Armagh Observatory and Planetarium

Öpik Fellowship

Candidate Booklet
Thank you for your interest in the Öpik Fellowship at the Armagh Observatory and Planetarium (AOP).

AOP is seeking to appoint an individual on an upward career trajectory and with an outstanding research record, who is looking to establish a unique research area that would contribute to, or complement, the ongoing research at AOP.

This is a unique opportunity to carry out independent research in one of the longest continuously operating astronomical research institutes in the world (a recognised leader in several specialist fields) and one of the world’s most advanced planetaria. The Armagh Observatory and Planetarium delivers internationally-recognised research in astronomy and related sciences and vibrant educational and outreach programmes for all ages. Its research staff work on a range of topics, from the study of our Sun and Solar System to distant galaxies, in keeping in the varied nature of the research legacy of Ernst Öpik during his career in Armagh.

The successful candidate will be expected to carry out original and significant research at international research quality standards in any field related to astrophysics, including theory, observations, simulations and instrumentation, to regularly publish this research in major refereed journals and to present it at international workshops and meetings. The Öpik Fellow will also be expected to effectively communicate his or her research results to the general public and to contribute to the broader public engagement and outreach functions of AOP. Finally, the Öpik Fellow will also be welcome to contribute to the supervision and training of PhD students at AOP.

The Candidate Information pack provides information about the Armagh Observatory and Planetarium, the responsibilities of the Öpik Fellow, the person specification and the selection process. Further information can also be found on our website [www.armagh.space](http://www.armagh.space).

If you would like further information before making your application, please contact HR@armagh.ac.uk, who will endeavour to answer any queries you may have.

As a Juno Practitioner, AOP embraces equality and welcomes applications from women, black and minority ethnic candidates, and members of other groups that are under-represented in physics.

**PROFESSOR MICHAEL BURTON**  
Director & Chief Executive  
Armagh Observatory and Planetarium
1. OVERVIEW

The Armagh Observatory was established in 1790 by Archbishop Richard Robinson as part of his ambition 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 longest running Planetarium in the UK and Ireland and has been the public face of astronomy for the past 50 years in Northern Ireland. The Observatory and Planetarium are located within approximately 14 acres of attractive, landscaped grounds, known as the Armagh Astropark, near 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. Previously AOP had operated as two distinct institutions within a single statutory corporation. AOP operates under the direction of a recently appointed Director, Professor Michael Burton. There is a staff complement of 25, including scientific, educational and administrative personnel. Currently there are five tenured astronomers and two PDRAs in addition to the Head of Research, the Director and ten PhD students.

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

The Vision of Armagh Observatory and Planetarium is:

“To advance the understanding of astronomy and related sciences through the execution, promotion and dissemination of astronomical research and scientific knowledge locally, nationally and internationally, in order to enrich the intellectual, economic, social and cultural life of all members of the community. The vision, as derived in legislation, is to build on its position as a thriving astronomical research institute, and to continue to expand our understanding of the Universe and of humanity’s place in it.”

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 out 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).
AOP is a member of several international projects such as GOTO, I-LOFAR and CTA. Further information regarding recent and current research interests of AOP may be obtained at www.armagh.space.

Heritage
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 work-experience students and undergraduates, and interaction 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, as well as several domes containing heritage telescopes 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.

Strategic direction
The establishment of the Ópik Fellowship is in keeping with the AOP long-term research strategy. As such, the successful candidate will be expected to contribute towards maintaining an international research-quality standard at AOP, while enhancing the visibility of AOP research both to the international research community and the general public, thus helping with the long-term sustainability of AOP research activity.

Further information
More information on the Armagh Observatory and Planetarium can be found on our website: www.armagh.space
2. **JOB DESCRIPTION**

The Öpik Fellowship is a 3-year Fixed-Term Appointment.

**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 the AOP Head of Research.

**Salary**

Salary will be within the range £37,272 to £40,979. Pay progression will be performance related. Applicants can expect to be placed at the minimum of the scale.

