

Parker Levesque

Department of Astronomy & Astrophysics

University of Toronto

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EDUCATION

UNIVERSITY OF TORONTO

2019 - 2023

HBSc, Department of Astronomy & Astrophysics, Specialist in Astrophysics and Minor in Mathematics

CGPA: 3.93/4.0

THESIS: *Calibrating MAPS's Adaptive Optics System*

SUPERVISOR: Dr. Suresh Sivanandam

RESEARCH EXPERIENCE

Calibrating MAPS's Adaptive Optics System

University of Toronto

Current

Supervisor: Dr. Suresh Sivanandam

- Simulating a closed-loop adaptive optics system as a means to calibrate the MMT's on-going adaptive secondary mirror upgrade in Arizona.
- Putting into practice a newly developed algorithm that makes use of empirical data and simulated data to calibrate the mirror.
- Analysing the performance of the mirror once installed and calibrated, then working to improve the performance.

Dragonfly Telephoto Array

University of Toronto, SURP

2022

Supervisor: Dr. Roberto Abraham

- Creating a continuous image display for the guide star camera in order to track star displacements on the science camera during long exposures.
- Utilizing the image stabilization capabilities built in to each of the lenses on the Dragonfly telescope to allow for longer exposures.
- Creating infrastructure for reducing and visualizing data in order to assess the performance of the instrument.
- Pushing performance updates of the instrument to the Slack channel of the team.

MEDIA APPEARANCES

Math & Physics Podcast

2020 - Present

- Co-host of over one hundred episodes, covering all topics in the math and physics world.
- The opportunity to communicate difficult scientific notions, talk with dozens of researchers and professors about their careers and their work, and to build a community of people who love science.
- Notable interviewees include: Dr. Pekka Sinervo from the University of Toronto, Dr. Don Lincoln from Fermilab, Dr. Jill Tarter from the SETI Institute, Grant Sanderson from the Youtube channel 3Blue1Brown, and many more.
- Amassed over 50,000 followers and 650,000 downloads across all platforms.

CONFERENCE TALKS

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| NSBP annual conference (invited)
<i>Data Organization for High Complexity Instruments</i> | 2023 |
| CASCA annual conference (invited)
<i>Calibrating MAPS's Adaptive Optics System</i> | 2023 |

CONFERENCE POSTERS

Levesque, P. (2022). *Data Reduction and Visualization for the Dragonfly Telephoto Array. SUPR final poster presentations.*

TEACHING EXPERIENCE

Math and Physics Tutor	2020 - Present
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- Give one-on-one lessons, specific to each student's needs.
- Create practice questions and review previous assignments.
- Answer questions via E-mail.

TECHNICAL SKILLS

- Python; Numpy, Scipy, Astropy, Matplotlib, OS.
- Latex
- Command line
- **Learning:** Mathematica and C++

OUTREACH

AstroTours	2022
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Volunteer at University of Toronto's monthly AstroTours. Duties include setting up spaces for the event, guiding guests to each location on campus, verifying tickets and answering astronomy related questions.

AWARDS AND FELLOWSHIPS

Walter John Helm Scholarship in Astronomy and Astrophysics	
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University of Toronto	2022
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Awarded to the student with the highest annual GPA in the astronomy and astrophysics specialist program.

The H. S. Robertson Prize in Astronomy

University of Toronto	2022
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Awarded to one student based on academic merit.

Aurora Borealis Fellowship

University of Toronto, DADDAA	2022
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As part of the 2022 Summer Undergraduate Research Program.

Dean's List Scholar

University of Toronto	2020 - 2022
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For having a high qualifying GPA.

OSOTF Award

Innis College, University of Toronto
For outstanding academic performance.

2021 AND 2022

Innis College Exceptional Achievement Award

Innis College, University of Toronto
For outstanding academic performance.

Nov. 2020

GRANTS AND BURSARIES

UTAPS Grant
University of Toronto

2021 AND 2022