# James R. Beattie

updated: 11-May-2023

## Personal Information

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| NATIONALITY: | · Australia · New Zealand |
| POSITIONS: | · Deakin & Dean's Merit (theoretical physics) Ph.D. Student, |
| | · Research School of Astronomy and Astrophysics, Australian National University |
| | · Joint Princeton & CITA Postdoctoral Fellow in astrophysical plasmas (Fall, 2023) |
| EMAIL: | · james.beattie@anu.edu.au · jbeattie@ucsc.edu |
| Online Profiles | · Google Scholar · ResearchGate · OrcID · Twitter |
| INTERESTS: | · MHD / HD turbulence · structure of the interstellar medium · star-formation |
| | · high-performance computing · theoretical astrophysics · magnetic fields |
| | · cosmic ray propagation · plasma/fluid dynamics · shocks · turbulent dynamo |
| | · computer vision techniques · statistical modelling · interdisciplinary research |

## Education

| | |
|---|---|
| ANTICIPATED MID-2023 | **Doctor of Philosophy**, Australian National University, Australia<br>**Specialisation:** Computational / theoretical astrophysics, magnetohydrodynamics.<br>**Thesis**: Highly-magnetised interstellar turbulence<br>**Advisor:** Christoph Federrath |
| 2019 | **Honours (First Class)**, Australian National University, Australia<br>**Major**: Astrophysics<br>**Thesis**: Supersonic Turbulent Molecular Clouds: Filaments and Anisotropies<br>(with University Medal, Chancellor's Commendations, Bok Prize) |
| 2018 | **Bachelor of Mathematics**, Queensland University of Technology, Australia<br>**Major**: Applied and Computational Mathematics |
| 2018 | **Bachelor of Science**, Queensland University of Technology, Australia<br>**Major:** Physics |
| 2013 | **Bachelor of Education**, Queensland University of Technology, Australia<br>**Major**: Biology & Computing |

**Exchange and Summer Programmes**

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|---|---|
| 2022-23 | Fulbright Exchange at the University of California, Santa Cruz, United States |
| 2017-18 | Cross Institutional Exchange at the University of Queensland, Australia |
| WINTER 2017 | Summer Science Programme at The University of Cambridge, United Kingdom |
| FALL 2015 | Exchange Semester at Simon Fraser University, Canada |

## Scholarships, Awards & Grants

**Selected Scholarships & Fellowships**

| | |
|---|---|
| 2023 | CITA Fellow, CITA |
| 2023 | Research Associate, Princeton University |
| 2023 | Stanford Science Fellow, Stanford (declined) |
| 2022 | Fulbright PhD Fellowship |
| 2020 | Joan Duffield Research Supplementary Scholarship |
| 2020 | Deakin PhD Scholarship |
| 2020 | Dean's Merit (theoretical physics) HDR Supplementary Scholarship |
| 2019 | Bok Honours Astrophysics Scholarship |
| 2017 | ANU Summer Research Scholarship |
| 2017 | QUT's Vacation Research Experience Scholarship |
| 2016 | ANU Summer Research Scholarship |
| 2016 | QUT's Winter Research Scholarship |

**Selected Significant Awards**

| | |
|---|---|
| 2020 | Chancellor's Letter of Commendation: 7.0/7.0 Honours GPA |
| 2020 | ASA Bok Prize: Best Astronomy Honours Thesis in Australia |
| 2020 | Best Student Talk at ANITA, 2020 |
| 2019 | University Medal (top in graduating science cohort) |
| 2018 | Admission to the Dean's List of Students with Excellent Academic Performance |

| 2018 | Vice Chancellor's Performance Award |
| 2018 | Nominated for 2018 Vice-Chancellor's Awards for Excellence |
| 2016 | Vice Chancellor's Performance Award: Best Sessional Teaching in Science & Engineering Faculty |
| 2016 | Admission to the Dean's List of Students with Excellent Academic Performance |
| 2015 | Admission to the Dean's List of Students with Excellent Academic Performance |
| 2014 | Admission to the Dean's List of Students with Excellent Academic Performance |

### Computing grants awarded (1 core hour $\approx \$0.13$)

| 2022 | (PI) LRZ large scale call extension | 1.5e7 core hours |
| 2021 | (PI) LRZ large scale call: The world's largest compressible MHD simulation | 7e7 core hours |

