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EMPLOYMENT

2022-	Herchel Smith Research Fellow	University of Cambridge
2021-22	Research Fellow	Monash University
2016-18	Summer Intern '16 & '17, Software Engineer/Consultant '18	Altran Intelligent Systems

EDUCATION

Nov. 2018-21	Ph.D.: <i>Eccentricity in Gravitational-Wave Transients</i> . Supervisors: Assoc. Prof. Paul Lasky & Prof. Eric Thrane	Monash University
2014-18	B.A. and M.Sci. Physics with Honours, Class I, Supervisor: Prof. Andreas Freise	University of Birmingham
2013-14	Engineering & Physical Sciences Foundation Year	University of Birmingham

INVITED TALKS

2024	Queen Mary University of London	IPAX Conference, Panel
-	University of Birmingham	Seminar
-	University of Cambridge	Kavli Institute for Cosmology Seminar
-	University of Milano-Bicocca	Black Hole Populations Conference, Panel
-	University of Wisconsin-Milwaukee	Seminar
2023	Madrid Instituto de Física Teórica	COSMO'23, Plenary
-	Cardiff University	Gravity Exploration Centre Seminar
-	Albert Einstein Institute, Max Planck Institute, Potsdam	Seminar
-	Northwestern University	CIERA Seminar
-	Queen Mary University of London	Seminar
-	National Observatory (Brazil)	Webinar
2022	Melbourne	GWPAW 2022 Conference Talk & Panel
-	University of Cambridge	(Data Intensive Science, Cosmology, KICC Frontiers) Seminars
-	University of Amsterdam	Anton Pannekoek Institute Colloquium
2021	Niels Bohr Institute	Conference on Dynamical Binary Black Hole Formation
-	CSIRO Australia Telescope National Facility	Seminar
-	OzGrav Centre of Excellence for Gravitational-Wave Discovery	Seminar
-	Massachusetts Institute of Technology	Seminar
-	California Institute of Technology	TAPIR Seminar
-	Royal Astronomical Society	Poster Prize Acceptance & Explainer
-	University of Queensland	Seminar
2020	OzGrav Centre of Excellence for Gravitational-Wave Discovery	Seminar
-	University of Santiago de Compostela	Colloquium
-	Monash University School of Physics and Astronomy	Colloquium

PRIZES, AWARDS & SCHOLARSHIPS

2023	<i>Honourable Mention: Charlene Heisler Prize</i>	Astronomical Society of Australia
-	Rising Star Award	OzGrav Centre of Excellence for Gravitational Wave Discovery
2022	<i>Honourable Mention: GWIC-Braccini Prize</i>	Gravitational Wave International Committee
-	Robert Street Prize	Monash University, School of Physics & Astronomy
	<i>For "the best PhD thesis awarded through the School of Physics and Astronomy"</i>	
2021	Norris Family Award	Monash University, Faculty of Science.
	<i>For "outstanding author contribution by a graduate student to published scholarly research output"</i>	
2020	Homeward Bound Membership	STEMM Leadership Initiative
-	Outreach Award	OzGrav Centre of Excellence for Gravitational Wave Discovery
-	ECR Poster Prize	Royal Astronomical Society
2019	Student Poster Award	OzGrav Centre of Excellence for Gravitational Wave Discovery
-	Student Talk Award	Astronomical Society of Australia
2018	J.L. William International Scholarship	Monash University, School of Physics and Astronomy
-	Dean's International Postgraduate Scholarship	Monash University, Faculty of Science
-	International Postgraduate Research Scholarship	Monash University
-	Nolan Merrill Prize	University of Birmingham
	<i>For "the highest-scoring M.Sci. project in the School of Physics & Astronomy"</i>	
-	M.Sci. Poster Prize, School of Physics & Astronomy	University of Birmingham

SUPERVISION & TEACHING

▷ Supervision:

- Salman Khan (Cambridge). Data Intensive Science MPhil project: *Reproducing Third Gravitational Wave Transient Catalogue Population Inference*

- Daniel Gibson (Cambridge). Part III Mathematics MPhil project: *Understanding Neutron Stars with Future Gravitational-Wave Detector Networks*
 - Joshua Sharkey (Cambridge). Summer student project: *Wrong Model, Right Answer: Recovering traces of dynamical binary black hole formation from gravitational-wave data*
 - Samir Goorachurn (McGill). Summer student project: *Eccentricities of Binary Black Holes with Circumbinary Disks*
 - Ajinkya Naik (Pune). Summer student project: *Spins of Binary Black Holes from High Mass X-Ray Binaries*
 - Teagan Clarke (Monash). Honours (Masters) project: *Gravitational Waves from Eccentric Binary Black Holes*
- ▷ Problem Class Leading (Cambridge):
Statistical Uncertainty Quantification
 - ▷ Teaching Assistance / Lab / Workshop Leading (Monash):
Introductory Astronomy, Introduction to Astrophysics, Computational Astrophysics & the Extreme Universe

