

Federation of Astronomical Societies



Editor: Michael Bryce

Newsletter

www.fedastro.org.uk

No 120: December 2020

Note: The FAS Council Reserves the Right to publish articles, events and reports submitted to the Newsletter by FAS Member Societies

President's Spot: Dr Paul A. Daniels FRAS



When I became FAS President just over three years ago the FAS was seriously moribund and there'd even been proposals by some on the previous FAS Council that it should be wound up! Well, I'm glad to say that the change of direction the FAS has since taken (to more directly support our member societies rather than our members' members) has

borne fruit: the hard work of the past three Councils is turning things around and we now have two successful AGMs & Conventions under our belt, an online AGM, a number of guideline documents to advise our members (more to come), a new membership system, an improved (and more up-to-date) website, an improved-quality Newsletter (which we will be publishing more frequently than in the past) and, of course, we continue to organise subscriptions to a group PLI policy for our members.

The reputation of the FAS is growing once more amongst our members and the Council is now also working hard to raise the profile of the FAS with external organisations so that we can have more influence where it matters, pass on benefits to our member societies and improve access to astronomy for all. So, what's new and what are we planning?

New Council Members

We have two new Council members: **Jerry Stone** has taken the Publicity and Meetings Organiser roles previously occupied by Adrian Roach and **John Evans** has filled a new post as Dark Skies Coordinator. Many of you will know Jerry for his entertaining Space-themed talks and John, who's been an FAS council member before, preceded me as president of Guildford AS'. Welcome to them both!

FAS Regional Groups

The UK has a range of about 12° in latitude and 10° in longitude and a similarly large range in weather and other local

conditions. The FAS knows that not all of our members' requirements are the exactly the same and so the Council would like to see the resurrection of some of the lapsed regional groups and the formation of new regional groups where necessary so that we can encourage communication between those groups and the FAS Council; it's much easier for us to provide our members what they need if we're getting feedback and it's easier for us to get and react to feedback from regional groups working at a local level than from individual member societies.

The Megaconstellation Threat

Many of you will have read my article in Newsletter #118 on the rise of the satellite megaconstellations, the threat they pose to astronomy, the concerns over the sustainable use of space and the potential for raising political tensions if the allocation and use of near-Earth space isn't fairly managed. I've already given a talk to four of our member societies with several others in my diary for early next year (and I'm open for bookings!).

A chance to help with an important international project

On 25th August this year the Satellite Constellations 1 (SATCON1) Workshop, hosted by the US National Science Foundation's (NSF) NOIRLab and the American Astronomical Society (AAS), released their final report in the form of an online press conference. The approximately one hour video of the press conference is very clear and approachable, is recommended watching and available for viewing on the 'AAS Press Office' YouTube site at www.youtube.com/watch?v=VCyE8BNYIKM. The workshop was set up to discuss and plan for the issues surrounding satellite megaconstellations and to make recommendations to the satellite operators and was divided into four working groups (WGs): Observations, Simulations, Mitigation and Metrics. The first WG is tasked with gathering and analysing brightness observations of the satellites, the second with modelling the visibility of the

President
Dr Paul A Daniels
Rose Hill
High Green, Bradenham
Thetford, Norfolk
IP25 7RD
president@fedastro.org.uk
07802 324 697

Treasurer
Pat McEvoy
17 Severn Close
Paulsgrove
Portsmouth
PO6 4BB
treasurer@fedastro.org.uk



Secretary
Richard Field
3 Campion Gardens,
Kirkby-in-Ashfield,
Nottinghamshire,
NG17 8RQ
secretary@fedastro.org.uk

Newsletter Editor
Michael Bryce
58 Park Road
Stourbridge
West Midlands
DY8 3QX
newsletter@fedastro.org.uk
07821 896 304

satellites, the third with developing mitigations/workarounds to cope with the problems caused by the satellites and the fourth WG with combining the work of the other three to produce a set of recommendations to policy-makers.

In parallel with the above US effort, the FAS, BAA and SPA were approached by the RAS to work together to encourage the involvement of the UK's amateur astronomical community in making observations of the satellites. During an online meeting on 16th October I was tasked with approaching the lead on the US Observations WG to see how the US and UK groups could best collaborate. At the time of writing this (2nd December) the response from the US has been positive and our next step is now to decide on a date for an online meeting when we can plan the most effective ways we can work together.

At the moment the project is in its formative stages but we'll 'keep you in the loop' on progress. Once the coordinating groups have defined a common approach to observation and analysis, set up a reporting and analysis infrastructure and written guide notes on how you can all help, we'll be inviting your participation.

In common with other concerned groups, the FAS considers the advent of satellite megaconstellations to be a significant sky pollution problem and so falls under the generic 'dark skies' umbrella. Our new Council member, John Evans, will lead this project for the FAS and, as he and I are both on the RAS' *Megaconstellations Group: Optical Subgroup* panel I shall be offering him my full support as and when he requires it.

This important project offers an opportunity for the UK amateur astronomy community to work with other amateurs and professionals in the UK, US and, perhaps, elsewhere to gather and analyse information that will help to protect our view of the sky and inform the political process in defining international policy.

The All-Party Parliamentary Group for Dark Skies

The RAS, FAS, BAA, CPRE, CfDS and other organisations concerned with preserving our dark skies were invited to contribute opinions as input to the first policy paper from the above APPG and a final content discussion took place on 9th December. The finished document is now on release and this can be downloaded here: <https://appgdarksdkies.co.uk/policy-plan>.

It's good to see, at last, that the government are taking the issue of sky pollution seriously. This policy paper is promoting a significant improvement over previous policies and is the best chance we've had for years on getting effective legislation that will force a reduction in light pollution in the UK.

