

LILLIAN YUSHU JIANG

Department of Physics, University of California, Santa Barbara

✉ lyjiang@ucsb.edu · [🌐 lillianjiang.github.io](https://github.com/lillianjiang) · [📄 0000-0003-4006-102X](https://orcid.org/0000-0003-4006-102X)

Summary

Research interests: Formation and accretion of planetary-mass companions; high-contrast imaging; machine learning for astrophysical image classification.

Publications: 3 first-author papers (in prep.); 3 co-author papers.

Observing: PI/Co-I on HST, JWST, Keck, and HET programs; 60 orbits on HST as PI.

Grants: \$176,175 in research funding as PI.

Education

University of California, Santa Barbara

Expected 2028

PH.D. IN PHYSICS

Advisor: Brendan Bowler

The University of Texas at Austin

Sep 2022 – Dec 2024

M.A. IN ASTRONOMY

Advisor: Brendan Bowler

Thesis: Deep H α Imaging Survey of IC 348 with the Hubble Space Telescope: Demographics of Accreting Protoplanets on Wide Orbits

Smith College

Sep 2018 – May 2022

B.A. IN ASTRONOMY (*Highest Honors*) and B.A. IN COMPUTER SCIENCE *Advisors: Kimberly Ward-Duong, Kate Follette*

Senior Honors Thesis: A FUV to NIR Accretion Luminosity Accounting of the Young Brown Dwarf 2M1207A

Professional Appointments

Graduate Student Researcher, UC Santa Barbara

Summer 2025 – present

Teaching Assistant, UT Austin

Fall 2024

Graduate Research Assistant, UT Austin

Fall 2022 – Spring 2025

Five-College Astronomy Undergraduate Intern, Amherst, MA

May – Aug 2021

Advisors: Kate Follette, Kimberly Ward-Duong

La Serena School of Data Science Participant, La Serena, Chile

Aug – Sep 2021

Advisor: Paula Sánchez Sáez

Special Studies Researcher, Smith College

Sep 2020 – May 2022

Advisor: James Lowenthal

Tinker Lab Research Assistant, Smith College

Feb – Jun 2020

Advisor: Katherine M. Kinnaird

Awards & Fellowships

- 2025 **Graduate Excellence Fund**, UT Austin Graduate School
2024 **Board of Visitors 2nd Year Defense Award**, UT Austin Astronomy Dept.
Graduate Excellence Fund, UT Austin Graduate School
2022 **Society of Sigma Xi**, Smith College
AAS 240 Chambliss Student Award Honorable Mention, Pasadena, CA
2021 **La Serena School of Data Science Full Scholarship**, AURA Observatory, Chile
Dean's List, Smith College
2020 **Harvard WECODE Technology Leadership Award**, Harvard University
Dean's List, Smith College

Observing & Grants

AWARDED TIME (PI)

- WFC3, Hubble Space Telescope (Cycle 33, GO-18139) 60 orbits
Tracing Accretion in the Planetary Regime: A Comprehensive UV/Optical Survey of the Late Stages of Planet Formation
LRIS, Keck I (2026B, NASA N184) 0.5 night
Tracing Planetary Accretion in Taurus with UV/Optical Diagnostics
LRIS, Keck I (2026B, UCO U241) 1 night
Tracing Planetary Accretion in Taurus with UV/Optical Diagnostics
LRIS, Keck I (2026A, UCO U290) 1 night
Tracing the Final Stages of Planetary Accretion in Upper Sco with UV/Optical Diagnostics
Hobby-Eberly Telescope (UT 25-01-023)
Tracing Accretion in the Planetary Regime: A Comprehensive Spectroscopic Survey of the Late Stages of Planet Formation

AWARDED TIME (CO-I)

- JWST (Cycle 4, ID 9091; PI: M. Morgan) 17.0 hr
Imaging a Hidden Super-Jupiter Accelerating its Metal-rich M-dwarf Host
WFC3, Hubble Space Telescope (Cycle 30, GO-17280; PI: Y. Zhou) 9 orbits
Validating and Characterizing the Protoplanet Candidate AB Aur b with WFC3/UVIS UV and Optical Photometry
Hubble Space Telescope (Cycle 19, GO-17122; PI: C. Robinson) 9 orbits
Testing Planetary Formation Mechanisms through the First FUV-Optical Spectrum of a Young, Accreting Planet
Keck (2022B; PI: K. Ward-Duong)
Establishing Accretion Relations for the Substellar Mass Regime

GRANTS

- HST Cycle 33 GO-18139 Research Grant \$162,800
NASA/Keck 2026B Observing Support \$13,375

OBSERVING EXPERIENCE

- NIRC2, W. M. Keck Observatory (in person, 4 nights) July 2022 – present
LRIS, W. M. Keck Observatory (remote, 3 nights) June, Oct 2021
16" Telescope, Smith College McConnell Observatory (local) Sep 2020 – May 2022