**Re-location**

Where the successful candidate has to relocate home in order to take up the appointment, the reimbursement of reasonable expenses (in part or full) as a result of the relocation may be considered. For more information see AOP Recruitment Policy [https://armagh.space/corporate/governance/](https://armagh.space/corporate/governance/)

**Hours of Work**

This is a full-time post. Your contracted working hours are 37 hours per week Monday – Friday. No payment will be made for additional hours worked and you will be required to confirm by way of a written/electronic declaration on a quarterly basis that there is no deficit between contractual hours and actual hours worked (including all forms of paid leave). You will be expected to attend the office during normal working hours when required by the Director and/or Head of Research.

**Travel and other Support**

The Post Holder must have access to a form of transport which will enable them to fulfil the duties of the post and will be required, on occasion, to travel nationally and internationally on official duty to present their research results, supported by a research budget of £3,000 per year.
**Holidays**

The Post Holder will have an annual leave allowance of 30 days, plus 12 public and privilege holidays. The holiday year runs from 1st February to 31 January.

**Pensions**

The post holder will be enrolled in the Northern Ireland Local Government Officers’ Superannuation Scheme (full details available at [www.nilgosc.org.uk](http://www.nilgosc.org.uk)).

**Vetting Requirements**

The level of vetting required for this post is a Basic Check.

**Referees**

Applicants should provide in the application form the names, titles and contact details of three referees who should submit confidential reports direct to [OPIK@armagh.ac.uk](mailto:OPIK@armagh.ac.uk) by the application deadline.

**Probation**

Confirmation of your appointment will be dependent upon the satisfactory completion of a probationary period of 12 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.
3. KEY RESPONSIBILITIES

The main duties and responsibilities of the Opik Fellow include:

Research
- Applying knowledge and understanding of methodologies for undertaking quantitative and pioneering scientific research, publish such results in international refereed journals and present these findings at international meetings at a level that can command respect within academic communities worldwide.

General/Miscellaneous Duties
- Represent and champion AOP’s profile and research accomplishments and work to maximise performance in any assessment of AOP’s research excellence.
- Promote STEM education and take part in outreach opportunities arising from the research being undertaken in AOP, including but not only research produced by the Opik Fellow.
- Play a full part in the academic life of the Observatory and Planetarium, including participation in discussion meetings and seminars.
- Engage with the supervision of PhD students.
- Participate and/or lead research funding grant applications.
- Act as required as a spokesperson on technical (or other) issues for the organisation to the media, etc.

This list is not meant to be exhaustive but to give a broad indication of the main duties relating to this post.

4. ELIGIBILITY CRITERIA

Applicants must have by the closing date for applications:

1) A PhD in Physics, Astrophysics or Astronomy (or related subject)

Applications will also be considered from applicants with relevant formal qualifications considered by the selection panel to be of an equivalent or higher standard to those stated.

Relevant or equivalent qualifications: give the type of qualification and date awarded (the date awarded is the date on which you were notified of your result by the official awarding body). If you believe your qualification is equivalent to the one required, the onus is on you to provide the panel with details of modules studied, etc so that a well-informed decision can be made.
5. **SHORTLISTING CRITERIA**

In addition, applicants should be aware that after an eligibility sift, the following shortlisting criteria will be applied to shortlist candidates to go forward to the next stage of selection:

1. Excellence of publication record in peer-review, high quality, international scientific journals. This will be evidenced through the submitted CV & Publication List.


3. International standing and Leadership potential of the individual in their field. This will be evidenced through the submitted CV and Research Proposal.

4. Alignment with AOP research, by adding to or complementing ongoing projects at AOP. This will be evidenced by the Research Proposal.

5. Ability to communicate their science and STEM-related subjects effectively to a broad range of audiences with varying levels of scientific knowledge. This will be evidenced by the submitted CV and the Lay Summary in the application form.

6. A clearly thought through and project-specific Pathways to Impact statement.

The Öpik Fellowship Competency Framework (Section 8) gives an additional indication of the applicant’s expected level of experience and abilities. Reference letters may also be used to assist with the shortlisting process.

