

Astronomy Forum, 29 November 2022

The Astronomy Forum took place at the Royal Astronomical Society as a hybrid meeting, with most delegates attending online via Zoom. Prof. Mike Edmunds, RAS President, chaired the meeting.

Attendees from the RAS: Prof. Mike Edmunds and Dr Robert Massey

Attendees from STFC: Prof. Mark Thomson, Dr Colin Vincent

Astronomy and Solar System Roadmaps: Profs. Stephen Serjeant and John Bridges

UK Space Agency: Dr Caroline Harper

Policy Update from the RAS (Deputy Executive Director)

Recent policy work by the Society includes:

- Horizon Europe Plan B: submitted community views to the Campaign for Science and Engineering, who are working with BEIS on a backup plan if no association by UK
- RAS wrote to Paul Bate (UKSA CEO) re flat space science budget at ESA
- Commons Science and Technology Committee inquiry into UK Space Strategy and UK Satellite Infrastructure: RAS submitted written evidence on impact of satellite constellations, committee did not cover this in its report, despite being in terms of reference for inquiry. [Committee report](#) did refer to our points on support needed for earth observation satellites and absence of a reference to diversity in the UK Space Strategy
- JWST naming: Society wrote to Paul Bate, Josef Aschbacher (ESA Director General) and Bill Nelson (NASA Administrator) requesting a full investigation into James Webb and connection to purges of gay men in Lavender Scare. [RAS has also changed publication policy](#) asking authors to use acronym rather than full name of telescope. Now have replies from Dr Bate and Mr Nelson, the latter linking to [NASA investigation report](#)
- Satellite constellations: Society in dialogue with Joanne Wheeler re BEIS sustainability kitemark; working with UKSA on possible mitigation policies; letter sent to Paul Bate re mitigation in design of possible ESA constellation; [evidence sent to OfCom](#) re protection of 14 GHz spectrum for radio astronomy, [response published](#) in November
- Delayed RAS bicentenary reception took place in May in Palace of Westminster, speakers included Greg Clark MP (Chair of Science and Technology Committee), Chi Onwurah MP (Shadow Minister for Business, Energy and Industrial Strategy), Lord Rees of Ludlow and beneficiary of BounceBack prison astronomy education programme. Society also represented at devolved assembly events in Belfast and Edinburgh

Political engagement from Forum members (all)

There were no other reports on political engagement by Forum members.

Report from the Science and Technology Facilities Council (Prof. Mark Thomson)

Prof. Thomson [presented slides](#) and described the new STFC Delivery Plan, including investment in frontier science, enhancing international links, infrastructure projects, skills development, public engagement, equity, diversity and inclusion, and sustainability. Challenges include the very high level of inflation in areas such as energy, and the concomitant impact on international subscriptions.

Astronomy highlights include E-ELT and associated ESO instruments, beginning of SKAO construction, and upcoming space science missions.

The report ended with a description of the new Small and Large Awards scheme for Astronomy.

Discussion points included (comments and questions in italics throughout):

Consolidated Grants: One of the downsides of the new system is flexibility for the institution. For example, what happens if a PDRA leaves 1.5 years through? Does this need to be used to support a new 1.5 year PDRA (which is not ideal) or could it be used to “buy out” the PI from institutional responsibilities? At the moment this is not an issue for large, overlapping, CGs where money can be shifted.

MT: I defer to Colin on this.

CV: If postdoc moves or leaves, we negotiate with the PI on what to do with funds. We have not looked at this in too much detail yet. Will take back to team. Few departments have the flexibility to move things around – and most consolidated grants are pretty small. We are not 100% clear on the policy yet. It does mean that individuals will be able to apply more frequently.

MT: Team always looking for solutions on this

The uplift in consolidated grants is roughly £19m extra. What does that represent?

MT: I think this is a 15% uplift for the programme as a whole. The plan is to continue that uplift at £2m a year for three years from 2023 / 24, so £6m a year thereafter. This would be a 60% uplift in terms of volume. We are trying to reverse the negative trends of last 10 years. Argument for this is that the pressure from subscriptions squeezes the budget, and has reduced science exploitation, which makes no sense.

Will there be the one year no cost extension on small grants?

CV: We are not changing that policy – it will still be there.

I am concerned that there will not be standard guidelines for support costs, for e.g. computing and secretarial support. These might be quite constrained with smaller grants, and the panel can decide to cut back on these costs to give more PDRA support. I am hoping we can maintain these.

CV: STFC is out of step with the other research councils on this. If the resources are needed, justified in the case for support, you should get them. People on review panels are like you and know the value of having these things. There is no higher level advice to cut them. It goes without saying that we want value for money. I think STFC is doing things the right way.

Is there some kind of idea of how specific we need to be?

CV: We are looking into ways in which we can give advice on this.

What are the plans for digital research infrastructure?

