

# Samuel McCarty

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First-year PhD student in Astronomy & Astrophysics at the  
Center for Astrophysics | Harvard & Smithsonian

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<b>Education</b>	Harvard University	Cambridge, MA
	Astronomy & Astrophysics PhD Program	Starting Fall 2025
	University of Washington	Seattle, WA
	B.S. <i>magna cum laude</i> with honors in Physics and Astronomy	06/2025
	Cumulative GPA: 3.96/4.0, Physics: 3.98, Astronomy: 3.96	
<b>Research</b>	Radio Strong Lensing	03/2024 – Present
	Advisor: Dr. Liam Connor (Harvard CfA)	
	Forecasting expected strong gravitational lenses in upcoming wide-field radio surveys, techniques for identifying them, and their application to important questions in astronomy.	
	Cosmic Sheets & Filaments	05/2023 – 06/2025
	Advisor: Dr. Matthew McQuinn (University of Washington)	
	This project aims to understand the structure of the IGM in sheets and filaments of the cosmic web using hydrodynamic cosmological simulations.	
	Virtual Planetary Laboratory Student Researcher	01/2025 – Present
	Advisor: Dr. Victoria Meadows (University of Washington)	
	Creating an ML classification pipeline to distinguish between biological and non-biological exoplanet observations for the planned Habitable Worlds Observatory.	
	Student Quasar Absorption Diagnosticians (SQuAD)	06/2023 – 01/2024
	Advisor: Dr. Jessica Werk (University of Washington)	& 01/2025 – 06/2025
	A group of student researchers working on analyzing the composition and kinematics of the circumgalactic medium using QSO absorption spectra and other methods. Currently using bright stars in the galactic halo to study the Milky Way's own CGM.	
	Undergraduate Research Assistant	03/2023 – 04/2024
	UW Nanopore Lab, Advisor: Dr. Jens Gundlach (University of Washington)	
	This lab develops nanopore DNA sequencing methods. Worked on a project using MCMC biomolecular simulations to understand internal variables in the experiments.	
<b>Publications</b>	<a href="#">McCarty, S., &amp; Connor, L. (2024)</a> . <i>Strong gravitational lensing with upcoming wide-field radio surveys</i> . Submitted to MNRAS.	

<b>Presentations</b>	<i>Strong lensing with upcoming wide-field radio surveys</i>	2025
	– ASTRO 3D <a href="#">Strong Lensing in the Next Decade</a> workshop, Harvard CfA	
	<i>Structure of Cosmic Sheets and Filaments</i>	2024
	– Mary Gates Research Symposium, University of Washington	
<b>Service</b>	Undergrad Mentorship Program Leader (UW Physics)	2024 – 2025
	UW Mobile Planetarium Volunteer	2022 – 2025
	<i>Exploring Strong Gravitational Lensing</i>	04/24/2024
	~45-minute public outreach talk for Astronomy on Tap Seattle. <a href="#">Video here.</a>	
	Outreach Coordinator (UW Astro)	2022 – 2023
	Phi Delta Theta Executive Social Chair	2023 – 2024
<b>Honors &amp; Achievements</b>	<i>Top Graduating Senior</i> (UW Physics)	2025
	<i>Departmental honors in both Physics and Astronomy</i> (UW)	2025
	<i>Caltech Summer Undergraduate Research Fellowship</i>	2024
	<i>Hans G. Dehmelt Scholarship</i> (UW Physics)	2024
	<i>Mary Gates Research Scholarship</i> (UW)	2024
	<i>Baer Prize</i> (UW Astro)	2024
	<i>Greek Man of the Year</i> (UW)	2023
	93rd percentile Physics GRE (970/990)	
	Dean's List every quarter in college	
	Perfect score on the ACT	
<b>Observing Experience</b>	Local Volume Mapper, Las Campanas Observatory	11/14/24 - 02/01/25
	Hale 200 Inch Telescope, Palomar Observatory	08/14/2024
	ARCSAT 0.5m Telescope, Apache Point Observatory	04/22-23/2024