

# MELINDA SOARES-FURTADO, PH.D.

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## PROFESSIONAL APPOINTMENTS

Assistant Professor of Astronomy & Physics, University of Wisconsin–Madison	2024–present
NASA Hubble Postdoctoral Fellow, University of Wisconsin–Madison	2021–2024
Postdoctoral Fellow, University of Wisconsin–Madison	2020–2021
Advanced Placement Math & Physics Instructor, Mount Madonna School	2012–2013

## EDUCATION

Princeton University	Astrophysical Science	Ph.D., 2020
Princeton University	Astrophysical Science	M.S., 2016
University of California, Santa Cruz	Physics	B.S., 2014

## RESEARCH EXPERIENCE

Graduate Student Researcher, Princeton University, Astrophysical Sciences	2014–2020
Advisor: Prof. Gáspár Bakos	
Undergraduate Student Researcher, UC Santa Cruz, Physics & Astronomy	2009–2014
Advisors: Profs. Enrico Ramirez-Ruiz & David Williams	

## PEER-REVIEWED PUBLICATIONS — MENTORED STUDENTS ARE UNDERLINED

26. **Soares-Furtado, M.**; Limbach, M.; et al. *The TEMPO Survey II: Predicting Yields of Transiting Moons, Planets, and Satellites from a 30-day Survey of Orion with the Roman Space Telescope*, in prep to be submitted to Space Science Reviews.
25. Jankowski, A.; Becker, J.; **Soares-Furtado, M.**; et al. *The Ambiguous Age and Tidal History for the Ultra-Hot Jupiter TOI-1937Ab*, submitted to Publications of the Astronomical Society of the Pacific.
24. Distler, A.; **Soares-Furtado, M.**; et al. *TESS Hunt for Young and Maturing Exoplanets (THYME) XII: A Young Mini-Neptune on the Upper Edge of the Radius Valley in the Hyades Cluster*, submitted to The Astronomical Journal.
23. Limbach, M.; Vanderburg, A.; Venner, A.; Blouin, S.; Stevenson, K.; Bowens-Rubin, R.; MacDonald, R.; **Soares-Furtado, M.**; et al. *The MIRI Exoplanets Orbiting White Dwarfs (MEOW) Survey: Mid-Infrared Excess Reveals a Giant Planet Candidate around a Nearby White Dwarf*, 2024, The Astrophysical Journal Letters, 973, 1. [2408.16813]
22. Hinkel, N.; Youngblood, A.; **Soares-Furtado, M.** *Host Stars and How Their Compositions Influence Exoplanets*, 2024, Reviews in Mineralogy and Geochemistry, 90, 1. [2404.15422]
21. Schulte, J.; Rodriguez, J.; Bieryla, A.; Quinn, S.; Collins, K.; Yee, S.; Nine, A.; **Soares-Furtado, M.**; et al. *Migration and Evolution of giant ExoPlanets (MEEP) I: Nine Newly Confirmed Hot Jupiters from the TESS Mission*, 2024, The Astronomical Journal, 168, 1. [2401.05923]
