

# SAL WANYING FU

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## RESEARCH INTERESTS

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Near-Field Cosmology, Galactic Chemical Evolution, Dwarf Galaxies;  
Photometric Metallicities, Stellar Chemical Abundances, Resolved Stellar Spectroscopy

## EDUCATION

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Ph.D., Astrophysics, University of California, Berkeley May 2025 (anticipated)  
Advisor: Dr. Dan Weisz  
M.A., Astrophysics, University of California, Berkeley May 2021  
B.A., Physics, *magna cum laude*, Pomona College May 2019  
Academic Advisor: Dr. Philip Choi  
Research Advisor: Dr. Josh Simon  
Thesis: “Small-Scale Tests of  $\Lambda$ CDM Cosmology”

## RESEARCH POSITIONS

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Paul and Daisy Soros Fellow & NSF GRFP Fellow, UC Berkeley 2019–  
Visiting Graduate Student Researcher, Kyung Hee University, Suwon, South Korea Summer 2022  
Summer Postbaccalaureate Researcher, Carnegie Observatories Summer 2019  
CASSI Summer Undergraduate Researcher, The Carnegie Observatories Summer 2016, 2017, 2018

## HONORS & AWARDS

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Paul and Daisy Soros Fellow 2020-2022  
Hertz Fellowship Finalist 2020  
NSF Graduate Research Fellow 2019-2024  
Cranor Fellow, UC Berkeley 2019-2025  
Goldwater Scholarship 2018  
Tileston Junior Physics Prize 2018  
FUTURE of Physics at Caltech November 2018  
Pomona College Scholar June 2016-May 2019  
Tileston Sophomore Physics Prize Jan 2018  
Moncrief Astronomy Prize Sep 2017

## TEACHING & SERVICE

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Referee, Astronomy & Astrophysics, The Astrophysical Journal  
**UC Berkeley**  
Astronomy Grad Representative - Space Science Lab Director Search 2024  
Institute for Scientist & Engineer Educators Professional Development Program 2024, in progress  
Graduate Student Instructor, ASTRON218, *Galaxies* Fall 2021  
Graduate Student Instructor, Ay160, *Stellar Physics* Fall 2019  
**Pomona College**  
Student Mentor, PHYS128, *Electronics (with community partnership)* Spring 2019  
Student Mentor & Lab TA, ASTR101, *Observational Astronomy* Fall 2018  
Student Mentor, ASTR51, *Introductory Astronomy* Spring 2018  
Student Mentor & Lab TA, ASTR101, *Observational Astronomy* Fall 2017  
Student Mentor, ASTR51, *Introductory Astronomy* Spring 2017  
Student Mentor, PHYS70, *Spacetime, Quanta and Entropy* Fall 2016  
Lab TA, ASTR2, *Galaxies and Cosmology* Spring 2016

AWARDED TELESCOPE TIME

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*co-I (PI Dan Weisz): Keck/Subaru Exchange - 2 nights <i>Resolved Metallicity Maps of M31's Halo</i>	2024B
*co-I (PI Dan Weisz): Keck/Subaru Exchange - 1 night <i>Metallicity Distributions of Ultra-Faint Dwarf Galaxies Using Wide-Field HSC Ca H&amp;K Narrow-Band Imaging</i>	2024A
co-I (PI Nathan Sandford): JWST GO (Cycle 3) - 23.11 hours <i>A Closer Look at the Formation and Evolution of M31's Inner Disk</i>	2024
co-I (PI Alessandro Savino): JWST GO (Cycle 3) - 24.30 hours <i>Anchoring the JWST Population II Distance Ladder to Gaia</i>	2024
co-I (PI Dan Weisz): JWST GO (Cycle 2) - 24.21 hours <i>Alpha Elements and the Baryon Cycle in Isolated Dwarf Galaxies</i>	2023
co-I (PI Dan Weisz): HST GO (Cycle 29) - 30 orbits <i>The Metallicity Distribution Functions of Faint M31 Satellites</i>	2021
<b>PI:</b> HST GO (Cycle 28) - 23 orbits <i>The Metallicity Distribution Functions of Quenched Field Dwarf Galaxies</i>	2020
(* Lead investigator; graduate students cannot PI UC Keck proposals)	

## PUBLICATIONS, TALKS & POSTERS

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### Publications: (ADS Bibliography)

