

We're hiring: two ESA Graduate Traineeships open!

ESA's Graduate Trainee (EGT) Programme offers recent graduates the opportunity to gain valuable on-the-job experience in the development and operation of space missions in an international and multicultural environment.

Our high-calibre EGT Programme lasts for one year and is a launch pad for many exciting professional opportunities in Europe's space sector, renowned research institutes or, of course, ESA itself.

ESA's Exploration Science team is hiring for two positions:

- EGT in Science Impact and Metrics Analysis. All info [here](#).
- EGT in Commercial Data Analysis for Lunar Resource Exploration.

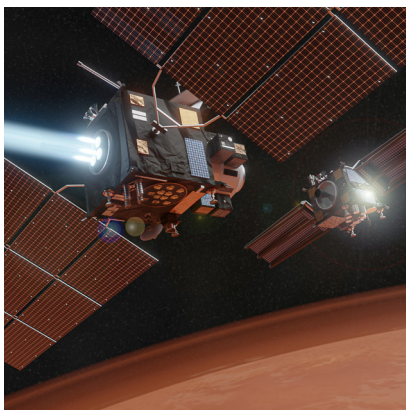
All info [here](#).

The deadline to apply for both positions is 28 February 2025 (23:59 CET).

More general information on the EGT opportunities is available [here](#).



LightShip-1 Announcement of Opportunity (AO): community briefing



ESA

The European Space Agency's (ESA) Directorate of Human and Robotic Exploration (HRE) intends to release an Announcement of Opportunity (AO) for **LightShip-1** science payloads of opportunity and investigations. It is currently planned to release the AO at the end of April 2025.

ESA will provide a briefing to the science community to describe the scope, results of scientific definition activities, timeline and expectations for the AO. **The briefing is scheduled on 28 February 2025, 11:00 – 12:30 CET, including a Q&A session:**

Teams Meeting App
Meeting ID: 366 665 047 654
Passcode: eC7uJ9xA

ESA's LightShip propulsive tug is a Mars infrastructure concept. Each LightShip would be able to deliver other spacecraft to Mars. After delivering these 'passenger' spacecraft, the LightShip propulsive tug would be placed in a service orbit at 5720 km altitude and 20-degree inclination, from which it would deliver data relay and navigation services.

The LightShip propulsive tug is intended to accommodate science payloads of opportunity. The plan to launch multiple LightShips opens opportunities for networked science and their high orbit makes the platform suitable for atmospheric monitoring.

The first mission, LightShip-1, includes not only the LightShip propulsive tug, but also a low Mars orbiter, SpotLight, whose observation goals would include high-resolution surface mapping. The LightShip-1 mission, including both the high-altitude LightShip propulsive tug and the low-altitude SpotLight orbiter, is currently under industrial study.

Participants are invited to submit questions before the briefing via email at LightShip_Science@esa.int or to pose their questions at the briefing.

Announcement of Opportunity (AO) for European science team members for the LuSEE-Night Lunar Radio Mission

- Community briefing: 15:00 CET, 4 March 2025
- AO intended release date: 11 March 2025
- AO intended closing date: 21 April 2025
- Announcement of selected proposals intended date: 16 May 2025

The Announcement of Opportunity will be released through ESA's **Open Space Innovation Platform**.



LuSEE-Night is a pathfinder radio telescope developed to explore the potential of low-frequency radio astronomy from the lunar far side. The mission is planned from early 2026. Its primary scientific objective is to assess the viability of observing the Dark Ages, the period between the last scattering of the cosmic microwave background and the emergence of the first stars and galaxies. Only cold, non-luminous hydrogen gas existed during this epoch, and so it has been largely unexplored and remains one of the least-constrained frontiers of modern cosmology.

LuSEE-Night will map the sky at low radio frequencies for the first time since pioneering satellite measurements in the 1970s, and in doing so will serve numerous secondary science objectives; these include: important contributions to the observation of the Sun and decametric emission from the outer planets, constraining properties of lunar regolith, understanding radiation mechanisms in the Milky Way (synchrotron emission and free-free absorption), blind searches for new physics (e.g. new radio lines, axion dark matter oscillations, and low-frequency departures in the temperature of the cosmic microwave background), constraining radio recombination lines, and others. The LuSEE-Night payload is designed to last several lunar nights.

LuSEE-Night is a collaboration between NASA and the US Department of Energy. The science payload will land on the lunar far side (at lunar latitude 182.258° and longitude 23.814°S) on the Firefly Aerospace Blue Ghost Mission 2 as a part of the NASA Commercial Lunar Payload Service (CLPS) CS-3 delivery in 2026. Communications relay services to Earth for LuSEE-Night will be provided by the **Lunar Pathfinder** spacecraft, a partnership between ESA and Surrey Satellite Technologies Limited.

This Announcement of Opportunity solicits proposals for scientific contributions to the LuSEE-Night science team.

Science team members selected through this call may contribute to any aspect of the mission, from joining existing preparations for the science analysis, proposing new investigative directions, to supporting the data reduction and calibration efforts. Selected science team members will have full access to the data but will be expected to join the existing science collaboration and adhere to its rules, including the publication policy. The ultimate goal is to establish lasting collaborative ties between the US and European communities that will enable future radio measurements from the surface and orbit of the Moon.