ACADEMIC SERVICE

2019-	Referee	<i>Nature Astronomy, PRD, MNRAS, ApJ, ApJ Letters</i>
2018-	Internal paper reviews, paper writing, eccentricity advisory team	<i>LVK Collaboration</i>
2023	Gravitational Waves Session Co-convenor	<i>National Astronomy Meeting (UK)</i>
2023	LOC, Conferences: Rubin/LSST, Astrostats/ML	<i>Kavli Institute Cambridge</i>
2022-2023	Organiser: GR Seminar, GR Journal Club, Theory Colloquia	<i>University of Cambridge</i>
2020-22	Steering Committee	<i>Australian National Institute for Theoretical Astrophysics</i>
2019	Women in Physics & Astronomy Student Co-Chair	<i>Monash University</i>
2018	Board of Misconduct Student Rep.	<i>University of Birmingham</i>
2013-18	Student Rep.	<i>University of Birmingham</i>

OUTREACH

Publications & Articles

- 2021 *Women in Physics, Colouring book*; co-author, editor, and illustrator
- 2020 *Planetymology: Why Uranus is not called George and other facts about space and words, Children's non-fiction book*; author, editor, and illustrator
- *The CO2 Elephant in the Room: Curbing the Carbon Footprint of Astronomy, Astrobites article*

Media Interviews

- PODCASTS *The Science Pawdcast*
- *Astrophiz*
- *Storytellers of STEMM*
- *Listening to the Cosmos (LIGO India)*
- RADIO *Einstein A Go-Go, Triple R*
- *The Space Show, Southern FM*
- ARTICLES *Space Australia*
- *Monash University Science*

Public Talks

- 2024 Bath Royal Literary & Scientific Institution (UK)
- 2023 Astronomy on Tap Chicago (US)
- 2022 U3A Deepdene (Australia; virtual)
- 2021 GWTC-3 Webinar
- Astronomical Society of Victoria (Australia)
- Denver Astronomical Society (US; virtual)
- 2020 Mount Burnett Observatory (Australia)
- OzGrav Public Lecture Series (Australia)
- 2019 Mount Burnett Observatory (Australia)

Kid's Talks & Outreach Visits

- 2024 City Academy Bristol with We The Curious (UK)
- 2022 Casey Tech School with OzGrav (Australia)
- Haileybury Middle School for Women's Day (Australia)
- 2021 Girlguiding (UK; virtual talk)
- Cambridge Festival (UK; virtual talk)

RESEARCH PUBLICATIONS: SHORT-AUTHOR	CITATIONS
[24] Eccentric Signatures of Stellar-Mass Binary Black Holes with Circumbinary Disks in LISA — IRS , S. Goorachurn, M. Siwek, C. J. Moore. Submitted to <i>MNRAS Letters</i> ,	
[23] A Star Cluster Population of High Mass Black Hole Mergers in Gravitational Wave Data — F. Antonini, IRS , T. Callister. Submitted to <i>PRL</i> , June 2024	
[22] Gravitational-wave data analysis with high-precision numerical relativity simulations of boson star mergers — T. Evstafjeva, U. Sperhake, IRS , M. Agathos. Submitted to <i>PRL</i> , June 2024	
[21] Residual eccentricity as a systematic uncertainty on the formation channels of binary black holes — G. Fumagalli, IRS , D. Gerosa, V. De Renzi, K. Kritos, A. Olejak. Submitted to <i>ApJ</i> , May 2024	
[20] Detecting gravitational-wave bursts from black hole binaries in the Galactic Center with LISA — A. Knee, J. McIver, S. Naoz, IRS , B-M. Hoang. Submitted to <i>ApJL</i> , April 2024	
[19] Blind Spots and Biases: The dangers of ignoring eccentricity in gravitational-wave signals from binary black holes — Divyajyoti, S. Kumar, S. Tibrewal, IRS , C. Mishra. Published in <i>PRD</i> , February 2024	10
[18] Double black hole mergers in nuclear star clusters: eccentricities, spins, masses, and the growth of massive seeds — D. Chattopadhyay, J. Stegmann, F. Antonini, J. Barber, IRS . Published in <i>MNRAS</i> , December 2023	15
[17] Inferring Interference: Identifying a Perturbing Tertiary with Eccentric Gravitational Wave Burst Timing — IRS , N. Loutrel, M. Zevin. Published in <i>PRD</i> , June 2023	7
[16] Rapid population synthesis of black-hole high-mass X-ray binaries: implications for binary stellar evolution — IRS , R. Hirai, A. Bahramian, R. Willcox, I. Mandel. Published in <i>MNRAS</i> , September 2023	6
[15] Eccentricity or spin precession? Distinguishing subdominant effects in gravitational-wave data — IRS , D. Gerosa, N. Loutrel. Published in <i>MNRAS</i> , January 2023	34
[14] Four eccentric mergers increase the evidence that LIGO-Virgo-KAGRA's binary black holes form dynamically — IRS , P. D. Lasky, E. Thrane. Published in <i>ApJ</i> , December 2022	53
[13] General-relativistic precession in a black-hole binary — M. Hannam et al. (incl. IRS). Published in <i>Nature</i> , October 2022	70
[12] A Rosetta Stone for Eccentric Gravitational Waveform Models — A. Knee, IRS , P. D. Lasky, J. McIver, E. Thrane. Published in <i>ApJ</i> , September 2022	23
[11] Subtracting glitches from gravitational-wave detector data during the third observing run — D. Davis, T. B. Littenberg, IRS , M. Millhouse, J. McIver, F. Di Renzo, G. Ashton. Published in <i>Class. Quant. Grav.</i> , December 2022	40
[10] Gravitational-wave inference for eccentric binaries: the argument of periapsis — T. A. Clarke, IRS , P. D. Lasky, E. Thrane. Published in <i>MNRAS</i> , December 2022	13
[9] When models fail: an introduction to posterior predictive checks and model misspecification in gravitational-wave astronomy — IRS , P. D. Lasky, E. Thrane. Published in <i>PASA</i> , June 2022	17
[8] Signs of Eccentricity in Two Gravitational-Wave Signals may Indicate a Sub-Population of Dynamically Assembled Binary Black Holes — IRS , P. D. Lasky, E. Thrane. Published in <i>ApJ Letters</i> , November 2021	59
[7] Implications of Eccentric Observations on Binary Black Hole Formation Channels — M. Zevin, IRS , K. Kremer, E. Thrane, P. D. Lasky. Published in <i>ApJ Letters</i> , November 2021	62
[6] Gravitational Waves as a Probe of Globular Cluster Formation and Evolution — IRS , K. Kremer, P. D. Lasky, E. Thrane, J. Samsing. Published in <i>MNRAS</i> , July 2021	17
[5] An Interactive Gravitational-Wave Detector Model for Museums and Fairs — S. Cooper et al. (incl. IRS). Published in <i>Am. J. Phys.</i> , July 2021	2
[4] GW190521: Orbital Eccentricity and Signatures of Dynamical Formation in a Binary Black Hole Merger Signal — IRS , P. Lasky, E. Thrane, J. Calderón Bustillo. Published in <i>ApJ Letters</i> , October 2020	206
[3] Bayesian Inference for Compact Binary Coalescences with BILBY: Validation and Application to the First LIGO-Virgo Gravitational-Wave Transient Catalogue — IRS , C. Talbot, S. Biscoveanu, V. D'Emilio, G. Ashton et al. Published in <i>MNRAS</i> , September 2020	305
[2] On the origin of GW190425 — IRS , N. Farrow, S. Stevenson, X-J. Zhu, E. Thrane. Published in <i>MNRAS Letters</i> , May 2020	58
[1] Searching for Eccentricity: Signatures of Dynamical Formation in the First Gravitational-Wave Transient Catalogue of LIGO and Virgo — IRS , P. Lasky, E. Thrane. Published in <i>MNRAS</i> , October 2019	115

