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EU-UNAWE Project: Inspiring every child with our wonderful cosmos

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Abstract

The Project UNAWE was born in 2005 with the intention that children, of every country and every economical and social condition, can be in touch with astronomy. This is the first large-scale attempt to use astronomy as a tool to inspire and educate very young children. Project resources are open to everyone, but are mainly tailored to boys and girls aged 4 to 10. The Project is implemented in countries from all over the world, supporting the activities that are performed there.
The European project EU-UNAWE funded by the European Union, includes six countries: Germany, Italy, the Netherlands, United Kingdom, South Africa and Spain. EU-UNAWE Spain bases its activity in conducting training courses for teachers: in Barcelona in November 2011, in Granada and Madrid in February 2012 and in Pamplona in May 2012. Just as in the publication of educational materials: practical activities, experiences, books made by teachers... available in the entire Spanish-speaking world. All this can be accessed through the website of the program (http://es.unawe.org).

1 Introduction

In 2004, Leiden University professor George Miley first began exploring the idea of setting up an astronomy programme to educate and inspire young children, especially those from underprivileged backgrounds. He had been awarded an Academy Professorship by the Royal Netherlands Academy of Arts and Sciences and decided to use part of the associated funding to explore the feasibility of setting up such a programme. With considerable support and encouragement from Claus Madsen at ESO, a successful workshop was held in Germany and it was agreed that the programme was worth pursuing. Universe Awareness (UNAWE) was born. Rosa M. Ros, vice-president of EAAE, participated since the very beginning in this project involving Spain. With the support of our national Research Council CSIC, a particularly useful website was created, *UNAWE en español* (http://sac.csic.es/unawe/).

UNAWE became a Cornerstone project of the successful UN-ratified IAU/UNESCO International Year of Astronomy in 2009 (IYA2009). During IYA2009, thousands of UNAWE

activities were organised in more than 45 countries. For example, in Venezuela, 43 teacher training sessions reached more than 1500 teachers and well over 60 000 children.

In 2010, a grant of 1.9 million Euros was awarded by the European Unions Seventh Framework Programme to fund a 3-year project called European Universe Awareness (EU-UNAWE), which builds on the work of Universe Awareness (UNAWE). With this grant, EU-UNAWE is now being further developed in six selected countries: the Netherlands, Germany, Spain, Italy, the United Kingdom and South Africa. This grant was obtained thanks also to the crucial help of the Spanish European Parliamentary Teresa Riera, who supported the UNAWE proposal since the beginning.

UNAWE is endorsed by UNESCO and the International Astronomical Union (IAU) and it is now an integral part of the IAU Strategic Plan 2010−2020, which is called Astronomy for the Developing World. This is an ambitious blueprint that aims to use astronomy to foster education and provide skills and competencies in science and technology throughout the world, particularly in developing countries.

2 Goals of the Project

2.1 Create an international network

Although UNAWE was founded only seven years ago, it is already active in 40 countries and comprises a global network of almost 500 astronomers, teachers and other educators. The international network provides a platform for sharing ideas, best practices and resources between educators from around the world. The network will also be used to run ambitious global projects, with the aim of broadening childrens horizons beyond their local area and to show them that they are part of a global community.

2.2 Organise teacher training sessions

A particularly important goal of EU-UNAWE is to provide training activities for teachers and other educators of young children. EU-UNAWE aims to give teachers the confidence to introduce astronomy and other science topics in the classroom, and to create innovative methods for engaging young children in astronomy. To achieve this goal, EU-UNAWE will organise teacher training workshops and advertise other relevant training opportunities on the EU-UNAWE website (http://unawe.org).

2.3 Develop educational resources

Learning should be exciting and fun −and this is never truer than when dealing with young children. EU-UNAWE encourages learning through play and hands-on activities, such as the inflatable UNAWE Earthball, which has been immensely popular. EU-UNAWE is currently developing new resources, including an astronomy news service for kids, called Space Scoop, which is produced in partnership with the European Southern Observatory. The idea behind Space Scoop is to share with children the excitement that the latest scientific discoveries

bring, and to demonstrate that there is still much to learn about the Universe research that they could contribute to in the future. Space Scoop is also great a resource for teachers, acting as a focus for a classroom discussion. Other educational materials will include beautifully illustrated hands-on games, adventure books and magazine features. All materials are available for free in the Resources section of the EU-UNAWE website (creative commons license) and you are free to adapt these to suit your requirements.

3 EU-UNAWE SPAIN

More specifically, EU-UNAWE Spain specializes in 1) training courses for both Kindergarten (nursery) and Primary School teachers and 2) producing educational materials. Regarding teacher training courses, four of them were completed during the first year of the project (Barcelona, Granada, Madrid and Pamplona) and another four are planned for the second year (Barcelona, along with an association of parents of children affected by Asperger Syndrome, a Coruña, Badajoz and Murcia). These courses have been designed and carried out jointly by professionals in the world of astronomy and education. This means that the course has a high scientific and methodological rigor. In terms of educational material, from EU-UNAWE Spain, we decided to make a collection of books on astronomy concepts, based on the points covered in the training courses for teachers. Seven books were developed:

- *Parallel Earth*: Based on the model of parallel earth presented in our courses. It focuses on the translation and rotation of the earth, the seasons, time zones...
- *Stars give parties*: The story features a star who tells her own life. It addresses concepts such as stellar evolution, the HR diagram, nebulae, star cumulus...
- *Above the horizon*: Based on the model presented in our courses. It focuses on the apparent movement of the Sun throughout the year.
- *Looking for the North*: It explains what terrestrial magnetism is and it looks at its effects in astronomy.
- *Roads of the Sky*: It is a book that gives a basis for orientation in the night sky (recognize the most important constellations) and an introduction to the recognition of the lunar surface (the most important craters and seas).
- *Tales of the Stars*: A collection of stories from different cultures related to astronomical objects and phenomena.
- *Forgotten Astronomers*: A book where we can discover forgotten Astronomers who nevertheless made a great contribution to the world of astronomy.

Each of these books was or will be published in the four official languages of Spain (Spanish, Catalan, Basque, and Galician) and also in English, which makes a total of 35 books published at the end of the project. It was decided to translate these books in five languages so they can get a better reception in schools in areas where there is more than one official language.