

Dr Benjamin POPE

LECTURER IN ASTROPHYSICS AND DECRA FELLOW

ADVISOR: Prof. David HOGG
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EDUCATION AND PREVIOUS POSITIONS

2017-2020	NASA Sagan Fellow, New York University Advisor: Prof. David HOGG
2017	Postdoctoral Research Associate, University of Sydney Advisor: Prof. Peter TUTHILL
2013-2017	Doctor of Philosophy in ASTROPHYSICS, University of Oxford Thesis: “Observing Bright Stars and their Planets from the Earth and from Space” Balliol College Supervisors: Prof. Suzanne AIGRAIN, Prof. Patrick ROCHE
2013-14	Master of Science in ASTROPHYSICS, University of Sydney Thesis: “Vision and Revision: Wavefront Sensing from the Image Domain” Supervisor: Prof. Peter TUTHILL
2012	Bachelor of Science (Advanced) with Honours in PHYSICS, University of Sydney <i>First Class Honours, with the University Medal</i> Thesis: “Dancing in the Dark: Kernel Phase Interferometry of Ultracool Dwarfs” Supervisors: Prof. Peter TUTHILL, Dr. Frantz MARTINACHE
2010-2011	Study Abroad at the University of California, Berkeley Research project with Prof. Charles H. TOWNES, Infrared Spatial Interferometer.

GRANTS

ARC Discovery Early Career Research Award (DECRA)
AUD \$444,075.00

NASA TESS Cycle 3 Guest Investigator
USD \$50,000

TESS Cycle 2 Guest Investigator
USD \$50,000

Balliol College Balliol Interdisciplinary Institute Research Grant
GBP £3,000

TEACHING

- 2021 | Extragalactic Astrophysics & Cosmology, University of Queensland
- 2019 | Master of Data Science Guest Lecturer, NYU Center for Data Science
- 2017 | Bayesian Reasoning Honours Lecturer, University of Sydney
- 2017 | Honours Project Supervisor, University of Sydney
Supervised Alison Wong and Matthew Edwards, both to First Class Honours and PhD acceptance.
- 2014-2016 | Tutor in Physics, Hertford College, Oxford
Tutor in General Relativity and Cosmology.
- 2013 | Optics Lab Demonstrator, University of Oxford, Department of Physics
- 2012-2013 | Workshop and Lab Tutor, University of Sydney, School of Physics
- 2009-2013 | Demonstrator, Kickstart Physics, University of Sydney, School of Physics

SERVICE

- Referee *ApJS*, *AJ*
MNRAS
PASP
A&A
Optics Letters
JOSA B
- NASA HST Cycle 27 Time Allocation Committee
Keck Time Allocation Committee
FINESST Review
Exoplanet Exploration Program Analysis Group (ExoPAG) Panelist 2018
- NYU Postdoctoral Representative Council

SCHOLARSHIPS AND PRIZES

BBC	WINNING UNIVERSITY CHALLENGE TEAM, 2017
Santander Universidades	SANTANDER SUMMER SCHOOL SCHOLARSHIP
MaxEnt and Bayesian Association of Australia	BEST STUDENT PRESENTATION
University of Oxford	CLARENDON SCHOLARSHIP
Balliol College, Oxford	JOWETT SCHOLARSHIP
Astronomical Society of Australia	BOK PRIZE
University of Sydney	VICE-CHANCELLOR'S RESEARCH AWARD
	UNIVERSITY MEDAL
	SHIROKI PRIZE FOR PHYSICS
	HENRY CHAMBERLAIN RUSSELL PRIZE FOR ASTRONOMY
	DEAN'S HONOURS LIST
	JULIUS SUMNER MILLER SCHOLARSHIP No. 3
	WALTER BURFITT SCHOLARSHIP
	SCIENCE FACULTY EXCHANGE SCHOLARSHIP
	WALTER REID MEMORIAL PRIZE
	OUTSTANDING ACHIEVEMENT SCHOLARSHIP
	JAMES AITKEN PRIZE
	LEVEY SCHOLARSHIP No. 1