The IAU AstroGPS Project

In mid-August I received an email from Prof Robert Walsh (UCLAN) who is the International Astronomical Union (IAU) UK National Outreach Coordinator (NOC) highlighting a possible international project the UK could get involved with. The project, called AstroGPS, is still in a pilot form and was originally put together by the Polish Astronomical Society and the Polish NOC (Krzysztof Czar) over the last year. Essentially it's a simple, clean web interface (website plus mobile app) providing a way of gathering details of public events related to astronomy and space science. Although currently prepared for Poland, the software is ready for making it international (English), and useful across any country.

The pilot is now looking to expand to cover other IAU countries (especially the US) and is seeking IAU funding to do this; the level of national IAU NOC interest in this is high so the chance of success is quite good. We should know whether the project was successful in its bid by 15th January 2021 and, if so, the funded project work would start in earnest in April 2021 and be completed by December 2021.

FAS Vice-President, Graham Bryant, and I have had a Zoom meeting with Robert and have agreed that the FAS will provide support. We now live in a world that's heavily dependent on online meetings (*via* Zoom or similar) but with the 'silver lining' that online *international* meetings are no more expensive than online national or local ones. This potentially valuable project offers a tremendous opportunity for opening up your society meetings to an international audience and *vice versa*.

FAS AGMs & Conventions

This year's AGM, held *via* Zoom for the first time, went very well with all of the agenda points successfully voted on, constitution updated and Council members elected or re-elected. There was a lot of concerned discussion about how and when our members can safely and legally return to doing outreach – we have some help for that (see next section).

I've long felt that it's a shame we have to shoehorn the AGM (the 'boring bit'!) into the middle of the annual FAS Convention; it breaks the flow, the public have to be excluded and it takes up time that could have allowed inclusion of another speaker. This year it hasn't been possible to have a standard, in-person convention with speakers and trade- and society-stands but we were still able to hold the AGM proving that we don't *have* to do it the way we have before and that it's quite possible to separate the AGM from the convention.

Earlier in the year, when the pandemic first reared its head, we were considering whether we might be able to hold the convention late in the year and it quickly became obvious, as the Covid-19 cases rose, that the virus had other plans! At the time of the AGM we were still considering the possibility of a delayed in-person convention around April/May 2021 time but the second (current) peak of cases, the predictably likely third peak in February due to the gregarious Xmas break and the knowledge that the vaccination programme and consequent immunity won't be fully established for most age groups until sometime in Summer 2021, all point to an in-person April/May convention not being possible.

The FAS Council have, therefore, decided to hold the 2021 AGM as an online meeting later in the year (date to be decided – Sep/Oct?) and to have both an online convention early in the year as well as working towards an in-person convention near the time of the online AGM. If, for some reason, the virus persists despite the vaccinations then we may have to move the later convention online too. As well as speakers for the online convention we're also considering online trade and society 'side-rooms' during the breaks between speakers. We'll let you know when we've firmed up on the dates and arrangements.

Seeking someone to join Council to promote Diversity and Inclusion

At the last Council meeting it was noted that not only is the Council comprised entirely of able-bodied white males but that by far the largest demographic amongst our members is the

same. Nowadays this lack of diversity reflects poorly on the FAS so the Council has decided to create a new *Diversity and Inclusion* post and seek another person with suitable experience to join Council in that role. That person would be appointed in the first instance but would subsequently be subject to election at an AGM in common with the other Council positions.

The person taking on this new role would, for example, review the FAS constitution to recommend updates to make explicit our commitment to diversity and would create and maintain guideline documents for our members advising them on best practise for organising meetings, observing sessions, outreach, etc, that did not discriminate. See the advert in this issue of the Newsletter.

As you can see, the FAS Council is keeping busy on your behalf with several 'irons in the fire'. If you have any comments or good ideas we're always ready to listen and I can be contacted at president@fedastro.org.uk.

Clear skies!

Dr Paul A Daniels FRAS
FAS President
2nd December 2020

An FAS Webinar on 'Outreach after Covid' – Saturday, 9th January 2021

Following the discussions at the FAS AGM on returning to doing safe outreach within the constraints of government rules and guidelines, the FAS Council have decided to organise a webinar-style conference for the afternoon of **Saturday, 9th January 2021** discussing how we can manage that return once the Covid-19 threat abates following mass vaccination.

The Zoom webinar will be free and open to all member societies and their members as well as school and college teachers, university outreach staff and other outreach organisers. Registration will be *via* Eventbrite and will also be live-streamed on YouTube. The programme will consist of a half-dozen invited short papers with opportunities for questions and discussion. We'll let you know when the registration process is open and the programme and timing for the day soon.

Special Portrait unveiled for Dame Jocelyn Bell-Burnell



The Royal Society has unveiled this new oil painting of Dame Jocelyn Bell Burnell by artist Stephen Shankland which marks the date over 50 years ago when Dame Jocelyn, aged just 24, discovered a new type of star while a PhD student at Cambridge University on 28 November 1967.

More information can be found at the Royal Society website:
www.royalsociety.org

A Note from your Editor:

*If you are reading this on a computer (Windows) you can select the hyperlinks in articles by using your mouse pointer and simultaneously selecting ctrl. Click on the mouse and your browser or email program will start up. **Note:** As might be said on TV; "Other operating systems are available."*

Michael Bryce (FAS Newsletter Editor)
Email Address: newsletter@fedastro.org.uk

FAS Council: New Diversity & Inclusion Post

The Council of the Federation of Astronomical Societies is looking for a person to take up a new position of **Diversity and Inclusion Council Member**. Ideally they should be a member of an FAS affiliated society.

