



Candidate Information

Position:	Research Fellow
School/Department:	Astrophysics Research Ctre
Reference:	23/111120
Closing Date:	Monday 7 August 2023
Salary:	£36,333 - £41,931 per annum
Anticipated Interview Date:	Thursday 24 August 2023
Duration:	Fixed term for 12 months or available until 31 August 2024, whichever is sooner

JOB PURPOSE:

To undertake research in solar physics within the Astrophysics Research Centre of the School of Mathematics and Physics. To be an active member assisting in the development of research proposals and the planning and delivery of the research activity so that the overall research objectives are met.

MAJOR DUTIES:

1. Develop, test, and validate computer algorithms for the analysis of faint, high-frequency signals from total solar eclipse and other solar observations.
2. Carry out analyses, critical evaluations, and interpretations of the acquired observational datasets.
3. Present regular progress reports on research to members of the research group and to relevant national and international conferences.
4. Prepare, often in consultation with supervisor, material for publication and publish the results in the refereed literature.
5. Carry out routine administrative tasks associated with the research project/s to ensure that project/s are completed on time and within budget. These might include organisation of project meetings and documentation, financial control, risk assessment of research activities.
6. Help supervise (as necessary) and support postgraduate and undergraduate students working in this area.
7. Read academic papers, journals, and textbooks to keep abreast of developments.

ESSENTIAL CRITERIA:

1. A PhD in Solar Physics or a closely-related discipline either awarded or submitted by the time of taking up the post.
2. Specifics relevant research experience including experience in either:
 - the development of magneto-hydrodynamic wave theory and/or the modelling of the solar atmosphere
 - the reduction, analysis, and interpretation of solar observations from satellite-borne or ground-based instruments, and/or
 - the development of computer algorithms to detect/isolate/track/quantify small-scale oscillations in the solar atmosphere.
3. Experience with computing coding environments, e.g., Python, IDL.
4. A number of high-quality refereed publications in the research field, commensurate with stage of career.
5. Ability to contribute to method improvement where required.
6. Ability to interact with research colleagues and support staff.
7. Ability to analyse and communicate effectively.
8. Demonstrable intellectual ability.
9. Must be prepared to spend considerable time away from home due to observing and/or collaborative commitments.

DESIRABLE CRITERIA:

1. Experience in the analysis and interpretation of wave phenomena manifesting in observations/simulations of the Sun's atmosphere.
2. Experience in the unification of magneto-hydrodynamic wave theory with numerical modelling techniques which can be tested using high-resolution ground- and space-based solar datasets.

3. Leadership role in the development of computer algorithms to better reveal small-scale oscillations in the Sun's atmosphere.
4. First-author refereed publications, commensurate with career stage.