20. Ong, J.; Hon, M.; **Soares-Furtado, M.**; et al. *Gasing Pangkah I: Asteroseismology and Preliminary Characterisation of a Rapidly-Rotating Red Giant in the TESS SCVZ*, 2024, The Astrophysical Journal, 966, 1. [2402.16971]
19. **Soares-Furtado, M.**; Capistrant, B.; et al. *TESS Hunt for Young and Maturing Exoplanets (THYME) XI: An Earth-sized Planet Orbiting a Nearby, Solar-like Host in the 400 Myr Ursa Major Moving Group*, 2024, The Astronomical Journal, 167, 2. [2401.04785]
18. Howell, S.; Howell, A.; Street, R.; **Soares-Furtado, M.**; et al. *The Dynamic Universe: Realizing the Potential of Classical Time Domain and Multimessenger Astrophysics*, 2024, Frontiers in Astronomy and Space Sciences, 11. [2024.1304616]
17. Yarza, R.; Razo-López, N.; Murguía-Berthier, A.; Wallace Everson, R.; MacLeod, M.; **Soares-Furtado, M.**; et al. *Hydrodynamics and Survivability During Post-Main-Sequence Planetary Engulfment*, 2023, The Astrophysical Journal, 954, 2. [2203.11227]
16. Limbach, M.; **Soares-Furtado, M.**; et al. *The TEMPO Survey I: Predicting Yields of Transiting Moons, Planets, and Satellites from a 30-day Survey of Orion with the Roman Space Telescope*, 2023, Publications of the Astronomical Society of the Pacific, 135, 1043. [2209.12916]
15. Kolborg, A.; Ramirez-Ruiz, E.; Martizzi, D.; Macias, P.; **Soares-Furtado, M.** *Constraints on the Frequency and Mass Content of R-Process Events Derived from Turbulent Mixing in Galactic Disks*, 2023, The Astrophysical Journal Letters, 936, 2. [2304.01144]
14. Limbach, M.; Vanderburg, A.; Stevenson, K.; Blouin, S.; Morley, C.; Lustig-Yaeger, J.; **Soares-Furtado, M.**; Jan-son, M. *A New Method for Finding Nearby White Dwarf Exoplanets and Detecting Biosignatures*, 2022, Monthly Notices of the Royal Astronomical Society, 517, 2. [2209.12914]
13. Tayar, J.; Moyano, F.; **Soares-Furtado, M.**; et al. *Spinning up the Surface: Evidence for Planetary Engulfment or Unexpected Angular Momentum Transport*, 2022, The Astrophysical Journal, 940, 1. [2208.01678]
12. Capistrant, B.; **Soares-Furtado, M.**; et al. *A Population of Dipper Stars from the Transiting Exoplanet Survey Satellite Mission*, 2022, The Astrophysical Journal Supplement Series, 263, 1. [2209.03379]

