

Dr. Matthew S. Bothwell

Public Astronomer - Institute of Astronomy - University of Cambridge

@ bothwell@ast.cam.ac.uk

🌐 <http://www.mattbothwell.com>

📍 Cambridge, UK

Education

PhD in Astronomy

University of Cambridge (Girton College)

📅 2007 - 2011

- Thesis: Galaxy Evolution, Near and Far
- Advisors: Professor Rob Kennicutt and Dr. Scott Chapman

MPhys in Astrophysics

University of Southampton

📅 2003 - 2007

- 1st Class Honours
- Included a year of full-time research at the Harvard Center for Astrophysics (master's thesis: Spectroscopic observations of the neutron star system 4U2129+47)

Professional Appointments

Public Astronomer

Institute of Astronomy (IoA), University of Cambridge

📅 2021 - present

- I am responsible for the outreach program at the IoA
- I lead the *AstroEast* program, which delivers astronomy teaching to secondary schools in underserved communities across East Anglia
- Responsibilities include running public events, hosting stargazing groups, delivering public lectures, giving talks to schools, organising Cambridge Festival events, liaising with the media, writing press releases, maintaining a web and social media presence, and providing science communication training for students

Outreach Officer

Kavli Institute for Cosmology, University of Cambridge

📅 2018 - present

- Responsibilities include maintaining the Kavli's web and social media presence, and coordinating outreach projects between faculty, post-docs, and students

Outreach Facilitator

Institute of Astronomy, University of Cambridge

📅 2017 - 2021

- Began as assistant to Carolin Crawford in 2017, before being promoted to Outreach Facilitator in 2018

Postdoctoral Researcher

Astrophysics Group, University of Cambridge

📅 2012 - 2017

Postdoctoral Researcher

Steward Observatory, University of Arizona

📅 2011 - 2012

Professional activities

- Bye-Fellow of Girton College, Cambridge
- Invited referee for *Nature*, *Nature Physics*, the *Astrophysical Journal*, *Monthly Notices of the Royal Astronomical Society*, and *Astronomy & Astrophysics*
- Fellow of the Royal Astronomical Society
- Patron and Trustee of the Kinetic Science Foundation
- Member of the Cambridge Physics Centre committee
- Honorary President of LYRA (Lowestoft & Yarmouth Regional Astronomers) and LDAS (Letchworth & District Astronomical Society)
- Member of the European Space Agency's James Webb Telescope Communication Coordination Group
- Served on the organising committee for *Pint of Science Cambridge* (2015-2018)
- Founded Cambridge's *Astronomy on Tap* committee (2018-)

Research

- As of Winter 2023, I have >5400 citations and my *h*-index = 36 (Google Scholar link)
- I have 42 papers in refereed journals (including 2 in *Nature*);
- I am PI of the 2016 ESO large program 'MASCOT', awarded 1000 hours with the Arizona Radio Observatory
- My research interests involve the role of gas in galaxy evolution across cosmic time

IT Skills

- Experienced with a range of programming languages (IDL, C++, LaTeX)
- Experienced with using film, video editing, and livestreaming to communicate science to online audiences
- Attended training courses on Falcon and Drupal website content management services
- I administer the IoA and KICC public websites

Science Communication

Public Speaking

- I give astronomy talks and lectures to general audiences of all ages on almost any area of astronomy (including exobiology, planetary science, stars, galaxies, and cosmology)
- I have given invited lectures for the Royal Institution, New Scientist Live, the Royal Astronomical Society, and the British Astronomical Association
- I regularly speak at festivals (including the Cambridge Science Festival, the Wigtown Book Festival, the Harrogate Festival, the Ely Cathedral Science Festival, and the Kings Lynn Festival), as well as speaking at Pint of Science (2015-2023), Astronomy on Tap, and Cafe Scientifique
- I speak to more than 3000 young people annually, across visits to 50-100 schools per year and hosting scouting groups for stargazing evenings throughout the winter

Science Communication Training

- I give science communication training workshops aimed at graduate students
- I work closely with researchers who want to improve their science communication, offering consultation on both science writing (for media press releases) and public speaking

Science Writing

- Since 2019 I have been represented by Laurie Robertson (for adult non-fiction) and Lucy Irvine (children's non-fiction) of Peters Fraser & Dunlop literary agents
- I have a two-book deal with Dorling Kindersley, the first of which – *Astrophysics for Supervillains* – will be published in Summer 2024, with the second planned for 2025.
- My popular astronomy book *The Invisible Universe: Why There's More to Reality than Meets the Eye* was published by Oneworld Publications in November 2021. Copies sold to date in excess of 9500 (excluding audiobooks)
- My science writing has appeared in *New Scientist*, *Aeon Magazine*, *The Daily Beast*, *The Guardian* 'ask an expert', *Writer's Digest*, and others
- I am an invited consulting science editor for the upcoming book *Beyond the Earth: An Anthology of Human Messages Into Deep Space and Cosmic Time* (Atalier Editions).
- I am a consulting expert for several upcoming children's popular science books to be published by Nosy Crow in collaboration with the University of Cambridge.

Working with the Media

- I have appeared on NPR, BBC Radio 5's 'The Naked Scientists' podcast, Tortoise Media's 'ThinkIn', BBC local radio (Radio Cambridgeshire, Radio Kent, etc) and more
- I facilitated a 'mutual marketing' social media relationship between the IoA and the Royal Institution
- I am regularly consulted by science journalists from a range of national and international publications (including the BBC, *The Daily Mail*, *The Telegraph*, and *The Guardian*) to discuss and comment on breaking astronomical news stories

Teaching

- Since 2023 I have supervised Part IA Physics for Emmanuel College
- Since 2022, I have interviewed for Physics for Emmanuel College
- I am a course tutor at the University of Cambridge Institute for Continuing Education (2016-present); courses include the Undergraduate Diploma in Astronomy (2016-2017); *Understanding the Universe: a multi-wavelength approach* (2018-2020); *Our Expanding Universe* (2019); *18th-Century Astronomy* (2020); *Windows to the Universe* (2021); *The Essentials of Astronomy* (2022-3)
- I have delivered astronomy courses and been a guest lecturer for a variety of International Summer Schools (including CL Global, Reach Cambridge, and Oxbridge Academic).
- I was primary supervisor for a Part III Astrophysics student (2014-2015)
- In 2023 I served on a master's thesis viva committee for the University of Ghent

Interdisciplinary Collaborations

- In 2018, I revitalised the IoA's 'Artist in Residence' programme
- I worked with Tim Watts, Affiliated Lecturer at the Faculty of Music on 'The Creation of the Universe', which used spoken words, poetry, and a score for string quintet to explore the link between music and astronomy. We performed this piece at the King's Lynn Festival in 2019.
- In 2019, I collaborated with playwright Natalie Songer on her interactive theatre piece 'Satellites'
- In 2021, I worked with visual artist Rhea Quinn, and contributed a lecture to her Cambridge Festival piece 'Dance of Light'
- From 2022-present I have participated in SunSpaceArt, a University of Cambridge project (led by Prof. Helen Mason) bringing artists and scientists into school classrooms