

# Dr. Guadalupe Tovar Mendoza

## Contact

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## Research Interests

- Stellar magnetic activity on low mass stars.
- The effects of stellar activity on exoplanet environments.
- The detection and characterization of exoplanets and exoplanet atmospheres.

## Education

2017–2024	<b>Dual-Title PhD</b> Astronomy and Astrobiology — "Cuentos de las Estrellas: Understanding the Properties and Impacts of Flares Across Time and Wavelength" (advised by James Davenport)	University of Washington, Seattle WA
2017–2019	<b>MSc</b> Astronomy and Astrobiology	University of Washington, Seattle WA
2013–2017	<b>BS</b> Astronomy, Minor in Physics	University of Washington, Seattle WA

## Research Appointments

Present	<b>NSF MPS-Ascend Postdoctoral Research Fellow</b> Collaborator: Meredith MacGregor	Johns Hopkins University
2017–2024	<b>Graduate Research Assistant</b> Advisor: James Davenport	University of Washington
Autumn 2022	<b>Graduate Research Assistant</b> Advisors: Elisa Quintana, Allison Youngblood, Lynnae Quick	NASA Goddard Space Flight Center
Summer 2017	<b>Banneker Institute Research Intern</b> Advisors: John Johnson, Benjamin Montet	Harvard Center for Astrophysics
2016-2017	<b>Undergraduate Research Assistant</b> Advisors: Victoria Meadows, Jacob Lustig-Yeager	University of Washington
2015	<b>Undergraduate Research Assistant</b> Advisors: Woodruff Sullivan	University of Washington
2013-2015	<b>Undergraduate Research Assistant</b> Advisors: Giada Arney, Victoria Meadows	University of Washington

## Awards & Honors

2024	<b>NSF MPS-Ascend Postdoctoral Fellow</b> \$300,000, 3 years, P-I: G. Tovar Mendoza	Johns Hopkins University
2023	<b>SACNAS Graduate Student Oral Presentation Award</b>	Portland, OR
2017	<b>NSF Graduate Research Fellow</b> \$37k/year, 3 years	University of Washington
2022	<b>SACNAS Travel Award Recipient</b>	Puerto Rico
2021	<b>Astronomy Department Service Award</b>	University of Washington
2017	<b>Husky 100 Recipient</b> Recognition of top 100 students at the university	University of Washington
2016-2017	<b>Ronald E. McNair Scholar</b>	University of Washington
2013-2017	<b>WA NASA Space Grant Consortium Scholar</b>	University of Washington
2013-2014	<b>College Assistance Migrant Program Scholar</b>	University of Washington

## Observing Proposals

2025	<b>"Monitoring Stellar Activity on TRAPPIST-1 with ARCTIC and JWST"</b> 8 half-nights on ARCTIC; PI: S. Hawley; Co-I: G. Tovar Mendoza	Apache Point Observatory
2025	<b>"Monitoring Flares from TRAPPIST 1 with XMM-Newton and JWST"</b> 30ks; P-I: W. Howard; Co-I: G. Tovar Mendoza	XMM-Newton T00
2025	<b>"Monitoring Flares from TRAPPIST 1 with ALMA and JWST"</b> 49hrs, P-I: M. MacGregor; Co-I: G. Tovar Mendoza	ALMA DDT
2025	<b>"Surveying Stellar Shenanigans: Exploring M dwarf Flares for Exoplanetary Insights"</b> GO 7068, 48.7 hrs, P-I: D. Doshi; Co-I: G. Tovar Mendoza	JWST Cycle 4
2022	<b>"Detecting Activity Cycles Using Stellar Flares"</b> (\$544,087) P-I: J. Davenport; Co-I: G. Tovar Mendoza	NASA ADAP