### Competitive Grants Awarded (PI / CO-PI)

| 2021 | (CO-PI) Australian Capital Territory Summer Holiday Grant, Inspire ACT |
| 2020 | (CO-PI) Australian Capital Territory National Science Week Grant |
| 2020 | (PI) SSAP Grant for Mt Stromlo Student Seminars, 2020 |

### Selected Minor Awards

| 2018 | Joint funding from the ANU and QUT to present at the Australian Institute of Physics (AIP) Congress, 2018 |
| 2017 | GHD Groundwater Modelling Award for Best Overall Group Submission |
| 2017 | Financial Sponsorship from the CPME and Mathematical Science School for the Cambridge Summer Science Programme |
| 2017 | Recipient of QUT's International short-term mobility bursary |
| 2015 | Recipient of QUT's International Bursary |
| 2014 | Best Paper Finalist | Australasian Conference on Robotics and Automation |

### Selected non-professional awards

| 2022 | Astro. Plot of the Week (Figure 1) |

## PROFESSIONAL ACTIVITIES & ORGANISATION AFFILIATIONS

### Professional Activities

Referee for the Astrophysical Journal (2 articles), Monthly Notices of the Astronomical Society (1 article).

| 2022 | MSATT program – connecting scientists with high school students |
| 2022 | Sustainability Committee, Member, RSAA |
| 2021 | Higher Degree Research Education Representative, RSAA |
| 2021 | Giving Committee, Member, RSAA |
| 2020 | President of the RSAA Student Seminar Committee |
| 2019 | ASTR4004, ANU Course Student Representative |
| 2019 | ASTR6007, ANU Course Student Representative |
| 2014-16 | QUT's STIMULATE Learning Support, Peer Learning Facilitator |

### Organisation Affiliations

| 2020 - PRES. | Astronomical Society of Australia, student member |
| 2014-18 | QUT Physics Society, founding president |
| 2016 | QUT's Science Student as Partners, physics representative. |
| 2016 | UQ's Student as Partners, Fellow |
| 2015 | Australian Institute of Physics, QLD Branch, ANU QUT representative |

## SUPERVISIONS & MENTORING

### Supervisions

2021 **Student**: Neco Kriel (co-supervised), Honours Student, ANU.
**Project:** Fundamental scaling relations in the turbulent dynamo.

**Student**: Matthew Sampson (co-supervised), Honours Student, ANU.
2021 **Project:** Cosmic ray transport in compressible ionised MHD turbulence.

### Mentorships

2022 **Student**: Adrian Lehane, Telopea Park School / Narrabundah College (high school).
**Project:** Automated phase detection of Venus.

# TALKS

## Invited (12 total)

| | |
|---|---|
| MAY 2023 | The World's Largest Compressible MHD Turbulence Simulation on SuperMUC-NG |
| | Presented at: SuperMUC-NG Status and Results Workshop. |
| SEP. 2022 | KIPAC Tea talk: Peta-scale magnetised interstellar medium turbulence simulations. |
| | Presented at: SLAC / Stanford University. |
| SEP. 2022 | Magnetised interstellar medium turbulence: dynamics & energetics. |
| | Presented at: Susan Clark's research group, Stanford. |
| SEP. 2022 | Astro-coffee: Streaming cosmic rays ion Alfvén velocity statistics. |
| | Presented at: Institute for Advanced Study. |
| SEP. 2022 | Bachall lunch discussion: peta-scale simulations & turbulent dynamics. |
| | Presented at: Institute for Advanced Study. |
| APR. 2022 | Streaming cosmic rays ion Alfvén velocity statistics. |
| | Presented at: Siang Peng Oh's research group, UC Santa Barbara. |
| NOV. 2021 | Ubiquitous magnetic field fluctuations driven by large-scale supersonic turbulence. |
| | Presented at: Star formation and ISM Physics Seminar, Princeton. |
| JAN. 2021 | Ubiquitous magnetic field fluctuations driven by large-scale supersonic turbulence. |
| | Presented at: Research School of Astronomy and Astrophysics seminar, ANU. |
| JUL. 2020 | The Anisotropic Density Variance for Highly-Magnetised Molecular Clouds. |
| | Presented at: Astronomical Society of Australia Bok Prize talk. |
| JUN. 2020 | Turbulence at the parsec scale of the Universe. |
| | Presented at: Research highlight talk at RSAA full school meeting. |
| AUG. 2018 | The Fractal Geometry of the Supersonic Turbulence in the Interstellar Medium. |
| | Presented at: QUT research highlights. |
| MAY 2018 | The Fractal Geometry of Turbulence. |
| | Presented at: QUT Physics Society Meeting. |

