



Nicole Gromek

✉ gromekn@mcmaster.ca  nicolegromek.github.io  Nicole Gromek

Education

- | | |
|---|----------------|
| Doctor of Philosophy (Ph.D.) in Physics and Astronomy
<i>McMaster University</i> | 2024 - Present |
| ◦ Thesis Supervisor: Prof. Ryan Cloutier | |
| Master of Science (M.Sc.) in Physics and Astronomy
<i>McMaster University</i> | 2022 - 2024 |
| ◦ Thesis Supervisor: Prof. Ryan Cloutier | |
| ◦ Thesis: A Spectroscopic Framework for Deriving Elemental Abundances of M Dwarfs  | |
| Honours Bachelor of Science (with Distinction)
<i>University of Toronto Mississauga</i> | 2017 - 2021 |
| ◦ Majors in Astronomy and Physics with a Minor in Chemistry. CGPA: 3.39. | |
| ◦ Coursework: Quantum Mechanics, Electrodynamics, Statistical Mechanics, Applied Statistics, Scientific Computing, Computational Physics | |

Research Experience

- | | |
|---|--------------------------------|
| Graduate Research
<i>McMaster University — Supervisor: Prof. Ryan Cloutier</i> | 2022 - Present
Hamilton, ON |
| ◦ Working to establish an empirical calibration of chemical abundances in M dwarf spectra in binary systems with FGK stars using SPIRou. | |
| ◦ Member of the Near InfraRed Planet Searcher (NIRPS) Consortium. | |
| Summer Undergraduate Research Program - Astronomy
<i>University of Toronto — Supervisor: Dr. Jennifer West</i> | 2021 - 2022
Toronto, ON |
| ◦ Analyzed the magnetic field structure and polarization of the Cygnus Loop, a supernova remnant, using radio wavelength data from LOFAR, DRAO, and GALFACTS. | |
| ◦ Featured as SURP Student Spotlight - July 2021  | |
| ◦ Continued afterwards as Research Assistant | |

Teaching and Work Experience

- | | |
|---|----------------|
| Portable Planetarium Manager
<i>W. J. McCallion Planetarium - McMaster University</i> | 2024 - Present |
| ◦ Coordinated a team of presenters, and regularly maintained and managed the portable planetarium that is designed to reach under-served communities. | |
| Planetarium Presenter
<i>W. J. McCallion Planetarium - McMaster University</i> | 2022 - Present |
| ◦ Presented educational shows on topics in astronomy to wide range of audiences. | |
| Teaching Assistant
<i>McMaster University</i> | 2022 - Present |
| ◦ Head TA for PHYS1A03 | |
| ◦ TA for ASTRON2B03, DATA2NM3, PHYS1A03 | |
| <i>University of Toronto Mississauga</i> | 2021 |
| ◦ AST101 and AST201 | |

Publications

Contributing Author

Turner, D., et al., *The mass of the exo-Venus Gliese 12 b, as revealed by HARPS-N, ESPRESSO, and CARMENES*, 2025, MNRAS ([Submitted](#)) [🔗](#)

Weisserman, D., **Gromek, N.**, et al., *Super-Earth Masses and Stellar Abundances from NIRPS Reveal Tentative Evidence for Water-Rich Formation around M Dwarfs*, 2025, A&A (In Prep.)

Osborn, A., et al., *Confirmation of the hot super-Neptune TOI-672 b with NIRPS and insights into the Neptunian desert around M dwarfs*, 2025, A&A (In Prep.)

Srivastava, A., et al., *TOI-4552 b: An exceptionally dense ultra-short period rocky world revealed by NIRPS and TESS*, 2025, A&A (In Prep.)

Additional Publications with Co-Authorship

Gomes da Silva, J., et al., *Blind search for activity-sensitive lines in the near-infrared using HARPS and NIRPS observations of Proxima and Gl 581*, 2025, A&A ([Published](#)) [🔗](#)

Vaulato, V., et al., *Atmospheric composition and circulation of the ultra-hot Jupiter WASP-121b with joint NIRPS, HARPS and CRIRES+ transit spectroscopy*, 2025, A&A ([Accepted](#)) [🔗](#)

Srivastava, A., et al., *Night sky emission correction techniques for high-resolution spectroscopy: a demonstration with NIRPS*, 2025, A&A (Submitted)

Parc, L., et al., *NIRPS and TESS reveal a peculiar system around the M dwarf TOI-756: a transiting sub-Neptune and a cold eccentric giant*, 2025, A&A (Submitted)

Lamontagne, P., et al., *NIRPS Tightens the Mass Estimate of GJ 3090 b and Detects a Planet Near the Stellar Rotation Period*, 2025, A&A (Submitted)

Volunteer Positions

Social Media Manager

2022 - Present

Promoting Inclusivity in Physics & Astronomy (PIPA)

- Managed the social media accounts and promoted events for PIPA, helping to ensure a supportive and diverse environment within the department.

