

SAL WANYING FU

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RESEARCH INTERESTS

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

EDUCATION

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, <i>magna cum laude</i> , Pomona College	May 2019
Academic Advisor: Dr. Philip Choi	
Research Advisor: Dr. Josh Simon	
Thesis: “Small-Scale Tests of Λ CDM Cosmology”	

RESEARCH POSITIONS

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, Carnegie Observatories	Summer 2016, 2017, 2018

HONORS & AWARDS

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

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, <i>Galaxies</i>	Fall 2021
Graduate Student Instructor, Ay160, <i>Stellar Physics</i>	Fall 2019
Pomona College	
Student Mentor, PHYS128, <i>Electronics (with community partnership)</i>	Spring 2019
Student Mentor & Lab TA, ASTR101, <i>Observational Astronomy</i>	Fall 2018
Student Mentor, ASTR51, <i>Introductory Astronomy</i>	Spring 2018
Student Mentor & Lab TA, ASTR101, <i>Observational Astronomy</i>	Fall 2017
Student Mentor, ASTR51, <i>Introductory Astronomy</i>	Spring 2017
Student Mentor, PHYS70, <i>Spacetime, Quanta and Entropy</i>	Fall 2016
Lab TA, ASTR2, <i>Galaxies and Cosmology</i>	Spring 2016

AWARDED GRANTS

ISEE PDP Travel Award & Fee Waiver (\$6000)	2024
Paul & Daisy Soros Fellowship for New Americans (\$90,000)	2020
NSF Graduate Research Fellowship (3 years stipend & tuition)	2019

AWARDED TELESCOPE TIME

*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&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
PI: HST GO (Cycle 28) - 23 orbits <i>The Metallicity Distribution Functions of Quenched Field Dwarf Galaxies</i> (* Lead investigator; graduate students cannot PI UC Keck proposals)	2020

OBSERVING EXPERIENCE

Subaru/HSC (3 nights)	2024
Magellan/IMACS (3 nights)	2018

REFERENCES

Dr. Daniel R. Weisz Associate Professor, UC Berkeley dan.weisz@berkeley.edu	Dr. Alexander P. Ji Assistant Professor, University of Chicago alexji@uchicago.edu
Dr. Joshua D. Simon Staff Scientist, Carnegie Observatories jsimon@carnegiescience.edu	Dr. Nicolas F. Martin Staff Researcher, Strasbourg Observatory nicolas.martin@astro.unistra.fr
Dr. Philip Choi Associate Professor, Pomona College philip.choi@pomona.edu	

Publications: ([ADS Bibliography](#))

- Ko, M., et al. including **Fu, S. W.** “Understanding Stellar Mass-Metallicity and Size Relations in Simulated Ultra-Faint Dwarf Galaxies,” 2024, [arXiv:2411.14683](#)
- **Fu, S. W.** et al. “Stellar Metallicities and Gradients in the Faint M31 Satellites Andromeda XVI and Andromeda XXVIII,” 2024, [ApJ, 975, 2](#)
- 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, 530, 2315](#)
- **Fu, S. W.** et al. “Stellar Metallicities and Gradients in the Isolated, Quenched Low-Mass Galaxy Tucana,” 2024, [ApJ, 965, 36](#)
- **Fu, S. W.** et al. “Metallicity Distribution Function of 13 Ultra-Faint Dwarf Galaxy Candidates from Hubble Space Telescope Narrow-band Imaging,” 2023, [ApJ, 958, 167](#)
- Alarcón Jara, A. G. et al. including **Fu, S. W.**, “Detection of chemo-kinematical structures in Leo I,” 2023, [A & A, 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, 925, 6](#)
- **Fu, S. W.** et al. “Dynamical Histories of the Crater II and Hercules Dwarf Galaxies”, 2019, [ApJ, 883, 11](#)
- **Fu, S. W.** et al. “The Origin of the 300 km s⁻¹ Stream Near Segue 1”, 2018, [ApJ, 866, 42](#)

Talks: (**invited*)

Dissertation Talk, AAS 245th Meeting, National Harbor, MD, USA (planned)	January 2025
Princeton Astronomy Galread, Princeton, NJ, USA	November 2024
Columbia University Astronomy & Astrophysics Seminar, New York, NY, USA	November 2024
Yale Galaxy Lunch Seminar, New Haven, CT, USA	November 2024
*Amherst College Physics and Astronomy Colloquium, Amherst, MA, USA	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