

Dr. Ryan Chown

Assistant Professor

Faculty of Computer Science and Technology, Algoma University
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<https://rchwn.github.io>

INTERESTS AND EXPERTISE

The interstellar medium and star formation in galaxies. Application of mathematical and computational techniques to astronomical research and large datasets. Infrared and radio observations with JWST, ALMA and the VLA. Dedicated to undergraduate education, and connecting abstract concepts to real-world applications through research mentorship.

EDUCATION

McMaster University

Ph.D. Astronomy

Hamilton, ON

08/2021

Thesis: *Multi-wavelength studies of the interstellar medium and star formation in nearby galaxies*

Advisors: Prof. Christine D. Wilson and Prof. Laura Parker

Finalist, J. S. Plaskett Medal for Most Outstanding PhD Thesis, Canada

McGill University

M.Sc. Physics

Montreal, QC

05/2015 - 05/2017

Thesis: *Mapping the Millimeter-wave Sky with Combined South Pole Telescope and Planck Data*

Advisor: Prof. Gil Holder

McGill University

B.Sc. Physics, with a Minor in Computer Science

Montreal, QC

09/2012 - 04/2015

ACADEMIC POSITIONS

Algoma University

Assistant Professor (Tenure-Track)

Sault Ste. Marie, ON

9/2025-

The Ohio State University

Postdoctoral Scholar

Columbus, OH

10/2023-9/2025

The University of Western Ontario

Postdoctoral Scholar

London, ON

10/2021-09/2023

TEACHING EXPERIENCE

PHYS 1006 Instructor

Introductory Physics I

Algoma

2025

PHYS 1AA3 Teaching Assistant

Introduction to Modern Physics

McMaster

2020

PHYS 1A03 Teaching Assistant

Introductory Physics

McMaster

2018, 2019, 2020

PHYS 1E03 Teaching Assistant

Waves, Electricity, and Magnetic Fields

McMaster

2018

ASTRO 1F03 Teaching Assistant

McMaster

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| <i>Astronomy and Astrophysics</i> | 2017, 2021 |
| ASTRO 2C03 Teaching Assistant | McMaster |
| <i>Big Questions</i> | 2017, 2021 |
| PHYS 183 Teaching Assistant | McGill |
| <i>The Milky Way and Beyond</i> | 2016 and 2017 |
| PHYS 230 Teaching Assistant | McGill |
| <i>Dynamics of Simple Systems</i> | 2015 and 2016 |

RESEARCH SUPERVISION EXPERIENCE

NOTES: * indicates that I was the primary (informal) supervisor

† = student held a MITACS Globalink Research Award

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| 5. *†Rajarshi Choudhury, <i>Indian Inst. of Sci. Ed. and Research Bhopal (undergraduate)</i> | 2023 |
| 4. †Arnab Chowhan, <i>Centre for Excellence in Basic Sciences, Mumbai (undergraduate)</i> | 2023 |
| 3. *†Raphaela Kestler, <i>Durham University (undergraduate)</i> | 2022 |
| 2. *†Holly Raynor, <i>Durham University (undergraduate)</i> | 2022 |
| 1. *Khaleda Ramzi, <i>Western University Work-Study Program (undergraduate)</i> | 2022 |

PROFESSIONAL DEVELOPMENT

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| Western Certificate for University Teaching and Learning | January 2024 |
| - An intensive five-component program designed “to enhance the quality of teaching by graduate students and postdoctoral scholars, and to prepare them for a future faculty or professional career” | |
| - https://teaching.uwo.ca/programs/certificates/cutl.html | |

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| “What makes a great postdoc mentor” – Workshop at UWO (attendee) | January 2022 |
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PUBLICATIONS

Overall summary: 85 peer-reviewed papers; 2077 citations; h-index=29

A. ≤ 3rd author papers

Summary: 11 papers, 341 citations as of December, 2025.

