

Dr. Matthew S. Bothwell

Public Astronomer - Institute of Astronomy - University of Cambridge

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📍 Cambridge, UK

Education

PhD in Astronomy

University of Cambridge

📅 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
- Duties include running public events, hosting stargazing groups, delivering public lectures, giving talks to schools, organising the Cambridge Festival, 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

- I lead the *AstroEast* project, which delivers astronomy teaching to secondary schools in deprived areas across East Anglia
- Other responsibilities include maintaining the Kavli's web and social media presence, and coordinating projects between faculty, post-docs, and students

Outreach Assistant/Facilitator

Institute of Astronomy, University of Cambridge

📅 2017 - 2021

Postdoctoral Researcher

Astrophysics Group, University of Cambridge

📅 2012 - 2017

Postdoctoral Researcher

Steward Observatory, University of Arizona

📅 2011 - 2012

Professional activities

- Invited referee for *Nature*, *Nature Physics*, the *Astrophysical Journal*, *Monthly Notices of the Royal Astronomical Society*, and *Astronomy & Astrophysics*
- 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* (2015-2018)
- Founded Cambridge's *Astronomy on Tap* committee (2018-)
- Fellow of the Royal Astronomical Society

Research

- As of Winter 2023, I have >5400 citations and my h -index = 36
- 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 popular-level astronomy talks and lectures on almost any area of astronomy (including exobiology, planetary science, stars, galaxies, and cosmology) to a wide range of ages
 - 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 appearing at Pint of Science, Astronomy on Tap, and Cafe Scientifique
 - I regularly speak to school pupils at all educational stages from pre-school to sixth-form
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Science Writing

- My children's astronomy book *Astrophysics for Supervillains* will be published by Dorling Kindersley in Summer 2024
 - 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
 - My science writing has appeared online in *New Scientist*, *Aeon Magazine*, *The Daily Beast*, *Writers Digest*, and others
 - I write a weekly newsletter (summarising the week's top astronomical news stories) for the public attending our open evenings
 - I am a consulting science editor for the upcoming book 'Beyond the Earth', published by *Atalier Editions*
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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 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
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Teaching

- I am a course tutor at the University of Cambridge Institute for Continuing Education (ICE)
- I have taught a wide range of courses for ICE, including 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)
- I have delivered astronomy courses for a variety of International Summer Schools (including 'CL Global', and 'Reach Cambridge'). The audience for these generally consists of international students aged 14-18.
- I was primary supervisor for a Part III Astrophysics student (2014-2015)

Interdisciplinary Collaborations

- In 2018 I revitalised the IoA's 'Artist in Residence' program (after a ~ 10-year hiatus), and invited Tim Watts, Affiliated Lecturer at the Faculty of Music, to the post
 - I worked with Dr Watts 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'
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