

# Parker Levesque

Department of Astronomy & Astrophysics

University of Toronto

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## EDUCATION

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UNIVERSITY OF TORONTO

2019 - 2023

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

Sessional GPA: 4.0/4.0

THESIS: *Calibrating MAPS's Adaptive Optics System*

SUPERVISOR: Dr. Suresh Sivanandam

## RESEARCH EXPERIENCE

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***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

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***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)** 2023  
*Data Organization for High Complexity Instruments*
- CASCA annual conference (invited)** 2023  
*Calibrating MAPS's Adaptive Optics System*

## CONFERENCE POSTERS

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

## TEACHING EXPERIENCE

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

## OUTREACH

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**AstroTours** 2022  
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

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- Aurora Borealis Fellowship** 2022  
University of Toronto, DADDAA  
As part of the 2022 Summer Undergraduate Research Program.
- Dean's List Scholar** 2020 - 2022  
University of Toronto  
For having a high qualifying GPA.
- OSOTF Award** 2021 AND 2022  
Innis College, University of Toronto  
For outstanding academic performance and financial need.
- Innis College Exceptional Achievement Award** Nov. 2020  
Innis College, University of Toronto  
For outstanding academic performance.

## GRANTS AND BURSARIES

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**UTAPS Grant** 2021 AND 2022  
University of Toronto