# Education

**2018 – 2024** PhD in Physics at the Department of Physics, University of Toronto and the Canadian Institute for Theoretical Astrophysics

**2014 – 2018** BSc. in Combined Honours Physics and Mathematics with Distinction, from the University of British Columbia (UBC)

# Academic Employment

Kavli Fellow at the Kavli Institute for Particle Astrophysics and Cosmology **2024 – present**  Stanford University

Undergraduate research studying CMB cosmology at the University of British Columbia, **2017 – 2018**  
with Dr. Douglas Scott

Undergraduate research studying supernova cosmology at the Imperial College London,  **2017** with Dr. Roberto Trotta

# Teaching Experience

## Instructor for PHY483, Relativity Theory I, at the UofT Department of Physics 2022

* Having TAed the couse for three years, I became full instructor of PHY483 partway through the fall term as an emergency replacement for the original instructor. This involved delivering lectures; and making, administering, and grading learning assessments. I was awarded the Van Kranendonk teaching award for my work.

## Teaching Assistant for UofT Department of Physics 2018 - 2024 Teaching Assistant (Grader) for UBC Department of Mathematics 2015 – 2017

# Leadership

## Canadian Institute for Theoretical Astrophysics Visitors Committee 2021 - 2024

* Responsibilities included inviting speakers and fascilitating visits to CITA.

## GPT-4 for Astronomy Exploratory Committee 2023

* Participated in pilot study of new generative AI technology in astronomy research. Reported findings to general CITA community.

## Executive of the Physics Graduate Student Association at UofT 2019 – 2020

* Responsibilities included organizing social events and advocating for student concerns within the Department of Physics.

**Outreach and Lay Publications**

Dylan L. Jow, “The Art of Scientific Writing”, Presentation for UofT Department of Astronomy Summer Undergraduate Research Program, July 2 2024  
  
Dylan L. Jow, “Opinion: Grades are failing students”, *The Varisty*, https://thevarsity.ca/2023/02/04/opinion-im-a-u-of-t-instructor-and-i-believe-we-need-to-abolish-grades/, February 4 2023  
  
Dylan L. Jow, “Wonder and Awe in Astronomy”, *Cosmos From Your Couch,* https://www.dunlap.utoronto.ca/events/wonder-and-awe-in-astronomy/, June 18 2022

**Awards and Scholarships**

Van Kranendonk Teaching Assistant Award **2023**  
Mitacs Globalink Research Award, **2022** NSERC Canada Graduate Scholarship – Doctoral **2021**  Ontario Graduate Scholarship **2019**    
UofT Faculty of Arts and Science Admission Award **2018**    
Thomas and Evelyn Hebb Memorial Scholarship **2017** Stanley M Grant Scholarship in Mathematics **2017**Stanley M Grant Scholarship in Mathematics **2016**  
J Fred Mui Memorial Scholarship in Science **2015**  
Janusz J. Klawe Memorial Science One Scholarship **2015**   
Governor General’s Academic Bronze Medal **2014**

# Selected Student Evaluations “[Dylan] has provided some of the best teaching I’ve received throughout my four years at UofT and is very supportive and understanding of the class and its needs.” – From PHY483 Student Evaluations, Fall 2022 “[Dylan] is an exceptional example of going to great lengths to ensure you learn the material, and then going a step beyond to do a little more.” – From PHY483 Student Evaluations, Fall 2022

**Conference Talks and Presentations**

“From Dust to Dust: Lessons from Scintillation and Radio Scattering” **2024**Making Light of the Universe, University of British Columbia

“Cusps of cusps: a universal model for extreme scattering in the ISM” **2024**Fields, Flows, and Filaments in the Magnetic ISM Workshop, Stanford University

“Wave lensing for precision cosmology” **2023**  
Coffee talk at the Department of Astrophysical Sciences, Princeton University

“FRB lensing: probing matter inhomogeneities transverse to the line of sight” **2023** Invited talk for Peng Oh’s group at UCSB  
  
“Real-time tunneling through complexified path integrals” **2023**String Theory Seminar at National Taiwan University  
  
“Where have all the lenses gone? Scattering of gravitationally lensed FRBs” 2**023**2023 FRB Conference at the National Chung Hsing University

“Prospects for gravitational and plasma lensing of FRBs” 2**023** Lunch Talk at ASIAA

“Cusps of cusps: a universal model for extreme scattering in the ISM” **2022**Cosmology Discussion Group at the Perimeter Institute

“Cusps of cusps: a universal model for extreme scattering in the ISM” **2022**Invited seminar at the Theoretical Astrophysics Including Relativity and Cosmology Institute, Caltech

“Wave optics in astrophysical lensing: unlocking the potential of the coherent sky” **2022**Invited seminar at the Mullard Space Science Laboratory

“Wave optics in astrophysical lensing: unlocking the potential of the coherent sky” **2022**Invited seminar at the Berkeley Centre for Cosmological Physics

