

# Ryan Chown

Postdoctoral Associate

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## EDUCATION

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### McMaster University

Hamilton, ON

Ph.D. Astronomy

08/2021

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

**Supervisors:** Prof. Christine D. Wilson and Prof. Laura Parker

### McGill University

Montreal, QC

M.Sc. Physics

05/2015 - 05/2017

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

**Supervisor:** Prof. Gil Holder

### McGill University

Montreal, QC

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

09/2012 - 04/2015

## ACADEMIC POSITIONS

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### The University of Western Ontario

London, ON

Postdoctoral Associate

10/2021-present

## AWARDS

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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

## COLLABORATIONS

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Radiative Feedback from Massive Stars as Traced by Multiband Imaging  
and Spectroscopic Mosaics – A JWST Early Release Science Program

10/2021-

The Virgo Environment Traced in CO survey (VERTICO; an ALMA large program)

2019-

The JCMT Dust & Gas in Nearby Galaxies Legacy Survey (JINGLE)

2017-

The South Pole Telescope Collaboration

2013-2017

## TEACHING EXPERIENCE

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PHYS 1AA3 Teaching Assistant	McMaster
<i>Introduction to Modern Physics</i>	2020
PHYS 1A03 Teaching Assistant	McMaster
<i>Introductory Physics</i>	2018, 2019, 2020
PHYS 1E03 Teaching Assistant	McMaster
<i>Waves, Electricity, and Magnetic Fields</i>	2018
ASTRO 1F03 Teaching Assistant	McMaster
<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

## PROFESSIONAL EMPLOYMENT

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Beta tester for the ARCADE tool for working with ALMA data	Fall 2020
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## OUTREACH

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McMaster Undergraduate Physics Society	Hamilton, ON
Organized and gave a seminar on Python for undergraduates in physics at McMaster.	2021
Astro McGill	McGill University
Astronomy on Tap Montreal	Montreal, QC
Gave a talk on “Patterns in the Cosmic Microwave Background.”	2017
Astro McGill	McGill University
Volunteered at public Astro Nights.	2016-2017
Physics Matters	McGill University
I created the website for this program to advertise public physics talks being given.	2016-2017
Eureka! Science Festival	Montreal, QC
Instructed young kids with a laser maze activity.	2015

## INVITED SEMINARS

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1. “Resolved Studies of the ISM and Star Formation with EDGE-CALIFA,” Ringberg Seminar Series, 25 May 2021.
2. “Resolved Studies of the ISM and Star Formation with EDGE-CALIFA,” EDGE Team Meeting (remotely), University of Maryland, USA, 5 May 2021.
3. “The link between molecular gas concentration, central star formation and bars in EDGE-CALIFA galaxies,” Shanghai Astronomical Observatory, Shanghai, China, August 2018.

## CONTRIBUTED TALKS

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<i>238th AAS Meeting – Dissertation Talk</i> , online	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>Canadian Astronomical Society Annual Conference</i> , York University, Toronto, ON (online)	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

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### As P.I.:

1. 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.”
3. JCMT 18A – “Extending the JINGLE RxA Samples to Include ‘Red Misfit’ Galaxies.”

### As Co-I.:

1. ALMA Cycle 7 (Large Program) – “The Virgo Environment Traced in CO survey (VERTICO).” P.I. T. Brown.
2. ALMA Cycle 7 – “Mapping CO emission in galaxies from the JINGLE survey.” P.I. C.D. Wilson.
3. JCMT 20A (Large Program) – “JINGLE at the edge: the ISM of starbursts and green valley galaxies.” P.I. L.-H. Lin.
4. JCMT 19B – “Observing CO(2-1) in Red Star-forming Galaxies.” P.I. L.-H. Lin.

## PUBLICATIONS

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### A. Papers in preparation

1. **R. Chown**, et al. “The molecular gas and dust properties of red star-forming galaxies.” (2021).
2. **R. Chown**, et al. “Environmental dependence of the spatially-resolved *WISE* 12  $\mu\text{m}$  vs. CO(1-0) relationship in Virgo cluster galaxies.” (2021).

### B. First- or second-author papers

*This set of 5 papers has 94 citations (94 refereed) as of October, 2021.*

1. **R. Chown**, et al. “A new estimator of resolved molecular gas in nearby galaxies.” MNRAS 500 (1), 1261-1278 (2021).
2. **R. Chown**, et al. “Linking bar- and interaction-driven molecular gas concentration with centrally-enhanced star formation in EDGE-CALIFA galaxies.” MNRAS 484 (4), 5192-5211 (2019).
3. **R. Chown**, et al. “Maps of the Southern millimeter-wave sky from combined 2500 deg<sup>2</sup> SPT-SZ and *Planck* temperature data.” ApJS 239 (1), 10 (2018).
4. Y. Omori, **R. Chown**, et al. “A 2500 deg<sup>2</sup> CMB lensing map from combined South Pole Telescope and *Planck* data.” ApJ 849 (2), 124 (2017).
5. T. M. Crawford, **R. Chown**, et al. “Maps of the Magellanic Clouds from combined South Pole Telescope and *Planck* data.” ApJS 227 (2), 23 (2016).

### C. Other co-authored papers

*This set of 12 papers has 312 citations (312 refereed) as of October, 2021.*

6. T. Brown, et al. “VERTICO: The Virgo Environment Traced In CO Survey.” Accepted to ApJ (October 2021).
7. L.E. Bleem, et al. “CMB/kSZ and Compton-y Maps from 2500 square degrees of SPT-SZ and *Planck* Survey Data.” Accepted to ApJ (October 2021).
8. L.M. Mocanu, et al. “Consistency of cosmic microwave background temperature measurements in three frequency bands in the 2500-square-degree SPT-SZ survey.” JCAP 07, 038, (2019).
9. Y. Omori, et al. “DES Year 1 Results: Cross-correlation between DES Y1 galaxy weak lensing and SPT+*Planck* CMB weak lensing.” Phys. Rev. D 100, 043517 (2019).
10. J. Prat, et al. “Cosmological lensing ratios with DES Y1, SPT and *Planck*.” MNRAS 487, 1363-1379 (2019).
11. Y. Omori, et al. “DES Year 1 Results: tomographic cross-correlations between DES galaxies and CMB lensing from SPT+*Planck*.” Phys. Rev. D 100, 043501 (2019).
12. T.M.C. Abbott, et al. “DES Year 1 Results: Joint analysis of galaxy clustering, galaxy lensing, and CMB lensing two-point functions.” Phys. Rev. D 100, 023541 (2019).
13. G. Simard, et al. “Constraints on cosmological parameters from the angular power spectrum of a combined 2500 deg<sup>2</sup> SPT-SZ and *Planck* gravitational lensing map.” ApJ 860 (2), 137 (2018).
14. Z. Hou, et al. “A comparison of maps and power spectra determined from SPT and *Planck* data.” ApJ 853 (1), 3 (2018).
15. K. Aylor, et al. “A Comparison of Cosmological Parameters Determined from CMB Temperature Power Spectra from the South Pole Telescope and the *Planck* Satellite.” ApJ 850 (1), 3 (2017).
16. B. Soergel, S. Flender, et al. “Detection of the kinematic Sunyaev-Zel’dovich effect with DES Year 1 and SPT.” MNRAS 461 (3), 3172-3193 (2016).
17. E. Baxter, et al. “Joint measurement of lensing-galaxy correlations using SPT and DES SV data.” MNRAS 461 (4), 4099-4114 (2016).