

# MICHAEL L. PALUMBO III, PH.D.

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## EDUCATION

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<b>Pennsylvania State University</b>	August 2018 - May 2024
Ph.D. in Astronomy & Astrophysics and Astrobiology	August 2024
M.Sc. in Astronomy & Astrophysics	December 2020
<b>University of North Carolina at Chapel Hill</b>	August 2014 - May 2018
B.Sc. in Physics, Astrophysics Option	<i>with Distinction and Highest Honors</i>
B.A. in Classics, Latin Option	

## PROFESSIONAL APPOINTMENTS & EXPERIENCE

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<b>Flatiron Research Fellowship</b>	September 2024 - Present
Flatiron Institute – Center for Computational Astrophysics <i>Supervisor: Dr. Megan Bedell</i>	
<b>Graduate Research Assistant and Fellow</b>	January 2019 - May 2024
Pennsylvania State University <i>Supervisor: Prof. Eric Ford</i>	
<b>Undergraduate Research Assistant</b>	June 2016 - July 2018
University of North Carolina at Chapel Hill <i>Supervisor: Prof. Sheila Kannappan</i>	
<b>Summer Research Student</b>	June 2017 - August 2017
Center for Astrophysics   Harvard & Smithsonian <i>Supervisors: Prof. Raphaëlle Haywood and Dr. Steve Saar</i>	

## SELECTED RESEARCH FUNDING & FELLOWSHIPS

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<b>Astronomy &amp; Astrophysics Postdoctoral Fellowship</b>	2024 Cycle ( <i>Declined</i> )
<i>National Science Foundation - \$330,000</i>	
<b>Pennsylvania Space Grant Graduate Fellowship</b>	August 2023 - May 2024
<i>Pennsylvania Space Grant Consortium</i>	
<b>Academic Computing Fellowship</b>	August 2020 - July 2023
<i>Pennsylvania State University &amp; The Eberly College of Science</i>	
<b>Paul M. Doty Distinguished Graduate Fellowship</b>	August 2018 - August 2019
<i>Pennsylvania State University &amp; The Eberly College of Science</i>	

## TEACHING AND OUTREACH

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<b>Instructor</b> , Upward Bound Math and Science	Summer 2020
<i>Astronomy: The Search for Exoplanets and Life Beyond Earth</i>	
<b>Guest Lecturer</b> , Pennsylvania State University	
· PSU ASTRO 401, <i>Stellar Spectroscopy</i> for Prof. Chris Palma	December 5, 2019
· PSU ASTRO 497, <i>Life in the Universe: SETI</i> for Prof. Suvrath Mahadevan	March 17, 2020
· PSU ASTRO 497, <i>Saturn and its Rings</i> for Prof. Suvrath Mahadevan	March 24, 2020
· PSU ASTRO 497, <i>The Moons of Saturn</i> for Prof. Suvrath Mahadevan	March 31, 2020
<b>Public Presentations</b>	
· Astronomy on Tap - State College, <i>A Spooky Tour of NASA's Galaxy of Horrors</i>	October 25, 2022

## SERVICE TO THE PROFESSION

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### Conference Organizing Committees

- *Emerging Researchers in Exoplanet Science (ERES) VII*, Penn State August 2022
- *Penn State SETI (PSETI) Symposium*, Penn State June 2022, June 2023

### Committee Membership

- C&D Committee, PSU Astronomy & Astrophysics August 2019 - August 2023
- C&D Grad. Student Subcommittee, Eberly College of Science May 2020 - August 2022
- Grad. Student Recruitment Committee, PSU Astronomy & Astrophysics January 2021 - April 2023

Referee, Astronomy & Astrophysics

Professional Societys, American Astronomical Society

## SELECTED AWARDS & HONORS

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- Rodger Doxsey Travel Prize** January 2024  
*American Astronomical Society*
- North Carolina Space Grant Undergrad. Research Scholarship** August 2017 - May 2018  
*North Carolina Space Grant Consortium*
- Earl Nelson Mitchell Scholarship** August 2016 - May 2018  
*University of North Carolina Department of Physics and Astronomy*
- Carolina Research Scholar** Conferred May 2018  
*University of North Carolina at Chapel Hill*
- Honors Carolina Laureate** Conferred May 2018  
*University of North Carolina at Chapel Hill*
- Phi Beta Kappa Society Member** Inducted February 2017  
*Alpha of North Carolina*

## COMPUTER SKILLS

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- Languages** Python, Julia, R, IDL, CUDA
- Software & Tools** LaTeX, IRAF and PyRAF, Git, GitHub
- Operating Systems** Linux, macOS

## SELECTED PRESENTATIONS

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### Talks

- **Inferring (Super)Granulation Flows Directly and Quickly from Stellar Spectra** July 2, 2025  
EPRV 6, Porto, Portugal (*contributed*)
- **Resolving Granulation-Driven Line Distortions in Disk-Integrated Solar Spectra** February 3, 2025  
Know Thy Star 2, Pasadena, CA (*contributed*)
- **Mitigating Granulation Noise with Lessons from Synthetic Spectra** March 30, 2023  
Extremely Precise Radial Velocities 5, Santa Barbara, CA (*contributed*)  
AAS 243 Winter Meeting, New Orleans, LA January 10, 2024  
PoET Workshop #2, Instituto de Astrofísica e Ciências do Espaço, Portugal October 24, 2024
- **Understanding Granulation Noise with Synthetic Spectra from GRASS** March 14, 2023  
Sun-as-a-Star Workshop, Flatiron Institute, NYC (*contributed*)

