

Mattias Lazda

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Current Position

University of Toronto

PhD Candidate, Astronomy & Astrophysics
Supervisors: Juan Mena-Parra & Maria Drout

Toronto, ON, Canada

Sept. 2023 -

Education

McGill University

B.Sc., Honours Physics (GPA: 3.98/4.00)
Undergraduate Thesis: *Forming Pulsar Tracking Beams for the CHIME/FRB Outriggers*
Supervisor: Victoria Kaspi

Montreal, QC, Canada

Aug. 2019 - Feb. 2023

Awards, Honours & Fellowships

2025	Canada Graduate Scholarship - Doctoral Program , \$120,000	University of Toronto
2024	Canada Graduate Scholarship - Master's Program , \$27,000	University of Toronto
2023	Ontario Graduate Scholarship , \$15,000	University of Toronto
2023	PhD Entrance Scholarship , \$5,000	University of Toronto
2022	James F. Mathison Scholarship , \$3,000	McGill University
2022	McGill Science Honour Roll , honor	McGill University
2021	R. Gruber Science Undergraduate Research Award , \$7,000	McGill University
2021	West Virginia University (WVU) Symposium, 2nd place , \$250	WVU
2021	Faculty of Science Scholarship , \$250	McGill University
2020	R. Gruber Science Undergraduate Research Award , \$7,000	McGill University
2020	McGill Science Honour Roll , honor	McGill University
2019	John Mahon Scholarship , \$9,000	McGill University

Publications

Lead Author, Co-lead Author Papers & Highlighted Results

- [4] **Lazda, M.** + 15 co-authors (2026). VLBI Observations of SN 2012au Reveal a Compact Radio Source a Decade Post Explosion. Submitted to *The Astrophysical Journal*. arXiv:2601.06278.
- [3] The CHIME/FRB Collaboration + 85 co-authors including **Lazda, M.** (2025). FRB 20250316A: A Brilliant and Nearby One-off Fast Radio Burst Localized to 13 pc Precision. *ApJL*, 989L, 48. arXiv:2506.19006.
- [2] The CHIME/FRB Collaboration + 64 co-authors including **Lazda, M.** (2025). A Catalog of Local Universe Fast Radio Bursts from CHIME/FRB and the KKO. *ApJS*, 280S, 6. arXiv:2502.11217.
- [1] Lanman, A., Andrew, A., **Lazda, M.** + 43 co-authors (2024). CHIME/FRB Outriggers: KKO Station System and Commissioning Results. *The Astrophysical Journal* 168, 87. arXiv:2403.05631

Supporting Author Papers

- [22] Moroianu, A. M. + 40 co-authors including **Lazda, M.** (2026). A Milliarcsecond Localization Associates FRB 20190417A with a Compact Persistent Radio Source and an Extreme Magnetoionic Environment. *ApJL*, 996L, 16. arxiv:2509.05174.
- [21] Shin, K. + 33 co-authors including **Lazda, M.** (2025). Investigating the Sightline of a Highly Scattered Fast Radio Burst through a Cosmic Sheet Structure in the Local Universe. *ApJ*, 993, 208. arxiv:2410.07307.
- [20] The CHIME/FRB Collaboration + 68 co-authors including **Lazda, M.** (2025). CHIME/FRB Outriggers: Design Overview. *ApJ*, 993, 55. arXiv:2504.05192.
- [19] Dong, Y. + 26 co-authors including **Lazda, M.** (2025). Searching for Historical Extragalactic Optical Transients Associated with Fast Radio Bursts. *ApJ*, 991, 199. arXiv:2506.06420.
- [18] Leung, C. + 23 co-authors including **Lazda, M.** (2025). Stellar Mass–Dispersion Measure Correlations Con-

strain Baryonic Feedback in Fast Radio Burst Host Galaxies. *ApJL*, 991L, 25. arXiv:2507.16816.