The post holder will be a full member of the Council and advise Council on BME and disability matters as well as promoting and advising on social inclusion amongst member societies.

Interested individuals are encouraged to contact the FAS President, Dr Paul Daniels, at president@fedastro.org.uk or on 07802 324697.

Welcome to the FAS Council

John Evans

Dark Skies Coordinator

John is a Committee Member and former President of the Guildford Astronomical Society. He has been a Committee Member of the South East Kent Astronomical Society and has previously served on the FAS Council. He is a member of the BAA, The Webb Society and the European Astronomical Society and is a Fellow of the Royal Astronomical Society.

John has been an active observer for more than 40 years and is an experienced imager. He has given many talks on imaging, observing techniques and instrumentation. He was fortunate to observe and image for several years from the pristine skies of the observatory site on La Palma and continues to visit the island regularly.

Recently, he has been focusing mainly on visual astronomy from his observatory at home and on developing the Dark Skies Matter initiative that he founded in 2019 with the support of local organisations sharing an interest in landscape beauty, the environment and biodiversity.



Jerry Stone

Publicity and Meetings Organiser

Jerry Stone is a Fellow of the British Interplanetary Society (FBIS), is a Freelance Space Presenter, and runs Spaceflight UK

He is a space expert, presenter and broadcaster! He has given presentations on astronomy and space exploration for over 50 years, all over the UK and abroad. He is often interviewed on radio and TV. He was on Sky News covering Tim Peake's mission on the International Space Station, and was on both Sky and BBC News when Neil Armstrong died. He is an acknowledged expert particularly on the Apollo missions.

He has spoken about space at the British Science Festival, the Edinburgh Festival, the Palace of Westminster, the Royal Institution, the World Science Fiction Convention ... and a rock festival! He now gives presentations online.

He is a space author. His book, "One Small Step" commemorating the Moon landings - on sale at the National Space Centre, Jodrell Bank and Kennedy Space Centre - was described by Sir Patrick Moore as "Marvellous!". His latest book is "Find Out - Space Travel". Both are described as "suitable for 8-year-olds of all ages"!

Should anyone reading this like to buy signed copies of Jerry's books, please write to jerry.stone2001@gmail.com. This is because if people buy them on amazon or elsewhere, he doesn't receive a penny!

He is an interplanetary poet! NASA's Mars probe, MAVEN, is in orbit around the Red Planet. Like various other spacecraft, it has Jerry's name on it, stored on a DVD, which also includes a poem he wrote! No other space presenter in the UK can make this claim.

He has a space-related Blue Peter badge! A few years ago at the UK Space Conference he showed Zoe Salmon and the Blue Peter team how rockets work.



Member Society Reports

Cornwall Astronomy Society Celebrates Twenty Five Years

Robert Beeman (Publicity Officer)

Cornwall Astronomy Society celebrates its 25th birthday in December 2020 being founded in 1995 by an enthusiastic group who held meetings in Ship Inn Porthleven.

Over the years as numbers grew, close to 50 for a number of years, the Society met twice a month at the Godolphin Club Helston. Currently (Covid 19 permitting) we hold the first meeting of the month at Degibna Chapel Helston which has an adjacent National Trust carpark which gives the opportunity for telescopes to be set up given suitable weather. The second meeting of the month being held at the WI Hall in Mabe which is better suited for talks.

The Society has always focused on outreach events at schools, local shows, village events and on numerous occasions has provided speakers to groups such as the WI and U3A. In the current situation all this is on hold but hopefully we shall get back in due course to doing what we like best in promoting Astronomy to others as a hobby and science.

Thanks to the efforts of several members we have been able to host our meetings on Zoom since March this year. Meeting attendances of 18 or so are often achieved, compromised on occasions by slightly flaky internet connections due to rurality. Being almost as far south west as one can get we have always relied on the membership to make a major contribution to the programme and we have not been disappointed in having had a number of very interesting short talks on diverse topics in addition to our "routine events", debate evening, quiz night, members 2 minute talks and a virtual Perseid BBQ (it was cloudy!!) We were able to live image the remnants of Comet C/2019Y4 (ATLAS) using members telescopes at Porthleven and St Ives in a Zoom meeting. We were also lucky enough to secure a brilliant talk from Professor Nathan Mayne of Exeter University.

And from Fred Deakin (Secretary)

For me, the biggest, and most shocking story of twenty-twenty came on 23rd March when Boris Johnson came on the television to put the country into lockdown because of the rising spread of the Novel Coronavirus. I'd known about virus, and had followed it from early January, when it was still confined to China; and even then I'd predicted it would be a pandemic in more countries. What I didn't wholly expect was that it was to affect me personally, or the small group of astronomers that twice a month would meet up for nights of stargazing, presentations and discussions.

My name is Fred Deakin, and I am the Secretary of the Cornwall

Astronomy Society and, this is how the group of passionate stargazers changed direction in how we did our meetings, and with it, how we added a new level to them. A couple of weeks before the official lockdown, we had decided to postpone our meetings. A lot of our members are elderly or frail, and the rest had family members who were the same, and so we didn't want to take any chances. I decided when we stopped the meetings to do everything I could to somehow keep the society going.

I did a few days research, and tried to find options to do virtual meetings. I am very computer literate, but had never heard of the software known as Zoom. After reading about it, it became the platform I pinned my hopes on. I joined the subscription before spending my first couple of days of lockdown solely testing the software, and seeing what I could do with it. I contacted a few society members and got them to join with me for testing what others could see. I purchased on eBay a couple of green-screens, not believing they would arrive before our first scheduled Zoom meeting on 26th March 2020.

