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University**FACULTY OF SCIENCE
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Image: ESO/M. Kornmesser

From the Dean

SPECIAL EDITION | WELCOMING THE AAO TO MACQUARIE

Dear Suzannah

FSE is very excited by the 1 July 2018 transfer of the Australian Astronomical Observatory research and optical instrumentation capability to join Macquarie University.

The AAO has a world-renowned reputation for building successful precision instrumentation for the world's largest telescopes.

It has particular strengths in the use of fibre optics and positioning systems that allow telescopes to observe many astronomical objects simultaneously, massively increasing the productivity and flexibility of observatories around the world and opening new views of the universe and its contents.

Examples include the 2dF Galaxy Redshift Survey, which enabled the Anglo-Australian Telescope to conduct the first comprehensive and accurate mapping of galaxy positions and motions in the nearby universe, revealing the large-scale networks of galaxies that carry the imprint of conditions just after the Big Bang.

The AAO now leads the design and construction of a new system that builds on this legacy in partnership with the European Southern Observatory, positioning thousands of fibres simultaneously, which will allow the most comprehensive survey of our own Milky Way galaxy and the large-scale universe ever done.

The AAO will continue to be located in their current offices on Delhi Road for the next two years or so as we plan a new facility to enable them to join us on campus.

As with many scientific fields sometimes, the science has multiple impacts in far-reaching areas. Technology developed originally for astronomical research has led to improvements in navigation technology, space weather monitoring, telecommunications and computer networks, medical and retinal imaging, and laser eye surgery.

The AAO-MQ will continue to advance astronomical instrumentation for large ground-based telescopes around the world as well as engaging with emerging opportunities in space.

Getting to this point has involved a huge effort from many people across the university, the AAO and our external partners over the last 15 months.

Several dozen people have been involved and thanks to all those, including the core Project Galactica team from across the university: Jim Phaboutdy, Lloyd Doherty, Carina Jarman, Katherine Rodionoff, Roberta Palfreeman, Nicole Gower, Robin Payne and Mike Steel; and at the AAO: Jon Lawrence, Andrew Hopkins, Katrina Sealey and Neville Legg.

We welcome the AAO staff to our Faculty.

If you want to know more about what's happening across the Faculty, follow our Faculty Twitter account [@MQSciEng](#) and my personal account [@BarbaraMesserle](#). If you've got news to share, please tweet about it and include our Faculty handle so we can see it and retweet. If you're not on Twitter then email us at fse.execdean@mq.edu.au and we'll share the news.

Regards,

Barbara

In this bulletin

- [Leading telescope science and technology group moves to Macquarie](#)
- [Job opportunities at AAO-Macquarie](#)
- [AAO public lecture: Bursts, bangs and things that go bump in the night](#)

Leading telescope science and technology group moves to Macquarie



It's official! Macquarie University has assumed responsibility for the research and optical instrumentation capability of the Australian Astronomical Observatory, a group with 45 years of excellence in astronomy instrumentation.

The group will be known as AAO-Macquarie and will partner with the University of Sydney, the Australian National University, and Astronomy Australia Limited to form a collaborative national capability for astronomical instrumentation, Australian Astronomical Optics (AAO).

"The consortium will build new optical astronomy instruments for the world's largest telescopes, create new opportunities for Australian industry, and enhance career pathways for young scientists and engineers," says Michael Steel, interim director of AAO-Macquarie, and head of Physics and Astronomy at Macquarie.

"In 45 years of operation the Australian Astronomical Observatory has developed and built over forty precision astronomy instruments. Today, AAO-Macquarie is leading the design and construction of the new AESOP fibre positioning system for the European Southern Observatory (ESO). It will use optical fibres to track thousands of stars simultaneously for the most comprehensive survey of our own Milky Way galaxy and the large-scale universe ever undertaken," he says.

"After many years of close collaboration with the AAO we're delighted to welcome over 40 staff as new employees at Macquarie University," says Barbara Messerle, Executive Dean of the Faculty of Science and Engineering.

"Their remarkable expertise will be complemented by our leadership in lasers and photonics, optical micro and nano-fabrication, and a host of optical sensing technologies."

