

Shanika Galaudage

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Education

Doctor of Philosophy | Monash University

Feb 2019 – Aug 2022

Dissertation: *Gravitational-wave inference in the catalogue era*

(expected)

Supervisors: Eric Thrane and Ilya Mandel

Bachelor of Science Advanced – Research (Honours) | Monash University

2018

Majors: Astrophysics and Physics – 1st class honours

Thesis: *Searching for X-ray pulsations from continuous gravitational-wave candidates*

Supervisors: Duncan Galloway and Karl Wette (ANU)

Publications

First author (4)

- Galaudage, S., Talbot, C., Nagar, T., Jains, D., Thrane, E., Mandel, I., *Building better spin models for merging binary black holes: Evidence for non-spinning and rapidly spinning nearly aligned sub-populations*, Submitted ApJL [arXiv:2109.02424](https://arxiv.org/abs/2109.02424)
- Galaudage, S., Wette, K., Galloway, D. K., and Messenger, C., *Deep searches for X-ray pulsations from Scorpius X-1 and Cygnus X-2 in support of continuous gravitational-wave searches*, Submitted MNRAS [arXiv:2105.13803](https://arxiv.org/abs/2105.13803)
- Galaudage, S., Adamcewicz, C., Zhu, X.-J., Stevenson, S. and Thrane, E. *Heavy double neutron stars: birth, mid-life and death*, (2021) [ApJL](https://arxiv.org/abs/2109.09019) 909 L19
- Galaudage, S., Talbot, C. and Thrane, E. *Gravitational-wave inference in the catalog era: evolving priors and marginal events*, (2020) [PRD](https://arxiv.org/abs/2010.08302) 102 083026

Co-author (3)-

- Essick, R., Farah, A., **Galaudage, S.**, Talbot, C., Fishbach, M., Thrane, E., Holz, D. E., *Probing Extremal Gravitational-Wave Events with Coarse-Grained Likelihoods*, Submitted ApJ [arXiv:2109.00418](https://arxiv.org/abs/2109.00418)
- The LIGO Scientific Collaboration; the Virgo Collaboration, *Population properties of compact objects from the second LIGO-Virgo Gravitational-Wave Transient Catalog*, (2021) [ApJL](https://arxiv.org/abs/2109.01317) 913 L7
Member of paper writing team; significant contribution to analyses and astrophysical interpretation of results.
- Romero-Shaw, I. M., Talbot, C., Biscoveanu, S., D'Emilio, V., Ashton, G., Berry, C. P. L., Coughlin, S., **Galaudage, S.**, et al., (51 authors), *Bayesian inference for compact binary coalescences with BILBY: validation and application to the first LIGO-Virgo gravitational-wave transient catalogue*, (2020) [MNRAS](https://arxiv.org/abs/2010.08302) 499 3295
[Bilby](#) and [BilbyPipe](#) developer; contribution to online [Bilby](#) (pipeline from trigger to parameter estimation).

Awards & Scholarships

LAAC Student Poster Prize | LIGO Laboratory

2021

Awarded for best poster (Data analysis/theory category)

J. L. William PhD Scholarship | Monash University

2019 - present

Research Training Program (RTP) Stipend | Australian Government

2019 - present

Monash Centre for Astrophysics (MoCA) Prize Monash University Awarded to the top Astrophysics honours student.	2018
ECR / Student Travel Award OzGrav	2018
J. L. William Honours Scholarship Monash University	2018