11. Kolborg, A.; Martizzi, D.; Ramirez-Ruiz, E.; Pfister, H.; Sakari, C.; Wechsler, R.; **Soares-Furtado, M.** *Supernova-Driven Turbulent Metal Mixing in High Redshift Galactic Disks: Metallicity Fluctuations in the Interstellar Medium and its Imprints on Metal Poor Stars in the Milky Way*, 2022, The Astrophysical Journal Letters, 936, 2. [2111.02619]
10. Vigna-Gómez, V.; Liu, B.; Aguilera-Dena, D.; Grishin, E.; Ramirez-Ruiz, E.; **Soares-Furtado, M.** *Mergers Prompted by Dynamical Resonances in Compact, Multiple-Star Systems*, 2022, Monthly Notices of the Royal Astronomical Society: Letters, 515, 1. [2204.10600]
9. Grunblatt, S.; Saunders, N.; Sun, M.; Thaddeus, K.; Huber, D.; Chontos, A.; **Soares-Furtado, M.**; et al. *Planets Orbiting Evolved TESS Stars (POETS) II: The Hottest Jupiters Orbiting Evolved Stars*, 2022, The Astrophysical Journal, 163, 3. [2201.04140]
8. **Soares-Furtado, M.**; et al. *Lithium Enrichment Signatures of Planetary Engulfment Events in Evolved Stars*, 2021, The Astrophysical Journal, 162, 6. [2002.05275]
7. **Soares-Furtado, M.**; et al. *A Catalog of Periodic Variables in Open Clusters M35 and NGC 2158*, 2020, The Astrophysical Journal Supplement, 246, 1. [1911.00832]
6. Naiman, J.; **Soares-Furtado, M.**; Ramirez-Ruiz, E. *Modeling Gas Evacuation Mechanisms in present-Day Globular Clusters: Stellar Winds from Evolved Stars & Pulsar Heating*, 2019, Monthly Notices of the Royal Astronomical Society, 491, 4. [1310.8301]
5. Rappaport, S.; Zhou, G.; Vanderburg, A.; Mann, A.; Kristiansen, M. H.; Oláh, K.; Jacobs, T. L.; Newton, E.; Omohundro, M. R.; LaCourse, D.; Schwengeler, H. M.; Terentev, I. A.; Latham, D. W.; Bieryla, A.; **Soares-Furtado, M.**; et al. *“Deep Long Asymmetric Occultation in EPIC 204376071”*, 2019, Monthly Notices of the Royal Astronomical Society, 485, 2. [1902.08152]
4. MacLeod, M.; Cantiello, M.; **Soares-Furtado, M.** *Planetary Engulfment in the Hertzsprung-Russell Diagram*, 2018, The Astrophysical Journal Letters, 853, 1. [1801.04274]
3. Zhu, Wei; Huang, C. X.; Udalski, A.; **Soares-Furtado, M.**; et al. *Extracting Microlensing Signals from K2 Campaign 9*, 2017, Publications of the Astronomical Society of the Pacific, 129, 980. [1704.08692]
2. **Soares-Furtado, M.**; et al. *Image Subtraction Reduction of Open Clusters M35 & NGC 2158 in the K2 Campaign 0 Super Stamps*, 2017, Publications of the Astronomical Society of the Pacific, 129, 974. [1703.00030]
1. Aliu, E.; Archambault, S.; Arlen, T.; Aune, T.; Beilicke, M.; Benbow, W.; Bird, R.; Bouvier, A.; Buckley, J. H.; Bugaev, V.; Cesarini, A.; Ciupik, L.; Connolly, M. P.; Cui, W.; Dumm, J.; Errando, M.; Falcone, A.; Federici, S.; Feng, Q.; Finley, J. P.; Fortin, P.; Fortson, L.; Furniss, A.; Galante, N.; Gérard, L.; Gillanders, G. H.; Griffin, S.; Grube, J.; Gyuk, G.; Hanna, D.; Holder, J.; Hughes, G.; Humensky, T. B.; Kaaret, P.; Kertzman, M.; Khassen, Y.; Kieda, D.; Krawczynski, H.; Krennrich, F.; Lang, M. J.; Madhavan, A. S.; Maier, G.; Majumdar, P.; McArthur, S.; McCann, A.; Moriarty, P.; Mukherjee, R.; Nieto, D.; O’Faoláin de Bhróithe, A.; Ong, R. A.; Orr, M.; Otte, A. N.; Park, N.; Perkins, J. S.; Pohl, M.; Popkow, A.; Prokoph, H.; Quinn, J.; Ragan, K.; Reyes, L. C.; Reynolds, P. T.; Richards, G. T.; Roache, E.; Saxon, D. B.; Sembroski, G. H.; Skole, C.; Smith, A. W.; **Soares-Furtado, M.**; et al. *Long Term Observations of B2 1215+30 with VERITAS*, 2013, The Astrophysical Journal, 779, 2. [1310.6498]