## Publications

- Howard, W.S., Kowalski, A. F., Radica, M, Flagg, L., Vasilyev, V., Rackham, B. V., **G. Tovar Mendoza**, et al. "Separating flare and secondary atmospheric signals with RADYN modeling of near-infrared JWST transmission spectroscopy observations of TRAPPIST-1" (ApJ, in review)
- G. Tovar Mendoza**, Davenport, J. R., et al. "Revisiting the Stellar Flares of TRAPPIST-1 with Spitzer" (in prep)
- G. Tovar Mendoza**, Wilson, R., Youngblood, A., et al. "Stellar Flare Yields in the Roman Galactic Bulge Survey" (in prep)
- G. Tovar Mendoza**, Wilson, R., Youngblood, A., et al. (2023) "Enabling Stellar Flare Science in the Roman Galactic Bulge Survey: Cadence, Filters, and the Read-Out Strategy Matter" arXiv:2307.05806
- Quick, L. C., Robergre, A., **G. Tovar Mendoza**, et al. (2023) Prospects for Cryovolcanic Activity on Cold Ocean Planets" ApJ, 956, 29
- G. Tovar Mendoza**, Davenport, J. R. A., Agol, E et al. (2022) "Llamaradas Estelares: Modeling the Morphology of White-light Flares" AJ, 164,17
- Davenport, J. R. A., **Tovar Mendoza, G.**, Hawley, S. L. (2020) "10 Years of Stellar Activity for GJ1243" AJ, 160,36
- Lustig-Yeager, J., V. S. Meadows, **Tovar, G.** et al.(2018) "Detecting Ocean Glint on Exoplanets Using Multiphase Mapping" AJ, 156,301
- Montet, B. T., **Tovar, G.**, Foreman-Mackey, D. (2017) "Long Term Photometric Variability in Kepler Full Frame Images: Magnetic Cycles of Sun-Like Stars" ApJ, 851,116
- Arney, G., V. S. Meadows, S. D. Domagal-Goldman, T. Robinson, D. Deming, T. Robinson, **Tovar, G.**, E. T. Wolf, E. Schwieterman. (2017) "Pale Orange Dots: The Impact of Organic Haze on the Habitability and Detectability of Earthlike Exoplanets" ApJ, 836,49

## Leadership & Service

2025	<b>Organizing Committee</b> NSF Workshop at AAS organizing committee for 50 fellows.	Virtual
2025	<b>Panel Reviewer</b> Subject-matter expert reviewer in NASA peer reviews.	Virtual
2021-2023	<b>Graduate Student Senator</b> One of two graduate student senators from the Astronomy department at UW in the Graduate Student Professional Senate (GPSS)	University of Washington
2019-2024	<b>Outreaching Grad</b> Graduate Student Equity & Excellence Program (GSEE). Support GSEE, and academic departments to enhance outreach and recruitment efforts for prospective and incoming graduate students.	University of Washington
2018-2019	<b>Equity &amp; Inclusion Committee Member</b> Astronomy Department	University of Washington
2018-2024	<b>First Generation Graduate Student Advisory Board Member</b> Advise graduate school on programming for first generation graduate students on campus	University of Washington
2017-2024	<b>Undergraduate Research Support Network Advisory Board Member</b> Advise undergraduate research program on programming and opportunities to increase undergraduate research on campus.	University of Washington

## Teaching Appointments

2 Quarters	<b>Graduate Teaching Assistant: Astro 101 - Intro to Astronomy</b> SPR 2023, WTR 2019	University of Washington
4 Quarters	<b>Graduate Teaching Assistant: Astro 150 - The Planets</b> Summer 2019, SPR 2019, SPR 2018, WTR 2018	University of Washington

## Advising & Mentorship

Fall 2023	<b>Undergraduate Research Mentor</b> Mentored two students from the Pre-Majors in Astronomy Program Project title: "The Stellar Flares of TRAPPIST-1"	University of Washington
Fall 2021	<b>Undergraduate Research Mentor</b> Mentored two students from the Pre-Majors in Astronomy Program Project title: "Searching for Flares on M Dwarf Stars"	University of Washington
2020-2021	<b>Pre Majors in Astronomy Program Academic Advisor</b> Responsible for mentoring and supporting 16 undergrad students in the Pre-MAP program. Held weekly office hours, reviewed summer internship applications and wrote letters of recommendation	University of Washington