“Wave optics in astrophysical lensing: unlocking the potential of the coherent sky” **2022**Brown Bag Lunch Talk at MIT

“Wave optics in astrophysical lensing: unlocking the potential of the coherent sky” **2022**Stanford Tea Talk

“Regimes in astrophysical lensing: refractive optics, diffractive optics, and the Fresnel scale” 2**022**2022 Scintillometry Conference at the Canadian Institute for Theoretical Astrophysics

“Imaginary images and Stokes phenomena in the weak lensing of coherent sources” **2021**  
Invited talk for the radio astronomy group at Caltech

“Wave Optics in Gravitational Lensing” **2019**2019 Scintillometry Conference at the Max Planck Institute for Radio Astronomy

# Publications

**Published**

**Dylan L. Jow**, Ue-Li Pen, Daniel Baker, On the cusp of cusps: a universal model for extreme scattering events in the ISM, *MNRAS,* https://10.1093/mnras/stae300. March 2024.  
 **Dylan L. Jow**, Ue-Li Pen, Job Feldbrugge, Regimes in astrophysical lensing: refractive optics, diffractive optics, and the Fresnel scale, *MNRAS,* https://10.1093/mnras/stad2332. August 2023.

F.X. Lin, R.A. Main, **Dylan L. Jow**, D.Z. Li, U.L. Pen, M.H. Van Kerkwijk, Plasma lensing near the eclipses of the Black Widow pulsar B1957+20, *MNRAS,* https://doi.org/10.1093/mnras/stac3456. Volume 519, Issue 1, February 2023, Pages 121-135

**Dylan L. Jow**, Ue-Li Pen, Measuring lens dimensionality in extreme scattering events through wave optics, *MNRAS,* https://doi.org/10.1093/mnras/stac1652. Volume 514, Issue 3, August 2022, Pages 4069-4077.

**Dylan L. Jow**, Fang Xi Lin, Emily Tyhurst, Ue-Li Pen, Imaginary images and Stokes phenomena in the weak plasma lensing of coherent sources, *MNRAS,* https://doi.org/10.1093/mnras/stab2337. Volume 507, Issue 4, November 2021, Pages 5390-5402.

**Dylan L. Jow**, Simon Foreman, Ue-Li Pen, Wei Zhu, Wave effects in the microlensing of pulsars and FRBs by point masses, *MNRAS,* https://doi.org/10.1093/mnras/staa2230. Volume 497, Issue 4, October 2020, Pages 4956-4969.

**Dylan L. Jow**, Douglas Scott, Re-evaluating evidence for Hawking points in the CMB, *JCAP,* doi: 10.1088/1475-7516/2020/03/021. Volume 2020, March 2020.

**Dylan L. Jow**, Dagoberto Contreras, Douglas Scott, Emory F. Bunn, Taller in the saddle: constraining CMB physics using saddle points, *JCAP,* doi: 10.1088/1475-7516/2019/03/031. Volume 2019,March 2019.

**Dylan L. Jow**, Ryley Hill, Douglas Scott, J.D. Soler, P.G. Martin, M.J. Devlin, L.M. Fissel, F. Poidevin; An application of an optimal statistic for characterising relative orientations, *MNRAS*, https://doi.org/10.1093/mnras/stx2736. Volume 474, Issue 1, February 2018, Pages 1018-1027.

**Pre-print**

**Dylan L. Jow**, Ue-Li Pen, Measuring cosmic expansion with diffractive gravitational scintillation of nanoHertz gravitational waves, *arxiv*, https://arxiv.org/abs/2407.03214. July 2024.  
  
Job Feldbrugge, **Dylan L. Jow**, Ue-Li Pen, Crossing singularities in the saddle point approximation, *arxiv,* https://arxiv.org/abs/2309.12427. September 2023.

Job Feldbrugge, **Dylan L. Jow**, Ue-Li Pen, Complex classical paths in quantum reflections and tunneling, *arxiv*, https://arxiv.org/abs/2309.12420. September 2023.

**Dylan L. Jow**, Xiaohan Wu, Ue-Li Pen, Refractive lensing of scintillating FRBs by sub-parsec cloudlets in the multi-phase CGM, *arxiv*, https://arxiv.org/abs/2309.07256. September 2023.

Anna Tsai, **Dylan L. Jow**, Daniel Baker, Ue-Li Pen, Scintillated microlensing: measuring cosmic distances with fast radio bursts, *arxiv,* https://arxiv.org/abs/2308.10830. August 2023.

Calvin Leung, **Dylan L. Jow**, Prasenjit Saha, Liang Dai, Masamune Oguri, L.V.E. Koopmans, Wave Mechanics, Interference, and Decoherence in Strong Gravitational Lensing, *arxiv*, https://arxiv.org/abs/2304.01202. April 2023.