

Simon Ellis
Associate Professor
Australian Astronomical Optics
MQ Photonics Research Centre
Astrophysics and Space Technologies Research Centre
Email: simon.ellis@mq.edu.au
Phone: 0293724845



Biography

Simon Ellis is an Associate Professor at Macquarie University where he is the head of the Instrument Science Group, which is responsible for research and development in astronomical instrumentation and technologies. He has over 20 years experience of research in astronomy and astrophysics, including instrumentation research and development, the evolution of galaxies and clusters of galaxies, and the astrophysics of positronium. He has played a leading role in the development of astrophotonics, most notably in the field of OH suppression. He was the commissioning scientist for the world's first two instruments to use fibre Bragg gratings for OH suppression. He has published foundational papers in the use of silicon photonics for astronomy. He is currently the Lead Instrument Scientist for the Imager and Spectrograph for MAVIS, an adaptive optics fed instrument for the European Southern Observatories Very Large Telescope.

Qualifications

Astrophysics, PhD, The Evolution of High Redshift Clusters of Galaxies, 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

Astrophysics and Space Technologies Research Centre

Macquarie University
1 Jan 2023 → 31 Dec 2027

Instrument Science Manager

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

Honorary Senior Lecturer

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

Research Fellow

University of Sydney
Camperdown, Australia
1 Oct 2008 → 30 Sept 2010

Instrument Scientist

Anglo-Australian Observatory
Australia
1 Aug 2006 → 30 Sept 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., Löhmannsröben, 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.