

Tiger Lu

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APPOINTMENTS	Center for Computational Astrophysics , Flatiron Institute, New York, NY Flatiron Research Fellow	Sep 2025 – Present
	Yale University , New Haven, CT Graduate Research Assistant	Aug 2020 – May 2025
	University of California, Berkeley , Berkeley, CA Summer Undergraduate Researcher	May 2019 – Aug 2019
	Carnegie Observatories , Pasadena, CA Summer Undergraduate Researcher	May 2018 – Aug 2018

EDUCATION	Yale University , New Haven, Connecticut, USA	
	▪ Ph.D. in Astronomy with Distinction	Aug 2020 – May 2025
	• Thesis: Planets are not Points: the Profound Effect of Planetary Structure on Exoplanet System Architectures	
	• Advisers: Prof. Gregory Laughlin, Prof. Malena Rice	
	▪ M.S., M.Phil. in Astronomy	Aug 2020 – Aug 2022
	California Institute of Technology , Pasadena, California, USA	
	▪ B.S. in Astrophysics	Aug 2016 – Jun 2020
	▪ Minor in Computer Science	

PUBLICATIONS 101 citations. *h*-index = 7.

FIRST-AUTHOR

- [6] **Lu, T.**, Tager, H., Hernandez, D.M., Rein, H., *Liu*, Y. and Rice, M., 2025. [Collisional Fragmentation Support in TRACE](#). *RNAAS* **9**, 110
- [5] **Lu, T.**, Li, G., Cassese, B., and Lin, D.N.C., 2025. [The Dynamical History of HIP-41378 f - Oblique Exorings Masquerading as a Puffy Planet](#). *ApJ* **980**, 1
- [4] **Lu, T.**, An, Q., Li, G., Millholland, S.C., Brandt, G.M. and Brandt, T., 2025. [Planet-Planet Scattering and ZLK Migration – the Dynamical History of HAT-P-11](#). *ApJ* **979**, 2
- [3] **Lu, T.**, Hernandez, D.M. and Rein, H., 2024. [TRACE: a Time-Reversible Algorithm for Close Encounters](#). *MNRAS* **533**, 3
- [2] **Lu, T.**, Rein, H., Tamayo, D., Hadden, S., Mardling, R., Millholland, S.C. and Laughlin, G., 2023. [Self-Consistent Spin, Tidal and Dynamical Equations of Motion in the REBOUNDx Framework](#). *ApJ* **948**, 221
- [1] **Lu, T.** and Laughlin, G., 2022. [Tilting Uranus via Secular Spin-Orbit Resonance with Planet 9](#). *PSJ* **3**, 221

SIGNIFICANT CONTRIBUTION

- [5] Cassese, B., Rice, M. and **Lu, T.**, 2025. [A High-Precision, Differentiable Code for Solar System Ephemerides](#). *PSJ*, in press
- [4] *Liu*, Y., **Lu, T.** and Rice, M., 2025. [The Formation of Double Hot Jupiter Systems Through ZLK Migration](#). *ApJ* **986**, 103
- [3] An, Q., **Lu, T.**, Brandt, G.M., Brandt, T. and Li, G., 2025. [Significant Mutual Inclinations Between the Stellar Spin and the Orbits of Both Planets in the HAT-P-11 System](#). *AJ* **169**, 1
- [2] Cassese, B., Vega, J., **Lu, T.**, Rice, M., Poddar, A. and Kipping, D., 2024. [squishyplanet: Modeling transits of non-spherical planets in JAX](#). *JOSS* **9**, 100
- [1] Wahl, S., Thorngren, D., **Lu, T.** and Militzer, B., 2021. [Tidal Response and Shape of Hot Jupiters](#). *ApJ* **921**, 105

OTHER CO-AUTHOR

- [2] Bardalez Gagliuffi, D.†, Balmer, W.†, Pueyo, L., et al. (inc. **Lu, T.**) 2025. [JWST Coronagraphic Images of 14 Her c: a Cold Giant Planet in a Dynamically Hot, Multi-planet System](#). *ApJL* in press
- [1] Wang, N., Lu, L.Y., Liu, H.G., et al. (inc. **Lu, T.**) 2025. [Development of Gravity Theories in the View of TRAPPIST-1e](#). *RAA* **25**, 1

WHITEPAPERS

- [1] Levine, W. G., Gerbig, K., Loudon, E., **Lu, T.**, Hsieh, C., O'Connor, C., Li, R. and Dong, J., 2024. [Emerging Researchers in Exoplanetary Science \(ERES\): Lessons Learned in Conference Organization for Early-Career Researchers](#). *Bulletin of the AAS* **56**, 1

