Michael Radica | Curriculum Vitae

NSERC Postdoctoral Fellow – University of Chicago
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General Information

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

Education

- **Ph.D., Astrophysics** 2024
  Université de Montréal, Montréal, QC, Canada
  Advisor: Dr. David Lafrenière
  GPA: 4.3/4.3
  - Dissertation: *Insights into the Diversity of Exoplanet Atmospheres in the Era of JWST*
- **M.Sc., Physics & Astronomy** 2019
  McMaster University, Hamilton, ON, Canada
  Advisor: Dr. Douglas Welch
  GPA: 11.7/12
  - Dissertation: *A Search for Light Echoes from Core-Collapse Supernovae in NGC 6946*
- **B.Sc. Summa Cum Laude, Honours Physics Co-op** 2017
  McMaster University, Hamilton, ON, Canada
  Advisor: Dr. Laura Parker
  GPA: 11.3/12
  - Dissertation: *On the Segregation of Dark Matter Substructure in the Bolshoi Simulation*

Fellowships and Research Funding

- STScI JWST Cycle 3 Grant (Science PI; Awarded to U Chicago) **$134,000** 2024
- NSERC Postdoctoral Fellowship (2yr) **$140,000** 2024
- CSA JWST Cycle 2 Grant (Science PI; Awarded to UdeM) **$87,000** 2023

All values in Canadian Dollars

Other Awards and Honours

- CASCA Annual General Meeting Best Student Talk **$100** 2024
- CASCA Annual General Meeting Travel Support **$750** 2023
- CRAQ International Internship Scholarship **$7,500** 2022
- First Science Results from JWST Conference Travel Support **$500** 2022
- Bourse J.A. DeSève (1yr; *declined*) **$8,000** 2021
- NSERC Canada Graduate Scholarship — Doctoral Program (3yr) **$105,000** 2021
- FRQNT Bourse de Doctorat en Recherche (3yr) **$70,000** 2021
- iREx Trottier Scholarship **$1,000** 2019, 2020, 2021
- Ontario Graduate Scholarship (1yr; *declined*) **$15,000** 2019
- McMaster University Symposium Day; 1st Place Talk **$30** 2018

- NSERC Canada Graduate Scholarship — Master's Program (1yr) **$17,500** 2018
- Ontario Graduate Scholarship (1yr) **$15,000** 2017
- Ontario Graduate Fellowship (1yr; *declined*) **$12,500** 2017
- Canadian Undergraduate Physics Conference 1st Place Talk 2015, 2016
- McMaster University Faculty of Science Dean's List 2013 – 2017
- McMaster University President's Award **$2,500** 2012

All values in Canadian Dollars

Refereed Publications

Summary: 8 first author, 1300+ citations, hindex=21.
Full library of publications available on the ADS.

First Author Publications

8. **Radica, M.**; et al. "Constraining the Scattered Light Properties of LTT 9779 b Using HST/WFC3 UVIS" 2025. *MNRAS*, 538, 3.
7. **Radica, M.**; et al. "Promise and Peril: Stellar Contamination and Strict Limits on the Atmosphere Composition of TRAPPIST-1 c from JWST NIRISS Transmission Spectra" 2025. *ApJL*, 979, L5.
6. **Radica, M.** "exoTEDRF: An EXOplanet Transit and Eclipse Data Reduction Framework" 2024. *JOSS*, 9, 6898.
5. **Radica, M.**; et al. "Muted Spectral Features in the JWST NIRISS Transmission Spectrum of Hot-Neptune LTT 9779 b" 2024. *ApJL*, 962, L20.
4. **Radica, M.**; et al. "Awesome SOSS: Transmission Spectroscopy of WASP-96b with NIRISS/SOSS" 2023. *MNRAS*, 524, 1.
3. **Radica, M.**; et al. "Revisiting Radial Velocity Measurements of the K2-18 System with the Line-by-Line Framework" 2022. *MNRAS*, 517, 4.
2. **Radica, M.**; et al. "APPLESOSS: A Producer of ProfiLEs for SOSS. Application to the NIRISS SOSS Mode" 2022. *PASP*, 134, 104502.
1. **Radica, M.**; Welch, D.; Rousseau-Nepton, L. "A Search for Supernova Light Echoes in NGC 6946 with SITELLE" 2020. *MNRAS*, 497, 3.

