Astronomy Education & Public Outreach: the European perspective

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Astronomy Education & Public Outreach: the European perspective

The mission of ASTRONET — Coordinating strategic planning for European Astronomy, a network supported by the European Commission, is to establish a strategic planning mechanism for all of European astronomy for the next 5–25 years. An important part of ASTRONET is Education, Public Outreach and Training, coordinated by the Task 5.3 Working Group, which has the aim to do an implementation plan for the 10 ASTRONET recommendation (pages 93–105 of the ASTRONET Roadmap).

This workshop includes Working Group members as well as international experts on astronomy education and outreach, and has the purpose to gather information and evaluations on the European perspective on astronomy EPO, to enable the definition of European priorities concerning future astronomy EPO infrastructure. Some of the questions we hope to address are:

- Which EPO activities need support at the European level?
- How can the EU help to leverage national EPO resources
- How can we best share best practice examples, as well as EPO material?

The ASTRONET Working Group

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The ASTRONET Infrastructure Roadmap

The infrastructures that are built and used for astronomical research are financed by — and therefore must be justified to — our society. Astronomy has an innate appeal for people of all ages, partly because it concerns the fascinating, great questions "of life, the Universe and everything" and partly because much of the data obtained with telescopes can be presented as objects of stunning beauty.

Recommendations

Recommendation 1

Create new and support existing training courses for the career and professional development of teachers, which include practical observations, modern topics and examples. Courses and conferences for teachers from different European countries should be promoted and attendance must be accounted for as teaching time. The Ministries of Education should encourage and facilitate attendance at such events.

Recommendations

Recommendation 2

Encourage schools to use their playgrounds as open-air astronomical observatories equipped with simple devices. Interested organisations should actively lobby governments and other relevant bodies to minimise light pollution to facilitate the appreciation of the sky throughout Europe. It is important that teachers are properly trained to teach astronomy both in the classroom and (in a hands-on manner) outside during day and night. It is becoming increasingly possible for schools to gain access to robotic telescopes. Such opportunities should be publicised and their exploitation encouraged.

Recommendations

Recommendation 3

Encourage European stakeholders involved in developing educational programmes and curriculum delivery to realise the inspirational quality of learning using astronomy-related exercises and experiences, and how this may lead to further engagement in science, technology, engineering, and mathematical endeavour. For pupils in the latest key-stages, dedicated astronomy courses should be offered, at least optionally.

Recommendations

Recommendation 4

Implement a centralised, web-based distribution system for educational material in a range of languages. This system will collect the necessary information, make it universally accessible and help lay the foundation for a common astronomy programme in Europe.

Recommendations

Recommendation 5

Active steps should be taken to forge links between science museums/planetaria and the European Agencies (ESA/ESO), the principal providers of high quality media and related resources in astronomy.

Recommendations

Recommendation 6

Adequate strategic long-term support must be provided for public communication and education in Europe. Firstly, observatories, laboratories and all facility-funding authorities should allocate sufficient resources for public communication and education. As a useful benchmark, this would amount to at least a few percent of the overall budget (1–2% is sometimes quoted as a good starting point). For smaller institutes, it should be understood that a threshold investment must be reached to enable a successful communication effort. Secondly, public communication of science is subject to the same competitive pressures as all other kinds of public communication. Hence communication departments must be organised and operated in a professional fashion, i.e., by professional science communicators, working with active scientists (see recommendation 7). Thirdly, as strategic management tools, communication departments must be placed at or directly linked to the highest levels of the institutional scientific hierarchies.

Recommendations

Recommendation 7

Ensure clear career-relevant recognition for scientists who become involved in public communication. Provide, and encourage scientists to utilise, media training courses. The Washington Charter should be promulgated at all levels. Proper public communication of astronomy entails the allocation of sufficient resources to secure an adequate, sustained effort executed by professional science communicators.

Recommendations

Recommendation 8

Support the creation of a standardised European science communication portal for media, educators, interested laypeople and others. This portal should promote best practices and requirements for public communication with a particular awareness of the spectacular image material produced by astronomical research activity (and whose production is currently dominated by the US), on multimedia products (animations, video podcasts, etc.) and engage the community in its continuous growth.

Recommendations

Recommendation 9

Create an international network of experts in technology transfer which organises an annual audit of technology transfer activities in order to increase the visibility of the industrial relevance of astronomy.

Recommendations

Recommendation 10

Large-scale, potentially high impact astronomical research in Europe generally has to go through a “two-hoop” process for the allocation of facility time and the support of analysis and publication. We propose that a way is found of using the high quality peer review process already operated by the facilities to provide “fast-track” funding for suitable projects, so enabling them to be internationally competitive and of high value for training. These projects are likely to use multiple facilities and may be pan-European and pan-continental in nature.