MONASH University

Position description

Research Fellow

Position number	50101795
Department/Unit	School of Mathematical Sciences
Faculty/Division	Faculty of Science
Classification (Salary rates)	Level A
Employment type	Full-time
Work location	Clayton campus
Date document created or updated	23/11/2012

Position purpose

Candidates are sought for a position of Postdoctoral Fellow. The position requires experience in computational star and planet formation and/or computational astrophysics. The appointee will conduct research at the School of Mathematical Sciences at Monash University in Melbourne, Australia, under the guidance of Dr. Daniel Price, in collaboration with Dr. Christoph Federrath at Monash and Professor Matthew Bate at the University of Exeter, UK. The research will cover topics related to the Australian Research Council funded project DP130102078 “What regulates star formation?”

- **Reporting line:** The position reports to Dr Daniel Price
- **Supervisory responsibilities**: N/A
- **Financial delegation and/or budget responsibilities** N/A

The position is available for three years. For further information please contact Daniel Price at daniel.price@monash.edu

Organisational context

Monash University is an energetic and dynamic university committed to quality education, outstanding research and international engagement. A member of Australia's Group of Eight research intensive universities, it seeks to improve the human condition and is committed to a sustainable future. Monash has six campuses in Victoria, a campus in Malaysia, a campus in South Africa, a centre in Prato, Italy, and numerous international partnerships and cooperative ventures. Monash has over 62,500 equivalent full-time students spread across its Australian and offshore campuses, and over 7,400 full time equivalent staff. Almost 3,500 of these staff members are academic staff.

The Faculty of Science, based at Clayton and Gippsland, has a total enrolment of approximately 3,500 students. Six Schools offer a large and diverse range of disciplines in undergraduate and postgraduate courses. Ten Schools from other university faculties contribute to science teaching at all levels, allowing students to choose their studies from physical, biological, biomedical, behavioural, environmental, mathematical and computer sciences.

The School of Mathematical Sciences, on the Clayton campus in the suburbs of Melbourne (one of the world's most liveable cities) is one of the largest of the six Schools in the Faculty, and has close working collaborations with other Schools/Departments such as Physics, Geosciences, Geography, Computer Science; and other faculties such as Business and Economics, Arts, Medicine, IT and Engineering.

The Monash Centre for Astrophysics (MoCA) spans the School of Mathematical Sciences and the School of Physics, with 27 staff (14 faculty) and a large number of graduate students. There are 6 thriving research groups within MoCA spanning most areas of Astronomy and Astrophysics, with key strengths in astrophysical fluid dynamics, star and planet formation, stellar evolution, high energy astrophysics, galaxy evolution, general relativity and solar physics. MoCA holds a weekly research seminar throughout most of the year and attracts a number of visitors from around the world. Staff in the astro fluids/star and planet formation group include Dr. Daniel Price, Prof. Joe Monaghan and Dr. Christoph Federrath, plus a number of graduate students and short term research assistants.

Key result areas and responsibility

- Undertake research under the supervision of Dr. Daniel Price in collaboration with Dr. Federrath and Prof. Bate (University of Exeter, UK) on simulating magnetic fields, dust and radiation in star formation.
- Participate in the weekly astro fluids research group meetings at Monash and attend MoCA seminars
- Prepare and submit research papers for publication in high quality Astronomy and Astrophysics journals
- Present results at national and international conferences
- Assist in advising any honours and graduate students working on the project
- Participate in group activities

Key selection criteria

Essential

1. A PhD in astrophysics or a related discipline and experience either in computational star/planet formation or in computational astrophysics with the smoothed particle hydrodynamics method.
2. Potential to publish in high quality journals.
3. Excellent communication skills including good technical writing skills.
4. Proven ability to perform collaborative research

Desirable

5. Ability to conduct independent research.
6. Programming skills in Fortran/C/C++ or similar language.
7. Demonstrated record of publications in high-quality journals

Other job-related information

Travel to other campuses of the University may be required.

Legal compliance

Ensure you are aware of and adhere to legislation and University policy relevant to the duties undertaken, including:

- Equal Employment Opportunity, supporting equity and fairness
- Occupational Health and Safety, supporting a safe workplace
- Conflict of Interest (including Conflict of Interest in Research)
- Paid Outside Work
- Privacy
- Research Conduct
- Staff/Student Relationships