- [17] Dong, F.A. + 24 co-authors including **Lazda, M.** (2025). *CHIME/Fast Radio Burst/Pulsar Discovery of a Nearby Long-period Radio Transient with a Timing Glitch*. *ApJL*, 990L, 49. arXiv:2407.07480.
- [16] Blanchard, P.K. + 25 co-authors including **Lazda, M.** (2025). *A VLBI Software Correlator for Fast Radio Transients*. *ApJL*, 989L, 49. arXiv:2506.19007.
- [15] Leung, C. + 16 co-authors including **Lazda, M.** (2025). *A VLBI Software Correlator for Fast Radio Transients*. *ApJ*, 170, 53. arXiv:2403.05631.
- [14] Shin, K. + 30 co-authors including **Lazda, M.** (2025). *The CHIME/FRB Discovery of the Extremely Active Fast Radio Burst Source FRB 20240114A*. Submitted to *ApJ*. arXiv:2505.13297.
- [13] Andrew, S. + 18 co-authors including **Lazda, M.** (2025). *A Very Long Baseline Interferometry Calibrator Grid at 600 MHz for Fast Radio Transient Localizations with CHIME/FRB Outriggers*. *ApJ* 981, 39. arXiv:2409.11476.
- [12] Eftekhari, T. + 41 co-authors including **Lazda, M.** (2025). *The Massive and Quiescent Elliptical Host Galaxy of the Repeating Fast Radio Burst FRB 20240209A*. *ApJL* 979, L22. arXiv:2410.23336.
- [11] Shah, V. + 48 co-authors including **Lazda, M.** (2025). *A repeating fast radio burst in the Outskirts of a Quiescent Galaxy*. *ApJL* 979, L21. arXiv:2410.23374.
- [10] McKinven, R. + 41 co-authors including **Lazda, M.** (2025). *A pulsar-like swing in the polarisation position angle of a nearby fast radio burst*. *Nature* 637, 43–47. arXiv:2402.09304.
- [9] Nimmo, K. + 28 co-authors including **Lazda, M.** (2025). *Magnetospheric origin of a fast radio burst constrained using scintillation*. *Nature* 637, 48–51. arXiv:2406.11053.
- [8] Cook, A. + 23 co-authors including **Lazda, M.** (2024). *Contemporaneous X-Ray Observations of 30 Bright Radio Bursts from the Prolific Fast Radio Burst Source FRB 20220912A* *ApJ* 974 170. arXiv:2408.11895.
- [7] Hewitt, D. + 54 co-authors including **Lazda, M.** (2024). *A Repeating Fast Radio Burst Source in a Low-luminosity Dwarf Galaxy* *ApJL* 977, L4 arXiv:2410.17044.
- [6] Pandhi, A. + 26 co-authors including **Lazda, M.** (2024). *Polarization properties of the 128 non-repeating fast radio bursts from the first CHIME/FRB baseband catalog*. *The Astrophysical Journal*, 968, 50. arXiv:2401.17378
- [5] The CHIME/FRB Collaboration + 61 co-authors including **Lazda, M.** (2024). *Updating the first CHIME/FRB catalog of fast radio bursts with baseband data*. *The Astrophysical Journal* 969, 145. arXiv:2311.00111
- [4] Cassanelli, T., Leung, C., Sanghavi, P. + 49 co-authors including **Lazda, M.** (2023). *A fast radio burst localized at detection to a galactic disk using very long baseline interferometry*. *Nature Astronomy*, 8, 1429–1442. arXiv:2307.09502
- [3] Sanghavi, P. Leung, C. + 14 co-authors including **Lazda, M.** (2024). *TONE: A CHIME/FRB Outrigger Pathfinder for localizations of Fast Radio Bursts using Very Long Baseline Interferometry*. *Journal of Astrophysical Instrumentation*, 13, 03, 2450010. arXiv:2304.10534
- [2] CHIME/FRB Collaboration + 58 co-authors including **Lazda, M.** (2023). *CHIME/FRB Discovery of 25 Repeating Fast Radio Burst Sources*, *ApJ*, 947, 83C. arXiv:2301.08762
- [1] Cook, A. + 27 co-authors including **Lazda, M.** (2023). *An FRB Sent Me a DM: Constraining the Electron Column of the Milky Way Halo with Fast Radio Burst Dispersion Measures from CHIME/FRB*, *ApJ*, 946, 58C. arXiv:2301.03502

Talks and Presentations

Invited Talks

- [3] (Sep., 2025) *SN 2012au: A compact radio source emerging a decade after a peculiar stripped-envelope supernova*. ASTRON Seminar, Dwingeloo, Netherlands.
- [2] (Jul., 2025) *The CHIME/FRB Outriggers: Project overview and commissioning results*. CSIRO/ATNF Seminar Series, Perth, Australia.
- [1] (Jul., 2024) *High degree of resolved asphericity at the origin of a Type Ib Supernova*. Special Seminar, University of McGill, Canada.

Contributed Talks

- [10] (Jul., 2025). *The CHIME/FRB Outriggers: Localizing fast radio bursts to their immediate local environments*.