Italics: Student supervised by T.L

†: Joint first author

AWARDS & FELLOWSHIPS

- DDA/AAS Raynor L. Duncombe Student Research Prize 2025
- Flatiron Research Fellowship 2025
- Flipped Science Fair Best Poster Explanation 2024
- AAS International Travel Grant 2024
- Graduate Student Assembly Conference Travel Fellowship 2024
- National Science Foundation GRFP (*Honorable Mention*) 2022
- Joan and Arnold Seidel Griffith Observer Science Writing Contest (*Second Place*) 2022
- Alan Porter Memorial Foundation Fellow 2019
- Summer Undergraduate Research Fellow 2018

ORAL PRESENTATIONS & TALKS

- 246th AAS Meeting Dissertation Talk (*Anchorage, AK*) Jun 2025
- Boston Area Planetary Science Meeting, MIT (*Cambridge, MA*) May 2025
- New York Area Exoplanets Meeting II, CCA (*New York City, NY*) May 2025
- 56th DDA Meeting, Georgia Institute of Technology (*Atlanta, GA*) May 2025
- ML in Planetary Dynamics Workshop, CCA (*New York City, NY*) Apr 2025
- Tea Talk, Indiana University (*Bloomington, IN*) Feb 2025
- ITC Luncheon, Harvard University (*Cambridge, MA*) Jan 2025
- Exoplanet Pizza Lunch, Harvard University (*Cambridge, MA*) Jan 2025
- Exoplanet Seminar, Princeton University (*Princeton, NJ*) Nov 2024
- Planetary Lunch Seminar, Massachusetts Institute of Technology (*Cambridge, MA*) Nov 2024
- Astronomy Seminar, Columbia University (*New York City, NY*) Oct 2024
- Astronomy Seminar, Stony Brook University (*Stony Brook, NY*) Oct 2024
- CRA Seminar, Georgia Institute of Technology (*Atlanta, GA*) Oct 2024
- Planetary Science Seminar, California Institute of Technology (*Pasadena, CA*) Oct 2024
- Lunch Seminar, UCLA (*Los Angeles, CA*) Sep 2024
- Exoplanet Group Meeting, UCSB (*Santa Barbara, CA*) Sep 2024
- FLASH Talk, UCSC (*Santa Cruz, CA*) Sep 2024
- Star and Planet Lunch, University of Hawai'i (*Honolulu, HI*) Aug 2024
- CT Exoplanet Picnic, Wesleyan College (*Wesleyan, CT*) Jul 2024
- Emerging Researchers in Exoplanet Science IX, Cornell University (*Ithaca, NY*) Jul 2024
- REBOUND 24 Meeting* (*Virtual*) Jul 2024
- *Arbitrary ODE Workshop*
- REBOUND 24 Meeting* (*Virtual*) Jul 2024
- *tides_spin*
- New York Area Exoplanets Meeting I, CCA (*New York City, NY*) May 2024
- 55th DDA Meeting, University of Toronto (*Toronto, Canada*) May 2024
- Makino Lab Seminar, Kobe University (*Kobe, Japan*) Jul 2023
- Exoplanet Seminar, Nanjing University (*Nanjing, China*) Jul 2023
- 54th DDA Meeting, Michigan State University (*East Lansing, MI*) May 2023
- Exoplanet Seminar, Princeton University (*Princeton, NJ*) Mar 2023
- Astronomy Seminar, Monash University (*Monash, Australia*) Feb 2023
- 240th AAS Meeting (*Pasadena, CA*) Jun 2022

*Invited Talk

POSTER PRESENTATIONS

- Emerging Researchers in Exoplanet Science, Princeton University (*Princeton, NJ*) Jun 2025