11. Sutter, J., Sandstrom, K., **Chown, R.**, et al., *Characterization of Two Cool Galaxy Outflow Candidates Using Mid-infrared Emission from Polycyclic Aromatic Hydrocarbons*. ApJL 992 (2025): L7
10. **Chown, R.**, et al., *Relationships between Polycyclic Aromatic Hydrocarbons, Small Dust Grains, H₂, and H I in Local Group Dwarf Galaxies NGC 6822 and WLM Using JWST, ALMA, and the VLA*. ApJ 987 (2025): 91
9. **Chown, R.**, et al., *PDRs4All: XIII. Empirical prescriptions for the interpretation of JWST imaging observations of star-forming regions*. A&A 698 (2025): A86
8. **Chown, R.**, et al., *Polycyclic Aromatic Hydrocarbon and CO(2–1) Emission at 50–150 pc Scales in 70 Nearby Galaxies*. ApJ 983 (2025): 64
7. **Chown, R.**, et al., *PDRs4All. IV. An embarrassment of riches: Aromatic infrared bands in the Orion Bar*. A&A 685 (2024): A75
6. **Chown, R.**, et al., *The cold gas and dust properties of red star-forming galaxies*. MNRAS 516 (2022): 84-99

5. **Chown, R., et al.**, *A new estimator of resolved molecular gas in nearby galaxies*. MNRAS 500 (2021): 1261-1278
4. **Chown, R., et al.**, *Linking bar- and interaction-driven molecular gas concentration with centrally enhanced star formation in EDGE-CALIFA galaxies*. MNRAS 484 (2019): 5192-5211
3. **Chown, R., et al.**, *Maps of the Southern Millimeter-wave Sky from Combined 2500 deg² SPT-SZ and Planck Temperature Data*. ApJS 239 (2018): 10
2. Omori, Y., **Chown, R., et al.**, *A 2500 deg² CMB Lensing Map from Combined South Pole Telescope and Planck Data*. ApJ 849 (2017): 124
1. Crawford, T., **Chown, R., et al.**, *Maps of the Magellanic Clouds from Combined South Pole Telescope and PLANCK Data*. ApJS 227 (2016): 23

B. Other papers with significant contributions during or after PhD

Summary: 57 papers, 931 citations as of December, 2025.

57. Tarantino, E., et al., *JWST Captures Growth of Aromatic Hydrocarbon Dust Particles in the Extremely Metal-poor Galaxy Sextans A*. arXiv e-prints (2025): arXiv:2512.04060
56. Sun, J., et al., *Resolved Profiles of Stellar Mass, Star Formation Rate, and Predicted CO-to-H₂ Conversion Factor Across Thousands of Local Galaxies*. ApJ 994 (2025): 263
55. Graham, G., et al., *PAH Marks the Spot: Digging for Buried Clusters in Nearby Star-forming Galaxies*. AJ 170 (2025): 340
54. Kim, J., et al., *Localized Deviations from the CO-PAH Relation in PHANGS-JWST Galaxies: Faint PAH Emission or Elevated CO Emissivity?*. arXiv e-prints (2025): arXiv:2511.14833
53. Bazzi, Z., et al., *PHANGS-JWST: the largest extragalactic molecular cloud catalog traced by polycyclic aromatic hydrocarbon emission*. arXiv e-prints (2025): arXiv:2511.06596
52. Pathak, D., et al., *Masses, Star Formation Efficiencies, and Dynamical Evolution of 18,000 H II Regions*. ApJL 993 (2025): L20
51. Oakes, E., et al., *The Hierarchical Dynamical State of Molecular Gas from 3 to 300 pc in NGC 253*. ApJ 993 (2025): 193
50. Egorov, O., et al., *Polycyclic aromatic hydrocarbon destruction in star-forming regions across 42 nearby galaxies*. A&A 703 (2025): A103
49. McClain, R., et al., *Resolved HII regions in NGC 253: Ionized gas structure and suggestions of a universal density-surface brightness relation*. arXiv e-prints (2025): arXiv:2510.25872
48. Zannese, M., et al., *PDRs4All XVII: Formation and excitation of HD in photodissociation regions. Application to the Orion Bar*. arXiv e-prints (2025): arXiv:2510.11248
47. Khan, B., et al., *PDRs4All XIX. The 6 to 9 m region as a probe of PAH charge and size in the Orion Bar*. arXiv e-prints (2025): arXiv:2510.06167
46. Lopez, S., et al., *JWST Observations of Starbursts: PAHs Closely Trace the Cool Phase of M82's Galactic Wind*. arXiv e-prints (2025): arXiv:2510.01314
45. Hassani, H., et al., *The Hidden Life of Stars: Embedded Beginnings to AGB Endings in the PHANGS-JWST Sample. I. Catalog of Mid-IR Sources*. arXiv e-prints (2025): arXiv:2509.16459

