

Tobin Wainer

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

Education	Doctorate of Philosophy in Astronomy University of Washington, Seattle, Washington	Pending 2027
	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. , [17 Authors], 2025, “Crowded Field Photometry with Rubin: Exploring 47 Tucanae with Data Preview 1”, <i>Research Notes of the AAS, Volume 9, Issue 7, id.171</i>
	Wainer, T. , [4 Authors], 2024, “Searching for Stellar Activity Cycles using Flares: The Short and Long Timescale Activity Variations of TIC-272272592”, <i>The Astronomical Journal, 2024AJ, 168, 232W</i>
	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*, 2024*AJ*, 168, 86*W*

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*, 2023*AJ*, 166, 106*W*

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*, 2022*ApJ*, 928, 15*W*

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, 81*J*

**Contribution
Publications
* Indicates
Student Paper**

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, 35*c*

* 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, 23*G*

**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

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>	April 2021

University of Utah, Salt Lake City, Utah

237 Meeting of the AAS, Poster 150.07 (Link to Abstract) January 2021
Virtual

Research Experience for Undergraduate Symposium, Contributing Poster August 2020
Northwestern University and Adler Planetarium, Chicago, Illinois

235 Meeting of the AAS, Poster 306.02 (Link to Abstract) January 2020
Honolulu, Hawaii

2019 Physics Congress, Contributing Poster November 2019
Providence, Rhode Island

Summer Research Symposium, Contributing Poster August 2019
University of Utah, Salt Lake City, Utah

**Teaching
Experience**

Teaching Assistant September 2022 - Current

University of Washington

Classes:

- *Astronomy 101a, 101b; Introduction to Astronomy In person and Online*
 - 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
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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>University of Washington Astronomy Planetarium Technical Assistant</i>	September 2023 - Present
	<ul style="list-style-type: none"> • Point person for technological issues with the planetarium. • Perform routine service to Planetarium software. 	
	<i>Society of Physics Students Communications Director</i>	May 2019 - May 2021
	University of Utah Chapter	
	<ul style="list-style-type: none"> • 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 	
	<i>Undergraduate Student Advisory Committee Associate Chair</i>	August 2019 - May 2021
	University of Utah Department of Physics and Astronomy	
	<ul style="list-style-type: none"> • 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 	
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	Other	<i>Research on Capitol Hill</i>
	Experience and Activities	Salt Lake City Capital Building February 2021
	<ul style="list-style-type: none"> • Selected as 1 of 15 undergraduates to represent the University of Utah • Presented research to state legislators 	

Pro Bono Law Clinic Volunteer
Salt Lake City Pro Bono Law Clinic

August 2019 - December 2019

- 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
University of Utah

August 2018 - May 2019

- 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

Skills

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

Professional Memberships

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