

- 11/2022 – 12/2023 **Swinburne University of Technology (Postdoctoral Research Associate)**
Supervisor: Prof. Michael Murphy **Location:** Hawthorn, Vic Australia (remotely)
- 12/2023 – current **Adjunct Postdoctoral Research Associate**
- Working on measuring the fine structure constant α using high-resolution spectra of red clump stars collected from HARPS, ESPRESSO, and Keck Planet Finder (KPF) spectrographs.
 - Using red clump stars observed at great distances towards our galactic centre to test non-standard models of physics and theories of α -variation in regions with higher dark matter densities.
 - Analyzing the spectra of giant stars to look for spectral features that predict evolutionary state using a differential equivalent width method.
 - Demonstrated that nearby (~ 150 pc) red clump stars can be used to measure α using archival HARPS spectra.
 - Awarded 4.1hr on VLT/ESPRESSO in 2023B to transfer α measurement models from HARPS to ESPRESSO.
- 08/2018 – 07/2022 **University of Southern Queensland (Research Fellow in Astrophysics)**
Supervisor: Prof. Rob Wittenmyer **Location:** Toowoomba, QLD Australia
- 07/2022 – current **Adjunct Research Fellow**
- Led the radial velocity follow-up and confirmation of TESS transiting exoplanet candidates using the MINERVA-Australis Telescope array and SONG telescopes.
 - Characterised and measured the bulk properties of exoplanets from the analysis of data collected from telescopes around the world and in space.
 - Made the exciting discovery of an ultra-hot Jupiter called TOI-1431b (Addison et al. 2021). Measured the planet's mass, radius, and day/nightside temperatures (second hottest nightside temperature ever measured). Discovery gained significant media coverage, including in the ABC, 7News, CNET, and Brisbane Times.
 - Published planet discovery and mass measurement of TOI-257b (Addison et al. 2021).
 - Measured the Spin-orbit alignment of one of the youngest planets, AU Mic b (Addison et al. 2021).
 - Published the Minerva-Australis commissioning paper (Addison et al. 2019).
 - Contributed to the discovery of an additional **47** TESS exoplanets and co-author on **24** planet discovery papers.
 - Taught several astronomy/astrophysics courses as examiner and tutor.
- 12/2015 – 06/2018 **Mississippi State University (Postdoctoral Researcher)**
Supervisor: Prof. Angelle Tanner **Location:** Starkville, MS USA
- Worked on developing the Starchive Stellar and Planetary Database.
 - Measured spin-orbit alignments of hot Jupiters and multi-planet systems via the Rossiter-McLaughlin effect.
 - Significantly contributed to the measurement of the spin-orbit alignment of Kepler-9 multi-planet system (one of only a few multi-planet systems with such measurements) with Keck RV observations (Wang, Addison, et al 2018).
 - Published results on the nearly polar orbits of WASP-100b & WASP-109b and spin-orbit alignment of WASP-72b (Addison et al. 2018).
 - Published results on the spin-orbit alignment of WASP-103b, WASP-87b, & WASP-66b (Addison et al. 2016).
- 07/2010 – 04/2015 **University of New South Wales Exoplanetary Science Group (Ph.D. work)**
Supervisor: Prof. Chris Tinney **Location:** Sydney, NSW Australia
- Measured exoplanet spin-orbit alignments via the Rossiter-McLaughlin effect.
 - Developed ExOSAM analysis tool (written in Fortran and IDL) to model transit light curves, radial velocities, and Rossiter-McLaughlin effect of exoplanet host stars.
 - Published results on the spin-orbit alignment of HATS-3b in ApJ (Addison et al. 2014).
 - Published results on the polar orbit of WASP-79b in ApJ Letters (Addison et al. 2013).
 - Worked in the team (led in Australia by Daniel Bayliss & Chris Tinney) following-up HATSouth transiting planet candidates with radial velocity measurements using CYCLOPS2 + UCLES on the AAT. Led the effort to measure the spin-orbit alignments of extrasolar planets.

