

PERSONAL & CONTACT INFORMATION  
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EDUCATION

**Master of Research** Jan 2025 – Nov 2025 (expected)  
 MACQUARIE UNIVERSITY  
 Topic: Radiative and Hydrodynamical Modelling of Colliding Wind Binaries  
 Supervisors: A/Prof Benjamin Pope and Prof Orsola De Marco

**Bachelor of Science (Hons)** Jan 2024 – Nov 2024  
 THE UNIVERSITY OF QUEENSLAND  
 Graduated with Class I Honours in Physics  
 Thesis Title: *Geometric Modelling of Wolf-Rayet Binary Colliding Wind Nebulae*  
 Supervisors: Dr Benjamin Pope (UQ) and Prof Peter Tuthill (USyd)

**Bachelor of Science** Jul 2017 – Dec 2023  
 THE UNIVERSITY OF QUEENSLAND  
*Extended Major in Physics*

**Bachelor of Mathematics** Jul 2017 – Dec 2023  
 THE UNIVERSITY OF QUEENSLAND  
*Major in Applied Mathematics*

TEACHING EXPERIENCE

SCHOOL OF MATHEMATICAL AND PHYSICAL SCIENCES, MACQUARIE UNIVERSITY  
**PHYS1210 – Physics for Life Sciences** 2025–Present  
*Ran laboratory sessions for first-year students.*

SCHOOL OF MATHEMATICS AND PHYSICS, THE UNIVERSITY OF QUEENSLAND  
**PHYS3080 – Computational Physics** 2024  
*Developed an interactive Python self-study tool, and tutored the course.*

**PHYS3071 – Extragalactic Astrophysics & Cosmology** 2023–4  
*Developed a [simulated universe](#) for use in the course, and taught weekly workshops.*

**PHYS2082 – Space Science & Stellar Astrophysics** 2022–4  
*Teaching workshops of ~ 60 students and moderated course delivery.*

**SCIE1000 – Theory & Practice in Science** 2021–4  
*“Super tutored” the course for multiple offerings, and routinely taught classes of ~ 60 students.*

RESEARCH EXPERIENCE

**CSIRO Undergraduate Vacation Scholarship** Nov 2024 – Feb 2025  
 Supervisor: Dr Andrew Zic

- We researched the mysterious long period radio transients. The project included analysing and cleaning ATCA and ASKAP radio data and developing new techniques to discover hidden periodic signals within interferometric visibilities.

**Swinburne CAS Vacation Scholarship** Nov 2023 – Feb 2024  
 Supervisor: Dr Simon Stevenson

- We developed  $N$ -body simulations in Python/C to model binary black hole formation within active galactic nuclei accretion disks. The simulations were compared to the rate of binary black hole inspiral measured with LIGO/VIRGO.

**University of Queensland Winter Research Scholarship** Jun 2023  
 Supervisor: Prof Tamara Davis

- We investigated how the expanding universe induces time dilation in the photometry of Type Ia supernovae. Using data from the Dark Energy Survey (DES), we measured the effective time dilation stretching in light curves as a function of redshift using our own Python algorithms.

- We analysed binary star light curves utilising data from the TESS Space Telescope within Python. We inferred analytic surface maps to each component of the binary stellar system DI Herculis and found that the primary star is likely a SPB star.

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PUBLICATIONS FIRST AUTHOR PUBLICATIONS:

**Ryan White**, Tamara Davis, Geraint Lewis et al., “*The Dark Energy Survey Supernova Program: Slow supernovae show cosmological time dilation out to  $z \sim 1$ .*” [arXiv:2406.05050](#) (2024) — [accessible summary](#)

SELECT OTHER PUBLICATIONS:

Richardson et al. (including **Ryan White**), “*Carbon-rich dust injected into the interstellar medium by Galactic WC binaries survives for hundreds of years*” [arXiv:2505.11616](#) (2025)

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BOOK  
CHAPTERS

**Ryan White** & Peter Tuthill, “*Wolf-Rayet Colliding Wind Binaries*” [arXiv:2412.12534](#) (2024), for publication in Elsevier’s *Encyclopedia of Astrophysics*

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AWARDS AND  
SCHOLARSHIPS

<b>Best Masters Poster</b> , Australian Institute of Physics Poster Day	2025
<b>The Andy Thomas Space Foundation Uranus Scholarship</b>	2024
<b>Best Science Talk</b> , Mount Stromlo Student Seminars	2024
<b>Student Publication Award Honourable Mention</b> , University of Queensland, for White et al (2024) <a href="#">arXiv:2406.05050</a>	2024
<b>Honours Research Project Runner-Up</b> , UQ Science Undergraduate Research Conference	2024
<b>Dean’s Commendation for Academic Excellence</b>	2023, 2024
<b>Outstanding Contribution Award</b> , UQ School of Mathematics and Physics	2022

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OBSERVING  
AND  
PROPOSALS

**Primary Investigator:**

- VLTI observing of the colliding wind binary *Apep*, ESO Period 114 2024/5

**Co-Investigator:**

- ATCA Observing of Long Period Radio Transients, ATNF Semester 2025APRS 2025

**Observing:**

- Australian Telescope Compact Array (ATCA), 24hr 2025

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TALKS

<b>SifA Seminar</b> , University of Sydney	May 2025
<b>Weekly Co-learnium</b> , CSIRO Marsfield	January 2025
<b>Stars in Brisbane Conference</b> , University of Southern Queensland	November 2024
<b>Physics Club Honours Talks</b> , University of Queensland	October 2024
<b>Mount Stromlo Student Seminars</b> , Australian National University	September 2024
<b>UQ Science Undergraduate Research Conference</b> , University of Queensland	September 2024
<b>Weekly Astronomy Seminar</b> , University of Tasmania	July 2024

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OUTREACH  
AND COMMU-  
NICATION

**Astrobiters Writer** – Paper summaries available on my [author page](#) 2025 – Present

**Annotated Papers** – [accessible summary of DES Time Dilation paper](#)

**Scientific American** – [Interviewed for an article covering White et al \(2024\)](#)

**Cosmology Talks** – [Accompanying video for White et al \(2024\) on Cosmological Time Dilation](#)

**UQ Work Experience Program 2024** – Helped introduce high school students to astrophysics at UQ, involving programming projects, telescope demonstrations, and a “Meet the Researcher” talk

**Laura Street Festival 2024** – Ran a stall focusing on solar telescope viewing aimed at the public, fielding any questions

TECHNICAL  
SKILLS

- *Programming Languages:* Python/JAX, C/C++, Git, R, Windows Subsystem for Linux and Bash scripting, Matlab.
- *High-Performance Computing:* I have frequently run code on the HPC systems *OzStar* (Swinburne) and *getafix + Bunya* (University of Queensland), using the Slurm scheduling language.
- *Misc. Skills:* Proficient in L<sup>A</sup>T<sub>E</sub>X, VSCode/Spyder, Jupyter Notebooks, confident with the Microsoft/Google Suite, among other applications/environments. I am also a professional (but retired) traditional landscape artist.

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REFERENCES

Please email me to request reference contact information.