Physics and Astronomy Representative

2023 - Present

Science Graduate Student Association (SciGSA)

- Organized events, held regular meetings and advertised the services of the SciGSA on behalf of the graduate students in the Physics and Astronomy department.

President

2019 - 2020

Erindale Physical and Chemical Sciences Society (ECPS)

- Led and managed an executive team to develop and run networking events, workshops, and services providing academic support to undergraduate students.

Physics Member-at-Large

2018 - 2019

Erindale Physical and Chemical Sciences Society (ECPS)

- Aided in designing, advertising, and setting up events, provided feedback from the student membership to the society, as well as other miscellaneous responsibilities.

Scholarships and Awards

Dr. Ron and Helene Goodman Physics Travel Award

2025

Amount: \$1,379

Physics & Astronomy Graduate Support Award

2025

Amount: \$468


McMaster University Entrance Scholarship

2022

Amount: \$6,000

University of Toronto Summer Undergraduate Research Award <i>Amount: \$9,595</i>	2021
Western University Summer Exploration Internship Award (Declined) <i>Amount: \$7,500</i>	2021
University of Toronto Scholar Award <i>Amount: \$7,500</i>	2017
University of Toronto Mississauga Entrance Scholarship <i>Amount: \$3,000</i>	2017

Presentations

NIRPS Online Meeting <i>NIRPS Consortium</i>	2025 Montreal, QC
From Stars to Life <i>McMaster University</i>	2025 Hamilton, ON
Emerging Researchers in Exoplanet Science (ERES) IX <i>Cornell University</i>	2024 Ithaca, NY
Graduate Research Symposium <i>McMaster University</i>	2023 Hamilton, ON
Physics and Astronomy Symposium Day <i>McMaster University</i> ◦ Won Best Presentation 	2023 Hamilton, ON

Conferences and Workshops

Emerging Researchers in Exoplanet Science (ERES) X <i>Princeton University</i> ◦ Poster Presentation	2025
Know Thy Star, Know Thy Planet 2 <i>California Institute of Technology</i> ◦ Poster Presentation	2025
Canadian Astronomical Society (CASCA) Annual General Meeting <i>Virtual / University of British Columbia / University of Toronto / St. Mary's University</i> ◦ Poster Presentations in 2023, 2024 & 2025 ◦ Won Best Poster in 2025	2022, 2023, 2024 & 2025
Canadian Conference for Undergraduate Women in Physics (CCUWiP) <i>University of Toronto / Virtual / McGill University</i> ◦ Represented McMaster University at Grad Fair in 2024	2020, 2021 & 2024
AstroEDU: Bridging Research & Practice <i>University of Toronto</i>	2023
CITA Planet Day <i>University of Toronto</i>	2021, 2022 & 2023
Great Lakes Exoplanet Area Meeting (GLEAM) <i>Ohio State University</i> ◦ Presented a Flash Talk	2022
Sagan Exoplanet Summer Hybrid Workshop <i>Virtual / California Institute of Technology</i>	2022
First Science Results from JWST <i>Virtual / Space Telescope Science Institute (STScI)</i>	2022

Science Communication Bootcamp
University of Toronto

Stellar Stats Workshop
University of Toronto

2022

2021 & 2022

Volunteering and Outreach

Sidewalk Astronomy	2022 - Present
Physics BOOM	2025
May @ Mac	2025
Soapbox Science	2024
Coding the Cosmos	2024
Eclipse Ambassador	2024
Elevate: A Day for Inclusion in Science	2023, 2024 & 2025
Doors Open Toronto	2022 & 2023
Science Rendezvous	2022 & 2023
AstroTours at U of T	2021 - 2023
Girls in STEM Workshop	2022
Graduate Student Panelist for McMaster Undergraduate Physics Society	2022
Science Unlimited Summer Camp Volunteer	2022
U of T Talks: Interstellar Health	2022
Undergraduate Panelist for Youth and Astronomy	2022
Pursue STEM	2022
Dunlap Institute Virtual Summer School for Instrumentation Facilitator	2022
Let's Talk Astrophysics	2021
UTM Open House - Physics Volunteer	2019

Mentorships

McMaster Physics and Astronomy Graduate Mentorship ◦ Jinoo Kim	2023 - 2024
McMaster Undergraduate Physics Society Mentorship Program ◦ Ryan Primdahl	2022 - 2023
Erindale Chemical and Physical Sciences Society Mentorship ◦ Zara Zaman	2018 - 2019

Skills

Languages: English, Polish, French, Spanish

Technologies: Python, \LaTeX , Microsoft Office, R