Theo O'Neill

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Education

University of Virginia — December 2022

- B.S. Astronomy-Physics (with high distinction) & Statistics
- *Thesis:* Star Formation and Feedback in Low-metallicity Environments: From Molecular Clouds to Protostars

Experience

Research Assistant, Harvard-Smithsonian Center for Astrophysics — 2023 –
Advisor: Prof. Alyssa Goodman

Undergraduate Researcher, UVA — 2019 – 2022
Advisor: Prof. Rémy Indebetouw

NSF REU, Smithsonian Astrophysical Observatory — 2022
Advisor: Prof. Alyssa Goodman

Undergraduate Research Fellow, Chalmers Initiative on Cosmic Origins — 2020 – 2021
Advisors: Prof. Jonathan Tan & Dr. Giuliana Cosentino

Student Head of Observatory, Thacher Observatory — 2015 – 2018
Advisor: Dr. Jonathan Swift

Awards

Goldwater Scholarship — 2022
Astronaut Scholarship — 2022
Universities Space Research Association Distinguished Undergraduate Award — 2022
Best Talk, UVA Sigma Pi Sigma Research Symposium — 2022
Vyssotsky Prize, UVA Dept. of Astronomy (*Outstanding 3rd year undergraduate*) — 2022
McCullough Scholarship, UVA Dept. of Astronomy (*Outstanding 2nd year undergraduate)* — 2021
Echols Scholar, UVA — 2018
College Science Scholar, UVA — 2018

Publications

- O'Neill, T. J.; Goodman, A. A.; Soler, J. D.; Han, J. J.; Zucker, C. *Mapping the Local Bubble's Magnetic Field in 3D.* 2023, available on Authorea preprint server (DOI: 10.22541/au.167303779.92162611).

6. Hsu, C.; Tan, J. C.; Christie, D.; Cheng, Y.; O'Neill, T. J. *GMC Collisions As Triggers of Star Formation. VIII. The Core Mass Function.* 2023, accepted to MNRAS (arXiv:2301.10657).
5. O'Neill, T. J.; Indebetouw, R.; Sandstrom, K. M.; Bolatto, A. D.; Jameson, K. E.; Carlson, L. R.; Finn, M. K.; Meixner, M.; Sabbi, E; Sewilo, M. *Sequential Star Formation in the Young SMC Region NGC 602: Insights from ALMA*. 2022, ApJ, 938, 82.
4. O'Neill, T. J.; Indebetouw, R.; Bolatto, A. D; Madden, S. C; Wong, T. *Effects of CO-dark Gas on Measurements of Molecular Cloud Stability and the Size-Linewidth Relationship.* 2022, ApJ, 933, 179.
3. Swift, J. J; and forty other authors including O'Neill, T. J. *The Renovated Thacher Observatory and First Science Results.* 2022, PASP, 134, 1033.

2. O'Neill, T. J.; Cosentino, G.; Tan, J. C.; Cheng, Y.; Liu, M. *The Core Mass Function across Galactic Environments. III. Massive Protoclusters.* 2021, ApJ, 916, 45.

1. Strauss, B. E.; Borges, S. R.; Faridani, T.; Grier, J. A.; Kiihne, A.; Maier, E. R.; Olsen, C.; O'Neill, T.; Rivera-Valentín, E. G.; Sneed, E. L.; Waller, D.; Zamloot, V. *Nonbinary Systems: Looking Towards the Future of Gender Equity in Planetary Science.* 2020, State of the Profession White Paper for the Planetary Science and Astrobiology Decadal Survey 2023–2032.

Presentations

Talks:

Colloquium, UVA Physics Department. 2023
Mapping the Local Bubble's Magnetic Field in 3D

Press Conference at 241st Meeting of the AAS. 2023
A 3D Map of the Local Bubble's Magnetic Field

241st Meeting of the AAS. 2023
A 3D Map of the Local Bubble's Magnetic Field

Max Planck Institute for Extraterrestrial Physics CAS Star & Planet Formation Journal Club. 2022
Sequential Star Formation in the Young SMC Region NGC 602

UVA Sigma Pi Sigma Research Symposium. 2022
Mapping the Local Bubble's Magnetic Field in 3D

Smithsonian Astrophysical Observatory REU Symposium. 2022
Mapping the Local Bubble's Magnetic Field in 3D

Michigan State University Astro Coffee. 2021
The Core Mass Function Across Galactic Environments

237th Meeting of the AAS. 2021
The Core Mass Function in Massive, Dense Protoclusters

VICO-CICO Fall Science Workshop. 2020
The Core Mass Function in Massive Protoclusters

VICO-CICO Summer Symposium. 2020
Searching for the Peak of the Core Mass Function with ALMA

Posters:

241st Meeting of the AAS. (Costa et al.) 2023
Complete Confusion: Photometry of Extended Sources in Interferometric Radio Data

52nd Lunar and Planetary Science Conference. (Strauss et al.) 2021
Nonbinary Systems: Gender-inclusive Study Methods in Planetary Science

American Geophysical Union Fall Meeting. (Strauss et al.) 2020
Nonbinary Systems: Looking Toward the Future of Gender Equity in Planetary Science

232nd meeting of the AAS. (Swift et al.) 2018
Nearby Type Ia Supernova Follow-up at the Thacher Observatory

229th meeting of the AAS. 2017
First Light of the Renovated Thacher Observatory

229th meeting of the AAS. (Swift et al.) 2017
Does the Eclipsing Binary KIC 10935310 Contain a Massively Inflated M Dwarf?

229^{th} meeting of the AAS. (Edwards et al.) 2017
A Search for Planet 9 at the Thacher Observatory

227^{th} meeting of the AAS. 2016
The Renovation and Future Capabilities of the Thacher Observatory

Observing Time

PI: ALMA Cycle 9 "CO-dark gas in the Low-metallicity Star-forming region NGC 602." 11 hrs

Co-I: Las Cumbres Observatory Education Program, FLOYDS spectrograph (PI: J. Swift). 2 hrs

100+ nights using 0.7m telescope at the Thacher Observatory, Ojai, CA

Service & Outreach

Diversity, Equity, and Inclusion Committee, UVA Dept. of Astronomy 2021 – 2022

Graduate-Undergraduate Astronomy Committee, UVA Dept. of Astronomy 2020 – 2022

Undergraduate Peer Mentoring Program, UVA Dept. of Astronomy 2020 – 2022

UVA Astronomy Club

- Vice President 2022
- Outreach Chair & Event Manager 2020 – 2022

Astronomy Undergraduate Council (Chair), UVA Dept. of Astronomy 2020 – 2021

Skills

Programming	Python, R, SAS, SQL
Applications	CASA, glue, DS9, OpenSpace, CARTA, MESA

March 2023