I am a keen astrophotographer, and over the years have built my imaging equipment up to be a mobile setup, but with complete autoimaging capabilities. This is useful as I work full time (under normal conditions), and with Cornwall being about the worst place in England for clouds, wind and rain, when there is a clear night I can set things up, write a script of what I want the telescope to capture, and still get a fairly good night's sleep.

On the day of the 26th March, rarely, the forecast was for clear skies. I videoed myself as I set up my Takahashi FS-78 (Scopey McScope Face), and connected it up by ethernet to the computer I was going to use for the evening's meeting. I also have an account with iTelescope, the remote telescope company that I have used before for imaging things in the Southern Hemisphere, so I made sure that was up on the computer; already logged in. Stellarium was loaded up, and then finally the Zoom app itself. I had no idea how it was going to go, but hoped somehow that I could find an hour or so of stuff to show to whoever joined me for the evening.

A couple of hours before the meeting started, and the green-screens arrived, so there was a frantic time putting them up and sorting out some backgrounds. I had a phone call from Kevin, a society member who has an observatory. He said that he would put his telescope online so we could do some live viewing together – this did help the butterflies that were brewing in my stomach. I knew that this could be either a game-changer or could flop massively; and I had no idea which way it would go.

I am not a confident public speaker. If you want to hear someone who is sweating inside and verbally stuttering and overusing lots of 'Umms', then I'm your man. I have done many talks to the members before, but not one has been without the sense of dread until they were over. The idea of sitting in front of a computer with five or ten faces in front of me, expecting me to inform and entertain them on the subject at hand almost stopped me a couple of times, but I swallowed my insecurities.

The sky outside started to go dark when I initiated the meeting. An email had gone out to our twenty-seven current members, and I had my fingers crossed a few of them would join me.

There was a beep, and Kevin came online. He had used Zoom for his work before, and said he would help and guide me if I needed it. Then another beep, and our Webmaster, Greg came online. Another beep, and then another came in, then another beep. Soon there were seventeen faces in front of me, all waiting expectantly, so I started. I talked about the current situation and how strange it was, and then I shared with the group some of my screens to make sure they could all see what I had put up... then we got started properly.

The meeting was a resounding success. I must have talked for England as I took people on a tour using my scope of the night sky. Between me showing everyone some things, Kevin would take over and show everyone what was being seen through his scope. There was a supernova in M61, so we took some images of that, and Comet C/2019 Y4 Atlas was in the sky, so we tracked on that for a bit, as well as a load of other targets. People joined in and asked questions or suggested new targets to look at. I showed off the video of when I set up the telescope and there was discussion on that. Before I knew it, well over three-hours of constant engagement had passed, and everyone was still there enjoying every one of those passed minutes.

After long goodbyes and the promises that we would be doing it again and again, the meeting was closed and the recording of it

saved. I felt quite proud of myself. I was actually so piped up after the meeting that I didn't sleep that night, and instead carried on making the most of the crystal-clear sky. We had proved a new method to our meetings, and had realised that even in dire situations, such as we were in, that we could still meet up, enjoy together our hobby and passion, as well as bring some kind of strange normality in a time where normal had taken a break.

Now, Zoom has become a part of the worldwide vocabulary, and it is accepted as one of the best ways for groups to keep in touch. I am glad I picked the right platform. At the time of writing this, the Novel Coronavirus is still ravaging its way around the World. Normal still doesn't exist, or not the way we used to know it.

The Cornwall Astronomy Society still meet up twice a month, on the same day and time that we would have previously when we were all able to meet and have a coffee and biscuit in person. We have more members, and often there are new faces. We have done some more live viewing, we have had talks from all our members during those meetings, we've had a debate evening, a hero's evening, a talk from a University Professor, and much, much more. I am still hosting it; and I'm still feeling quite proud.

If you want to see for yourself some of what we have been up to, then have a look at a brief video I made: <https://youtu.be/EQS-u0URkS8>

www.cornwallas.org.uk

Southport Astronomical Society

1) Due to the pandemic we've suspended 'live' monthly meetings, and are hosting two Zoom meetings each month instead. These Zoom meetings include members of the Astronomical Society of Botswana (ASB) that our President, Professor Michael Bode, helped establish in Gaborone. The aims of the ASB are to encourage the people of Botswana to look at the night sky, wonder at their place in the universe, encourage educational learning, and help develop amateur astronomical societies throughout the country.

2) Sefton MBC who owns the Hesketh Park Victorian observatory that Southport AS manages on their behalf, instructed us not to open it to the public or use it for Society events, again because of the pandemic.

3) For these reasons Southport AS's management committee decided to suspend subs, normally due in September for the 20/21 year, and agreed the society would fund the cost of Zoom meetings.

4) Several local visitors to our website have been contacting us to ask if they could join the society, so based on this understanding we add them to our membership email list, and include them in Zoom notifications. These prospective new members plus existing honorary & paid-up members from last year, means our total membership is at a record 61, the highest since 1986 when the current society reformed, the same year Halley's comet was visible.

Rick Tyers
Southport Astronomical Society

Guildford Astronomical Society

In March we suspended our monthly lectures, outreach activity and the use of our observatory. Since then we have offered live e-training in PixInsight and in navigating the night sky, commenced a society newsletter and in October provided live Zoom talks for Virtual World Space Week (organised by the IoP South Central Branch).

We are now holding our monthly meetings successfully via Zoom and offer recordings on a private YouTube channel for members who are unable to participate in the live meeting.

Unsurprisingly, experience to date is that invited lecturers are less reluctant to demur as the need to travel is no longer a barrier and the time commitment is short and that the talks seem more personal and engaging ("lean forward") than if held in a University lecture theatre.