44. Koch, E., *et al.*, *The Karl G. Jansky Very Large Array Local Group L-Band Survey (LGLBS)*. ApJS 279 (2025): 35
43. Sarbadhicary, S., *et al.*, *A First Look at Spatially Resolved Infrared Supernova Remnants in M33 with JWST*. ApJ 989 (2025): 138
42. Kim, J., *et al.*, *Timescales of Polycyclic Aromatic Hydrocarbon and Dust Continuum Emission from Gas Clouds Compared to Molecular Gas Cloud Lifetimes in PHANGS-JWST Galaxies*. ApJ 988 (2025): 215
41. Ramambason, L., *et al.*, *Duration and properties of the embedded phase of star formation in 37 nearby galaxies from PHANGS-JWST*. arXiv e-prints (2025): arXiv:2507.01508
40. Khan, B., *et al.*, *PDRs4All: XIV. Probing CH out-of-plane bending modes of PAH molecules in the Orion Bar with JWST*. A&A 699 (2025): A133
39. Elmegreen, B., *et al.*, *An Investigation of Disk Thickness in M51 from H α , Pa α , and Mid-infrared Power Spectra*. ApJ 986 (2025): 13
38. Leroy, A., *et al.*, *Cloud-scale Gas Properties, Depletion Times, and Star Formation Efficiency per Freefall Time in PHANGS–ALMA*. ApJ 985 (2025): 14
37. Draine, B., *et al.*, *Detection of Deuterated Hydrocarbon Nanoparticles in the Whirlpool Galaxy, M51*. ApJL 984 (2025): L42
36. Williams, T., *et al.*, *The resolved star-formation efficiency of early-type galaxies*. MNRAS 538 (2025): 3219-3246
35. Pathak, D., *et al.*, *Linking Stellar Populations to H II Regions across Nearby Galaxies. II. Infrared Reprocessed and UV Direct Radiation Pressure in H II Regions*. ApJ 982 (2025): 140
34. Goicoechea, J., *et al.*, *PDRs4All: XII. Far-ultraviolet-driven formation of simple hydrocarbon radicals and their relation with polycyclic aromatic hydrocarbons*. A&A 696 (2025): A100
33. Zannese, M., *et al.*, *PDRs4All: XI. Detection of infrared CH $^+$ and CH $_3^+$ rovibrational emission in the Orion Bar and disk d203-506: Evidence of chemical pumping*. A&A 696 (2025): A99
32. Whitmore, B., *et al.*, *Empirical SED Templates for Star Clusters Observed with HST and JWST: No Strong PAH or IR Dust Emission after 5 Myr*. ApJ 982 (2025): 50
31. Dale, D., *et al.*, *PAH Feature Ratios around Stellar Clusters and Associations in 19 Nearby Galaxies*. AJ 169 (2025): 133
30. Chastenet, J., *et al.*, *The Resolved Behavior of Dust Mass, Polycyclic Aromatic Hydrocarbon Fraction, and Radiation Field in \sim 800 Nearby Galaxies*. ApJS 276 (2025): 2
29. Pingel, N., *et al.*, *The Local Group L-band Survey: The First Measurements of Localized Cold Neutral Medium Properties in the Low-metallicity Dwarf Galaxy NGC 6822*. ApJ 974 (2024): 93
28. Goicoechea, J., *et al.*, *PDRs4All: X. ALMA and JWST detection of neutral carbon in the externally irradiated disk d203-506: Undepleted gas-phase carbon*. A&A 689 (2024): L4
27. Sutter, J., *et al.*, *The Fraction of Dust Mass in the Form of Polycyclic Aromatic Hydrocarbons on 10–50 pc Scales in Nearby Galaxies*. ApJ 971 (2024): 178
26. Williams, T., *et al.*, *PHANGS-JWST: Data-processing Pipeline and First Full Public Data Release*. ApJS 273 (2024): 13