## OTHER PUBLICATIONS — MENTORED STUDENTS ARE UNDERLINED

2. Clark, M.; Sullivan, K.; **Soares-Furtado, M.** *Moderate-Separation Binary Companions May Influence Young Stellar X-ray Luminosity*, 2024, in press with Research Notes of the American Astronomical Society.
1. **Soares-Furtado, M.**; Kubiak, S. *Aging Ungracefully*, 2023, Sky and Telescope, 145, 1, p.14

## SELECTED FELLOWSHIPS, GRANTS, & AWARDS

Postdoctoral Excellence in Mentoring Award, University of Wisconsin-Madison	2023
NASA Topical Workshops, Symposia, and Conferences Award, Total budget: \$69,550	2023
PI: E. Zweibel, Science-PI: M. Soares-Furtado	
NASA Hubble Fellowship, Total budget: \$364,527	2021–2024
TESS DDT Proposal, Principal Investigator, <i>Investigation of Pulsating Blue Stragglers in M67</i>	2021
TESS DDT Proposal, Principal Investigator, <i>Investigation of Pulsating Blue Stragglers in NGC 6819</i>	2021
NASA Postdoctoral Program Fellowship ( <i>declined</i> ), Total budget: \$237,162	2020
First Place Poster, Kepler & K2 Science Conference V	2019
National Science Foundation Graduate Research Fellowship, Total budget: \$102,000	2015–2018
TESS Cycle 1 Guest Investigator Program, Total budget: \$200,000	2018
PI: J. Hartman, Co-I: M. Soares-Furtado	
Permanent Exhibit Selection, <i>Art of Science</i> , Princeton University	2017
Kenneth & Ann Thimann Scholarship, UCSC	2014
SLUG Fellowship, UCSC	2013
Lamat Fellowship, UCSC	2013
First Place Oral presentation, AAAS National ERN Conference	2012
Steven Chu Award for Undergraduate Research, APS Annual Conference	2011
Ron Ruby Memorial Scholarship for Teaching Excellence, UCSC	2010
Regents Scholarship, UCSC	2008–2010

## SELECTED SCIENTIFIC PRESENTATIONS

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64 presentations, including 43 invited colloquia, seminars, and technical presentations.

### Colloquia:

University of Virginia	2024
The Minnesota Institute for Astrophysics	2024
University of Minnesota, Twin Cities	2024
University of Colorado, Boulder	2023
University of Nevada, Las Vegas	2023
University of Illinois Urbana-Champaign (2x)	2022 & 2023
Harvard Institute for Theory and Computation	2023
University of Wisconsin–Madison, Department of Physics	2022
Massachusetts Institute of Technology Kavli Institute for Astrophysics and Space Research	2022
University of California, Los Angeles	2022
NASA Goddard Space Flight Center	2021
Astrophysics Research Centre of the Queen’s University, Belfast	2021
University of California, Santa Barbara Kavli Institute for Theoretical Physics	2021
University of Wisconsin–Madison, Department of Astronomy (2x )	2019 & 2020
Pomona College	2019
University of the Virgin Islands	2019

### Recent Invited Seminars:

CIERA, Northwestern University (2x)	2021 & 2024
Presentation, NASA Hubble Fellowship Program Symposium (3x)	2021–2023
MIT Planetary Lunch Colloquium Series (PICS)	2022
Penn State Center for Exoplanets and Habitable Worlds	2022
Harvard University Exoplanet Lunch Series (3x)	2016, 2019, 2022
Probes of Transport in Stars—Kavli Institute for Theoretical Physics	2021
Michigan State University	2021
Carnegie Earth and Planets Laboratory	2021
Division on Dynamical Astronomy of the AAS	2021
UCLA–UCSC Joint Astrophysics Seminar Series	2021
American Museum of Natural History	2020
Carnegie Department of Terrestrial Magnetism	2019
Harvard University Stars & Planets Seminar Series	2019
Princeton University Envision Conference—Ethics & Space Policy	2019
Harvard University Institute for Theory and Computation	2017

### Recent Invited Conference Presentations:

American Physical Society’s April Meeting: <i>Quarks to Cosmos</i>	2024
33rd Annual Wisconsin Space Conference	2023
Probes of Transport in Stars, UCSB Kavli Institute for Theoretical Physics	2021
NASA’s Kepler & K2 SciCon V	2019

## OBSERVATIONAL EXPERIENCE

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Southern African Large Telescope High Resolution Échelle Spectrograph (75 hours)  
WIYN 3.5-M telescope at Kitt Peak National Observatory (7 nights)  
Australian National University 2.3-m telescope at Siding Spring Observatory (15 nights)  
Magellan Telescopes (Walter Baade 6.5-m) at Las Campanas Observatory (2 nights)  
VERITAS at Whipple Observatory (12 nights)

## TEACHING EXPERIENCE

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Instructor, <i>Our Exploration of the Solar System</i> (AST 104), UW–Madison	2024
Guest Instructor, <i>The Physical Universe</i> (AST 200), UW–Madison	2024
Guest Instructor, <i>Stellar Interiors and Evolution</i> (AST 715), UW–Madison	2023
Summer Instructor, Lamat REU Program (NSF #1852393)	2021–2023
Guest Instructor, <i>Stellar Structure &amp; Evolution</i> (AST 123), Pomona College	2019
Assistant Instructor, <i>The Universe</i> (AST 205), Princeton University	2015
Head Instructor, <i>AP Physics, AP Calculus, &amp; Python Programming</i> , Mount Madonna School	2012–2013
Physics Section Leader & Lecturer, UCSC Academic Excellence Program	2009–2011
<i>Introduction to Waves &amp; Optics, Introduction to Elementary Mechanics,</i> <i>Introduction to Electricity &amp; Magnetism</i>	

