

Press release :

Bringing asteroids to class: a new Erasmus+ programme



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An ambitious space science education project has been launched to involve school children in the search for asteroids and meteorite hunts.

StudentTs As plaNetary Defenders (StAnD)

The StudentTs As plaNetary Defenders (StAnD) is an Erasmus+ project to engage primary and secondary school students in the exciting subject of asteroids, meteors, and planetary defence.

The 36-month programme brings asteroids, comets, meteors and micrometeorites to the classroom using carefully prepared activities and experiments, including the installation of meteor detection cameras in participating schools and a specially designed kit for micrometeorite hunting. The partners involved have joined their expertise to design an integrated approach that will enable students to follow the journey of these cosmic visitors from the depths of space to our planet. StAnD will introduce a new trend of activities engaging students in their STEM (science, technology, engineering, and mathematics) curriculum and enhancing their interest in these fields.

The activities in the project also have the considerable potential of leading to new original scientific discoveries such as the discovery of new asteroids and meteorite falls. Their teachers will receive training and support via massive open online courses and summer schools to prepare topics related to astronomy, the solar system, and space exploration. The teachers will make use of selected online resources to better present the contents to the students and will acquire innovative student-centred methodologies that facilitate the integration of digital content into the STEM curriculum. They will also receive training on how to use robotic telescopes and the relevant software to plan the observations and analyse the data, as well as how to operate and interpret the meteor images acquired by the camera systems. They will also learn how to collect and identify the micrometeorite samples. The results of various phases of the project will be continuously disseminated, spreading the results among the participants, countries, at European and international level.

StAnD will be coordinated by the [Istituto Nazionale di Astrofisica](#) (INAF), Italy, with the active participation of [COSPAR](#), France, [NUCLIO](#), Portugal, [Ellinogermaniki Agogi](#), Greece, and [FTP-Europlanet](#), Germany.



The partners at the StAnD kick-off meeting at the Turin Observatory

Daniele Gardiol, Coordinator of the Outreach and Educational activities of the Turin Observatory said: *“The National Institute for Astrophysics in Italy (INAF) is deeply involved in research and technological efforts related to the defence of our planet from the threat posed by potentially hazardous asteroids. INAF researchers have conceived and built LiciaCube, the satellite that monitored the successful hit on Didymos within the NASA DART Mission last October. Besides coordinating the PRISMA fireball network for the recovery of freshly fallen meteorites (part of the international FRIPON network), INAF has also increased outreach and educational efforts during the past few years, so participation in this exciting project was a natural consequence.”*

The COSPAR President, Professor Pascale Ehrenfreund said: *“Learning about space can capture the imagination of students, leading to increased interest in Science, Technology, Engineering, and Mathematics (STEM) subjects. This can foster a future workforce skilled in these critical areas. COSPAR is therefore engaging with teachers and educators worldwide to increase and sustain interest in STEM subjects and to encourage more young people to take up STEM careers to enter the space sector. I strongly believe we can make a difference and I look forward to following the progress of these Erasmus+ projects.”*

Rosa Doran, director of NUCLIO, said: *“I am a believer in the empowerment of educators to bring the new generation closer to their future careers. Bringing authentic research experience to students. These young people will develop with a different mindset towards innovation, with a better understanding of the scientific method and with a good starting point on the construction of their science capital.”*

Angelos Lazoudis of Ellinogermaniki Agogi stated: *“Looking up to the sky has never been so exciting and so educative for secondary school students. Engaging in related STEM activities, monitoring real phenomena, collecting and analysing scientific data, and applying knowledge to meaningful problems not only allows them to better understand our world but also to explore future careers and, most importantly, to develop skills and competencies that are essential to student success” .*

Lothar Kurtze, Director of FTP-Europlanet said *“The StAnD project gives schools all over Europe the unique opportunity to bring real science into the classroom. One example is the real time observation of an asteroid with remote telescopes in Hawaii or Australia. This can be followed by doing measurements of the position of this asteroid at school. This way, students can generate valuable data for professional astronomers and even make their first publications. So already at school, the students get an idea of what a scientific job is like, and whether this could become interesting for them later.”*

The dedicated website for the project is at <https://projectstand.eu/> and will be populated as the project develops.

