

A photograph of a space station component in orbit over Earth, showing the planet's surface and clouds. The component is metallic and has a complex structure.

Sweden

The logo for 'esero' features the word in a white, lowercase, sans-serif font on a blue background. A white line starts from the top of the 'e', goes up to a four-pointed starburst, then down to the top of the 'e', then down to the bottom of the 'e', and finally down to a solid white circle.

esero

bringing the universe into the classroom



What is ESERO Sweden?

- ESERO (European Space Education Resource Office) Sweden is an initiative of the European Space Agency ESA and the Swedish National Space Agency. Started in 2021.
- Run by KTH Royal Institute of Technology in collaboration with the Wisdome project's five arenas: Visualization Center C, Malmö museum, Universeum, The National Museum of Science and Technology (Tekniska), and Curiosum.
- Support schools in STEM-subjects by using space as a context.
- Offers: teacher training courses, teaching materials and resources, participates in and organizes events.
- Collaborative project between several space and education actors in Sweden.
- Network of teachers and space industry.



We work with ESERO Sweden



Christer Fuglesang
Chairman/KTH



Cecilia Kozma
Manager/KTH



Lisa Sundén
Co-manager/
Visualization Center C



Jenny Jansson
ESERO ambassador



Mariana Back
ESERO Senior advisor



ESERO network

- Est. 2006
- Today 22 ESEROs





Collaborators and Hubs



WISDOME

- Visualization Center C, Norrköping
- Tekniska museet, Stockholm
- Universeum, Göteborg
- Malmö museum, Malmö
- Curiosum, Umeå

Collaborators

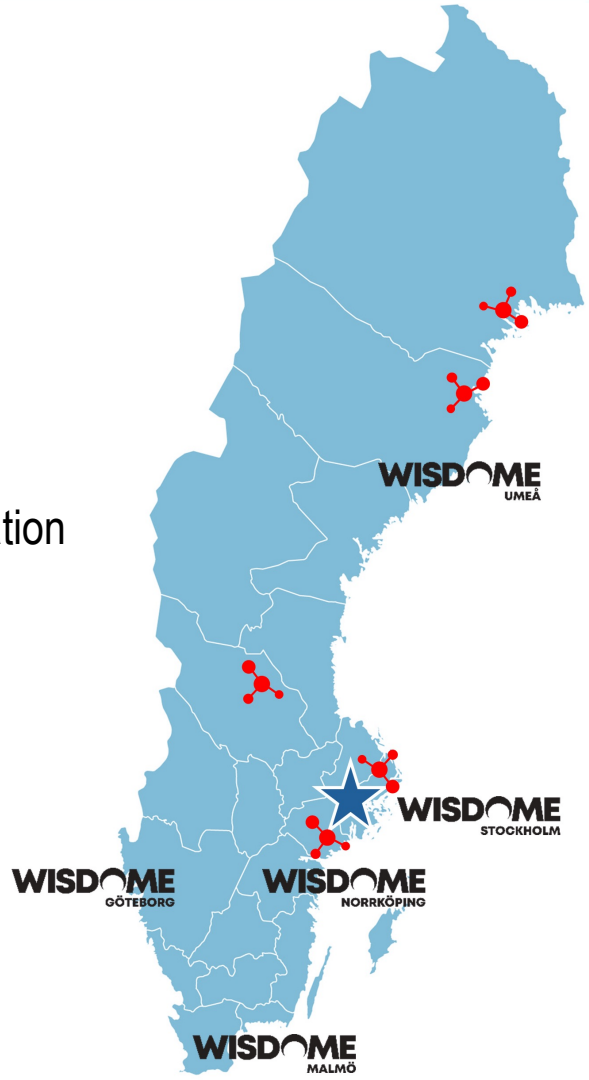
- Swedish Astronomical Youth Association (AU)
- Fuglesang Space Center (FSC)
- Swedish Institute of Space Physics (IRF)
- NTA School development (NTA)
- SSC Space
- Association of Swedish Science Centers (FSSC)



