House of Commons Business, Innovation and Skills Committee: Inquiry into Open Access: Response from the Royal Astronomical Society

Executive summary

1. This is the formal submission to the BIS Committee inquiry into Open Access from the Royal Astronomical Society (RAS). With around 3750 members (Fellows), the RAS is the leading learned society representing the interests of astronomers, space scientists, planetary scientists and geophysicists.

2. Our response centres on three of the four key points raised by the Committee; namely the acceptance of the Finch Group Report, the costs of Article Processing Charges (APCs) and the level of 'gold' open access uptake in the rest of the world.

3. The RAS is concerned about the implementation of the Finch recommendations by Research Councils UK (RCUK). The resulting guidelines endorse the 'gold' model for Open Access publishing, but do not give a clear policy steer on the way in which researchers in higher education institutions will be able to access APCs. Furthermore, there is no guidance on how research groups should handle international collaborations, in particular where a UK researcher is not the lead author on a paper.

4. The Society has additional concerns about the cost of APCs. For the most active research groups and for most journals, these are likely to be significantly higher than their current institutional subscription.

5. We also urge MPs to investigate the issue of international competitiveness further. It appears that no other nations (including other EU members, China, Japan and the United States) have so far adopted the Open Access model being implemented in the UK. The Society is concerned that researchers in the UK will therefore be at a competitive disadvantage as their peers elsewhere can read their work at no fee, whilst potentially British scientists will need to pay to view published articles.

Introduction

6. With around 3750 members (Fellows), the Royal Astronomical Society (RAS) is the leading learned society representing the interests of astronomers, space scientists, planetary scientists and geophysicists. We are therefore keen to respond to this inquiry as it affects both the activity of a large fraction of our membership and the business of the Society itself.

7. Along with many other learned societies, such as the Geological Society and the Institute of Physics, the Society receives a significant fraction of its income through its publishing activities. This allows the RAS to remain independent of Government as we do not receive any direct funding from the public sector.

8. Our publishers, Oxford University Press (OUP), are a not for profit enterprise. The RAS sees many benefits from using a professional publisher including a consistent journal "brand", professional copy editing, language improvement services, indexing, journal marketing, currency conversion, control of permissions and rights, support for authors against plagiarism and new access technologies.

9. As a registered charity the Society must by law use its income, including that derived from publishing, to serve its charitable objectives. In the case of the RAS the publication surplus funds activities including 15-20 scientific meetings per year, student and post-doctoral travel grants and undergraduate summer bursaries, underpins accessible journals such as Astronomy and Geophysics and supports open lectures for the public. All these activities directly or indirectly contribute to an environment in which more science is accomplished and therefore more science is available for publication. We therefore argue that this publication income contributes to a virtuous circle if intelligently deployed.

10. Our major publication activity through OUP consists of the two peer-reviewed journals Monthly Notices of the Royal Astronomical Society (MNRAS) and (with the German Geophysische Gesellschaft) Geophysical Journal International (GJI).

11. Monthly Notices is a world-leading primary research journal in astronomy and astrophysics. It is circulated to 4446 institutions worldwide with a further 1663 institutions receiving it through a third party database. In addition there is a philanthropic circulation of this journal to 173 libraries and institutes in developing countries. The number of papers submitted to MNRAS is increasing by 5-10% each year. 2551 papers were accepted in 2012, of which 575 (23%) were from the UK.

12. GJI is a journal covering all aspects of theoretical, computational, applied and observational geophysics. Over 4000 libraries worldwide have access to this journal. Paper submissions to GJI increased by 11% from 2010 to 2011 but remained steady in 2012. 475 papers were accepted in 2012, of which 37 (8%) were from the UK.

13. Both MNRAS and GJI are 'hybrid' journals that allow papers to be submitted on a 'gold' Open Access basis (whereby authors pay an Article Processing Charge (APC) once their paper is accepted) or through a more conventional embargoed route (so called 'green' Open Access). In the latter case authors can publish at no cost but papers are not freely available for three years. The Committee may wish to note that until now the Open Access option for our journals has been little used, with only one or two requests each year.

14. According to the RCUK guidelines, MNRAS and GJI are already compliant with the new Open Access policy. RCUK stipulates a preference for publication through gold Open Access but allows researchers merely to publish in a journal where this option is available.

15. Committee members may be interested in exploring the role of online repositories like arXiv (see www.arxiv.org). This contains copies of papers in subject areas across astronomy and physics (although not yet geophysics). Researchers often upload their papers at the time of submission to journals and then subsequently add a revised version once their work is accepted for publication. In the case of MNRAS, around 90% of papers are placed in arXiv where they are freely available.

16. UK astronomy researchers thus appear to value both routes, with publication in a respected journal and in arXiv being the best way to give their work both the stamp of peer review approval and to disseminate it to the widest possible audience.

17. Astronomy papers have been placed in the arXiv repository since 1992. We are not aware of any evidence that there has been a significant take up of this resource outside of the scientific community. It therefore seems unlikely that the new Open Access regime will lead to a significant widening of the research paper readership.

