Curriculum Vitae of Ryan White

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 ~ 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 ~ 60 students with the course content, and providing guidance and feedback on assessment.

- Graded undergraduate reports and exams, and performed moderation/support duties for the other course tutors to ensure consistent feedback to students.

"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

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: 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.

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.

PUBLICATIONS **Ryan White** et al., *"The Dark Energy Survey Supernova Program: Slow supernova show cosmological time dilation out to $z \sim 1$."* arXiv:2406.05050 (2024) arXiv:2406.05050.

AWARDS AND SCHOLARSHIPS

The Andy Thomas Space Foundation Uranus Scholarship	2024
Dean's Commendation for Academic Excellence	2023
Outstanding Contribution Award – UQ School of Mathematics and Physics	2022

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

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REFERENCES **Dr. Benjamin Pope**
University of Queensland - ARC DECRA Fellow and Lecturer in Astrophysics
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Prof. Tamara Davis
University of Queensland - ARC Laureate Fellow and Lecturer in Physics
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