- **Insights into Stellar Variability from Ground- and Space-Based Solar Observations**  
The Ohio State University, OH (*invited*) September 29, 2023  
Instituto de Astrofísica e Ciências do Espaço, Portugal (*invited*) March 1, 2023  
University of Warwick, UK (*invited*) February 20, 2023  
University of Birmingham, UK (*invited*) February 15, 2023
- **Mitigating Granulation Noise with GRASS and Prospects with PoET** February 24, 2023  
PoET Workshop, Porto, Portugal (*contributed*)
- **Toward Mitigating Granulation RV Noise with GRASS** August 2, 2022  
Emerging Researchers in Exoplanet VII, State College, PA (*contributed*)

## Posters

- **Physical Insights into Solar Center-to-Limb RV Variability with SDO**  
Emerging Researchers in Exoplanet Science VIII, Yale, New Haven, CT June 2023  
Extremely Precise Radial Velocities 5, Santa Barbara, CA March 2023
- **Modeling Granulation's Effect on Stellar Line Shapes and EPRV Surveys with GRASS**  
Cool Stars 21, Toulouse, France July 2022  
Exoplanets IV, Las Vegas, NV May 2022

## PUBLICATIONS

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A full list of my publications is curated on [NASA ADS](#) and [ORCID](#)

(† = Non-refereed)

### First-Author

- **Palumbo, M. L., III** *The Limits of Line Broadening: Modeling Stellar Spectra and Formation Temperatures at High Resolution*, 2025, [arXiv:2512.09861](#), submitted to ApJ
- **Palumbo, M. L., III**, Saar, S. H., and Haywood, R. D. *Characterizing Solar Center-to-Limb Radial-Velocity Variability with SDO*, 2024, [ApJ](#), **973**, 1, 11
- **Palumbo, M. L., III**, Ford, E.B., et al. *GRASS II: Simulations of Potential Granulation Noise Mitigation Methods*, 2024, [AJ](#), **168**, 1, 46
- † **Palumbo, M. L., III**, Wright, J. T., and Huston, M. J. *Fortuitous Observations of Potential Stellar Relay Probe Positions with GBT*, 2023, [RNAAS](#), **7**, 209
- **Palumbo, M. L., III**, Ford, E. B., Wright, J. T., et al. *GRASS: Distinguishing Planet-induced Doppler Signatures from Granulation with a Synthetic Spectra Generator*, 2022, [AJ](#), **163**, 1, 11
- **Palumbo, M. L., III**, Kannappan, S. J., Frazer, E. M., et al. *Linking Compact Dwarf Starburst Galaxies in the RESOLVE Survey to Downsized Blue Nuggets*, 2020, [MNRAS](#), **494**, 4

### N<sup>th</sup>-Author

- Frame G., et al. *Towards understanding stellar variability at the sub m/s level: isolating granulation signals in synthetic spectral lines*, 2025, [MNRAS](#), **539**, 3
- Ford E. B., et al. *Earths within Reach: Evaluation of Strategies for Mitigating Solar Variability using 3.5 years of NEID Sun-as-a-Star Observations*, 2024, in revision for AAS Journals, [arXiv:2408.13318](#)
- Tusay, N., Huston, M.J., et al. *A Search for Radio Technosignatures at the Solar Gravitational Lens Targeting Alpha Centauri*, 2022, [AJ](#), **164**, 3, 166
- Haywood, R. D., et al. *Unsigned Magnetic Flux as a Proxy for Radial-velocity Variations in Sun-like Stars*, 2022, [ApJ](#), **935**, 1, 6
- Zhao, L., et al. *The EXPRES Stellar Signals Project II. State of the Field in Disentangling Photospheric Velocities*, 2022, [AJ](#), **163**, 4, 171

- Milbourne, T., et al. *HARPS-N Solar RVs Are Dominated by Large, Bright Magnetic Regions*, 2019, *ApJ*, 874, 1, 107
- Cegla, H. M., et al. *Stellar Surface Magneto-convection as a Source of Astrophysical Noise. II. Center-to-limb Parameterization of Absorption Line Profiles and Comparison to Observations*, 2018, *ApJ*, 866, 1, 55

## Software

- **Palumbo, M.L., III**, Wright, J T., & Huston, M.J., 2023, *FormationTemps.jl*, Zenodo, <https://doi.org/10.5281/zenodo.18343828>
- **Palumbo, M.L., III**, Wright, J T., & Huston, M.J., 2023, *seti-fortuitous-obs*, Zenodo, <https://doi.org/10.5281/zenodo.8361381>
- **Palumbo, M.L., III**, Saar, S.H., & Raphalle D.H., 2023, *sdo-clv-pipeline*, Zenodo, <https://doi.org/10.5281/zenodo.8273623>
- **Palumbo, M.L., III**, Ford, E.B., Wright, J.T., Mahadevan, S., Wise, A.W., & Lohner-Bottcher, J., 2023, *GRASS*, Zenodo, <https://doi.org/10.5281/zenodo.8271530>
- Ford, E.B, Matthias Y.H., Wise, A.W., & **Palumbo, M.L., III**, 2022, *RvSpectML/EchelleCCFs.jl*, Zenodo, <https://doi.org/10.5281/zenodo.7058308>