- **Fu, S. W.** et al. “Stellar Metallicities and Gradients in the Faint M31 Satellites Andromeda XVI and Andromeda XXVIII,” ApJ accepted, in press, [arXiv:2407.04698](https://arxiv.org/abs/2407.04698)
- Sandford, N., Weinberg, D., Weisz, D. & **Fu, S. W.**, “Strong Outflows and Inefficient Star Formation in the Reionization-era Ultra-faint Dwarf Galaxy Eridanus II,” 2024, [MNRAS](https://arxiv.org/abs/2407.04698), **530**, 2315S
- **Fu, S. W.** et al. , “Stellar Metallicities and Gradients in the Isolated, Quenched Low-Mass Galaxy Tucana,” 2024, [ApJ](https://arxiv.org/abs/2407.04698), **965**, 36F
- **Fu, S. W.** et al., “Metallicity Distribution Function of 13 Ultra-Faint Dwarf Galaxy Candidates from Hubble Space Telescope Narrow-band Imaging,” 2023, [ApJ](https://arxiv.org/abs/2407.04698), **958**, 167
- Alarcón Jara, A. G. et al. including **Fu, S. W.**, “Detection of chemo-kinematical structures in Leo I,” 2023, [A & A](https://arxiv.org/abs/2407.04698), **672**, 131
- **Fu, S. W.** et al. “Metallicity Distribution Function of the Eridanus II Ultra-Faint Dwarf Galaxy from Hubble Space Telescope Narrow-band Imaging,” 2022, [ApJ](https://arxiv.org/abs/2407.04698), **925**, 6
- **Fu, S. W.** et al. “Dynamical Histories of the Crater II and Hercules Dwarf Galaxies”, 2019, [ApJ](https://arxiv.org/abs/2407.04698), **883**, 11
- **Fu, S. W.** et al. “The Origin of the 300 km s<sup>-1</sup> Stream Near Segue 1”, 2018, [ApJ](https://arxiv.org/abs/2407.04698), **866**, 42

### Talks: (*\*invited*)

Princeton Astronomy Galread, Princeton, NJ, USA	(planned) November 2024
Columbia University Astronomy & Astrophysics Seminar, New York, NY, USA	(planned) November 2024
Yale Galaxy Lunch Seminar, New Haven, CT, USA	(planned) November 2024
*Amherst College Physics and Astronomy Colloquium, Amherst, MA, USA	(planned) November 2024
Stanford KIPAC Tea Talk, Stanford, CA, USA	October 2024
Small Galaxies, Cosmic Questions II, Durham, UK	July 2024
Dwarf Galaxies, Star Clusters, and Stellar Streams in LSST Era, Chicago, IL, USA	July 2024
*UC Davis Cosmology Seminar, Davis, CA, USA	March 2024
Galactic Archaeology Workshop, Matsushima, Japan	March 2024
National Astronomical Observatory of Japan Seminar, Tokyo, Japan	February 2024
The Milky Way is not an Island, Sesto, Italy	January 2024
University of Toronto Astronomy Lunch Talk Seminar, Toronto, Canada	January 2024
Seoul National University Seminar, Seoul, South Korea	September 2022
Korean Astronomical Space Institute Seminar, Daejeon, South Korean	September 2022
IAUGA 2022 Division H, Busan, South Korea	August 2022
A Comprehensive View of Galaxy Evolution from the Milky Way to I Zwicky 18, Sesto, Italy	July 2022
Observatoire astronomique de Strasbourg Seminar, Strasbourg, France	July 2022
Kapteyn Astronomical Institute Seminar, Groningen, Netherlands	July 2022
240th AAS Meeting, Pasadena, CA, USA	June 2022
KIPAC “Local Local Group” Meeting, Stanford, CA, USA	November 2019
“Exploring the Galaxy and the Local Group with WFIRST,” Pasadena, CA, USA	June 2019

### Posters:

S4 Symposium at European Astronomical Society meeting, Valencia, Spain	June 2022
Virtual “Local Group Symposium” hosted by STScI	September 2020
233rd AAS Meeting, Seattle, WA, USA	January 2019
231st AAS Meeting, Washington, D.C., USA	Jan 2017
229th AAS Meeting, Grapevine, TX	Jan 2017