University of St Andrews

School of Mathematics and Statistics

Research Fellow in Solar and Magnetospheric Theory Group – AR1741DD

Further Particulars for Applicants

School of Mathematics and Statistics

The Solar and Magnetospheric Theory Group is based in the Division of Applied Mathematics within the School of Mathematics and Statistics and is concerned with the investigation of a variety of research areas but mainly in solar and magnetospheric magnetohydrodynamics and kinetic theory.

Current topics of particular interest include: 3D magnetic reconnection theory; MHD waves in inhomogeneous media; nonlinear MHD instabilities; magnetospheric physics (MHD waves, particle acceleration, and coupling to the ionosphere); coronal physics (solar flare MHD; Non-linear Force Free Field Models, Coronal Mass Ejections, solar filaments; particle acceleration; coronal seismology; flux emergence); computational MHD, Hybrid codes and HPC.

Preference may be given to applicants with interests in (i) global magnetic field modelling, (ii) active region modelling and (iii) magnetic flux emergence.

Both analytical and computational techniques are used, and close links with observations are maintained. The Group has a dedicated network of high-powered workstations and leads a consortium that provides parallel computing resources for UK MHD researchers.

The Group has seven staff members (Professors De Moortel, Hood, Mackay, Neukirch and Parnell, Drs Archontis and Wright), a Senior Scientific Officer, 3 Research Assistants and 12 PhD research students. In addition, retired staff members Profs Priest and Cargill still actively participate in the group's research activities.

The Group is partially funded by an STFC Consolidated Grant and two European Research Council grants. It has a lively atmosphere and many international visitors. Its research fellows have enjoyed considerable success over many years in gaining tenured university positions.

The job description for this role is attached below.

Job Description

Job Title: Research Fellow School/Unit: School of Mathematics and Statistics Reporting to: P/I Alan Hood Job Family: Academic (Research) Duration of Post: Fixed term for 16 months in the first instance	Working Hours: Full time/36.25 hours per week Grade/Salary Range: Grade 6 /£33,797 - £38,017 per annum Reference No: AR1741DD Start Date: 1 February 2021 Interview date: To be confirmed

Main Purpose of Role

The successful applicant is expected to work independently on a project in solar or magnetospheric physics. The successful applicant will be under the guidance of one of the staff members, Professors De Moortel, Hood, Mackay, Neukirch and Parnell, Drs Archontis, and Wright, and take part in collaborative discussions with group members on the progress of the project.

Details of possible projects can be made available to applicants upon request (email: dhm@st-andrews.ac.uk).

You should hold or expect to obtain shortly a PhD in either solar physics or magnetospheric physics or a closely related subject.

The project selected will utilise the expertise of the successful applicant but is likely to involve MHD theory and running numerical MHD experiments.

In addition, the ability to work well both independently and in a team is also desirable.

Key Duties and Responsibilities

1. Analyse, interpret and write up results of your own research
2. Contribute to the production of research reports and publications in conjunction with the PI
3. Prioritise own workload within agreed objectives and schedule to meet deadlines
4. Deal with problems which may affect the achievement of your own research objectives and deadlines, (seeking support/guidance when necessary)
5. Manage administrative tasks related to your own work
6. Possess sufficient specialist knowledge in the discipline and be developing further skills in and knowledge of research methods and techniques

Please note that this job description is not exhaustive, and the role holder may be required to undertake other relevant duties commensurate with the grading of the post. Activities may be subject to amendment over time as the role develops and/or priorities and requirements evolve.

Person Specification

This section details the attributes e.g. skills, knowledge/qualifications and competencies which are required in order to undertake the full remit of this post.

Attributes	**Essential**	**Desirable**	**Means of Assessment** (i.e. application form, interview, test, presentation etc)
Education & Qualifications (*technical, professional, academic qualifications and training required)*	Degree in relevant subject Hold or be near to completion of a PhD in solar physics or closely related subject		Application/certificates Application/certificates
Experience & Knowledge (*examples of specific experience and knowledge sought*)	Knowledge of MHD theory Experience of MHD numerical simulations	Ability to write and use software for observational data analysis Experience of analysing numerical and/or observational data	Application/Interview Application/Interview Application/Interview
Competencies & Skills (*e.g. effective communication skills, initiative, flexibility, leadership etc*)	Relevant computing skills Effective communication skills Ability to write up research results for publication in scientific journals	Ability to work both independently and in a team Research publications commensurate with career stage	Application/Interview Application/Interview
Other Attributes/Abilities	Willingness to engage in continuing professional development		Interview

Essential Criteria – requirements without which a candidate would not be able to undertake the full remit of the role. Applicants who have not clearly demonstrated in their application that they possess the essential requirements will normally be rejected at the short listing stage.

