

Job Title: Internal Research Fellow (PostDoc) Lunar Samples, Research and Application

Req ID 7501 - Posted 26/07/2018



EUROPEAN SPACE AGENCY

Research Fellowship Opportunity in the Directorate of Human & Robotic Exploration Programmes.

ESA is an equal opportunity employer, committed to achieving diversity within the workforce and creating an inclusive working environment. Applications from women are encouraged.

Post

Internal Research Fellow (PostDoc) Lunar Samples, Research and Application

This post is classified F2.

Location

ESTEC, Noordwijk, The Netherlands

Our team and mission

The Internal Research Fellow will be based in the **Strategy and Innovation Team**, Directorate of Human and Robotic Exploration Programmes, at ESA/ESTEC. (http://www.esa.int/About_Us/ESTEC)

The Team supports the development, evolution and implementation of ESA's exploration strategy and manages the benefits resulting from ESA's space exploration activities. This includes supporting international activities, including the international Space Exploration Coordination Group (ISECG), and the development of new partnerships and governance schemes. The Team also works to implement new innovation partnerships with commercial space and non-space sectors for activities related to exploration of the Moon, Mars and low Earth orbit, while seeking to increase commercial and industrial utilisation of the International Space Station. The Team leads a number of activities to prepare future exploration missions and technologies, working closely with the space science community. These include technology developments and mission studies, coordinated at international level and leveraging commercial partnerships.

Interested candidates are encouraged to visit the ESA website: www.esa.int

Field(s) of activities/research

The appointee will do research using lunar samples and materials to produce new scientific results and provide data and lessons-learned to inform the preparation of ESA's exploration programme. He/she will also support the maintenance and implementation of a Lunar Science, Research & Applications Plan (see below).

Research will be done which results in new and novel scientific results, published in peer-reviewed journals. Areas of particular interest are those which yield information having implications for: the origins, abundance and distribution of water on the Moon; potential resources (e.g. water, oxygen, metals) of lunar regolith, the physical properties of lunar regolith; approaches to handling, excavating and processing lunar regolith; sample curation and handling. An important aspect of the Fellowship will be the use of scientific and technical insights obtained through working with samples to support the definition of new and improved engineering approaches to working with lunar and Martian samples and materials on future exploration missions, both in situ and sample-return.

Samples will be obtained through proposals to appropriate authorities for access and through cooperation with research groups with existing research activities in this area. This may include new proposals for samples, involvement in ongoing activities and engagement in existing ESA activities and proposals. Activities may be with institutional and/or

international partners. Work may also involve working with, and supporting, the development and characterisation of new and existing simulants and standards.

It is expected that most of the laboratory-based research will be performed using facilities found at ESTEC subject to agreement with laboratory management. For available facilities, see for example:

http://www.esa.int/Our_Activities/Space_Engineering_Technology/Materials_Electrical_Components_Laboratory).

Facilities associated with other ESA centres may also be considered, as may those based at other institutions where relevant and accessible, e.g.:

http://www.esa.int/spaceinvideos/Videos/2016/07/ESA-RAL_Advanced_Manufacturing_Laboratory).

A Lunar Science Research and Applications Plan

A Plan is in preparation to identify European priorities for fundamental and applied research enabled by lunar exploration and to address how this research can be enabled and implemented by ESA's lunar exploration plans. This Plan includes science on, of and from the Moon. It looks for synergies with Mars, benefits for Earth and aims to generate knowledge that can enable and transform future exploration missions through the use of lunar resources.

An important aspect of the Research Fellowship will be to support the development and ongoing revision of the Plan, activities that implement the Plan and interactions/consultations with various research communities to ensure that it continues to represent community consensus on priorities and implementation approach.

Technical competencies

Knowledge relevant to the field of research

Research/publication record

Ability to conduct research autonomously

Breadth of exposure coming from past and/or current research/activities

Interest in space and space research

Ability to gather and share relevant information

Behavioural competencies

Innovation & Creativity

Continuous Learning

Communication

Relationship Management

Self Motivation

Problem Solving

Cross-Cultural Sensitivity

Education

Applicants should have recently completed, or be close to completing, a PhD in a related technical or scientific discipline. Preference will be given to applications submitted within five years of candidates being awarded their doctorate. Research experience in any of the following areas will be viewed favourably:

- Scientific research using lunar samples
- Handling and preparing lunar materials
- Writing and publishing scientific papers
- Leading or supporting proposals for accessing lunar samples
- Working with international, multidisciplinary and multi-institution teams
- Working in teams including both scientists and engineers

Additional requirements

Knowledge of the breadth and diversity of lunar science and research relevant to exploration, beyond the scope of the specific research to be done. Competence in the specific skills required to do the proposed research (laboratory, measurement and analysis, programming etc.). Applicants must demonstrate an ability to work in a multidisciplinary environment in diverse teams. A proactive approach to identifying opportunities, problem-solving and communication skills are also required.

The working languages of the Agency are English and French. A good knowledge of one of these is required.

Knowledge of another Member State language would be an asset.

Specificities

For this Research Fellow opportunity, interviews will include a presentation of the proposed research and may include meetings with the ESA team, discussions about the proposed research and visits of relevant facilities located at ESTEC.

A wide range of laboratories and facilities are available at ESA ESTEC (see for example http://www.esa.int/Our_Activities/Space_Engineering_Technology/Laboratories), which could be made available for the research if needed. Access to facilities and the availability of other resources to support the proposed research will be discussed and determined on an case by case basis, based on the needs of the specific research proposed and the availability of the required facilities.

Other information

For behavioural competencies expected from ESA staff in general, please refer to the [ESA Competency Framework](#).

The Agency may require applicants to undergo selection tests.

The closing date for applications is 07 September 2018.

In addition to your CV and your motivation letter, please add your proposal of no more than 5 pages outlining your proposed research in the "additional documents" field of the "application information" section. Candidates are asked to arrange for 3 reference letters, to be sent by the referees themselves, before the closing date to temp.htr@esa.int. Please ensure your name is mentioned in the subject of the e-mail.

If you require support with your application due to a disability, please email contact.human.resources@esa.int.

Please note that applications are only considered from nationals of one of the following States: Austria, Belgium, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Romania, Spain, Sweden, Switzerland, the United Kingdom and Canada and Slovenia as well as Bulgaria, Cyprus, Latvia, Lithuania, Slovakia as European Cooperating States (ECS).

Priority will first be given to candidates from under-represented Member States.

In accordance with the European Space Agency's security procedures and as part of the selection process, successful candidates will be required to undergo basic screening before appointment