Request for Proposals: Lunar Resource Assessment from Localised Neutron Data from the Puli Lunar Water Snooper

SUBMIT YOUR PROPOSALS SOON

- Intended release date for Invitation To Tender: 25 February 2025
- Intended Invitation To Tender closing date: 22 April 2025

This Invitation to Tender (ITT) will be released through the ESA STAR ITT publication system, and requires proposing organisations to register: **esa-star Publication**

This ITT solicits proposals for the analysis of neutron data from the lunar surface, to be collected in March 2025 by the **Puli Lunar Water Snooper** (PLWS) instrument on the second mission of commercial US lander company Intuitive Machines (IM-2). . .

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The PLWS is a novel instrument designed to measure water at the lunar surface by detecting neutrons. It was developed by Puli Space Technologies in collaboration with CERN.

Two PLWS instruments will be flown to the Moon in February 2025 on IM-2.

One of the PLWS instruments is attached to a propulsive hopper, a vehicle which will take off from the IM-2 lander and hop to several surface locations, where PLWS will make measurements. This will include the first-ever landing inside a permanently shadowed crater, where water ice may be found. PLWS will operate alongside a radiometer provided by the German Aerospace Center DLR.

The second PLWS instrument will be mounted on a rover, which is expected to travel up to two kilometres from the lander. Measurements will be made during the rover traverse. The primary customer of the rover is Nokia, who will test surface-to-surface communication technology.

These PLWS data will provide the first ground truth for surface neutron data, one of the primary data sets used to infer the presence of water at the lunar poles.

ESA will provide the selected team with a unique in situ data set relating to water resources and radiation at the lunar surface. This data set will be collected at one of the most frequently identified landing sites on the Moon for accessing solar energy and possible water ice resources. The analysis of this data set can provide an important input for the assessment of landing sites for future missions, including human missions, as well as for a sampling and prospecting rover mission.

This activity will provide an independent review of the commercial data pipeline, ensuring scientific quality and analysing the data to produce results on hydrogen and water resources. These results will inform future mission preparation and will also be publishable as peer-reviewed scientific outcomes.

ESA is looking to select an expert team with expertise in neutron production physics, the physics underlying the instrument's measurements, lunar geology and surface conditions.

The activity shall:

- Independently assess and support the development of a robust data pipeline for delivering data products from the PLWS instrument.
- Identify needs for, and where possible undertake, ground-based studies to aid with the reduction of raw data when constraining calibrated data and sub-products.
- Generate additional derived data products using calibrated sub-products to support analysis.
- Analyse the data to determine water content and its correlation with orbital data sets and models of water distribution.
- Provide an independent assessment of the PLWS technology as a method for resource assessment on future missions and identify potential improvements and lessons learned.
- Determine the extent to which the surface radiation environment can be inferred from the PLWS data set.

Request for Proposals: Astronaut-deployed Lunar Environment Analysis Package (AstroLEAP)

SUBMIT YOUR PROPOSALS

- Intended release date for Invitation To Tender: mid-February 2025
- Intended Invitation To Tender closing date: mid-March 2025

This Invitation to Tender (ITT) will be released through the ESA STAR ITT publication system and requires proposing organisations to register in **esa-star Publication**.

The Astronaut-deployed Lunar Environment Analysis Package (AstroLEAP) is planned as a package of instrumentation to provide in-situ analytical measurements for quantifying and understanding the complex interactions and dynamics of the lunar surface, lunar dust and surface-bounded exosphere with solar radiation, plasma, energetic particles, meteoritic flux and more. The characterisation of these phenomena over a long duration (two years or more) contributes to constraining exploration environment models informing preparation of safe and sustained human and robotic lunar surface operations, as well as addressing fundamental science questions. >

Such monitoring of the lunar surface-space environment also enables assessment of the environmental impacts that human activity has on the pristine Moon and prepares a future lunar weather monitoring and forecasting service. Furthermore, it enables taking advantage of the Moon's location as a unique vantage point to characterise the Earth's magnetosphere environments (magnetosheath, lobe, plasma sheet, magnetotail) and upstream solar wind, the effects of which are currently not fully understood.

AstroLEAP is an ESA instrument suite proposed to be serviced by the first "Moon Surface Payload Servicing Module" (aka OASIS), in the frame of NASA's Artemis programme.

The main objective of this activity is to increase the technical maturity of candidate science instruments for in situ operation on the lunar surface to a level that would enable flight-readiness in 2030, in conjunction with the parallel OASIS central station development.

Call for Proposals for ESA's Exploration Biobank

SUBMIT YOUR PROPOSALS NOW

As part of our Exploration Science activities, ESA is looking for a contracted service to store, manage and preserve biological samples stemming from projects within our science pool. These samples are precious and limited, and their value extends beyond their initial collection. By opening the possibility to request these samples for further research, we aim to make the most scientific use of them and maximise their potential to contribute to the advancement of human space exploration.



