ARMAGH OBSERVATORY & PLANETARIUM
EXPLORING THE COSMOS SINCE 1790

Armagh Observatory and Planetarium

POSTDOCTORAL RESEARCH ASSISTANT

Extragalactic Astronomy

Candidate Information

IOP | Institute of Physics
Juno Practitioner

1. Background Information

Overview

Armagh Observatory was established in 1790 by Archbishop Richard Robinson as part of his dream to see a university in the City of Armagh. It is the oldest scientific institution in Northern Ireland and the longest continuously operating astronomical research institute in the United Kingdom and Ireland. The Armagh Planetarium was founded in 1968 by Dr Eric Lindsay, the seventh Director of the Armagh Observatory. It is the oldest operating Planetarium in the UK and Ireland and has been the public face of astronomy for the past 50 years. The Observatory and Planetarium are located within approximately 14 acres of attractive, landscaped grounds, known as the Armagh Astropark, in close proximity to Armagh City. Together, the Armagh Observatory and Planetarium (AOP) deliver internationally recognised research in astronomy and related sciences and vibrant educational and outreach programmes for all ages.

In April 2016, the Armagh Observatory and the Armagh Planetarium became one organisation, registered with the Charity Commission. There is a staff complement of 25, including scientific, educational and administrative personnel. Currently there are 6 tenured astronomers in addition to the Director, and a dozen post-doctoral fellows and PhD students.

There is an active visitors programme, and each year AOP hosts several academic visitors.

The Mission of the Armagh Observatory and Planetarium is:

"To advance the knowledge and understanding of astronomy and related sciences through interactive engagement and the execution, promotion and dissemination of astronomical research nationally and internationally, in order to enrich the intellectual, economic, social and cultural life of all members of the community."

Research and Observation

The principal function of the Observatory is to undertake original research of a world-class academic standard that broadens and expands our understanding of astronomy and related sciences. Important secondary functions include the organisation's responsibilities to: promote, preserve and widen access to the heritage of astronomy at Armagh; maintain the continuity and precision of the unique 220-year meteorological record at Armagh; and pursue a vibrant programme of Science in the Community in support of the Northern Ireland Executive's Science, Technology, Engineering and Mathematics (STEM) Strategy and the strategic goals of the Department for Communities (DfC).

Front-line astronomical research is carried in several key areas of astrophysics, including: Solar Physics, the Solar System, exo-planets, stars, the Galaxy and external galaxies. Staff regularly obtain telescope time on national and international facilities such as the ESO Very Large Telescope, the Southern African Large Telescope, various spacecraft missions (such as SoHO, IRIS, SDO, Hinode, Stereo, Swift, XMM-Newton, and the Hubble Space Telescope). The Observatory participate in several international projects such as GOTO, SALT, I-LOFAR and CTA.

Heritage

The AOP has an important responsibility to maintain and preserve the fabric of the historic buildings, the continuity and precision of the meteorological archive, the library, historic books and other archives, and the collection of scientific instruments and artefacts built up over more than 225 years of continuous astronomical activity in Armagh. The main historic buildings of the Observatory have unique architectural features and house one of the most valuable collections of scientific books, instruments and archives in Northern Ireland. The organisation's heritage policy is to progressively restore the historic buildings, scientific instruments, and historic books and other archives in its possession, placing the restored material where possible on display or close to its original location in its Georgian Grade A-listed Observatory building.

Education and Outreach

In addition to research activities and in line with ministerial priorities, AOP staff and students participate in a vibrant and wide-ranging programme of Science in the Community through lectures, popular astronomy articles, supervision of schoolwork-experience students and undergraduates, and interviews with the press, radio and television. The AOP Demesne, Grounds and Astropark, have also been developed to include scale models of the Solar System and the Universe, two sundials, two historic telescopes, as well as telescope domes and a Human Orrery.

The principal function of the Planetarium is to promote public understanding of astronomy and science through its on-site educational programme of digital theatre shows, exhibits and interactive activities for schools and the wider public. The Planetarium's educational programme has been developed to complement the core curriculum and, in particular, to support the Northern Ireland Executive's Science, Technology, Engineering and Mathematics (STEM) Strategy.

Further information

Further information on the Armagh Observatory and Planetarium can be found on our website, www.armagh.space.

2. Job Description

Job Title: **Postdoctoral Research Assistant**

This is a 2-year fixed-term position funded by a new applicant scheme consolidated grant to the Armagh Observatory and Planetarium (AOP) from the Science and Technology Facilities Council (STFC).

