Ian Chow

Astronomy Ph.D Student | University of Washington

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Education

PRESENT Sep. 2025	**University of Washington** Ph.D Astronomy Supervisor : Prof. Mario Jurić	*Seattle, WA, USA*
Aug. 2025 Sep. 2023	**University of Western Ontario** MSc. Astronomy **Thesis :** Orbital and Physical Properties of Decameter-Sized Earth Impactors Supervisor : Prof. Peter G. Brown	*London, ON, Canada*
May 2023 Sep. 2018	**University of Toronto** Honours BSc. w/ High Distinction – Astronomy & Physics Specialist, Statistics Major, Mathematics Minor **Astronomy Thesis :** Analyzing Radial Velocity Data from the Resonant Planetary System HD 45364 Supervisors : Dr. Sam Hadden, Prof. Hanno Rein **Statistics Thesis :** Probabilistic Dimensionality Reduction Methods for Stellar Chemodynamics Supervisor : Prof. Joshua S. Speagle	*Toronto, ON, Canada*

Additional Research Positions

Aug. 2023 May 2023	**Dunlap Institute for Astronomy & Astrophysics, University of Toronto** Summer Undergraduate Research Assistant **Project :** Understanding the impact of Bayesian inference on ultra-light axion limits Supervisors : Dr. Keir K. Rogers, Prof. Renée Hložek	*Toronto, ON, Canada*
Aug. 2022 May 2022	**Canadian Institute for Theoretical Astrophysics (CITA)** Summer Undergraduate Research Fellow **Project :** Modelling Migration Scenarios of Resonant Planets Using Radial Velocity Data Supervisors : Dr. Sam Hadden, Prof. Hanno Rein, Prof. Norman Murray	*Toronto, ON, Canada*

Peer-Reviewed Journal Publications

First Author

1. **Chow, I.**, Jurić, M., Jones, R.L., Kiker, K., Moeyens, J., Brown, P.G., Heinze, A.N., & Kurlander, J.A. "Predictions of Imminent Earth Impactors Discovered by LSST." 2026, ApJ, 1001(1), 61.
2. **Chow, I.**, & Brown, P.G. "Decameter-sized Earth Impactors – II : A Bayesian Inference Approach to Meteoroid Ablation Modeling." 2026, JGR : Planets, 131, e2025JE009392.
3. **Chow, I.**, & Brown, P.G. "Decameter-sized Earth impactors – I : Orbital properties." 2025, Icarus, 429, 116444.
4. **Chow, I.**, & Hadden, S. "Influence of Modeling Assumptions on the Inferred Dynamical State of Resonant Systems : A Case Study of the HD 45364 System." 2025, ApJ, 980(2), 236.

Contributing Author

1. Cheng, Q., Scolnic, D., Kurlander, J.A., **Chow, I.**, & Fernandes, M.B. "Assessing the Vera Rubin Observatory's Ability to Discover Asteroid Impactors Before They Collide with Earth", in press at AJ.

Selected Awards, Scholarships, Fellowships & Honours

2025	**Top Scholar Award**, $10,830 USD	*University of Washington*
2025-2028	**NSERC Postgraduate Scholarship – Doctoral (PGS-D)**, $120,000 CAD	*NSERC*
2024	**NASA International Space Apps Challenge Global Winner**, honour	*NASA*
2024-2025	**Ontario Graduate Scholarship (OGS)**, $15,000 CAD	*University of Western Ontario*
2023-2025	**Western Graduate Research Scholarship**, $13,137 CAD	*University of Western Ontario*
2023	**SURP Symposium Poster Competition Award**, $50 CAD	*University of Toronto*

2023 **Summer Undergraduate Research Program (SURP) Award**, $9,980 CAD — *University of Toronto*
2022 **Summer Undergraduate Research Fellowship (SURF)**, $9,500 CAD — *CITA*
2022 **Smith Solis Research Scholarship in Astronomy and Astrophysics**, $1,250 CAD — *University of Toronto*
2020-2023 **Dean's List Scholar**, honour — *University of Toronto*

