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RAS 200: Sky & Earth

Building for the Bicentennial with Outreach and Engagement

*A programme based on the Green Paper approved by Council at its
February 2014 meeting*

In 2020, the Royal Astronomical Society will celebrate 200 years of serving its scientific community and the wider public beyond. Our sciences have always attracted the crowds, from the early days of the travelling showmen, through magazines, newspaper and books, to the media of radio, film and television. Crowd-sourcing activities, blogs, tweets and other new media outreach activities show just how inspirational and popular astronomy and geophysics can be. In the years leading up to the RAS Bicentennial, the Royal Astronomical Society will show its deep-seated commitment to the popularisation of astronomy and geophysics with a major investment of one million pounds from its reserves in a programme of outreach and engagement projects.

RAS 200: Sky & Earth is intended to provide the focus for this activity. It will support projects, coming from the grass roots upwards, that extend the reach and appeal of the Society into new areas of society. It specifically aims to reach audiences not always easy to engage with our, or any, sciences. It seeks to form new partnerships with organisations that have had little to do with the Society in the past, whilst mobilising the extensive network of existing partners that we have built up over the last two centuries. At its foundation, it will draw on the Society's own committed and enthusiastic membership, making use of their talents and their individual and local networks.

Above all, projects Sky & Earth will leave a legacy of embedding astronomy and geophysics amongst our fellow citizens and the wider community that will ensure our sciences retain their appeal, inspire young people and old alike, and set the RAS on course for the next 200 years as an outward looking society that actively supports and underpins its sciences.

Background

The RAS Strategic Away Day in July 2013 generated a proposal to establish a major outreach and engagement programme, to lead up to the 200th anniversary of the foundation of the Society in 2020. At its meeting October 2013, Council agreed in principle to establish the RAS 200: Sky & Earth project (originally known as “Astonishing Astronomy and Glorious Geophysics”), to be overseen by a Steering Group. Following more detailed work by the Steering Group, Council approved the Green Paper C(2014/02)6.3 at its February 2014 meeting, and this forms the basis for this Action Paper. As part of this, Council agreed that the overall budget for this project would be £1m, and that this would be expected to support around 10 to 20 activities around the UK.

Progress to date

The Steering Group set up by Council demonstrates the commitment to this project at the highest levels of the Society. It is made up of Councillors Steve Miller (Chair), Helen Fraser and Charlie Barclay, Vice Presidents Barry Parsons and Andrew Norton, Astronomy Secretary Mandy Bailey, *Sky at Night* presenter Maggie Aderin-Pocock, and Executive Secretary Pamela Mortimer and Deputy Executive Secretary Robert Massey. Group members have backgrounds in research in astronomy, geophysics and space science, in local and national government, education and outreach and voluntary organisations, and wide experience in the mass and new media. As the project develops, more Steering Group members will be added to complement the skills and experience already represented.

The Steering Group has already met several times, during the Autumn of 2013 and this year. Over the course of its meetings the Steering Group has considered the scope of the project and the audiences we want to engage, examples of projects that would be eligible for Sky & Earth funding, and the decision making process. Advice from other funders and the deliberations of the Steering Group have tended towards funding fewer projects, but more generously, with an average of £100k overall per project. The precise number to be funded would be dependent on additional funds being available from co-sponsors to augment the £1 million RAS 200: Sky & Earth fund.

The fundamental goal of Sky & Earth is to inspire people to engage with RAS science. Sky & Earth should not replicate existing work backed by the research councils and similar organisations, but should seek new audiences, novel partnerships and encourage ‘out of the box’ ideas. The RAS Executive and members of the Steering Group as delegated by the Executive and Council have already made several approaches to potential stakeholders, and an outline timetable for the project has been established.

Criteria for funded projects

RAS 200: Sky & Earth will provide one of the larger sources of funding for public engagement (particularly in geophysics where NERC does not support this activity financially). Projects will need to consider a number of factors and demonstrate several characteristics, including:

- Evidence that a project can achieve a long term legacy and has a high potential for ‘mainstreaming’ i.e. it can endure once Sky & Earth funding comes to an end
- Engagement with diverse audiences across ethnicity, gender, socioeconomic background, religion and age
- Partnership with organisations that represent communities with little previous experience of astronomy or geophysics

- The opportunities for leveraging additional external sponsorship
- The benefits that the project may have for the Society itself i.e. in expansion of our membership
- A plan for evaluation of the outcomes of the project, something likely to be essential for partners in formal education

Structure and partnerships

Responsibility for Sky & Earth will ultimately fall on RAS Council and staff (particularly the new Education, Outreach and Diversity Officer). The Steering Group will act on behalf of Council on a day-to-day basis, and will play an active role in overseeing any projects funded to ensure quality, scientific input, and the proper use of RAS funds. We are also developing a network of regional contacts to ensure that the programme covers the UK, including regions without universities and research establishments. The wide geographical distribution of RAS Fellows will help with this and allow us to find local community champions.