Second and Third Author Publications

7. Taylor, J.; **Radica, M.**; et al. "JWST NEAT: NIRISS/SOSS Transmission Spectrum of the Super-Earth GJ 357b, a Favourable Target for Atmospheric Retention". *MNRAS*, submitted.
6. Ahrer, E.-M.; **Radica, M.**; et al. "Escaping Helium and a High- Metallicity, Low-C/O Atmosphere on the Sub-Neptune GJ 3090 b from JWST NIRISS and NIRSpec Transit Spectroscopy". *AAS Journals*, submitted.
5. Coulombe, L.-P.; **Radica, M.**; et al. "Highly Reflective White Clouds on the Western Dayside of an Exo-Neptune". *Nature Astronomy*, in press.
4. Piaulet-Ghorayeb, C.; Benneke, B.; **Radica, M.**; et al. "NIRISS/SOSS reveals the water-rich 'steam world' atmosphere of GJ 9827 d" 2024. *ApJL*, 974, L10.
3. Fournier-Tondreau, M.; MacDonald, R.; **Radica, M.**; et al. "Near-Infrared Transmission Spectroscopy of HAT-P-18 b with NIRISS: Disentangling Planetary and Stellar Features in the Era of JWST" 2024. *MNRAS*, 528, 2.
2. Taylor, J.; **Radica, M.**; et al. "Awesome SOSS: Atmospheric Characterisation of the Early Release Observations of WASP-96b" 2023. *MNRAS*, 524, 1.

1. Feinstein, A.; **Radica, M.**; et al. "Early Release Science of the exoplanet WASP-39b with JWST NIRISS" 2023. *Nature*, 614, 670.