Publications

PAPERS

- ◇ Morgan, M., Bowler, B. P., Franson, K., **Jiang, Lillian Yushu**, Gaidos, E., Tran, Q. H., Zhang, J., Van Zandt, J., Painter, K. E., Petigura, E. A., Seligman, D. Z., Feinstein, A. D., Ciardi, D. R., Kiman, R., Fulton, B. J., Isaacson, H., Howard, A. W., & Dreizler, S. (2026). *An Outer Giant Planet or Brown Dwarf in the 51 Pegasi System?* Accepted to *The Astronomical Journal*. [arXiv:2605.11127](https://arxiv.org/abs/2605.11127)
- ◇ Bowler, B. P., Zhou, Y., Biddle, L. I., **Jiang, Lillian Yushu**, Bae, J., Close, L. M., Follette, K. B., Franson, K., Kraus, A. L., Sanghi, A., Tran, Q., Ward-Duong, K., Wu, Y.-L., & Zhu, Z. (2025). *H α Variability of AB Aur b with the Hubble Space Telescope: Probing the Nature of a Protoplanet Candidate with Accretion Light Echoes.* *The Astronomical Journal*, 169(5), 258. [ADS link](#)
- ◇ Zhou, Y., Bowler, B. P., Yang, H., Sanghi, A., Herczeg, G. J., Kraus, A. L., Bae, J., Long, F., Follette, K. B., Ward-Duong, K., Zhu, Z., Biddle, L., Close, L. M., **Jiang, Lillian Yushu**, & Wu, Y.-L. (2023). *UV-optical Emission of AB Aur b Is Consistent with Scattered Stellar Light.* *The Astronomical Journal*, 166(6), 220. [ADS link](#)

POSTERS (AS LEAD AUTHOR)

- ◇ *A Deep H α Imaging Survey to Probe the Demographics of Accreting Planets at Wide Separations.* Spirit of Lyot 6; 2026 Feb 2–6; Pasadena, CA.
Observatoire de Haute-Provence 2025; 2025 Oct 6–10; Saint-Michel-l'Observatoire, France.
Exoplanet 5; 2024 Jun 16–21; Leiden, the Netherlands.
- ◇ *A FUV to NIR Accretion Luminosity Accounting of the Young Brown Dwarf 2M1207A.* Cool Stars 21; 2022 Jul 4–9; Toulouse, France.
- ◇ *Constructing a Multi-Wavelength Spectral Template for Accreting Brown Dwarfs.* AAS 239 iPoster-Plus; 2022 Jan 13; Salt Lake City, UT.
- ◇ *Understanding the Spectra of Accreting Substellar Objects: Observation and Data Reduction.* Five-College Astronomy Undergraduate Internship Program; 2021 Jul 29; Amherst, MA.

POSTERS (AS CO-AUTHOR)

- ◇ *Probing Accretion and Formation Paradigms in the Substellar Regime.* Cool Stars 21; 2022 Jul 4–9; Toulouse, France.
- ◇ *Exoplanets: Finding Planets Beyond Our Star.* Smith College Celebrating Collaborations; 2021 May 6; Northampton, MA.

Invited & Contributed Talks

International Conference on Exoplanets and Planet Formation; Shanghai, China	<i>Dec 2025</i>
<i>Accretion Light Echoes and Hα Variability of a Protoplanet Candidate</i>	
Stars, Planets, and ISM Seminar; UT Austin (Contributed)	<i>Apr 2025</i>
<i>A Deep HST/WFC3 Hα Imaging Survey to Probe the Demographics of Accreting Planets at Wide Separations</i>	
Gas Accretion in Planet Formation; Heidelberg, Germany (Contributed)	<i>Mar 2025</i>
<i>A Deep HST/WFC3 Hα Imaging Survey to Probe the Demographics of Accreting Planets at Wide Separations</i>	
243rd Meeting of the American Astronomical Society; New Orleans, LA (Contributed)	<i>Jan 2024</i>
<i>A Deep HST/WFC3 Hα Imaging Survey to Probe the Demographics of Accreting Planets at Wide Separations</i>	
Stars, Planets, and ISM Seminar; UT Austin (Contributed)	<i>Mar 2023</i>
<i>A Deep Hα Imaging Survey to Probe the Demographics of Accreting Planets at Wide Separations</i>	
FCAD Senior Celebration Thesis Talk; UMass Amherst (Contributed)	<i>May 2022</i>
<i>A FUV to NIR Accretion Luminosity Accounting of the Young Brown Dwarf 2M1207A</i>	

Service & Outreach

- ◇ **GUMMY mentor:** graduate student mentor for astronomy undergraduates at UT Austin, advising on courses and careers in astronomy
- ◇ **Volunteer, 239th AAS Meeting:** assisted in monitoring Oral & Special Sessions
- ◇ **AEMES mentor:** peer mentor for first-year students of minority background at Smith College, serving as an academic and social resource
- ◇ **Tech and Design Chair:** curated the online Smithies in CS community of 350+ members, helping members of all majors excel in CS beyond the classroom
- ◇ **Student Ambassador:** publicized Harvard WECODE at Smith College and reached out to underrepresented students

Media Links & Appearances

- ◇ [Hubble Cycle 33 Science Highlights](#)
- ◇ [AAS 240 Chambliss Student Award Winners](#)

Technical Skills

Programming: proficient in Python, Java, Unix shell scripting, JavaScript, and \LaTeX ; working knowledge of Mathematica, IDL, x86 Assembly, and Clojure

Software & pipelines: machine learning, deep learning, image processing, Jupyter, MESA, SAOImageDS9, LPipe, PyPeIt, Fusion 360, Microsoft Office

Languages: native/bilingual proficiency in English and Chinese; professional working proficiency in Cantonese