

Michael Radica | Curriculum Vitae

Ph.D Student - Université de Montréal

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🌐 radicamc.github.io

General Information

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

Education

Université de Montréal <i>Ph.D. Physique</i>	Montréal, CAN 2019 - present
McMaster University <i>M.Sc. Astrophysics</i>	Hamilton, CAN 2017 - 2019
McMaster University <i>B.Sc. (Summa Cum Laude) Honours Physics - Co-op</i> GPA: 11.3/12 equivalent to 94/100	Hamilton, CAN 2012 - 2017

Research Experience

Université de Montréal <i>Ph.D. Thesis with Dr. David Lafrenière</i> ○ Studying atmospheres of exoplanets with JWST as a member of the NEAT project.	Montréal, CAN 2019 - present
McMaster University <i>M.Sc. Thesis with Dr. Douglas Welch</i> ○ Developed a novel method to search for light echoes from core-collapse supernovae using the SITELLE instrument on the CFHT. Dissertation: <i>A Search for Supernova Light Echoes in NGC 6946 with SITELLE</i>	Hamilton, CAN 2017 - 2019
Canada France Hawaii Telescope <i>Science Intern with Dr. Laurie Rousseau-Nepton</i> ○ Studied high resolution spectra from NGC 6822, using SITELLE, to quantify variations in dust extinction along different lines of sight.	Waimea, USA Sept - Dec 2017
University of Manitoba <i>Research Assistant with Dr. Chris O'Dea</i> ○ Performed analysis of emission from galaxy clusters to understand the connection between a cluster's X-Ray morphology and AGN feedback.	Winnipeg, CAN May - Dec 2016
McMaster University <i>Honours Thesis with Dr. Laura Parker</i> ○ Studied the evolution of dark matter haloes comparable in mass to galaxies, within the Bolshoi Cosmological Simulation. Dissertation: <i>On the Segregation of Dark Matter Substructure in Simulations.</i>	Hamilton, CAN Sept 2015 - Apr 2016
Queen's University <i>Research Assistant with Dr. Judith Irwin</i> ○ Wrote, and implemented python scripts to carry out data analysis, and quality control on radio emission images of galaxies, for the CHANG-ES Consortium.	Kingston, CAN Jan - Sept 2015

Awards and Honours

- iREx Scholarship (\$1000) 2019
- Ontario Graduate Scholarship (\$15000) 2019 (*rejected*)
Awarded to top 2% of graduate students in Ontario.
- McMaster Symposium Day 1st Place Talk 2018
- NSERC - Canada Graduate Masters Scholarship (\$17500) 2018
Awarded to <1000 graduate students in Canada.
- Ontario Graduate Scholarship (\$15000) 2017
- CUPC 1st Place Astrophysics Talk 2016
- CUPC 1st Place Astrophysics Talk 2015
- McMaster University Dean's List (\$1000) 2013 - 2017
Awarded to students in the to 5% of their class.
- McMaster President's Award (\$2500) 2012
Awarded to top 1% of first year students.

All values in Canadian Dollars

Refereed Publications

1. [A Search for Supernova Light Echoes in NGC 6946 with SITELLE](#)
Radica, M.C., Welch, D., Rousseau-Nepton, L.
Monthly Notices of the Royal Astronomical Society, In press
2. [CHANG-ES XXI. Transport processes and the X-shaped magnetic field of NGC 4217: off-center superbubble structure](#)
Stein, Y., Dettmar, R. -J., Beck, R., Irwin, J., Wiegert, T., Miskolczi, A., Wang, Q. D., English, J., Henriksen, R., **Radica, M.**, Li, J. -T.
Astronomy & Astrophysics, 639, A111, 2020.

White Papers and Conference Proceedings

1. [Exoplanet instrumentation in the 2020s: Canada's pathway towards searching for life on potentially Earth-like exoplanets](#)
Benneke, Bjorn; Cowan, Nick; Rowe, Jason; Marois, Christian; Metchev, Stanimir; Moores, John; Lee, Eve; Boley, Aaron; Doyon, Rene; Cumming, Andrew; Matthews, Jaymie; Lafreniere, David; Strong, Kimberly; Gladman, Brett; Menou, Kristen; Valencia, Diana; Mawet, Dimitri; Cook, Neil James; Ngo, Henry; Albert, Loic; Godin, Paul; Chauhan, Akash; Darveau-Bernier, Antoine; Lee, Junchan; Pelletier, Stefan; Coulombe, Louis-Phillippe; Miles-Paez, Paulo; Marquette, Melissa; Bell, Taylor; **Radica, Michael**; Gerard, Benjamin L.; Ouelette, Nathalie; Dang, Lisa; Naud, Marie-Eve; Moore, Kevin; Lim, Olivia; Wu, Yanqin; Gupta, Prashansa; Bastien, Pierre; Malo, Lison; Gagne, Jonathan; Beauvais, Simon-Gabriel; Cloutier, Ryan; Cadieux, Charles; Talens, Geert Jan; Herman, Miranda; Mann, Christopher; Piaulet, Caroline; Weiss, Lauren; Chan, Jonathan; Speedie, Jessica; Hedgepeth, Josh; Ali-Dib, Mohamad; Ellery, Alex; Lee, Christopher; Thorngren, Daniel; Navarro, Thomas; Nguyen, Giang; Keating, Dylan; Hallatt, Tim
White Paper for the Canadian Long Range Plan 2020

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

Contributed Talks and Posters

- *Towards a Robust Extraction Algorithm for NIRISS SOSS Spectra** at Exoplanets 3 (2020)
- *NEAT Exploration of Exoplanet Atmospheres** at the CASCA Annual General Meeting (2020)
- *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)
- *A High Resolution Study of NGC 6822 with SITELLE* at the CFHT Fall Colloquium Series (2017)
- *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

Committee Membership

- UdeM Representative, CASCA Graduate Student Committee (2020 - present)
- Graduate Student Liaison, UdeM Equity and Diversity Committee (2020 - present)

Workshop and Conference Participation

- Exoplanets 3 (2020) Heidelberg, GER
- CASCA Annual General Meeting (2020) York, CAN
- CASCA Annual General Meeting (2019) Montréal, CAN
- MkPy Workshop (2017) Hilo, USA
- Canadian Undergraduate Physics Conference (2016) Halifax, CAN
- CASCA Annual General Meeting (2016) Winnipeg, CAN
- Canadian Undergraduate Physics Conference (2015) Peterborough, CAN

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 - present)
Marking and presentation of tutorials (*en français*) for courses including:
 - Astrobiologie (Winter 2020)
 - Introduction à la Physique Numérique (Fall 2020)
- **Teaching Assistant** McMaster University (2017 - 2019)
Marking and presentation of 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 Co-op Program Alumni Mentor (2020 - present)
- 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)