Matthew J. Shannon

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Universities Space Research Association
NASA Ames Research Center
Astrochemistry Group
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Research Positions

Universities Space Research Association

NASA Postdoctoral Program Fellow, 2017–present

University of Western Ontario

Postgraduate Research Assistant, 2016–2017

Research interests

Astrochemistry, organic molecules, astrobiology, infrared astronomy/observational astronomy, interstellar molecules, dust, protoplanetary disks, data analysis, programming

Education

Ph.D. Astronomy, University of Western Ontario, 2016

Dissertation: "The Spectral Variability of Astronomical PAHs" [Publication]

Committee: Dr. Lou Allamandola, Dr. Carol Jones, Dr. Sarah Gallagher, Dr. Victor Staroverov

Advisor: Prof. Els Peeters

M.Sc. Astronomy, University of Western Ontario, 2012

B.Sc. Honours Physics & Astronomy, University of Victoria, 2011

Peer-Reviewed Publications

1. **M. J. Shannon**, C. Boersma (2019). Examining the class B-to-A shift of the 7.7 μm PAH band with the NASA Ames PAH IR Spectroscopic Database. *The Astrophysical Journal*. [ADS]
2. **M. J. Shannon**, C. Boersma (2018). Organic Molecules in Space: Insights from the NASA Ames Molecular Database in the era of the James Webb Space Telescope. *Proceedings of the 17th Python in Science Conference*, ed. Fatih Akici, David Lippa, Dillon Niederhut, & M. Pacer, 99 - 105. [Link]
3. **M. J. Shannon**, E. Peeters, J. Cami, J. A. D. L. Blommaert (2018). Polycyclic aromatic hydrocarbon emission toward the Galactic bulge. *The Astrophysical Journal*. [ADS]
4. **M. J. Shannon**, D. J. Stock, E. Peeters (2016). Interpreting the subtle spectral variations of the 11.2 and 12.7 μm polycyclic aromatic hydrocarbon bands. *The Astrophysical Journal*, 824, 111. [ADS]
5. **M. J. Shannon**, D. J. Stock, E. Peeters (2015). Probing the ionization states of polycyclic aromatic hydrocarbons via the 15–20 μm emission bands. *The Astrophysical Journal*, 811, 153. [ADS]
6. D. J. Stock, E. Peeters, W. D.-Y. Choi, **M. J. Shannon** (2014). The mid-infrared appearance of the Galactic mini-starburst W49A. *The Astrophysical Journal*, 791, 99. [ADS]

Computing Skills

Programming Languages: Python, R, IDL, BASH, LaTeX
Operating Systems: Linux, Unix, OS X, Windows
Specialty Software: IRAF, DS9, Git/GitHub, Anaconda

Grants, Fellowships, & Awards

2017-2019 – NASA Postdoctoral Program Fellowship
2016 — University of Western Ontario Graduate Student Teaching Award
2016 — Queen Elizabeth II Graduate Scholarship in Science and Technology
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2012 — Queen Elizabeth II Graduate Scholarship in Science and Technology
2011 — University of Victoria Physics and Astronomy Co-op Student of the Year
2010 — Miranda Ward Physics Scholarship
2008 — Don Ingham Memorial Scholarship

Conference presentations/attendance

2019 — SciPy 2019, Austin, TX (TBD).
2018 — SciPy 2018, Austin, TX (poster).
2018 — Summer schools in Astrostatistics & Astroinformatics, State College, PA (workshop).
2016 — The Past & Future of AstroPAH Research, Noordwijk, NL (oral & poster).
2015 — From Interstellar Ices to PAHs, Annapolis, MD (oral).
2015 — 30 Years of Photodissociation Regions, Pacific Grove, CA (poster).
2014 — Interaction of Stars with the ISM of Galaxies, Les Houches, FR (winter school).
2013 — The Molecular Physics of Interstellar PAHs, Leiden, NL (oral).
2012 — Chemistry and IR Spectroscopy of Interstellar Dust, Cuijk, NL (poster).
2010 — Division of Planetary Sciences Meeting, Pasadena, CA (poster).

Journal refereeing

Refereed two articles for: Monthly Notices of the Royal Astronomical Society, The Astrophysical Journal

Accepted observing proposals

1. E. Peeters (PI), **M. J. Shannon**, D. J. Stock, 2014, SOFIA Telescope, CA (resubmission)
2. E. Peeters (PI), **M. J. Shannon**, D. J. Stock, 2013, SOFIA Telescope, CA
3. **M. J. Shannon (PI)**, E. Peeters, D. J. Stock, 2012, Subaru Telescope, HI

Observing experience

1. SOFIA Telescope, CA. September 30th 2015. Co-investigator, one night.
2. SOFIA Telescope, CA. January 21st 2015. Guest investigator, one night.
3. Subaru Telescope, HI. January 28th 2013. Principal investigator, one night.

Additional research experience

2011 — University of Victoria, Victoria, B.C.; *NSERC Undergraduate Student Research Award*

2010 — NASA: Jet Propulsion Laboratory, Pasadena, CA; *Caltech Summer Undergraduate Research Fellowship*

2009 — TRIUMF Particle and Nuclear Physics Laboratory, Vancouver, B.C.; *Research Assistant*

2009 — NASA: Jet Propulsion Laboratory, Pasadena, CA; *NASA Undergraduate Student Research Program*

2008 — Joint Astronomy Center, Hilo, HI; *Research Assistant*

Outreach at the University of Western Ontario

2016 — Cronyn Observatory open house, telescope operator.

2016 — Faculty of Science “Space Day", oral presentation.

2015 — Cronyn Observatory open house, telescope operator.

2015 — Faculty of Science open house, poster presentation.

2012 — Cronyn Observatory open house, oral presentation.

Teaching assistantships at the University of Western Ontario

Physics

- Introductory physics I/II
- Enriched introductory physics II
- First-year physics laboratories

Astronomy

- The Sun, Earth and planets
- Stars, galaxies and cosmology
- The origin of the universe
- The interstellar medium
- Introduction to planetary science