We welcome proposals from biobanking institutions, research organisations, space medicine experts, and life sciences consortia with expertise in biological sample management, data standardization, and ideally in spaceflight-related research. We welcome proposals from biobanking institutions, research organisations, space medicine experts, and life sciences consortia with expertise in biological sample management, data standardisation, and ideally in spaceflight-related research.

Tender details:

Deadline: 7 March 2025

More information on submission [here](#).

CELEBRATING TWENTY YEARS OF KUBIK

REGISTER NOW

On 19 April 2004 the first two KUBIK space incubators were launched together with ESA astronaut André Kuipers to the International Space Station (ISS) as part of the Delta mission. Now, 20 years later, KUBIK has become one of the best used and most productive facilities flown on the ISS.

We are celebrating this milestone in a festive symposium, gathering scientists, engineers, and operators of KUBIK over the years. Attention will be given to the successful design philosophy, the scientific experiments performed, as well as the future perspectives in an era which will see more attention for commercial experimentation, as well as an outlook of exploration of moon and Mars.

All information is available [here](#). Registration is available [here](#).

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Call for Life and Physical Sciences Working Group (LSWG, PSWG) Members

APPLY NOW

Deadline submissions: 28 February 2025 (23:59 CEST)

With the present call, ESA invites scientists affiliated with institutions in the ESA Member States to express their interest to become members of either the Physical Sciences Working Group or the Life Sciences Working Group.

The Life and Physical Sciences research Working Groups are set up to advise on all matters concerning their specific research areas. Their main tasks are:

- Formulating and updating medium- and long-term plans in their respective areas
- Assigning priorities among several potential candidate studies and recommendations on the selection of future studies
- Advice on problems affecting ongoing programmes
- Recommendations on the selection of experiments for flight opportunities
- Recommendations on the selection of peer groups, topical teams and facility science teams

The goal is to create a pool of potential candidates to be considered in future years to replace members completing their mandate, guaranteeing proper discipline balance and various diversity criteria in the composition of the LSWG and PSWG.

More info and submissions [here](#).

Announcement of Opportunity for Radiation Research (IBPER)

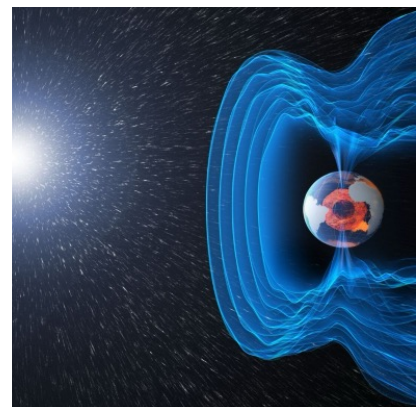
APPLY NOW

Deadline for submissions: 23 March 2025

ESA invites scientists to apply to the Announcement of Opportunity: "Investigating Biological and Physical Effects of Radiation" (IBPER) intended to advance knowledge on effects of space radiation on human health, improve radiation risk models and investigate novel radiation mitigation strategies, including shielding.

IBPER focuses on the following topics:

- Sex differences in radiation effects on biological systems: to investigate and quantify individual responses and susceptibility with the use of biomarkers including OMICS technologies, such as genomics, metabolomics, proteomics, and metagenomics.
- Radiation shielding: investigating how space radiation impacts various materials used in spacecrafts and space habitats to ensure their durability and safety. Developing and testing new shielding materials and technologies to protect astronauts and equipment from harmful effects of space radiation.
- Biological countermeasures: to mitigate health risks by identifying, developing, and validating biological countermeasures including drugs and innovative physiological approaches.
- Astrobiology: exploring the potential for life in extreme environments by simulating space radiation conditions and studying its effects on microorganisms.



More information on submissions [here](#).

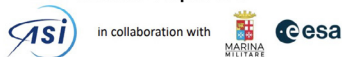
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ASI/ESA Isolation and Confinement workshop

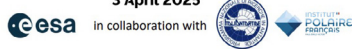
From 31 March until 3 April 2025, the Italian Space Agency (ASI) and ESA are organising an Isolation and Confinement workshop at the ASI headquarters in Rome, Italy.

The Workshop “Isolation/confinement studies for human space exploration”, organised by ASI in collaboration with the Italian Navy and ESA aims at exploring the existing heritage and state-of-the-art research related to isolation and confinement. The workshop will be held at ASI headquarters in Rome from 31 March to 2 April 2025.

WORKSHOP
Isolation/confinement studies for
human space exploration
31 March – 2 April 2025



WORKSHOP
20 years of Concordia research
3 April 2025



The workshop “20 years of Concordia research”, organised by ESA in collaboration with Programma Nazionale di Ricerche in Antartide (PNRA) and Institut Polaire Français Paul-Émile Victor (IPEV), will be hosted by ASI on 3 April 2025. The aim of the workshop is to highlight lessons learned and key results from two decades of studies at **Concordia** Station in Antarctica, a high-fidelity analogue for space exploration.

These events will also explore opportunities for future research and collaboration.

More info and registration/submissions [here](#).

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European Space Agency
Directorate of Human and Robotic Exploration



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