## Colloquium (3 total)

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|---|---|
| AUG. 2020 | The Anisotropic Density Variance for Highly-Magnetised Molecular Clouds. |
| | Presented at: University of Macquarie Colloquium. |
| NOV. 2017 | The University of Cambridge and Quantum Mechanics. |
| | Presented at: School of Chemistry, Physics and Engineering Colloquium, QUT. |
| NOV. 2017 | Mathematical Aspects of Mechanics. |
| | Presented at: School of Mathematical Sciences Colloquium, QUT. |

## Contributed (14 total)

| | |
|---|---|
| FEB. 2022 | Petascale magnetised interstellar medium turbulence simulations |
| | Presented at: ANITA 2022 Workshop. |
| DEC. 2021 | Understanding the nature of magnetic field fluctuations driven by large-scale supersonic turbulence. |
| | Presented at: Australian Institute of Physics Congress, QUT. |
| OCT. 2021 | Understanding the nature of magnetic field fluctuations driven by large-scale supersonic turbulence. |
| | Presented at: Royal Astronomical Society: Galactic magnetic fields meeting. |
| FEB. 2021 | Steps towards anisotropic star formation theory: A multi-shock model for the density variance of anisotropic MHD turbulence. |
| | Presented at: ANITA 2021 Workshop. |
| DEC. 2020 | Multi-shock model for the density variance of anisotropic, highly-magnetised ISM turbulence. |
| | Presented at: The Magnetic Field Awakens: A new era of star formation. |
| NOV. 2020 | Recent progress on anisotropic, magnetised, supersonic turbulence. |
| | Presented at: Mount Stromlo Student Seminars, 2020. |
| SEP. 2020 | Is the Starry Night Turbulent? |
| | Presented at: RSAA Feast of Facts. |
| FEB. 2020 | Density, velocity and magnetic structures and correlations in sub-Alfvénic, supersonic turbulence. |
| | Accepted* for contributed talk: Magnetic Fields in the Universe 7, Vietnam. |
| FEB. 2020 | Anisotropy in the column density of highly-magnetised supersonic turbulence. |
| | Presented at: ANITA 2020 Workshop, UNSW, Canberra. |
| DEC. 2019 | Anisotropic structures in highly-magnetised, observed turbulent clouds. |
| | Presented at: Universality: Turbulence across vast scales, Flatiron Inst., New York |
| NOV. 2019 | Reconstructing the 3D Density PDF from the 2D Column Density. |
| | Presented at: Cosmic turbulence and magnetic fields : physics of baryonic matter across time and scales in Cargese, France, 2019. |

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|---|---|
| Dec. 2018 | Mach number - fractal dimension relation for turbulent, molecular clouds. Poster presented at: AIP Congress 2018, Perth, Australia. |
| Jan. 2018 | The Fractal Geometry of the World's Largest Turbulence Simulation. Presented at: Research School of Astronomy and Astrophysics, ANU. |
| Jan. 2017 | The Analysis of Novel Magnetic Field Configurations in the H-1 NF Stellarator. Presented at: Research School of Physics and Engineering, ANU. |

\* did not attend due to COVID19

**Public Outreach Talks (10 total)**

| | |
|---|---|
| Aug. 2021 | Building the Universe, Brick-by-brick. Presented at: Young Stars, ANU, Canberra. |
| May. 2021 | Understanding The Big Bang. Presented at: Young Stars, ANU, Canberra. |
| Mar. 2021 | The Secret Life of Cells. Presented at: Young Stars, ANU, Canberra. |
| Jan. 2021 | Mission to Mars. Presented at: Young Stars, ANU, Canberra. |
| Jan. 2021 | The Jiggling Universe. Presented at: SciScouts Space Squad, Canberra. |
| Nov. 2020 | The Jiggling Universe. Presented at: Campbell Primary School STEM day, Canberra. |
| Oct. 2020 | Thinking Like An Atom. Presented at: Young Stars, Canberra. |
| Sep. 2020 | Simulating the Universe. Presented at: SciScouts Space Squad, Canberra. |
| Mar. 2020 | Modelling Pandemics. Presented at: Young Stars, Canberra. |
| Feb. 2020 | How do scientists test their ideas? Presented at: Young Stars, Canberra. |