SELECTED REFEREED PUBLICATIONS

17. *Kernel Phase and Coronagraphy with Automatic Differentiation*. **Benjamin J. S. Pope**, Laurent Pueyo, Yinzi Xin, Peter G. Tuthill. Accepted ApJ. [arXiv:2011.09780](https://arxiv.org/abs/2011.09780)
16. *No Massive Companion to the Coherent Radio-Emitting M Dwarf GJ1151*. **Benjamin J. S. Pope**, Megan Bedell, Joseph R. Callingham, Harish K. Vedantham, Ignas A. G. Snellen, Adrian M. Price-Whelan, Timothy W. Shimwell. ApJL February 17, 2020. [Online](#)
15. *Coherent metre-wave radio emission from a quiescent red dwarf*. H. K. Vedantham, J. R. Callingham, T. W. Shimwell, C. Tasse, **B. J. S. Pope**, M. Bedell, I. Snellen, P. Best, M. J. Hardcastle, M. Haverkorn, A. Mechev, S. P. O'Sullivan, H. J. A. Röttgering, G. J. White. *Nature Astronomy* 2020. [Online](#).
14. *The K2 Bright Star Survey I: Methodology and Data Release*. **Benjamin J. S. Pope** et al., ApJS Volume 245, Issue 1, article id. 8, 15 pp. (2019). [arXiv:1908.06981](https://arxiv.org/abs/1908.06981)
13. *The Kepler Smear Campaign: Light curves for 102 Very Bright Stars*. **Benjamin J. S. Pope** et al., ApJS Volume 244, Issue 1, article id. 18, 19 pp. (2019). [arXiv:1905.09831](https://arxiv.org/abs/1905.09831)
12. *Exoplanet Transits with Next-Generation Radio Telescopes*. **Benjamin J. S. Pope**, Paul Withers, Joseph R. Callingham, and Marissa F. Vogt. MNRAS, March 2019, Volume 484, Issue 1, p.648-658. [arXiv:1810.11493](https://arxiv.org/abs/1810.11493)
11. *Anisotropic winds in Wolf-Rayet colliding-wind binary identify potential gamma-ray burst progenitor*. J. R. Callingham, P. G. Tuthill, **B. J. S. Pope** et al. *Nature Astronomy*, 2018. [Online](#)
10. *Aldebaran b's temperate past uncovered in planet search data*. Farr, Will M., **Pope, Benjamin J. S.** et al. ApJL Volume 865, Issue 2, article id. L20, 12 pp. (2018). [arXiv:1802.09812](https://arxiv.org/abs/1802.09812)

9. *Beyond the Kepler/K2 bright limit: variability in the seven brightest members of the Pleiades.* White, T. R.; **Pope, B. J. S.** et al. MNRAS (2017). [arXiv:1708.07462](#)
8. *Anchoring historical sequences using a new source of astro-chronological tie-points.* Michael Dee, **Benjamin Pope.** Proc. R. Soc. A 20160263 (2016). [Online](#)
7. *Kernel Phase and Kernel Amplitude in Fizeau imaging.* **Benjamin Pope.** MNRAS (2016). [arXiv:1609.00200](#)
6. *Transiting exoplanet candidates from K2 Campaigns 5 and 6.* **Benjamin Pope,** Hannu Parviainen, Suzanne Aigrain. MNRAS, Volume 461, Issue 4, p.3399-3409 (2016). [arXiv:1606.01264](#)
5. *K2SC: Flexible systematics correction and detrending of K2 light curves using Gaussian Process regression.* Suzanne Aigrain, Hannu Parviainen, **Benjamin Pope.** MNRAS, 2016. [arXiv:1603.09167](#)
4. *The Palomar Kernel Phase Experiment: Testing Kernel Phase Interferometry for Ground-based Astronomical Observations.* **Benjamin Pope,** Peter Tuthill, Sasha Hinkley, Michael J. Ireland, Alexandra Greenbaum, Alexey Latyshev, John D. Monnier, Frantz Martinache. MNRAS, Volume 455, Issue 2, p.1647-1653 (2016). [arXiv:1510.06406](#)
3. *Photometry of Very Bright Stars with Kepler and K2 Smear Data.* **Benjamin Pope,** Timothy White, Daniel Huber, Simon Murphy, Tim Bedding, Douglas Caldwell, Aleksa Sarai, Suzanne Aigrain, Thomas Barclay. MNRAS Letters, Volume 455, Issue 1, p.L36-L40 (2016). [arXiv:1510.00008](#).
2. *A Demonstration of Wavefront Sensing from the Image Domain.* **Benjamin Pope,** Nick Cvetojevic, Anthony Cheetham, Frantz Martinache, Barnaby Norris, Peter Tuthill. MNRAS, Volume 440, Issue 1, p.125-133 (2014). [arXiv:1401.7566](#)
1. *Dancing in the Dark: New Brown Dwarf Binaries From Kernel Phase Interferometry.* **Benjamin Pope,** Frantz Martinache, Peter Tuthill. ApJ, V. 767, Issue 2, article id. 110, 14 (2013). [arXiv:1302.6682](#)