Co-Author Publications

32. Cadieux, C.; et al. (incl. **Radica, M.**) "Detailed Architecture of the L 98-59 System and Confirmation of a Fifth Planet in the Habitable Zone". *AAS Journals*, submitted.
31. Rotman, Y.; et al. (incl. **Radica, M.**) "Enabling Robust Atmospheric Retrieval of Exoplanets with Gaussian Processes". *AAS Journals*, submitted.
30. Murphy, M.; et al. (incl. **Radica, M.**) "A Panchromatic Characterization of the Evening and Morning Atmosphere of WASP-107 b: Composition and Cloud Variations, and Insight into the Effect of Stellar Contamination". *AAS Journals*, submitted.
29. Roy, P.-A.; et al. (incl. **Radica, M.**) "JWST Reveals a Methane-Rich, Hazy Atmosphere on the Temperate Sub-Neptune LP 791-18 c". *Nature*, submitted.
28. Piaulet-Ghorayeb, C.; et al. (incl. **Radica, M.**) "Strict Limits on Potential Secondary Atmospheres on the Temperate Rocky exo-Earth TRAPPIST-1d". *AAS Journals*, submitted.
27. Schmidt, S. & Tsai S.-M.; et al. (incl. **Radica, M.**) "A Comprehensive Re-analysis of K2-18b's JWST NIRSpec/NIRISS Transmission Spectrum". *AAS Journals*, submitted.
26. Krishnamurthy, V.; et al. (incl. **Radica, M.**) "Continuous helium absorption from the leading and trailing tails of WASP-107 b". *Nature Astronomy*, submitted.
25. Benneke, B.; et al. (incl. **Radica, M.**) "JWST Reveals CH_4, CO_2, and H_2O in a Metal-rich Miscible Atmosphere on a Two-Earth-Radius Exoplanet". *ApJL*, submitted.
24. Fournier-Tondreau, M.; et al. (incl. **Radica, M.**) "Spot-crossings, along with Water and Helium Absorption in the JWST/NIRISS Transmission Spectrum of the Hot Jupiter WASP-52 b". *MNRAS*, accepted.
23. Morel, K.; et al. (incl. **Radica, M.**) "A Moderate Albedo from Reflecting Aerosols on the Dayside of WASP-80 b Revealed by JWST/NIRISS Eclipse Spectroscopy". *AJ*, accepted.
22. Louie, D.; et al. (incl. **Radica, M.**) "JWST-TST DREAMS: A Definitive Water Abundance for WASP-17b from NIRISS SOSS Transmission Spectroscopy". *AJ*, 169, 2.
21. Gressier, A.; et al. (incl. **Radica, M.**) "JWST-TST DREAMS: A Super-Solar Metallicity in WASP-17 b's Day-side Atmosphere from NIRISS SOSS Eclipse Spectroscopy". *AJ*, 169, 2.
20. Fisher, C.; et al. (incl. **Radica, M.**) "JWST/NIRISS and HST: Exploring the improved ability to characterise exoplanet atmospheres in the JWST era" 2024. *MNRAS*, 535, 1.
19. Carter, A. & May, E.; et al. (incl. **Radica, M.**) "A Benchmark JWST Near-Infrared Spectrum for the Exoplanet WASP-39b" 2024. *Nature Astronomy*, 8, 1008.
18. Hammond, M.; et al. (incl. **Radica, M.**) "Identifying and Fitting Eclipse Maps of Exoplanets with Cross-Validation" 2024. *MNRAS*, 532, 4.
17. TRAPPIST-1 JWST Community Initiative; et al. (incl. **Radica, M.**) "A Roadmap to the Efficient and Robust Characterization of Temperate Terrestrial Planet Atmospheres with JWST" 2024. *Nature Astronomy*, 8, 810.
16. Cadieux, C.; et al. (incl. **Radica, M.**) "Transmission Spectroscopy of the Habitable Zone Exoplanet LHS 1140 b with JWST/NIRISS" 2024. *ApJL*, 970, L2.
15. Zamyatina, M.; et al. (incl. **Radica, M.**) "Quenching-Driven Equatorial Depletion and Limb Asymmetries in Hot Jupiter Atmospheres: WASP-96b Example" 2024. *MNRAS*, 528, 2.
14. Powell, D.; et al. (incl. **Radica, M.**) "Sulfur dioxide in the mid-infrared transmission spectrum of WASP-39b" 2024. *Nature*, 626, 979.

13. Howard, W.; et al. (incl. **Radica, M.**) "Characterizing the Near-infrared Spectra of Flares from TRAPPIST-1 During JWST Transit Spectroscopy Observations" 2023. *ApJ*, 959, 1.
12. Lim, O.; et al. (incl. **Radica, M.**) "Atmospheric Reconnaissance of TRAPPIST-1 b with JWST/NIRISS: Evidence for Strong Stellar Contamination in the Transmission Spectra" 2023. *ApJL*, 955, L22.
11. Boucher, A.; et al. (incl. **Radica, M.**) "CO or no CO? Narrowing the CO Abundance Constraint and Recovering the H2O Detection in the Atmosphere of WASP-127 b Using SPIRou" 2023. *MNRAS*, 522, 4.
10. Coulombe, L.-P.; et al. (incl. **Radica, M.**) "A Broadband Thermal Emission Spectrum of the Ultra-Hot Jupiter WASP-18b" 2023. *Nature*, 620, 292.
9. Allart, R.; et al. (incl. **Radica, M.**) "Homogeneous Search for Helium in the Atmosphere of 11 Gas Giant Exoplanets with SPIRou" 2023. *A&A*, 677, A164.
8. Doyon, R.; et al. (incl. **Radica, M.**) "The Near Infrared Imager and Slitless Spectrograph for the James Webb Space Telescope - I Instrument Overview and in-Flight Performance" 2023. *PASP*, 135, 098001.
7. Albert, L.; et al. (incl. **Radica, M.**) "The Near Infrared Imager and Slitless Spectrograph for the James Webb Space Telescope - III. Single Object Slitless Spectroscopy" 2023. *PASP*, 135, 075001.
6. Kammerer, J.; et al. (incl. **Radica, M.**) "The Near Infrared Imager and Slitless Spectrograph for JWST – V. Kernel Phase Imaging and Data Analysis" 2023. *PASP*, 134, 014502.
5. Rustamkulov, Z.; et al. (incl. **Radica, M.**) "Early Release Science of the exoplanet WASP-39b with JWST NIRSpec PRISM" 2023. *Nature*, 614, 659.
4. JWST Transiting Exoplanet Community Early Release Science Team, et al. (incl. **Radica, M.**) "Identification of carbon dioxide in an exoplanet atmosphere" 2023. *Nature*, 614, 649.
3. Darveau-Bernier, A.; et al. (incl. **Radica, M.**) "ATOCA: an algorithm to treat order contamination. Application to the NIRISS SOSS mode" 2022. *PASP*, 134, 094502.
2. Boucher, A.; et al. (incl. **Radica, M.**) "Characterizing exoplanetary atmospheres at high resolution with SPIRou: Detection of water on HD 189733 b" 2021. *AJ*, 162, 233.
1. Stein, Y.; et al. (incl. **Radica, M.**) "CHANG-ES XXI. Transport Processes and the X-Shaped Magnetic Field of NGC 4217: Off-Center Superbubble Structure" 2020. *A&A*, 639, A111.

