

Ian CHOW
Astronomy Ph.D Student | University of Washington

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RESEARCH INTERESTS

Small Solar System Bodies, Machine Learning, Astrostatistics, Planetary Science, Bayesian Inference

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 SUPERVISOR : Dr. Keir K. Rogers	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.**, and Brown, P.G. “Decameter-sized Earth Impactors – II : A Bayesian Inference Approach to Meteoroid Ablation Modelling”, in review at JGR : Planets.
2. **Chow, I.**, and Brown, P.G. “Decameter-sized Earth impactors – I : Orbital properties.” 2025, Icarus, 429, 116444.
3. **Chow, I.**, and 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.

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 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

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 **Innovere Medical** *Markham, ON, Canada*
Jun. 2020 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 **Plantiga Technologies** *Vancouver, BC, Canada*
Jun. 2019 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 **Synced Review** *Toronto, ON, Canada*
Jun. 2017 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

CONFERENCE PRESENTATIONS

CONTRIBUTED 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*

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 PRESENTATIONS

SELECTED ACADEMIC PRESENTATIONS

Jun. 2025	NASA Funding Review Presentation , NASA Meteoroid Environment Office	<i>Virtual</i>
Feb. 2025	CSA Executive Committee Meeting Presentation , Canadian Space Agency	<i>Virtual</i>
May 2024	NASA Funding Review Presentation , NASA Meteoroid Environment Office	<i>Virtual</i>
Aug. 2023	SURP Poster Symposium , University of Toronto	<i>Toronto, ON, Canada</i>

OUTREACH TALKS

Aug. 2025	"Brighter than the Sun : Fireballs in Earth's Atmosphere" , Hume Cronyn Memorial Observatory	<i>London, ON, Canada</i>
Apr. 2025	"SkyShield : Protecting Earth and Space Infrastructure From Space Hazards" , Royal Astronomical Society of Canada	<i>London, ON, Canada</i>



LEADERSHIP, VOLUNTEERING & EXTRACURRICULAR EXPERIENCE

Aug. 2024	Hume Cronyn Memorial Observatory	<i>London, ON, Canada</i>
Jun. 2024	OUTREACH VOLUNTEER <ul style="list-style-type: none"> Volunteered at summer astronomy Public Nights attended by 80+ visitors weekly at the University of Western Ontario's Cronyn Observatory 	
Jun. 2024	Consensus Trivia	
Sep. 2023	QUESTION WRITER/EDITOR <ul style="list-style-type: none"> 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	University of Toronto Academic Trivia Club	<i>Toronto, ON, Canada</i>
Jan. 2019	VICE PRESIDENT, COMPETITOR, TOURNAMENT ORGANIZER & QUESTION WRITER/EDITOR <ul style="list-style-type: none"> 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 Facebook group and Discord server with 300+ members, 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. 	



PROJECTS

SKYSHIELD ORRERY	2024
spaceapp-wmpgang2024orrery.netlify.app/ An interactive, physics-based digital Solar System orrery highlighting near-Earth objects and meteoroids. Developed by Ian Chow, 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. <div>HTML CSS JavaScript</div>	
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) . <div>Python</div>	
HERE I STAND CALCULATOR	2020
ia-chow.github.io/projects/his/ An online calculator tool to compute the odds of various outcomes for the strategy board game Here I Stand , written to familiarize myself with HTML, CSS and JavaScript. Hosted on a personal website. <div>HTML CSS JavaScript</div>	



MEDIA COVERAGE

Jan. 2025 [Team of Western students wins NASA Space Apps Challenge](#)
Oct. 2023 [SURP Student Spotlight](#)

University of Western Ontario

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 (ssh), Microsoft Excel
Languages English (fluent), French (intermediate), Cantonese (spoken)



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](#)