Nick Tanton
President Guildford Astronomical Society

Bridgend Astronomical Society

Like lots of other societies, Bridgend Astro have been extremely busy during what's been a difficult year for everyone. Lockdown has given our society the opportunity to grow and flourish in a way that has, until now, has been a time challenging exercise. With everyone turning to technology, our society Facebook page has grown by nearly 500%. Our society

membership numbers are now reaching 90 and growing. All this activity during a season where we cannot actually get together in ways we normally would! It's been rather heart warming to see like minded individuals including juniors, beginners and amateurs come together, learn and support their local society like never before!

The committee team have been working tirelessly to plan and bring 'Zooming' sessions to the forefront with speakers and quiz nights. The few socially distant observation events have seen members enjoy the Perseids, the planets, deep sky treasures and the unforgettable Comet NEOWISE. When the pandemic subsides, Bridgend Astro have many more member events lined up. An exciting Rocket Science day, telescope workshops and star parties to name a few.

But it's been our educational courses that have really truly engaged our members! Due to demand, we are currently running our second eight week 'Astronomy for Beginners' course via Zoom! An excellent opportunity has been opened up for distance learning that we will be expanding upon in 2021 with another course entitled 'Observing the Skies' that we are sure will be just as popular!

The Sky is certainly not the limit at Bridgend Astronomical Society! Check out our Facebook, Instagram and Twitter feeds as well as our website here.....

www.bridgendastro.org.uk

Mansfield and Sutton Astronomical Society

Mansfield and Sutton Astronomical Society were going great guns up until March, in as much we were heading for the second -best outreach figures since our records began.

Since closing the observatory we have moved online with at first google meet and lately Zoom.

Accompanying this our monthly guest speakers have been regular "visitors" alongside our weekly Wednesday night members meeting, with quizzes (we're looking forward to our online Obs Christmas bake-off as the warm-up act before the Christmas quiz) members talks and general meetings.

We quickly set up our online meetings as well as a new members forum, allowing a safe and casual platform which has proved useful and popular.

During the summer we set about making the observatory as Covid as safe as possible. We managed to conduct a safe Solar viewing event for members.

Viewing was done with a camera on our Solar scope, and talks were socially distanced outside, so minimising any risk of virus transmission.

We intended to conduct blended meetings. This is where a safe number of members can attend the Obs and a talk was given and live-streamed to the rest of our members (the rise of infections and the subsequent 2nd lockdown put this on hold)

NEOWISE and Mars have been a welcomed distraction and the latter is also our topic for our contribution to National Astronomy

week on the 21st of November.

We are encouraging members to live stream viewings from their scopes and again this is proving popular.

When we can get back to real normal we will keep certain things that have proven benefits for our society and it's members, like for example cameras on scopes and blended meetings.

The bake-off is fun and light-hearted as it's a feature of our public open events, but the competition is keen. Please see the below image from our youngest member Freya.



An FAS Webinar on 'Outreach after Covid' – Saturday, 9th January 2021

Following the discussions at the FAS AGM on returning to doing safe outreach within the constraints of government rules and guidelines, the FAS Council have decided to organise a webinar-style conference for the afternoon of **Saturday, 9th January 2021** discussing how we can manage that return once the Covid-19 threat abates following mass vaccination.

The Zoom webinar will be free and open to all member societies and their members as well as school and college teachers, university outreach staff and other outreach organisers. Registration will be *via* Eventbrite and will also be live-streamed on YouTube. The programme will consist of a half-dozen invited short papers with opportunities for questions and discussion. We'll let you know when the registration process is open and the programme and timing for the day soon.

Liverpool's Very Own Planetarium: 1970 - 2020

By Patrick Kiernan - National Museums Liverpool

Submitted by Gerard Gilligan (Chairman: The Society for the History of Astronomy)

50 Years of Star Gazing – With the Roof On!

May 2020 marks World Museum's planetarium's 50th anniversary, it is the longest surviving planetarium in a British museum and this is the story so far... In 1941 the Liverpool Museum, as it was known then, suffered a direct hit from a bomb during the Liverpool Blitz. It was reopened in 1956 and was to see huge redevelopment. A lot of that work happened in the late 1960s. The director at that time, Tom Hume, had the vision of creating a modern museum that would embrace science and technology. The 1960's was a decade of change and of belief in a new and better future, forged, as the Prime Minister Harold Wilson phrased it, 'in the white heat of technology'. Hume set up a new Astronomy Department early in 1969, establishing a new time and space gallery and installing the planetarium.

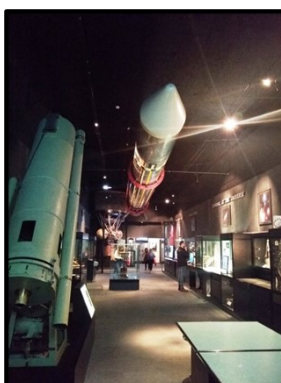
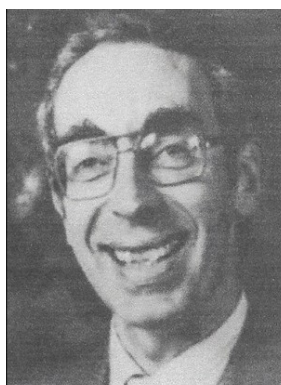
The driving force behind the planetarium and space gallery came from Dr Patrick V. Sudbury, a scientist who had previously worked with NASA surveying possible landing sites for the Apollo missions using the telescope at the Pic Du Midi observatory in the Pyrenees. With his knowledge of telescopes and astronomy, he became the first head of the Astronomy Department and manager of the planetarium. He used the telescope at the Pic Du Midi observatory in the Pyrenees to do this and earned his PhD for his efforts. He also served as President of Liverpool Astronomical Society between 1970 – 72.

