

Christopher C. Lovell

Curriculum Vitae

University of Sussex
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Education

- 2015–2019 **Ph.D. Astronomy, Modelling Galaxy Formation and Evolution during the Epoch of Reionisation and Beyond**, *Astronomy Centre, School of Mathematical and Physical Sciences, University of Sussex.*
Advisors: Prof. Peter Thomas & Dr. Stephen Wilkins
The focus of my research is on using both semi-analytic and hydrodynamic simulations of galaxy evolution to model galaxies during the first few billion years of cosmic history.
- 2013 **Cardiff Undergraduate Research Opportunities Programme (CUROP)**, *School of Physics and Astronomy, Cardiff University.*
Advisor: Dr. Ian Harrison
Summer research placement within the Cosmology group on quantifying extreme cosmological voids and their potential to provide cosmological constraints.
- 2009–2013 **MPhys Astrophysics**, *School of Physics and Astronomy, Cardiff University.*
Advisor: Prof. Peter Coles
First-class honours. Masters project on using extreme value statistics to investigate massive clusters in cosmological simulations

First-Author Publications

- 2017 **Characterising and Identifying Galaxy Protoclusters.**
Christopher C. Lovell, Peter A. Thomas, Stephen M. Wilkins
[arxiv:1710.02148](https://arxiv.org/abs/1710.02148)
Accepted, Monthly Notices of the Royal Astronomical Society

Non-refereed Publications

- 2018 **Learning the Relationship between Galaxies Spectra and their Star Formation Histories.**
Christopher C. Lovell, Viviana Acquaviva, Stephen M. Wilkins, Peter A. Thomas, In prep.

Co-Authored Publications

- 2017 **Dust Obscured Star Forming Galaxies in the Early Universe.**
Stephen M. Wilkins, Yu Feng, Tiziana Di Matteo, Rupert Croft, Christopher C. Lovell, Peter Thomas
[arxiv:1710.01976](https://arxiv.org/abs/1710.01976)
Accepted, Monthly Notices of the Royal Astronomical Society
- 2017 **The properties of the first galaxies in the BLUETIDES simulation.**
Stephen M. Wilkins, Yu Feng, Tiziana Di-Matteo, Rupert Croft, Christopher C. Lovell, Dacen Waters
[arxiv:1704.00954](https://arxiv.org/abs/1704.00954)
Accepted, Monthly Notices of the Royal Astronomical Society

- 2016 **The Photometric Properties of Galaxies in the Early Universe.**
Stephen M. Wilkins, Yu Feng, Tiziana Di-Matteo, Rupert Croft, Elizabeth R. Stanway, Andrew Bunker, Dacen Waters, Christopher C. Lovell
[arxiv:1605.05044](#)
Accepted, Monthly Notices of the Royal Astronomical Society

Invited Talks

- March 2018 **University of California, Santa Cruz, USA.**
Characterising and Identifying Galaxy Protoclusters

Long Term Visits

- September 2017 - **City University New York, USA.**
March 2018 Prof. Viviana Acquaviva
September - **University of The Western Cape, South Africa.**
December 2016 Prof. Romeel Davé

Conferences and Meetings Attended

- May 2018 **European Week of Astronomy & Space Science.**
Liverpool, UK
- January 2018 **231st American Astronomical Society Meeting.**
Washington DC, US
- October 2017 **Scientific Visualisation, Simons Foundation Centre for Computational Astrophysics.**
New York, USA
- January 2017 **Dawn of Galaxies.**
Obergurgl, Austria
- December 2016 **VIRGO consortium meeting, Institute for Computational Cosmology.**
Durham, UK
- June 2016 **Royal Astronomical Society National Astronomy Meeting.**
Nottingham, UK
- June 2016 **32nd IAP Colloquium - Cosmic dawn of galaxy formation: linking observations and theory with new-generation spectral models.**
Institut d'Astrophysique de Paris
- January 2016 **Single Node Performance Optimisation, ARCHER.**
Swansea University, UK
- December 2015 **VIRGO consortium meeting, Lorentz Centre.**
Leiden, Netherlands
- August 2015 **Introductory Summer School in Astronomy.**
Cardiff University, UK

Outreach

- 2015–Present **Astrobites.**
provides accessible summaries of the latest research papers in Astronomy and Astrophysics. Since September 2015 I have produced **14 articles** and edited and mentored other authors.
- 2017 **Where is Everybody?, Significance.**
Invited to contribute an article on the Search for ExtraTerrestrial Intelligence (SETI) to *Significance*, the magazine of the Royal Statistical Society and the American Statistical Association.
- 2017–Present **Webb UK.**
Performed outreach at a number of events around the UK related to the upcoming James Webb Space Telescope, including festivals and talks for societies.

Other Experience

- 2013–2015 **Data Scientist**, *Bank of England*, London.
Graduate analyst in the IT department, before moving to the Data Lab as a Data Scientist. I worked on text analytics projects using techniques such as latent dirichlet allocation to perform topic modelling on large text corpora.
- 2016 **Online Learning Module Developer**, *University of Sussex*.
Recipient of a £1000 award to develop an open access [online training module](#) for fellow postgraduates on the use of popular Python packages in Astronomy.
- 2015–2016 **Hack Day Co-Organiser**, *University of Sussex*.
I co-organised and participated in two hack days. The first explored the potential for visualising astrophysical data sets with web based 3D modelling tools. The second was run in conjunction with Deckchair, a company that runs premium webcam services for clients around the world. We developed a novel, automatic image classification pipeline utilising principal component analysis.
- 2017–Present **Brilliant Club Tutor**, *Scholars Programme*.
I taught an intensive 6 week course on processes in galaxy evolution. The scheme required the design from scratch of a course intended for secondary school age students, the delivery of that course, communication with students and teachers, and marking and assessment of submissions.
- 2016 **Associate Tutor**, *University of Sussex*.
Performed marking and workshop supervision for a first year introductory Python course. Duties included marking and feedback on submitted scripts, and supervision in exercise classes.
- 2010–2013 **Support Worker**, *Cardiff University*.
Cardiff university support workers aid students with physical or mental disabilities by taking and writing up notes from lectures, helping them to and from classes, and generally supporting their well being throughout the academic year. I worked with tens of students and learnt valuable note taking and communication skills.