

LILLIAN YUSHU JIANG

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Summary

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

Publications: 3 first-author papers (1 published, 2 submitted); 4 co-author papers.

Observing: PI/Co-I on HST, JWST, Keck, and HET programs; 72 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 34, GO-18436) 12 orbits
Imaging Six Young Planetary-Mass Companions with HST/WFC3-UVIS
- 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) 1.5 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)

- Hubble Space Telescope (Cycle 34, GO-18376; PI: K. Crotts) 20 orbits
Extending Accretion Studies into the Sub-Jupiter Regime with TWA 7 b
- JWST (Cycle 4, ID 9091; PI: M. Morgan) 17.0 hr
Imaging a Hidden Super-Jupiter Accelerating its Metal-rich M-dwarf Host
- 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

Publications

PAPERS

- ◇ **Jiang, Lillian Yushu**, Bowler, B. P., Zhou, Y., Kraus, A. L., Andrews, S. M., Hillenbrand, L. A., Ireland, M. J., & Zhu, Z. (2026). *Deep H α Imaging Survey of IC 348 with the Hubble Space Telescope: I. Accretion Properties of Stellar and Substellar Objects*. Accepted to *The Astronomical Journal*. [arXiv:2609.05620](#)
- ◇ Van Zandt, J., Bowler, B. P., Endl, M., Cochran, W. D., MacQueen, P., Hatzes, A., Torres, G., Latham, D. W., Howard, A. W., Fulton, B., Isaacson, H., Liu, M. C., Walker, S. A. U., Xuan, J. W., Zhang, J., Soto Armendariz, R. E., Biddle, L. I., Franson, K., **Jiang, Lillian Yushu**, Morgan, M., & Tran, Q. H. (2026). *The γ Cephei System: Updated Orbits, Dynamical Architecture, and Limits on Additional Companions*. Accepted to *The Astronomical Journal*. [arXiv:2608.30030](#)
- ◇ 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? The Astronomical Journal*, 172(1), 60. [ADS link](#)
- ◇ 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 L^AT_EX; working knowledge of Mathematica, IDL, x86 Assembly, and Clojure

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

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