

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 • Thesis: Planets are not Points: the Profound Effect of Planetary Structure on Exoplanet System Architectures • Advisers: Prof. Gregory Laughlin, Prof. Malena Rice	Aug 2020 – May 2025
	▪ M.S., M.Phil. in Astronomy	Aug 2020 – Aug 2022
	California Institute of Technology , Pasadena, California, USA	
	▪ B.S. in Astrophysics ▪ Minor in Computer Science	Aug 2016 – Jun 2020
PUBLICATIONS	124 citations. <i>h</i> -index = 8. <i>Italics:</i> Student directly supervised by T. Lu	
	FIRST-AUTHOR	
	[6] Lu, T. , Tager, H., Hernandez, D.M., Rein, H., <i>Liu</i> , Y. and Rice, M., 2025. Collisional Fragmentation Support in TRACE . <i>RNAAS</i> 9 , 5	
	[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 . <i>ApJ</i> 980 , 39	
	[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 . <i>ApJ</i> 979 , 218	
	[3] Lu, T. , Hernandez, D.M. and Rein, H., 2024. TRACE: a Time-Reversible Algorithm for Close Encounters . <i>MNRAS</i> 533 , 3708	
	[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 . <i>ApJ</i> 948 , 41	
	[1] Lu, T. and Laughlin, G., 2022. Tilting Uranus via Secular Spin-Orbit Resonance with Planet 9 . <i>PSJ</i> 3 , 221	
	STUDENT-LEAD	
	[2] <i>Liu</i> , Y., Lu, T. and Rice, M. in review.	
	[1] <i>Liu</i> , Y., Lu, T. and Rice, M., 2025. The Formation of Double Hot Jupiter Systems Through ZLK Migration . <i>ApJ</i> 986 , 103	
	SIGNIFICANT CONTRIBUTION	
	[5] Yahalomi, D.A., Lu, T. , Armitage, P., Bedell, M., Casey, A.R., Price-Whelan, A., and Rice, M., in review. The Astrometric Resoecentric Degeneracy: Eccentric Single Planets Mimic 2:1 Resonant Planet Pairs in Astrometry	
	[4] Cassese, B., Rice, M. and Lu, T. , 2025. A High-Precision, Differentiable Code for Solar System Ephemerides . <i>PSJ</i> 6 , 252	

- [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**, 22
- [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

- [3] Tajer, H., Wang, J., Childs, C., et al. (inc. **Lu, T.**) in review. [Origins of Mercury's Big Heart of Iron: Exploring Pathways to Form High Core Mass Fraction \(CMF\) Planets via N-body Simulations](#).
- [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* **988**, L18
- [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**, 015003

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**, 2024i004

†: 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 (<i>Honorable Mention</i>)	2022
▪ Joan and Arnold Seidel Griffith Observer Science Writing Contest (<i>Second Place</i>)	2022
▪ Alan Porter Memorial Foundation Fellow	2019
▪ Summer Undergraduate Research Fellow	2018

ORAL PRESENTATIONS & TALKS

▪ Powell Group Meeting, University of Chicago (<i>Chicago, IL</i>)	Oct 2025
▪ 246th AAS Meeting Dissertation Talk (<i>Anchorage, AK</i>)	Jun 2025
▪ Boston Area Planetary Science Meeting, MIT (<i>Cambridge, MA</i>)	May 2025
▪ New York Area Exoplanets Meeting II, CCA (<i>New York City, NY</i>)	May 2025
▪ 56th DDA Meeting, Georgia Institute of Technology (<i>Atlanta, GA</i>)	May 2025
▪ ML in Planetary Dynamics Workshop, CCA (<i>New York City, NY</i>)	Apr 2025
▪ Tea Talk, Indiana University (<i>Bloomington, IN</i>)	Feb 2025
▪ ITC Luncheon, Harvard University (<i>Cambridge, MA</i>)	Jan 2025
▪ Exoplanet Pizza Lunch, Harvard University (<i>Cambridge, MA</i>)	Jan 2025
▪ Exoplanet Seminar, Princeton University (<i>Princeton, NJ</i>)	Nov 2024
▪ Planetary Lunch Seminar, Massachusetts Institute of Technology (<i>Cambridge, MA</i>)	Nov 2024
▪ Astronomy Seminar, Columbia University (<i>New York City, NY</i>)	Oct 2024
▪ Astronomy Seminar, Stony Brook University (<i>Stony Brook, NY</i>)	Oct 2024
▪ CRA Seminar, Georgia Institute of Technology (<i>Atlanta, GA</i>)	Oct 2024
▪ Planetary Science Seminar, California Institute of Technology (<i>Pasadena, CA</i>)	Oct 2024
▪ Lunch Seminar, UCLA (<i>Los Angeles, CA</i>)	Sep 2024
▪ Exoplanet Group Meeting, UCSB (<i>Santa Barbara, CA</i>)	Sep 2024
▪ FLASH Talk, UCSC (<i>Santa Cruz, CA</i>)	Sep 2024
▪ Star and Planet Lunch, University of Hawai'i (<i>Honolulu, HI</i>)	Aug 2024
▪ CT Exoplanet Picnic, Wesleyan College (<i>Wesleyan, CT</i>)	Jul 2024
▪ Emerging Researchers in Exoplanet Science IX, Cornell University (<i>Ithaca, NY</i>)	Jul 2024
▪ REBOUND 24 Meeting* (<i>Virtual</i>) <i>Arbitrary ODE Workshop</i>	Jul 2024
▪ REBOUND 24 Meeting* (<i>Virtual</i>) <i>tides_spin</i>	Jul 2024
▪ New York Area Exoplanets Meeting I, CCA (<i>New York City, NY</i>)	May 2024

