



Adam Carnall

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[github.com/
ACCarnall](https://github.com/ACCarnall)

Adam Carnall

Astrophysics PhD student working on galaxy spectral modelling and fitting.

Interests and Skills

- Galaxy formation and evolution
- Bayesian statistical analysis
- Software development in Python
- Machine learning and optimisation techniques
- I also climb mountains in my spare time!

Education

2015 – present: PhD Astrophysics, Royal Observatory Edinburgh

- Thesis title: The star-formation histories of quiescent galaxies
- Supervisors: Prof. Ross J. McLure and Prof. James S. Dunlop

2011 – 15: MPhys Physics and Astronomy, Durham University

- Graduated with first class honours: final mark 82%
- Final year project: A new search for high redshift quasars
- Supervisor: Prof. Tom Shanks

2007 – 11: GCSEs + A-levels, Thirsk School and Sixth Form College

- A-levels: A*A*A*A* in Physics, Chemistry, Maths and Further Maths
- AS-levels: AA in Geography and General Studies
- GCSEs: Eight A* grades and two A grades

First Authored Publications

2018: The VANDELS Survey: The star-formation histories of massive quiescent galaxies at $1.0 < z < 1.3$ - in preparation, to be submitted to MNRAS

2018: How well-motivated are parametric star-formation history models? - in preparation, to be submitted to ApJ

2018: Inferring the star-formation histories of massive quiescent galaxies with BAGPIPES - [MNRAS 480, 4379](#)

2017: SpectRes: A fast spectral resampling tool in Python - [arXiv:1705.05165](#)

2015: Two bright $z > 6$ quasars from VST ATLAS and a new method of optical plus mid-infrared colour selection - [MNRAS Letters 451, 16](#)

Coauthored Publications

2018: The VANDELS ESO public spectroscopic survey - *R. J. McLure et al. (tenth author)* - [MNRAS 479, 25](#)

2018: Two more, bright, $z > 6$ quasars from VST ATLAS and WISE - *B. Chehade et al. (second author)* - [MNRAS 478, 1649](#)

2018: The VANDELS ESO public spectroscopic survey: observations and first data release - *L. Pentericci et al. (tenth author)* - [A&A Accepted](#)

2017: The VANDELS survey: Dust attenuation in star-forming galaxies at $z=3-4$ - *F. Cullen et al. (sixth author)* - [MNRAS 476, 3218](#)

Software Development

BAGPIPES: Bayesian Analysis of Galaxies for Physical Inference and Parameter ESTimation - bagpipes.readthedocs.io

SpectRes: Spectral Resampling - spectres.readthedocs.io

Conference Talks

2018: IAU Symposium 341: Challenges in Panchromatic Galaxy Modelling with Next Generation Facilities, Osaka

- Talk: Advanced panchromatic spectral modelling and fitting with BAGPIPES

2018: The Art of Measuring Galaxy Physical Parameters, UC Riverside

- Invited talk: Review of star-formation and chemical-enrichment histories

- Invited talk: Advanced spectral modelling with BAGPIPES

2018: The Growth of Galaxies in the Early Universe IV, Sesto

- Talk: Advanced spectral modelling with BAGPIPES

2018: Durham Edinburgh Extragalactic Conference XIV, Durham

- Talk: Inferring the SFHs of massive quiescent galaxies with BAGPIPES

2017: Royal Society of Edinburgh Cormack Meeting

- Talk: Understanding galaxy quenching with BAGPIPES

2017: Advances in Galaxy Evolution with Surveys, Ringberg Castle

- Invited talk: Understanding galaxy evolution with VANDELS

Awards and Scholarships

2018: Scottish Universities Physics Alliance PECRE Bursary

- Funding for five week visit to the Harvard-Smithsonian Center for Astrophysics

2015: Durham University J. A. Chalmers Prize in Experimental Physics

- Awarded for best final year research project

2015: Durham University Summer Research Placement Bursary

- Funded six week summer research project supervised by Prof. T. Shanks

2014: Institute of Physics Top 50 Award: Southampton University

- Funded eight week research project supervised by Dr. D. Altamirano

2013: Oxford University Summer Research Programme

- Funded eight week summer research project supervised by Dr. R. Houghton

2013: Leicester University SURE Bursary

- Funded six week summer research project supervised by Prof. A. Blain

Teaching and Supervision

2018: Edinburgh University Physics Summer Scholarship

- Supervised undergraduate student Jamie Yellen for 8 week project

- Project title: Advanced Bayesian methods for galaxy spectral fitting

2017: Royal Society of Edinburgh Cormack Research Scholarship

- Supervised undergraduate student Joe Cairns for 6 week project

- Project title: SCUBA-diving in the deep universe: The origins of massive galaxies

2015-present: Edinburgh University Teaching Assistant

- I teach tutorials and labs for a variety of undergraduate courses

Outreach, Voluntary Activities and Hobbies

2018: Royal Observatory Edinburgh Doors Open Day Volunteer

- Organised stall exhibiting ROE research involving spectroscopic surveys

2017: Royal Observatory Edinburgh Christmas Ceilidh Organiser

2017 – Present: Edinburgh Physics Postgraduate Forum member

- Member of staff-student liason committee responsible for delivering student feedback and organising department-wide social events

2017: Royal Observatory Edinburgh Doors Open Day Volunteer

- Outreach talk: Astronomical archaeology: how do galaxies form?

2017: Edinburgh University Physics Department Furbush Organiser

- Organised a week-long outdoor activities trip for PhD students in physics

2015 – present: Edinburgh University Hillwalking Club

- Treasurer 2016-17: Managed a budget of £40,000
- I drive minibuses and lead walks on weekend trips to the highlands

2013 – 2015: Durham University Humanist Students Society

- President 2014 – 15: Organised speaker events, socials and campaigns
- Treasurer 2013 – 14: Managed a budget of £2000

2012 – 15: Durham University Cross Country Club Member