

## ASTRONOMY FORUM 2009 MARCH 11

### 1. In attendance at 1100 :

Prof. Philip Diamond (Manchester); Prof. Mark Cropper (MSSL); Prof. Andy Taylor (Edinburgh); Prof. Paul Crowther (Sheffield); Prof. Ofer Lahav (UCL); Prof. Iain Steele (LJMU); Prof. Mike Merrifield (Nottingham); Prof. Peter Thomas (Sussex); Prof. Martin Hendry (Glasgow); Prof. Jim Hough (Herts); Prof. Stephen Smartt (QUB); Prof. Don Kurtz (UCLan); Prof. Coel Hellier (Keele); Prof. Keith Horne (St Andrews); Prof. Paul Nandra (Imperial); Prof. Tom Hartquist (Leeds); Prof. Jim Emerson (QMU); Prof. Steve Rawlings (Oxford); Prof. Glenn White (OU); Prof. Ian McHardy (Southampton); Prof. Trevor Ponman (Birmingham); Prof. Bob Nichol (Portsmouth); Prof. Mark Birkinshaw (Bristol) and Prof. Andy Fabian (Cambridge).

Joined at 1400 by

Professor Keith Mason CEO, STFC; Colin Vincent, Head of Astronomy Programme, STFC; Terry O'Connor, Communications Director, STFC; Mark Foster, Strategy Co-ordination Group, STFC and Dr Robert Massey, Policy Officer RAS

### 2. 1100-1400

- Paul Crowther reviewed recent developments including changes to STFC Science Board, appointment of PPAN advisory panels, re-balancing ( between executive and others) of STFC Council and the IUSS Committee investigation into the Science Budget
- Glen White reported on the meeting at the IoP about the STFC Strategy document addressed by Keith Mason
- Andy Fabian reported on his, positive, meeting with Minister for Science Paul Drayson who had hinted at an 'Obama-like' surge in science spending as part of the next fiscal stimulus (though gave the impression that astronomy would not feature so much as space since '2009 would be the year the UK returned to Space')
- Most of the meeting was taken up with discussing the STFC Strategy Consultation Document, with the session before lunch focused on the questions which would be asked of Keith Mason (KM) in the afternoon.

### 3. 1400-1530

- KM explained that input to the consultation would be used to produce 2 documents. The first, a 20 page 'glossy' scheduled for April and pitched at HM Treasury. This will make the case for STFC science sharing in any additional funds made available under the government's expected fiscal stimulus package. Consequently it will stress STFC's 'economic impact' (which is defined to include societal as well as

commercial benefits). The second, scheduled for October, will be a longer document setting out STFC's science vision and how this can be realised. Underlying that is the conviction, he said, that, currently, resources are spread too thinly resulting in UK scientists rarely taking leading roles in major international projects; instead (he felt) we should be doing less, but better. In addition, he added, there should be a shift in the balance of activity from data analysis to instrumentation development, not least since this was a more convincing argument to make to HM Treasury in terms of contributing to economic stimulus (and creating additional PDRAs was expensive). In response to questions he confirmed that unlike PPARC, STFC did not want to be seen as the champion of the community; like the other Councils it was important, for the community as much as anything, that government viewed STFC as an independent interlocutor as well as a source of expertise. KM also questioned the dichotomy between directed and responsive mode research funding; the role of government and its advisors was to set priorities within which grants were allocated by peer review. In doing this it would rely heavily on the advisory panels whose role was 'evolving'. The Forum stressed that the current intention of STFC to fund only one meeting per year of the panels was wholly inadequate; rather they needed to be funded to meet as frequently as was necessary, which would certainly be more than once in the first year.

4. Forum agreed that its submission to the Consultation should insist on the case for curiosity led research and for proper community involvement in determining its future - and not worry too much about trying to answer the questions in the way posed in the consultation document. Accordingly, the following submission was sent:

The Astronomy Forum (representing around 30 university groups at professoriate level) welcomes this opportunity to comment on the proposed strategy for the Science and Technology Facilities Council (STFC). This submission is based on the questions posed by the consultation document - but is not constrained by them.