Selected White Papers, Proceedings, and Research Notes

4. Agol, E.; et al. (incl. **Radica, M.**) "Updated Forecast for TRAPPIST-1 Times of Transit for All Seven Exoplanets Incorporating JWST Data" 2024. *Research Notes of the American Astronomical Society*, 8, 10.
3. **Radica, M.** & Alderson, L. "On the Ideal Combination of Instruments for Atmosphere Spectroscopy with JWST" 2023. *Strategic Exoplanet Initiatives with HST and JWST White Paper*.
2. **Radica, M.**; et al. "Quantifying Biases in Extracted NIRISS/SOSS Spectra" 2022. *Bulletin of the American Astronomical Society*, Vol. 54, No. 5.
1. Benneke, B; et al. (incl. **Radica, M.**) "Exoplanet Instrumentation in the 2020s: Canada's Pathway Towards Searching for Life on Potentially Earth-Like Exoplanets" 2020. *Canadian Long Range Plan 2020*.

Selected Successful Observing Proposals

Summary: 10 PI programs, 17 Co-I programs.

Space-Based Observatories

JWST

- **2025: PI** | JWST-GO-9101 | 95 hrs
  Unveiling the Nature of Super-Puffs: A Panchromatic Transmission Spectroscopy Survey.
- **2024: PI** | JWST-GO-5744 | 16 hrs
  Starspots, Hazes, and Disequilibrium Chemistry: A Deep Dive into the Atmosphere of HAT-P-18b.
- **2023: PI** | JWST-GO-4082 | 7 hrs
  Putting it all Together: Dynamics and Chemistry Probed Through Transmission Spectroscopy of a Cloud-Free Exoplanet.

- **2025: Co-I** | JWST-GO-9095 | 38 hrs
  Combining Emission and Transmission Spectroscopy to Reveal Exo-Neptune Aerosols, Chemistry, and Formation. PI: C. Piaulet-Ghorayeb.
- **2025: Co-I** | JWST-GO-7982 | 74 hrs
  Warm Jupiters: The Next Step in Uncovering Giant Planet Formation and Migration. PI: A. Claringbold.
- **2025: Co-I** | JWST-GO-8017 | 19 hrs
  Resolving Atmospheric Uncertainties and Building a Legacy Dataset for WASP-39b. PI: L. Welbanks.
- **2024: Co-I** | JWST-GO-5967 | 21 hrs
  Exploring the Desert: Thermal Characterization of an Exposed Planetary Core. PI: P.-A. Roy.
- **2024: Co-I** | JWST-GO-5959 | 145 hrs
  KRONOS: Keys to Revealing the Origin and Nature of Sub-Neptune Systems. PI: A. Feinstein.
- **2024: Co-I** | JWST-GO-5268 | 60 hrs
  Around the World in Less than Two Days: Observing the Spectral Phase Curve of an Ultra-Hot Jupiter with JWST/NIRSpec. PI: J. Wardenier.
- **2023: Co-I** | JWST-DD-6543 | 16 hrs
  Stellar Activity Characterization of LHS 1140 - Is LHS 1140 b a Mini-Neptune or a Water World?. PI: C. Cadieux.
- **2023: Co-I** | JWST-GO-4098 | 82 hrs
  Exploring the Existence and Diversity of Volatile-Rich Water Worlds. PI: B. Benneke.