Note to Editors

About Erasmus+



Co-funded by
the European Union

Erasmus+ is the EU's programme to support education, training, youth and sport in Europe. It has an estimated budget of €26.2 billion. This is nearly double the funding compared to its predecessor programme (2014-2020). The 2021-2027 programme places a strong focus on social inclusion, the green and digital transitions, and promoting young people's participation in democratic life. It supports priorities and activities set out in the European Education Area, Digital Education Action Plan and the European Skills Agenda. The programme also supports the European Pillar of Social Rights; implements the EU Youth Strategy 2019-2027; and develops the European dimension in sport.

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

About the *Istituto Nazionale di Astrofisica (INAF)*

The Italian National Institute for Astrophysics is the main Italian research institute for the study of the Universe. INAF promotes the enhancement of the research results conducted or coordinated by its astronomers. Besides research in astronomy and astrophysics, INAF is very active in education towards students in schools and society through dissemination, educational and outreach activities. These activities are carried out by the 16 research facilities spread all over the country. INAF – Osservatorio Astrofisico di Torino, the leading partner of StAnD, is one of the most important research institutes in Piedmont (NW Italy) and its history dates back to the mid-18th century. Currently more than 100 people (including researchers, technicians, administration, students) collaborate with the Observatory activities.

For more information, visit www.inaf.it

About COSPAR

COSPAR, the Committee on Space Research, was created in 1958 under the aegis of the International Council of Scientific Unions, now the [International Science Council \(ISC\)](http://www.cosparhq.cnes.fr/) providing a forum for all scientists to discuss problems affecting space research. COSPAR strives to promote the use of space science for the benefit of humanity and for its adoption by developing countries and new space-faring nations through a series of Capacity Building Workshops teaching very practical skills. COSPAR advises the United Nations and other intergovernmental organisations on space research matters and is the key entity worldwide for developing, maintaining and promulgating policies and requirements to protect against the harmful effects of biological interchange in the conduct of solar system exploration. The COSPAR Panel on Education aims to generate greater awareness of the importance of space science and how it is already impacting society. The Panel also establishes links and strategic partnerships and alliances, for example with UNESCO, so that its activities can be supported without unnecessary duplication. The four Officers in charge of this Panel, and the very large body of volunteers (both teachers and scientists) working to support its activities and events have extensive experience of developing international educational projects.

For more information, visit <https://cosparhq.cnes.fr/>

About NUCLIO

NUCLIO is a non-profit association and an NGO for development created in 2001 that focuses on the promotion of innovation for a better future. The team is composed of scientists, teachers, and researchers devoted to innovation in education, science education, psychology of education and science outreach. The work done by the team in the field of innovation in education includes the promotion of student-centred approaches, STEAM learning, Maker skills and the Digital transition, Democracy and participatory activities, Inclusion and Diversity, Design Thinking, Scientific Research in the Classroom, Open Schooling and Innovative student Assessment (among others). An official training centre recognised by the Portuguese Ministry of Education, NUCLIO is also the coordinator of the Galileo Teacher Training Program, one of the largest astronomy education efforts in the world, endorsed by the International Astronomical Union and UNESCO. The program has already reached over 70,000 teachers from over 120 nations. NUCLIO is the coordinator of the

Portuguese Language Expertise Centre for the International Astronomical Union (PLOAD) where, and among other roles, has the responsibility of bringing innovation and capacity building to Portuguese speaking nations and communities across the world.

For more information, see <http://nuclio.org>

About Ellinogermaniki Agogi



Ellinogermaniki Agogi (EA) is one of the most innovative schools in Europe. It has 2500 students (ages 5 to 18 years old) and 250 teachers in different disciplines. EA has a very strong vision-generated interest and rich research and development activity in the fields of Inquiry Based Science Education (IBSE), Project Based Learning (PBL), and STEM education in combination with digital, online based learning environments and tools that use virtual reality, augmented reality and story-based education. EA is continuously modernising STEM education by promoting and creating user-driven learning environments for students and offering numerous opportunities for teachers' professional development to be prepared and thrive in the landscape of unprecedented challenges and opportunities in the 21st century.