Conferences, Presentations & Workshops

Collaboration Meeting LIGO/Virgo/KAGRA (Virtual) – Poster – Winner <i>Building better spin models for merging binary black holes</i>	Sep 2021
Orange Pulsar Meeting Australasian Pulsar group (Virtual) <i>Heavy Double Neutron Stars: birth, midlife and death</i>	Aug 2021
Nuclear burning in Massive Stars Workshop YITP + OzGrav (Virtual) - Invited Talk <i>LIGO-Virgo observations of gravitational waves: The emerging picture of the BBH population</i>	Jul 2021
Amaldi Conference on Gravitational Waves OzGrav + IUPAP (Virtual) <i>Heavy Double Neutron Stars: birth, midlife and death</i>	Jul 2021
Annual Scientific Meeting Astronomical Society of Australia (Virtual) <i>Population Properties of Compact Objects from GWTC2</i>	Jul 2021
Open Data Workshop #4 LIGO (Virtual) – Invited Talk <i>Parameter Estimation with Bilby</i>	May 2021
Gravitational Wave group presentation University of Queensland (Virtual) – Invited Talk <i>Population properties of binary black holes: Results from LIGO/Virgo O3a</i>	Apr 2021
ECR Australia Seminar series ASTRO3D (Virtual) – YouTube <i>Population properties of binary black holes: Results from LIGO/Virgo O3a</i> A series showcasing Australia's Early Career Researchers to international audience.	Mar 2021
Collaboration Meeting LIGO/Virgo/KAGRA (Virtual) – Poster – Honourable Mention <i>Heavy Double Neutron Stars: birth, midlife and death</i>	Mar 2021
Annual Meeting Australian National Institute for Theoretical Astrophysics (Virtual) <i>Heavy Double Neutron Stars: birth, midlife and death</i>	Feb 2021
Public Webinar LIGO/Virgo Collaboration (Virtual) - YouTube – Invited Talk Presented results from LIGO/Virgo publications alongside a panel of experts. <i>Population Properties of Compact Objects from the Second LIGO-Virgo Gravitational-Wave Transient Catalog</i>	Nov 2020
School of Physics and Astronomy colloquium Monash University (Virtual) <i>Population properties of binary black holes: Results from LIGO/Virgo O3a</i>	Oct 2020
Annual Scientific Meeting Astronomical Society of Australia (Virtual) <i>Gravitational Wave inference in the catalogue era</i>	Jul 2020
Annual Scientific Meeting Astronomical Society of Australia <i>Selection Effects in Gravitational Wave Astronomy</i>	Jul 2019
Parameter Estimation F2F workshop LIGO PE Group	Feb 2019
Annual Scientific Meeting Astronomical Society of Australia <i>Searching for X-ray pulsations from Low Mass X-ray Binaries</i>	Jul 2018

Leadership & Mentoring

Media Advisory Committee – ECR representative OzGrav	2021
Role involves ensuring voices of Early Career Researchers are heard and represented for media related opportunities	
Women in Physics and Astronomy Committee Monash University	2020 – 2021
Role involves organising events and coordinating a mentoring program as well as creating a supportive environment for women in physics and astronomy.	
Palladian Mentoring Program Mac. Robertson Girls' High School	2020
Science Peer Mentoring Program Monash University	2018
Advanced Research Mentoring Program Monash University	2017 – 2018
Global Leadership Advanced Research Program Monash University	Jul 2017
Winter intensive unit for inter-disciplinary research and development of leadership skills	
Science Future Leaders Program Monash University	2015

Outreach & Engagement

School Presentation St Leonard's College	July 2021
Talk on 'Our Place in Space' to year 3 students	
Media Article Space Australia – Article	May 2021
Podcast AstroPhiz – SoundCloud	Apr 2021
Discussion of research and issues of diversity & inclusion to a general audience.	
Social Media Coordinator Space Australia (Freelance role)	2021 – present
Communicate Australian space news with general public.	
Victoria representative & Social Media Manager IncludeHer Movement	2020 – present
A campaign to improve representation of women in high-school STEM courses.	
MySci Program Volunteer OzGrav + Monash Astrophysics	Feb 2020
Create & deliver a workshop for year 11/12 students about gravitational waves.	
Outreach team member OzGrav	2019 – present

Teaching Experience

Teaching Associate Monash University	2018 – present
<ul style="list-style-type: none">· ASP1010 - Earth to cosmos, Introductory astronomy· ASP2062 - Introduction to astrophysics· ASP3051 - Relativity and cosmology· PHS1001 - Foundation physics· PHS1011 - Classical physics and relativity· PHS1022 - Fields and quantum physics· BMS1031 - Medical biophysics	