

## **Astronomy Forum Meeting Notes**

**7 April 2016, Imperial College London**

**In attendance: see list on page 6**

### **1. Introduction**

### **2. Reports on political engagement**

- One letter sent to local MP
- RAS gave evidence to Select Committee (Satellites + Space), plus other meetings with Nicola Blackwood

### **3. Update from STFC**

Prof John Womersley, CEO of STFC presented an update on the work of the research council and the impact of the Spending Review settlement. The slides are available at

[https://www.ras.org.uk/images/stories/Astronomy\\_Forum/Town\\_meeting\\_public\\_slides.pptx](https://www.ras.org.uk/images/stories/Astronomy_Forum/Town_meeting_public_slides.pptx)

- Modest investment, and international collaboration, continues to deliver outstanding success
- CSR – STFC’s scenarios and plans transmitted to ministers
- Some of protected science budget to come from ODA – may be subject to limitations
- Allocations/grants beyond 2018 not firm – only indicative budgets from government
- STFC did comparatively well from research council cash allocations (compared to other bodies) – doesn’t account for e.g. rising baseline though, no real terms protection
- Some cuts in resource offset by rises in capital, and vice versa
- Any extra money (compared to previous funding levels) will go to international subscriptions e.g. SKA. No funding removed from Core Programme
- Q: Capital – Core Programme looks variable, but BIS managing allocations slightly differently now
- Q: Cash exchange rate protections still present
- Science Board and community input requested to deal with flat cash budget allocation
- Also looking at bigger picture questions, e.g. how many grad students should be supported, but review will not be heavy and in-depth

#### **Global Challenge Research Fund**

- Bulk of ODA money. £3.5m p.a. to STFC looks low, but offset by protection in other areas of budget
- £700m of GCRF until 2021 in central RCUK pot – STFC role to advise on e.g. ODA compliancy, cross-collaboration

- Later rounds of GCRF funding likely to be much larger, NB also uplift in Newton Fund. Represents significant future investment by government

### **Nurse Review**

- Key proposed change – new NDPB, to collate all reporting to government, raise profile of science
- Means fewer guarantees about ring-fencing for individual research council budgets, change in roles and responsibilities
- Many details still to be worked through

### **How community can help**

- Need to be better at accessing funding, e.g. highlighting transferrable benefits, such as space research to feed into agri-tech applications
- Need to engage with big changes recommended in Nurse Review. Lacking details on e.g. international facilities/subscriptions, infrastructure, which are nevertheless relevant and need to be brought up
- Brexit etc. – need to get facts straight

### **Discussion**

- Q: Current protection on exchange rate fluctuations?
  - Partitioned budgets – risk lies with BIS if a shortfall arises in a specific funding line due to exchange rate changes. Not necessarily even in science budget, but could get money e.g. from underspend in other research councils
- Q: Difficulty allocating money to specific geographical regions? Any means of providing advice?
  - e.g. SKA – bilateral agreement with RSA government is allowed to be ODA, but not overall collaboration
  - Bringing in additional partners from other countries, or proposing applications of research to those countries, can access ODA funds
  - Advice available from STFC
- Q: HPC facility funding? Vital for many science areas, and is fast-approaching a cliff edge
  - Funding needs have been assessed, waiting for advice from BIS as to how to access
  - DiRAC3 a high priority for investment, plus high computing needs for LHC etc.
- Q: Core Programme – can grants line budget still be protected in future rounds?
  - Could continue to keep marginally decreasing funding, or maybe time for a re-think. Not many options for getting extra funding. May be approaching looking at de-funding certain parts of programme – better than sub-critical support for all existing areas.
  - Awareness in universities about critical levels of funding, numbers of postdocs etc.
- Q: Growth in number of astronomy groups is welcome, but also a stress in flat-cash environment – is astronomy the only area in this situation? Does this support a case for more funding?
  - Particle physics theory similar, also nuclear physics

- Would be nice if extra interest and vibrancy in field resulted in more funding, but unlikely from government's perspective

#### 4. Update from UK Space Agency

Dr Chris Castelli from the UK Space Agency gave an update on its work. The slides from the presentation are available from

[https://www.ras.org.uk/images/stories/Astronomy\\_Forum/Science\\_up-date\\_to\\_RAS.ppt](https://www.ras.org.uk/images/stories/Astronomy_Forum/Science_up-date_to_RAS.ppt)

- Brexit – majority of funding is extraneous to EU – no major impact in that sense. However ESA is a major delivery vehicle for many UK programmes, which would be affected
- Exchange rate volatility risk taken on by UKSA/BIS.
- UKSA still a young organisation (2011) – no precedent, need to establish baseline. Budgets periodically increased – found a sustainable baseline from CSR15 for future plans (tight, but good, settlement)
- 'Dual key' – split of responsibility between UKSA and STFC, with close engagement between the bodies. Good integration through e.g. SPAC, Science Board
- Change of personnel
  - new CEO, Katherine Courtney, background exclusively in civil service – understands and has good links across government
  - new Head of Space Science, Dr Katherine Wright, background in strategic policy (NERC, civil service) and academic research
- UKSA wholly responsible for civil space policy, space infrastructure critical and on National Risk Register
- Q: Is there any civil space responsibility in e.g. DEFRA, or other government departments?
  - UKSA is delivery body, but other departments also dependent on space
- UKSA policy framework, role, structure and status to remain unchanged, new corporate plan about to be released

