

Education

Although education was included from the outset in the ESA Convention as one of the Agency's basic activities, it is only in recent years that a dedicated education effort has been undertaken both at Corporate level and within Directorates. With education having become one of the priorities listed in the Director General's 'Agenda 2007', a separate Education Department was created in 2004.

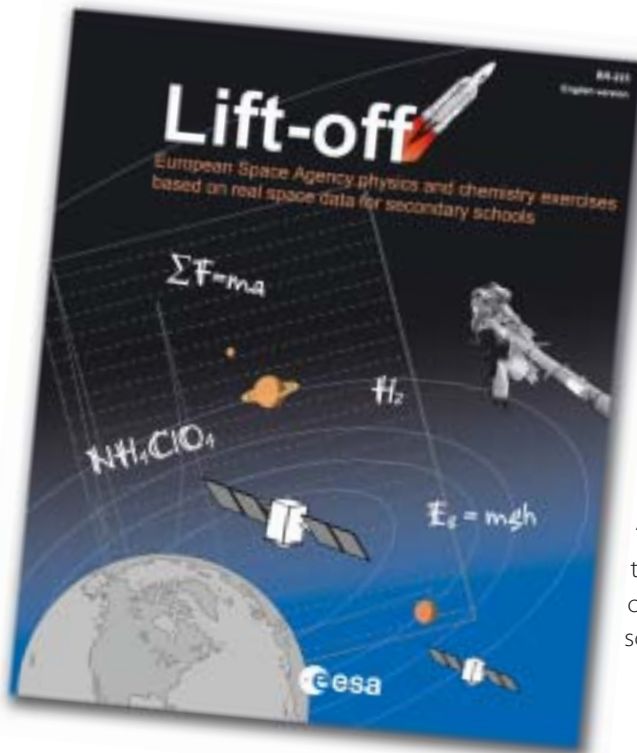
Focus on Teachers

In a continued effort to give teachers the relevant 'tools' to exploit space as a topic in the classroom, several workshops and training sessions were organised throughout Europe. These were also excellent occasions for obtaining first-hand feedback on the education resources proposed by the Agency.

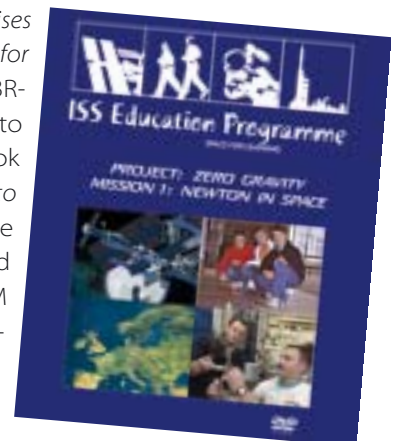
Participation in the 2004 Congress of the European Council of International Schools (ECIS) allowed ESA Corporate and Programme Directorate education staff to further strengthen the already excellent and fruitful cooperation with the respective international



schools. ESA is now fully recognised as a valuable partner for national and international schools, and its education tools are highly appreciated.



Also in cooperation with the Programme Directorates, emphasis was put on the development and dissemination of resources that teachers can use directly in the classroom, such as the brochure 'Lift-off: European Space Agency physics and chemistry exercises based on real space data for secondary schools' (ESA BR-223), pedagogical sheets to accompany the comic book 'Cassini-Huygens: A Probe to Titan' (ESA BR-228), the 'Newton in Space' DVD, and the 'Heavens Above' CD-ROM developed for primary-school use.



Meeting of the EDUspace
Council of Teachers at ESA
Head Office in Paris



In addition to the already operational Education web site (www.esa.int/education), the Education Department launched its multilingual site for younger children (<http://kids.esa.int>). The EDUspace web site, focussing on Earth Observation and with more than 1300 schools already having registered, was further developed. A Danish-language version financed by the Danish Ministry of Science, Technology and Innovation was put online.

ESA became a member, as the first of the international partners, of the newly created French 'Comité National pour l'Accompagnement en Sciences et Technologies à l'Ecole Primaire'. This committee has the task of advising the French Ministry of Education regarding possible partnerships with primary schools and the selection of partnership projects proposed to the Ministry by external partners.

Direct Contact with Youngsters

Knowing how important it is to complement teachers' efforts, the Agency seized many opportunities to address and involve pupils directly. The Ciencia Viva exhibition in Madrid, for example, gave hundreds of children the opportunity to play the space quiz, to attend presentations on space topics, and to learn more about the role of satellites and working aboard the International Space Station.

Student Projects

As in previous years, to continue motivating students ESA organised the highly successful 7th Student Parabolic-Flight Campaign. Through these Campaigns, over 700 students have now had the opportunity to experience zero-gravity and conduct experiments into basic physical and physiological phenomena.

140 students selected by the Education Department and from the Aurora Design contest participated in the International Astronautical Federation (IAF) Congress in Vancouver in October. All of them concurred in emphasising how important it is for their careers to experience such a unique opportunity to interact with space professionals and to present their very own ideas and projects.

Both of these initiatives generated significant media interest, with articles in several scientific magazines, both national and regional TV coverage, etc., all of which helps to encourage youngsters to take a greater interest in science and technology in general, and in space activities in particular.

Another significant educational activity is the Student Space Exploration and Technology Initiative (SSETI). This is a network of several hundred students spread throughout the major

European universities, who have joined forces over the past three years to design their own micro-satellite, with the help of ESA experts. Their hard work culminated in 2004 with the integration of the subsystems developed and built in the various European universities to construct the SSETI Express satellite. The drawing together of all of the different nationalities and cultures around the integration of a single spacecraft is proving a very enriching experience for all parties involved. But the most difficult part still lies ahead, namely the launch in June 2005 and subsequent operation of the micro-satellite and its three deployable nanosats.

In parallel, a second team of students was finalising the Critical Design Review documentation for the Young Engineers Satellite, YES 2. This 40 kg educational payload, composed of a tether system and a deployable capsule, is designed for inclusion in the Foton M3 mission, currently scheduled to be launched from Baikonur in autumn 2006.

The Education Department has also consolidated its IT tools, in order to optimise its interaction with the students, and in particular facilitate and simplify the application processes and the management of the student/professor contact database.

Cooperation with Other Organisations

Following the successful 'Physics on Stage 3' festival in 2003, ESA and its EIROforum partners have defined a four-year plan of activities, set to begin in 2005. These activities will involve many additional partners, such as ECSITE, the European Collaboration for Science, Industry and Technology Exhibitions, and European Schoolnet. A journal for European science educators will be launched and a new 'Science on Stage' programme will support national and international activities for science teachers.

The successes of the many projects continued or launched in 2004 are a great encouragement for the Education Department and demonstrate the explicit need for educational resources based on real space data.



The Ciencia Viva Exhibition
in Madrid