Overview of the Post

The Postdoctoral Research Assistant will be responsible for pursuing research within the remit of the Fornax3D MUSE integral-field spectroscopic survey of galaxies within the virial radius of the Fornax Cluster (http://www.na.astro.it/Fornax3D). Goals may include the characterisation of the stellar age and chemistry distribution of the embedded stellar disk or stellar halos of early-type galaxies, the reconstruction of the star-formation history of late-type galaxies in Fornax, or the interpretation of such and other observational results in light of predictions from cosmological simulations. As such, experience with integral-field spectroscopic data, the modelling of unresolved stellar population or in the analysis of numerical simulations will be desirable.

Location

The Post Holder will be based at the Armagh Observatory and Planetarium, which is located at College Hill, Armagh, Northern Ireland, BT61 9DB.

Reporting

The Post Holder will report to AOP Head of Research Dr Marc Sarzi.

Salary

Starting salary will be GBP £31,866 with standardised yearly increments

Hours of Work

This is a full-time post. Flexible working arrangements are available. In addition, on occasion there will be a requirement to work on evenings, weekends and public holidays.

Starting Date

The post will start no later than September 2020.

Holidays

The Post Holder will have an annual leave allowance of 30 days, plus 11 public and privilege holidays.

Pensions

The Post Holder is entitled to join the Northern Ireland Local Government Officers' Superannuation Scheme. Full details available at www.nilgosc.org.uk.

Referees

It is the responsibility of the applicant to arrange for letters of reference to be submitted by three individuals (referees) familiar with their scientific abilities directly to **HR@armagh.ac.uk**. These letters MUST be received by the application deadline **Friday 13 March 2020 @ 4pm.**

Probation

Confirmation of your appointment will be dependent upon the satisfactory completion of a probationary period of 6 months. If your performance, conduct or attendance during this period is not satisfactory your appointment may be terminated. All appointees will be expected to demonstrate a track record of effective service within this period.

Further Information

Applicants wishing to learn more about the post before deciding may contact Lisa O'Neill (lisa.oneill@armagh.ac.uk) for employment related issues, or Dr Marc Sarzi (marc.sarzi@armagh.ac.uk) for astronomy related issues.

3. Key Tasks and Responsibilities

Research

- Carry out observational or theoretical research contributing to the goals of the Fornax3D survey.
- Write up research results as papers for publication in major refereed journals.
- Attend and present relevant research at appropriate workshops and conferences as the budget allows.

Miscellaneous Duties

- Play a full part in the academic life of the Observatory and Planetarium, including participation in discussion meetings, seminars and outreach events.
- Carry out other duties not specified but within the general scope of the post and capabilities of the post holder, as determined by the Line Manager or the Director.

4. Eligibility Criteria

JOB TITLE: Postdoctoral Research Assistant

Education/Qualification	
Essential	Desirable
• By the starting date, a PhD (or equivalent degree) in astronomy, astrophysics, or a related science.	• A thesis in extra-galactic astronomy, either from an observational or theoretical perspective.
Experience	
Essential	Desirable
• Refereed papers in major journals (e.g. ApJ, A&A, MNRAS, Science, Nature). • Experience in delivering talks at international conferences and workshops.	• At least 1 year of experience in either the use of integral field data, the analysis of unresolved stellar population or in the interpretation of extragalactic observations based on numerical simulations.
Skills, Abilities and Knowledge	
Essential	Desirable
• Fluency in one or more high-level programming languages (e.g. Fortran, Python, etc.). • Competence in one or more graphical or text-processing languages (e.g. LaTeX, IDL, etc). • Good written and oral communication skills. • Self-motivated and able to work without much supervision.	• Familiarity with multi-processor computing. • Familiarity with stellar-dynamical modelling. • Familiarity theory of galaxy formation and the role of galactic environment.

Shortlisting Criteria

In addition to the above qualifications and experience, AOP reserves the right to shortlist only those candidates who satisfy one or more of the desirable criteria. Furthermore, particular attention would be given to the candidate research plan and how this would fit within the scope of the Fornax3D project and complement other research activities at AOP.

5. Additional Information

Postdoctoral Research Assistant

Enquiries

Enquires about the position can be directed to Dr Marc Sarzi:
marc.sarzi@armagh.ac.uk

Applications

Applicants should submit a single PDF file that includes:

- letter of motivation (maximum one page)
- a curriculum vitae (with a list of publications and presentations), and
- statement of research interests (maximum of two pages).

To hr@armagh.ac.uk by **4pm on Friday 13th March 2020.** Applicants should also arrange for 3 letters of recommendation to be delivered to the same email address by the same deadline.

Short-listing and Interview Date

It is envisaged that interviews (most likely by Skype) will take place in late March 2020.

Pre-Employment Checks

All offers of employment will be conditional, with the offer being subject to the candidate's relevant pre-employment checks being returned satisfactorily:

- Proof of identity and entitlement to work in Northern Ireland;
- Proof of relevant PhD qualification*;
- Three references.

*** By the date the post is taken up, either a PhD certificate, or an assurance by the PhD awarding University that the paperwork is just a formality, i.e. that all exams have been completed.**