

THE UNIVERSITY OF MANCHESTER

PARTICULARS OF APPOINTMENT

FACULTY OF SCIENCE AND ENGINEERING

SCHOOL OF PHYSICS AND ASTRONOMY

JODRELL BANK CENTRE FOR ASTRONOMY

**RESEARCH ASSOCIATE IN PROBING STAR-FORMATION
AND ACCRETION THROUGH COSMIC TIME**

Vacancy ref: S&E-09473

Salary: Grade 6, £31,076 to £38,183 per annum

Hours: 1 FTE

Duration: Fixed term, 1 April 2017 until 31 March 2020

Location: Jodrell Bank Centre for Astrophysics, Cheshire

Responsible to: Dr Rob Beswick

Enquiries about the vacancy, shortlisting and interviews:

Name: Dr Rob Beswick

Email: robert.beswick@manchester.ac.uk

Name: Dr Tom Muxlow

Email: tom.muxlow@manchester.ac.uk

ROLE BACKGROUND

This is an opportunity for a Research Associate to join the Jodrell Bank Centre for Astrophysics (JBCA) group and is funded as part of the STFC Programme. This post is available immediately up until a end date of 31st March 2020.

The JBCA is the astronomical research centre of the University of Manchester and one of the largest astronomy and astrophysics groups in the UK. The group is world leader in radio astronomy-related research and technology development but also carries out research across the electromagnetic spectrum and in theoretical topics. The group has with strong involvement in existing and next-generation telescopes including the SKA, DES, LSST, ALMA, VLBI and e-MERLIN. It operates [e-MERLIN/VLBI](#), the UK's National Radio Astronomy Facility from the Jodrell Bank Observatory. JBCA also hosts the UK's ALMA regional centre and the International SKA Project Office, which alongside JBCA's e-MERLIN and VLBI activities make it the UK's prime centre for mm- and cm- interferometry.

In this role you will work with the JBCA group and their collaborators who study the properties of faint radio sources, both in the nearby Universe and at high redshift. Much of the research will be carried out at radio wavelengths and will focus on science delivery of the on-going e-MERLIN legacy programmes, e-MERGE, LeMMINGS and LIRGI. These programmes each enable high resolution and high sensitivity studies of both star-formation and accretion in galaxies and cover a wide range of redshift and environments and are providing a unique insight into microJansky radio sky which will be targeted by future SKA key-science-programmes (KSPs). You will be expected to play a leading role in the science delivery from these high profile e-MERLIN programmes and the use of these results to guide the development of SKA KSPs.

Overall Purpose of the Job

You will be required to undertake research related to the faint radio emission which will be revealed by deep e-MERLIN legacy programme observations. This emission arises from star-forming and accretion powered systems, both in nearby galaxies and galaxies in the distant Universe. Though focussing primarily on radio observations, you will be expected to make use of the extensive multi-wavelength data available in order to study star-formation and the evolution of such activity throughout the age of the Universe. You must have a PhD, or equivalent experience, in Astrophysics, ideally the majority of their doctoral research will be in the area of the star-formation and activity in galaxies.

Key Responsibilities, Accountabilities or Duties

- Develop research objectives and proposals for own or joint research, with the assistance of a mentor if required.
- Conduct individual and collaborative research projects.
- Write up research work for publication.
- Continually update knowledge and understanding in field or specialism.
- Translate knowledge of advances in the subject area into research activity.
- Deal with routine communication using a range of media.
- Communicate complex information, orally, in writing and electronically.
- Prepare proposals and applications to external bodies, e.g. for funding and contractual purposes.
- Communicate material of a specialist or highly technical nature.
- Liaise with colleagues and students.
- Build internal contacts and participate in internal networks for the exchange of information and to form relationships for future collaboration.
- Join external networks to share information and identify potential sources of funds.
- Manage own research and administrative activities, with guidance if required.
- Work with colleagues on joint projects, as required
- Collaborate with academic colleagues on areas of shared research interest.
- Attend and contribute to relevant meetings.
- Use new research techniques and methods.
- Use initiative and creativity to identify areas for research, develop new research methods and extend the research portfolio.
- Use creativity to analyse and interpret research data and draw conclusions on the outcomes.
- Contribute to collaborative decision making with colleagues in areas of research.
- Use research resources, laboratories and workshops as appropriate.
- Plan and manage own research activity in collaboration with others.

- Balance with help the competing pressures of research and administrative demands and deadlines.
- Be aware of the risks in the work environment and their potential impact on their own work and that of others.

PERSON SPECIFICATION

Essential Skills, Knowledge and Experience:

- A PhD (or equivalent research experience), submitted or obtained in Astrophysics with the majority of your doctoral research in the area of the star-formation and activity in galaxies.
- Have a strong interest astrophysical research, and be highly motivated to pursue it;
- Have experience in studies of the evolution of galaxies and/ or star formation;
- Be familiar with observational data analysis using up to date computer packages, and in particular radio interferometric data analysis;
- Excellent communication and interpersonal skills;
- Excellent time management and organisational skills;
- Ability to work independently and as part of a team;
- Have a willingness to travel both within the UK and internationally;
- Be expected be able to present research findings at collaboration meetings or conferences;
- Have a desire to pass on skills and knowledge to PhD, MSc and project students.
- Ability to present in both written and oral publications
- Ability to meet deadlines
- Strong journal publication record.
- The ability to evaluate complex data
- Ability to contribute to broader management and administrative processes.
- Ability to assess and organise resources
- Understand equal opportunity issues as they may impact on areas of research content.

Desirable Skills, Knowledge and Experience:

- Familiarity with radio synthesis techniques and experience with imaging software;
- Experience in exploiting multi-wavelength data.

Applications:

Applications should contain a CV, full publication list, and personal research statement. These should be added onto your application in the additional information and CV attachment sections. Please note the University of Manchester's jobsite (<http://www.manchester.ac.uk/connect/jobs/>) can only accept one attachment per application. Therefore, please ensure any documents you are attaching are merged into one composite document.

Three letters of reference are requested which may be sent separately by email to Dr Rob Beswick (robert.beswick@manchester.ac.uk).