For more details, visit www.ea.gr

About FTP-Europlanet

Founded in 2021, and located in Weinheim, Germany, FTP-Europlanet gUG builds on the heritage of the Faulkes Telescope Project (FTP), established in 2004 to bring the excitement of observing with research-grade telescopes into classrooms. Through an MoU with the Europlanet Executive Board, FTP-Europlanet gUG draws on the 18 years' experience of Europlanet in delivering media, communications and education activities and training for the European planetary community, with a particular emphasis on supporting early career researchers to develop skills for their future careers.

Visit <https://ftp-europlanet.de/> for more details.

<p>StAnD Fact box</p>		
<p>What?</p>		
<p>Students As planetary Defenders (StAnD) aims to engage primary and secondary school students and teachers in the subject of asteroids, meteors, and planetary defence, raising interest in science and space exploration, and improving their skills in science, technology, engineering and mathematics (STEM) subjects. Students will have the opportunity to discover new asteroids in telescopic images obtained in Hawaii, USA, and study in more detail the properties of known asteroids and comets using robotic telescopes in observatories around the world. They will learn how to use new technologies, will improve their digital skills, and will work as teams in the different campaigns during the project.</p>		
<p>Why?</p>		
<p>Several growing needs in education are targeted in StAnD. The project is designed to raise interest and awareness of the importance of STEM fields among young students; to upgrade educators' skills and learning in various fields; to improve educators' and learners' digital literacy; and to bridge the digital divide, ensuring an inclusive environment. These are crucial areas for the future needs of society. Trained teachers will become better prepared for addressing STEM topics, leading to improved learning by the students. The activities will engage students and teachers and lead to potential scientific discoveries.</p>		
<p>Who?</p>		
<p>The Istituto Nazionale di Astrofisica (INAF) is coordinating the project, leading the partnership of COSPAR, NUCLIO, Ellinogermaniki Agogi and FTP-Europlanet GuG.</p>		
<p>For whom?</p>		
<p>A minimum of 50 schools will be involved in the project, reaching 135 educators and 1,500 students. The main target groups are schools, scientists, and other relevant stakeholders in the field of education.</p>		

How?

Meteor detection cameras will be installed in schools in each of the participating countries, and students will operate them, with support from project members. These cameras will detect meteors that enter the Earth's atmosphere and may register a meteor large enough to leave a remnant in the ground—a meteorite—that can be recovered by specialists, and possibly the re-entry of man-made objects. Students will also have the opportunity to recover micrometeorites, microscopic fragments of asteroids and comets, by using the Stardust Hunter kit that will be developed by the project team. The project will include:

- Teacher training sessions by means of massive open online courses (MOOC) and two summer schools;
- Installation and operation of meteor detection cameras in participating schools;
- Micrometeorite collection using the detection kits;
- Asteroid Search Campaigns using professional telescopes in Hawaii on the framework of the International Astronomical Search Collaboration; and
- Asteroid follow-up observations using telescopes of the [Las Cumbres Global Observatory](#).

Where?

Initially in schools in Germany, Greece, Italy and Portugal, and it is hoped to mainstream the methodology being piloted in this project to other schools at a global level.

Duration? 36 months; starting 1 September 2023

The StAnD project will help to:

- Improve the digital skills of educators and learners;
- Increase student motivation and interest in STEAM school subjects;
- Provide better understanding of the importance of astronomy and space science;
- Raise student interest in STEAM subjects;
- Develop knowledge acquisition;
- Improve key skills such as problem-solving, critical thinking, creativity, communication and collaboration;
- enhance educators' ability to follow universal design for learning guidelines and incorporate differentiation and personalisation into their daily practices.