POSITION DESCRIPTION:

SECTION A: Position Context

<table>
<thead>
<tr>
<th>Position Title</th>
<th>Research Associate</th>
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<tbody>
<tr>
<td>Position Number</td>
<td></td>
</tr>
<tr>
<td>Classification</td>
<td>Academic Level A</td>
</tr>
<tr>
<td>School/Department/Faculty</td>
<td>Centre for Astrophysics and Supercomputing, Faculty of Information and Communication Technologies</td>
</tr>
<tr>
<td>Division</td>
<td>Higher Education Division (Hawthorn)</td>
</tr>
<tr>
<td>Effective Date</td>
<td>2011</td>
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</tbody>
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Position Purpose:

This is a Research Associate position funded within the ARC Centre of Excellence for All-sky Astrophysics (CAASTRO) to work within its “Dark Universe” scientific theme area. The successful applicant would perform cutting-edge large-scale structure analyses of the recently-completed WiggleZ Dark Energy Survey dataset, and would produce forecasts of how future peculiar velocity surveys will probe the cosmological model. Research experience in theoretical cosmology, large-scale structure or dark energy is advantageous. The appointee would work with Dr. Chris Blake, Prof. Warrick Couch and the rest of the CAASTRO team, and may also pursue independent research. The successful candidate will be expected to be an active member of CAASTRO, attending and contributing to Centre meetings and working collaboratively with researchers at its other nodes. He/she will also attend national and international meetings and present and promote the results of their work. The appointee will be encouraged to spend a fraction of their time on independent research.

University Information:

Swinburne University of Technology is a large multi-sectoral and multi-campus institution with a stated mission to be a pre-eminent entrepreneurial university from the Asia-Pacific, thriving on new ideas and knowledge and exploiting its intersectoral heritage to create value for its stakeholders.

Swinburne has campuses in metropolitan Melbourne at Hawthorn, Prahran, Lilydale, Wantirna, Croydon and Healesville and an overseas branch campus in Kuching, Sarawak. It also offers an increasing number of subjects and courses via the Internet. Its programs cover the education and training needs of over 40,000 students ranging from apprentices through to doctoral students.

Swinburne is proud of its close links with industry, business and the community generally. It has gained a prominent and respected name in education in Australia and overseas through:

- government funded programs and research;
- industry and business funded research;
- consultancy and training;
- fee-for-service teaching;
- an international focus for its curricula, student recruitment and operations.
CENTRE/FACULTY

The Swinburne Centre for Astrophysics and Supercomputing is part of the Faculty of Information and Communication Technologies. The Centre currently has approximately 50 full-time staff and students and is committed to excellence in basic research, public outreach and education and the commercial applications of supercomputing. The Centre operates the most powerful supercomputer in an Australian university, upgraded in May 2007. The supercomputer has 1160 processing cores, 2320 GB of RAM, a theoretical peak processing speed of over 10 trillion floating point operations per second, and 200 Terabytes of disk storage. The Centre also possesses a virtual-reality projection facility with direct access to the supercomputer for immersive 3D visualisation of data. The Centre runs school and public tours of the virtual reality theatre, and is closely involved with the Victorian Partnership for Advanced Computing (VPAC). VPAC is a consortium of universities that are interested in High Performance Computing.

The Faculty (www.ict.swin.edu.au) has approximately 120 EFT staff, including academic, administrative and technical positions. There are approximately a further 35 EFT staff employed specifically to support research activity funded by grants. There are approximately 2,000 EFTSL enrolled across undergraduate and postgraduate programs; of that number approximately 65 EFTSL or 79 students are enrolled in postgraduate research programs. A significant number of the students enrolled in the Faculty are full-fee paying international students. The Faculty offers a wide range of innovative and industry-relevant undergraduate and postgraduate coursework and research programs. These programs are delivered at the Hawthorn and Sarawak campuses, in Hong Kong and online. The programs encompass major academic disciplines of Astronomy and Computational Science, Computer Science and Software Engineering, Information Systems and Telecommunications and Networks. The Faculty also hosts the following major research centres: the Centre for Advanced Internet Architectures, the Centre for Information Technology Research and the Centre for Molecular Simulation.

HIGHER EDUCATION DIVISION INFORMATION

The Higher Education Division located at Hawthorn and Prahran campuses has approximately 12,000 undergraduate and postgraduate students and over 600 academic and other staff. The relatively small size necessitates a focused approach to both course offerings and research activities. The Higher Education Division’s mission is to be a research-intensive technological university characterised by:

- Research activities of national prominence and international recognition focussed around the University’s chosen areas of excellence
- Students of high academic standard in a range of high quality specialist undergraduate and post-graduate coursework and research programs
- Being international in operation and perspective
- A significant level of self determination arising from a sustainable balance between revenue generating activity and prestige.

