

Harrison Jack SOUCHEREAU

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Education

Ph.D. in Astronomy - Started September 2021
Yale University, New Haven, CT

B.Sc. in Honours Astrophysics - Graduated May 2020 - *Magna cum laude*
Saint Mary's University, Halifax, Nova Scotia
Honours Thesis Advisor: Dr. Ivana Damjanov
Thesis title: *The Performance of Surface Brightness Profile Extraction*

Research Work Experience

Researcher / Data Analyst 05/2018 - 09/2019 , 05/2020 - 06/2021

- Project supervised by Dr. Ivana Damjanov and Dr. Marcin Sawicki
- Developed a pipeline to automate the extraction of galaxy surface brightness profiles.
- Extracted over 2 million profiles from multi-band imaging from Hyper-Suprime Cam on the SUBARU telescope.
- Processed astronomical big-data imaging over the Compute Canada Cedar Cluster.
- Required a mastery of PYTHON (Anaconda), Pyplot, FITS files, and Jupyter notebooks.

Researcher / Programmer 10/2019 - 06/2020

- Project supervised by Dr. Ivana Damjanov
- Research goal is to generate a training set for machine-learning classification of galaxies based on low surface brightness features
- Currently maintaining a classification workflow made in PYTHON, used by myself and two additional students to identify thousands of low-SB merging features in the SDSS sample.

Refereed Publications

1. Damjanov, I., Geller, M. J., Utsumi, Y., Sohn, J., & **Souchereau, H.**, "*Quiescent Galaxy Size and Spectroscopic Evolution: Combining HSC Imaging and Hectospec Spectroscopy*", The Astrophysical Journal 872.1 (2019): 91.

Teaching and Outreach

2. Teaching Assistant, ASTR 155, Introduction to Astronomical Observing, Fall 2021
1. Teaching Assistant, ASTR 120, Galaxies and the Universe, Summer 2021

Oral Presentations

2. *Surface Brightness Profiles and Galactic Evolution*
Presented at the Canadian Undergraduate Physics Conference (CUPC), Hosted by McGill University, Montreal QC. (November 2019).
1. *Examining Factors in Galactic Evolution Using Surface Brightness Profiles*,
Presented at the Atlantic Universities Physics and Astronomy Conference (AUPAC), Acadia University, Wolfville NS, (February 2019).
Presented at the Mini-Symposium for Undergraduate Student Research, Saint Mary's University, Halifax NS. (September 2018).

Grants and Academic Scholarships

3. Saint Mary's University Faculty of Science Conference Travel Grant, (October 2019) – **\$500**
2. Saint Mary's University Academic Achievement Award, (September 2019) – **\$3000**
1. Dalhousie University International Baccalaureate Entrance Scholarship, (September 2015) – **\$20000**