## Teaching (23 total contributions)

**Guest Lectures**

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| Oct. 2022 | ASTR8002 (ANU): Guest lecture on MHD turbulence theory for a graduate level gas dynamics class. |
| Oct. 2020 | ASTR8002 (ANU): Guest lecture on linear MHD waves for a graduate level gas dynamics class. |

**TA experience (Click on the "Semester" to see teacher evaluation reports)**

| 2021 | **Australian National University**, Canberra, Australia | |
|---|---|---|
| | ASTR2013: Foundations of Astrophysics | Semester Two |

| 2018 | **Queensland University of Technology**, Brisbane, Australia | |
|---|---|---|
| | PVB101: Physics of the Large | Semester Two |
| | MXB105: Calculus of One and Two Variables (wrote all assessment) | Semester Two |
| | MXB161: Computational Explorations | Semester One |
| | SEB113: Quantitative Methods in Science | Semester One & Two |
| | SEB104: Grand Challenges in Science | Semester One |
| | SEB115: Experimental Science | Semester One |

| 2017 | **Queensland University of Technology**, Brisbane, Australia | |
|---|---|---|
| | MXB105: Calculus of One and Two Variables | Semester Two |
| | PVB101: Physics of the Large (Lab Demonstrator) | Semester Two |
| | BVB204: Ecology | Semester Two |
| | SEB113: Quantitative Methods in Science | Semester One & Two |
| | SEB104: Grand Challenges in Science | Semester One |
| | SEB115: Experimental Science (Lab Demonstrator) | Semester One |
| | MXB161: Computational Explorations | Semester One |

| 2016 | **Queensland University of Technology**, Brisbane, Australia | |
|---|---|---|
| | PVB101: Physics of the Large (Lab Demonstrator) | Semester Two |
| | BVB202: Plant Biology (Lab Demonstrator) | Semester Two |
| | BVB224: Plant Diversity (Lab Demonstrator) | Semester Two |
| | SEB113: Quantitative Methods in Science | Semester One & Two |
| | SEB104: Grand Challenges in Science | Semester One |
| | SEB115: Experimental Science (Lab Demonstrator) | Semester One |

| 2015 | **Queensland University of Technology**, Brisbane, Australia | |
|---|---|---|
| | SEB113: Quantitative Methods in Science | Semester One |

## Publications

- **First author:** 11 publications (10 refereed)     · **Total:** 23 publications
- **Citations:** 350 (11-May-2023)     · **h index:** 10 (11-May-2023)

## First Author (and joint first) Refereed (10 total)

**Beattie**, **J. R.**, & Federrath, C. (2020). Filaments and striations: anisotropies in observed, supersonic, highly magnetized turbulent clouds. *MNRAS*, *492*(1), 668–685. https://doi.org/10.1093/mnras/stz3377

**Beattie**, **J. R.**, Federrath, C., & Klessen, R. S. (2019). The relation between the true and observed fractal dimensions of turbulent clouds. *MNRAS*, *487*(2), 2070–2081. https://doi.org/10.1093/mnras/stz1416

**Beattie**, **J. R.**, Federrath, C., Klessen, R. S., & Schneider, N. (2019). The relation between the turbulent Mach number and observed fractal dimensions of turbulent clouds. *MNRAS*, *488*(2), 2493–2502. https://doi.org/10.1093/mnras/stz1853

**Beattie**, **J. R.**, Federrath, C., Kriel, N., Mocz, P., & Seta, A. (2023). Growth or decay – I: universality of the turbulent dynamo saturation. *arXiv e-prints*, arXiv:2209.10749.

**Beattie**, **J. R.**, Federrath, C., & Seta, A. (2020). Magnetic field fluctuations in anisotropic, supersonic turbulence. *MNRAS*, *498*(2), 1593–1608. https://doi.org/10.1093/mnras/staa2257

**Beattie**, **J. R.**, Krumholz, M. R., Federrath, C., Sampson, M. L., & Crocker, R. M. (2022). Ion alfvén velocity fluctuations and implications for the diffusion of streaming cosmic rays. *Frontiers in Astronomy and Space Sciences*, *9*. https://doi.org/10.3389/fspas.2022.900900