	<ul style="list-style-type: none"> ▪ 55th DDA Meeting, University of Toronto (<i>Toronto, Canada</i>) May 2024 ▪ Makino Lab Seminar, Kobe University (<i>Kobe, Japan</i>) Jul 2023 ▪ Exoplanet Seminar, Nanjing University (<i>Nanjing, China</i>) Jul 2023 ▪ 54th DDA Meeting, Michigan State University (<i>East Lansing, MI</i>) May 2023 ▪ Exoplanet Seminar, Princeton University (<i>Princeton, NJ</i>) Mar 2023 ▪ Astronomy Seminar, Monash University (<i>Monash, Australia</i>) Feb 2023 ▪ 240th AAS Meeting (<i>Pasadena, CA</i>) Jun 2022 	
	<i>*Invited Talk</i>	
POSTER PRESENTATIONS	<ul style="list-style-type: none"> ▪ Emerging Researchers in Exoplanet Science, Princeton University (<i>Princeton, NJ</i>) Jun 2025 ▪ 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	<p>ASTR 210: Stars and Their Evolution New Haven, CT, USA Yale University Teaching Fellow Spring 2023</p> <p>ASTR 160: Frontiers and Controversies in Astrophysics New Haven, CT, USA Yale University Teaching Fellow Fall 2022</p> <p>ASTR 160: Frontiers and Controversies in Astrophysics New Haven, CT, USA Yale University Teaching Fellow Spring 2021</p> <p>ASTR 155: Introduction to Astronomical Observing New Haven, CT, USA Yale University Teaching Fellow Fall 2021</p> <p>Dean's Tutor Pasadena, CA, USA Tutoring Caltech students in Physics, Astronomy and Computer Science 2017-2020</p>	
OUTREACH	<p>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></p> <p>Yale OpenLabs Local outreach organization dedicated to educating middle school children on STEM topics. Receipt of the Seton Elm-Ivy Award.</p> <ul style="list-style-type: none"> ▪ 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 <p>Astronomy on Tap New Haven branch of outreach program aimed at engaging local community with astronomy research</p> <ul style="list-style-type: none"> ▪ Social Media Director 2022 <p>Science in the News Local outreach organization dedicated to educating the greater community on STEM topics.</p> <ul style="list-style-type: none"> ▪ Outreach Speaker 2021 <ul style="list-style-type: none"> • Hidden Things: Pulling Back the Veil on the Universe 	
RESEARCH MENTORING	<p>Haedam Im* May 2025 – Dorrit Hoffleit Undergraduate Research Fellow Massachusetts Institute of Technology Project: <i>Hunting for a Hidden Planet in the GJ 436 System</i></p> <p>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></p>	

	Jeremiah Reynoso Summer Undergraduate Research Fellow Project: <i>Dissipation due to Inelastic Planesimal Collisions in Differentially Precessing Debris Disks</i> *Primary Research Advisor	Jun 2023 – Oct 2023 Morehouse College
INFORMAL MENTORING	Chris Santiago Astro Sibs	2022 – 2024 Yale University
	Kylyn Smith Astro Sibs	2023 – 2024 Yale University
	Sally Jiang (current Ph.D. Candidate, Columbia University) Astro Sibs	2022 – 2023 Yale University
TELESCOPE PROPOSALS (CO-I)	Keck Observatory (KPF) – 0.5 nights <i>Directly Probing the Migration History of WASP-53 with Precise Orbital Constraints</i>	Yale 2026A
	Keck Observatory (KPF) – 2 nights <i>The Search for Double Hot Jupiter Systems</i>	Yale 2024B
	Keck Observatory (HIRES) – 2 nights <i>Probing the Exoplanet Mass Discrepancy Between the Radial Velocity and Transit Timing Methods with the Anomalous Low Density Planet Sample and Keck-HIRES (Phase 2)</i>	Yale 2023A
	Keck Observatory (HIRES) – 2 nights <i>Probing the Exoplanet Mass Discrepancy Between the Radial Velocity and Transit Timing Methods with the Anomalous Low Density Planet Sample and Keck-HIRES (Phase 1)</i>	Yale 2022B
PROFESSIONAL SERVICE	Science Organizing Committee – 57th DDA Meeting <i>Division of Dynamical Astronomy, University of Chicago</i>	June 2026
	Science Organizing Committee Chair – DSPS <i>A Dynamical Synthesis of Planetary Systems, New Haven</i>	Jan 2026
	Organizing Committee – ERES X <i>Emerging Researchers in Exoplanet Science Symposium, Princeton University</i>	July 2025
	Science Organizing Committee – ERES VIII <i>Emerging Researchers in Exoplanet Science Symposium, Yale University</i>	June 2023
	Reviewer <i>NASA Solar System Workings Panel, A&A, AJ, ApJ, MNRAS</i>	2024 – Present
	Main Co-Organizer – Yale Exoplanets and Stars Seminar <i>Weekly Seminar Series</i>	2023 – 2025
	Committee Member – ACDC <i>Yale University Astronomy Climate and Diversity Committee</i>	2022 – 2025
MEDIA	Yale Daily News New study offers a double dose of ‘hot Jupiters’	Jun 2025
	Popular Science What if ‘cotton candy’ planets are actually Ring Pops?	Oct 2024
	AAS Author Journal Series Tilting Uranus via Secular Spin-Orbit Resonance with Planet 9	Nov 2022
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 <i>NCAA Division III Cross Country/Track & Field at Caltech</i>	2016 – 2020
	Avery House – Pasadena, CA, USA <i>Student Government</i>	

- Athletics Manager
- Underclassmen Counselor

2017 – 2018

2017 – 2020

[CV compiled on 2025-12-02]