The division consists of five faculties and three research institutes. The five faculties are:

- Faculty of Business and Enterprise
- Faculty of Design
- Faculty of Engineering and Industrial Sciences
- Faculty of Information & Communication Technologies
- Faculty of Life & Social Sciences

The Division has a range of undergraduate and postgraduate coursework and research programs focussed around the themes of:

- Professional engineering
- Information technology
- Business and innovation
- Design
- Multimedia
- Health and human services

Areas of research strength include:

- Advanced computing and modelling
- Advanced industrial technologies
- Astrophysics
• Biotechnology and bioengineering
• Brain function and cognition
• Entrepreneurship
• New communication technologies
• Optics and applied laser technology
• Social sustainability and well-being

URL to Faculty web page: http://www.swin.edu.au/ict

Participation on Committees:
The appointee will attend and contribute to occasional staff meetings.

Supervision Reporting Relationships:

<table>
<thead>
<tr>
<th>This positions’ supervisor/manager</th>
<th>Prof. Warrick Couch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other positions reporting to this position</td>
<td>none</td>
</tr>
</tbody>
</table>

Location:
This position is located at the Hawthorn campus.

SECTION B: Key Responsibility Areas

The key responsibility areas (KRAs) are the major outputs for which the position is responsible and are not a comprehensive statement of the position activities.

<table>
<thead>
<tr>
<th>Key Responsibility Areas</th>
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<tbody>
<tr>
<td>1. RESEARCH</td>
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<tr>
<td>• Conduct research activities and contribute to the research output of the Centre, both individually and as part of a team.</td>
</tr>
<tr>
<td>• Publish astronomical research in international refereed journals.</td>
</tr>
<tr>
<td>• From time to time, attend national and international meetings and present research results.</td>
</tr>
<tr>
<td>2. SUPERVISION</td>
</tr>
<tr>
<td>• Provide guidance and leadership for research students.</td>
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<tr>
<td>3. BUILDS RELATIONSHIPS</td>
</tr>
<tr>
<td>• Participate in and contribute to the research environment of CAASTRO through collaborations and group meetings. Similarly contribute to the research environment at CAS.</td>
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<tr>
<td>4. GRANTS</td>
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<tr>
<td>• Contribute to competitive grants.</td>
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<tr>
<td>5. OTHER</td>
</tr>
<tr>
<td>• Undertake other duties as required by the Director of the Centre and the Dean of the Faculty.</td>
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</tbody>
</table>

SECTION C: Key Selection Criteria

Application letters and/or resumes must address the Qualifications and Knowledge/Experience/Attributes sections under the key selection criteria. Preferably applications should not exceed six (6) A4 pages in total.

Qualifications: Include all educational and training qualifications, licences, and professional registration or accreditation, criminal record checks etc. required for the position.

<table>
<thead>
<tr>
<th>Essential/Preferable</th>
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<tbody>
<tr>
<td>1. A PhD in astrophysics, with research interests in cosmology, large-scale structure or dark energy.</td>
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<tr>
<td>2. Strong research skills and a demonstrated publication track record in peer-reviewed journals.</td>
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<tr>
<td>3. Excellent oral and communication skills.</td>
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</tbody>
</table>
Experience / Knowledge / Attributes: Required by the incumbent to successfully perform the position’s key responsibilities.

1. Experience of analysis and modelling in cosmology, large-scale structure or dark energy.

2. Demonstrated ability to work productively and cooperatively with others in a team environment and to provide a “mentoring” role for students.

Swinburne Attributes:
Our attributes inform the selection process; however, a written response to the attributes is not required. The attributes are:

- Building Organisational Capability
- Demonstrates Personal Integrity
- Manages Change Effectively
- Builds Relationships
- Drives Service Excellence
- Provides Educational Leadership
- Creates a Learning Environment
- Exhibits Entrepreneurial Skills
- Sets Direction

For information refer to the following weblink: Swinburne Attributes (http://www.swin.edu.au/corporate/hr/attributes/).

Further Information:
For further information, please contact Professor Matthew Bailes, Director, Centre for Astrophysics and Supercomputing, Faculty of Information and Communication Technologies on telephone +613 9214 8782, fax +613 9819 8797, email mbailes@swin.edu.au

 Supervisor: Prof Warrick Couch  Date: ______________________________
Signature: ______________________________

Dean: Prof Leon Stirling  Date: ______________________________
Signature: ______________________________

I accept the Position Description as stated above and that the Position Description may need amending and updating periodically due to changes in responsibilities and organisational requirements. Changes to position descriptions will be in accordance with the position classification and consistent with the purpose for which the position was established.

 Incumbent: ______________________________  Date: ______________________________
Signature: ______________________________

For more information, refer to following attachments/web links
Swinburne Attributes (http://www.swin.edu.au/corporate/hr/attributes/).