6. **PERSON SPECIFICATION**

Candidates will be expected to demonstrate the skills and competencies set out in the eligibility criteria and shortlisting criteria. For the purpose of filling the Öpik Fellowship position, AOP is adopting a similar competency framework (Section 8) as used by the Science & Technology Facilities Council (STFC) for the appointment of their Ernest Rutherford Fellowship (ERF).

7. **INTERVIEW CRITERIA**

Applicants will be expected to display the following qualities and skills at interview (these are detailed in Section 8 below):

1. **Research Vision**
   Marks available: 20
   Minimum standard: 12

2. **Research Experience & Potential**
   Marks available: 20
   Minimum standard: 12
3. **Leadership**  
   Marks available: 20  
   Minimum standard: 8

4. **Communicating & Engagement Skills**  
   Marks available: 20  
   Minimum standard: 8

5. **Profile and Influence**  
   Marks available: 20  
   Minimum standard: 8

**Total Marks Available:** 100  
**Overall Pass Mark:** 48

The Selection panel will design questions to test the applicant’s knowledge and experience in each of the above areas and award marks accordingly.

As part of the selection process candidates will be required to make a presentation relevant to their Research Proposal and the responsibilities of the post lasting no longer than 10 minutes.

Candidates should fully prepare their presentation in advance of the interview as no preparation time will be provided on the day of interview.

Further details regarding the presentation will be provided to candidates in the invitation to interview letter.

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8. **ÖPIK FELLOWSHIP COMPETENCY FRAMEWORK**

The following table provides further information of the skills, knowledge and experience that candidates might demonstrate to support their application for the Öpik Fellowship. The competencies will be tested at interview and the examples are provided as a guide to candidates as to the type of experience the panel will expect them to demonstrate.

<table>
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<tr>
<th>Competence</th>
<th>Effective Examples</th>
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| 1. Research Vision       | a) have a clear strategic vision for their own research within the context of the broad research area within which they work;  
                           b) have their own research plans/ideas which are independent of their current group, mentors or proposed sponsors and which will enable them to become an independent research leader;  
                           c) be able to describe how their research plans fit in to an international context; |
2. Research Experience & Potential

a) Have a track record of ambitious, innovative and productive research in their area which demonstrates an upward trajectory. For example, by producing high quality publications, recognition of their publications, high profile invitations to seminar/conferences or similar outputs;
b) Demonstrate potential to lead research, for example by having collaborated with teams in other departments, research organisations or other disciplines, or by having been awarded small amounts of independent funding;
c) Demonstrate a track record in engagement or impact outside the academic environment where relevant e.g. through collaboration with private, public or third sector bodies, or public engagement activities.

3. Leadership

a) Show an ability to identify and maximise potential in others. For example, through the day to day support of Masters and PhD students or early career researchers or by actively networking or coordinating the work of others;
b) Beginning to demonstrate evidence of recognition and leadership in the community on an international scale through mechanisms appropriate to their discipline.

4. Communication & Engagement Skills

a) Have effective communication and interpersonal skills across different audiences, including academic and public, for example, through social media, publications for a non-academic audience, or presentation at conferences and public engagement events;
b) Show how research outcomes will be/and have been communicated and disseminated within and outside the research community.

5. Profile & Influence

a) Show an understanding of how to influence their research field and awareness of ways to influence the wider research agenda. For example, through experience of participation in peer review, invitations to give lectures/seminars, participation in internal committees, acting as an ambassador or advocate for a research field or theme, or influencing policy;
b) Evidence of recognition by the host organisation, for example, in the form of specific support or a contract or dedicated leadership development plans.
It is important that all candidates familiarise themselves with the competency framework as this will form the basis of the assessment / interview criteria as outlined above.

9. TIMETABLE

Closing Date for applications: Wednesday 08 January 2020 @ 16:00

<table>
<thead>
<tr>
<th>Call Activity</th>
<th>Indicative Timetable</th>
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</thead>
<tbody>
<tr>
<td>Application</td>
<td>w/c 18 November 2019 – 08 January 2020</td>
</tr>
<tr>
<td>Shortlisting</td>
<td>January 2020</td>
</tr>
<tr>
<td>Interviews</td>
<td>February 2020 (Armagh)</td>
</tr>
<tr>
<td>Award Announced</td>
<td>March/April 2020</td>
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<tr>
<td>Fellowship start</td>
<td>October 2020, at the latest</td>
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10. HOW TO APPLY

To apply, applicants should complete and submit the Application and Monitoring Forms along with the required additional documentation.