25. Mayker Chen, N., et al., *H α Emission and H II Regions at the Locations of Recent Supernovae in Nearby Galaxies*. AJ 168 (2024): 5
24. Fuente, A., et al., *PDRs4All. IX. Sulfur elemental abundance in the Orion Bar*. A&A 687 (2024): A87
23. Van De Putte, D., et al., *PDRs4All. VIII. Mid-infrared emission line inventory of the Orion Bar*. A&A 687 (2024): A86
22. Zannese, M., et al., *OH as a probe of the warm-water cycle in planet-forming disks*. Nature Astronomy 8 (2024): 577-586
21. Schroetter, I., et al., *PDRs4All. VII. The 3.3 μ m aromatic infrared band as a tracer of physical properties of the interstellar medium in galaxies*. A&A 685 (2024): A78
20. Pasquini, S., et al., *PDRs4All. VI. Probing the photochemical evolution of PAHs in the Orion Bar using machine learning techniques*. A&A 685 (2024): A77
19. Elyajouri, M., et al., *PDRs4All. V. Modelling the dust evolution across the illuminated edge of the Orion Bar*. A&A 685 (2024): A76
18. Peeters, E., et al., *PDRs4All: III. JWST's NIR spectroscopic view of the Orion Bar*. A&A 685 (2024): A74
17. Habart, E., et al., *PDRs4All. II. JWST's NIR and MIR imaging view of the Orion Nebula*. A&A 685 (2024): A73
16. Berné, O., et al., *A far-ultraviolet–driven photoevaporation flow observed in a protoplanetary disk*. Science 383 (2024): 988-992
15. Teng, Y., et al., *Star Formation Efficiency in Nearby Galaxies Revealed with a New CO-to-H₂ Conversion Factor Prescription*. ApJ 961 (2024): 42
14. Pathak, D., et al., *A Two-Component Probability Distribution Function Describes the Mid-IR Emission from the Disks of Star-forming Galaxies*. AJ 167 (2024): 39
13. Changala, P., et al., *Astronomical CH₃⁺ rovibrational assignments. A combined theoretical and experimental study validating observational findings in the d203-506 UV-irradiated protoplanetary disk*. A&A 680 (2023): A19
12. Berné, O., et al., *Formation of the methyl cation by photochemistry in a protoplanetary disk*. Nature 621 (2023): 56-59
11. Roberts, I., et al., *VERTICO. VI. Cold-gas asymmetries in Virgo cluster galaxies*. A&A 675 (2023): A78
10. Jiménez-Donaire, M., et al., *VERTICO. III. The Kennicutt-Schmidt relation in Virgo cluster galaxies*. A&A 671 (2023): A3
9. Leroy, A., et al., *PHANGS-JWST First Results: A Global and Moderately Resolved View of Mid-infrared and CO Line Emission from Galaxies at the Start of the JWST Era*. ApJL 944 (2023): L10
8. Leroy, A., et al., *PHANGS-JWST First Results: Mid-infrared Emission Traces Both Gas Column Density and Heating at 100 pc Scales*. ApJL 944 (2023): L9
7. **Chown, R.**, et al., *Correction to: The cold gas and dust properties of red star-forming galaxies*. MNRAS 518 (2023): 4536-4536

6. Zabel, N., et al., *Erratum: “VERTICO II: How H I-identified Environmental Mechanisms Affect the Molecular Gas in Cluster Galaxies”* (2022, *ApJ*, 933, 10). *ApJ* 942 (2023): 56
5. Gao, Y., et al., *The Correlation between WISE 12 μm Emission and Molecular Gas Tracers on Subkiloparsec Scales in Nearby Star-forming Galaxies*. *ApJ* 940 (2022): 133
4. Zabel, N., et al., *VERTICO II: How H I-identified Environmental Mechanisms Affect the Molecular Gas in Cluster Galaxies*. *ApJ* 933 (2022): 10
3. Berné, O., et al., *PDRs4All: A JWST Early Release Science Program on Radiative Feedback from Massive Stars*. *PASP* 134 (2022): 054301
2. Brown, T., et al., *VERTICO: The Virgo Environment Traced in CO Survey*. *ApJS* 257 (2021): 21
1. Brown, T., et al., *VERTICO: Virgo Environment Traced In CO*. (2020): 13

C. Other papers with significant contributions prior to PhD

Summary: 17 papers, 805 citations as of December, 2025.

