# Curriculum Vitae of Ryan White

**Correct as of September 21, 2024**


PERSONAL & CONTACT INFORMATION

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## EDUCATION

**Bachelor of Science (Hons)** — Jan 2024 – Nov 2024 (Expected)
Topic: The Births and Deaths of Wolf-Rayet Binaries
Supervisor: Dr Benjamin Pope (UQ) and Prof Peter Tuthill (USyd)
University of Queensland

**Bachelor of Science** — Jul 2017 – Dec 2023
*Extended Major in Physics*
University of Queensland

**Bachelor of Mathematics** — Jul 2017 – Dec 2023
*Major in Applied Mathematics*
University of Queensland

## TEACHING EXPERIENCE

**Casual Academic / Teaching Assistant** — 2023–Present
**PHYS3080 – Extragalactic Astrophysics & Cosmology**
School of Mathematics and Physics, University of Queensland

- Developed material for and tutored the course of $\sim 50$ students. Responsibilities included liaising with course staff to develop a simulation (using Python) that adhered to course aims/goals. I was also responsible for teaching students how to work with data in the context of astrophysics through the use of my program. Additional duties included monitoring and responding on the course discussion board, as well as marking assignments and giving feedback on research paper style reports.

**Teaching Assistant** — 2022–Present
**PHYS2082 – Space Science & Stellar Astrophysics**
School of Mathematics and Physics, University of Queensland

- Responsibilities included assisting classes of $\sim 60$ students with the course content, and providing guidance and feedback on assessment. I also graded undergraduate reports and exams, and performed moderation/support duties for the other course tutors to ensure consistent feedback to students.

**Casual Academic / Teaching Assistant** — 2024–Present
**PHYS3071 – Computational Physics**
School of Mathematics and Physics, University of Queensland

- Developed course material for student self-study in the form of an automated Python script unit tester. I also tutored the course, teaching students about common mathematical/computer science topics such as root finding, ODE/PDEs, numerical integration, etc.

**"Super Tutor" / Teaching Assistant** — 2021–Present
**SCIE1000 – Theory & Practice in Science**
School of Mathematics and Physics, University of Queensland

- Routinely conveyed course material to multiple classes of 50+ students, including (but not limited to) curve fitting data, data science in Python, and assessing the validity of numerical models to explain observed phenomena. Responsibilities also included marking assignments and final exams.
- Super tutor duties included interfacing with course coordinators and lecturers as to ensure students progressed through the course to their highest potential, providing support to other tutors, and moderating and distributing marking material for the course among other administrative duties.

## Research Experience

**CSIRO Undergraduate Vacation Studentship** Nov 2024 – Feb 2025 (expected)
Supervisor: Dr Andrew Zic

- Offered a position to research the mysterious long period radio transients at CSIRO Marsfield.

**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** 2023
Supervisor: Professor 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.

**Undergraduate Research** 2022
Supervisor: Dr Benjamin Pope

- 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

**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) arXiv:2406.05050.

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## Awards and Scholarships

**The Andy Thomas Space Foundation Uranus Scholarship** 2024
**Best Science Talk**, Mount Stromlo Student Seminars 2024
**Student Publication Award Honourable Mention**, University of Queensland, for White et al (2024) arXiv:2406.05050 2024
**Honours Research Project Runner-Up**, UQ Science Undergraduate Research Conference 2024
**Dean's Commendation for Academic Excellence** 2023, 2024
**Outstanding Contribution Award**, UQ School of Mathematics and Physics 2022

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## Talks

**Mount Stromlo Student Seminars**, Australian National University September 2024
**UQ Science Undergraduate Research Conference**, University of Queensland September 2024
**Weekly Astronomy Seminar**, University of Tasmania July 2024

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## Outreach and Communication

**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

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## Technical Skills

- *Programming Languages*: Python, C/C++, Git, Matlab, R, Windows Subsystem for Linux
- *Misc. Skills*: Proficient in LaTeX, capable '*Google-r*', confident with the Microsoft/Google Suite, VSCode/Spyder, Jupyter Notebooks, among other applications/environments, professional (but retired) traditional landscape artist

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## References

Please email me to request reference contact information.