"We're looking forward to building closer relationships with our colleagues at AAO-Stromlo (ANU) led by Professor Anna Moore, and the AAO-USydney team led by Dr Julia Bryant," says Michael. "And the participation of Astronomy Australia Ltd provides a voice for the astronomy community in the development of the new AAO consortium."

Minister for Jobs and Innovation Senator Michaelia Cash acknowledged the strong investment from many universities and congratulated the sector on achieving such a

positive outcome for the nation.

“Macquarie University, ANU and the University of Sydney have impressive track records in science and commercialisation, and are well positioned to continue developing the AAO into a business that benefits Australians and the world,” she says.

Assistant Minister for Science, Jobs and Innovation Senator Zed Seselja said it was the start of an exciting new chapter for the AAO.

“The spectacular discoveries and images created by our astronomers advance scientific understanding, stimulate scientific interest in young people and inspire all of us to think about our place in the universe.

“Australia has a strong international reputation in optical astronomy and I’m sure we will continue to play a leading role in developing future optical telescopes and inspiring the next generation of Australian astronomers and engineers,” he says.

The transfer of the instrumentation team to Macquarie follows the disestablishment of the Australian Astronomical Observatory, previously a division of the Australian Government’s Department of Industry, Innovation and Science (DIIS). As part of the same restructure, the 3.9m Anglo-Australian Telescope (AAT) at Siding Spring Observatory, will henceforth be operated by ANU on behalf of a 13-university consortium. Australian astronomers have also gained access to powerful optical telescopes in Chile through a 10-year strategic partnership with the ESO supported by Australian Government funding.

“It is an important reshaping of Australian astronomy infrastructure and I’d like to record my deep appreciation of the effort of my colleagues at Macquarie and of the government team led by Sue Weston and coordinated by Jane Urquhart and Clare McLaughlin,” says Barbara.

“We thank the Australian government for their commitment to ensuring that Australia maintains its leading position in optical astronomy research, instrumentation and industry innovation.”

Find out more: [Ministerial media release](#), [Macquarie University media release](#).

Job opportunities at AAO-Macquarie



The Macquarie University is the new home for the instrumentation group of the Australian Astronomical Observatory (AAO).

Over decades, this group has established an enviable reputation for its precision engineering capability and expertise within astronomical instrumentation across optical, mechanical, electronics, and software engineering.

AAO-Macquarie is excited to take a significant role in leading and growing our national astronomical instrumentation capability, in partnership with AAO-Stromlo at the Australian National University and AAO-USydney at the University of Sydney.

Over the next 12 months it is expected that a number of new positions will be available, including:

- **Director**, responsible for overall leadership of AAO-Macquarie including strategic planning and all operations,
- **Program Manager**, responsible for leading project management for the instrumentation group,
- **Project Manager**, responsible for management of multiple astronomical instrumentation projects,
- **Optical Engineer**, responsible for engineering/designing optics for spectrographs and imagers,
- **Mechanical Engineer**, responsible for design and analysis of precision mechanical parts,
- **Instrument Scientist**, responsible for systems and science analysis.

Additionally, AAO-Macquarie staff will be interested to engage with potential new PhD students and undergraduate interns for a variety of projects related to astronomical instrumentation.

Enquiries and informal expressions of interest for these roles are welcomed. In all cases, please contact aaoinfo@mq.edu.au.

AAO public lecture: Bursts, bangs and things that go bump in the night



In partnership with the Department of Industry, Innovation and Science, AAO-Macquarie is delighted to be hosting Dame Jocelyn Bell Burnell, who will be presenting the Allison Levick Memorial Lecture on Thursday 19 July.

With the advancement of new technology and equipment, astronomers can now study the sky in new ways. In particular, they are able to see things that vary quickly in brightness, and things that move, revealing a host of new phenomena. In a 50-minute lecture, radio astronomer Jocelyn Bell Burnell will introduce some of these discoveries.

British astrophysicist, scholar and trailblazer Jocelyn Bell Burnell discovered the space-based phenomena known as pulsars, going on to establish herself as an esteemed leader in her field.

[More about the event](#)

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If you have comments, questions or research news you think might be of interest to the rest of Faculty, I'd love to hear from you. Drop me a line at fse.execdean@mq.edu.au.

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- Barbara on Twitter: [@BarbaraMesserle](https://twitter.com/BarbaraMesserle)

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