Katerina Isabel Benevides

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EDUCATION

University of British Columbia, Department of Earth, Ocean, & Atmospheric Sciences — *Vancouver, BC*
MSc. Physical Oceanography — *Sept 2024 – June 2026*
- Observational analysis of Pan-Arctic stratification over the last few decades
- Judging Canada's role in the degradation of the Pan-Arctic permafrost

University of Toronto, Department of Arts & Science — *Toronto, ON*
HBSc. Specializing in Planetary Science. Minor in Archaeology. Minor in Geoscience — *Sept 2020 – June 2024*

EXPERIENCE

Project Supervisor, Visions of Science, Dunlap Institute for Astronomy and Astrophysics — *Toronto, ON*
Jun 2023 – Aug 2023
- Supervised two projects for four high school students partaking in Visions of Science
- Wrote Python to help the students characterize exoplanet habitability via physical properties and characterize galaxy types through the light they emit
- Helped students problem solve and debug their Python code

Campus Organizations Assistant, Student Life, University of Toronto — *Toronto, ON*
Sept 2022 – Aug 2023
- Fostered inclusive environments by hosting EDI meetings, ensuring students felt supported and comfortable in seeking assistance to effectively address their challenges

President of PhySU & ASX, University of Toronto — *Toronto, ON*
May 2022 – May 2023
- VP for both the Physics Student Union and the Astronomy and Space Exploration Association, previously the VP Internal/External and Events Director respectively
- Held financial meetings with the Arts & Science Student Union, UTSU, and UofT staff
- Hosted the annual symposium and gave a platform for prominent physics and astronomy figures

Information Officer, Allan I. Carswell Observatory, York University — *Toronto, ON*
June 2020 – Mar 2022
- Organized monthly training sessions for volunteers and researchers, leveraging their expertise to conduct engaging educational public tours
- Designed weekly newsletters and managed social media announcements

RESEARCH

HII Region Identification for Stellar Clusters, Astronomy Department, University of Toronto — *Toronto, ON*
Sept 2023 – Apr 2024
- The study involves tailored target selection for studying star forming regions evolution, data analysis techniques, emission line fitting and dust extinction correction using Hα/Hβ ratios
- Aims to innovate methods for assessing the life cycles of HII regions; gas density, cluster mass determination, exploring the spatial correlation, giving insight to the dynamics of star formation
- This project is being supervised by Laurie Rousseau-Nepton, Professor in the Astronomy and Astrophysics Department at the University of Toronto

Sub-surficial Geophysical Imaging of an Artesian Spring, University of Toronto — *Toronto, ON*
Sept 2023 – Apr 2024
- Using geophysical imaging techniques like Resistivity Lines and Ground-Penetrating Radar to analyze sub-surface dynamics of artesian springs found in Laurentian Hills, Ontario
- MATLAB and Python scripts written to create cross-sections for analysis

Geophysical Field Techniques, ESS450, University of Toronto — *Deep River, ON*
Aug 2023 - Sept 2023
- Course offered at the University of Toronto where only 15 students per year are taken to Deep River, ON to perform analyses using various hands-on geophysical instrumentation devices
- Applying various data collection techniques, and performing data analysis in gravity, magnetic, seismic, electrical, electromagnetic, and radar surveys

Source Mechanism Analysis Earthquake in Kahramanmaras, Department of Earth Sciences, University of Toronto — *Toronto, ON*
May 2023 – Nov 2023
- Applied the MTUQ package to examine the earthquake source mechanism and aftershock sequences, as well as its temporal and spatial relationship to the mainshock.

- Explore utilizing a regional 3D background model for the source mechanism of the earthquake. Built models to examine the events leading up to and beyond the main earthquake.
- This project was supervised by the J. Tuzo Wilson award professor, Qinya Liu

CONFERENCES & PANELS

Annual Canadian Space Conference, SEDS Canada — *Montreal, QC, Jan 2023*
- Chosen, along with the other executives of the Astronomy and Space Exploration Association, to take part in this conference
- Presented past symposium events and workshops to hundreds of people
- Participated in interactive discussion with James Webb Space Telescope engineers

Life (not) As We Know It, ASX, University of Toronto — *Toronto, ON, Feb 2023*
- Organized accommodations for speakers to present for the symposium event internationally
- Budgeted large sums of money to accommodate our needs. the needs of the speakers, and catering for 400 people; totaling over $10,000

GAIA Data-Release 3 (DR3) Hike, Canadian Institute of Theoretical Astrophysics (CITA), University of Toronto — *Vancouver, BC, June 2022*
- Authored a paper about the integration of nearby GAIA stars orbits, computing orbits in the default Milky Way mass model implemented in the Gala astropy package
- Used Java and TopCat software to graph GAIA data into readable formats

Stellar Spectacles 18th Annual Symposium, ASX, University of Toronto — *Toronto, ON, Feb 2022*
- Hosted an astrophotography workshop, teaching guests on how to use equipment to take deep-space images
- Introduced DORADO and HoggCam to interested parties

PROJECTS

DORADO, Allan I. Carswell Observatory — *Toronto, ON, Sept 2019 – Feb 2021*
- Co-founded the Digitizing Observatory Resources for Automated Data Responses, an open-source Python package made to replace IRAF in research data processing/analysis at the observatory, now accommodating public outreach efforts

HoggCam, Allan I. Carswell Observatory — *Toronto, ON, May 2019 – June 2020*
- Co-created a low-cost, versatile space camera using a Raspberry Pi HQ camera board
- Supports most thread-mount lenses and attaches to any telescope

SKILLS

Tools/Equipment — Python, Java, TopCat, 1m/60cm/40cm/16in/8in Telescopes, Spectrophotometers, CCD Cameras, Seismometers, Radar Surveys, ResiPY, GPRpy, MTUQ

Languages — English, French, Greek, Spanish, Portuguese