Observing Programs

Selected Observing Proposals Awarded

Q2 2026 **Apache Point Observatory (APO) 3.5-m**, 1 half-night ToO (PI : Colin Orion Chandler) — *Co-I*
UW Solar System Rapid Follow-up Campaign : Imminent Impactors, Interstellar Objects, and Cataclysmic Cometary Events

Observing Experience

2025- **APO 3.5-m**, 9 half-nights (remote) — *Observer*
Instruments : ARCTIC, KOSMOS

Selected Academic Presentations

Contributed Conference Talks

Sep. 2025 **EPSC-DPS 2025**, Europlanet/AAS Division for Planetary Sciences — *Helsinki, Finland*
Jul. 2025 **Meteoroids 2025**, Curtin University — *Perth, WA, Australia*
Mar. 2025 **56th Lunar and Planetary Science Conference**, NASA/Lunar and Planetary Institute — *The Woodlands, TX, USA*
May 2024 **55th Annual DDA Meeting**, AAS Division on Dynamical Astronomy — *Toronto, ON, Canada*
Aug. 2022 **2022 CITA Planet Day**, Canadian Institute for Theoretical Astrophysics — *Toronto, ON, Canada*

Conference Poster Presentations

Jun. 2024 **2024 CASCA Annual General Meeting**, University of Toronto/York University — *Toronto, ON, Canada*
Jun. 2023 **2023 CASCA Annual General Meeting**, NRC Herzberg/University of British Columbia — *Penticton, BC, Canada*

Other Invited Presentations

Feb. 2026 **Cosmology Group Seminar**, Duke University — *Durham, NC, USA*
Jun. 2025 **NASA Funding Review**, NASA Meteoroid Environment Office — *Virtual*
Feb. 2025 **CSA Executive Committee Meeting**, Canadian Space Agency — *Virtual*
May 2024 **NASA Funding Review**, NASA Meteoroid Environment Office — *Virtual*

Public Outreach Talks

Mar. 2026 **"Great Balls of Fire : Meteors and Meteorites in the Past, Present and Future"**, Astronomy on Tap Seattle — *Seattle, WA, USA*
Aug. 2025 **"Brighter than the Sun : Fireballs in Earth's Atmosphere"**, Hume Cronyn Memorial Observatory — *London, ON, Canada*
Apr. 2025 **"SkyShield : Protecting Earth and Space Infrastructure From Space Hazards"**, Royal Astronomical Society of Canada London — *London, ON, Canada*

Teaching Experience

My duties in the following course included delivering lectures, conducting in-class demonstrations, holding office hours, and proctoring, grading and reviewing exams.

2024-2025 **Astronomy 1021 : General Astronomy**, Teaching Assistant (x2) & Guest Lecturer — *University of Western Ontario*

My duties in the following course included supervising lab sessions and grading lab reports.

2023-2024 **First-Year Physics Labs**, Teaching Assistant (x2) — *University of Western Ontario*

My duties in the following courses included delivering in-person tutorials and help centres, running midterm viewing sessions, and proctoring, grading and reviewing exams.

2024 **Physics 1402 : Physics for Engineering Students II**, Teaching Assistant — *University of Western Ontario*

2023 **Physics 1201 : Physics for the Sciences I**, Teaching Assistant *University of Western Ontario*

Relevant Professional Experience

Sep. 2020 – Jun. 2020 | **Innovere Medical** | *Markham, ON, Canada*
Software Developer

- Automated detection of dropouts in time-series audio data from an MRI scanner's wireless audio system using power spectrum analysis in MATLAB and Python, eliminating 20+ hours of work weekly
- Developed and tested TechSmart, an in-house multimedia app for patient use during MRI scans, with company's software development team

MATLAB | Python | Signal Processing

Aug. 2019 – Jun. 2019 | **Plantiga Technologies** | *Vancouver, BC, Canada*
Software Developer

- Developed methods to compute physical fitness heuristics from time-series acceleration (g-force) data, using signal processing techniques like digital filtering and convolution in Python (NumPy, SciPy, Pandas) to improve detection of foot impacts
- Field-tested and validated hardware such as sensor shoe insoles that track movement
- Acquired data from company partners such as physiotherapy clinics, universities (University of British Columbia, Simon Fraser University), and sports organizations (Houston Rockets, US Tennis Association)
- Wrote documentation of company products and services for clients

