

Rajika Kuruwita

CONTACT INFORMATION	Centre for Star and Planet Formation University of Copenhagen Øster Voldgade 5-7 DK-1350, Copenhagen, Denmark	<i>Tel:</i> +61 02 9850 7111 <i>E-mail:</i> rajikakuruwita@gmail.com <i>Website:</i> https://rajikalk.github.io/index.html
RESEARCH INTERESTS	Star formation, binary and multiple star systems, protoplanetary disks and planets in binary star systems, MHD simulations, software development.	
EDUCATION	Australian National University , Canberra, Australia	February, 2015 - January, 2019
	PhD <ul style="list-style-type: none">• Thesis Topic: “The formation, evolution, and survivability of discs around young binary stars”• Primary Supervisor: Dr Christoph Federrath• Secondary Supervisor: Associate Professor Michael Ireland	
	Macquarie University , Sydney, Australia	February, 2010 - January, 2015
	MRes. Physics and Astronomy <ul style="list-style-type: none">• Thesis Topic: “Fallback disks and the end of the common envelope phase”• Primary Supervisor: Professor Orsola De Marco• Secondary Supervisor: Assistant Professor Jan Staff	
	BSc. Astronomy and Astrophysics	
WORK AND ACADEMIC EXPERIENCE	University of Copenhagen , Copenhagen, Denmark <i>Post-doctorate researcher (European Union INTERACTIONS fellow)</i> Research the formation of binary and multiple star systems via numerical simulations.	April, 2019 - Present
	Australian National University , Canberra, Australia <i>Research Assistant</i> Research binary star formation and publish work on episodic accretion and turbulence.	February, 2019 - April, 2019
	<i>Outreach Assistant</i> Organise and run outreach observing and site tours for the public, school and scout groups, as well as private groups, as well as design activities for the observatory visitor centre.	December, 2015 - April, 2019
	Macquarie University , Sydney, Australia <i>Laboratory Demonstrator</i> Taught lab experiments for undergraduate students. This also involved marking lab books.	February, 2014 - January, 2015
	<i>Observatory and Planetarium Supervisor</i> Coordinated groups, created tours and presentations, operated observatory and planetarium.	February, 2010 - January, 2015
	<i>Vacation Scholarship Researcher</i> Simulated light curves to understand the influence of exoplanets on the asteroseismological pulsation spectrum of stars.	December, 2012 - February, 2013
	<i>Vacation Scholarship Researcher</i> Carried out research on nanowires using white light interferometry.	January, 2012 - February, 2012

TELESCOPE TIME	Australian National University 2.3m Telescope	
AWARDED	<ul style="list-style-type: none"> • PI: Building a Census of Protoplanetary Disks in Binary Star Systems (4 nights) • PI: Building a Census of Circumbinary Protoplanetary Disks (3 nights) • PI: Building a Census of Circumbinary Protoplanetary Disks (6 nights) • PI: Building a Census of Circumbinary Protoplanetary Disks (7 nights) 	
TALKS	Distorted Astrophysical Discs	May, 2020 (Postponed due to Covid-19)
	Contributed Talk	Cambridge, UK
	Ramses User Meeting	September, 2019
	Contributed Talk	Copenhagen, Denmark
	Annual Danish Astronomy Meeting	May, 2019
	Contributed Talk	Nyborg, Denmark
	Niels Bohr Institute	January, 2019
	Invited Talk	Copenhagen, Denmark
	Sutherland Astronomical Society Incorporated	September, 2018
	Invited Talk	Sydney, Australia
	Greenlight for Girls National Science Week	August, 2018
	Invited Talk	Canberra, Australia
	University of Tübingen	May, 2018
	Astronomy Seminar	Tübingen, Germany
	Heidelberg Institute for Theoretical Astrophysics	May, 2018
	Astronomy Seminar	Heidelberg, Germany
	Max Planck Institute for Astronomy	May, 2018
	Planet and Star Formation Seminar	Heidelberg, Germany
	Hamburg Observatory	May, 2018
	Astronomy Seminar	Hamburg, Germany
	Annual Scientific Meeting of the Astronomical Society of Australia	June, 2018
	Contributed Talk	Melbourne, Australia
	Planets in Perculiar Places	April, 2018
	Contributed Talk	Sydney, Australia
	International Women's Day Science in the Pub	March, 2018
	Invited Talk	Canberra, Australia
	12th ANITA Theory Workshop	February, 2018
	Contributed Talk	Perth, Australia
	Franco-Australian Astrobiology and Exoplanet School and Workshop	December, 2017
	Contributed Talk	Canberra, Australia
	Annual Scientific Meeting of the Astronomical Society of Australia	July, 2017
	Contributed Talk	Canberra, Australia
	11th ANITA Theory Workshop	February, 2017
	Contributed Talk	Hobart, Australia
	Mt Stromlo Students Seminars	December, 2016
	Contributed Talk (Awarded Best Theme Talk)	Canberra, Australia
	6th Australian Exoplanet Workshop	November, 2016
	Contributed Talk	Melbourne, Australia
	Star Formation	August, 2016
	Computational Astrophysics splinter session (Invited) Exeter, UK	Annual Scientific Meeting of the Astronomical Society of Australia
	Contributed Talk	July, 2016
	10th ANITA Theory Workshop	Sydney, Australia
	Contributed Talk	February, 2016
		Melbourne, Australia