## ADVISING EXPERIENCE

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Key: [\*] co-advisor; [†] publication resulted from collaboration; [‡] publication is forthcoming.

### Graduate Students:

Claire Zwicker (University of Wisconsin–Madison)	2024–present
Julia K. Sheffler‡ (University of Wisconsin–Madison)	2023–present
Ricardo Yarla*† (FINESST Fellow; University of California, Santa Cruz)	2021–present
Andrew Nine*† (University of Wisconsin–Madison)	2022–2023
Anne Noer Kolborg*† (University of California, Santa Cruz)	2021–2023
Rachel McClure*‡ (NSF GRFP Fellow; University of Wisconsin–Madison)	2020–2022

### Undergraduate & Postbaccalaureate Students

Ritvik Narayan‡ (University of Wisconsin–Madison)	2024–present
Nadja Aldarondo Quiñones‡ (University of Puerto Rico)	2024–present
Adam Distler† (University of Wisconsin–Madison)	2023–present
M. L. Clark† (University of Wisconsin–Madison)	2023–present
Brooke Kotten‡ (NSF GRFP Fellow; University of Wisconsin–Madison)	2023–present
Nicholas Marston† (University of Wisconsin–Madison)	2023–present
Alyssa Jankowski† (University of Wisconsin–Madison)	2022–present
Lily Robinthal* (University of Wisconsin–Madison)	Summer 2022
Sara Kubiak† (University of Wisconsin–Madison)	Summer 2022
Benjamin Capistrant† (University of Wisconsin–Madison)	2021–2022
Rianna Kuenzi‡ (University of Wisconsin–Madison)	2021–2022
Tyler Barna† (Rutgers University)	2018–2019

## SELECTED PROFESSIONAL SERVICE EXPERIENCE

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Advisory Board Member, Lamat Institute	2021–present
Member, TESS Follow-Up Working Group	2021–present
Science Organizing Committee Member, Exoplanets VI	2024
Science Organizing Committee Member, IAU Symposium	2024
Member of the AURA Future Leaders Program, AURA Annual Member Representatives Meeting	2024
Media Fellow, University of Wisconsin–Madison	2024
Session Chair, Extreme Solar Systems V	2024
Reviewer, National Science Foundation Panel	2024
Reviewer, NASA Panel (3x)	2023–2024
Referee, <i>Nature</i> , <i>Nature Communications</i> , <i>Monthly Notices of the Royal Astronomical Society</i>	2021–2024
Lead Organizer, Aspen Center for Physics 2023 winter conference	2022–2023
<i>Exoplanet Systems and Stellar Life Cycles: Late-Stage and Post-MS Systems</i>	
LAMAT REU Admissions Committee Member	2021–2022
Co-organizer & host of the TESS (TSC2) Splinter Session	2021

## SELECTED DEPARTMENTAL SERVICE EXPERIENCE

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UW–Madison Colloquium Organizer	2024–2025
UW–Madison Southern African Large Telescope Telescope Allocation Committee	2023–2024
UW–Madison Graduate Admissions Committee	2021–2024
UW–Madison Graduate Application Advice Panel	2021–2024
Co-organizer, UW–Madison Sherry Hour	2021–2024
Co-organizer, UW–Madison Monday Science Seminar	2020–2023
Presenter, UW–Madison Board of Visitors	2022
Graduate Applicant Recruiter, SACNAS & NSBP Conferences	2020–2021
Presenter, Princeton Advisory Council	2020



## SELECTED OUTREACH SERVICE EXPERIENCE

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I have given **62 talks**, including **51 invited** presentations.