17. Sánchez, J., et al., *Mapping gas around massive galaxies: cross-correlation of DES Y3 galaxies and Compton-y maps from SPT and Planck*. *MNRAS* 522 (2023): 3163-3182
16. Omori, Y., et al., *Joint analysis of Dark Energy Survey Year 3 data and CMB lensing from SPT and Planck. I. Construction of CMB lensing maps and modeling choices*. *Phys. Rev. D* 107 (2023): 023529
15. Abbott, T., et al., *Joint analysis of Dark Energy Survey Year 3 data and CMB lensing from SPT and Planck. III. Combined cosmological constraints*. *Phys. Rev. D* 107 (2023): 023531
14. Chang, C., et al., *Joint analysis of Dark Energy Survey Year 3 data and CMB lensing from SPT and Planck. II. Cross-correlation measurements and cosmological constraints*. *Phys. Rev. D* 107 (2023): 023530
13. Anbajagane, D., et al., *Shocks in the stacked Sunyaev-Zel'dovich profiles of clusters II: Measurements from SPT-SZ + Planck Compton-y map*. *MNRAS* 514 (2022): 1645-1663
12. Salvati, L., et al., *Combining Planck and SPT Cluster Catalogs: Cosmological Analysis and Impact on the Planck Scaling Relation Calibration*. *ApJ* 934 (2022): 129
11. Bleem, L., et al., *CMB/kSZ and Compton-y Maps from 2500 deg² of SPT-SZ and Planck Survey Data*. *ApJS* 258 (2022): 36
10. Omori, Y., et al., *Dark Energy Survey Year 1 Results: Cross-correlation between Dark Energy Survey Y1 galaxy weak lensing and South Pole Telescope+Planck CMB weak lensing*. *Phys. Rev. D* 100 (2019): 043517
9. Omori, Y., et al., *Dark Energy Survey Year 1 Results: Tomographic cross-correlations between Dark Energy Survey galaxies and CMB lensing from South Pole Telescope +Planck*. *Phys. Rev. D* 100 (2019): 043501
8. Prat, J., et al., *Cosmological lensing ratios with DES Y1, SPT, and Planck*. *MNRAS* 487 (2019): 1363-1379
7. Mocanu, L., et al., *Consistency of cosmic microwave background temperature measurements in three frequency bands in the 2500-square-degree SPT-SZ survey*. *JCAP* 2019 (2019): 038
6. Abbott, T., et al., *Dark Energy Survey year 1 results: Joint analysis of galaxy clustering, galaxy lensing, and CMB lensing two-point functions*. *Phys. Rev. D* 100 (2019): 023541

5. Simard, G., et al., *Constraints on Cosmological Parameters from the Angular Power Spectrum of a Combined 2500 deg² SPT-SZ and Planck Gravitational Lensing Map.* ApJ 860 (2018): 137
4. Hou, Z., et al., *A Comparison of Maps and Power Spectra Determined from South Pole Telescope and Planck Data.* ApJ 853 (2018): 3
3. Aylor, K., et al., *A Comparison of Cosmological Parameters Determined from CMB Temperature Power Spectra from the South Pole Telescope and the Planck Satellite.* ApJ 850 (2017): 101
2. Baxter, E., et al., *Joint measurement of lensing-galaxy correlations using SPT and DES SV data.* MNRAS 461 (2016): 4099-4114
1. Soergel, B., et al., *Detection of the kinematic Sunyaev-Zel'dovich effect with DES Year 1 and SPT.* MNRAS 461 (2016): 3172-3193

D. Abstracts in proceedings

4. **R. Chown**, et al. “Polycyclic Aromatic Hydrocarbon and CO (2-1) Emission at 50-150 pc Scales in 70 Nearby Galaxies.” AstroPAH Newsletter, 117 (April 2025).
3. **R. Chown**, et al. “PDRs4All IV. An embarrassment of riches: the Aromatic Infrared Bands in the Orion Bar.” AstroPAH Newsletter, 104 (December 2023).
2. **R. Chown**, et al. “The Relationship Between Mid-infrared and CO Emission at kpc Scales in Nearby Galaxies.” Bulletin of the American Astronomical Society, Vol. 53, No. 6 (2021).
1. T. Brown, et al. (incl. **R. Chown**) “VERTICO: Virgo Environment Traced In CO.” Scientific Meeting of the Spanish Astronomical Society, 13-15 July 2020.