#### **A. The Priority of Curiosity –led research**

- *STFC's strategy should be based on an unapologetic assertion of the value of fundamental or basic research since all the other, desirable and necessary, benefits listed, including commercial contracts, ultimately flow from this. Without a healthy base of fundamental research the UK will not produce major scientific break-throughs (or enjoy their attendant recognition, such as Nobel Prizes). While the document acknowledges the role of curiosity led research, it should be at its core (and 'headlined' appropriately).*
- *Similarly, while appreciating the benefits of linking relevant STFC research to RCUK/DIUS cross cutting themes, like security and global warming, there should be continued support for stand-alone 'genuinely blue-skies' research*

- *While STFC research can make, and has made ,major contributions to meeting government priorities (Health and Wellbeing; Economic Wellbeing et al) it would be misguided to attempt to contrive such contributions from astronomy research ‘ab initio’ since they have arisen, by definition, as unintended outcomes from investigations into fundamental questions (the ‘Universal challenges’) about the nature of the universe.*
- *That said, astronomy research can **guarantee** to make a major contribution to the improvement of the nation’s well being , given the large numbers who make a career in other walks of life, by producing graduates and post-graduates with high-level, transferable, skills. In addition, the reputation of its research attracts overseas talent to work in the UK*
- *Striking a balance between curiosity-led and application-led research portfolio, currently, is best undertaken by the various STFC panels and boards, providing this is done in full consultation with the wider community. In reaching a considered view on the balance of curiosity-led and application-led research STFC should be mindful that, while other agencies, and industry, are potential sponsors of the latter, only the government, through the Research Councils, is able to undertake the former. While acknowledging the importance of Knowledge Transfer it would be counter-productive for considerations of potential commercial application to influence decisions which should rest on scientific excellence exclusively*
- *It is important, therefore, that the advisory panels established by PPA are properly resourced to accomplish their, difficult, tasks .It will be a false economy to ‘do this on the cheap’ since, learning the lessons of the past year, securing community confidence in their outcomes is vital. It is also important that, if they are undertaken in the thorough way required, advisory panel recommendations are treated very seriously and that if any are not accepted by the Science Board or Council, a full and public explanation should be forthcoming*
- *That said, there is a case for 5 or 10 year reviews , on the lines of the US Decadal Review, to thoroughly investigate options and agree long range ‘road maps’*
- *In addition to striking a balance between curiosity-led and application-led research, the strategy also should make explicit the process by which it will achieve an optimum balance between investment in facilities and the provision of funds available to researchers to exploit the results emanating from them (as well as results from non-STFC supported facilities). Astronomers and space scientists enjoy the benefits of many international and bilateral projects including ESO and ESA. However there is real concern that the exploitation of these facilities is not adequately provided for in the level of grants, a situation exacerbated by the shortfall in the STFC budget in the last spending round.*

## **B. Ranking Priorities**

- *Regardless of the outcome of the next spending settlement, there is a recognition that, if UK scientists are to take **leading** parts in international projects, there may need to be more focus with a smaller number of STFC funded research activities*
- *The Astronomy Forum cannot make 'ex cathedra' statements about the relative importance of current or planned STFC activities. It can, and does, facilitate community discussion and is anxious that the **process** by which priorities is set is transparent and broadly based. A starting point should be investigations already undertaken with strong community involvement e.g. the ASTRONET and ESFRI road maps, ESA Cosmic Vision and the Astroparticle ERAnet (ASPERA) roadmap. Peer review on the basis of scientific excellence, despite some shortcomings, is superior to other ways of ranking options. Placing disproportionate weight on secondary considerations, such as wider impact, will lead to reduced funding for the best science.*
- *The existing structure of 'Town Meetings', online consultation and engagement with researchers at events like the National Astronomy Meeting works best when attendees feel they have the opportunity and time to meaningfully contribute to the decision-making process. Community consultation should be genuine dialogue and not used to explain decisions already taken.*

### **C. Other**

- *There is a strong case (highlighted in the Wakeham review) for investment in High-Performance Computing (HPC) to be increased to bring the UK into line with other industrialised nations. Such facilities would be of great benefit to researchers in the area of theoretical astrophysics but could also serve many other scientific disciplines.*
- *International subscriptions to facilities and projects are in many cases calculated on the basis of Net National Income (relating to GDP measured in e.g. Swiss Francs). Economic and exchange rate fluctuations can cause unforeseen pressures on budgets available for other areas of research and hence has an impact on long-term investment plans. We welcome the funds provided by DIUS that provide some measure of protection from 2008-11 but ask that this is made permanent.*
- *The British National Space Centre (BNSC) has not served the space science community as well as it might have done. BNSC lacks a clear identity and as a partnership of many organisations, has been unable to provide the leadership the sector requires. The UK, in company with most analogue countries, should have a free-standing space agency, possibly located on one of the STFC campuses, to take forward UK engagement with ESA, NASA and other partners.*

- *There is a case for translational research and knowledge transfer being handled by a cohort of experts rather than by diverting scientists away from their core activity*