	<ul style="list-style-type: none"> ▪ Exoplanets V Meeting (<i>Leiden, The Netherlands</i>) Jun 2024 ▪ Extreme Solar Systems (<i>Christchurch, New Zealand</i>) Jun 2024 ▪ 2022 AGU Meeting (<i>Chicago, IL</i>) Dec 2022 ▪ Exoplanets IV Meeting (<i>Las Vegas, NV</i>) May 2022 ▪ 2019 AGU Meeting (<i>San Francisco, CA</i>) Dec 2019 ▪ 233rd AAS Meeting (<i>Seattle, Washington</i>) Jan 2019 	
TEACHING	ASTR 210: Stars and Their Evolution New Haven, CT, USA	
	Yale University Teaching Fellow	Spring 2023
	ASTR 160: Frontiers and Controversies in Astrophysics New Haven, CT, USA	
	Yale University Teaching Fellow	Fall 2022
	ASTR 160: Frontiers and Controversies in Astrophysics New Haven, CT, USA	
	Yale University Teaching Fellow	Spring 2021
	ASTR 155: Introduction to Astronomical Observing New Haven, CT, USA	
	Yale University Teaching Fellow	Fall 2021
	Dean's Tutor Pasadena, CA, USA	
	Tutoring Caltech students in Physics, Astronomy and Computer Science	2017-2020
OUTREACH	Warrior-Scholar Program New Haven, CT, USA	
	Research Project Leader	Summer 2023
	<i>One week intensive boot camp preparing military veterans for undergraduate degrees</i>	
	Yale OpenLabs	
	Local outreach organization dedicated to educating middle school children on STEM topics. Receipt of the Seton Elm-Ivy Award.	
	▪ Public Relations Officer	2023
	▪ Regular Outreach Speaker	2022 – 2025
	<ul style="list-style-type: none"> • Science Cafe 2024 Speaker: <i>What if 'Cotton Candy' Planet are Actually Ring Pops?</i> • Flipped Science Fair Best Poster Explanation: <i>Probing the Shapes of Planets</i> • Science Cafe 2022 Speaker: How We Discover Exoplanets 	
	Astronomy on Tap	
	New Haven branch of outreach program aimed at engaging local community with astronomy research	
	▪ Social Media Director	2022
	Science in the News	
	Local outreach organization dedicated to educating the greater community on STEM topics.	
	▪ Outreach Speaker	2021
	• Hidden Things: Pulling Back the Veil on the Universe	
MENTORING	Haedam Im* May 2025 –	
	Yale HOFFLEIT Fellow	Massachusetts Institute of Technology
	Project: <i>Hunting for a Hidden Planet in the GJ 436 System</i>	
	Yurou (Nina) Liu* Jun 2023 –	
	Alexander P. Hixon Summer Undergraduate Research Fellow	Yale University
	Project: <i>The Formation of Double Hot Jupiter Systems Through ZLK Migration</i>	
	Jeremiah Reynoso Jun 2023 – Oct 2023	
	Summer Undergraduate Research Fellow	Morehouse College
	Project: <i>Dissipation due to Inelastic Planesimal Collisions in Differentially Precessing Debris Disks</i>	
	Chris Santiago 2022 – 2024	
	AstroSibs	Yale University
	Kylyn Smith 2023 – 2024	
	AstroSibs	Yale University
	Sally Jiang (current Ph.D. Candidate, Columbia University) 2022 – 2023	
	AstroSibs	Yale University

*Primary Research Advisor

TELESCOPE PROPOSALS (CO-I)	Keck Observatory (HIRES) – 2 nights	Yale 2024B
	<i>The Search for Double Hot Jupiter Systems</i>	
	Keck Observatory (HIRES) – 2 nights	Yale 2023A
	<i>Probing the Exoplanet Mass Discrepancy Between the Radial Velocity and Transit Timing Methods with the Anomalously Low Density Planet Sample and Keck-HIRES (Phase 2)</i>	
	Keck Observatory (HIRES) – 2 nights	Yale 2022B
	<i>Probing the Exoplanet Mass Discrepancy Between the Radial Velocity and Transit Timing Methods with the Anomalously Low Density Planet Sample and Keck-HIRES (Phase 1)</i>	
PROFESSIONAL SERVICE	Science Organizing Committee – 57th DDA Meeting	June 2026
	<i>Division of Dynamical Astronomy, University of Chicago</i>	
	Science Organizing Committee Chair – DSPS	Jan 2026
	<i>A Dynamical Synthesis of Planetary Systems, New Haven</i>	
	Organizing Committee – ERES X	July 2025
	<i>Emerging Researchers in Exoplanet Science Symposium, Princeton University</i>	
	Science Organizing Committee – ERES VIII	June 2023
	<i>Emerging Researchers in Exoplanet Science Symposium, Yale University</i>	
	Reviewer	
	<i>NASA Solar System Workings Panel, A&A, AJ, ApJ, MNRAS</i>	2024 – Present
	Main Co-Organizer – Yale Exoplanets and Stars Seminar	2023 – 2025
	<i>Weekly Seminar Series</i>	
	Committee Member – ACDC	2022 – 2025
	<i>Yale University Astronomy Climate and Diversity Committee</i>	
MEDIA	Yale Daily News	Jun 2025
	New study offers a double dose of ‘hot Jupiters’	
	Popular Science	Oct 2024
	What if ‘cotton candy’ planets are actually Ring Pops?	
	AAS Author Journal Series	Nov 2022
	Tilting Uranus via Secular Spin-Orbit Resonance with Planet 9	
COMMUNITY ENGAGEMENT	New Haven Road Runners – New Haven, CT, USA	
	<i>Local USATF sanctioned running club</i>	
	▪ Public Relations Officer	Jul 2023 – Jul 2024
	▪ Racing Team Director / Elite Athlete Coordinator	Jul 2022 – Jun 2025
	NCAA Athlete – Pasadena, CA, USA	2016 – 2020
	<i>NCAA Division III Cross Country/Track & Field at Caltech</i>	
	Avery House – Pasadena, CA, USA	
	<i>Student Government</i>	
	▪ Athletics Manager	2017 – 2018
	▪ Underclassmen Counselor	2017 – 2020

[CV compiled on 2025-09-25]