#### National Space Policy document (see

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/484865/NSP -  
\\_Final.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/484865/NSP_-_Final.pdf))

- Defines roles of all space partners (including dual key)
- Dual key – exploitation of data kept with STFC, UKSA responsible for funding development of missions, generic technology, specific instruments, space operations
- Review of 'early R&D' – Technology Readiness Level (TRL) scale formulated to define and assess grant applications, and define which body is responsible
- Latest science highlight raise questions on relative priorities of several missions. Athena still selected as L2 mission, UKSA will proceed on that basis
- Policy developments – ongoing Select Committee inquiry into space and satellites, to inform development of future civil space strategy once current one ends this year (focus on balance of investment, regulatory environment, government use of space data). ESA Council of Ministers December 2016 (focus on launchers, relationship between ESA and EU, European

space policy). Not currently known whether national contributions will be inflation-compensated or flat cash

### **Budget allocations**

- Drop in 18/19 in capital line, flexibility to handle this through ESA subscriptions (60% resource, 40% capital currently)
- International Partnership Programme, from GCRF – pilot programme of ODA-funded applications
- Delivery plan due by September
- World Class Labs is capital part of National Programme, Grand Challenges line is capital part of ESA subscription
- Q: Are future missions going to come under Grand Challenges?
  - No, PLATO is an exception, tactical plan for future allocations
- Q: 16% over-planning for 18/19
  - Can handle by averaging across years
- Future programme – focus on getting maximum value out of currently-selected ESA missions. Science excellence a priority for national programme funding (commitments to international subscriptions putting pressure on this). Need to ensure adequate facilities to support PLATO. New future opportunity funding to come from any head room, with care about long-term commitment

### **Discussion**

- Q: How large is the headroom?
  - Still working through the details – several programmes coming to an end, current and future missions and commitments under review
- Q: Is there a prospect for a national/bilateral capability?
  - Potentially. Need to exploit ESA subscriptions, as well as create headroom for a bilateral programme. With allocations now revealed, this can be planned for. STFC also open to ideas, subject to current pressure on budgets and flexibility to rearrange
- Q: Long-term space capability (UKSA) depends on investment from STFC
  - UKSA encourages links with industry to provide good quality proposals to exploit technology. Advice available from UKSA. Current capability gap – TRL levels will hopefully help
- Q: ESA-ESO agreement – importance of ground-based support for PLATO, important for future missions
  - Agreed
- Q: Did STFC participation in LSST become possible because of delays in e.g. SKA?
  - Not specifically those programmes, but LSST is best-value science deal we've seen. Need to evaluate priorities – add more projects, or support graduate students better, or developing strategic technology, etc.
- Q: TRL clarification appreciated. Mission proposers now though have to navigate another planning landscape – need STFC support for this, or availability of guidance from UKSA.
  - Agreed

- Q: M5 hasn't been mentioned
  - Aware it's coming, waiting for ESA science programme. Challenge that timescale is still ~a decade – questions about sustainability of such long-term effort if unsuccessful
- Q: Swiss Space Agency invested £35m in CHEOPS
  - UKSA aware of this, will look at future resources available for e.g. S-class missions

## 5. AOB

- STFC town meeting 29<sup>th</sup> June
- Upcoming Select Committee enquiry into science and communications – request for contributions
- EU referendum approaching soon, deadline to register
- Fewer engagement impact case studies than expected provided to REF assessment. Not put forward by universities, for reasons of e.g. not being able to quantify, difficulty linking to funding bodies etc.
- Public Engagement roadshows - being offered on long-term loans, will need PhD/postdoc volunteers soon
- REF science panel were very scientific about quantifying impact – just doing good outreach not enough. Industry-linked projects, spin-offs etc. encouraged much more than outreach activities to assess impact of engagement. Contributions encouraged, especially if quantifiable evidence can be provided
- ESA setting up working group for proposed L3 gravity wave mission. UKSA setting up UK working group – call for volunteers
- STFC introductory summer school to be announced soon

## List of attendees

Martin Barstow	RAS (Chair)
Robert Massey	RAS
Morgan Hollis	RAS
John Womersley	STFC
Chris Castelli	UKSA
Katherine Wright	UKSA
Paul Crowther	Sheffield
Brad Gibson	Hull
Graham Woan	Glasgow
Stephen Serjeant	Open University
David Alexander	Durham
Chris Copperwheat	LJMU
Alan Hood	St. Andrews
Isobel Hook	Lancaster
Lance Miller	Oxford
Derek Ward-Thompson	UCLAN
Alberto Vecchio	Birmingham
Andrew Blain	Leicester
Richard McMahon	Cambridge
Ian McHardy	Southampton
Carole Mundell	Bath
Glenn White	RAL/Open University
Alfonso Aragon-Salamanca	Nottingham
Richard Battye	JBCA/Manchester
Alan Fitzsimmons	QUB
Andrew Jaffe	Imperial College London
Andy Lawrence	Edinburgh
Don Pollacco	Warwick
Tom Hartquist	Leeds
David Seery	Sussex
David Wands	Portsmouth
Enzo Pascale	Cardiff
Mark Cropper	MSSL/UCL