

Tobin Wainer

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<https://tobin-wainer.github.io>

Education	Doctorate of Philosophy in Astronomy University of Washington, Seattle, Washington	Pending 2026
	Masters of Science in Astronomy University of Washington, Seattle, Washington	June 2024
	Honors Bachelor of Science in Physics with Astronomy Emphasis University of Utah, Salt Lake City, Utah	May 2021
	<ul style="list-style-type: none">• Unweighted GPA: 3.90/4.0 (3.84/4.0 Physics GPA)• Honors Thesis; “Star Clusters in the Triangulum Galaxy: Star Cluster Catalog and Mass Function Fitting”• Undergraduate Research Scholar Designation	

Grants	Science PI: TESS Cycle 7,	\$70,000
	Co-I: HST Proposal. Cycle 32, ID. #17833	\$Pending Budget Approval
	Co-I: JWST Proposal. Cycle 3, ID. #5145	\$Pending Budget Approval
	Co-I: Astrophysics Data Analysis Program (ADAP)	\$262,000, 2025-2026 5.5 Months
	Undergraduate Research Opportunity Program Grant	\$1200, 2020

Project Lead Publications	Wainer, T., [4 Authors], 2026, "Searching for Stellar Activity Cycles using Flares II: The TESS CVZ", <i>In Preparation for AAS Journals</i>
	Wainer, T., [8 Authors], 2026, "The Panchromatic Hubble Andromeda Southern Treasury (PHAST). III. The Spatially Resolved Recent Star Formation History in M31", <i>In Preparation for AAS Journals</i>
	Wainer, T., [8 Authors], 2025, "The Timescales of Embedded Star Formation as Observed in STARFORGE", <i>Submitted to AAS Journals</i>

Wainer, T., [17 Authors], 2025, "Crowded Field Photometry with Rubin: Exploring 47 Tucanae with Data Preview 1", *Research Notes of the AAS*, Volume 9, Issue 7, *id.171*

Wainer, T., [4 Authors], 2024, "Searching for Stellar Activity Cycles using Flares: The Short and Long Timescale Activity Variations of TIC-272272592", *The Astronomical Journal*, 2024AJ, 168, 232W

Wainer, T., [17 Authors], 2024, "The Panchromatic Hubble Andromeda Treasury: Triangulum Extended Region (PHATTER). VI. The High-mass Stellar Initial Mass Function of M33", *The Astronomical Journal*, 2024AJ, 168, 86W

Wainer, T., [3 Authors], 2023, "ELK: A python package for correcting, analyzing, and diagnosing TESS integrated light curves", *The Journal of Open Source Software* 2023 JOSS, 8(90), 05605

Wainer, T., [9 Authors], 2023, "Catalog of Integrated-light Star Cluster Light Curves in TESS", *The Astronomical Journal*, 2023AJ, 166, 106W

Wainer, T., [12 Authors], 2022, "The Panchromatic Hubble Andromeda Treasury: Triangulum Extended Region (PHATTER). III. The Mass Function of Young Star Clusters in M33", *The Astrophysical Journal*, 2022ApJ, 928, 15W

Johnson, L.C., **Wainer, T.**, [11 Authors], 2022, "The Panchromatic Hubble Andromeda Treasury: Triangulum Extended Region (PHATTER). IV. M33 Star Cluster Catalog", *The Astrophysical Journal* 2022ApJ, 938, 81J

**Contribution
Publications
* Indicates
Student Paper**

Wang, Y., [...] **Wainer, T.**, 2025, "Optical Counterparts to X-ray sources in LSST DP1", *Submitted to AAS Journals*

Chen, Z., [...] **Wainer, T.**, 2025, "PHAST. The Panchromatic Hubble Andromeda Southern Treasury. I. Ultraviolet and Optical Photometry of over 90 Million Stars in M31", *The Astrophysical Journal*, 979, 35c

* Gollotti, G., [...] **Wainer, T.**, 2024, "Two Intriguing Transits of HIP 23309 Observed by TESS", *Research Notes of the AAS*, 8, 293

