

# ROWINA NATHAN

PhD Candidate

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📍 Melbourne, Australia

🌐 [rowina-n.github.io](https://rowina-n.github.io)

## COLLABORATIONS

Parkes Pulsar Timing Array

MeerKAT Pulsar Timing Array

International Pulsar Timing Array

OzGrav ARC

LIGO-Virgo-Kagra Scientific  
Collaboration

## SKILLS

Python

Machine Learning

Teaching

Scientific Writing

R

## RESEARCH INTERESTS

Pulsar timing, gravitational-wave background, cosmic variance, bayesian inference, machine learning, pulsar glitches, physics education, data visualisation, graphic design.

## EDUCATION

**PhD in Astrophysics | Monash University | 2022 - 2025**

Thesis due August 2025

Supervised by Paul Lasky, Eric Thrane and Greg Ashton

Dynamic pulse fitting, cosmic variance, gravitational-wave background sky-mapping

**Honours in Astrophysics | Monash University | 2021**

Supervised by Paul Lasky and Greg Ashton

Dynamic pulse fitting, profile domain timing, pulsar glitches

2021 Faculty of Science Dean's List Award

**Bachelor of Science | Monash University | 2017 - 2020**

Majors in Astrophysics, Minor in Mathematics

High Distinction Average

**Bachelor of Commerce | Monash University | 2017 - 2020**

Major in Business Analytics

High Distinction Average

## EMPLOYMENT

**Teaching associate | Monash University | 2022 - Present**

Experience delivering workshops and labs for Introductory Astronomy (ASP1010), Astrobiology (ASP1022), Introduction to Astrophysics (APS2062), Observational Astronomy (ASP3231) and Relativity and Cosmology (ASP3051).

**Social Media Coordinator | Monash Astrophysics | 2023 - Present**

Responsible for running the Instagram, Facebook, Twitter, Linked-in and Bluesky accounts for Monash University Astrophysics.

**Head Teacher | Code Camp | 2018 - 2022**

Taught coding to children aged 6 to 13 in a classroom setting, managed conflict, broke down difficult concepts and helped them find a passion for STEM subjects from an early age.

**Finance and Performance Intern | Deloitte Australia | 2019**

Assisted on a project implementing Workday Financials at a tertiary institution. Adapted to new software quickly and created value adds for the client such as a self-checking financial reports and quick-view dashboards.

**Short Term Staff | Kandersteg International Scout Center | 2018 - 2020**

Worked in the remote Swiss Alps across 2 winter seasons with 35 people from over 20 different nationalities. Responsible for guiding guests on alpine skiing and survival activities as well as internal chalet operations.

<https://www.kisc.ch/news/power-positivity-kisc>

# ROWINA NATHAN

## EXTRAS

### ABC News TV Interview

Gravitational-wave background discovery

### Instagram and TikTok Science Communicator

3M+ views, 12K+ followers

### OzGrav Education and Public Outreach Coordinator

Monash Node, 10+ school visits and outreach events

### Women and Non-binary People+ in Physics and Astronomy

Committee Member and Mentor

### Melbourne Region Rover Scouts

Treasurer and Secretary

### Bentleigh Football Netball Club

Netball Player

## PUBLICATIONS

**Nathan, R. S.**, Miles, M. T., Ashton, G., Lasky, P. D., Thrane, E., Reardon, D. J., ... & Cameron, A. D. (2023). [Improving pulsar-timing solutions through dynamic pulse fitting](#). Monthly Notices of the Royal Astronomical Society, 523(3), 4405-4412.

Tong, H., Guttman, N., Clarke, T. A., Lasky, P. D., Thrane, E., Payne, E., ... & Di Marco, V. (2024). [Transdimensional inference for gravitational-wave astronomy with Bilby](#). arXiv preprint arXiv:2404.04460.

Zic, A., Reardon, D. J., Kapur, A., Hobbs, G., Mandow, R., Curyło, M., ... & Zhu, X. J. (2023). [The Parkes Pulsar Timing Array Third Data Release](#). Publications of the Astronomical Society of Australia, 40, e049.

Reardon, D. J., Zic, A., Shannon, R. M., Di Marco, V., Hobbs, G. B., Kapur, A., ... & Zhu, X. J. (2023). [The gravitational-wave background null hypothesis: Characterizing noise in millisecond pulsar arrival times with the Parkes Pulsar Timing Array](#). The Astrophysical Journal Letters, 951(1), L7.

Reardon, D. J., Zic, A., Shannon, R. M., Hobbs, G. B., Bailes, M., Di Marco, V., ... & Zhu, X. J. (2023). [Search for an isotropic gravitational-wave background with the Parkes Pulsar Timing Array](#). The Astrophysical Journal Letters, 951(1), L6.

Sarin, N., Lasky, P. D., & **Nathan, R. S.** (2023). [Missed opportunities: GRB 211211A and the case for continual gravitational-wave coverage with a single observatory](#). Monthly Notices of the Royal Astronomical Society, 518(4), 5483-5489.

Ashton, G., Lasky, P. D., **Nathan, R.**, & Palfreyman, J. (2020). [Flickering of the Vela pulsar during its 2016 glitch](#). arXiv preprint arXiv:2011.07927.

## WORKSHOPS AND CONFERENCES

International Pulsar Timing Array Science Meeting | [2024](#)  
Contributed talk

International Pulsar Timing Array Student Week | [2024](#)  
Invited Talk

International Pulsar Timing Array Science Meeting | [2023](#)  
Contributed talk and Local organising committee

International Pulsar Timing Array Student Week | [2023](#)  
Organising committee

Gravitational Wave Physics and Astronomy Workshop | [2022](#)  
Poster

Astronomical Society of Australia Scientific Meeting | [2022, 2023](#)  
Contributed talk and Talk prize honourable mention (2023)

Australian National Institute of Theoretical Astrophysics Meeting | [2022, 2023](#)  
Contributed Talk and Summer School Session Assistant (2023)

OzGrav retreat | [2021 - 2023](#)  
Contributed Talk and Outreach Award Highly Commended (2023)