



COSPAR to launch new space science education programme

31 July 2023

The Committee on Space Research (COSPAR) is pleased to announce the launch of an ambitious series of space science education projects through its Panel on Education, starting with participation in an Erasmus+ programme.

COSPAR and the Erasmus+ Education Programme

COSPAR's participation in an Erasmus+ programme on education is part of the COSPAR Panel on Education's new approach to its mission of developing "means and media to encourage and spread space-related education". The recent successful proposal for this Erasmus+ programme on cooperation partnerships in school education, coordinated by the [Austrian Space Forum](#) (OeWF), marks the start of this new approach.

The EXpeditionary Program for Learning OppoRtunities in Analog Space Exploration (EXPLORE) is a 36-month project—starting 1 September 2023—to introduce a new trend of activities engaging students in space exploration experiences that meet the requirements of their STEAM (science, technology, engineering, arts and mathematics) curriculum. EXPLORE will invite students to engage in activities similar to existing analog missions that simulate Moon or Mars environments. Educators will receive training to deliver curriculum content and improve their knowledge of digital solutions, as well as student-centred, inclusive, equitable and accessible methodologies while implementing the project.

EXPLORE will produce a kit that will encourage students to embrace an exploratory mission to Mars. Educators will receive training and support to adapt this kit to the curricula and conduct classroom involvement in the preparation of the missions. A group of selected students will visit a planetary surface analog site where they will simulate an international space mission and collaborate with peers and professionals from participating countries.

Students will have the opportunity to learn about space exploration and its importance in our daily lives, understand the importance of preserving the Earth's environment with hands-on experience, improve their digital skills, become problem solvers, learn to collaborate, and get acquainted with innovative digital solutions. Educators will be introduced to innovative student-centred methodologies that facilitate the integration of digital content into the STEAM curriculum.

EXPLORE will be coordinated by the [Austrian Space Forum](#) (OeWF), with the active participation of COSPAR, [NUCLIO](#), [Ellinogermaniki Agogi](#) and [BIOSKY](#).

At the heart of the COSPAR Panel on Education's new initiatives is a move to enhance teacher training. Efforts to bring space research to educators and trainers will be stepped up, by expanding the teacher training programme during the biennial COSPAR Scientific Assembly, by including this opportunity in the COSPAR Symposia, held in alternate years to the Assembly, and by forming partnerships with organisations such as the International Astronomical Union (IAU) and the Global Hands-On Universe (G-HOU).

PRESS RELEASE

The COSPAR President, Professor Pascale Ehrenfreund said: *“We are looking forward to including new activities within the COSPAR community that will address the Committee’s future sustainability, influence, and impact within the international space sector. It is my firm belief that focusing on the new generation of scientists and researchers, providing support, opportunities, and capacity building in space-developing countries is beneficial to all.”*

The Executive Director of COSPAR, Dr Jean-Claude Worms, stated: *“A generation of pioneering space researchers is retiring. COSPAR places great emphasis on enabling the next generation to reap the benefits of the heavy investments and efforts conducted in the space sector by a steadily growing number of actors, public and private. It is vital that this opening new age of space exploration and astronomy is conducted in an ethical and sustainable manner, allowing both scientific exploration and use of celestial bodies. This approach also applies to Earth observation from space, a critical aspect of the fight against climate change. Capacity Building of countries accessing the space field is crucial, as is the education and training of young researchers and teachers, in order to better address these issues, and inform the public and the decision-makers.”*

Chair of COSPAR’s Panel on Education, Rosa Doran, said: *“The next astronauts setting foot on the Moon or Mars are probably sitting in a classroom somewhere around the world. The space industry is blooming, and jobs related to this important field are become more and more relevant. COSPAR’s Panel on Education aims to bring this reality closer to the students’ learning experiences. EXPLORE will be the first of many new ideas and partnerships that will put COSPAR at the centre stage for Space Education.*

Background

The COSPAR activity that is particularly relevant to this ERASMUS+ educational project is developed by the [Panel on Education](#). The COSPAR Panel on Education, under the dynamic Chair Rosa Doran, aims to adopt a more active approach towards its growth and impact within COSPAR, to broaden its target audience from educators to a whole-school approach, involving all members of the schools and their local communities, to reach out to policy makers and to guarantee a deeper involvement of its members towards a common goal: generating greater awareness of the importance of space science and how it is already impacting society.

The Panel on Education works on the development of means and appropriate media for encouraging and spreading space-related education. The Panel meets during education-targeted sessions at Assemblies or other events and supports relevant educational initiatives or entities outside of Assemblies. It works with COSPAR Scientific Commission Chairs, Panels, and other interested parties to identify the audience to whom the outreach and education is aimed, whether primary and secondary schools, universities, the general public via journalistic media, students, and especially underprivileged students in countries where space-related activities do not exist.

The Panel seeks to identify how to make educational tools and media available, and it explores possible links to and interactions with already established educational programs on topics related to research areas covered by COSPAR. It seeks to identify funding opportunities within certain countries for education and outreach work, and sets up and maintains websites or other relevant communication tools. 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, including EU-funded programmes, in particular ERASMUS+.