HST

- **2022: PI** | HST-GO-2663 | 12 orbits
  Unravelling the Mysteries of LTT 9779b — Studying Clouds that Shouldn't Exist on a Planet that Shouldn't Exist.

Ground-Based Observatories

CFHT

- **2023: PI** | SPIRou-2023B | 16 hrs
  Born Survivor: A SPIRou Study of a Hot-Neptune Orbiting a Red-Giant Star.
- **2021: PI** | SPIRou-2021B | 8 hrs
  Do Exo-Neptunes Have Low-Metallicity Atmospheres? A Case Study of HAT-P-11b.
- **2018: PI** | SITELLE-2018B | 12 hrs
  A SITELLE Survey for Highly Broadened H-alpha P-Cygni Profiles in NGC 6946 from Core-Collapse Supernova Light Echoes.

Gemini

- **2023: PI** | MAROON-X-2022A | 40 hrs

RV Characterization of the Keystone Triple Planet System TOI-1749.

- **2022: PI** | IGRINS-2022A | 5 hrs
  An IGRINS Study of the First Hot-Neptune.

- **2023: Co-I** | MAROON-X-2024B | 10 hrs
  Characterizing a Nearby Habitable-Zone Exo-Earth. PI: M. Brady.

VLT

- **2023: Co-I** | ESPRESSO-P112 | 40 hrs
  Mirror in the Desert: constraining the high resolution reflection spectrum of the unusual ultra hot Neptune LTT9779 b. PI: S. Vaughan.

OMM

- **2021: PI** | PESTO-2021C | 36 hrs
  Photometric Followup of an M-Dwarf Trio of Planets Spanning the Radius Valley.

Talks & Posters

Summary: 12 Talks, 3 Invited, 2 for general public; 9 Seminars; 8 Posters.
Timeline: 2025 (2), 2024 (6), 2023 (7), 2022 (3), 2021 (2), 2020 (2), 2019 (1)

Invited Talks

2. *Awesome SOSS: Transmission Spectroscopy of WASP-96b with NIRISS/SOSS*
   OMM-NRC Astronomy Day, Montréal, Canada — Apr 2023
1. *Awesome SOSS: Transmission Spectroscopy of WASP-96b with NIRISS/SOSS*
   JWST Exoplanet Atmospheres Meeting, Oxford, UK — Mar 2023

Invited Colloquia & Seminars

9. Physics & Astronomy Seminar, **Memorial University of Newfoundland** — Aug 2024
8. APEx Seminar, **Max-Planck-Institut für Astronomie** — Mar 2024
7. iREx Seminar, **Université de Montréal** — Jan 2024
6. AOPP Seminar, **University of Oxford** — Apr 2023
5. Astronomy Seminar, **University of Exeter** — Apr 2023
4. Astronomy Seminar, **University of Bristol** — Apr 2023
3. Astronomy Colloquium, **Canada-France-Hawaii Telescope** — Dec 2017
2. Summer Astrophysics Colloquium, **University of Manitoba** — Aug 2016
1. Undergraduate Physics Colloquium, **McMaster University** — Feb 2013

Contributed Conference Talks and Posters

* Denotes a poster presentation.

