Alexander Laroche

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Education University of Toronto Expected 2027

PhD, Astronomy and Astrophysics

McGill University May 2022

BSc, Honours Physics

Supervisors: Jo Bovy, Adrian Liu, Jonathan Sievers

Grants NSERC USRA Fellowship Awarded March 2022

Value: CAD\$9600 for Summer 2022

Canada 150 Research Chair Undergraduate Grant Awarded May 2021

Value: CAD\$6000 for Summer 2021

Awards Charles River Laboratories Scholarship 2020-2021

Wing Hing Chan Scholarship in Science 2020-2021 Dean's Honours List 2020-2021

Publications

1. **A. Laroche**, D. Gilman, X. Li, J. Bovy. (2022) Quantum fluctuations masquerade as halos: Bounds on ultra-light dark matter from quadruply-imaged quasars. Submitted to MNRAS, arXiv:2206.11269.

Presentations

- 1. Canadian Astro-Particle Physics Summer Student Talk Competition Aug 2022 Quantum fluctuations masquerade as halos: Bounds on ultra-light dark matter from quadruply-imaged quasars
- 2. University of Toronto 2022 Stellar Stats Workshop May 2022

 Constraining ultra-light dark matter by forward modeling flux ratios
- 3. McGill University Undergraduate Research Project Presentation Dec 2021

 Probing the quantum mechanics of ultra-light dark matter with strong gravitational lensing
- 4. McGill University NSERC USRA Project Presentation Aug 2021

 Probing the quantum mechanics of ultra-light dark matter with strong gravitational lensing
- 5. University of Toronto NSERC USRA Project Presentation Aug 2021

 Probing the quantum mechanics of ultra-light dark matter with strong gravitational lensing
- 6. McGill University Undergraduate Research Thesis Presentation Apr 2021

 Quantifying Density-Ionization Correlations with the 21cm Power Spectrum While
 Including X-ray Heating Effects

Teaching Teaching Assistant, The Sun and Its Neighbours, UofT AST101H1F Fall 2022

Programming • Languages: Python, C/C++, Mathematica, Java, MATLAB

 $\bullet \ \ Github\ repository:\ https://github.com/AlexLaroche7$