- The space available on the application form is the same for all applicants and must not be altered.
- Applicants must complete the application form in typescript font size 11.
- Applicants must not reformat application forms.
- Information in support of your application will not be accepted after the closing date.
- AOP will not examine applications until after the closing deadline.

10.1 Application Submission Instructions

All documents must be submitted to OPIK@armagh.ac.uk as pdf documents and must abide by the page limits (outlined below) and should be written in Arial 11pt, Helvetica script 11pt or an equivalent 11pt sans serif universal font. AOP will reject a proposal if any of the documents submitted breaches the rules on page limits or font size.

Together with your application and monitoring forms, you will need to submit the following mandatory attachments:

- **Curriculum vitae** of a maximum of two sides of A4.
- **Publications List** by year.
- **Case for Support**, of a maximum length of three sides of A4 including references, diagrams and illustrations. This should be a clear and concise description of your research track record and the vision, aims and context of your research (maximum length of three A4 sides). The description of your track record may refer to but should
not duplicate material in your CV or publication list. You should focus on your achievements that have the most relevance to your application and the assessment criteria, including your most significant results and their impact, and mention any past or present collaborations. The description of your Fellowship research should describe the context and aims, indicate the approach you intend to take and the timetable for your work, highlight what is novel and explain why it is timely. You should set your programme of research in the wider international context and explain why you are the right person to do the work.

- **Pathways to Impact** of a maximum length of **two sides** of A4. See below for further guidance. This should describe how the potential impacts of your research will be realised by users and beneficiaries of the research who are outside of your immediate academic research community, for example the public sector, commercial private sector, third sector (voluntary and community groups, social enterprises, charities, cooperatives and mutuals) or the wider public in general. This should include any track record in public engagement and give the plans you have for engaging selected public audiences with your research and evaluating the outcomes of that engagement.

- **3 Letters of support** (personal reference), of a maximum of **two sides** of A4. 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 OPIK@armagh.ac.uk. These letters MUST be received by the application deadline Wednesday 08 January 2020 @ 1600.

No other documents will be considered.

11. **OTHER CONDITIONS AND FEATURES**

Please ensure that AOP are informed immediately of any changes in personal circumstances.

11.1 **Disability Requirements**

If you require any reasonable adjustments, due to disability, to enable you to attend any part of the assessment process, please contact Lisa O’Neill (lisa.oneill@armagh.ac.uk). If you have indicated that you have a disability and are successful in the selection process and are being considered for appointment, you may be required to outline any adjustments you consider necessary in order for you to take up an appointment.

11.2 **Equal Opportunity Monitoring Form**

Under Section 75 of the Northern Ireland Act 1998 public bodies are required to report on equal opportunity monitoring.

It is the policy of the Governors of the Armagh Observatory and Planetarium to ensure that all eligible persons have equal opportunities for employment and advancement in the Armagh Observatory and Planetarium on the basis of their ability, qualifications and aptitude. The
Governors of the Armagh Observatory and Planetarium select those suitable for appointment solely on the basis of merit without regard to an individual’s religious belief, political opinion, trade union membership, gender, marital status, sexual orientation, age, disability, race, colour or ethnic origin.

In order to ensure that the equal opportunity policy of the Governors of the Armagh Observatory and Planetarium is effectively implemented, the equal opportunity information provided on application forms will be monitored.

11.3 Assessment Information

All candidates invited to attend for interview will need to bring sufficient documentation to satisfy the eligibility/shortlisting criteria (if applicable) and the Nationality and Vetting requirements. Further details regarding acceptable documentation will be issued with an invitation to attend for assessment.

You should ensure that these documents are readily available.

11.4 Nationality Requirements

There are no nationality restrictions on this post, however, before an offer of appointment can be made to an overseas candidate, AOP will need to ensure that all UK visa and immigration requirements are met.