Sudbury began the astronomy and science collections, particularly rocketry and telescopes, and created the new Space gallery next to the Planetarium. He was also responsible for the oceanography, modern physics, photography, scientific instruments and medicine collections, some of which are nationally significant.

The restored museum was launched in January 1970 with a display of moon rock brought back by the Apollo 11 crew. There were queues stretching hundreds of yards outside the museum and more than 32,000 people visited during the three-day showing.

The planetarium opened a few months later on Friday the 22nd May 1970. It was only the second planetarium to be built in a museum – the first, the London Planetarium, was built in Madame Tussauds in Baker Street in 1958, but was closed in 2006 but a new one was established Greenwich a few years later.

The new Planetarium featured sixty-seven seats and initially there were two shows each afternoon,



Images above:

First

Saturn looms large on the dome of the planetarium above the Zeiss projectors

Second

Dr Patrick Victor Sudbury (1941 – 2007)

Third

The Space and Time Gallery

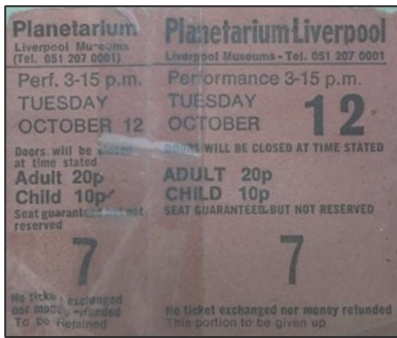
except on Monday's which were kept for maintenance of the equipment. As with all new equipment there were some initial difficulties with the £5,000 (about £85,500 in today's money) Zeiss projector.

There was a suite of 150 projectors using almost 50 different motors for images of planets, galaxies and other extras that were not built into the main projector. Each week four to five projector lamps had to be replaced along with bulbs around the dome. When new shows were introduced, new projectors had to be filled with slides, checked and installed; the planet projectors had to be moved to keep them correctly positioned in the sky.

A little after opening the Liverpool skyline was added to the base of the dome. Even though the shows were mainly pre-recorded, everything had to be done manually: bringing up images, moving the sky and pointing out items. The audio was played on a two track reel tape recorder and the audio to the public was fed through speakers whilst the operator wore headphones with the track of the show playing in one ear and the prompts of what to do and when playing in the other! The newly installed console the operator's had to use, took some learning and patience to work out which knob and switch did what. Liverpool A.S. became a recruiting agent for many of the operators, and in return was used as a recruitment tool for society members.

The Space and Time Gallery followed, opening on the 9th September 1993. Leading towards the Planetarium on Level 5, the cost for the renovation was £375,000 and was a new home for the collection of rockets and telescopes. The opening ceremony was overseen by Dr Stephen Hawking via video telephone link. At the time, Dr Hawking was the Lucasian Professor of Mathematics at Cambridge University, a position once held by Sir Isaac Newton. This renovation made the gallery an exciting and fascinating prelude to the planetarium. New comfortable padded seating was installed in the planetarium for visitors to sit back and enjoy the shows.

The first big improvement to the planetarium equipment since its opening was in 2012 when Zeiss (who made the original projector – the 'Star Ball') donated two digital projectors. The new projectors allowed us to present higher quality and more immersive shows without the need for filters, slides and weekly calibration. Unfortunately, because of the way the projectors work we had to remove the skyline from around



On opening the entrance fee was 2 shillings (or £1.41 today), after decimalisation that price became 15p (or about £2.50 today).

This picture shows the dome we still use being built, and by 1970 Phase two of the museum's development was complete



Above left - Members of The Society for the History of Astronomy visit the Liverpool Planetarium during their annual summer picnic event and visit to Liverpool, July 2017. © SHA James Dawson. Above right—ESA/UK Astronaut Tim Peake event in 2016.

All Images with thanks © World Museum Liverpool, The Liverpool Echo, TMGoogle Images



the base of the dome. The feature is greatly missed by our visitors to this day, many of whom remember seeing it when visiting the Planetarium as children.

Over the years our programme has changed; the first school shows began in 1979 nine years after opening and continue to this day. Since 1979, we have welcomed around half a million school children! Over the years we increased the number of shows from two a day to our current full schedule of eight shows a day at weekends and holidays, with five public shows a day and three school shows a day during school term.

One of the highlights of the last few years took place in February 2016 when we had a live link-up with the International Space

Station to talk with British astronaut Tim Peake. Schools from around the country attended the museum for the event and others watched it live online. Pupils were able to ask him questions which he then answered whilst whizzing over the Earth at 27.000 Km an hour!

The planetarium remains a very popular and entertaining attraction with over 2 million visitors and counting! It is a unique venue and something of which the people of Liverpool and the region are rightly proud. The future for the planetarium is exciting: when we re-open why not pop in and say 'Hi'. Let's talk space and become part of the next 50 years of our journey through the cosmos.

Planetarium Fast Facts

- Opened 22nd May 1970, entrance fee 2 shillings (£1.41 at today's prices).
- 1972 after decimalisation entrance fee 15p (£2.50 at today's prices).
- Today's entrance fee is great value and similar to 1972; £3.00 for adults, £2.50 for concessions!
- From two shows a day we now show up to eight a day!
- 1 Millionth visitor arrived in June 2002.
- Half a million school children have visited the planetarium for unforgettable school trips.
- There have been 2.18 million public visitors
- Space & Time Gallery opened 1993
- New projectors installed in 2012
- A live link to the International Space Station in 2016.

