

Dr Sarah E. I. Bosman

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- RESEARCH INTERESTS** Using a wide range of observations of the most distant quasars and galaxies currently known, my work provides some of the best constraints to date on the unfolding of the Epoch of Reionisation, and challenges our current models of cosmic structure formation.
Keywords: Cosmic Dawn, quasar spectroscopy, galaxy formation
- EMPLOYMENT**
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| <i>Postdoctoral Researcher</i> in Observational Cosmology
Department of Physics and Astronomy, UCL
Group: Cosmology and First Light | 2017-2020 |
| Department of Astrophysics, UCL
<i>Summer research project</i>
Dr. Manda Banerji and Dr. Filipe Abdalla | Aug-Sep 2013 |
| Institut de Recherche Astrophysique et Planétologie, Toulouse, France
<i>Summer research project</i>
Dr. Emmanuel Davoust | Aug 2012 |
- EDUCATION**
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|---|-----------|
| Institute of Astronomy, University of Cambridge
Kavli Institute for Cosmology
<i>Ph.D</i> in Astrophysics
Thesis: <i>Quasars at the High Redshift Frontier</i>
Supervisors: Prof. George Becker & Prof. Martin Haehnelt | 2014-2017 |
| Girton College, University of Cambridge
<i>BA, MA, Natural Sciences</i>
<i>Msci, Astrophysics</i>
Part III: Class I | 2010-2014 |
- TEACHING**
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| Department of Physics and Astronomy, UCL
<i>Practical Physics Laboratory Course</i> , first year Physics course
Laboratory Demonstrator in charge of ~ 15 students, one term | 2018-2019 |
| University College London Observatory
<i>Practical Astronomy</i> , first year Physics with Astronomy course
Taught and tested usage of telescopes, one term | 2017-2018 |
| Institute of Astronomy, University of Cambridge
<i>Principles of Quantum Mechanics</i> , third year Physics and Astrophysics course
Small group tutoring, ~ 50 hours in total | 2014-2016 |

LANGUAGES *Fluent:* French, English, Romanian
Good: Italian

PUBLIC TALKS	• Space Lates, National Space Centre (~200 people), Leicester	January 2019
	• Certificate in Astronomy guest lecture, UCL, London	November 2018
	• Société Astronomique de France (in French, ~250 people), Paris	November 2018
	• Thurrock Asttronomical Society	October 2018
	• Herschel Astronomical Society, Eton College	October 2018
	• Ewell Astronomical Society	Septembre 2018
	• The Ned memebbers' club	April 2018
	• Norman Lockyer Observatory	March 2018
	• Breckland Skies astronomical society	February 2018
	• Saffron Walden Rotary Club	October 2017
	• LYRA Lowesoft Regional Astronomers	July 2017
	• Norwich Amateur Astronomer Society	April 2017
	• Cambridge Astronomical Association	January 2017
	• Ely Astronomical Society	December 2016
	• Cambridge University Astronomical Society	October 2016
	• Wednesday open evenings, IoA, Cambridge, UK (~180 people)	May 2016

**OTHER
OUTREACH
ACTIVITIES**

Several apperances in TV programs on the BBC and ITV channels on various space-related topics

Personal YouTube channel explaining concepts and news of cosmology to the general public

Ran and helped organize visits from general public, scouts & guides groups to the Institute of Astronomy, Cambridge, including talks to small groups and telescope tours and demonstrations; about 20 visits over two years

Talked and demonstrated to the general public and school groups as part of a multitude of astronomy-related outreach events, including Science Festivals, weekly public open days over three years, Observatory visits in both Cambridge and UCL, and events in schools and museums including the Royal Astronomical Society

PRIZES AND AWARDS	Girton College, University of Cambridge	
	<i>Emily Davies Prize</i>	2014-2015
	<i>Gwendolen Crewdson Prize</i>	2014-2015
	<i>Eileen Ellenbogen Travel Prize</i>	2012

COMPUTER SKILLS *Languages & Software:*
C, LaTeX, HTML, Python, IDL, awk, bash, F77

