

Jack Lubin

Curriculum Vitae

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Jack Lubin
University of California, Irvine
Department of Physics & Astronomy
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EDUCATION

Ph.D. Physics Expected ~2023
Thesis Advisor: Paul Robertson
University of California, Irvine

Masters of Science, Physics 2020
University of California, Irvine

Bachelors of Arts, Physics and Applied Mathematics 2016
Thesis Advisor: Keivan Stassun
Vanderbilt University

APPOINTMENTS

Teaching Assistant September 2018 - Present
University of California, Irvine

Associate Data Engineer June 2016 - September 2017
Capital One Financial

Physics Tutor September 2015 - June 2016
Vanderbilt, Athletics Department

Research Experience for Undergraduates (REU) Summer 2015
Hosted at Vanderbilt University

TEACHING EXPERIENCE

Teaching Assistant September 2018 - Present
Department of Physics and Astronomy, UCI

- Phys 213A, Graduate Electricity & Magnetism Winter 2022
- Phys 20A, Introduction to Astronomy (3rd time) Winter 2022
- Phys 139, Observational Astronomy Lab Fall 2021

- Phys 52C, Experimental Physics Lab, Statistics (online) Spring 2021
- Phys 138, Galactic Astrophysics (online, 2nd time) Winter 2021
- Phys 20A, Introduction to Astronomy (online, 2nd time) Winter 2021
- Phys 7C, Classical Physics: Kinematics/Energy/Gravity (online) Spring 2020
- Phys 138, Galactic Astrophysics Winter 2020
- Phys 18, How Things Work Winter 2020
- Phys 20A, Introduction to Astronomy Fall 2019
- Phys 51A, Modern Physics Spring 2019
- Phys 7D, Classical Physics: Electricity and Magnetism Winter 2019
- Phys 52A, Experimental Physics Lab, Wave Theory Fall 2018

HONORS, AWARDS & FELLOWSHIPS

- NASA ExoExplorer* 2023
- ARCS Foundation Scholar*, Fellow 2023
- National Osterbrock Leadership Program (NOLP)*, Fellow 2022
- UCI Diversity Fellow* - Funding provided to lead the PACE program 2022
- Highest Honors in Astronomy* – For successful defense of undergrad honors thesis 2016
- Larry Ross Cathey Award* – For best undergrad honors thesis in astronomy 2016
- Sigma Pi Sigma* – Member 2016

Observing Experience

Keck/HIRES - 51 nights

Lick/ShaneAO - 36 nights

WIYN/NEID - 21 hours

HET/HPF - 8 hours

COMMUNITY SERVICE AND OUTREACH

Physics & Astronomy Community Excellence (PACE), Co-Leader. A UCI graduate student led organization providing a peer-mentoring program and career-building workshops for graduate students. Helped organize the program and run workshops. Academic years 2020-2023.

Physics Graduate Caucus (PGC), Treasurer. The student-run government representing graduate student interests to the department. Served for 3 academic years, 2019-2023.

Intro2Astro Summer Course, Grad student mentor. A 10 week free introduction to astronomy research for aspiring students/researchers/enthusiasts. Helped organize and run weekly seminars (recorded to YouTube) including fully leading two lessons per year. Summers 2021 and 2022

Osterbrock Sierra Conference Campus Leader. Helped plan, organize, and implement the annual camping conference/retreat for astro grad students across the UC system. Summer 2020 (entirely planned, but then cancelled due to Covid) and Summer 2021.

Science Olympiad Test Writer, Orange County Regional. Authored, proctored, and scored the *Astronomy B* and *Astronomy C* tests for local 5th and 6th graders. Hosted at UCI, February 15, 2020.

Referee for AAS Journals, I have been asked, and accepted, the role of referee for an academic paper in review. The paper was ultimately accepted for publication in *The Astrophysical Journal*. **Count: 1.**

Mentoring

Antony Rozic 2022
UCI Undergrad. Assisted in getting set up with software tools for Radial Velocity fitting as well as project design.

Adam Hagen 2022
High School student. Helped both in getting set up with the best software tools for working with TESS light curves and with applying new knowledge to search for transits.

Simon Olshan-Cantin 2022
High School student. Helped them with the software skills needed for searching archival radio data sets for Fast Radio Bursts (FRB)

David Zhou 2021
High School student. Helped both in getting set up with the best software tools for working with TESS light curves and with applying new knowledge to search for transits.

PRESENTATIONS

“Exploring New Dimensions in Time Series Analysis”, Invited Talk, Ohio State Exoplanet Group, September 30, 2022.

“Stellar Activity Manifesting at a One Year Alias Explains Barnard b as a False Positive”, AAS 240, Talk, Pasadena, June 14, 2022.

“Stellar Activity Manifesting at a One Year Alias Explains Barnard b as a False Positive”, Exoplanets IV, Talk, Las Vegas, May 5, 2022.

Cal-Bridge Graduate Student Workshop, Cal-Bridge Program, Panel Member. In-person, April 24, 2022.

“Trends and Biases in the Now 5000 Strong Exoplanet Population”, UCI Undergraduate Astronomy Club, Talk. In-person, April 13, 2022.