Python | Signal Processing | Data Analysis

Aug. 2017 – Jun. 2017 | **Synced Review** | *Toronto, ON, Canada*
Research Intern

- Conducted literature review focusing on advancements in reinforcement learning used in adversarial-search board and video game artificial intelligence programs for a company report
- Worked with company team to research and edit review articles on industry trends in machine learning and robotics technology

Machine Learning | Artificial Intelligence | Literature Review

Leadership, Volunteering & Extracurricular Experience

Aug. 2025 – Jun. 2024 | **Hume Cronyn Memorial Observatory** | *London, ON, Canada*
Outreach Volunteer

- Volunteered at astronomy Public Nights attended by 80+ visitors weekly at the University of Western Ontario's Cronyn Observatory

Jun. 2024 – Sep. 2023 | **Consensus Trivia**
Question Writer/Editor

- Wrote and edited trivia questions for Consensus Trivia, a registered nonprofit organization that runs team-based trivia tournaments for high school and collegiate teams across Canada and the U.K.
- Moderated and kept score for tournament games as a staffer

May 2023 – Jan. 2019 | **University of Toronto Academic Trivia Club** | *Toronto, ON, Canada*
Vice President, Competitor, Tournament Organizer & Question Writer/Editor

- Elected Vice President of the University of Toronto's Academic Trivia Club during the 2020-2021 and 2021-2022 academic years organizing twice-weekly practices and social events, managing club social media presence, and moderating practices and tournament games
- Represented the University of Toronto at 30+ trivia (quiz bowl) tournaments across Canada and the U.S. as a competitor with several top finishes at North American championships
- Organized and directed several collegiate and high school tournaments, including the 2021 University of Toronto Collegiate Novice and the 2022 University of Ottawa ACF Fall tournaments, played by 30+ collegiate teams in total across Canada and the U.S.
- Wrote and edited trivia questions across a wide range of academic disciplines (including astronomy and physics) for 2022 WORKSHOP, 2023 Canadian Novice, and 2024 MRNA III, collegiate tournaments played by 80+ teams in total across Canada, the U.S., and the U.K.

Relevant Projects

SkyShield Orrery 2024

spaceapp-wmpgang2024orrery.netlify.app/

An interactive, physics-based digital Solar System orrery highlighting near-Earth objects and meteoroids. Developed by myself, Dakota Cecil, Simon Van Schuylenbergh and Maximilian Vovk for the 2024 NASA International Space Apps Challenge and selected by NASA as one of 10 Global Winners out of 10,000 submitted projects.

HTML CSS JavaScript

fasano-franceschini-test 2024

github.com/wmpg/fasano-franceschini-test

A Python package implementing the multivariate extension of the two-sample Kolmogorov-Smirnov (K-S) statistical test described by Fasano & Franceschini (1987). Published as part of Chow & Brown (2025).

Python

Media Coverage

Apr. 2026	Rubin Observatory Announces 11000 New Asteroids	*Sky & Telescope*
Apr. 2026	What Vera Rubin is Doing for Meteorite Hunting	*Universe Today*
Jan. 2025	Team of Western students wins NASA Space Apps Challenge	*University of Western Ontario*
Oct. 2023	SURP Student Spotlight	*University of Toronto*

Skills

Programming Python (NumPy, SciPy, Pandas, Matplotlib, Keras/TensorFlow, scikit-learn), MATLAB, R (ggplot, dplyr), HTML5 (Bootstrap), CSS, JavaScript (Node.js)

Software LaTeX, Git/GitHub, Jupyter Notebook, Anaconda, R Suite, Bash, Linux, SAOImageDS9, Microsoft Excel

Other Affiliations and Organizational Memberships

2025-PRESENT	American Astronomical Society
2025-PRESENT	Europlanet Society
2024-2025	Western Institute for Earth and Space Exploration
2023-PRESENT	Canadian Astronomical Society