ATTENDED CONFERENCES	• Massive black holes in evolving galaxies: from quasars to quiescence, IAP, France (talk)	June 2018
	• Rise and Shine: galaxies in the epoch of reionization, Strasbourg, France (talk)	June 2018
	• MIAPP program: The interstellar Medium of High Redshift Galaxies, Garching, Germany (attendant)	April 2018
	• European Week of Astronomy and Space Science - EWASS, Liverpool, UK (talk)	April 2018
	• Tokyo Spring Cosmic Lyman-alpha Workshop - Sakura CLAW, Tokyo, Japan (talk)	March 2018
	• Royal Astronomical Society Specialist Meeting – The Epoch of Reionisation: UK community update (talk)	February 2018
	• IAU Symposium 333: Peering towards Cosmic Dawn, Dubrovnik, Croatia (talk)	October 2017
	• Signals from the Deep Past, UOM, Malta (talk)	July 2016
	• Illuminating the Dark Ages, MPIA Heidelberg, Germany (talk)	June 2016
	• Cosmic dawn of galaxy formation, IAP, France (talk)	June 2016
	• Cosmology and First Light, IAP, France (poster)	December 2015
	• The Olympian Symposium: Cosmology and the Epoch of Reionisation, Paralia Katerini, Greece (poster)	May 2015

INVITED CONFERENCES	• What Matter(s) between galaxies, Abbazia di Spineto, Italy	June 2019
	• Spectroscopic Surveys at UCL, London, UK	February 2019

INVITED SEMINARS	• Centre for Astrophysics Research, University of Hertfordshire	5 December 2018
	• Scuola Normale Superiore, Pisa	31 October 2018
	• Trieste Observatory	24 October 2018
	• Institute of Astronomy, Cambridge	18 May 2018

PUBLICATIONS

- Meyer R. A., **Bosman S. E. I.** & Ellis R. S., *New Constraints on Quasar Evolution: Broad Line Velocity Shifts over $1.5 \lesssim z \lesssim 7.5$* , 2019, MNRAS submitted, arXiv:1902.04588
- **Bosman S. E. I.**, Laporte N., Ellis R. S., Ouchi M. & Harikane Y., *Fluorescent C II* 1335\AA emission spectroscopically resolved in a galaxy at $z = 5.754$* , 2019, MNRAS Letters submitted, arXiv:1902.03880
- Kulkarni G., Keating L. C., Haehnelt M. G., **Bosman S. E. I.**, Puchwein E., Chardin J. & Aubert D., *Large Lyman- α opacity fluctuations and low CMB τ in models of late reionization with large islands of neutral hydrogen extending to $z < 5.5$* , 2018, MNRAS Letters, 485, 24
- Meyer R. A., **Bosman S. E. I.**, Kakiichi K. & Ellis R. S., *The role of galaxies and AGN in reionizing the IGM - II: metal-tracing the faint sources of reionization at $5 < z < 6$* , 2019, MNRAS, 483, 19
- **Bosman S. E. I.**, Fan X., Jiang L., Reed S., Matsuoka Y., Becker G., Haehnelt M., *New constraints on Lyman- α opacity from 62 quasar lines of sight at $z > 5.7$* , 2018, MNRAS, 479, 1055
- Kakiichi K., Ellis R. S., Laporte N., Zitrin A., Eilers A.-C., Ryan-Weber E., Meyer R. A., Robertson B., Stark D. P. & **Bosman S. E. I.**, *The role of galaxies and AGN in reionizing the IGM - I. Keck spectroscopy of $5 < z < 7$ galaxies in the QSO field J1148+5251*, 2018, MNRAS, 479, 43
- Chardin J., Haehnelt M. G., **Bosman S. E. I.** & Puchwein E., *A tale of seven narrow spikes and a long trough: constraining the timing of the percolation of HII bubbles at the tail-end of reionization with ULAS J1120+0641*, 2018, MNRAS, 473, 765
- **Bosman S. E. I.**, Becker G., McMahon R. G., Mortlock D., Venemans B. P., Warren S. R., Hewett P. C., Simpson C., Haehnelt M. G., *A deep search for metals near redshift 7: the line-of-sight towards ULAS J1120+0641*, 2017, MNRAS, 470, 1919
- **Bosman S. E. I.** & Becker G., *Re-examining the case for neutral gas near the redshift 7 quasar ULAS J1120+0641*, 2015, MNRAS, 452, 1105
- Banerji M., Jouvel S., Lin H., McMahon R. G., Lahav O., Castander F. J., Abdalla F. B., Bertin E., **Bosman S. E.** + 69 co-authors, *Combining Dark Energy Survey Science Verification data with near-infrared data from the ESO VISTA Hemisphere Survey*, 2015, MNRAS, 446, 2523