PUBLIC TALKS

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| 5. Public Astro Night, Queen's University Public talk on star formation and galaxies with JWST | Kingston, ON 8 June 2024 |
| 4. Amica Retirement Home “Are We Alone?” – a talk about searching for life in the Universe with JWST | London, ON June 2023 |
| 3. Parkwood Institute “Are We Alone?” – a talk about searching for life in the Universe with JWST | London, ON January 2023 |
| 2. JWebbinar 23: PDRs4All Community Telecon Gave a public talk on status of JWST observations from PDRs4All | December 2022 |
| 1. Astronomy on Tap “Patterns in the Cosmic Microwave Background” | Montreal, QC May 2017 |

OUTREACH

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| STEAM Factory, Ohio State University Gave a talk on “stellar birth” | Columbus, OH 2024 |
| McMaster Undergraduate Physics Society Organized and gave a seminar on Python for undergraduates in physics at McMaster | Hamilton, ON 2021 |
| Astro McGill Helped facilitate public Astro Nights | McGill University 2016-2017 |

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| Physics Matters | McGill University |
| Helped organize this series of public talks on physics | 2016-2017 |
| Eureka! Science Festival | Montreal, QC |
| Instructed physics experiments for elementary school students | 2015 |

INVITED SEMINARS

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| 9. Astro Tea talk, Indiana University, Bloomington | 01/2025 |
| 8. PHANGS Colloquium | 02/2024 |
| 7. Astronomy Journal Club, Waterloo Center for Astrophysics | 10/2024 |
| 6. Astronomy Seminar, Queen's University Department of Physics & Astronomy | 06/2024 |
| 5. Astronomy Journal Club, McMaster University | 11/2023 |
| 4. CANadian Virtual Astronomy Seminar (CANVAS) | 03/2023 |
| 3. Ringberg Seminar Series, MPIA, Germany | 05/2021 |
| 2. Extragalactic Database for Galaxy Evolution Meeting, University of Maryland | 05/2021 |
| 1. Shanghai Astronomical Observatory, Shanghai, China | 08/2018 |

CONTRIBUTED TALKS

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| <i>Star Formation, Stellar Feedback, and the Ecology of Galaxies</i> , Visegrad, Hungary | 05/2025 |
| <i>PHANGS Collaboration Meeting</i> , Nice, France | 02/2025 |
| <i>The Physics and Impact of Astrophysical Dust: Star Formation to Cosmology</i> , Aspen, CO | 03/2024 |
| <i>PHANGS Collaboration Meeting</i> , Garching, Germany | 02/2024 |
| <i>Illuminating the Dusty Universe: A Tribute to the Work of Bruce Draine</i> , Florence, Italy | 10/2023 |
| <i>Symposium on the Life Cycle of Cosmic PAHs</i> , Aarhus University, Denmark | 09/2022 |
| <i>KIAA Forum on Gas in Galaxies for Early Career Scientists</i> , Peking University, Beijing | 11/2021 |
| <i>238th AAS Meeting – Dissertation Talk</i> | 7/2021 |
| <i>Exploring Gas in and Around Galaxies</i> meeting, Tsinghua University, Beijing | 7/2018 |
| <i>KIAA Forum on Gas in Galaxies</i> , Peking University, Beijing | 6/2018 |
| <i>SDSS Chinese MaNGA Meeting</i> , University of Chinese Academy of Sciences, Beijing | 6/2018 |
| <i>South Pole Telescope Collaboration Conference</i> , University of Chicago, IL | 7/2017 |
| <i>The Centre for Research in Astrophysics of Quebec (CRAQ) Annual Meeting</i> , Montreal, QC | 5/2017 |
| <i>South Pole Telescope Collaboration Conference</i> , University of Chicago, IL | 8/2016 |
| <i>South Pole Telescope Collaboration Conference</i> , University of Chicago, IL | 7/2015 |

CONFERENCE POSTERS

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| <i>First Science Results from JWST</i> , STScI, Baltimore | 9/2023 |
| <i>Canadian Astronomical Society Annual Conference</i> , York University, Toronto, ON | 5/2020 |
| <i>Views on the ISM in galaxies in the ALMA era</i> , University of Bologna, Italy | 9/2019 |
| <i>Canadian Astronomical Society Annual Conference</i> , McGill University, Montreal, QC | 6/2019 |

APPROVED OBSERVING PROPOSALS

As P.I.:

4. ALMA Cycle 11 (2024.1.01179.S, B-ranked) – “A Complete View of Low Metallicity Star Forming Complexes in the Local Group Dwarf NGC 6822.”
3. JCMT 21A – “Measuring global CO(2-1) to supplement interferometric observations from the EDGE survey.”
2. JCMT 18B – “Observing red star-forming galaxies from xCOLD GASS with SCUBA-2.”
1. JCMT 18A – “Extending the JINGLE RxA Samples to Include ‘Red Misfit’ Galaxies.”

