Job Related Information

This document includes information about the role for which you are applying and the information you will need to provide with your application.

1. Role Details

<table>
<thead>
<tr>
<th>Vacancy reference</th>
<th>13939</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job title:</td>
<td>Spaceflight Operations Project Officer (NOMAD)</td>
</tr>
<tr>
<td>Reports to:</td>
<td>Senior Lecturer</td>
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<tr>
<td>Salary:</td>
<td>£32,548 - £38,833</td>
</tr>
<tr>
<td>Terms and conditions:</td>
<td>Academic Related</td>
</tr>
<tr>
<td>Grade</td>
<td>7</td>
</tr>
<tr>
<td>Duration of post:</td>
<td>Temporary contract until 31 March 2020</td>
</tr>
<tr>
<td>Working hours:</td>
<td>37 hours per week</td>
</tr>
<tr>
<td>Location:</td>
<td>Milton Keynes</td>
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<tr>
<td>Closing date:</td>
<td>Noon on 21 December 2017</td>
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<tr>
<td>Type of application form accepted:</td>
<td>Short</td>
</tr>
<tr>
<td>Number of referees required:</td>
<td>Three</td>
</tr>
<tr>
<td>Unit recruitment contact:</td>
<td>Fiona McGavin</td>
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</table>
2. Summary of duties

The School of Physical Sciences is a world-leader in the development of laboratory instrumentation for solar system sample analysis and environmental simulation. Dr. Patel is PI on the UKSA post-launch support grant involving activities relevant to the UVIS channel in the NOMAD instrument for the ExoMars Trace Gas Orbiter in 2016. This post relates to the design, development and operation/maintenance of specialist equipment and models that will be used to investigate operating issues relating to the NOMAD instrument.

The post holder will work sometimes on their own initiative, and sometimes as part of a team, to design, develop and operate tests using new and existing equipment/theoretical models to meet the requirements of the research applications.

**Main Duties**

To assist in implementing the successful operation of the NOMAD instrument by:
- Determining the optimum instrument configuration to achieve the overall science objectives
- Configuring telecommands for uplink to the Trace Gas Orbiter to implement observations
- Processing data returned from the NOMAD instrument for analysis by the science team
- Analysing the predicted spacecraft orbit over the mission lifetime
- Planning future observation requirements

To design theoretical models of operation of the NOMAD instrument by:
- Assessing and judging the scientific and engineering challenges
- Applying specialist scientific and/or technical knowledge to propose and document solutions to the challenges
- Iterating proposed designs with research team members in order to arrive at an optimal design solution
- Applying the relevant design standards and working practices to designs.

To validate the operation of NOMAD models by:
- Devising and conducting appropriate experiments and tests
- Analysing and presenting the data obtained
- Refining and optimising the operational procedure
- Iterating findings from previous investigations and performing revised tests as appropriate
- Prepare test results reports.

**Other Duties**

All staff are expected to:
- Co-operate with the Open University in ensuring as far as is necessary, that Statutory Requirements, Codes of Practice, University Policies and School Health and Safety arrangements are complied with.
- Have a strong commitment to the principles and practice of equality and diversity.
- Attend appropriate staff development events

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2. Person specification

**Requirements  (E = Essential/ D = Desirable)**

<table>
<thead>
<tr>
<th>Education, qualifications and training</th>
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<tbody>
<tr>
<td>Educated to at least degree level in a physical sciences or computing subject, or other closely related discipline/equivalent experience</td>
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</table>

**Knowledge, work and other relevant experience**
Essential:
- Excellent knowledge and experience of numerical coding languages
- Experience in processing and manipulating large data sets
- Demonstrated logical and scientifically rigorous approach to work
- Competent in the use of Microsoft Office software (Outlook, Word, Excel, PowerPoint) or equivalent packages

Desirable:
- Experience in the use of Python, Fortran, IDL, MATLAB or equivalent programming tools
- Knowledge of use of SPICE kernels for orbit analysis
- Knowledge of optical spectrometer operating principles
- Knowledge of the operation and characterisation of CCD detectors
- Experience of telecommand generation and operations procedures for spaceflight instruments
- Experience in PDS (or equivalent) data archiving
- Experience in processing spaceflight instrument data for analysis

Personal abilities and qualities

Essential:
- A “can do” attitude and the ability/enthusiasm necessary to work in a unique environment
- Demonstrated ability to plan and prioritize own workload and delivery in a timely manner
- Demonstrated ability to solve problems and come up with new ideas
- Demonstrated ability to communicate and work with colleagues from a wide range of functional backgrounds (e.g. engineering, science, management, technical, non-technical, etc.)
- Demonstrated ability to work both as part of a team and on own initiative as appropriate

3. Role specific requirements e.g. Shift working

The role will require travel to Europe for meetings.