Text and several of the images with thanks to Patrick Kiernan, Education Demonstrator. Learning & Participation Department, National Museums Liverpool, plus SHA member and appreciation also to Phil Phillips, New Media Development Manager Systems Department. National Museums Liverpool.

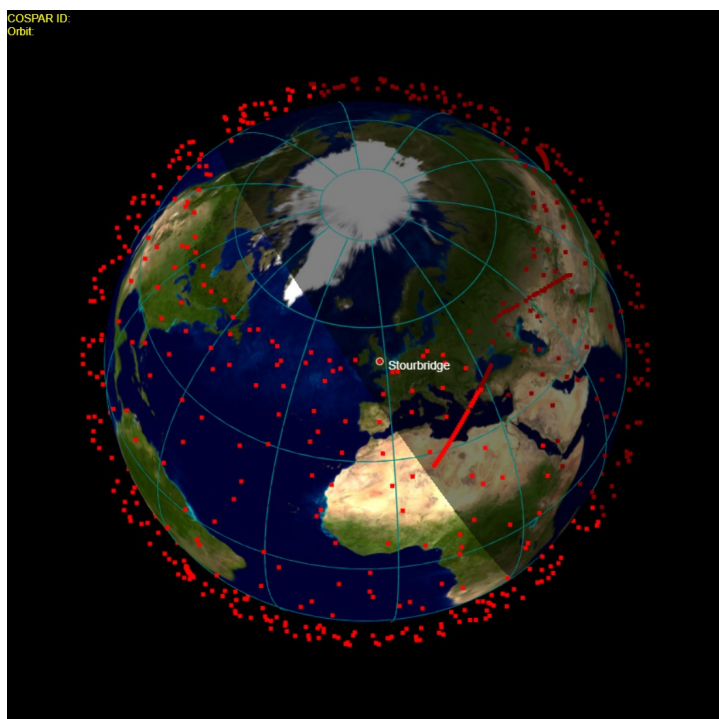
Starlink Orbits

Do you want to monitor the orbital paths of the Starlink megaconstellation of satellites? The satellite tracking website **Heavens Above** has a great animated graphic which you can have centred on your observing location. The site also produces a table of sightings like those it produces for the ISS.

Date	Satellite	Brightness (mag)	Start		Highest point			End	
			Time	Altitude	Azimuth	Time	Altitude	Time	Altitude
06 December	STARLINK-1836	4.6	17:43:15	10°	S	17:45:06	17°	SE	17:45:06
06 December	STARLINK-1870	4.6	17:43:20	10°	S	17:45:11	17°	SE	17:45:11
06 December	STARLINK-1840	4.6	17:43:26	10°	S	17:45:17	17°	SE	17:45:17
06 December	STARLINK-1868	4.6	17:43:31	10°	S	17:45:22	17°	SE	17:45:22
06 December	STARLINK-1875	4.6	17:43:38	10°	S	17:45:28	17°	SE	17:45:28
06 December	STARLINK-1873	4.6	17:43:43	10°	S	17:45:32	17°	SE	17:45:32
06 December	STARLINK-1845	4.6	17:43:49	10°	S	17:45:38	17°	SE	17:45:38
06 December	STARLINK-1856	4.6	17:43:54	10°	S	17:45:44	17°	SE	17:45:44
06 December	STARLINK-1858	4.6	17:43:59	10°	S	17:45:49	17°	SE	17:45:49
06 December	STARLINK-1854	4.6	17:44:04	10°	S	17:45:54	17°	SE	17:45:54
06 December	STARLINK-1843	4.6	17:44:10	10°	S	17:46:00	17°	SSE	17:46:00
06 December	STARLINK-1863	4.6	17:44:15	10°	S	17:46:05	17°	SSE	17:46:05
06 December	STARLINK-1879	4.6	17:44:22	10°	S	17:46:10	17°	SSE	17:46:10



Heavens Above: <http://www.heavens-above.com>





RAS GCSE Astronomy Student 2020 Online Poster Competition!

The Royal Astronomical Society online GCSE Astronomy poster competition is now on!

Did you study for GCSE Astronomy with a view to taking the exam in the summer of 2020? If so, you are eligible to enter our RAS GCSE Astronomy online poster competition. The RAS invites you to present an astronomy or geophysics topic of your choice as an academic style poster with book token prizes of 1st = £100, 2nd = £50, 3rd = £25.

All entries will be displayed on our website, and judges from the Royal Astronomical Society Education and Outreach committee will pick three winners!

Eligibility:

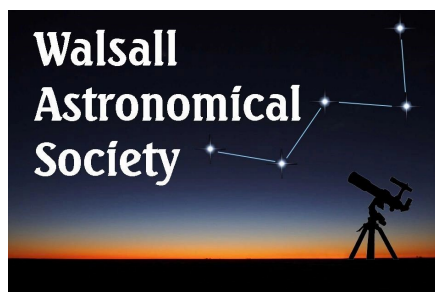
1. You must have studied for GCSE Astronomy.
2. You must have been due to take the exam in the summer of 2020.

Criteria:

- Your poster must cover an astronomy or geophysics topic.
- The poster must be: · Portrait or landscape · Electronic · Created in PowerPoint or similar
- You must include your name, your school address (if applicable) and your GCSE Astronomy teacher's details (name and email address) in your entry. This is so we can check that you are eligible to enter the competition.
- A document containing full entry criteria details can be downloaded from <https://ras.ac.uk/education-and-careers/ras-gcse-astronomy-student-2020-online-poster-competition-launched>

Deadline:

All posters must be emailed to awards@ras.ac.uk by the 1st February 2021.



