

Raina Irons

raina.iron@mail.utoronto.ca | Github | LinkedIn | Website

ABSTRACT

I am a graduate student at Queen's University studying astronomy and astrophysics. I completed my Honors Bachelor of Science at the University of Toronto at Mississauga with the Specialist in Astronomical Sciences, Physics Major, and Minor in Mathematics. I currently conduct research in both instrumentation and observation on antenna design for the new CHARTS array and the discovery of new dwarf galaxies in the field of NGC 3621. My undergraduate thesis was on HII regions and star formation efficiency in NGC 6946. In my free time I conduct public observations as the President of the UofT Amateur Astronomer's Society (UTAAS) as the club's President, and I am a member of the Society of Indigenous Physicists (SIP).

RESEARCH EXPERIENCE/PROJECTS

Undergraduate Thesis, AST425

Sept. 2023-Apr. 2024

Dunlap Institute of Astronomy and Astrophysics

- Project: Study of HII regions and star formation efficiency in NGC 6946. Supervised by Dr. Laurie Rousseau-Nepton.

SURP Research Fellowship(s)

May 2023 - Aug. 2023, May 2024 - Aug. 2024

Dunlap Institute of Astronomy and Astrophysics

- 2023 Project: Discovery and analysis of Dwarf Galaxy Candidates about NGC 3621. Built galaxy models and radial brightness profiles of 61 candidates with work continuing to a paper in progress. Supervised by Dr. Dae-Sik Moon. Award amount: \$9,980 CAD.
- 2024 Project: Development of instrumentation for radio astronomy applications. (Co-)Supervisor(s): Keith Vanderlinde, Juan Mena. Awarded through NSERC USRA. Award amount: \$10,880 CAD.

AWARDS & SCHOLARSHIPS

CLFN Scholarship

Sept. 2019 - Apr. 2023

Complete tuition scholarship awarded by Curve Lake First Nations (CLFN) for Indigenous students.

Aurora Borealis Fellowship

Apr. 2023, Mar. 2024

Awarded to Indigenous students as part of SURP for outstanding research involvement.

Indspire Scholarship

Jan., Oct. 2022,

Scholarship for high-achieving Indigenous students. Award amounts: \$2000, \$1500 CAD.

CONFERENCES

Canadian Conference for Women in Physics (CCUWiP)

Jan. 2023, 2024

Regina, SK. Montreal, QC.

- Gave poster presentation on 2023 SURP project at 2024 conference. Awarded funding from the Physics Department at UofT to attend both conferences.

Society for Advancement of Chicanos/Hispanics & Native Americans in Science

Oct. 2023

Portland, OR.

- Conference equips young researchers with the skills and mentoring needed to be successful on their STEM journeys with the opportunity to engage and network with other Indigenous scientists in a professional environment. Awarded funding from the Astronomy and Astrophysics Department at UofT to attend.

LEADERSHIP & COMMUNITY ENGAGEMENT

UofT Amateur Astronomer's Society President

Aug. 2022 - Aug. 2024

Organize club observation nights centered around astronomical events for UofT students.

AstroTours Volunteer

June 2022 - Aug. 2024

Monthly public outreach conducted by Dunlap Institute. Educate public and run demonstrations.

Perseid Meteor Shower Excursion to Earl Rowe Organizer

Aug. 12 2022, 2023

Inter-campus event run by UTAAS for the Perseid Meteor Shower.

UTM Physics Club Event Director <i>Facilitate and organize events for the Physics Club.</i>	Aug. 2021 - Aug. 2022
UTM Physics Club Event Director Associate <i>Work with executives of the Physics Club to promote and run events on campus or online.</i>	Aug. 2022 - Aug. 2023
Public science educator, CBC <i>Interviewed by CBC for the November 8th for the total lunar eclipse in Toronto.</i>	Nov. 7, 2022

EDUCATION

Queen's University <i>Master's of Science</i>	Kingston, ON 2024 - 2026
University of Toronto <i>Honors Bachelor of Science, Astronomical Sciences Specialist, Physics Major, Mathematics Minor</i>	Mississauga, ON 2019 - 2024

TECHNICAL SKILLS

Languages: Python, Mathematica, MATLAB, L^AT_EX, C#, Bash, Git
Libraries: Numpy, Scipy, Pandas, Astropy, Pylab, ORCS, Photutils