5. About the unit/department

Faculty of Science, Technology, Engineering & Mathematics
The Faculty of Science, Technology, Engineering and Mathematics (STEM) is comprised:

- School of Computing & Communications
- School of Environment, Earth & Ecosystem Sciences
- School of Engineering & Innovation
- School of Life, Health & Chemical Sciences
- School of Mathematics & Statistics
- School of Physical Sciences
- Knowledge Media Institute
- Deanery including teams supporting Curriculum, Research and Enterprise, Laboratory Infrastructure and Faculty Administration

“We aspire to be world leaders in inclusive, innovative and high impact STEM teaching and research, equipping learners, employers and society with the capabilities to meet tomorrow’s challenges”
The Faculty of STEM consists of 700 staff and 1,800 Associate Lecturers. The Faculty delivers over 185 modules across undergraduate and postgraduate curriculum, supporting nearly 19,000 students (full time equivalents) which is 29% of the OU total.

The Faculty generates more research income (circa £17M) than any other Faculty in the University, supported by a comprehensive laboratory infrastructure.

We are proud of our distinctive values and capabilities underpinning our aspiration:

We are inclusive:
- We transform people’s lives, ensuring STEM education is openly accessible to many thousands of students from diverse backgrounds – our students express high satisfaction with their study experience
- We engage the public in exciting citizen science and engineering, including through free open educational resources, multi-platform broadcasting, outreach to inspire the next generation and with programmes to encourage more women into STEM

We are highly innovative:
- We are at the forefront of innovative developments in teaching practical science and engineering at a distance, through simulated and remote access laboratories and practical experimentation
- Our high quality teaching and curriculum are informed by world-leading research, strong links with professional bodies and communities of practitioners, as well as by scholarship focused on continuously improving our STEM pedagogy

We deliver significant social and economic impact:
- We provide STEM higher education at a scale and reach unsurpassed in the UK, with a sizeable international reach and further growth potential
- We inject transferable STEM skills and knowledge direct into the workplace for immediate employee and employer benefit, as students combine study while working
- The employability value of our courses is underpinned by accreditation from leading STEM Professional Bodies and Learned Societies, as well as partnerships and sponsorship with leading employers
- Our high quality, applied and academically relevant teaching and research addresses real-world issues, delivering impact for industry and society, including addressing pressing STEM skill shortages across the UK

School of Physical Sciences

The School of Physical Sciences is a lively and innovative community of approximately 85 academic and research staff and 70 PhD students, mostly based in Milton Keynes. Our curriculum is supported by associate lecturer staff based all over the UK and Ireland whilst each year our physics, astronomy and planetary sciences and interdisciplinary science modules are studied by thousands of students all over the world.

Our research covers a wide range of subjects, broadly aligned with the research disciplines of
- Astronomy
- Physics
- Planetary and Space Sciences
- Space Instrumentation
- Physics Education

We have an extensive suite of world class facilities and laboratories, including advanced analytical instrumentation, experimental and simulation chambers and instrument development laboratories, complemented by regular use of large-scale facilities such as synchrotrons (e.g. Diamond) and a wide array of ground based and space-based telescopes (e.g. VLT, Hubble) as well as our own robotic telescopes in Tenerife. We play a major role in many well-known space missions such as Rosetta and ExoMars. We also apply much of
our spaceflight and laboratory expertise to a wide array of real world problems including medical and environmental applications.

School members also contribute to the Open University’s teaching on a large range of modules and we have been at the forefront of many innovations in distance education, including the OpenScience Lab and the OpenScience Observatories. We are members of SEPnet, the South East Physics Network. Our commitment to equality and diversity has been recognised by the award of “Juno Champion” status by the Institute of Physics and an Athena SWAN Silver Award.

We currently offer undergraduate qualifications in Natural Sciences (with a physics route and an astronomy and planetary science route), with a strand which carries Institute of Physics accreditation, and in Mathematics and Physics. We also offer an MSc in Space Science and Technology. We are in the process of refreshing the curriculum at Stage 3, and are drawing up plans for adding an integrated MPhys to our portfolio, including topics in physics, astronomy, planetary and space science.