5th Australian Exoplanet Workshop

Contributed Talk

November, 2015

Sydney, Australia

9th ANITA Theory Workshop

Contributed Talk

February, 2015

Canberra, Australia

AWARDS AND
HONORS

- 2020: European Union INTERACTIONS Fellowship
- 2017: Joan Duffield Research Supplementary Scholarship
- 2015: Australian Postgraduate Award
- 2013: Macquarie University Research Training Scholarship
- 2012: Vacation Scholarship (Macquarie University)
- 2011: Vacation Scholarship (Macquarie University)

TEACHING AND
MENTORING
EXPERIENCE**Computational Astrophysics****November, 2019**

Gave two post-graduate level lectures on computational astrophysics reviewing hydrodynamics and modelling shockwaves. **Graduate Student** **September, 2017 - present**

Mentoring ANU graduate student Eloise Birchall in implementing radiative transfer and tracer particles into my simulations. This is to trace environments within protoplanetary disks to determine certain mineral formation sites.

Mt Stromlo Observatory Summer Research**December, 2017 - February, 2018**

Co-supervised Isabella Gerard (currently a graduate student at Monash University) on a research project on turbulent magnetic fields and star formation. I am currently co-author on the paper she has submitted for publication from this project.

Mt Stromlo Observatory Winter School**June-July, 2017**

Advised undergraduate students Lara Cullinane (currently a graduate student at ANU), Joshua Ho, Lillian Guo and Patrick Armstrong in planning observations and writing telescope proposals.

COMPUTER SKILLS

- Computing Languages: Python, Fortran and html
- Applications: \LaTeX , `yt`, simulation code FLASH, analysis of hdf5 files from hydrodynamic simulations, reducing observational data in fits files, retrieving radial velocities.
- Operating Systems: Unix/Linux, Windows, and Mac.

OTHER
EXPERIENCE

- Founder of Astronomy on Tap Copenhagen.
- Treasurer of Kvinder i Fysik (the Danish women in physics society)
- Member of the Science Organising Committee for the 2016 Harley Wood Winter School.
- Chair of the Organising Committee for the 2016 Mt Stromlo Student Seminars
- Member of the Local Organising Committee for the 2017 Harley Wood Winter School and Annual Scientific Meeting of the Astronomical Society of Australia.

REFeree DETAILS

- Professor Orsola De Marco, Department of Physics and Astronomy, Macquarie University, Sydney NSW 2109, Australia. tel: +61 2 9850 4241, email: orsola.demarco@mq.edu.au
- Associate Professor Michael Ireland, Research School of Astronomy and Astrophysics, Australian National University, Research School of Astronomy & Astrophysics, Mount Stromlo Observatory, Cotter Road, Weston Creek, ACT 2611, Australia. tel: +61 2 6125 0288, email: michael.ireland@anu.edu.au
- Dr Christoph Federrath, Research School of Astronomy and Astrophysics, Australian National University, Research School of Astronomy & Astrophysics, Mount Stromlo Observatory, Cotter Road, Weston Creek, ACT 2611, tel: +61 2 6125 0217, email: christoph.federrath@anu.edu.au

Kuruwita et al., *The dependence of episodic accretion on eccentricity during the formation of binary stars*, 2020, *Astronomy & Astrophysics*, *Accepted*

- Lead author, and conductor of research and analysis.

Kuruwita & Federrath, *The role of turbulence during the formation of circumbinary discs*, 2019, *Monthly Notices of the Royal Astronomical Society*, 486, 3647-3663

- Lead author, and conductor of research and analysis.

Kuruwita et al., *Multiplicity of disc-bearing stars in Upper Scorpius and Upper Centaurus-Lupus*, 2018, *Monthly Notices of the Royal Astronomical Society*, 480, 5099–5112

- Lead author, and conductor of research and analysis.
- Collected the majority of observations.

Kuruwita et al., *Binary star formation and the outflows from their discs*, 2017, *Monthly Notices of the Royal Astronomical Society*, 470, 1626-1641

- Lead author, and conductor of research and analysis.

Kuruwita et al., *Considerations on the role of fall-back discs in the final stages of the common envelope binary interaction*, 2016, *Monthly Notices of the Royal Astronomical Society*, 461, 486-496

- Lead author, and conductor of research and analysis.

Gerrard et al., *The role of magnetic field structure in the launching of protostellar jets*, 2019, *Monthly Notices of the Royal Astronomical Society*, 485, 5532-5542

- Co-supervised Gerrard in running simulations and analysing them

Green et al., *Testing the binary trigger hypothesis in FUors*, 2016, *The Astrophysical Journal*, 830, 29

- Obtained observational data with Keck and commented on paper drafts.

Childress et al., *The ANU WiFeS SuperNova Programme (AWSNAP)*, 2016, *Publications of the Astronomical Society of Australia*, 33, 29

- Obtained observational data with Australian National University 2.3m telescope.

Little et al., *Phase-stepping interferometry of GaAs nanowires: Determining nano-wire radius*, 2013, *Applied Physical Letters*, 103, 161107

- Obtained experimental data with white light interferometry of nanowires.