

JAMES LANE

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EDUCATION

University of Toronto PhD, Astronomy and Astrophysics Thesis Supervisor: Jo Bovy	Expected Summer 2023
University of Victoria BSc Honours, Combined Physics and Astronomy Thesis Supervisor: Julio Navarro	Conferred June 2018

MAJOR AWARDS

Ontario Graduate Scholarship Value: \$15,000 for AY 2021-2022	Awarded July 2022
Ontario Graduate Scholarship Value: \$15,000 for AY 2021-2022	Awarded July 2021
Ontario Graduate Scholarship Value: \$15,000 for AY 2020-2021	Awarded July 2020
NSERC CGS-M Value: \$17,500 for AY 2019-2020	Awarded August 2019
Ontario Graduate Scholarship Value: \$15,000 for AY 2019-2020	Awarded June 2019, Declined
Faculty of Arts & Science Top Doctoral Fellowship Value: \$22,500 + tuition per year for 4 years	Awarded March 2018

REFEREED PUBLICATIONS

First Author

1. Lane, James M. M. et al. (2022) *The Kinematic Properties of Milky Way Stellar Halo Distribution Functions*. MNRAS. 510:5119L.
2. Lane, James M. M. et al. (2020) *The Ophiuchus stream progenitor: a new type of globular cluster and its possible Sagittarius connection*. MNRAS. 492:4162.
3. Lane, J. et al. (2016) *The JCMT Gould Belt Survey: Dense Core Clusters in Orion A*. The Astrophysical Journal. 833:44L

Contributing Author

1. Yong-Hee, Lee et al (includes **JL**). (2021) *The JCMT Transient Survey: Four-year Summary of Monitoring the Submillimeter Variability of Protostars*. ApJ. 920:119L
2. Monty, Stephanie; Venn, Kim A.; Lane, James M. M.; et al. (2020) *Chemodynamics of outer halo dwarf stars, including potential members of Gaia-Enceladus and Gaia-Sequoia*. MNRAS. 497:1236M
3. Johnstone, Doug et al (includes **JL**). (2018) *The JCMT Transient Survey: Stochastic and Secular Variability of Protostars and Disks in the Sub-Millimeter Observed Over Eighteen Months*. The Astrophysical Journal. 854:31J

4. Broekhoven-Fiene, H. et al (includes **JL**). (2018) *The JCMT Gould Belt Survey: A First Look at the Auriga-California Molecular Cloud with SCUBA-2*. The Astrophysical Journal. 852:73B
5. Mairs, Steve et al (includes **JL**). (2017) *The JCMT Transient Survey: Identifying Submillimeter Continuum Variability over Several Year Timescales Using Archival JCMT Gould Belt Survey Observations*. The Astrophysical Journal. 849:107M
6. Herczeg, Gregory J. et al (includes **JL**). (2017) *How do stars gain their mass? A JCMT/SCUBA-2 Transient Survey of Protostars in Nearby Star Forming Regions*. The Astrophysical Journal. 2017. 849:43H
7. Mairs, Steve; **Lane, James** et al (2017) *The JCMT Transient Survey: Data Reduction and Calibration Methods*. The Astrophysical Journal. 843:55M
8. Kirk, H. et al (includes **JL**). (2016) *The JCMT Gould Belt Survey: Dense Core Clusters in Orion B*. The Astrophysical Journal. 821:98K

NON-REFEREED CONTRIBUTIONS

Conferences:

1. SDSS Collaboration Meeting 2021 August 2021
The stellar mass of Gaia-Enceladus with APOGEE and Gaia (talk, presenter)
2. 2020 Space Telescope Science Institute Spring Symposium September 2020
Inferring the properties of mono-kinematic halo populations with APOGEE and Gaia (poster, presenter)
3. SDSS Collaboration Meeting 2020 June 2020
Inferring the properties of mono-kinematic halo populations with APOGEE and Gaia (talk, presenter)
4. Cambridge WG1 Workshop – The Gaia Treasure Hunt September 2019
The Ellipticity of the Milky Way Disk with Gaia and APOGEE (Talk, presenter)
5. SDSS Collaboration Meeting 2019 June 2019
The Ellipticity of the Milky Way Disk with Gaia and APOGEE (Talk, presenter)
6. Canadian Astronomical Society Annual General Meeting May 2018
The JCMT Gould Belt Legacy Survey: A multi cloud comparison of star-forming structures at 850 μm (Poster, presenter)
7. Canadian Astronomical Society Annual General Meeting June 2017
The mysterious progenitor of the Ophiuchus stream (Poster, presenter)
8. University of Victoria Honours Fest February 2017
The mysterious progenitor of the Ophiuchus Stream (Poster, presenter)
9. Canadian Astronomical Society Annual General Meeting June 2016
How do stars gain their mass? A JCMT/SCUBA-2 transient survey of protostars in nearby star forming regions (Poster, contributing author)
10. Canadian Undergraduate Physics Conference October 2015
Primordial mass segregation in clusters of star-forming cores (Talk, presenter)

Other Talks:

1. University of Victoria Astronomy Summer Seminar June 2022
Picking apart the stellar halo of the Milky Way in the Gaia era

2. University of Victoria Astronomy Summer Seminar August 2017
The mysterious progenitor of the Ophiuchus stream
3. University of Victoria Astronomy Summer Seminar June 2017
SCUBA-(2)-Diving: Studies of low mass star formation with the James Clerk Maxwell Telescope
4. Orion Unplugged (**Invited**) November 2016
Primordial mass segregation in clusters of star forming cores: examining Orion A with SCUBA-2

PROGRAMMING

- Computing languages, fluent: Python, MATLAB, IDL
- Computing languages, familiar: SQL, C, HTML+CSS
- github repository: <https://github.com/jamesmlane>
- Astronomy software: astropy, galpy, GADGET-2, AMUSE
- Other software tools: numpy, scipy, git, matplotlib, emcee
- Capable with large datasets, and parallel programming
- galpy contributor
- Creator of the apomock package

PROFESSIONAL DEVELOPMENT

- Gaia Hike** June 2022
Participated in a week-long workshop exploring the science capabilities of the new *Gaia* data
- Made-To-Measure Collaboration Workshop** February 2020
Participated in a week-long workshop with researchers from the University of Toronto and University College London
- IDIES/UofT joint Visualization Hackathon** January 2019
Participated in a multi-day workshop focused on developing data visualization skills.
- CASCA Graduate Student Workshop** May 2018
Participated in a professional development day centered around skills for graduate students.
- CASCA Graduate Student Workshop** May 2017
See above.
- Visiting observer, James Clerk Maxwell Telescope** February 2016
Visited EAO headquarters in Hilo for one week to participate in nightly observing sessions at the telescope and engage in scientific discussion.

OUTREACH, VOLUNTEERING, & TEACHING

- University of Toronto BizTech Association, Director of Finance (August 2022–present)
- University of Toronto AST 101 and AST 201, head TA (January 2019–present)
- Canadian Conference for Undergraduate Women in Physics 2020 - Presenter
- University of Toronto Graduate Student Union, Board of Directors (September 2019–April 2022)
- University of Toronto Astrotours volunteer (2019–2020)
- Astro On Tap Toronto volunteer (2018–2020)