Priority Research Areas in the School of Physical Sciences

Astronomy

- The Compositional Universe: exploiting the spectroscopic discovery space from major facilities and projects including ALMA, JWST, SPICA, SOFIA and IRAM/NOEMA, E-ELT, VLT, SKA, JCMT, SALT, LOFAR, ELIPS, Herschel, SDSS-IV, Euclid etc., to study galactic star formation, evaporating exoplanets, and the physics of galaxies in the distant universe. We will further develop our laboratory/observational astrochemistry research to focus on the development of molecular compositional diagnostics.

- The Time-Domain Universe: exploiting the discovery space of new and future telescopes e.g. Gaia, LIGO, PLATO 2.0, TWINKLE, VLT and LSST, in studies such as galactic and extragalactic stellar populations using leading follow-up facilities such as SALT, or (as part of a wider follow-up network) our robotic telescopes, with a focus on key processes such as stellar binarity.

Physics

- Biomedical physics: to understand physical phenomena involved in conditions such as cancer and cardiovascular diseases and their treatment through experimental and theoretical investigations of a range of approaches such as electron-driven processes in radiation treatment and imaging, use of nanoparticles for cancer therapy and plasma sources for biomedical purposes.

- Quantum correlated systems: theoretical and experimental study of quantum correlations in atomic, molecular and condensed matter systems, and the development of practical applications such as quantum enhanced devices and the functionalisation of materials, as well as the development of multi-purpose software to treat electronic continua.

- Engineering physics: applied plasma research aimed at developing novel functional materials, understanding electron induced processes in nanofabrication and the development of plasma-driven techniques for advanced materials applications.

Planetary and Space Science

- Application of advanced analytical techniques, laboratory simulation, remote observation and modelling to investigate the key processes involved in the formation and evolution of the Solar System and the planetary bodies it contains, including the search for habitable environments and the presence of life.

- Maintain and build high scientific credibility for our analytical expertise by exploiting the performance of existing instruments and updating the analytical infrastructure in order to ensure leading involvement in upcoming sample-return missions, and maintain access to the most important planetary samples. Particular strengths are in the measurement of light-stable isotopes using conventional mass spectrometry and in-situ analysis of samples.

- Development and expansion of our expertise in planetary environments using modelling, remote sensing and the use of field analogues and simulation facilities on Earth, and secure further leading science team involvements in future planetary space missions.
Space Instrumentation

- Development of imaging sensors and instruments for space applications, with expertise in a range of wavelengths from IR to X-ray and the study of the effects of radiation damage, in order to secure involvement in future space missions.
- Development of miniaturized analytical instrument systems for planetary exploration missions, particularly for the measurement of volatiles, organic materials and their light stable isotope composition, and securing leading involvement in future planetary exploration missions.
- Knowledge exchange between the UK technology industry and academia, utilising the technologies and expertise in detectors and mass spectrometer systems to provide commercial products and solutions.

Physics Education Research

- Remote and virtual experimentation
- Concept inventories
- Interactive online assessment
- Demographic differences in achievement

6. How to obtain more information about the role or application process

If you would like to discuss the particulars of this role before making an application please contact Dr Manish Patel on +44 (0)1908 659598 or email: manish.patel@open.ac.uk.

If you have any questions regarding the application process please contact Fiona McGavin on +44 (0)1908 858110 or email: STEM-Recruitment@open.ac.uk.

7. The application process and where to send completed applications

| Your application should contain: | • Short application form  
| | • CV  
| | • Covering letter detailing how you meet the person specification  
| Please ensure that your application reaches the University by: | Noon on 21 December 2017  
| E-mail your application to: | STEM-Recruitment@open.ac.uk  
| Or post it to Name/Job title: | Fiona McGavin, Staffing Adviser  
| Department/Unit: | Deanery, Faculty of Science, Technology, Engineering & Mathematics  
| Address: | The Open University, Walton Hall, Milton Keynes, MK7 6AA  

8. Selection process and date of interview

The interview panel will be chaired by: Dr Manish Patel
<table>
<thead>
<tr>
<th>The other members of the interview panel will include:</th>
<th>To be confirmed</th>
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<tbody>
<tr>
<td>The interviews will take place on:</td>
<td>9 January 2018</td>
</tr>
<tr>
<td>The selection process for this post will include</td>
<td>A formal interview</td>
</tr>
</tbody>
</table>

We will let you know as soon as possible after the closing date whether you have been shortlisted for interview. Further details on the selection process will also be sent to shortlisted candidates.

Applications received after the closing date will not be accepted.