Hubs for ESA school projects


- Tom Tits Experiment
- Exploratoriet
- Teknikens Hus
- Vetenskapens Hus
- Swedish Astronomical Youth Association

- Teacher network**
- Universities**
- Resource centers**
- Space industry**






ESA school projects




Astro Pi




CanSat



Climate detectives



Mission X



Moon Camp



Trainings and courses

Moon Camp



CanSat



Mission X



Astro PI



Climate detectives



KTH - ESERO courses (online, 3 ECTS)

- LT1044
Space and sustainable development
- LT1071
Space, health and authentic learning

Webinars and other trainings

To be found here:
<https://www.esero.se/for-larare/lararfortbildningar/>



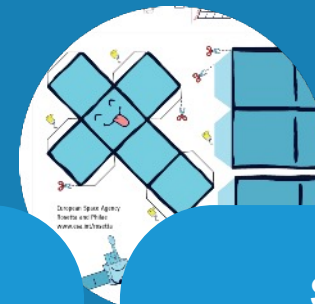
Classroom resources

- **Preschool**
- **Compulsory school**
- **Upper secondary school**
- **Compulsory School for Pupils with Intellectual Disabilities**

Space and programming



Space crafts



Rocket design



Earth observations



Paxi



Showlets





Events

Space festival
Astronomy Day and Night

Edutainment days
Gröna Lund

Run together with astronauts





ESERO in numbers 2023 - 2025

Trainings/courses

3 413
teachers and educators

124 310
students – indirectly



School projects, activities in schools/science centers, events

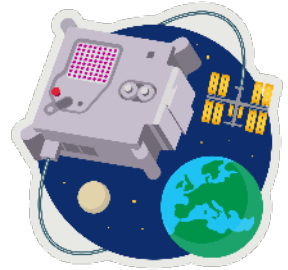
109 191
students

9 664
teachers

46 076
general public



Astro Pi – Program and run your code in space!



The European Astro Pi Challenge is one of ESA's school projects carried out in collaboration with the Raspberry Pi Foundation. It gives students a great opportunity to conduct scientific research in space as they write their own code which is then run on Raspberry Pi computers on board the ISS.

Mission Zero: Send a message to the astronauts on the ISS! Take a measurement with the color sensor and draw and display an image.

Space Lab: Design a science experiment to be conducted on the ISS! Measuring ISS speed.

Target group: Students up to 19 years



CanSat – Build your own satellite



CanSat is a national competition where students build a small satellite (the size of a soda can) that is launched using a small rocket or dropped from a drone.

The winning team is invited to "Space engineer for a day" at ESTEC, the Netherlands.

Mission: Build a CanSat and measure temperature, humidity and an optional parameter

Target group: Students 14-19 years



Climate detectives – exciting projects in your local area



The students are challenged to become climate detectives and investigate nearby environment. They get to explore and analyze an environmental problem, and propose measures to reduce the negative environmental effects. The winning team gets to participate in "Climate Detective Days" at ESRIN, Earth Observation Center of ESA, Italy.

- Identify a climate/environmental problem
- Investigate the climate/environmental problem. Students collect, analyze and compare data, e.g. satellite data.
- Suggest actions and share the results



Mission X – Train like an astronaut



Mission X is a project that focuses on health, nutrition, exercise and science, and wants to inspire children to train like a real astronaut.

The students practice collaborating and thinking and working scientifically when they have to solve scientific tasks and carry out physical activities that focus on strength, endurance, balance and coordination.

Everyone will receive a certificate and an invitation to a virtual event organised by ESA.

Challenge: “Go to the Moon” – collect steps for Luna and Leo

Target group: Students up to 14 years



Moon Camp – Design your own space camp



In order for astronauts to be able to live and work on the moon in the future, several problems must be solved, a new infrastructure must be built. Challenges that the astronauts face are, for example, how to protect themselves from radiation and meteorites, how to produce energy, extract and recycle water, and produce food. Closing event online with an ESA astronaut

Mission: Design a camp on the moon where at least two astronauts can live.

Any format, software or other material.

Target group: Students up to 19 years



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