THE UNIVERSITY OF WESTERN AUSTRALIA

POSITION DESCRIPTION

Position Title	Research Associate (Free-Space Optics)
Classification	Level A
School/Division	Office of the Deputy Vice Chancellor (Research)
Centre/Section	International Centre for Radio Astronomy Research (ICRAR)
Supervisor Title	Principal Research Fellow
Supervisor Position Number	318215
Position Number	

Your work area

ICRAR is a WA State funded high profile equal joint venture established in 2009 between Curtin University and The University of Western Australia (UWA). The Centre's headquarters are located at UWA, with research nodes at both UWA and Curtin. ICRAR is one of the lead Australian organisations participating in the international Square Kilometre Array (SKA) Project and is one of the largest astronomy organisations in Australia.

The Astrophotonics Group at ICRAR is focused on designing, building, and testing advanced photonic systems with applications in radio astronomy, optical astronomy, and space science. The group combines research expertise from people with a broad range of backgrounds including astronomy, physics, and engineering. The group's core technological capability is the long-distance transfer of stabilised optical-frequency signals, microwave-frequency signals, timing signals and communications signals, transmitted across optical fibre networks and free-space laser links.

Your work will contribute to a number of Astrophotonics free-space laser links projects including the ARC Mid Career Industry Fellowship project, the TeraNet Optical Ground Station project, the DTSG Next-Generation Technologies Fund (NGTF) project, and other related projects.

Reporting structure

Reports to: Principal Research Fellow

Your role

As the appointee you will, under broad direction undertake research relating to free-space optical timing and positioning. This includes working with the Industry Fellowship team on building and deploying optical terminal to demonstrate phase-stabilised frequency transfer and absolute time transfer; working with the TeraNet teams to conduct timing and positing experiments between Earth and space; and work on other projects towards free-space quantum-assured timing.

Your key responsibilities

Conduct research and development on free-space optics systems, photonics systems, and timing systems to meet the overarching research goals of the Astrophotonics group

Contribute to the current Astrophotonics research projects including ARC Mid Career Fellowship, TeraNet, and NGTF, as well as other related research projects

Establish and maintain effective working relationships with our other project personnel, including those within project partners and other collaborating organisations

Publish scientific research in refereed international journals

Present research at national and international scientific conferences

Contribute to the supervision of undergraduate and postgraduate research students

Record, process, analyse and interpret data and report results to supervisor

Attend and contribute to relevant meetings

Other duties as directed

Your specific work capabilities (selection criteria)

Qualifications

PhD, or soon to be completed PhD or equivalent experience in physics, engineering, or related discipline

Research

Demonstrated experience in one or more of the following:

- free-space optics, optical fibre coupling, and optical system design
- experimental frequency or quantum metrology
- frequency transfer and time transfer systems
- understanding of atmospheric physics theory

Experience with high-quality supervision of Masters and PhD students

Demonstrated ability to work independently and collaboratively and to build effective and positive working relationships with diverse collaborators and stakeholders

Highly developed organisational skills with the demonstrated ability to set priorities and to meet deadlines

Excellent verbal and written communication skills

Proficiency in a range of computing skills including word processing, spreadsheets, databases, internet and email

Experience with programming and simulation in Python or MATLAB is desirable

Special requirements (selection criteria)

Occasional travel within the state will be required for field deployments

Occasional domestic and international travel may be required

Some after-hours work will be required to attend meetings across time zones

Compliance

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

The University's Code of Conduct hr.uwa.edu.au/policies/policies/conduct/code/conduct

Inclusion and Diversity web.uwa.edu.au/inclusion-diversity

Safety, health and wellbeing safety.uwa.edu.au/