As Co-I.:

14. JWST Cycle 4: “Exploring the Last Watering Hole of Low Metallicity PAH Emission: Deep Spectroscopic Observations of Sextans A.” PI: L. Tarantino.
13. JWST Cycle 4: “Resolving the thin disk of a nearby Milky Way analog.” PI: A. Leroy.
12. ALMA Cycle 11: “Linking Molecular Cloud Structure to Massive Star Formation: 5000 molecular clouds, filaments, and bubbles across M33.” PI: E. Koch.
11. ALMA Cycle 11: “Completing the Virgo High-resolution CO 2-1 Survey: Dissecting Galaxy Quenching with Molecular Cloud Scale Micro-physics”. PI: J. Sun.
10. ALMA Cycle 11: “The Last Refuge of CO and PAH Emission in the Most Metal Poor Galaxies.” PI E. Tarantino.
9. HST Cycle 32: “Decoding stellar feedback in action with an HST+MUSE+JWST full-disk survey of starburst galaxy prototype NGC 253.” PI D. Thilker.
8. HST Cycle 32: “Bringing HST to the VLA: The Interaction of Stars and Gas in the Local Group.” PI J. Dalcanton.
7. ALMA Cycle 10: “Virgo High-resolution CO(2-1) Survey: Dissecting Galaxy Quenching with Molecular Cloud Scale ‘Micro-physics’”. PI: J. Sun.
6. JWST Cycle 3: “A Systematic Study of the 3.3 - 3.5 μm PAH Features at $z = 0$ with Archival NIRSpec Observations.” PI K. Sandstrom.
5. ALMA Cycle 9 – “The chemical richness of the Orion Bar and its role as a lab of CH₃CN chemistry in disk-evolved systems.” P.I. F. Alarcón.
4. ALMA Cycle 7 (Large Program) – “The Virgo Environment Traced in CO survey (VERTICO).” P.I. T. Brown.
3. ALMA Cycle 7 – “Mapping CO emission in galaxies from the JINGLE survey.” P.I. C.D. Wilson.
2. JCMT 20A (Large Program) – “JINGLE at the edge: the ISM of starbursts and green valley galaxies.” P.I. L.-H. Lin.
1. JCMT 19B – “Observing CO(2-1) in Red Star-forming Galaxies.” P.I. L.-H. Lin.

COLLABORATIONS

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| 6. The Physics at High Angular Resolution in Nearby GalaxieS (PHANGS) Collaboration http://www.phangs.org | 10/2023– |
| 5. The Local Group L-Band Survey Collaboration https://www.lglbs.org | 10/2023– |
| 4. PDRs4All: Radiative Feedback from Massive Stars as Traced by Multiband Imaging and Spectroscopic Mosaics – A JWST Early Release Science (ERS) Program https://pdrs4all.org | 10/2021– |
| 3. The Virgo Environment Traced in CO survey (VERTICO; an ALMA Large Program) https://sites.google.com/view/verticosurvey/home | 2019–2022 |
| 2. The JCMT Dust & Gas in Nearby Galaxies Legacy Survey (JINGLE) https://www.eaoobservatory.org/jcmt/science/large-programs/jingle/ | 2017–2021 |
| 1. The South Pole Telescope Collaboration https://pole.uchicago.edu/public/Home.html | 2013–2017 |

AWARDS

- | | |
|--|---------------|
| Visiting Scholar, Tsinghua University, Beijing, China | 2019 |
| Mitacs Globalink Research Award | 2018 |
| McMaster Graduate Fellowship | 2018 |
| McGill University Graduate Excellence Award in Physics | 2015 and 2016 |
| Carl Reinhardt Fellowship | 2015 |
| McGill and Novelis Global Technologies Summer Research Award | 2014 |
| McGill Summer Research Award | 2013 and 2015 |