Publications Statistics:

57 published peer reviewed papers — **9** as first author. Author on a total of **57** journal papers, **4** refereed conference proceedings, and **15** other conference presentations. H-index of **25** (ADS)/**28** (Google Scholar). [ADS Library of my papers.](#)

HDR Supervision:

- 06/2021 – current Co-supervisor of PhD student Tony Wells at UniSQ.
Supervising student on measuring orbital obliquities of exoplanets and eclipsing binary stars to understand their formation and migration histories.
- 02/2020 – current Co-supervisor of PhD student John Gianforte at UniSQ.
Supervising student on measuring transit timing variations to discover new exoplanets and understand planet demographics, formation, and evolution.
- 02/2022 – 12/2022 Principal supervisor of Jarrod Slater Master's degree Research Project (MSC8001/8002) at UniSQ.
*Supervised student project on searching for long-period exoplanets using MINERVA-Australis. **Completed Master's degree.***
- 02/2022 – 12/2022 Principal supervisor of Rebecca Barrett Master's degree Research Project (MSC8001/8002) at UniSQ.
*Supervised student project on searching for narrow-band transmission from transiting exoplanets observed by TESS using Parkes radio data. **Completed Master's degree.***
- 02/2020 – 12/2020 Principal supervisor of Tony Wells Master's degree Research Project (MSC8001/8002) at UniSQ.
*Successfully supervised student project on characterising exoplanets with MINERVA-Australis. **Completed Master's degree.***

Recent Teaching Experience and Course Development:

- 08/2025 – 12/2025 Course tutor and marker for PHY1107 Astronomy 2 at UniSQ.
Running course tutorial sessions and marking assignments and exams.
- 05/2025 – 08/2025 Course tutor and marker for PHY6001 Observational Astrophysics at UniSQ.
Ran the course tutorial sessions and marked assignments and exams.
- 05/2025 – 08/2025 Course tutor and marker for SCI6101 Science in Practice at UniSQ.
Ran the course tutorial sessions and marked assessments.
- 05/2025 – 08/2025 Course tutor and marker for SCI6102 Research Skills at UniSQ.
Ran the course tutorial sessions and marked assessments.
- 05/2025 – 08/2025 Course marker for SCI6103 Essentials for Professional Scientists at UniSQ.
Marked assessments for the course.
- 02/2025 – 05/2025 Course tutor and marker for PHY1101 Astronomy 1 at UniSQ.
Ran the course tutorial sessions and marked assignments and exams.
- 02/2025 – 05/2025 Course marker for PHY5001 Concepts in Astronomy at UniSQ.
Marked assignments and exams for the course.
- 02/2025 – 05/2025 Course tutor and marker for SCI6101 Science in Practice at UniSQ.
Ran the course tutorial sessions and marked assessments.
- 02/2025 – 05/2025 Course tutor and marker for SCI6102 Research Skills at UniSQ.
Ran the course tutorial sessions and marked assessments.
- 09/2024 – 12/2024 Course tutor and marker for PHY1107 Astronomy 2 at UniSQ.
Ran the course tutorial sessions and marked assignments and exams.
- 09/2024 – 12/2024 Course marker for PHY6002 Stellar Astrophysics at UniSQ.
Marked assignments and exams for the course.

07/2022 – 10/2022	Course examiner, tutor, and marker for PHY8003 Galactic Astronomy and Cosmology at UniSQ. <i>Ran the course tutorial sessions and developed and marked assignments and exams.</i>
07/2022 – 10/2022	Course examiner, tutor, and marker for PHY8004 Stellar Astronomy at UniSQ. <i>Ran the course tutorial sessions and developed and marked assignments and exams.</i>
07/2022 – 10/2022	Course examiner, tutor, and marker for PHY3307 Galactic & Extragalactic Astronomy at UniSQ. <i>Ran the course tutorial sessions and developed and marked assignments and exams.</i>
07/2022 – 10/2022	Course tutor for CSC3501/8001 Principles of/Introduction to Data Science & Visualisation at UniSQ. <i>Ran the course workshop sessions.</i>
02/2022 – 06/2022	Course assistant examiner, tutor, and marker for PHY3306 Solar & Stellar Astronomy at UniSQ. <i>Ran the course tutorial sessions and developed and marked assignments and exams.</i>
02/2022 – 06/2022	Course tutor and marker for PHY2204 Astronomical Techniques at UniSQ. <i>Ran the course tutorial sessions and marked assignments and exams.</i>
02/2022 – 06/2022	Course tutor and marker for SCI8102 Research Skills at UniSQ. <i>Ran the course tutorials/workshop sessions and marked assignments.</i>
08/2021 – 11/2021	Course assistant for PHY8003 Galactic Astronomy and Cosmology at UniSQ. <i>Ran the course tutorial sessions and marked assignments and exams.</i>
08/2021 – 11/2021	Course assistant for PHY8004 Stellar Astronomy at UniSQ. <i>Ran the course tutorial sessions and marked assignments and exams.</i>
08/2021 – 11/2021	Course assistant for PHY3307 Galactic and Extragalactic Astronomy at UniSQ. <i>Ran the course tutorial sessions and marked assignments and exams.</i>
08/2021 – 11/2021	Course assistant for PHY1107 Astronomy 2 at UniSQ. <i>Marked the assignments and exams.</i>
08/2021 – 11/2021	Course assistant for PHY8102 Research Skills at UniSQ. <i>Marked the assignments.</i>