“TKS IX: HD 191939 Hosts a Multi-Planet System”, Keck Science Meeting. Poster, Virtual. September 9, 2021

“The Lives and Deaths of Barnard b”, Astronomy on Tap, Penn State University. Public Talk, Virtual. June 21, 2021 <https://www.youtube.com/watch?v=D7-3lwf4D7E>

“TKS IX: HD 191939 Hosts a Multi-Planet System”, Emerging Researchers in Exoplanet Science (ERES) 2021, Talk. Virtual, May 24, 2021.

“My Research in Exoplanets”, UCI Undergraduate Astronomy Club, Talk. Virtual, February 3, 2021.

“TKS V: HD 191939 Hosts a 5 Planet System”, American Astronomical Society (AAS) 237th Meeting Oral Session 117, Talk. Virtual, January 11, 2021.

Teaching Assistant Professional Development Training, Panel Member. Virtual, November 5, 2020

The Search for M-M Eclipsing Binaries, Vanderbilt University Science Fair, Poster. September 17, 2015.

Professional Development

CodeAstro, An astronomy-focused workshop teaching best coding practices for software development, testing, and publishing. June 21-24, 2022

Farmer-Trimble Graduate Observational Astronomy Workshop designed for UC astronomy graduate students on observational techniques. Hosted at Lick Observatory

over 5 nights. Learned telescope setup, observational strategies and limitations, and data reduction techniques. October 10-16, 2019

PRESS COVERAGE

“Planet Around Barnard’s Star Probably Doesn’t Exist At All”, Scientias.nl (Dutch language science news website), May 26, 2021

“Astronomers Challenge Claim of Planet Around Barnard’s Star”, Sky & Telescope, May 21, 2021

“Astronomers Nix Idea Of Super-Earth Around Barnard’s Star”, Forbes, May 18, 2021

“A very stealthy alias: the impostor planet of Barnard’s star”, HPF Blog, May 17, 2021

“Astronomers use new technology developed with help from UC Irvine professor to look for habitable planets”, LA Times, March 11, 2019

PUBLICATIONS

As of November 2022

Count = 36

h-Index = 12

273 total citations

First Author

Lubin, J., van Zandt, J., Holcomb, R., et al. *TESS-Keck Survey IX: Masses of Three Sub-Neptunes Orbiting HD 191939 and the Discovery of a Warm Jovian Plus a Distant Sub-Stellar Companion*, AJ, 163:101, February 2022.

Lubin, J., Robertson, P., Stefansson, G., et al. *Stellar Activity Manifesting at a One Year Alias Explains Barnard b as a False Positive*, AJ, 162:61, August 2021

Lubin, J., Rodriguez, J., Zhou, G., et al. *A Bright Short Period M-M Eclipsing Binary from the KELT Survey: Magnetic Activity and the Mass-Radius Relationship for M-dwarfs*, ApJ, 844:134, August 2017.

N Author

Grünblatt, S., Saunders, N., Chontos, A., et al. *TESS Giants Transiting Giants III: An eccentric warm Jupiter supports a period-eccentricity relation for giant planets transiting evolved stars*, arXiv, November 2022

- Yee, S., Winn, J., Hartman, J., et al. *The TESS Grand Unified Hot Jupiter Survey. II. Twenty New Giant Planets*, arXiv, October 2022
- Dai, F., Masuda, M., Beard, C., et al. *TOI-1136 is a Young, Coplanar, Aligned Planetary System in a Pristine Resonant Chain*, arXiv, October 2022
- Brinkman, C., Weiss, L., Dai, F., et al. *TOI-561 b: A Low Density Ultra-Short Period "Rocky" Planet around a Metal-Poor Star*, arXiv, October 2022
- van Zandt, J., Petigura, E., MacDougall, M., Gregory, G., **Lubin, J.**, et al. *TESS-Keck Survey XIV: 2 giant exoplanets from the Distant Giants Survey*, arXiv, September 2022
- Beard, C., Robertson, P., Kanodia, S., et al. *GJ 3929: High Precision Photometric and Doppler Characterization of an Exo-Venus and its Hot, Mini-Neptune-mass Companion*, ApJ, 936:55, September 2022
- MacDougall, M., Petigura, E., Fetherolf, T., Beard, C., **Lubin, J.**, et al. *The TESS-Keck Survey. XIII. An Eccentric Hot Neptune with a Similar-Mass Outer Companion around TOI-1272*, AJ, 164:97, September 2022
- Yee, S., Winn, J., Hartman, J., et al. *The TESS Grand Unified Hot Jupiter Survey. I. Ten TESS Planets*, AJ, 164:70, August 2022
- Turtelboom, E., Weiss, L., Dressing, C., et al. *The TESS-Keck Survey. XI. Mass Measurements for Four Transiting sub-Neptunes orbiting K dwarf TOI-1246*, AJ, 163:293, June 2022
- Beard, C., Robertson, P., Kanodia, S., et al., *TOI-1696 and TOI-2136: Constraining the Masses of Two Mini-Neptunes with HPF*, AJ, 163:286, April 2022
- Reefe, M., Luque, R., Gaidos, E., et al. *A close-in puffy Neptune with hidden friends: The enigma of TOI 620*, AJ, 163:269, June 2022
- Terrien, R., Keen, A., Oda, K. et al. *Rotational modulation of spectroscopic Zeeman signatures in low-mass stars*, ApJL, 927:L11, March 2022
- Grunblatt, S., Saunders, N., Sun, M., et al. *TESS Giants Transiting Giants II: The hottest Jupiters orbiting evolved stars*, AJ, 163:120, March 2022
- Canas, C., Mahadevan, S., Bender, C., et al. *An eccentric Brown Dwarf eclipsing an M dwarf*, AJ 163:89, February 2022
- Dalba, P., Kane, S., Dragomir, D., et al. *The TESS-Keck Survey. VIII. Confirmation of a Transiting Giant Planet on an Eccentric 261 day Orbit with the Automated Planet Finder Telescope*, ApJ, 163:61, February 2022