There are many suggestions for the kind of bodies that the Society could work with to deliver projects. As well as universities and research establishments, these cover a huge swathe of third sector bodies, including community groups, scouts and guides, faith groups and related bodies.

As well as our known partners – the British Astronomical Association, the Federation of Astronomical Societies, the Society for Popular Astronomy, the Science and Technology Facilities Council, the Institute of Physics - some of the newer potential partners / stakeholders already contacted include (in no particular order) the Prince's Trust, the Woodcraft Folk, the Worshipful Company of Parish Clerks, the Trades Unions Congress, the National Farmers' Union, the National Trust, English Heritage, Lambeth Palace, the Quilliam Foundation, the Workers' Education Association, and the Royal Parks. We are in the process of approaching bodies such as the National Autism Society, Women's Institute, Canals Network, Ramblers' Association, U3A, Rotary Clubs, successor bodies to the New Deal for Communities (NDC) boards and home educator organisations.

We also recognise the importance of working with formal educational establishments such as schools and colleges, but will again target cohorts that are not well supported by existing public engagement programmes. A good example is the 10-14 year old age group, who research shows are at greatest risk of losing interest in science as a whole. Working across the primary-secondary transition will be easier where structures such as federations of schools (sometimes with single governing bodies) are in place.

It is envisaged that projects will have a variety have different lead partners, analogous to the "Principal Investigators" in research. These need not be universities, although the involvement of academics will give projects credibility and a firm scientific foundation, and we will encourage consortia of organisations and individuals. Examples of the sort of projects that may be of interest are given in Appendix 1. (Note that these are *not* projects that have been proposed to date, let alone agreed, but are meant to be illustrational.)

Outline timetable

The Steering Group believe that a straightforward, two-stage approach is appropriate for bids on this scale. We have looked at the ESA model, where the first call for proposals invites short preliminary ideas to be put forward. The Steering Group will then invite more detailed submissions from around 10 bidders, before eventually selecting ~5 for funding in the first round. Further calls for proposals will follow, so that activity remains

high over the period 2015-2020. In some cases we may also consider funding pilot projects up to £5k, with the remaining £45 - 95k then made available if the initial work is successful.

In the period leading up to the initial call for proposals we will hold a number of town hall meetings as an opportunity for networking to encourages further collaboration (including the ‘speed dating’ model used by some research councils).

An important consideration is the nature of the call for proposals. The Steering Group believe that this should be an open and competitive process, where we invite external bids from single organisations and consortia. We understand that bodies with no history of involvement with astronomy and geophysics are unlikely to be aware of this project, so RAS staff will undertake to inform them of our plans and assist them with the development of proposals. Although this is not a formal commissioning process, we would look forward to and encourage applications from the kinds of organisations listed above, as well as other partners suggested by RAS Fellows (see “Actions for Fellows”).

The proposed timetable for the project roll-out from now on is:

- May 9, 2014: Official launch of RAS 200: Sky & Earth at RAS AGM
- May – July, 2014: Targetted consultation of wider astronomy and geophysics communities, with a particular view to identifying potential stakeholders
- **July 16, 2014: “Stakeholders meeting” to further develop the overall shape of the project**
- July – August 2014: Further dissemination of Sky & Earth
- Autumn 2014: Town Hall meetings in key locations.
- Autumn 2014: Call for short proposals “Letters of Intent” from consortia
- Early 2015: Invitations to ~10 consortia to submit full bid
- Spring 2015: Selection of ~5 projects for first tranche of funding
- Summer 2015: Further dissemination
- Autumn 2015: Town Hall meetings in key locations.
- Autumn 2015: Call for short proposals “Letters of Intent” from consortia
- Early 2016: Invitations to ~10 consortia to submit full bid
- Spring 2016: Selection of ~5 projects for second tranche of funding

Actions for Fellows of the RAS

We want Fellows of the RAS to be fully involved in Sky & Earth. We have to move forward in a coordinated fashion if we are to tap into the Society’s full potential. We ask Fellows to consider three actions in particular:

- If you have potential stakeholders who you could see as partners or leads in Sky & Earth projects, please send in the particulars – name of organisation, contact person, contact details – to the Executive Secretary and Deputy Executive Secretary, in the first instance. Not every one of them will be invited to the Stakeholder Meeting on July 16, but they may be asked to attend a Town Hall meeting in the Autumn.
- If you have ideas for organisations or individuals who might be inspired by the RAS’ own financial commitment to co-sponsor individual projects or Sky & Earth itself, again please send the details to the Executive Secretary and Deputy Executive Secretary, in the first instance.
- Please use your contacts to help us spread news of this project more widely.

