

ISOBEL ROMERO-SHAW

gravitational-wave astrophysics PhD student

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SIGNIFICANT EMPLOYMENT

- SINCE 2018 PhD Student**
MONASH UNIVERSITY, AUSTRALIA
(18 months)
As a member of the LIGO collaboration, I investigate how black holes and neutron stars become bound to one another and eventually merge, producing the gravitational waves that we observe. My research involves statistical analysis of gravitational-wave strain data.
- SINCE 2018 Teaching Assistant**
MONASH UNIVERSITY, AUSTRALIA
(18 months)
I lead workshops for groups of 20-30 Physics and Astronomy undergraduate students of multiple year groups in a variety of modules.
- 2017,18 Summer Internships**
ALTRAN INTELLIGENT SYSTEMS, UK
(2 months, 5 months)
I drove development of a software life-cycle tool over two internships. In 2018 I became Development Team Lead, successfully motivating a team of four placement students to make substantial progress.
- 2017 Astrophysics & Space Research Summer Student**
UNIVERSITY OF BIRMINGHAM, UK
(2 months)
I researched stellar evolution models for implementation into the *Compact Object Mergers: Population Astrophysics & Statistics* (COMPAS) code package.
- 2016 Summer Internship**
ALTRAN INTELLIGENT SYSTEMS, UK
(4 months)
I reconfigured a training package for the Ada SPARK programming language such that the end product could be embedded in microcontroller boards. I evaluated the utility of LabVIEW to Altran in an office-wide presentation.

PUBLICATIONS

- 2020 On the origin of GW190425**
I. ROMERO-SHAW, N. FARROW, S. STEVENSON, X-J. ZHU, E. THRANE
arxiv.org/abs/2001.06492
- 2019 Searching for eccentricity: signatures of dynamical formation in the first gravitational-wave transient catalogue of LIGO and Virgo**
I. ROMERO-SHAW, P. LASKY, E. THRANE
academic.oup.com/mnras/article-abstract/490/4/5210/5607801

PRIZES, AWARDS & SCHOLARSHIPS

- 2019 Best Student Poster Award**
OzGrav Centre of Excellence for Gravitational Wave Discovery
- 2019 Best Student Talk Award**
Astronomical Society of Australia
- 2018 J.L. William International Top-Up Scholarship**
Monash University
- 2018 RTP Stipend & International Postgraduate Research Scholarship**
Monash University
- 2018 Nolan Merrill Prize for best performance in Master's Project**
University of Birmingham, School of Physics & Astronomy
- 2018 Best Project Poster Prize**
University of Birmingham, School of Physics & Astronomy (peer-nominated)

EDUCATION

University of Birmingham, UK

- 2014–18 M.Sci. Physics with Honours, Class I (81% average)**
Integrated Undergraduate Masters
- 2013–14 Engineering & Physical Sciences Foundation Year (77% average)**
Required for entry into Physics degree without Mathematics A-Level

Ralph Allen School, Bath, UK

- 2011–13 A Levels - A*AB**
Fine Art, English Literature, Physics
- 2006–11 GCSEs - 11 A*-A**
8 A*s including Physics, English Literature, English Language & Fine Art
3 As including Mathematics & ICT

