UNIVERSITY OF LEICESTER

Job Summary

Job Title: Research Associate (Planet Mercury)
Grade: 7
Salary: £39,906 to £46,049 per annum, pro-rata if part-time
Department: Physics and Astronomy
Hours/Contract: Full-time or job share, fixed term contract for 36 months, with the possibility for extension, subject to funding.
Reference: 13193

Role Purpose

To conduct postdoctoral research to achieve the aims on the STFC-funded Large Grant "Planet Mercury: Origins, Evolution, and Interactions" consortium with University of Leicester, Open University and Imperial College. The main aim of this role is to exploit new data from the Mercury X-ray Imaging Spectrometer with the PI group at the University of Leicester. The successful candidate will help to characterize the nature of the nightside X-ray emissions and magnetosphere-surface interaction at Mercury using new spacecraft data from the ESA/JAXA BepiColombo mission. Additionally, there is potential for an accompanying experimental programme within our BepiColombo laboratory.

The candidate will work collaboratively and independently as part of the local research group, the "Planet Mercury" consortium, and the international MIXS team, to achieve defined milestones and produce high quality research outputs. The role will be based at Space Park Leicester, and there is an expectation that the role is predominantly carried out in person with some flexibility for working from home periodically.

Main Duties and Responsibilities

Research

- Responsible for independent and collaborative research in the field of space plasma physics and planetary magnetosphere-surface coupling, resulting in significant contributions to peer-reviewed journal papers (often as lead author).
- To lead in the visualisation and interpretation of data from the MIXS instrument on board BepiColombo, principally as part of the PI-led team based at the University of Leicester.
- To use data analysis techniques along with existing and future magnetic field models of Mercury to gain an understanding of how the magnetosphere couples with Mercury's surface.
- To interpret the MIXS nightside dataset (predominantly) to gain insight into the physical mechanisms driving the nightside X-ray emissions, determining factors which affect their morphology and their variability.
- To develop Python-based data processing tools for the visualisation of the MIXS data, and any other complementary datasets, and to support these via Github for the benefit of the community.
- Represent the research group, STFC Large grant consortium, and MIXS team by disseminating results at national and international conferences and meetings, and to interact with all collaborators on the project, including national and international partners.
- Contribute to the overall BepiColombo science goals by collaborating with other instrument teams (e.g. SIXS, MPO-MAG, SERENA, PHEBUS on ESA MPO, and e.g. MMO-MGF, MPPE and PWI on JAXA Mio)

Athena Swan Silver Award · Race Equality Charter Bronze Award · disability confident LEADER · LGBT+ 2020 - 2021 AWARDEE ORGANISATION · Stonewall DIVERSITY CHAMPIONS

- Contribute to the direction of the research programme which is consistent with reaching the research goals of the STFC Large grant. This will include adapting research priorities in line with the progression of the overall mission.
- Providing support for UG and PG student research projects relating to BepiColombo MIXS.

Professional Development

- Engage in work that supports your own professional development, including, for example, seeking independent funding opportunities.
- Providing mentoring and coaching to Early Career Researchers and research students.

Impact and Knowledge Exchange

- Network and contribute to the maintaining and furthering of the wider research programme and research area
- To collaborate effectively with people external to the University
- To engage positively and pro-actively in research impact

Leadership and Citizenship

- The appointee will be encouraged to engage with outreach and Open Day activities at the University, Space Park Leicester, and National Space Centre and beyond
- Pro-actively build networks and collaborations.

Internal and External Relationships

- Work closely with collaborators within the Planetary Science and Space Projects and Instrumentation Groups, School of Physics and Astronomy, Institute for Space and Space Park Leicester.
- Establish strong partnerships with key external members of the consortium and with the international MIXS science team.
- Liaise with external collaborators on the BepiColombo mission, including those in Europe, Japan, and in the USA.
- Coordinate research and work closely with the Principal Investigator, Co-Is, Team Associates and other collaborators on the project.
- Contribute to the supervision of graduate students and undergraduate students working on related projects.

