

# Shaun C Read

Ph.D. Student



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shaun.science



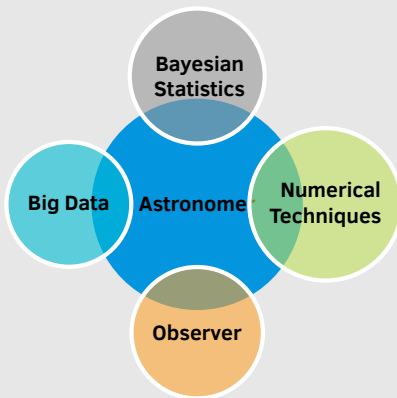
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## Technical Skills

### Overview



### Programming

Python

Shell • SQL • Matlab •  $\text{\LaTeX}$

C • C++ • R • Ruby • IDL • html

## Education

### Ph.D., Astronomy

University of Hertfordshire, UK

2015 - Present

Expected completion: 2019

### MPhys, Physics

Durham University, UK

2010 - 2014

2:1 with Honours

## Affiliations

Fellow of the Royal Astronomical Society, *FRAS*

## Summary

PhD student

## Experience

Oct 2015 - Present

### Ph.D. student

University of Hertfordshire

Supervisor: Dr Daniel J.B. Smith

Thesis: Measuring the Physical Properties of Distant Galaxies and Black Holes in the Era of Surveys

- Studying the relation between the star-formation rate and radio luminosity of galaxies.
- Using new photometric time-series techniques to estimate quasar black-hole masses using reverberation mapping.
- Innovating new Bayesian methods to infer complete distributions from incomplete, noisy data in order to mitigate observational bias and explore large datasets.

Jun 2016 - Present

### Observing

William Herschel Telescope, La Palma

Jan 2016 - Present

### Programming teaching assistant & tutor

University of Hertfordshire, UK

- Taught students Python and Matlab for scientific programming courses.
- Assisted students with programming exercises.
- Lead programming lectures and demonstrations.

Nov 2016 - Mar 2017

### 'Physics of stars' demonstrator

University of Hertfordshire, UK

- Assisted students at the Bayfordbury teaching observatory.
- Instructed in the use of 16-inch telescopes and the reduction of data.
- Projects included PNe imaging and constructing open cluster HR-diagrams.

Jul 2014 - Jul 2015

### Insight Analyst

Linkdex, UK

Processing big data from raw consumer search patterns to an explanatory format suitable for client business strategies.

- Big data processing with Python & sci-kit learn
- Communication with the backend team
- API design, visualisation, and automation development.

Jun 2013 - Aug 2013

### Summer Student

National Physical Laboratory, UK

Supervisor: Dr Alastair Sinclair

- Worked with the Time & Frequency Team.
- Analysed Gaussian beam quality for the strontium ion optical clock group.
- Developed analytical Matlab code and the optical bench setup required.

## Research Interests

- **Star-formation:** LOFAR, FIR, empirical relations, FIRC, MagPhys, SFG-AGN interface.
- **Reverberation mapping:** High redshift, photometric techniques,  $t_{lag} - L_{5100}$ , selection biases.
- **Big data & Bayesian analysis:** Large surveys, advanced Bayesian statistical inference, bias mitigation.

# Publications

## Published

- *The Far-Infrared Radio Correlation at low radio frequency with LOFAR/H-ATLAS*, **Read, S. C.**; Smith, D. J. B.; Gürkan, G.; Hardcastle, M. J.; Williams, W. L.; Best, P. N.; Brinks, E.; Calistro-Rivera, G.; Chyży, K. T.; Duncan, K.; Dunne, L.; Jarvis, M. J.; Morabito, L. K.; Prandoni, I.; Röttgering, H. J. A.; Sabater, J.; Viaene, S. – 2018MNRAS.480.5625R
- *LOFAR/H-ATLAS: a deep low-frequency survey of the Herschel-ATLAS North Galactic Pole field*, Hardcastle, M. J.; Gürkan, G.; van Weeren, R. J.; Williams, W. L.; Best, P. N.; de Gasperin, F.; Rafferty, D. A.; **Read, S. C.**; Sabater, J.; Shimwell, T. W.; Smith, D. J. B.; Tasse, C.; Bourne, N.; Brienza, M.; Brüggen, M.; Brunetti, G.; Chyży, K. T.; Conway, J.; Dunne, L.; Eales, S. A.; Maddox, S. J.; Jarvis, M. J.; Mahony, E. K.; Morganti, R.; Prandoni, I.; Röttgering, H. J. A.; Valiante, E.; White, G. J. – 2016MNRAS.462.1910H

## Submitted and in preparation

- *Highly Efficient Photometric Reverberation Mapping at High Redshift*, Read, S.C. Smith, D. J. B. Jarvis, M. J. Gürkan, G. – submitted to MNRAS
- *On the Causes of the Mass Dependency of the Star-formation Rate – Radio Luminosity Relation with LOFAR, Horizon-AGN, and CANDID*, Read, S.C. Smith, D. J. B. Gürkan, G. Hardcastle, M. J. et al. – in prep.
- *A LOFAR-IRAS cross-match study: the far-infrared radio correlation and the 150 MHz luminosity as a star-formation rate tracer*, Wang, L. Rowan-Robinson, M. Gao, F. Bonato, M. Calistro-Rivera, G. Chyży, K.T. Duncan, K.J. Farrah, D. Gurkan, G. Hardcastle, M.J. McCheyne, I. Prandoni, I. Read, S.C. Röttgering, H.J.A. Sabater, J. Shimwell, T. W. Smith, D.J.B. Williams, W.L. – in prep.
- *Bias and Accretion Rate Dependency in the Reverberation-Mapped Lag-luminosity Relation*, Read, S.C. Smith, D. J. B. et al. – in prep.
- *Galaxy Morphological Classification in Deep-Wide Surveys via Unsupervised Machine Learning*, Martin, G. Kaviraj, S. Hocking, A. Read, S.C. Geach, J. – in prep.
- *Brown dwarfs with Gaia*, Gonzalez, E. Pinfield, D. Read, S.C. et al. – in prep.

## Presentations

April 2018	<b>European Week of Astronomy and Space Science</b> University of Liverpool, UK poster	European Astronomical Society, <i>EAS</i>
July 2017	<b>National Astronomy Meeting</b> University of Hull, UK contributed talk	Royal Astronomical Society, <i>RAS</i>
June 2016	<b>National Astronomy Meeting</b> University of Nottingham, UK contributed talk, poster	Royal Astronomical Society, <i>RAS</i>
May 2016	<b>The Cosmic FIR Landscape with H-ATLAS</b> University of Lisbon, Portugal contributed talk	H-ATLAS consortium