16. *NEAT Things JWST Can do with Eclipses: An Overview of Thermal Emission and Reflected Light Results from the NIRISS GTO*
    Atmospheric Characterization in Thermal Emission with JWST, Aspen, USA — Apr 2025
15. *Stellar Contamination and Limits on the Atmosphere Composition of TRAPPIST-1 c from JWST NIRISS*
    Know Thy Star, Know Thy Planet 2, Pasadena, USA — Feb 2025
14. *A Comprehensive Study of the Only Known Ultra-Hot-Neptune*
    CASCA Annual General Meeting, Toronto, Canada — Jun 2024
13. **Ultraviolet to Infrared Atmosphere Spectroscopy of the Hot-Neptune LTT 9779b*
    Exoplanets V, Leiden, Netherlands — Jun 2024

12. **Awesome SOSS: Transmission Spectroscopy of WASP-96b with NIRISS/SOSS*
ExoClimes VI, Exeter, UK — Jun 2023
11. *Awesome SOSS: Transmission Spectroscopy of WASP-96b with NIRISS/SOSS*
CASCA Annual General Meeting, Penticton, BC, Canada — Jun 2023
10. *A First Look Transmission Spectrum of WASP-96b with NIRISS/SOSS*
First Science Results from JWST, Baltimore, MD, USA — Dec 2022
9. **A Validation of the Line-by-Line Framework for Precision Velocimetry with the K2-18 System*
CASCA Annual General Meeting, Waterloo, ON, Canada (*virtual*) — May 2022
8. **How Assumptions in the Underlying Spatial Profile Impact Extracted NIRISS/SOSS Spectra*
Exoplanets IV, Las Vegas, NV, USA — May 2022
7. **Towards a Robust Extraction Algorithm for NIRISS SOSS Spectra*
CASCA Annual General Meeting, Penticton, BC, Canada (*virtual*) — May 2021
6. **Towards a Robust Extraction Algorithm for NIRISS SOSS Spectra*
Exoplanets III, Heidelberg, Germany (*virtual*) — Jul 2020
5. **NEAT Exploration of Exoplanet Atmospheres*
CASCA Annual General Meeting, York, ON, Canada (*virtual*) — May 2020
4. **A Search for Supernova Light Echoes in NGC 6946 with SITELLE*
CASCA Annual General Meeting, Montréal, QC, Canada — Jun 2019
3. *The Search for Supernova Light Echoes in NGC 6946*
McMaster University Symposium Day, Hamilton, ON, Canada — Oct 2018
2. *The Evolution of Dark Matter Substructure in Simulated Galaxy Clusters*
Canadian Undergraduate Physics Conference, Halifax, NS, Canada — Nov 2016
1. *Studying Radio Haloes of Galaxies with CHANG-ES*
Canadian Undergraduate Physics Conference, Peterborough, ON, Canada — Nov 2014

Invited Public Talks

2. *From Earth Twins to Water Worlds; the Big Questions About Small Planets*
LaSalle Community Comprehensive High School, Montréal, QC, Canada — May 2024
1. *The Search for Earth 2.0*
Villa Maria College, Montréal, QC, Canada — Oct 2021

Open-Source Software

Summary: `GitHub:` ☆5 ⑂6 | `Zenodo:` 26

- **`StellarFit`**: `https://github.com/radicamc/StellarFit`
  – Software for fitting models of inhomogeneous stellar photospheres.
- **`exoUPRF`**: `https://github.com/radicamc/exoUPRF`
  – Library for flexible light curve fitting.
- **`exoTEDRF`**: `https://github.com/radicamc/exoTEDRF`
  – Tools for the end-to-end reduction of JWST time series observations.
- **`APPLESOSS`**: `https://github.com/radicamc/applesoss`
  – Software to create data-driven PSF models for JWST NIRISS/SOSS observations.

Professional Memberships and Service

Professional

- External Panelist for NASA HST Cycle 33 Time Allocation Committee — 2025
- "Signal in the Noise" Ringberg Workshop SOC Member — 2025
- Reviewer for MNRAS, Science, JOSS, AAS Journals, A&A

- Canadian Undergraduate Physics Conference Judge 2021
  – Judge for student talks in astrophysics.
- Canadian Astronomical Society Annual General Meeting Online Organizing Committee 2021

EDI

- Canadian Astronomical Society Graduate Student Committee 2020 – 2023
  – Co-led series of monthly town halls during spring/summer of 2020 to provide safe spaces for graduate students to share experiences about adjusting to working during the COVID-19 pandemic.
  – Led initiative to highlight work of indigenous graduate students in weekly social media posts during Canadian National Indigenous History Month (June).
- Université de Montréal Equity and Diversity Committee 2020 – 2022
  – Led initiative to invite indigenous speakers from the Montréal area to the first journal club of each year to share their ancestral knowledge of astronomy.
- McMaster University Graduate Student Mentorship Program 2018 – 2019
- McMaster Co-op Program Alumni Mentor 2020 – 2023
  – Mentor to one Physics & Astronomy undergrad per year to help with job searching and interview preparation.