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Note to Editors

COSPAR, the Committee on Space Research, was created in 1958, at the dawn of the space age, under the aegis of the International Council of Scientific Unions, now the [International Science Council \(ISC\)](#). COSPAR's objectives are to promote on an international level scientific research in space, with emphasis on the exchange of results, information and opinions, and to provide a forum, open to all scientists, for the discussion of problems affecting space research. In its first years of existence as an entity that ignores political considerations and views all questions solely from the scientific standpoint, COSPAR played an important role as an open bridge between East and West for cooperation in space. When this role became less prominent with the end of the Cold War, COSPAR focused its objectives on the progress of all kinds of research carried out with the use of space means.

COSPAR has played a central role in the development of new space disciplines such as life sciences and fundamental physics in space, by facilitating the interaction between scientists in emerging space fields and senior space researchers.

A recent emphasis is the development of tighter bonds between science and industry, through the establishment of the Committee on Industry Relations, grouping 18 major aerospace companies worldwide, and advising COSPAR on how best to integrate the capabilities of industry into COSPAR's activities and by doing so, to best serve the interests of industry and science in a synergistic way.

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, in particular through a series of Capacity Building Workshops which teach very practical skills enabling researchers to participate in international space research programs.

COSPAR advises, as required, the United Nations and other intergovernmental organizations on space research matters and on the assessment of scientific issues in which space can play a role, for example the Group on Earth Observations (GEO), in which COSPAR is a Participating Organization.

Finally, COSPAR is the key entity worldwide in terms of developing, maintaining and promulgating clearly delineated policies and requirements as to the standards that must be achieved to protect against the harmful effects of biological interchange in the conduct of solar system exploration and use.



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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 Austrian Space Forum (OeWF)

The Austrian Space Forum is one of the world's leading institutions conducting Mars analog missions, thus paving the way for the future human exploration of the Red Planet. Experts from a broad variety of disciplines as well as the spaceflight sector constitute the core of the OeWF's continued endeavours that on a regular basis include national and international institutions from science and industry to work at the cutting edge of scientific research. In doing so the Austrian Space Forum is using its excellent contacts to opinion leaders, politics and media to further and internationally propagate Austrian top-level research. The Austrian Space Forum also contributes significantly to inspiring and educating young people in the sectors of science, technology and engineering. The OeWF offers internships to students and pupils, its experts supervise scientific papers on a regular basis.

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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 a group 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 on 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, the Galileo Teacher Training Program, endorsed by the International Astronomical Union and UNESCO. The program has already reached over 50,000 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.

<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 modernizing 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.

www.ea.gr

About Biosky, Lda

OLA (official name BIOSKY) provides access to a professional astronomical observatory and educational programs related to astronomy. OLA is located in a special region in Portugal known for its dark skies and dry and extreme weather conditions during most of the school year. It hosts the perfect conditions for the creation of the analog site necessary for the EXPLORE project.

<http://olagoalqueva.pt/>



(Image credit: ÖWF/Voggeneder)

EXPLORE Fact box

What?

Using the context of an exploratory mission to Mars, EXPLORE is a project to bring the future of space exploration closer to the reality of schools and bring the competence profile of educators and learners closer to the real need for emerging economic and societal challenges.

Why?

This project addresses a number of growing needs in education, particularly to raise interest and awareness of the importance of STEAM fields among young students; to upgrade educators' competence profile and learning in various fields; to bring innovation into the classroom and to the student's learning experience; to improve educators' and learners' digital literacy; and to bridge the digital divide ensuring an inclusive environment where the students' background will be respected, differentiated and personalized. These are areas that are crucial for the future needs of society.

Who?

Austrian Space Forum is coordinating the project, leading the partnership of COSPAR, NUCLIO, Ellinogermaniki Agogi and Biosky.

For whom?

30 teachers of STEAM subjects and 360 students (60 upper high school students per country - per year).

How?

An EXPLORE toolkit will provide the tools and instruments for integrating the analog field mission in schools. A carefully selected set of classroom-compatible activities, relevant to analog research, will be defined and distributed. The activities will cover various curriculum STEAM subjects, including communication and intercultural training, analog space mission operations, geoscience exploration, robotics, and safety and will require minimal training for teachers. The concept will accommodate different learning styles, abilities, and cultural backgrounds, to promote inclusivity and diversity. This package will also conceptualise and design the EXPLORE analog missions, prepare the experiments and oversee arrangements for the on-site analog mission experience. Summer schools to support STEAM subject teachers will also be organised, where the toolkit and programme will be presented and discussed. A group of selected students will visit a planetary surface analog site where they will simulate an international space mission and collaborate with peers and professionals from participating countries.

Where?

In high schools in Austria, Greece and Portugal. The analog missions will be undertaken in a real scenario in Observatório Largo do Alqueva (Portugal).

Duration?

36 months; starting 1 September 2023