Peltonen, J., [...] **Wainer, T.**, 2024, "JWST reveals star formation across a spiral arm in M33", *Monthly Notices of the Royal Astronomical Society*, 527, I4

Peltonen, J., [...] **Wainer, T.**, 2023, "Clusters, Clouds, and Correlations: Relating Young Clusters to Giant Molecular Clouds in M33 and M31", *Monthly Notices of the Royal Astronomical Society*, 522, I4

Gibson, B., [...] **Wainer, T.**, 2023, "The Chemodynamics of the Stellar Populations in M31 from APOGEE Integrated Light Spectroscopy" *The Astrophysical Journal* 2023ApJ, 952, 23G

Honors and Awards	Graduate Student Prize for Excellence in Research	2024
	Predoctoral fellow at the Center for Computational Astrophysics	2024
	Honorable Mentions in the Graduate Research Fellowship Program	2024
	University of Utah Most Outstanding Teaching Assistant Award	2022
	Honorable Mentions in the Graduate Research Fellowship Program	2022
	Honorable Mentions in the Chambliss Achievement Student Award competition for undergraduates at the 237th AAS conference	2021
	University of Utah Outstanding Undergraduate Research Award in Astronomy and Astrophysics	2021
	University of Utah representative for Research on Capitol Hill; presenting research to state legislators	2021
	Made Dean's List each eligible semester of enrollment	F17, S18, F19, F20
	Research Experience for Undergraduates at Northwestern University	2020
	Summer Undergraduate Research Program at the University of Utah	2019
	One-year Peer Advisor Scholarship for dedication to student learning and excellence in teaching	\$2000, 2019
	Four-year Sterling Scholar Scholarship for Speech and Debate	\$20,000, 2017-2020
	Two-year Regents Scholarship	\$6000, 2017-2019

Teaching Experience	Course Instructor	September 2025 - Current
	Yakima Valley Community College Classes: <ul style="list-style-type: none"> • <i>Introduction to Scientific Computing</i> <ul style="list-style-type: none"> – Develop course syllabus and content – Lead weekly lectures of 20 students 	
	Teaching Assistant	September 2022 - May 2023
	University of Washington Classes: <ul style="list-style-type: none"> • <i>Astronomy 101a, 101b; Introduction to Astronomy In person and Online</i> 	

- Lead 3 weekly sections of 30 students each
- Make weekly recap lecture videos

Teaching Assistant

August 2018 - May 2022

University of Utah

Classes:

- *Astronomy 1010, 4090; The Universe, Stellar Astrophysics*
 - Helped facilitate weekly 5-person teaching staff meeting to plan for the next week
 - Facilitated 20-person group sessions and provided one-on-one support
 - Collaborate with professor to design class structure
- *Physics 2210, 2020; Physics I for Scientists and Engineers, General Physics II*
 - Collaborated with teachers and program directors to meet academic needs of students
 - Graded student assignments and exams
- *LEAP 1010, 1020; Pre-Law I, Pre-Law II, Role of Law in Society*
 - Led class when professors were attending conferences

Presentations and Conference Contributions	<i>Center for Computational Astrophysics Pre-Doc Symposium, Invited Talk</i> (Link to talk)	June 2025
	New York, New York	
	<i>Ballyfest; Star Formation, Stellar Feedback, and the Ecology of Galaxies, Contributing Poster</i>	May 2025
	Visegrad, Hungary	
	<i>2025 Spring Symposium: Inter+Stellar: Harnessing the Intersection Between Stars and the Interstellar Medium, Contributing Poster</i>	May 2025
	Baltimore, Maryland	
	<i>TESS Science Conference III, Contributing Poster</i>	August 2024
	Cambridge, Massachusetts	
	<i>243rd Meeting of the AAS, Contributing Talk</i>	January 2024
	New Orleans, Louisiana	
	<i>8th TESS Asteroseismic Science Consortium, Contributing Talk</i>	July 2023
	Honolulu, Hawaii	
	<i>240th Meeting of the AAS, Poster 201.01</i> (Link to Abstract)	June 2022
	Pasadena, California	