MT: This is broader than STFC. Talking to the Government, the discussions are very positive. There is support for the PPAN community through DIRAC, and we are continuously finding ways to resource this at a pretty good level. When brought together under UKRI, we are looking to do something much more ambitious. It is very much in flux. I have asked Digital Research Infrastructure about skills, and ways to support the whole programme. We are aiming for a steady state, where the UK can have a long-term investment plan. The DCMS review on this will be published early 2023 and will be quite helpful.

Reports from STFC Advisory Panels: Astronomy Roadmap (Profs. John Bridges and Stephen Serjeant)

Prof. Serjeant [presented slides](#) setting out the work of the STFC Advisory Panels on the Astronomy Roadmap.

What is the place of gravitational wave astronomy among the various ways we can apply for grants? It's not clear where we should apply.

CV: We haven't had a problem with things falling between the gaps, and astronomy money was recently used in grants round to support gravitational wave research. We are talking about how we might adjust this to make things even better for the future, and working to ensure that people who apply are appropriately advised.

Is it the case that those who are not already members of an experiment consortium should not be applying? Only through AGP?

CV: At the moment apply through AGP. There are examples of groups who traditionally weren't members of consortia who have applied. This is being addressed and discussions are under way at the moment. Talk to particle astrophysics secretariat.

There is an absence of X-ray astronomy in the plan.

SS: Good point. Facilities [we consider] are ground-based. The choices though for science exploitation are an AGP choice. We don't want to invade their territory. It does feature in roadmap report. In the full text of the report we do stress the importance of multi-messenger astronomy.

We don't want to end up caught in cracks of dual key system.

SS: No, and we are trying to prevent an algorithmic decision making process. e.g. listed at number six in priorities, tick, go ahead. The way it works is that UKSA asks the science boards if it is a priority. We absolutely support multi-messenger astronomy. This requires conversations, rather than letting things tick over.

Prof. Bridges presented [slides setting out the STFC Solar System Road Map](#).

Bilaterals are very welcome, so long as they don't divert us from anything else. Is that realistic?

JB: Focus on the positive aspects. There is very positive response from community, it opens up new way of working, but doesn't mean we want to stop working with ESA etc.

Report from the UK Space Agency (Dr Caroline Harper)

Dr Harper summarised the recent ESA Council of Ministers (CMIN).

- UK had been in favour of an uplift to space science programme in run up to Ministerial, but a number of the smaller member states indicated they could not afford it
- Some larger member states (such as France and Germany) also noted affordability issues in current programme
- ESA DG revised proposal, removing request for uplift
- Plan is to fix this now, aim for uplift at CMIN 2025. UK Space Agency sees CMIN 2022 as summit in post-pandemic Ukraine war context, CEO Paul Bate would like science uplift next time
- Outcome is flat ESA funding for space science
- UK Space Agency will reach out to community for evidence to support uplift at next Ministerial
- Effect is slowdown in programme, reformulation of missions like Athena, can still deliver L class science goals
- M7 also slowed down, five candidates will go through short phase zero study, three selected after that. All downselected missions will have UK involvement
- F2 selection went ahead as planned, ARRAKHIS mission chosen, building on Euclid heritage
- SPC considering options re missions in extended operations, including termination of support by ESA
- Debate about whether to just focus on ESA missions, or scale back involvement in e.g. NASA flagship projects
- ESA asked whether it should continue to do some of payload development on most complex missions – consensus is for this as derisks and saves money in longer term
- UK position on balance between F, L and M class missions is to prioritise diverse programme rather than picking winners, and to maintain mission cadence
- ESA still considering L class icy moon mission, but no longer with sample return

- Also discussed JWST naming. ESA Director of Science that ESA position is always to follow lead funding agency i.e. NASA in this case. UKSA continues to review with concern and interest
- Two new bilateral programmes, a Science & Exploration Bilateral Fund, which is driven by science excellence and science value to UK, and an International Bilateral Programme with a more directed, commercial focus.
- First call for Science & Exploration bilateral proposals ended in October, review of submissions is imminent, expected to be an annual programme, fund is designed to increase opportunities for the academic R&D community to do globally significant science in space, and to complement work in ESA – ESA remains route by which we secure leading roles on international science missions
- Science Minister sees ESA as become more important post-Brexit, not less
- On dual key raised earlier, much work is done to avoid things falling between stools and relationship between STFC and UKSA is good – any queries or concerns please talk to us.

Dr Harper then [presented slides](#) giving an update on other work at the UK Space Agency

On ExoMars and the agreed £350m of investment, is it right that this isn't enough to do everything, and needs NASA involvement?

CH: My understanding is this has been agreed in principle now, NASA has agreed to come on board but the detail of that is still being worked out.

Any other business

AOB: RM reminded the meeting of dates of the NAM 2023 conference, to take place in Cardiff from 3 to 7 July 2023. The call for registrations will soon be open.