Recent Telescope Time Allocation:

1. *Testing fundamental physics with distant red clump stars – Phase 1: Bright local reference stars*
Addison, B. (PI), Murphy, M. (D-PI), Scott, B., Flynn, C., Fan, L., et al.
Awarded 4.1hr on VLT/ESPRESSO 2023B.
2. *Using obliquity to probe the formation and migratory history of brown dwarfs*
Wells, T. (PI), **Addison, B.** (D-PI), & Wittenmyer, R.
Awarded 1.75 nights on 3.6m/HARPS 2023B.
3. *Probing the Origins of Warm and Tropical Jovian and sub-Jovian planets by Measuring their Orbital Obliquities*
Addison, B., Wright, D., Wittenmyer, R., Bergmann, C., Schwab, C., Wang, S., Zhou, G., & Knight, S.
Awarded 2 night on AAT/Veloce 2020B.
4. *Confirming and Characterising the TESS Warm and Tropical Jovian candidates with SONG*
Addison, B., Wittenmyer, R., Wright, D., Clark, J., & Wang, S.
Awarded 77 hours on SONG 2020B. Resulted in two publications on TOI-1431b/MASCARA-5b.
5. *Detecting and characterising newly found Warm and Tropical Jovians with SONG*
Addison, B., Wittenmyer, R., Wright, D., Clark, J., & Wang, S.
Awarded 98 hours on SONG 2020A.

Time Allocation Committees:

1. Member of the SONG time allocation committee
April 2020 – April 2021

Recent Public Outreach & Press:

- 13/01/2023 **7News Toowoomba TV interview on Discovery of TOI-778b**
• TV interview can be accessed at <https://fb.watch/i1ErGiEpyv/?mibextid=VhDh1V>.
- 28/04/2021 **Live interview on ABC Radio Mornings with Rebecca Levingston on the Discovery of TOI-1431b**
• Radio interview starts at ~57 minutes at
<https://www.abc.net.au/radio/brisbane/programs/mornings/mornings/13312764>.
- 15/03/2021 **Invited Astronomy public outreach talk to the Macarthur Astronomical Society (MAS)**
• Gave a 1-hour presentation to MAS on 'The Hunt for & Characterization of Alien Worlds Beyond the Solar System'.
- 25/06/2020 **7News Toowoomba TV interview on AU Mic b Discovery and Follow-up**
• TV interview can be accessed at <https://www.youtube.com/watch?v=z9-6zltEouw>.
- 23/01/2020 **ABC Radio Brisbane interview on Discovery of TOI-257b**
- 22/01/2020 **7News Toowoomba TV interview on Discovery of TOI-257b**
• Written article and TV interview can be accessed at <https://tinyurl.com/rx7nkyg>.
- 04/03/2018 **Science at the Tavern Astronomy Public Outreach @ Dave's Dark Horse Tavern**
• Presented astronomical talks to audience of ~ 60 people about the Solar System, Exoplanets, & Life Beyond Earth. The event last approximately 2 hours.
• Presentation was interactive that included karaoke, astro trivia, and fun science news. Similar to Astronomy on Tap. <https://www.msstate.edu/events/2018/02/science-tavern/>
• Planned and organized the event.

Select Journal Publications (full list available on ADS [here](#)):

