

Owen Mitchem

Curriculum Vitae

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Department of Physics & Astronomy
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Research Interests

- Observational Astronomy, Exoplanets, Time-Domain & High-Energy Astrophysics, Observational Cosmology

Education

2021–2025 **B.S., Physics with Departmental Honors**, *University of Oregon*, Eugene, OR
Advisors: Yvette Cendes[‡], R. Scott Fisher[§]

Research Positions

- 10/2025–Present **Post-baccalaureate Research Associate**, *University of Utah*, Salt Lake City, UT
Member of Professor Tanmoy Laskar's high energy transients research group.
- 06/2025–10/2025 [‡]**Post-baccalaureate Research Assistant**, *University of Oregon*, Eugene, OR
Hired as a post-bacc to continue project on late-time radio emission from Type Ia supernovae.
- 08/2024–06/2025 [‡]**Presidential Undergraduate Research Fellow**, *University of Oregon*, Eugene, OR
- Probed shockwave-CSM interactions of 13 SNe Ia using targeted & archival VLA observations.
 - Self calibrated VLA data using UO's high performance computing cluster Talapas.
 - Developed Python scripts to implement models from the literature & interpret novel results.
 - Authored 8hr VLA 2026A proposal, accepted with A priority..
 - Drafted manuscript to be submitted to ApJ in January 2026.
- 06/2023–09/2024 [§]**Lead Researcher**, *Pine Mountain Observatory*, UO, Eugene, OR
Initiated PMO partnership with TESS follow-up observing program, contributing more than a dozen precise exoplanet light curves from PMO's 0.35m and 0.6m telescopes.
- 10/2022–06/2023 [§]**Research Assistant**, *Pine Mountain Observatory*, UO, Eugene, OR
- Identified and implemented the observational techniques needed to pursue frontline research.
 - Responsible for all elements of remote and in-person PMO observations.
 - Developed the data reduction pipeline and exposure calculator for PMO's 0.35m telescope.
 - Shared analysis with international collaborators for eventual publication in *MNRAS* and *AJ*.
 - Mentored team of other undergraduate researchers to continue project after my graduation.

Publications

Journal Articles

- [1] *Updated Masses for the Gas Giants in the Eight-Planet Kepler-90 System Via Transit-Timing Variation and Radial Velocity Observations*. Shaw, D. E., Weiss, L. M., Agol, E., et al. **incl. Mitchem, O.** 2025. *AJ*, **170**, 146. [arXiv:2507.13588]
- [2] *The eccentricity distribution of warm sub-Saturns in TESS*. Fairington, T. R., Dong, J., Huang, C. X., et al. **incl. Mitchem, O.** 2025. *MNRAS*, **540**, 1144. [arXiv:2505.04106]

Conference Proceedings

- [1] *University of Oregon Undergraduate Research: TESS Follow-up at the Pine Mountain Observatory.* Mitchem, O., Linnenkohl, K., Fisher, R. S. 2024. *TESS Science Conference III*, 34. [doi:10.5281/zenodo.12789213]

Funding, Scholarships, & Awards

Aug 2024	Presidential Undergraduate Research Scholars (PURS) Fellowship <i>University of Oregon Office of Research & Innovation</i>	(\$6,000)
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2021–2025	Pathway Oregon Scholarship, <i>University of Oregon.</i>	(\$62,128)
Dec 2024	Conference Travel Award, <i>UO Physics Department</i>	(\$1,900)
Dec 2024	Conference Travel Award, <i>Institute for Fundamental Science</i>	(\$500)
Sep 2024	Inaugural Jim Clinton Physics Scholarship, <i>UO Physics Department.</i>	(\$4,750)
Sep 2021	Mary E Russell Scholarship, <i>University of Oregon.</i>	(\$1,500)
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June 2025	Commencement Speaker, <i>UO Physics Department.</i>	
May 2025	Physics Poster Award, <i>UO Physics Department.</i>	(2 nd place)
Dec 2024	Distinguished Chapter Award, <i>Society of Physics Students' National Office</i>	
Aug 2024	Best Poster Honorable Mention Award, <i>TESS Science Conference III.</i>	(2 nd place)
— —	Weiser Undergraduate Leadership Award (3x), <i>UO Physics Department.</i>	
Jun 2025	○ <i>On recommendation of the Director of Undergraduate Studies and the Head of Department, awarded to a physics undergraduate major who has performed exemplary service to the Department through outreach, teaching, and/or mentoring activities.</i>	
May 2024		
May 2023		

Computational Background & Observing Experience

Languages	<i>Python, L^AT_EX, Mathematica, Unix shell scripts, R, C++</i>
Software	<i>AstrolmageJ, MaxImDL, CASA, CARTA, SAOImageDS9, SExtractor, ArduinoIDE</i>
Python packages	<i>Pandas, NumPy, Astropy, SciPy, NumPyro, JAX, Flax, TensorFlow</i>

VLA/26A-394	Follow-up Obs. for Two Radio-detected Type Ia Supernovae	(8 hours, A priority)
2023–2024	PMO Key Project: TESS Exoplanet Follow-up with PMO 0.35m.	(40 Nights)
2023–2024	PMO Key Project: TESS Exoplanet Follow-up with PMO 0.6m.	(2 Nights)

Conferences Attended

Jan 2026	247 th Meeting of the AAS, Phoenix, AZ.	(Poster)
Sep 2025	1 st Oregon Astronomy Research Symposium, UO, Eugene, OR.	(Talk)
May 2025	15 th Oregon Undergraduate Research Symposium, UO, Eugene, OR.	(Talk + Poster)
Jan 2025	245 th Meeting of the AAS, National Harbor, MD.	
Jul/Aug 2024	TESS Science Conference III, MIT, Cambridge, MA.	(Talk + Poster)
May 2024	14 th Oregon Undergraduate Research Symposium, UO, Eugene, OR.	(Poster)

- Apr 2024 *SPS Zone 17 Meeting*, Lewis and Clark College, Portland, OR. (Talk)
 May 2023 *13th Oregon Undergraduate Research Symposium*, UO, Eugene, OR. (Poster)

Service & Outreach

Departmental Service

- 01/2025–06/2025 Physics Curriculum Committee (Appointed)
 05/2023–06/2025 President, *University of Oregon Society of Physics Students* (Elected)
 ... Leadership Team, *Physicists for Advancing Gender Equity in Science* (ex officio)
 10/2022–05/2023 Secretary, *University of Oregon Society of Physics Students* (Appointed)

Outreach

- 08/2022–10/2026 Telescope Operator & Tour Guide, *Pine Mountain Observatory*, Bend, OR.
Featured Article *Strange New Worlds*, *University of Oregon College of Arts & Sciences*. (Link)
 Dec 2024 ○ Cover article of quarterly UO newsletter *CAS Connections*.

- Museum Exhibit** *Capturing the Cosmos*, *Oregon Museum of Natural and Cultural History*, Eugene, OR.
 09/2024–04/2025 ○ Research at PMO featured in museum exhibit.

- Invited Talk** *Undergraduate Research at the Pine Mountain Observatory*, Undergraduate Recruitment,
 Mar 2024 University of Oregon College of Arts & Sciences
 ○ Invited speaker for prospective students; shared experience leading research at PMO.