<i>Undergraduate Research Symposium, Contributing Poster</i> University of Utah, Salt Lake City, Utah	April 2021
<i>237 Meeting of the AAS, Poster 150.07</i> (Link to Abstract) Virtual	January 2021
<i>Research Experience for Undergraduate Symposium, Contributing Poster</i> 2020 Northwestern University and Adler Planetarium, Chicago, Illinois	August 2020
<i>235 Meeting of the AAS, Poster 306.02</i> (Link to Abstract) Honolulu, Hawaii	January 2020
<i>2019 Physics Congress, Contributing Poster</i> Providence, Rhode Island	November 2019
<i>Summer Research Symposium, Contributing Poster</i> University of Utah, Salt Lake City, Utah	August 2019

Service	<i>Senator in the University of Washington Graduate and Professional Student Senate</i> September 2023 - Present
	<ul style="list-style-type: none"> • Serve the broader University student population on issues like affordability and student wellness.
	<i>Apache Point Observatory Telescope Allocation Committee</i> May 2023 - Present
	<ul style="list-style-type: none"> • University of Washington graduate student representative for allocating telescope time of the 3.5 meter APO. • Tasks include reading proposals and collaborating with faculty members of the TAC, to equitably allocate time.
	<i>Astronomy on Tap Roadshow Co-Founder</i> September 2024 - Present
	<ul style="list-style-type: none"> • Bring Astronomy on tap to rural communities across Washington State.
	<i>Astronomy on Tap Seattle Technical Assistant</i> September 2023 - Present
	<ul style="list-style-type: none"> • In charge of all technical aspects of the show from microphones and projection, to live streaming the show.
	<i>University of Washington Astronomy Planetarium Technical Assistant</i> September 2023 - 2024
	<ul style="list-style-type: none"> • Point person for technological issues with the planetarium.

- Perform routine service to Planetarium software.

Society of Physics Students Communications Director May 2019 - May 2021

University of Utah Chapter

- Raised over \$7500 to send 12 undergraduates to the quadrennial SPS conference in Rhode Island
- Orchestrated monthly outreach events for local high school and middle school students
- Coordinated lab tours to help undergraduates discover research opportunities

Undergraduate Student Advisory Committee Associate Chair August 2019 - May 2021

University of Utah Department of Physics and Astronomy

- Worked with a six-person committee to generate a report providing a recommendation about a professor's Retention, Promotion, or Tenure
- Conducted interviews with professors, graduate students, and undergraduates to gather information
- Coordinate with the committee chair to facilitate meetings

**Other
Experience and
Activities**

Research on Capitol Hill

February 2021

Salt Lake City Capital Building

- Selected as 1 of 15 undergraduates to represent the University of Utah
- Presented research to state legislators

Pro Bono Law Clinic Volunteer

August 2019 - December 2019

Salt Lake City Pro Bono Law Clinic

- Worked alongside law students and practicing attorneys to provide clients with legal advice
- Conducted client interviews and consulted with attorneys
- Helped direct clients through necessary paperwork

Resident Advisor

August 2018 - May 2019

University of Utah

- Assisted 30 residents with transitioning into a new living environment
- Facilitated floor meetings to discuss concerns, review complaints and convey policy changes
- Enforced policies and safety standards through building rounds
- Provided emotional support and counseling to residents coping with loss
- Provided swift and knowledgeable emergency support in line with campus crisis protocols

Hobbies

- Backpacking
 - Mountaineering
 - Skiing
 - Sports fanatic
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Telescope Time 3 Nights- Apache Point Observatory 3.5M: Fall 2024
Awarded

8 Half Nights- CHIRON echelle spectrograph, SMARTS 1.5 M telescope Fall 2025

Skills

- Programming Languages: Python, HTML
- Astronomy Software: DS9, Astropy, MATCH, SKIRT, SLUG
- Data Analysis: integrated spectroscopy, using large survey data (HST, JWST), HST, JWST image processing, time series analysis using TESS
- Technical skills: Stellar population synthesis modeling
- Statistical Techniques: Bayesian Modelling, Regression, Bootstrap sampling
- Other software: LATEX, Github

Professional American Astronomical Society (AAS)
Memberships American Physics Society (APS)
Society Of Physics Students (SPS)