1. *Spinning up a Daze: TESS Uncovers a Hot Jupiter orbiting the Rapid-Rotator TOI-778:*
Clark, Jake, **Addison, Brett C.**, Okumura, Jack, Vach, Sydney, Heitzmann, Alexis, ..., 2023, The Astronomical Journal, 165, 207. [2023AJ....165..207C](#)
2. *TOI-1431b/MASCARA-5b: A Highly Irradiated Ultra-Hot Jupiter Orbiting One of the Hottest & Brightest Known Exoplanet Host Stars:*
Addison, Brett C., Knudstrup, Emil, Wong, Ian, Hebrard, Guillaume, Dorval, Patrick, ..., 2021, The Astronomical Journal, 162, 292. [2021AJ....162..292A](#)
3. *The obliquity and atmosphere of the ultra-hot Jupiter TOI-1431b (MASCARA-5b): A misaligned orbit and no signs of atomic or molecular absorptions:*
Stangret, M., Pallé, E., Casasayas-Barris, N., Oshagh, M., Bello-Arufe, A., Luque, R., Nascimbeni, V., Yan, F., Orell-Miquel, J., Sicilia, D., Malavolta, L., **Addison, B. C.**, ..., 2021, Astronomy & Astrophysics, 654, 73. [2021A&A...654A..73S](#)
4. *The Youngest Planet to Have a Spin-Orbit Alignment Measurement AU Mic b:*
Addison, Brett C., Horner, Jonathan, Wittenmyer, Robert A., Plavchan, Peter, ..., 2021, The Astronomical Journal, 162, 137. [2021AJ....162..137A](#)
5. *TOI-257b (HD 19916b): A Warm sub-Saturn Orbiting an Evolved F-type Star:*
Addison, Brett, Wright, Duncan J., Nicholson, Belinda A., Cale, Bryson, Mocnik, Teo, ..., 2021, Monthly Notices of the Royal Astronomical Society, 502, 3704. [2021MNRAS.502.3704A](#)

6. *Minerva-Australis. I. Design, Commissioning, and First Photometric Results:*
Addison, Brett, Wright, Duncan J., Wittenmyer, Robert A., Horner, Jonathan, Mengel, Matthew W.,..., 2019, Publications of the Astronomical Society of the Pacific, 131, 115003. [2019PASP..131k5003A](#)
7. *Stellar Obliquities & Planetary Alignments (SOPA). I. Spin-Orbit Measurements of Three Transiting Hot Jupiters: WASP-72b, WASP-100b, and WASP-109b*
Addison, Brett, Wang, S., Johnson, M., Tinney, C., Wright, D., Bayliss, D., 2018, The Astronomical Journal, 156, 197. [2018AJ....156..197A](#)
8. *Spin-Orbit Alignment for Three Transiting Hot Jupiters: WASP-103b, WASP-87b, & WASP-66b*
Addison, Brett, Tinney, C., Wright, D., Bayliss, D., 2016, Astrophysical Journal, 823, 29. [2016ApJ...823...29A](#)
9. *A Spin-Orbit Alignment for the Hot Jupiter HATS-3b*
Addison, Brett, Tinney, C., Wright, D., Bayliss, D., 2014, Astrophysical Journal, 792, 112. [2014ApJ...792..112A](#)
10. *A Nearly Polar Orbit for the Extrasolar Hot Jupiter WASP-79b*
Addison, Brett, Tinney, C., Wright, D., Bayliss, D., Zhou, G., Hartman, J. D., Bakos, G. Á., Schmidt, B. 2013, Astrophysical Journal Letters, 774, 9. [2013ApJ...774L...9A](#)

Recent Conference/Workshop proceedings & Colloquiums/Seminars:

1. *Exoplanet Discovery and Characterisation in the era of TESS and JWST (June 2023)*
Invited colloquium presentation at the University of Melbourne, Parkville, VIC, Australia.
2. *Exoplanet Discovery and Characterisation with the MINERVA-Australis Telescope Array in the era of TESS and JWST (2022)*
Oral presentation at the Astronomical Society of Australia Conference (ASA), Hobart, Australia.
3. *TOI-1431b/MASCARA-5b: An Ultra-hot Jupiter Orbiting One of the Hottest & Brightest Known Exoplanet Host Stars (2021)*
Invited Talk – TESS Science Conference II (virtual presentation).
4. *TOI-1431b/MASCARA-5b: A Highly irradiated hot Jupiter on a nearly polar orbit around one of the hottest known exoplanet host stars (2021)*
Invited Talk – TESS Science Team Meeting #24 (virtual presentation).
5. *Exoplanet Discovery with MINERVA-Australis: The Confirmation of the TESS Transiting Warm sub-Saturn Candidate, TOI-257b (2021)*
Oral presentation at the 43rd COSPAR 2021 Scientific Assembly, virtual conference.
6. *Minerva-Australis Confirms TESS Warm sub-Saturn Candidate TOI-257b & Measures the Orbital Obliquity of AU Mic b (2020)*
Poster presentation at Exoplanets III Conference, virtual conference (Covid-19, formally in Heidelberg, Germany).