

PHYSICS ON STAGE 3: LIFE AND NEW FRONTIERS

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THE TEACHING OF PHYSICS in Europe's schools is changing. In a growing number of places, thanks to well-informed and dedicated teachers, it is becoming an increasingly fascinating subject, appreciated by the students. More and more educators are beginning to realize that physics lessons may be a stage for demonstrations of how our daily life is influenced by numerous physical phenomena and processes. Moreover, as new frontiers of research open, new opportunities arise for interesting and effective teaching means and methods.

The new trends in the teaching of physics and basic facts about this and related subjects were high on the agenda when more than 400 delegates from 22 European countries met during this year's "Physics on Stage 3" festival (POS 3), organized at ESTEC/ESA (Noordwijk, The Netherlands) on November 8–15, 2003 by the EIROforum Working Group on Outreach and Education, and held with support from the European Commission under the auspices of the European Science and Technology Week. Following the preceding, vastly successful events in 2000 and 2002, the main theme this year was "Physics and life", reflecting the decision to broaden the Physics on Stage activities to encompass more of the natural sciences, in particular biology, within an interdisciplinary approach.

On the first day, the seven EIROforum organizations (CERN, EFDA, EMBL, ESA, ESO, ESRF, ILL) presented selected aspects of their current work during individual 3-hour sessions. An eighth session was organized by the European Physical Society and the European Association for Astronomy Education (EAAE). ESO had chosen to run an



ALMA presentation session.

"experimental" session to demonstrate new and exciting possibilities of the wide and fascinating field of interdisciplinary teaching, with the ALMA project at the centre and the title "The Atacama Large Millimeter Array Project and Related Educational Opportunities". Emphasis was placed on the opportunity to illustrate the workings of a major international science and technology project, not just through research goals and techniques, but to introduce other fields, for example geography, chemistry, biology and history. The subject of ALMA can thus be made more "interesting" and useful in an educational context because of the many entry points, be it geological aspects (volcanoes, earthquakes), historical (the native people in the Atacama region), biological (the sparse life in the desert or the high-altitude effects on human beings) or political/international ones (the making of the ALMA project; management; operation). About thirty teachers from more than a dozen countries listened to talks given by Peter Shaver, Tom Wilson, Bernhard Mackowiak and Richard West; each of them received a comprehensive booklet and a souvenir.

During the ensuing discussion, the participants explained about their experience with interdisciplinary teaching and made various proposals on how to fuse ALMA and education. They were told to send in their ideas to ESO's Educational Office, thereby contributing to the start-up of this new educational project.

As before, ESO had set up a stand at the fair, informing the POS 3 participants about this organisation's main goals, as well as its present and future projects, and leading to interesting and useful discussions with the teachers. Also at POS 3, ESO and EAAE announced the winners of this year's European student contest "Catch a Star!".

Spectacular and original performances by students and professional actors, intensive encounters at the central fair, seminars and workshops were the components of the rich, one-week POS 3 programme. Among the highlights were the Opening Ceremony with the attendance of Prince Johan Friso of the Netherlands and the Dutch Minister for Education as well as the Farewell Dinner with the presentation of the Project Development Awards. Four teachers were awarded cash sums for the further development and dissemination of their excellent projects. A documentary film was shown about the solar race across Australia and the presentation of the Netherlands winner crew proved that physics is life.

The next event in this series will be "Science on Stage 4", to take place in Grenoble (France) in the first half of 2005.

Look at the website of the ESO Educational Office (www.eso.org/outreach/eduoff/) for more information and links to related programmes.



Prince Johan Friso (right) of the Netherlands inaugurated the one-week event.



A display during the POS 3 festival.



Visualising acoustic waves.