Appendix 1: Example projects

The Steering Group have devised examples of projects that might be suitable for Sky & Earth funding. These will not necessarily be developed further, and are not intended to be exclusive or to imply any prior commitment from the RAS. They are intended to stimulate discussion on the kind of work we would like to support, in order to take astronomy and geophysics out into public domains not often reached by our Society and its scientific disciplines.

Get Going Sky & Earth

Based in an ethnically diverse area of significant socioeconomic deprivation, this project proposes a link with a trust involved with hard-to-reach young people and a lead local secondary school previously active in IYA 2009 to engage with 'hard to reach' young people. The project would deliver practical astronomy and geophysics courses and workshops, making use of a local park and the local river system. It also would seek external sponsorship from local and national businesses. It would see the courses and workshops developed and delivered as models to be copied on a wider scale, and making use of the trust's network of centres and contacts to ensure that materials developed could be freely available.

The Music of the Stars: Astronomy in the Field

There are around 350 music festivals nationwide each year, many of which attract an audience of tens of thousands of predominantly young people. This project would take astronomy and planetary science to around 20 festival sites annually, running after the music has finished for the night. Staffed by young adults from astronomy societies and universities, festival goers would be able to enjoy a tour of the night sky and shows in an inflatable planetarium.

Astronomy in Transit: The Universe on the Move

Devised with the assistance of a local astronomical society, this would see a van travelling to diverse settings to bring astronomy to previously unengaged audiences. These might include travellers; home schooled groups, women's organisations branches, guide and scout groups as well as different types of schools. The proposal suggests the use of a portable planetarium and telescopes in each location. The organisers will seek commercial sponsorship to enhance the core grant from the RAS.

Engaging with young people in unconventional settings

This project involves several stages, first taking astronomy and geophysics to locations such as shopping centres, parks and fairs. Here the organisers would encourage young people to take part in practical activities and sign up for later 'taster' sessions. The next stage and main aim of the project is to have a selected group construct an observatory and workshop, giving them a sense of ownership as well as providing the community with a long term resource. This would be done in partnership with a local FE college (providing a site for trainee construction workers, plumbers and electricians).

Star Splash!

Relatively few science outreach projects have worked with people participating in sporting activities. This project aims to start that process, using local swimming pools as mass participation settings for astronomy and space films. After the showing, the pool itself could be a 'strange' environment (analogous to the strangeness of space) to demonstrate many concepts in physics such as weightlessness, optics and different phases of matter. Participants could also try activities such as scuba diving and snorkelling. This proposal could become sustainable through fees for most participants, but remission for those from low-income backgrounds.

Astronomy as a learning stimulus for children with Autism/Asperger's

Over half a million people in the UK have autism, with an estimated one in 100 children on the autism spectrum. People with Asperger's Syndrome, a form of autism, are frequently of above average intelligence but have difficulties in understanding or interpreting language. They are however often drawn to technical, enchanting subjects like astronomy. A partnership between the RAS and the stakeholder societies, this proposal would see a range of activities run at venues around the country to engage children on the autistic spectrum and their families / carers. It would seek other external partners and sponsors, perhaps including the IOP and private industry.

Space, Time and Religion

Astronomy and space science courses and employers struggle to recruit beyond a white British base (see e.g. the RAS Demographic Survey of 2011). The proposal is to engage Muslim children with astronomy, working with Madrassa schools, a local university of college that has a strong outreach programme and a foundation who support this plan as part of their civic engagement work. It would run a series of workshops, exploring a variety of topics in practical astronomy, the historical (and contemporary) contribution made by Muslim and other scientists and the astronomical basis of the calendar. The proposal anticipates an enduring legacy, not least in establishing direct relationships between a leading university and a hitherto largely 'unreached' community. The organisers would also seek external sponsorship from other civic engagement organisations and from private industry.

**RAS 200: Sky & Earth Steering Group
May 2014.**