18. The community of researchers in astronomy and space science has however been heavily and successfully involved in 'science and society' activity for many years, with a key aim of this work being to explain complex topics to a diverse audience. Taking this activity and the existence of arXiv into account, the Society is thus unconvinced that further developments in Open Access will result in an increase in public engagement in these disciplines.

The Government's acceptance of the recommendations of the Finch Group Report 'Accessibility, sustainability, excellence: how to expand access to research publications', including its preference for the 'gold' over the 'green' open access model

19. Following the publication of the Finch Group Report, RCUK moved quickly to publish its guidelines for dissemination of research results derived from public funding.

20. In the UK, astronomy and geophysics researchers are mostly funded by the Science and Technology Facilities Council (STFC) and the Natural Environment Research Council (NERC).

21. STFC therefore use the RAS to liaise with the astronomy community via convened meetings such as our Astronomy Forum. This brings together heads of groups and external contributors to discuss current science policy issues. We have plans in place to establish formal mechanisms for dialogue with NERC but these are at a nascent stage.

22. STFC has been diligent in outlining how the new Open Access regime will affect funding and how they plan to implement this system. Community interaction with e.g. RCUK has been more limited and there remain concerns about issues such as international competitiveness and the administration of funding with higher education institutions.

23. We urge Committee members to examine this in more detail. Learned societies are a key stakeholder and a conduit for the views of the scientific community, so engagement with institutions like the RAS is essential.

24. We further believe that the peer review model is vital to the scientific process, and that the management of this is underpinned by a sustainable income stream, something recognised by the Finch review. Many of the most distinguished scientists describe how their published papers benefit from inputs from their peers and how the final version may be quite different to the original draft. The Open Access reforms should not be allowed to threaten what has until now been a successful model that gives UK science its strength on the world stage.

25. Whatever developments take place in scientific publishing, if the benefits of publicly funded research are to be delivered and maintained, both for the science itself and for any applications, then we recommend that certain basic principles are adhered to:

    (a) Highly quality scientific journals must maintain peer-review by independent professional experts in the field if they are to retain the confidence of readers and contribute soundly to scientific progress.
    (b) Any scientific publishing system must maintain an accessible "version of record" in a sustainable way which is also capable of migrating to future technologies.
    (c) There should be no undue restriction on scientists to publish in the journals of their choice and at the rate their scientific discipline demands.
    (d) Whatever business model develops for high quality scientific journals, the responsible agencies must provide the funds needed to maintain the quality of publications and the academic freedom of the authors, as outlined in the recommendations (a)-(c) above.

The costs of article processing charges (APCs) and the implications for research funding and for the taxpayer

26. There are a number of challenges and concerns that have been raised by the scientific community around the management of APCs.

27. Through the implementation of the Finch review recommendations, library funding that covered journal subscriptions has been moved out of the Higher Education Funding Council for England and the equivalents in Wales, Scotland and Northern

Ireland to RCUK and will now be distributed to the central administration of grant receiving higher education institutions (HEIs).

28. Researchers in universities have a number of concerns about the way in which this will operate. Until now, the decision to publish a paper lay in the hands of the researcher as in most cases this was done at no charge. In the new regime, RCUK funded researchers are effectively mandated to publish their work as Open Access. Most peer review journals will demand an APC for Open Access papers once they have been accepted. It may then fall to senior university managers, who do not necessarily have expertise in the scientific field, to decide whether they wish to spend a portion of their budget on an APC. In any case it is at present unclear how research groups will access APC funding.

29. There is a further risk that research-intensive institutions may be penalised for their activity, in that they pay more for APCs for publishing papers than they did to subscribe to journals.

30. HEIs not in receipt of RCUK grants will not have access to the new APC funds, so researchers there may be disadvantaged as a result. RCUK guidelines indicate that 99% of researchers will be unaffected, but we recommend that this, the overall costs of moving to the new model and its implementation are closely monitored as the rules change.

The level of 'gold' open access uptake in the rest of the world versus the UK, and the ability of UK higher education institutions to remain competitive

31. As far as we can tell the UK is the first country in the world to announce the adoption of an Open Access policy for all publicly-funded research. Australia has now done the same but this is not yet the case for major research competitors such as the United States, other EU nations, Japan and China.

32. The RAS is concerned that this places UK based researchers at a competitive disadvantage. Here researchers will need to pay an APC, after which their work will be freely available to anyone in the world. In other countries researchers can continue to publish in journals at no cost but UK researchers may well need their institutions to pay an article fee or subscription to read the work of their scientific peers.

33. The RAS therefore believes that the UK government should act swiftly to resolve these concerns and Committee members may wish to explore this further. We recommend that negotiation takes place at EU level and in other international bodies to work to harmonise national scientific publishing policies.

34. International research collaborations are commonplace in astronomy and geophysics and the lead scientist in these teams is often the first author on any publications that

result. If the team leader is based in the UK, they may in future ask a colleague overseas to take the first author role and avoid the APC, but in the process reduce the credit given for their work. The new RCUK policy does not address this issue and we recommend that this is clarified as a matter of urgency.