**Review of the Department of Physics and Astronomy**

**Review Panel:-**

**Chair - Professor John O’Connor**

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From 1991 to 1997 I was Head of the Department of Physics which, under a restructure, became the School of Mathematical and Physical Sciences of which I have been head since 2002.

I have been President of the Australian Institute of Physics and Secretary of the Federation of Australian Scientific and Technological Societies. As secretary of the Vacuum Society of Australia I served in two capacities on the Council of the International Union of Vacuum, Science and Technologies Association over a period of nine years.

### Research expertise

Principal research experience is in materials analysis (editor of "Surface Analysis Methods in Materials Science") with particular emphasis on ion beam techniques ranging from 100eV to 1GeV. These tools have been applied to study the structure and composition of the first few atomic layers of materials. In the areas of low energy (0.1 - 10keV) and medium energy (50 - 200keV) I have a recognised international standing reflected in conference organisation, publication and research grant reviewing.

I have made fundamentally contributions to the development of reliable interatomic potentials (most highly cited paper with over 150 citations) which has been recognised as the most valuable contribution to reliable computer simulation. In some groups the conclusion I arrived at is termed the OConnor potential.

A second growing area of research interest is in the field of science communication and outreach. I have been involved in this activity alongside my research for my whole career but my main concern has been that there has not been sufficient attention paid to measuring and optimising the effectiveness of such activities. With a PhD student I commenced a project on this which developed into a broader involvement. In 2001, I brought together the AIP (of which I was president at the time), the RACI, Engineers Australia and the Australian Council of Mathematical Societies to highlight to the Federal Government the declining participation in senior secondary school chemistry, physics and mathematics. This has developed into the current DEST focus on these enabling sciences. At the same time we developed (at University of Newcastle) the Science and Engineering Challenge which won the Sir William Hudson award for Engineering Excellence in 2003. This program has been funded by DEST for $1.8M to take it Australia wide. In 2002 Institute of Physics (UK) awared me (with T Burns and R Nelson) the Public Awareness of Physics Award recognising not only the Science and Engineering Challenge but other activities in this area of endeavour.

Further research in science and engineering outreach is being undertaken through an ARC Linkage Project with Engineers Australia and Ampcontrol.

My publications have an average 11 citations per paper and my Hirsch index is currently 21. I have presented 5 invited presentations at national and international conferences in the past 5 years.

### Qualifications

* Doctor of Science, Australian National University
* Bachelor of Science (Honours), Australian National University
* PhD, Australian National University
* Bachelor of Science, Australian National University

**Professor Jeremy Mould**

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**Centre for Astrophysics and Supercomputing**

I am interested in galaxies and cosmology and the late stages of stellar evolution. Improving (or retiring) the WMAP cosmological parameters is one focus. Galaxy evolution is another. It is highly desirable to better understand the Tully-Fisher relation and what it can tell us about galaxy dynamics and evolution. I am a CI of CAASTRO, working in the dark Universe program.

**Jeremy R. Mould** (born 31 July 1949 [Bristol](http://en.wikipedia.org/wiki/Bristol)) is an Australian [astronomer](http://en.wikipedia.org/wiki/Astronomer) currently at the Centre for Astrophysics and Supercomputing at [Swinburne University of Technology](http://en.wikipedia.org/wiki/Swinburne_University_of_Technology). Mould was previously Director of the Research School of Astronomy and Astrophysics at the [Australian National University](http://en.wikipedia.org/wiki/Australian_National_University) and the American [National Optical Astronomy Observatory](http://en.wikipedia.org/wiki/National_Optical_Astronomy_Observatory). He is an Honorary Professorial Fellow, at the University of Melbourne.

### Summary

Jeremy Mould is a professor at Swinburne University’s Centre for Astrophysics & Supercomputing and professorial fellow at the University of Melbourne, hosted by the astrophysics group of the School of Physics. Jeremy Mould was Director of the National Optical Astronomy Observatory (NOAO). NOAO is the National Science Foundation’s facility for ground-based astronomical research at optical and infrared wavelengths. Preceding appointments were Professor of Astronomy at the Australian National University, Director of the ANU's Research School of Astronomy & Astrophysics, and Professor of Astronomy at the California Institute of Technology's Palomar Observatory. Educated in Australia, his career to date has been in optical/infrared observatories. Besides Palomar, he has worked at the Royal Greenwich Observatory, Kitt Peak National Observatory, and Mount Wilson & Las Campanas Observatories.

### Experience

* Professor, Centre for Astrophysics & Supercomputing 2011 – present

### Education

* University of Melbourne, DSc, 2010
* ANU, PhD, 1977

### Research Areas

* Cosmology And Extragalactic Astronomy (020103)

**Internal Panel member:-**

**Maxine Brodie – University Librarian**

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