- El Mufti, M., Plavchan, P., Isaacson, H., et al. *TOI 560 : Two Transiting Planets Orbiting a K Dwarf Validated with iSHELL, PFS and HIRES RVs*, arXiv December 2021
- Wang, X., Rice, M., Wang, S., et al. *SOLES II: The Aligned Orbit of WASP-148b, the Only Known Hot Jupiter with a Nearby Warm Jupiter Companion, from NEID and HIRES*, ApJL: 926:L8, February 2022
- Heidari, N., Boisse, I., Orell-Miquel, J., et al. *HD207897 b: A dense sub-Neptune transiting a nearby and bright K-type star*, MNRAS, 658:A176, February 2022
- MacDougall, M., Petigura, E., Angelo, I., **Lubin, J.** et al. *The TESS-Keck Survey. VI. Two Eccentric sub-Neptunes Orbiting HIP-97166*, AJ, 162:265, December 2021
- Scarsdale, N., Murphy, J., Batalha, N., et al. *TKS V. Twin sub-Neptunes Transiting the Nearby G Star HD 63935*, AJ, 162:215, November 2021
- Kanodia, S., Stefansson, G., Canas, C., et al. *TOI-532b: The Habitable-zone Planet Finder confirms a Large Super Neptune in the Neptune Desert orbiting a metal-rich M dwarf host*, AJ, 162:135, October 2021
- Llop-Sayson, J., Wang, J., Ruffio, J., et al. *Constraining the Orbit and Mass of ϵ Eridani b with Radial Velocities, Hipparcos IAD-Gaia DR2 Astrometry, and Multi-epoch Vortex Coronagraphy Upper Limits*, AJ, 162:61, August 2021
- Chontos, A., Murphy, J., MacDougall, M., et al. *The TESS-Keck Survey: Science Goals and Target Selection*, AJ, 163:297, June 2022
- Dai, F., Howard, A., Batalha, N., et al. *TKS X: Confirmation of TOI-1444b and a Comparative Analysis of the Ultra-short-period Planets with Hot Neptunes*, May 2021
- Winters, J., Cloutier, R., Medina, A., et al. *A Second Planet Transiting LTT 1445A and a Determination of the Masses of Both Worlds*, AJ, 163:168, April 2022
- Rubenzahl, R., Dai, F., Howard, A., et al. *The TESS-Keck Survey IV: A Retrograde, Polar Orbit for the Ultra-Low-Density, Hot Super-Neptune WASP-107b*, AJ, 161:119, March 2021
- Weiss, L., Dai, F., Huber, D., et al. *The TESS-Keck Survey II: An Ultra-Short Period Rocky Planet and its Siblings Transiting the Galactic Thick-Disk Star TOI-561*, AJ, 161:56, February 2021
- Dai, F., Roy, A., Fulton, B., et al. *TKS III: A Stellar Obliquity Measurement of TOI-1726 c*, AJ, 160:193, October 2020

Canas, C., Stefansson, G., Kanodia, S., et al. *A warm Jupiter transiting an M dwarf: A TESS single transit event confirmed with the Habitable-zone Planet Finder*, AJ, 160:147, September 2020

Carleo, I., Gandolfi, D., Barragan, O., et al. *The multi-planet system TOI-421 – A warm Neptune and a super puffy mini-Neptune transiting a G9 V star in a visual binary* AJ, 160:114, September 2020

Robertson, P., Stefansson, G., Mahadevan, S., et al. *Persistent starspot signals on M dwarfs: multi-wavelength Doppler observations with the Habitable-zone Planet Finder and Keck/HIRES*, ApJ, 897:125, July 2020

Cloutier, R., Rodriguez, J., Irwin, J., et al. *TOI-1235 b: a keystone super-Earth for testing radius valley emergence models around early M dwarfs*, 160:22, July 2020

Dalba, P., Gupta, A., Rodriguez, J., et al. *The TESS-Keck Survey I: A Warm Sub-Saturn-mass Planet and a Caution about Stray Light in TESS Cameras*, AJ, 159:241, May 2020