

Job Title: Internal Research Fellow (PostDoc) on Lunar Prospecting Instrumentation, Science and Operations

Req ID 8612 - Posted 19/12/2018



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) on Lunar Prospecting Instrumentation, Science and Operations

This post is classified F2.

Location

ESTEC, Noordwijk, The Netherlands

Our team and mission

The Research Fellow will be based in the Lunar Lander Team of the HRE Development Projects Group.

The Lunar Lander Team in the Directorate of Human Spaceflight and Robotic Exploration supports the initiation and leads the implementation of near to medium term lunar exploration mission studies, technology development and flight projects. Current activities include the development of PROSPECT and PILOT for the Russian led mission Luna-27. These activities are defined to generate knowledge, technologies, expertise, capabilities and partnership to prepare for future human lunar exploration; whilst creating new opportunities for fundamental scientific research.

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

Information on the PROSPECT Project.

Field(s) of activities/research

Overview of the field of research proposed

A Research Fellow is sought to engage in both independent and supporting research in preparation of future lunar exploration via the PROSPECT package on the Luna-27 mission. Work topics include the investigation of specific problems related to the PROSPECT investigation in the areas of sample contamination, volatile loss and –preservation, sensor calibration (permittivity sensor, cameras and illumination unit, temperature sensors), and in particular the definition and optimization of PROSPECT operations concepts for maximizing the science output. Additional topics may include contributions to data processing, calibration and archiving of PROSPECT and PILOT data.

The Research Fellow will work closely with the lunar lander team, to address important scientific questions that affect the PROSPECT design and performances. The candidate will also develop and refine PROSPECT operations concepts and related constraints based on inputs including review of test results regarding their impact on science performance and operations. This will involve working closely with the members of the PROSPECT User Group / PROSPECT science team, members of the PROSPECT industrial consortium, and with colleagues in ESA including the PROSPECT project scientist, to perform multidisciplinary research in support of an optimized PROSPECT mission. The generation of technical notes in support of the PROSPECT development activities and of publications on performed scientific investigations is expected. The specific interests and proposed research of the Research Fellow will be taken into account and given priority where possible.

The Research Fellow is also expected to create research and collaborative links as needed with other areas of HRE as well as ESA's Science Directorate and ESA's Technical Directorate in order to profit from existing expertise and for exploiting synergies within ESA's various activity areas.

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
General 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 completion of a PhD in a related technical or scientific discipline. Preference will be given to applications submitted by candidates within five years of receiving their PhD.

Additional requirements

Candidates are expected to have research experience in at least one of the below areas, with a demonstrated interest in others:

- data analysis techniques, space instrumentation, data calibration, space data archiving;
- space instrument operations and related planning & optimization;
- multispectral imaging / fluorescence investigations;
- lunar soil mechanics and sample handling;
- volatile preservation / volatile loss in vacuum environments, thermal analysis.

Experience in multidisciplinary analysis skills, instrument operations planning, instrument data processing / calibration / archiving, scientific collaboration, documentation and publication etc. will be considered an asset.

Applicants shall also demonstrate flexibility to adjust their program of work to the PROSPECT project's needs.

Applicants are required to be able to demonstrate an ability to work in a multidisciplinary environment as part of diverse teams. A proactive approach to identifying opportunities, problem solving and communicating is 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

The Research Fellow in the Lunar Lander Team is embedded in an ESA project team which is working under tight constraints to achieve the goal of delivering a fully functional and space qualified payload on time and in line with available budget to the Russian Luna-27 project. This means that

1. The RF's work is performed in an international and highly interactive environment where ESA, industry, and academia collaborate under schedule constraints to achieve a common goal. For directly project related tasks, schedule constraints may apply to the RF's work.
2. Project activities are taking place in several locations in Europe, and occasionally in Russia.
3. The RF is expected to propose and conduct independent Research in support of PROSPECT related science topics. A time sharing of about 50% of time spent on independent research and 50% of time spent on directly project related activities is envisaged.
4. In general, no laboratory facilities are available in the Lunar Lander Team. On a case by case basis, when supported by the project needs, the use of some lab facility on the premises may be enabled by the PROSPECT project. Any lab / facility access needed for the proposed research must be clearly specified in the research proposal.

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 31 January 2019.

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, and the United Kingdom. Nationals from Slovenia, as an Associate Member, or Canada as a Cooperating State, can apply as well as those from Bulgaria, Cyprus, Latvia, Lithuania and 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