

Simon Ellis
Associate Professor
Australian Astronomical Optics
MQ Photonics Research Centre
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Biography

Simon Ellis is an Associate Professor at Macquarie University and an Honorary Senior Lecturer at the University of Sydney. Simon is Manager of the Instrument Science Group at AAO-Macquarie, where he leads the research and development of new instrument concepts and novel technologies for astronomy. He has over 20 years experience working in many areas of astronomical research, from X-ray astronomy to optical astronomy, including observations, theory and modelling. His research interests include clusters of galaxies, galaxy evolution, brown dwarfs, and the astrophysics of antimatter. Simon has 79 total publications, of which 25 are first author and 42 are refereed, with 1794 total citations total, and 212 normalised citations, and an h-index of 25. Additionally, Simon has over a decade of experience in the development of astronomical instrumentation, and was the project scientist for the KOALA IFU on the AAT. He has been involved in several on-telescope demonstrations of new photonic technologies including fibre Bragg gratings and integrated spectrographs. He is actively involved in the development and testing of astrophotonics, including ring resonators, and multicore fibres. Simon is an expert in the field of OH suppression, and was the instrument scientist for the GNOSIS instrument, the first astronomical instrument to use fibre Bragg gratings and photonic lanterns, and he is currently the instrument scientist for the PRAXIS near infrared spectrograph, the successor to GNOSIS.

Qualifications

Astrophysics, PhD, University of Birmingham
1 Oct 1999 → 30 Jun 2003
Award Date: 12 Dec 2003

Employment

Associate Professor

Associate Professor
Australian Astronomical Optics
Macquarie University
1 Jan 2021 → present

MQ Photonics Research Centre

Macquarie University
1 Jul 2018 → present

Instrument Science Manager

Australian Astronomical Observatories
Sydney, Australia
1 Nov 2017 → 30 Jun 2018

Honorary Senior Lecturer

University of Sydney
2006, Australia
22 Mar 2016 → 22 Mar 2019

Instrument Scientist

Australian Astronomical Observatories
Sydney, Australia
1 Oct 2010 → 1 Nov 2017

Honorary Senior Lecturer

University of Sydney
2006, Australia
1 Jan 2010 → 1 Jan 2013

Research Fellow

University of Sydney
2006, Australia
1 Oct 2008 → 30 Sep 2010

Instrument Scientist

Anglo-Australian Observatory
Australia
1 Aug 2006 → 30 Sep 2008

Research Fellow

Anglo-Australian Observatory
Australia
1 Aug 2003 → 31 Jul 2006

Grants

\$500,000, Partner Investigator, Linkage Infrastructure, Equipment and Facilities, LE100100164, GNOSIS: a new window on the early universe using revolutionary photonic technology
\$300,000, Partner Investigator, Linkage Infrastructure, Equipment and Facilities, LE120100199, GNOSIS-J: completing the revolutionary OH suppression spectrograph

Publications

79 total publications of which 25 are first author and 42 are refereed. 1794 citations total, 212 normalised citations, h-index 25

Conference Organisation and Invited Talks

Invited speaker, Science with AO fed instruments, Dunk Island, Australia 2008
Lecturer, Summer School in Astrophotonics, Wiesenburg, Germany 2012
Invited speaker, Guillermo Haro Workshop: Galaxy structure and evolution through Integral Field Spectroscopy: the next generation surveys, Tonantzintla, Mexico 2013
Invited speaker, ULTIMATE-Subaru workshop, NAOJ, Tokyo, 2016
Plenary Speaker, POSMOL, Magnetic Island, Australia 2017
Invited speaker, ULTIMATE-Subaru workshop, NAOJ, Tokyo, 2018
MAVIS workshop, LOC (chair), SOC, and speaker, AAO, Australia 2018

Instrumentation Projects

Instrument Scientist, GNOSIS, 2011
Project Scientist, KOALA, 2012
Project Scientist, ULTIMATE-Subaru concept study, 2016
Instrument Scientist, PRAXIS, 2018

Selected Publications

1. The case for OH suppression at near-infrared wavelengths, Ellis, S.C. and Bland-Hawthorn, J., 2008, Monthly Notices of the Royal Astronomical Society 386, 47.
2. Suppression of the near-infrared OH night-sky lines with fibre Bragg gratings - first results, Ellis, S.C., Bland-Hawthorn, J., Lawrence, J., Horton, A.J., Trinh, C., Leon-Saval, S.G., Shortridge, K., Bryant, J., Case, S., Colless, M., Couch, W., Freeman, K., Gers, L., Glazebrook, K., Haynes, R., Lee, S., Löhmannsröben, H.-G., O'Byrne, J., Miziarski, S., Roth, M., Schmidt, B., Tinney, C.G., and Zheng, J., 2012, Monthly Notices of the Royal Astronomical Society 425, 1682.
3. Photonic ring resonator filters for astronomical OH suppression, Ellis, S.C., Kuhlmann, S., Kuehn, K., Spinka, H., Underwood, D., Gupta, R.R., Ocola, L.E., Liu, P., Wei, G., Stern, N.P., Bland-Hawthorn, J., and Tuthill, P., 2017, Optics Express 25, 15868.

4. A complex multi-notch astronomical filter to suppress the bright infrared sky, Bland-Hawthorn, J., Ellis, S.C., Leon-Saval, S.G., Haynes, R., Roth, M.M., Löhmansröben, H.-G., Horton, A.J., Cuby, J.-G., Birks, T.A., Lawrence, J.S., Gillingham, P., Ryder, S.D., and Trinh, C. 2011, *Nature Communications* 2, 581.
5. First starlight spectrum captured using an integrated photonic micro-spectrograph, Cvetojevic, N., Jovanovic, N., Betters, C., Lawrence, J.S., Ellis, S.C., Robertson, G., and Bland-Hawthorn, J., 2012, *Astron. Astroph.* 544, L1.
6. Hexabundles: imaging fiber arrays for low-light astronomical applications, Bland-Hawthorn, J., Bryant, J., Robertson, G., Gillingham, P., O'Byrne, J., Cecil, G., Haynes, R., Croom, S., Ellis, S., Maack, M., Skovgaard, P., and Noordegraaf, D., 2011, *Optics Express* 19, 2649.
7. The Sydney-AAO Multi-object Integral field spectrograph, Croom, S.M. et al. incl. Ellis, S., 2012, *Monthly Notices of the Royal Astronomical Society* 421, 872.
8. CALIFA, the Calar Alto Legacy Integral Field Area survey. I. Survey presentation, Sánchez, S.F. et al. incl. Ellis, S., 2012, *Astron. Astroph.* 538, A8.
9. The K-band galaxy luminosity functions of three massive high-redshift clusters of galaxies, Ellis, S.C. and Jones, L.R., 2004, *Monthly Notices of the Royal Astronomical Society* 348, 165.
10. Correlations of near-infrared, optical and X-ray luminosity for early-type galaxies, Ellis, S.C. and O'Sullivan, E., 2006, *Monthly Notices of the Royal Astronomical Society* 367, 627.
11. Possibility of observable signatures of leptonium from astrophysical sources, Ellis, S.C. and Bland-Hawthorn, J. 2015, *Physical Review D* 91, 123004.
12. Astrophysical signatures of leptonium, Ellis, S.C. and Bland-Hawthorn, J. 2018, *European Physical Journal D* 72, 18.