**Beattie**, **J. R.**, Krumholz, M. R., Skalidis, R., Federrath, C., Seta, A., Crocker, R. M., Mocz, P., & Kriel, N. (2022). Energy balance and Alfvén Mach numbers in compressible magnetohydrodynamic turbulence with a large-scale magnetic field. *MNRAS*. https://doi.org/10.1093/mnras/stac2099

**Beattie**, **J. R.**, Mocz, P., Federrath, C., & Klessen, R. S. (2021). A multishock model for the density variance of anisotropic, highly magnetized, supersonic turbulence. *MNRAS*, *504*(3), 4354–4368. https://doi.org/10.1093/mnras/stab1037

**Beattie**, **J. R.**, Mocz, P., Federrath, C., & Klessen, R. S. (2022). The density distribution and physical origins of intermittency in supersonic, highly magnetised turbulence with diverse modes of driving. *MNRAS*. https://doi.org/10.1093/mnras/stac3005

Birch, M., **Beattie**, **J. R.**, Bennet, F., Rattenbury, N., Copeland, M., Travouillon, T., Ferguson, K., Cater, J., & Sayat, M. (2023). Availability, outage, and capacity of spatially correlated, australasian free-space optical networks. *J. Opt. Commun. Netw.*, *15*(7), 415–430. https://doi.org/10.1364/JOCN.480805

## Second Author or Major Contributions Refereed (8 total)

Federrath, C., Klessen, R. S., Iapichino, L., & **Beattie**, **J. R.** (2021). The sonic scale of interstellar turbulence. *Nature Astronomy*, *5*, 365–371. https://doi.org/10.1038/s41550-020-01282-z.

**Measured the sonic scale position from the second order structure functions and contributed to writing the manuscript.**

Kriel, N., **Beattie**, **J. R.**, Seta, A., & Federrath, C. (2022). Fundamental scales in the kinematic phase of the turbulent dynamo. *MNRAS*. https://doi.org/10.1093/mnras/stac969.

**Developed the spectral fitting methodology, spectral models, taught Kriel how to use the** FLASH **code throughout the project and contributed to writing the manuscript.**

McCool, C., **Beattie**, **J. R.**, Firn, J., Lehnert, C., Kulk, J., Bawden, O., Russell, R., & Perez, T. (2018). Efficacy of mechanical weeding tools: A study into alternative weed management strategies enabled by robotics. *IEEE Robotics and Automation Letters*, *3*(2), 1184–1190. https://doi.org/10.1109/LRA.2018.2794619.

**Developed and applied the survival analysis models used to compare between the different automated weeding strategies and contributed to writing the manuscript.**

McCool, C., **Beattie**, **J. R.**, Milford, M., Bakker J. D., J. L., Moore, & Firn, J. (2018). Automating analysis of vegetation with computer vision: Cover estimates and classification. *Ecology and Evolution*, *8*(12), 6005–6015. https://doi.org/10.1002/ece3.4135.

**Developed and applied the statistical model for comparing between the different computer vision techniques and contributed to writing the manuscript.**

Risch, A. C., Page-Dumroese, D. S., Schweiger, A. K., **Beattie**, **J. R.**, Curran, M. P., Finér, L., Liu, Y., Schütz, M., Terry, T. A., Wang, W., & Jurgensen, M. F. (2022). Controls of initial wood decomposition on and in forest soils using standard material. *Frontiers in Forests and Global Change*, *5*, 829810. https://doi.org/10.3389/ffgc.2022.829810.

**Constructed the principle data set, developed and ran parallelised hierarchical Bayesian mixed effects models and model selection methods.**

Sampson, M. L., **Beattie**, **J. R.**, Krumholz, M. R., Crocker, R. M., Federrath, C., & Seta, A. (2022). Turbulent diffusion of streaming cosmic rays in compressible, partially ionised plasma. *Accepted in MNRAS*, arXiv:2205.08174.

**Ran all MHD turbulence models, provided analytical Green's function solutions to the diffusion problems, helped develop the theory and fitting for fractional diffusion transport and contributed to writing the manuscript.**

Skalidis, R., Sternberg, J., **Beattie**, **J. R.**, Pavlidou, V., & Tassis, K. (2021). Why take the square root? An assessment of interstellar magnetic field strength estimation methods. *A&A, 656*, Article A118, A118. https://doi.org/10.1051/0004-6361/202142045.