OTHER REFEREED PUBLICATIONS

11. *A Mystery in Chamaeleon: Serendipitous Discovery of a Galactic Symbiotic Nova.* Lancaster, Lachlan; Greene, Jenny E.; Ting, Yuan-Sen; Koposov, Sergey E.; **Pope, Benjamin J. S.**; Beaton, Rachael L. *AJ*, Volume 160, Issue 3, id.125.
10. *Two Wolf-Rayet stars at the heart of colliding-wind binary Apep.* Callingham, J. R.; Crowther, P. A.; Williams, P. M.; Tuthill, P. G.; Han, Y.; **Pope, B. J. S.**; Marcote, B. *MNRAS*, Volume 495, Issue 3, pp.3323-3331
9. *Radiocarbon Production Events and their Potential Relationship with the Schwabe Cycle.* Scifo, A., M. Kuitens, A. Neocleous, **B. J. S. Pope,** D. Miles, E. Jansma, P. Doeve, A. M. Smith, F. Miyake & M. W. Dee. *Sci Rep* 9, 17056 (2019) [Online](#)
8. *Low-frequency variability in massive stars: Core generation or surface phenomenon?* Lecoanet, D., Cantiello, M., Quataert, E., Couston, L.-A., Burns, K. J., **Pope, B. J. S.,** Jermyn, A. S., Favier, B., & Le Bars, M. (2019). [arXiv:1910.01643](#)
7. *Low-frequency gravity waves in blue supergiants revealed by high-precision space photometry.* D. Bowman et al., *Nature Astronomy* 2019. [Online](#)
6. *Asteroseismology of the Hyades red giant and planet host ϵ Tau.* T. Arentoft et al. *Astronomy & Astrophysics*, Volume 622, id.A190, 2019. [arXiv:1901.06187](#)
5. *Testing stellar evolution models with the retired A star HD 185351.* Hjørringgaard, J. G.; Silva Aguirre, V.; White, T. R.; Huber, D.; **Pope, B. J. S.**; Casagrande, L.; Justesen, A. B.; Christensen-Dalsgaard, J. MNRAS 2016. [arXiv:1610.05990](#)
4. *Supernovae and Single-Year Anomalies in the Atmospheric Radiocarbon Record.* Michael Dee, **Benjamin Pope,** Daniel Miles, Sturt Manning and Fusa Miyake. *Radiocarbon*, Available on CJO 2016. [Online](#)

3. *HII 2407: A Low-Mass Eclipsing Binary Revealed by K2 Observations of the Pleiades*, Trevor J. David, John Stauffer, Lynne A. Hillenbrand, Ann Marie Cody, Kyle Conroy, Keivan G. Stassun, **Benjamin Pope**, Suzanne Aigrain, Ed Gillen, Andrew Collier Cameron, David Barrado, L.M. Rebull, Howard Isaacson, Geoffrey W. Marcy, Celia Zhang, Reed L. Riddle, Carl Ziegler, Nicholas M. Law, Christoph Baranec. *ApJ*, 2015. [arXiv:1510.06399](https://arxiv.org/abs/1510.06399)
2. *Interferometric radii of bright Kepler stars with the CHARA Array: θ Cygni and 16 Cygni A and B*, White, T. R.; Huber, D.; Maestro, V.; Bedding, T. R.; Ireland, M. J.; Baron, F.; Boyajian, T. S.; Che, X.; Monnier, J. D.; **Pope, B. J. S.**; Roettenbacher, R. M.; Stello, D.; Tuthill, P. G.; Farrington, C. D.; Goldfinger, P. J.; McAlister, H. A.; Schaefer, G. H.; Sturmann, J.; Sturmann, L.; ten Brummelaar, T. A.; Turner, N. H. *MNRAS*, 2013. [arXiv:1305.1934](https://arxiv.org/abs/1305.1934)
1. *Spatial dispersion in three-dimensional drawn magnetic metamaterials*, Alessandro Tuniz, **Benjamin Pope**, Anna Wang, Maryanne C. J. Large, Shaghik Atakaramians, Seong-Sik Min, Elise M. Pogson, Roger A. Lewis, Avi Bendavid, Alexander Argyros, Simon C. Fleming, and Boris T. Kuhlmeiy. *Opt. Express* 20, 11924-11935 (2012). [Online](#)

SELECTED TALKS

SEPTEMBER 2020	NASA Hubble Fellows Symposium
<i>Global pandemic...</i>	
OCTOBER 2019	NASA Hubble Fellows Symposium UC Riverside University of Queensland
AUGUST 2019	University of Sydney Center for Translational Data Science
MARCH 2019	Kepler & K2 Science Conference
DECEMBER 2018	University of Washington DIRAC Seminar
NOVEMBER 2018	Harvard CfA Stars Seminar MIT PICS Seminar Sagan Fellows Symposium
JUNE 2018	ASTRON Seminar Dunlap Institute Seminar, Toronto
JANUARY 2018	NASA ExoPAG Invited Panel Speaker
NOVEMBER 2017	Sagan Fellows Symposium
NOVEMBER 2016	Cambridge Exoplanet Group Seminar University of Bern, ETH Zurich, Observatory of Geneva
JULY 2016	Astronomical Society of Australia Annual Scientific Meeting
JUNE 2016	University of Copenhagen STARPLAN Seminar Aarhus University SAC Seminar
DECEMBER 2015	University of Birmingham Seminar
JULY 2015	STSci Seminar UK National Astronomy Meeting
MARCH 2015	UK Exoplanet Community Meeting, Warwick
JULY 2014	Astronomical Society of Australia Annual Scientific Meeting SPIE Astronomical Telescopes and Instrumentation
DECEMBER 2013	MaxEnt 2013 Sydney Institute for Astronomy Seminar
JULY 2013	Astronomical Society of Australia Annual Scientific Meeting. BOK LECTURE