Planning and Organising

You will be required to effectively manage your time to plan your research activity and to deliver on the priorities of the project:

- Prioritise tasks within agreed work schedules;
- Plan for specific aspects of research incorporating issues such as deadlines, project milestones and overall research aims;
- Adapt daily and weekly plans to accommodate new developments and be flexible to

the changing priorities of the research project;

Qualifications, Knowledge and Experience

Essential

- To hold a PhD in a research area relevant to planetary magnetosphere physics and/or space plasma physics*
- A good honours degree in a relevant discipline e.g. Physics, Astrophysics, Space Science*
- Evidence of productive research experience and data analysis skills in planetary magnetosphere physics*
- Evidence of experience in presenting results at national and international meetings*
- To have demonstrated the ability to publish relevant and impactful peer-reviewed papers in international literature at a rate commensurate to career stage*
- Evidence of proven data handling capability using (ideally) Python or other coding languages*

Desirable

- Demonstrate an understanding of planetary origins, evolution, and interactions
- Laboratory experience of preparing and analysing planetary surface analogues
- Experience of data analysis from previous space missions*

Skills, Abilities and Competencies

Essential

- Capability to develop innovative approaches to visualization and interpretation of remote sensing observations of planets
- High level of proficiency in English, sufficient to undertake research utilising English Language materials and to communicate effectively with staff and students
- Evidence of good time management, organisational and problem-solving skills
- Willingness to travel nationally and internationally for research meetings and data dissemination to collaborators*
- Evidence of the ability to work both independently and as part of a wider research team

Desirable

- Ability to develop novel ideas and to promote own research agenda
- Flexible and adaptable approach to work over a range of research duties
- Willingness to foster new collaborations with national and international partners

Criteria to be used in shortlisting candidates for interview

UNIVERSITY OF LEICESTER

Job Summary

Reason for Fixed Term Contract

The reason for the fixed term contract is stated in section 1.9 in the summary of contractual terms in your contract of employment.

Criminal Declaration

If you become an employee, you must inform your manager immediately, in writing, if you are the subject of any current or future police investigations/legal proceedings, which could result in a criminal offence, conviction, caution, bind-over or charges, or warnings.

Supporting University Activities

As a University of Leicester citizen, you are encouraged to support key university activities such as clearing, graduation ceremonies, student registration and recruitment open days. We encourage all staff as citizens to work flexibly across the University if required. If supporting these activities is likely to affect your workload, please speak to your line manager in the first instance

University Values

Inclusive - We are diverse in our makeup and united in ambition. Our diversity is our strength and makes our community stronger.

Inspiring - We are passionate about inspiring individuals to succeed and realise their ambitions. We challenge our community to think differently, to get involved, and to constantly embrace new ideas.

Impactful - As Citizens of Change we will generate new ideas which deliver impact and empower our community

Freedom of Speech

The University is committed to upholding freedom of speech and academic freedom within the law throughout our recruitment processes. We ensure that all candidates are considered based on merit and suitability for the role, without regard to their lawful viewpoints or the expression of challenging or controversial ideas. Our recruitment policies and practices are designed to protect applicants from discrimination or adverse treatment on the basis of their opinions, and to foster an environment where open debate and diverse perspectives are valued as essential to our academic mission.

Equity and Diversity

We believe that equity, diversity and inclusion is integral to a successful modern workplace. By developing and implementing policies and systems that challenge stereotypes across all aspects of our work, we have a culture that recognises and values the diverse contributions of our staff which benefits everyone. Our strong values of inclusivity and equality support our efforts to attract a diverse range of high quality staff and students, and identify our University as a progressive and innovative workplace that mainstreams equality, diversity and inclusion.

Athena Swan Silver Award
Race Equality Charter Bronze Award
disability confident LEADER
LGBT+ 2020 - 2021 AWARDEE ORGANISATION
Stonewall DIVERSITY CHAMPIONS