Madeline Anne Marshall — Curriculum Vitae

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Education

2017–Present	**Doctor of Philosophy**	**University of Melbourne**
	Thesis: "The Host Galaxies of High-Redshift Quasars"	
	Supervisors: Professor Stuart Wyithe, Dr Simon Mutch	
	Expected Completion: August 2020	
2016	**Bachelor of Science with First Class Honours**	**University of Tasmania**
	Thesis: "Triggering Active Galactic Nuclei in Galaxy Clusters"	
	Supervisors: Dr Stanislav Shabala, Dr habil. Martin Krause	
2015–2017	**Diploma of Philosophy**	**University of Tasmania**
2013–2015	**Bachelor of Science**	**University of Tasmania**
	GPA: 7.0 on a 7 point grading scale	

Awards & Scholarships

- **Alan Kenneth Head Travel Scholarship,** University of Melbourne, 2018
- **Women in Physics Award,** University of Melbourne, 2017
- **Australian Government Research Training Program (RTP) Scholarship,** University of Melbourne, 2017–2020
- **Bok Prize,** for outstanding research in astronomy by an Honours student or eligible Masters student at an Australian university, Astronomical Society of Australia, 2017
- **University Medal,** University of Tasmania (UTAS), 2017
- **Tasmania Honours Scholarship,** UTAS, 2016
- **Adrian La Palombara Annual Appeal Honours Scholarship in Physics,** UTAS, 2016
- **Dean's Roll of Excellence for the Faculty of Science, Engineering and Technology,** UTAS, 2013, 2014, 2015
- **Australian Institute of Physics Prize,** for greatest proficiency in final year undergraduate Physics, UTAS, 2015
- **Premier of Tasmania National Undergraduate Scholarship,** UTAS, 2013–2016

Notable Talks

Oct. 2019 — **Cosmic Evolution of Quasars: from the First Light to Local Relics**
Kavli Institute for Astronomy and Astrophysics, Peking University, Beijing, China
The Host Galaxies of High Redshift Quasars

Aug. 2019 — **Astrophysics Seminar**
Carnegie Mellon University, Pittsburgh, USA
The Host Galaxies of High Redshift Quasars

July 2019 — **Barefoot Reionization: Exploring the First Billion Years of the Universe**
Fitzroy Island, Queensland, Australia
The Host Galaxies of High Redshift Quasars

July 2018 — **Are AGN Special?**
Durham University, Durham, United Kingdom
Ram Pressure Triggers AGN in Galaxy Clusters

July 2018 **The Early Growth of Supermassive Black Holes**
Sexten Center for Astrophysics, Sexten, Italy
Exploring High-z Black Hole–Bulge Relations With Semi-Analytics

June 2018 **Astronomical Society of Australia Annual Scientific Meeting**
Swinburne University of Technology, Melbourne, Australia
Exploring High-z Black Hole–Bulge Relations With Semi-Analytics

July 2017 **Astronomical Society of Australia Annual Scientific Meeting**
Australian National University, Canberra, Australia
Triggering AGN in Galaxy Clusters
Bok Prize Talk

Skills

- **Programming experience:** Python, C, MATLAB, IRAF, PyRAF, LaTeX
- **Astrophysical simulation experience:** Meraxes (development), BlueTides, SAGE
- **Data/observing experience:** JWST observation planning (APT and ETC) for large projects; Basic image processing using IRAF/PyRAF; HST WFC3 photometric analysis; Long Baseline Array data analysis

Selected Workshops & Training

- **São Paulo School of Advanced Science on First Light: Stars, Galaxies and Black Holes in the Epoch of Reionization,** Instituto de Astronomia, Geofísica e Ciências Atmosféricas da Universidade de São Paulo, Brazil, July-August 2019
- **SciCoder Workshop,** University of Melbourne, November 2018
- **Harley Wood School of Astronomy,** Ballarat Observatory, June 2018 (LOC member)
- **ITSO/AAO Observational Techniques Workshop,** Australian Astronomical Observatory Headquarters, April/May 2018
- **ADACS - Introduction to high performance computing (HPC) for astronomers,** Swinburne University of Technology, November 2017
- **Harley Wood School of Astronomy,** Australian National University, July 2017

Undergraduate Research

Nov. 2015–Jan. 2016 **Summer Research Program** **Monash University**
Thesis: "Simulating Binary Neutron Star Mergers with SPH"
Supervisors: Dr James Wurster, Dr Paul Lasky

July–Nov. 2015 **Physical Science Research Project** **University of Tasmania**
Thesis: "Methanol absorption in PKS B1830-211 at milliarcsecond scales"
Supervisor: Professor Simon Ellingsen

Nov.–Dec. 2015 **Summer Vacation Research Program** **University of New South Wales**
Thesis: "Exoplanet Detection using Radial Velocities"
Supervisor: Professor Robert Wittenmyer

Teaching and Outreach

- **Tutor, Physical Cosmology (Masters level),** University of Melbourne, 2018 to present
- **Lab Demonstrator, Third Year Laboratory and Computational Physics,** University of Melbourne, 2018 to present
- **Lab Demonstrator, First Year Physics (Advanced),** University of Melbourne, Semester 2 2017
- **Year 10 Work Experience volunteer,** University of Melbourne, 2017, 2018, 2019
- **Invited outreach talk,** Smithton Rotary Club, Tasmania, 2018
- **Invited school talk,** Smithton Primary School, Tasmania, 2019

Marshall, M. A., Mutch, S. J., Qin, Y., Poole, G. B., and Wyithe, J. S. B.: 2019, *"Dark-ages Reionization and Galaxy Formation Simulation – XVIII. The high-redshift evolution of black holes and their host galaxies."* Submitted to MNRAS. arXiv:1910.08124.

Marshall, M. A., Mutch, S. J., Qin, Y., Poole, G. B., and Wyithe, J. S. B.: 2019, *"Dark-ages Reionization and Galaxy Formation Simulation – XVII. Sizes, angular momenta and morphologies of high redshift galaxies."* MNRAS 488, 1941. DOI: 10.1093/mnras/stz1810.

Marshall, M. A., Shabala, S. S., Krause, M. G. H., Pimbblet, K. A., Croton, D. J., and Owers, M. S.: 2018, *"Triggering active galactic nuclei in galaxy clusters."* MNRAS 474, 3615.
DOI: 10.1093/mnras/stx2996.

Marshall, M. A., Ellingsen, S. P., Lovell, J. E. J., Dickey, J. M., Voronkov, M. A., Breen, S. L: 2017, *"Methanol absorption in PKS B1830-211 at milliarcsecond scales."* MNRAS 466, 2450.
DOI: 10.1093/mnras/stw3295.

In preparation:

Marshall, M. A., Ni, Y., Di Matteo, T., and Wyithe, J. S. B.: 2019, *"The host galaxies of $z = 7$ quasars: predictions from the BlueTides simulation."* In preparation, to be submitted November 2019.

Marshall, M. A., Mechtley, M. A., Jones, V. R., Cohen, S. H., and Windhorst, R. A. : *"Rest-frame ultraviolet emission from infrared-luminous $z \simeq 6$ quasar hosts."* In preparation, to be submitted early 2020.