### Invited Service

Panelist, UW–Madison L&S Graduate Research Scholars	2024
Speaker, UW Space Place (2x)	2023–2024
Speaker, Lamat REU Mentor Speaker Series	2020–2024
Presenter, <i>Learn With An Expert</i> , Milwaukee Public Museum	2023
Presenter, <i>Science on Tap</i> , Milwaukee Public Museum	2023
Instructor, Lamat REU Professional Development Workshops	2021–2023
Presenter, <i>Astronomy on Tap</i> , UNLV, UPenn, Princeton, UW–Madison (4x)	2018–2023
Speaker, Society of Physics Students, UNLV, UCSC (2x)	2015–2023
Speaker, Madison Astronomical Society	2022
Panelist for the Committee on the Status of Women in Astronomy	2021
Speaker, European Astronomical Society Annual Meeting	2021
<i>Building Social Support Networks for Mothers in Astronomy</i>	
Speaker, NSF NoirLab DEI Seminar	2021
Speaker, AeroSTEM Academy	2021
Speaker, The National Society of Black Physicists, University of the Virgin Islands	2019
Keynote Speaker & Co-organizer, National Chemistry Week, “ <i>Life Beyond Earth</i> ” (932 attendees)	2018

### Contributed Service

SETI Institute’s NASA Community College Network Committee Member	2022–present
Founder and organizer, The Astrono-Mom Conversation Series	2020–present
Founder & Moderator, Astronomy and Physics Graduate School Applicant Discord Server	2021–present
Organizer & Mentor, Mastering the Graduate School Application Process	2018–present
Organizer & Speaker, <i>Solar System Annual Science Workshop</i> , Lincoln Elementary School	2022
NASA Hubble Fellowship Program SOC Symposium Committee Member	2021
Panelist for the NASA Hubble Fellowship Program Application Workshop	2021
Co-founder & Co-organizer, Astronomy on Tap Trenton Chapter	2019–2020
Co-organizer, Young Women’s Conference in STEM, Princeton University	2017

## MEDIA & PRESS

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On Wisconsin, *How to Study a Star*, M. Provost, 2024.  
BBC, *The Mysterious Pairs of Planets We Still Can’t Explain*, J. O’Callaghan, 2024.  
Scientific American, *Don’t Panic, But A Lot of Stars Seem to Eat Their Own Planets*, R. G. Andrews, 2024.  
New Scientist, *Where are all the exomoons?*, J. O’Callaghan, 2024.  
Astronomy Magazine, *Nearest young Earth-sized planet could shed light on how terrestrial worlds evolve*, S. Kuthunur, 2024.  
Inside UW, *Earth-sized planet discovered in ‘our solar backyard’*, C. Barncard, 2024.  
The Independent, *Scientists find Earth-sized planet shockingly nearby*, A. Griffin, 2024.  
Ars Technica, *Astronomers found ultra-hot, Earth-sized exoplanet with a lava hemisphere*, J. Ouellette, 2024.  
The Atlantic, *A Different Vision for Earth’s Demise*, J. O’Callaghan, 2024.  
Planetarium Film, *Lights Out! Eclipses: Whys, Wonders, & Wows*, Directed by Bob Bonadurer, 2023.  
Quanta Magazine, *New Clues for What Will Happen When the Sun Eats the Earth*, J. O’Callaghan, 2023.  
AAS YouTube Series, *Lithium Enrichment Signatures of Planetary Engulfment Events in Evolved Stars*, 2022.  
Badger Talks, *Devoured Worlds: Lessons From Planet-Ingesting Stars*, 2023.  
The New York Times, *The Juicy Secrets of Stars That Eat Their Planets*, B. Ferreira, 2022.  
Scientific American Magazine, *Women Are Creating a New Culture for Astronomy*, A. Finkbeiner, 2022.  
Princeton University Press, *Astronomy on Tap Brings Astrophysicists & the Community Together*, L. Wright, 2019.  
New Scientist Magazine, *Stars That Devour Their Planets Get Brighter & Faster*, J. Wenz, 2018.