Desirable Criteria – requirements which would be useful for the candidate to hold. When short listing, these criteria will be considered when more than one applicant meets the essential requirements.

Other Information

We encourage applicants to apply online at www.vacancies.st-andrews.ac.uk/welcome.aspx, however if you are unable to do this, please call +44 (0)1334 462571 for a paper application form.

For all applications, please quote ref: AR1741DD.

The University is committed to equality for all, demonstrated through our working on diversity awards (ECU Athena SWAN/Race Charters; Carer Positive; LGBT Charter; and Stonewall). More details can be found at http://www.st-andrews.ac.uk/hr/edi/diversityawards/.

The University of St Andrews is a charity registered in Scotland (No SC013532).

Obligations as an Employee

You have a duty to carry out your work in a safe manner in order not to endanger yourself or anyone else by your acts or omissions.

You are required to comply with the University health and safety policy as it relates to your work activities, and to take appropriate action in case of an emergency.

You are required to undertake the Information Security Essentials computer-based training course and adhere to its principles alongside related University Policy and Regulations.

You are responsible for applying the University's equality and diversity policies and principles in your own area of responsibility and in your general conduct.

You have a responsibility to promote high levels of customer care within your own area of work/activities.

You should be adaptable to change, and be willing to acquire new skills and knowledge as applicable to the needs of the role.

You may, with reasonable notice, be required to work within other Schools/Units within the University of St Andrews.

You have the responsibility to engage with the University's commitment to Environmental Sustainability in order to reduce its waste, energy consumption and carbon footprint.

Who Are We? St Andrews At a Glance

Third oldest university in English speaking world

Consistently ranked one of the UK's top five universities

Award-winning teaching quality and student experience

Top in UK for student satisfaction

Research-intensive – ranked 14th in UK Research Excellence Framework

Athena SWAN Bronze Award holder

Strategy founded on ambition to be World-Leading, Diverse, Global, Entrepreneurial and Socially Responsible.

Over 9000 students and 2500 staff

Highly international – over 45% of students and staff are from outwith the UK

A non-campus university, closely integrated with the ancient town of St Andrews

Top quality sports, music and nursery facilities for staff and students

Committed to sustainability and a pioneer of green energy solutions

The University & Town

Founded in the early 15th century, St Andrews is Scotland's first university and one of the oldest in the world.

Situated on the east coast of Scotland and framed by countryside, beaches and cliffs, the town of St Andrews was once the centre of the nation's political and religious life.

Today, it's a vibrant academic town with a distinctively cosmopolitan feel where students and university staff account for more than half of the local population.

The University of St Andrews is a diverse and international community of almost 12,000 students and staff, typically of over 140 nationalities. It has over 9000 students, just over 7,000 of them undergraduates, and employs approximately 2,500 staff - made up of c. 1,190 in the academic job families and c 1,350 in the non-academic job families.

Under the leadership of current Principal Professor Sally Mapstone, the University's Strategy (2018-23) is to broaden its global influence, become more diverse and consolidate its long-held position amongst the top five universities in the UK.

The plan sets out St Andrews' ambitions to grow its international profile, champion diversity and inclusivity, expand its portfolio of world-leading research, develop stronger links with industry and embed a new culture of entrepreneurship among students and staff.

It also places social responsibility at its heart, with a pledge to manage growth in student numbers, foster a growing culture of sustainability and pursue a research and teaching agenda for the wider public good.

The University is one of Europe's most research-intensive seats of learning. In the Research Excellence Framework (REF) 2014 it was ranked top in Scotland for quality of research output and one of the UK's top 20 research universities.

St Andrews is consistently held to be one of the United Kingdom's top five universities in university league tables compiled by The Times and The Sunday Times, The Guardian and The Complete University Guide.

It has frequently been rated the leading university in Scotland for teaching quality and academic experience, and in the National Student Survey 2018/19 was the leading mainstream UK university for student satisfaction.

In international and world rankings St Andrews scores highly for teaching quality, research, international outlook and citations. It is currently a World Top 100 institution in the QS World University Rankings 2019.

St Andrews' reputation for teaching, research and student satisfaction make it one of the most sought-after destinations for prospective students from the UK, Europe and overseas.

The University typically averages 12 applications per place and has not offered Clearing places for over a decade. St Andrews has highly challenging academic entry requirements to attract only the most academically potent students in the Arts, Sciences, Medicine and Divinity.

St Andrews holds an Institutional Athena SWAN Bronze Award, while the Schools of Biology, Physics & Astronomy and Psychology and Neuroscience have achieved Athena SWAN Silver Awards.