PUBLIC EDUCATION & OUTREACH

- 2019 **Public talk at Mount Burnett Observatory, Melbourne**
I gave a talk about *The Mystery of Globular Star Clusters* to a group of about 40 amateur astronomers.
- 2018 **Session Leader for Space-Py Quest Workshop at Arena Academy, Birmingham**
I helped to design & run educational activities revolving around gravitational waves and programming for key-stage 3 children.
- 2017 **Assistant at Royal Society Summer Science exhibition, London**
I walked primary and secondary school students through our exhibit: *Listening to Einstein's Universe*. I communicated our science to members of the public of all ages over three days.
- 2017 **Activity Leader at University of Birmingham Physics applicant activity days**
I led visitor interactions at one station out of a circuit of physics-based activities for applicants to the School.
- 2016-17 **Teaching Assistant at Teach Programming, Bath**
£ www.programming-uk.com
Teach Programming aims to teach young people – especially young girls – how to code. I taught children aged 9-13 to use Scratch & Python during Saturday clubs & Bath Digital Festival workshops.
- 2014-15 **Student Engineer, Face Your Elephant tent at Latitude Festival**
£ woodcraft.org.uk/face-your-elephant
I communicated the science and engineering of sustainable living to festival-goers, having trained at the Centre for Alternative Technology in Wales. I was able to express my passion for a scientifically sound sustainable future by teaching a wide range of people about the necessary relevant technologies.
- 2013 **Bartender for Worker's Beer Company, Reading festival**
£ www.workersbeer.co.uk/about
I worked at a festival bar for Worker's Beer Company, who donate their profits to a number of different projects that promote sustainability and equality.
- 2012 **Steward at Bath Festival of Children's Literature**
I helped to direct and managed crowds at Europe's largest festival of literature for children.
- 2011 **Activity Leader for Girl Guides, St Luke's Church, Bath**
As part of my Bronze Duke of Edinburgh award, I led activities for young girls in the Guides.

COMMITTEE & REPRESENTATIVE ROLES

- 2020 **Student Representative, ANITA Steering Committee**
I have a two-year position on the steering committee of the Australian National Institute for Theoretical Astrophysics, playing a key role in organising the next two year's ANITA meeting.
- SINCE 2019 **Co-chair, Women in Physics and Astronomy, Monash University**
Since taking the position of co-chair, I have co-organised social morning teas, movie & pizza nights, coffee meetings, mentoring, and online seminars for the female undergraduates in the school of Physics and Astronomy at Monash.
- SINCE 2018 **Treasurer, Optical Society Chapter, Monash University**
As a member of the Optical Society Chapter I have assisted with outreach for school groups attending the University. In my role as treasurer, I order supplies for these outreach activities.
- 2017-18 **Student Representative Panel Member, Board of Misconduct, University of Birmingham**
I attended hearings for academic misconduct cases and provided impartial advice on behalf of the student body of the University.
- 2016-18 **Secretary, Art Society, University of Birmingham**
I organised two weekly art sessions and arranged life models once a week.
- 2013-18 **Physics Student Representative, University of Birmingham**
I was elected representative of Physics students in my cohort for 5 consecutive years. I resolved issues & maintained communications between students & staff. I also organised fundraiser events, like a sponsored festive-jumper-wearing day and a physics-themed baking competition ("the Great Physics Bake-Off").
- 2016 **University of Birmingham representative, Women's Engineering Society conference, Aston University**
£ A-weekend-with-WES.aspx
I collaborated with women from many different STEMM backgrounds in workshops and activities. Meeting so many strong, capable, clever women, who also experienced discrimination through all engineering disciplines, made me determined to break the stereotypes of women in science.
- 2013-15 **Writer for Engineering and Physical Sciences College Newsletter**
I collaborated with other EPS students to write articles for the College Newsletter.

PUBLIC SOFTWARE PROJECTS

- 2018

MAGIC

GRAVITATIONAL-WAVE INTERFEROMETER NOISE SIMULATION

🔗 pypi.org/project/ifomagic
- 2018

Space Py Quest

TOY MODEL OF GRAVITATIONAL-WAVE INTERFEROMETER NOISE ADJUSTMENT& DETECTION

🔗 github.com/gwoptics/SpacePyQuest
- 2016

Birds

3D SIMULATIONS OF BIRDS FLOCKING, FLEEING PREDATORS AND CHASING PREY

🔗 github.com/IsobelMarguarethe/birds

SOFTWARE SKILLS

- LANGUAGES



Python | C/C++ | Java | Matlab | Ada | HTML | LabVIEW | Epsilon (EOL)
- OTHER

LaTeX | QT Creator | Eclipse | JIRA | Unix | Linux

HOBBIES & INTERESTS

- ▶ I am currently teaching myself Spanish, as well as taking ice-skating lessons.
- ▶ Right now I am reading a mixture of science fiction novels and non-fiction.
- ▶ I love to draw detailed portraits and still-life studies.
- ▶ At the moment, my primary creative outlet is cooking.
- ▶ I am a keen runner, and am working on building short-distance speed after having completed four half-marathons, one full marathon and a ten-mile endurance obstacle course.

REFERENCES



Available on request