## Talks & Posters

### Talks (\* denotes invited)

May 2025	*ASCEND Mentor Network Fellowship Conference Keynote	Virtual
April 2025	JHU Wine + Cheese Seminar	Baltimore, MD
Jan 2025	NSF Postdoctoral Fellows Workshop	National Harbor, MD
Jan 2025	245th American Astronomical Society Meeting	National Harbor, MD
Nov 2024	JHU + STScI ExoJamboree	Baltimore, MD
July 2024	* UW STEMsub (Math Science Upward Bound) Seminar Series	Seattle, WA
Dec 2023	* Carnegie Observatories Lunch Seminar	Pasadena, CA
Nov 2023	* UW Physics Colloquium	Bothell, WA
Nov 2023	* Ohio State Exoplanet Group Seminar	Virtual
Oct 2023	SACNAS NDiSTEM Conference	Portland, WA
Oct 2023	* Harvard CfA Exoplanet Pizza Lunch	Cambridge, MA
April 2023	UW Astrobiology Colloquium	Seattle, WA
April 2023	* Gabriel E. Gallardo McNair Symposium Keynote	Seattle, WA
Jan 2023	241st American Astronomical Society Meeting	Seattle, WA
Dec 2022	* Habitable Worlds Observatory Seminar	NASA GSFC, Greenbelt, MD
April 2018	* Earth & Space Sciences Seminar	Seattle, WA
Aug 2016	Banneker Institute Symposium	Cambridge, MA
April 2016	Theodor Jacobsen Observatory	Seattle, WA
Dec 2013	Pre Majors in Astronomy Seminar	Seattle, WA

### Posters

July 2022	Cool Stars 21	Toulouse, FR
Aug 2021	TESS Science Conference II	Seattle, WA
Aug 2017	Habitable Worlds Conference	Laramie, WY
Oct 2016	Northwest Astronomy Meeting	Bellingham, WA
Aug 2016	Undergraduate Research Symposium	Seattle, WA
Jan 2015	225th American Astronomical Society Meeting	Seattle, WA

## Selected Outreach

2024-Now	<b>Academic Tutor</b> Weekly tutor with the Jail Tutorial Project at JHU. Topics include math, science, and GED prep.	Baltimore, MD
2021-2024	<b>Academic Tutor</b> Weekly tutor at Echo Glen Youth Detention Center. Topics include math, biology, spanish, and GED prep. Helped lead and develop labs for summer school.	Snoqualmie, WA
2019-2024	<b>Letters to a Pre-Scientist pen pal</b> 3 pen pals total ranging from 5th-8th grade across the U.S.	Various
2017-2024	<b>Planetarium Presenter</b> Quarterly shows to various groups visiting the university	University of Washington

## Invited Panels

April 2022	<b>Equity in Graduate Education Summit</b> Graduate student panelist for event hosted by the Office of Equity & Justice in Graduate Programs	University of Washington
July 2021	<b>Research Community Connections</b> Graduate student panelist for event hosted by the Undergrad Research Program.	University of Washington
May 2018	<b>Women's Economic Empowerment – Breaking Gender Barriers and Advancing Equity</b> Department of Scandinavian Studies. Graduate student panelist.	UW

## Media Features

Aug 2018	<b>LatinX @ UW Book</b> Personal story was featured in a chapter of a published book by Ricardo Gomez. Article about book also published.	University of Washington
June 2017	<b>Early Career NASA Astrobiology Feature</b>	NASA
June 2017	<b>UW College of Arts and Sciences Feature</b> Interview for the college of arts and sciences at the UW	University of Washington
April 2017	<b>La Raza del Noroeste Newspaper Interview</b> Interview for local newspaper	Seattle, WA


## Workshops

2025	MIT Stars & Planets Workshop	Boston, MA
2025	ALMA Users Workshop	Baltimore, MD
2019	Catalyzing Advocacy in Science and Engineering (CASE) Workshop	Washington D.C.
2017	NASA Astrobiology Summer School	Santander, Spain

## Fundraising Experience

Jan 2018	<b>Foundation Board Meeting</b> Invited student speaker for the 50th anniversary fundraiser of the Office of Minority Affairs and Diversity.	University of Washington
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References available upon request.

 Last Updated: October 7, 2025