Theo O'Neill

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Education

Harvard University $\hfill$ 2023 – Present

– Ph.D., Astronomy & Astrophysics

University of Virginia $\hfill$ 2022

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

Experience

Graduate Researcher, Center for Astrophysics | Harvard & Smithsonian $\hfill$ 2023 –
Advisors: Prof. Alyssa Goodman & Dr. Catherine Zucker

Undergraduate Researcher, University of Virginia $\hfill$ 2019 – 2022
Advisor: Prof. Rémy Indebetouw

NSF REU, Smithsonian Astrophysical Observatory $\hfill$ 2022
Advisor: Prof. Alyssa Goodman

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

Awards

NSF Graduate Research Fellowship	2023
Goldwater Scholarship	2022
Astronaut Scholarship	2022
Universities Space Research Association Distinguished Undergraduate Award	2022
D. Nelson Limber Award, UVA Dept. of Astronomy (*Outstanding 4th year undergraduate*)	2023
Vyssotsky Prize, UVA Dept. of Astronomy (*Outstanding 3rd year undergraduate*)	2022
McCullough Scholarship, UVA Dept. of Astronomy (*Outstanding 2nd year undergraduate)*	2021
Echols Scholar & College Science Scholar, UVA	2018

Publications

5. 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, MNRAS, 552, 700.

4. 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.

3. 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.

2. Swift, J. J; and forty other authors including O'Neill, T. J. *The Renovated Thacher Observatory and First Science Results.* 2022, PASP, 134, 1033.

1. 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.

Non-refereed:

4. O'Neill, T. J.; Zucker, C.; Goodman, A. A.; Edenhofer, G. *The Local Bubble is a Local Chimney: A New Model from 3D Dust Mapping.* 2024, submitted to ApJ, arXiv:2403.04961

3. 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).

2. Rasmusssen, K.; Chen, J.; Colquhoun, R. L.; Frentz, S.; Hiatt, L.; Kosciesza, A. J.; Olsen, C.; O'Neill, T. J.; Zamloot, V.; Strauss, B. E. *Gender Inclusive Methods in Studies of STEM Practitioners.* 2023, arXiv:2307.15802.

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:

Surveying the Milky Way: the Universe in Our Own Backyard; Caltech IPAC. 2023
The 3D Structure of Bubbles & Clouds in the Solar Neighborhood, identified with Persistent Homology

Harvard-Heidelberg Star Formation Workshop. 2023
The 3D Structure of Bubbles & Clouds in the Solar Neighborhood, identified with Persistent Homology

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

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

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

232$^{\text{nd}}$ meeting of the AAS. (Swift et al.) 2018
Nearby Type Ia Supernova Follow-up at the Thacher Observatory

229$^{\text{th}}$ meeting of the AAS. 2017
First Light of the Renovated Thacher Observatory

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

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

227$^{\text{th}}$ 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: ALMA Cycle 10 (PI: E. Koch).
Co-I: ALMA Cycle 10 (PI: S. Madden).
Co-I: JWST Cycle 3 (PI: E. Sabbi).
Co-I: VLA, DDT (PI: J. Han).

SERVICE & OUTREACH

Organizing Committee, Harvard-Heidelberg Star Formation Workshop 2023
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, Outreach Chair, Event Manager) 2020 – 2022
Astronomy Undergraduate Council (Chair), UVA Dept. of Astronomy 2020 – 2021

April 2024