**Ran all MHD turbulence simulations and contributed to the theoretical development of the coupling term energy model and drafting the manuscript.**

Thomas, M. L., Baker, L., **Beattie**, **J. R.**, & Baker, A. M. (2020). Determining the efficacy of camera traps, live capture traps, and detection dogs for locating cryptic small mammal species. *Ecology and Evolution, 10*(2), 1054–1068. https://doi.org/10.1002/ece3.5972.

**Developed and applied the occupancy analysis models used to compare between the different detection methods and contributed to writing the manuscript.**

## Multi-author Refereed (4 total)

Milford, M., Firn, J., **Beattie**, **J.**, Jacobson, A., Pepperell, E., Mason, E., Kimlin, M., & Dunbabin, M. (2014). Automated sensory data alignment for environmental and epidermal change monitoring. *Australasian Conference on Robotics and Automation 2014*, 1–10. https://eprints.qut.edu.au/81684/

Schneider, N., Ossenkopf-Okada, V., Clarke, S., Klessen, R. S., Kabanovic, S., Veltchev, T., Bontemps, S., Dib, S., Csengeri, T., Federrath, C., Di Francesco, J., Motte, F., André, Ph., Arzoumanian, D., Beattie, J. R., Bonne, L., Didelon, P., Elia, D., Könyves, V., ... Ward-Thompson, D. (2022). Understanding star formation in molecular clouds - iv. column density pdfs from quiescent to massive molecular clouds. *A&A, 666*, A165. https://doi.org/10.1051/0004-6361/202039610

Seligman, D. Z., Rogers, L. A., Feinstein, A. D., Krumholz, M. R., **Beattie**, **J. R.**, Federrath, C., Adams, F. C., Fatuzzo, M., & Günther, M. N. (2022). Theoretical and Observational Evidence for Coriolis Effects in Coronal Magnetic Fields via Direct Current Driven Flaring Events. *ApJ, 929*(1), Article 54, 54. https://doi.org/10.3847/1538-4357/ac5b69

Sharda, P., Menon, S. H., Federrath, C., Krumholz, M. R., **Beattie**, **J. R.**, Jameson, K. E., Tokuda, K., Burkhart, B., Crocker, R. M., Law, C. J., Seta, A., Gaetz, T. J., Pingel, N. M., Seitenzahl, I. R., Sano, H., & Fukui, Y. (2022). First extragalactic measurement of the turbulence driving parameter: ALMA observations of the star-forming region N159E in the Large Magellanic Cloud. *MNRAS, 509*(2), 2180–2193. https://doi.org/10.1093/mnras/stab3048

## Preprints Undergoing Review or Other (1 total)

**Beattie**, **J. R.**, & Kriel, N. (2019). Is The Starry Night Turbulent? *arXiv e-prints*, arXiv:1902.03381.

# MEDIA (16 TOTAL)

| | |
|---|---|
| 2022 | Unravelling magnetised turbulence in galaxies, *Lunations, Research Bytes* |
| 2022 | The Magic And Mystery Of Turbulence, *IFL Science* |
| 2021 | Extreme efficiency astrophysical turbulence simulations, *National Computing Infrastructure, Australia* |
| 2021 | Coffee, planes and magnetism. *Space Australia, TikTok* |
| 2021 | Unravelling the turbulent, magnetised dynamics of the interstellar medium. *Space Australia* |
| 2021 | Turbulence in the heavens, *Nature Astronomy, News & Views*. |
| 2021 | Researchers Use LRZ HPC Resources to Perform Largest-Ever Supersonic Turbulence Simulation, *Gauss Centre for Supercomputing* |
| 2021 | The Role of Turbulence in the Birth of Stars, *University Heidelberg*. |
| 2021 | Star-making motion, COSMOS magazine |
| 2021 | Study helps unlocks secrets of star formation, *ANU Media* |
| 2021 | Stellar Simulation Reveals The Turbulent Nature of Star Birth, Space Australia. |
| 2021 | The Need for (Sound) Speed, *Astrobite research highlight* |
| 2019 | Modelling Star Formation with a Supercomputer: Computational Astrophysics Research, *National Computing Infrastructure Australia* |
| 2019 | Feature article on turbulence depicted in Van Gogh's Starry Night in the Art's and Culture section of the American Physical Societies Magazine. |
| 2018 | QUT advertising photoshoot for the BSc and BMath degree on QUT's blackboard website. |
| 2018 | QUT media exposure, and photoshoot for our publication, Automating Analysis of Vegetation with Computer Vision: cover estimates. |