the geology and conducting biological experiments.

Mars Opportunity Rover and Out

I think the whole astronomical community shed a tear in February this year when NASA announced that Opportunity rover is now non responsive and officially declared d-e-d. Considering the mission was only supposed to last a mere 3 months, the announcement comes ***15 years*** after the rover landed on Mars. Following a dust storm on the red planet last year, Opportunity was not heard from again and NASA finally declared the mission over or as some optimistic scientists may say….complete. Here is what Opportunity achieved:

1. Opportunity covered 28 miles
2. Detected signs of water on Mars
3. Studied the geology of Mars
4. Took thousands of photographs of the red planet
5. Studied the Victoria crater for 2 years
6. Discovered an intact meteorite known as Heat Shield Rock

Notes from a Novice Astronomer – Part 1

By ‘Justin Starlet’

Justin Starlet is the pen name of one of our society members. Notes from a Novice Astronomer will be a regular feature. Enjoy!

So here I am in my midlife crisis. I have reached 40 years old, that time when traditionally middle aged men with middle aged spread decide to try and relive the youth they wished they had. What should I do I asked myself. Buy a totally impractical sports car and drive around thinking I look like Don Johnson and everyone staring at me thinking I look more like Brian Johnstone or invest in thigh throbbing motorcycle? As I cannot drive (for legal reasons) they were out so had to find another outlet to spend the money burning a hole in my pocket on something I don’t need. The stars and planets were always a wonder and a mystery to me so decided I should try that. It couldn’t be that expensive or confusing I thought.

My journey starts by buying all the astronomical magazines in my local WH Smith. Sky at night, Sky and Telescope, Astronomy Now etc. I browsed the advert pages looking for what I thought I wanted – a nice BIG telescope. After all a small one was no good, it had to contend with the size of my ego.

So I looked and became very confused very quickly. What were all these different types? Refractors, reflectors, Dobsonion, Schmidt Cassegrain, Maksutov Cassegrain! I learned at school that Galileo used a refractor and Newton used a reflector. But as for the others! For all I knew the cassegrains were brothers who invented another type and fell out after an argument about naming rights. Then there were the different types of mounts. I didn’t know my Alt from my Equatorial and all the different types of telescopes fitted on these different mounts. So even more confusion.

I could spend a few hundred pounds or go to town and spend a fortune on a large scope that I would equally have to splash out on gym membership to get into shape to lift it. I also had another very important decision to make. How much could I spend and get away with the other half not caring about it. Too much and I could be in hot water, too little and my ego would not be satisfied.

I searched the internet for advice and I kept seeing the question – what do you want to look at? Planets and the moon or deep sky objects? I didn’t think I would be faced with that sort of question. I assumed that whatever I bought would see everything wouldn’t it?!

So, in the end I decided to seek advice from my local astronomical society. They were bound to have experts on hand for me to find out these things. Perhaps they would have some different types of telescope to show me how easy they are to use.

The conversations I had and the tips I was given helped me to understand all these options. In the end I took the plunge and dipped my toe in the water. Start off small I was told. Not too cheap but something reasonable and see how you get on. So I have been on-line, credit card in hand and started on my journey. I eagerly anticipate my first night out and seeing all these incredible sights.

Final Thoughts

- I am always after new material for the newsletter. The newsletter would be a lot less without our member's updates, photographs and stories. So please send me any material you have including astrophotography images.
- Do you need this newsletter printed? If you would like to have it sent to you electronically and opt out of the printed newsletter then please let Kath Compton know.
- CAS vacancies. We are still after a new secretary for the society. If this is a position that interests you then please speak to a committee member to find out what it entails. As mentioned previously, this year's speaker's programme has been sorted so if you take over the role then you can ease in gently!

  We are also on the lookout for someone who would like to join us at our committee meetings to take the minutes. You do not have to be a committee member and it is a great insight in to what happens at these meetings and the work that goes on behind the scenes.
- A new idea I would like to share with you for future newsletters is 'Meet a Member'. We are a large society with nearly 300 members and if like me, you probably only know a handful of people who attend the fortnightly talks. We all have interesting backgrounds and hobbies and I think this would be great to share in the newsletter. Knowing what other people's astronomical hobbies are may also help us to get hints and tips on a certain subject. For example, knowing which telescope to buy, how to photograph the moon or why black holes have no hair. If this is something you would like to take part in then please speak to me.

Cardiff Meteor Camera 1: Mag: -5.6 Northern Taurid meteor 03/12/2018 22:30:49 UT

Our UKMon camera at Dyffryn Observatory captured a stunning image of a Taurid Meteor back in December. Thanks to Edward Cooper for the image.

CAS are part of the UK network for observing meteors, a form of Citizen Science. The data is making a valuable contribution to the understanding of meteors and our Solar System. If you would like to know about UKMon and our involvement, please talk to Edward.