A Brief History of Walsall Astronomical Society

By Alan Ledbury (Treasurer)

The club seems to have started on the 5 November 1990 as a branch of Walsall Science Club (now defunct) and struggled along with no committee or structure for several years at Shellfield School. The Secretary of WSC, Stuart Williams and his brother Andy Williams organised the meetings.

Around 1995 the club had a whip round and purchased a second hand Dark Sky 12" Dobsonian telescope for £200.

After a disastrous fire at the school in August 1996 the club moved to the bowling alley at the Royal Oak pub at Pelsall using the canal towpath as an observing site till the pub was turned into a restaurant (The Finger Post) and the bowling alley closed.

1997 November, Another move, this time to the Free Trade Inn, also at Pelsall, about this time the connection to the science club was severed and Stuart, with several members, particularly

those with an interest in paleontology moved away. They formed a short lived rival club 'The South Staffs A S at Bloxwich.

A committee was formed, a club constitution and rules were written and the format changed from monthly to weekly meetings. The biggest change was the seating arrangement which changed from lecture theatre to round table format to lose the "them and us" mentality which had prevailed

Eventually the Free Trade Inn closed and became derelict, meetings moved to the house of Bob Cleverley, the club Treasurer, until another member, Edwin Venables, introduced us to Rushall Olympic Football Club (ROFC) who very generously offered us their committee room where we currently meet.

The club now owned several small telescopes but in 2003 we purchased a used Mead 10" SCT on a wedge and fork equatorial



driven mount, the club now had two decent astronomical instruments.

An observatory was badly needed so with permission from the FC the club held a series of work parties to clear scrub land adjacent to the football pitch and in March 2009 a 20ft ISO container was delivered to the site.

At this time the club was hearing two talks a month, both given by Alan Ledbury using a 35mm slide projector and an overhead projector. The purchase around 2007 of a digital projector made this a lot easier. The oldest digital transcript is from April 2004.

In February 2008 a grant of £400 from Walsall Neighbourhood Development Program was used to purchase a Coronado PST Solar Telescope.

In 2010 the club started to bring in professional speakers, well known names include BBC Sky at Night presenters were found by the club's then Secretary, Carl Kimberley.

In March 2016 the club purchased a larger Hydrogen Alpha Solar Scope and camera.

Although members had been attending star camps since about 1999, April 13 & 14 2012 was the date of the first Club organised camp at Sparchford in Shropshire, since then the meets (WOE or Weekend Observing Event) have occurred twice a year, in spring and autumn.

Visiting Speakers at Walsall AS

From the BBC Sky at Night team: Prof. Chris Lintott, Dr. Paul Abell, Paul Money and Dr. Chris North.

The CEO Institute of Physics: Nik Szymanek, UK's top deep sky imager

Damian Peach, UK's top Planetary Imager

The Director of Jodrell Bank radio observatory Prof Albert Zijlstra, the Director of Science at E.S.A. David Southwood;

NASA Astronaut Don Thomas;

Apollo Astronaut Walt Cunningham

Before the Covid Lockdown the club enjoyed three talks a month from Alan, Dr Bill Law, and an outside speaker. Since the lockdown a daily news-sheet "The Virtual Meeting" has sufficed (free copies available from g.ledbury@blueyonder.co.uk)

More information about Walsall Astronomical Society and their contact details can be found at the club's website www.walsallastro.com



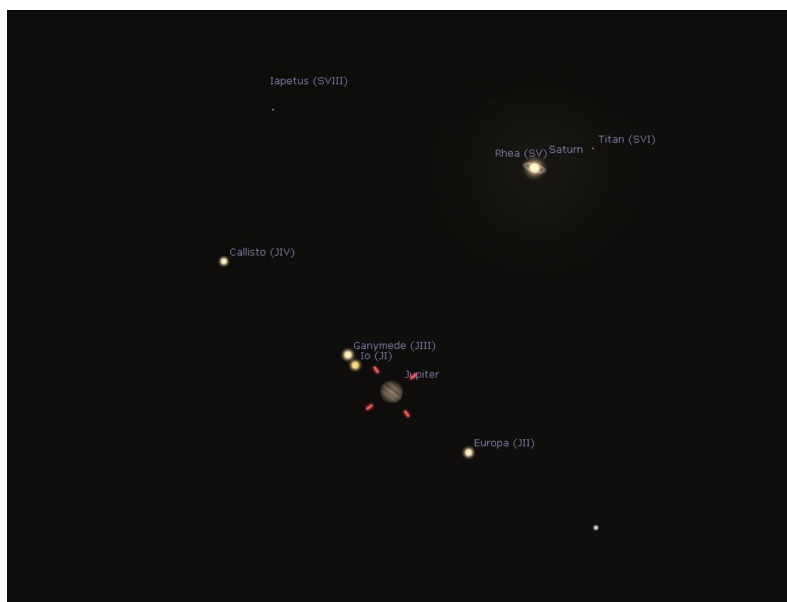
April 2012 and the first Dark Sky Camp at Sparchford Shropshire

Jupiter and Saturn Conjunction

2020 December 21

An interesting event this month is that Jupiter and Saturn will reach their closest conjunction at 17:00 on December 21st when their separation will be at a historic low. You can find them low in the southwest in the constellation of Capricorn.

The sky chart opposite is taken from Stellarium for 17:00 hrs on the 21 December.



To finish this issue here is a lovely little project that has been completed by a junior member of the Bridgend Astronomical Society: Joshua Burnett, age 7. Well done Joshua. The FAS is pleased to include your work in this issue of the FAS Newsletter.

Michael Bryce (FAS Newsletter Editor)

Submitted by Jason Mead VC & Observation Officer (Bridgend Astronomical Society)