RESEARCH PUBLICATIONS: LARGE COLLABORATION

CITATIONS

I list here publications to which I have actively contributed.

To see all papers upon which I am listed as an author, please visit my [ADS bibliography](#).

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| [7] | Observation of Gravitational Waves from the Coalescence of a 2.5 – 4.5 Msun Compact Object and a Neutron Star — <i>The LVK Collaboration (incl. IRS)</i> . Submitted to <i>ApJ</i> , April 2024. Contribution: Internal review of parameter estimation results and presentation. | 28 |
| [6] | Population of Merging Compact Binaries Inferred using Gravitational Waves through GWTC-3 — <i>The LVK Collaboration (incl. IRS)</i> . Published in <i>PRX</i> , March 2023. Contribution: Internal review of population spin analysis. | 748 |
| [5] | GWTC-3: Compact Binary Coalescences Observed by LIGO and Virgo During the Second Part of the Third Observing Run — <i>The LVK Collaboration (incl. IRS)</i> . Published in <i>PRX</i> , December 2023. Contribution: Member of the paper-writing team. Event analysis, writing, result presentation. | 1683 |
| [4] | Population Properties of Compact Objects from the Second LIGO-Virgo Gravitational-Wave Transient Catalog — <i>The LVK Collaboration (incl. IRS)</i> . Published in <i>ApJ Letters</i> , May 2021. Contribution: Internal review of population spin analysis. | 752 |
| [3] | GWTC-2: Compact Binary Coalescences Observed by LIGO and Virgo During the First Half of the Third Observing Run — <i>The LVK Collaboration (incl. IRS)</i> . Published in <i>PRX</i> , April 2021. Contribution: Analysis of strain data surrounding one event trigger. | 1717 |
| [2] | Neutron Star Extreme Matter Observatory: A KiloHertz-Band Gravitational-Wave Detector in the Global Network — <i>OzGrav: K. Ackley et al. (incl. IRS)</i> . Published in <i>PASA</i> , November 2020. Contribution: Research into efficacy of GW detector network including Australian instrument for observing binary neutron stars. | 151 |
| [1] | A cryogenic silicon interferometer for gravitational-wave detection — <i>R. X. Adhikari et al. (incl. IRS)</i> . Published in <i>CQG</i> , August 2020. Contribution: Created one of the numerical models used to simulate noise at gravitational-wave interferometers. | 138 |