Dynamic Radio Sky, Sydney, Australia.

[9] (Jun., 2025). *The CHIME/FRB Outriggers: Project overview and commissioning results*. FRB2025, Montreal, Canada.

[8] (Mar., 2025). *Overview of the CHIME/FRB Outriggers Project*. Invited Talk, Hat Creek Radio Observatory, California.

[7] (Jan., 2024). *Characterising the performance of the first CHIME/FRB Outrigger as a standalone radio interferometer*. Presented at the URSI National Radio Science Meeting, University of Colorado Boulder, USA.

[6] (Jan., 2024). *CHIME/FRB Outriggers: Removing Systematic Baseline Delays Using Traditional VLBI Continuum Sources*. Presented at the URSI National Radio Science Meeting, University of Colorado Boulder, USA.

[5] (Oct., 2023). *Localising Fast Radio Bursts with the CHIME/FRB Outriggers*. Presented at the Department of Astronomy & Astrophysics, University of Toronto, Canada.

[4] (Sept., 2023). *Localising Fast Radio Bursts with the CHIME/FRB Outriggers*. Presented at the 52nd Young European Radio Astronomers Conference (YERAC), University of Manchester, United-Kingdom.

[3] (August, 2022). *Localizing Fast Radio Bursts using Steady Source Calibrators*. Presented at the Dominion Radio Astrophysical Observatory, Penticton, Canada.

[2] (August, 2021). *Improving FRB Localization Using Measured Geometric Delay Rates*. Presented at West Virginia University Symposium, Morgantown, USA.

🏆 *Second Top Student Presentation*

[1] (August, 2021). *Improving FRB Localization Using Measured Geometric Delay Rates*. Science talk presented at the McGill University Space Institute Research Showcase, Montreal, Canada.

Outreach Talks

[1] (Jul. 2025). *A song of ice and fire: Building a radio telescope in the middle of Canadian winter*. SKA-LOW, Perth, Australia.

Employment History

Research Assistant

Montreal, Canada

Canadian Hydrogen Intensity Mapping Experiment Fast Radio Burst (CHIME/FRB)

Sept. 2023 – present

I work on the CHIME/FRB Outrigger project, commissioning new radio telescopes alongside a group of 20 graduate students, postdocs and faculty. Supervised by Kiyoshi Masui (MIT), Victoria Kaspi (McGill) and Juan Mena-Parra (UofT). Notable contributions:

- Leading commissioning of third outrigger telescope.
- Developed calibration pipeline of the first outrigger telescope.
- Developed and implemented the very-long-baseline-interferometry (VLBI) calibration pipeline for the first outrigger telescope.
- Implemented offline beamforming pipeline for the outrigger telescopes.

Research Intern

Penticton, Canada

Dominion Radio Astrophysical Observatory (DRAO)

May. 2022 – August 2022

I was employed at the Dominion Radio Astrophysical Observatory to investigate the feasibility of using traditional continuum sources to localize FRBs, while also working on-site to assist with the analog and digital deployment of the Outrigger telescope in Allenby, BC. Supervised by Jane Kaczmarek (CSIRO).

Projects, Volunteering & Outreach

AstroTours

Toronto, ON

Executive Committee Member, Lab Tour Organiser

Sept. 2023 -

AstroTours is a monthly public outreach event to engage the general public with astronomy research. I organise in-person tours of the various laboratories within the astronomy department to highlight the ongoing development of various projects at the University of Toronto.

Dunlap Summer School

Toronto, ON

Event Organiser

June 2023 -

I contribute significantly to the Dunlap Institute's summer school at the University of Toronto. This includes designing, developing and testing the experiments that will be carried out during the summer school. During the week of the event, I organize and conducted the radio instrumentation lab.

Teaching Experience

University of Toronto

Toronto, ON

Teaching Assistant

Sept. 2023 - Aug. 2024

Assistant for Michael Reid and Adam Hinks in *AST 101 The Sun and its Neighbors*, 1500 students.

Assistant for Michael Reid and Barth Netterfield in *AST 201 Stars and Galaxies*, 1000 students.

Teaching Assistant

Sept. 2024 - Aug. 2025

Assistant for Renée Hložek in *AST 101 The Sun and its Neighbors*, 1500 students.

Assistant for Michael Reid in *AST 251 Life on Other Worlds*, 500 students.

PAPERS Tutoring Inc.

Montreal, Canada

Online Tutor

June 2018 - July 2021

Tutored high school level calculus, physics, and linear algebra.