Michael Radica | Curriculum Vitae

Ph.D Student - Université de Montréal
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General Information

- Nationality: Canadian
- Languages: English (Native), French (Intermediate)
- Affiliations: Canadian Astronomical Society (CASCA), Centre de Recherche en Astrophysiqe du Québec (CRAQ), Institute for Exoplanet Research (iREx)

Education

Université de Montréal — **Montréal, QC**
Ph.D. Physique — *2019-*

McMaster University — **Hamilton, ON**
M.Sc. Astrophysics — *2017-2019*

McMaster University — **Hamilton, ON**
B.Sc. Honours Physics - Co-op — *2012-2017*

Research Experience

Université de Montréal — **Montréal, QC**
Ph.D. Thesis with Dr. David Lafrenière — *2019 - 2023*
- Studying atmospheres of exoplanets with JWST as a member of the NEAT project.

McMaster University — **Hamilton, ON**
M.Sc. Thesis with Dr. Douglas Welch — *2017 - 2019*
- Developed a novel method to search for light echoes from core-collapse supernovae using the SITELLE instrument on the CFHT.
  Dissertation: *A Search for Supernova Light Echoes in NGC 6946 with SITELLE*

Canada France Hawaii Telescope — **Waimea, HI**
Science Intern with Dr. Laurie Rousseau-Nepton — *Sept - Dec 2017*
- Studied high resolution spectra from NGC 6822, using SITELLE, to quantify variations in dust extinction along different lines of sight.

University of Manitoba — **Winnipeg, MB**
Research Assistant with Dr. Chris O'Dea — *May - Dec 2016*
- Preformed analysis of emission from galaxy clusters to understand the connection between a cluster's X-Ray morphology and AGN feedback.

McMaster University — **Hamilton, ON**
Honours Thesis with Dr. Laura Parker — *Sept 2015 - Apr 2016*
- Studied the evolution of dark matter haloes comparable in mass to galaxies, within the Bolshoi Cosmological Simulation.
  Dissertation: *On the Segregation of Dark Matter Substructure in Simulations.*

Queen's University — **Kingston, ON**
Research Assistant with Dr. Judith Irwin — *Jan - Sept 2015*
- Wrote, and implemented python scripts to carry out data analysis, and quality control on radio emission images of galaxies, for the CHANG-ES Consortium.

Awards and Honours

- iREx Scholarship ($1000) ..... *2019 - 2020*
- Ontario Graduate Scholarship ($15000) ..... *2019 (rejected)*
- McMaster Symposium Day 1^{st} Place Talk ..... *Oct 2018*
- NSERC-Canada Graduate Masters Scholarship ($17500) ..... *2018 - 2019*
- Ontario Graduate Scholarship ($15000) ..... *2017 - 2018*
- CUPC 1^{st} Place Astrophysics Talk ..... *Nov 2016*
- CUPC 1^{st} Place Astrophysics Talk ..... *Nov 2015*
- McMaster University Dean's List ..... *2013 - 2017*
- McMaster University Dean's List Bursary ($1000) ..... *2013 - 2015*
- McMaster University Entrance Scholarship ($2500) ..... *Sept 2012*

Succesful Observing Proposals

1. A SITELLE Survey for Highly Broadened H-alpha P-Cygni Profiles in NGC 6946 from Core-Collapse Supernova Light Echoes
   Michael Radica, Douglas Welch, Laurie Rousseau-Nepton
   CFHT Semester 2018B, PID: 18BC017

Presentations

- *A Search for Supernova Light Echoes in NGC 6946 with SITELLE** at the CASCA Annual General Meeting (2019)
- *The Search for Supernova Light Echoes in NGC 6946* at the McMaster Symposium Day (2018)
- *The Evolution of Dark Matter Substructure in Simulated Galaxy Clusters* at the Canadian Undergraduate Physics Conference (2016)
- *Segregation of Dark Matter Substructure in the Bolshoi Simulation** at the McMaster Honours Thesis Poster Presentation (2015)
- *Studying Radio Haloes of Galaxies with CHANG-ES* at the Canadian Undergraduate Physics Conference (2014)
- *Quark Stars and Compact Stellar Remnants* at the McMaster Undergraduate Colloquium (2013)

* denotes a poster presentation

Workshop and Conference Participation

- CASCA Annual General Meeting 2019 ..... *Montréal, QC*
- MkPy Workshop 2017 ..... *Hilo, HI*
- Canadian Undergraduate Physics Conference 2016 ..... *Halifax, NS*
- CASCA Annual General Meeting 2016 ..... *Winnipeg, MB*
- Canadian Undergraduate Physics Conference 2015 ..... *Peterborough, ON*

Technical Skills

- **Operating Systems:** Linux, OS X
- **Programming:** Python, C++
- **Astronomical Data Processing:** CIAO, CASA, IRAF, ds9, ORCS
- **Pubic Speaking:** I enjoy preparing and giving talks to all audiences, and have presented research at numerous conferences.

Teaching and Tutoring

- **Teaching Assistant** — Université de Montréal (2020 -)
  Marking of assignments (*en français*) for courses including:
  - Astrobiologie (Winter 2020)
- **Teaching Assistant** — McMaster University (2017 - 2019)
  Marking and organization of weekly tutorials for courses including:
  - Introduction to Physics for Engineers (Winter 2017)
  - Planetary Astronomy (Winter 2018, 2019)
  - Introduction to Astronomy (Fall 2018)
  - The Big Questions in Astronomy (Fall 2018)
  - Stellar Structure (Winter 2019)
- **Certified Tutor** — McMaster University (2014 - 2019)
  - McMaster Physics Help Initiative (2014-2016)
  - McMaster Physics Help Center (Winter 2018)
  - Private Tutor (Fall/Winter 2019)

Outreach Activities

- McMaster Physics & Astronomy Graduate Student Mentor (2018 - 2019)
- McCallion Planetarium Presenter (2017 - 2019)
- McMaster Sidewalk Astronomy (2017 - 2019)
- McMaster Fall Preview Lab Tour Guide (2013)