Media & Press

- *JWST Forecasts Partially Cloudy Skies on Ultra-Hot Neptune LTT 9779 b*, UdeMnouvelles (Feb 2025) [Link]
- *AwesomeSOSS*, CASCA Gradhighlights (Oct 2023) [Link]
- *An exoplanet atmosphere as never seen before*, UdeMnouvelles (Nov 2022) [Link]
- *Exploration de la diversité atmospherique d'exoplanètes en transit*, Moteur de Recherche (Nov 2022) [Link]

Teaching Experience

- **Teaching Assistant** 2020 – 2022
  Université de Montréal
  – Marking and presentation of tutorials (*en français*) for courses incl. :
  Astrobiologie (Winter 2020 – 2022; 7 hr/wk)
  Introduction à la Physique Numérique (Fall 2020; 10 hr/wk)
- **Teaching Assistant** 2017 – 2019
  McMaster University
  – Marking and presentation of tutorials for courses incl. :
  Introduction to Physics for Engineers (Winter 2017; 6 hr/wk)
  Planetary Astronomy (Winter 2018, 2019; 6 hr/wk)
  Introduction to Astronomy (Fall 2018; 6 hr/wk)
  The Big Questions in Astronomy (Fall 2018; 6 hr/wk)
  Stellar Structure (Winter 2019; 6 hr/wk)
- **Physics Tutor** 2014 – 2023
  Private Tutor: Undergraduate/Secondary School Physics (2021 – 2023; 2 hr/wk)
  Private Tutor: Undergraduate Physics (Fall/Winter 2019; 2 hr/wk)
  McMaster Physics Help Center (Winter 2018; 3 hr/wk)
  McMaster Physics Help Initiative (2014 – 2016; 2 hr/wk)

Student Mentorship

- K. Morel, M.Sc. student (Université de Montréal). Principal advisor: D. Lafrenière.
- M. Fournier-Tondreau, M.Sc. student (Université de Montréal). Principal advisor: D. Lafrenière.
- B.Sc. Student Project (University of Manitoba). Principal advisor: C. O'Dea.

Former Research Positions

- Visiting Student. Supervisor: Dr. Hannah Wakeford 2023
  University of Bristol, Britstol, UK
  – Performed analysis of HST/UVIS eclipse observations of LTT 9779 b.
- Science Intern. Supervisor: Dr. Laurie Rousseau-Nepton 2017
  Canada-France-Hawaii Telescope, Waimea, HI, USA
  – Studied dust extinction in the Milky Way using the SITELLE instrument.
- Research Assistant. Supervisor: Dr. Chris O'Dea 2016
  University of Manitoba, Winnipeg, MB, Canada
  – Developed tools to quantify the X-ray morphology of AGNs.
- Research Assistant. Supervisor: Dr. Judith Irwin 2015
  Queen's University, Kingston, ON, Canada
  – Analyzed EVLA radio observations of galactic haloes as part of the CHANG-ES survey.

Science Outreach

- LaSalle Community Comprehensive High School (May 2024)
  – Invited presentations about astronomy research in secondary school classrooms.
- 24 Hours of Science — Astronomer in your Classroom (May 2021)
  – Astronomy presentations for three primary school classrooms.
- Montréal Student Space Association iREx Liaison (2020 – 2022)
  – Aided in organization of yearly Montréal Space Symposium (∼100 attendees).
- William J. McCallion Planetarium Presenter (2017 – 2019)
  – Weekly presentations to undergraduate classes and the general public.
- McMaster Sidewalk Astronomy (2017 – 2019)
  – Member of McMaster's "Sidewalk Astronomy" initiative.
- McMaster University Fall Preview Lab Tour Guide (Oct 2013)