Candidate Information

Position: Transients Research Fellow
School/Department: School of Mathematics and Physics
Reference: 25/112598
Closing Date: Monday 16 June 2025
Salary: £39,922 per annum
Anticipated Interview Date: Tuesday 15 July 2025
Duration: Fixed Term - Full Time; Available for 14 months

JOB PURPOSE:

To improve our NEEDLE machine learning code for classifying astrophysical transients, and manage spectroscopic follow-up.

MAJOR DUTIES:

1. Adapt our NEEDLE code to process data from the Rubin Observatory Legacy Survey of Space and Time.
2. Interface with alert brokers (UK Lasair broker) to monitor candidates and trigger spectroscopic follow-up.
3. Manage the data flow, release public classifications, and monitor transients of interest.
4. Write publications and present findings at conferences and workshops.
5. Help supervise and support postgraduate and undergraduate students working in this area.
6. Read academic papers to keep up to date with developments in the field.
7. Carry out any other duties designated by a line manager and which fall within the general ambit of the post.
8. PLANNING AND ORGANISING:
   • Plan own day-to-day activity within the framework of the agreed research programme.
   • Contribute to the planning of research projects through proposals and publications etc.
9. RESOURCE MANAGEMENT RESPONSIBILITIES (e.g. finance, people, equipment, etc.):
   • Ensure research resources are used in an effective and efficient manner.
   • Provide guidance as required to support staff and any students who may be assisting with research.
10. INTERNAL AND EXTERNAL RELATIONSHIPS:
    • Liaise with research colleagues and support staff on routine matters.
    • Make internal and external contacts, particularly with European and US partners, to develop knowledge and understanding and form relationships that will ensure the success of the project.
    • Organise, attend and contribute to relevant meetings.

ESSENTIAL CRITERIA:

1. A PhD in astrophysics, awarded or with thesis submitted by the time of taking up the post.
2. Expertise in developing and training machine learning codes for astronomical data.
3. Experience with real-time transient spectroscopic classification.
4. Experience in triggering and analysing follow-up observations with large telescopes.
5. Programming in Python and standard astronomy software packages.
6. Ability to interact with research colleagues and support staff.
7. Ability to analyse and communicate effectively.
8. Demonstrate intellectual ability.
9. Supportive of students and colleagues.

DESIRABLE CRITERIA:

1. Expertise in using and developing the NEEDLE code.
2. Flexibility to travel for conferences / collaborative visits / data collection.