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 (in prep.); 2 co-author papers.
Observing: PI/Co-I on HST, JWST, Keck, and HET programs; 60 orbits on HST 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
Master Thesis: Deep Hα Imaging Survey of IC 348 with the Hubble Space Telescope: Demographics of Accreting Protoplanets on Wide Orbits Advisor: Brendan Bowler

Smith College *Sep 2018 – May 2022*
B.A. in Astronomy (*Highest Honors*)
Senior Honors Thesis: A FUV to NIR Accretion Luminosity Accounting of the Young Brown Dwarf 2M1207A Advisors: Kimberly Ward-Duong, Kate Follette
B.A. in Computer Science

PROFESSIONAL APPOINTMENTS

Graduate Student Researcher, UCSB, Fall 2025 – present Santa Barbara, CA
Teaching Assistant, UT Austin, Fall 2024 Austin, TX
Graduate Research Assistant, UT Austin, Fall 2022 – Spring 2025 Austin, TX
Five-College Astronomy Undergraduate Intern, May 2021 – Aug 2021 Amherst, MA
Advisors: Kate Follette, Kimberly Ward-Duong
La Serena School of Data Science Participant, Aug 2021 – Sep 2021 La Serena, Chile
Advisor: Paula Sánchez Sáez
Special Studies Researcher, Smith College, Sep 2020 – May 2022 Northampton, MA
Advisor: James Lowenthal
Tinker Lab Research Assistant, Smith College, Feb 2020 – Jun 2020 Northampton, MA
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 (As PI)
HST Cycle 33 (GO–18139, 60 orbits): *Tracing Accretion in the Planetary Regime: A Comprehensive UV/Optical Survey of the Late Stages of Planet Formation*

UC/Keck 2026A (1 night; Science PI), *Tracing the Final Stages of Planetary Accretion in Upper Sco with UV/Optical Diagnostics*

HET UT 25-01-023, *Tracing Accretion in the Planetary Regime: A Comprehensive Spectroscopic Survey of the Late Stages of Planet Formation*

Awarded Time (As co-Investigators)
JWST Cycle 4 (ID 9091, 17.0 hours, PI: M. Morgan), *Imaging a Hidden Super-Jupiter Accelerating its Metal-rich M-dwarf Host*

HST Cycle 30 (GO–17280, 9 orbits, PI: Y. Zhou), *Validating and Characterizing the Protoplanet Candidate AB Aur b with WFC3/UVIS UV and Optical Photometry*

HST Cycle 19 (GO–17122, 9 orbits, PI: C. Robinson), *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*

Observing Experience

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

PUBLICATIONS

Papers:

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). *Hα 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–alpha Imaging Survey to Probe the Demographics of Accreting Planets at Wide Separations. Presentation at: The 2023 Emerging Researchers in Exoplanet Science Symposium (ERES VIII @ Yale); 2023 June 19 – 21; New Haven, CT, USA.

A FUV to NIR Accretion Luminosity Accounting of the Young Brown Dwarf 2M1207A. Presentation at: Cool Stars 21; 2022 July 4 – 9; Toulouse, France

Constructing a Multi–Wavelength Spectral Template for Accreting Brown Dwarfs. Presentation at: AAS239 IPoster–Plus; 2022 Jan 13; Salt Lake City, Utah.

Understanding the Spectra of Accreting Substellar Objects: Observation and Data Reduction. Presentation at: Five–College Astronomy Undergraduate Internship Program; 2021 July 29; Amherst, MA.

Co–Author:
Exoplanets: Finding Planets Beyond Our Star. Poster session at: Smith College Celebrating Collaborations; 2021 May 6; Northampton, MA.

Probing Accretion and Formation Paradigms in the Substellar Regime. Presentation at: Cool Stars 21; 2022 July 4 – 9; Toulouse, France

INVITED & CONTRIBUTED TALKS

International Conference on Exoplanets and Planet Formation; Shanghai, China — Dec 2025
Accretion Light Echoes and Halpha Variability of a Protoplanet Candidate

Stars, Planets, and ISM Seminar; UT Austin Astronomy Department (Contributed) — Apr 2025
A Deep HST/WFC3/H-alpha Imaging Survey to Probe the Demographics of Accreting Planets at Wide Separations

Gas Accretion in Planet formation; Heidelberg, Germany (Contributed) — Mar 2025
A Deep HST/WFC3/H-alpha Imaging Survey to Probe the Demographics of Accreting Planets at Wide Separations

Stars, Planets, and ISM Seminar; UT Austin Astronomy Department (Contributed) — Mar 2023
A Deep Hα Imaging Survey to Probe the Demographics of Accreting Planets at Wide Separations

FCAD Senior Celebration Thesis Talk; UMass Amherst (Contributed) May 2022
A FUV to NIR Accretion Luminosity Accounting of the Young Brown Dwarf 2M1207A

SERVICE & OUTREACH

GUMMY mentor: graduate student mentor for astronomy undergraduate students at UT Austin, advising on courses and careers in astronomy
Volunteering at the 239th AAS Meeting: assisted in monitoring Oral & Special Session
AEMES mentor: peer mentor for first–year students of minority background at Smith College, serving as academic and social resource
Tech and Design Chair: curated the online Smithies in CS community with 350+ members, helping members of all majors to excel in CS knowledge beyond the classroom
Student Ambassador: publicized Harvard WECode at Smith College and outreached to under-represented students

MEDIA LINKS / APPERANCES

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 Notebook, MESA, SAOImageDS9, LPipe, PypeIt, Fusion360, Microsoft Office

Languages:
Native/Bilingual Proficiency in English and Chinese, Professional Working Proficiency in Cantonese