

ZHEXING LI

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- EDUCATION**
- University of California, Riverside (UCR)** Riverside, CA
Doctor of Philosophy in Earth and Planetary Sciences 2018-Current
- Boston University (BU)** Boston, MA
Master of Arts in Astronomy 2016-2018
- University of California, Santa Barbara (UCSB)** Santa Barbara, CA
Bachelor of Science in Physics 2011-2015
- RESEARCHES**
- Graduate Student Researcher at UCR** 2018-Current
Advisor: Prof. Stephen Kane
- Spearheaded multiple projects that performed time series frequency analyses and hypothesis tests on ~20 GB of exoplanet data that identified many exoplanet candidates signals as well as refutation of 2 previously claimed exoplanets.
 - Modeled exoplanet candidates data and estimated parameter uncertainties using Bayesian statistics and Markov Chain Monte Carlo that contributed to discoveries of 7 exoplanets, 7 sub-stellar companions, and 1 white dwarf star.
 - Created a pipeline that tests the best strategy to refine known exoplanetary orbits for future NASA space telescopes based on simulation data that could reduce orbital uncertainties by 10-80%, depending on the target.
 - Led and collaborated with researchers from different backgrounds on exoplanet projects that achieved over 20 peer-reviewed publications in top journals and presented results at domestic and international conferences.
- Graduate Student Researcher at BU** 2017-2018
Advisor: Prof. Catherine Espaillat
- Modeled a sample of 58 protoplanetary disks in Upper Scorpius region using a combination of stellar and disk models that improved our understanding of stellar birth environment through disk excess emission.
 - Created scripts that iteratively model protoplanetary disk and stellar models to the data, find the best-fit solutions, and model intrinsic stellar parameters that all became integral parts of the group's analysis pipeline.
 - Optimized the group's disk data analysis pipeline that improved the overall efficiency by 20%.
- Project Intern at Las Cumbres Observatory** 2015-2016
Advisor: Dr. Rachel Street
- Pre-processed and modeled exoplanet microlensing data that resulted in the discovery of a brown dwarf and demonstrated for the first time ever the possibility of detecting microlensing parallax from space.
 - Developed an automated pipeline that queries a data archive hourly and ports

the observational data (~ 30 GB per night) into the analysis pipeline, and intelligently schedules future observations that is critical to the entire team.
 - Reworked the reference frame selection algorithm of the observatory's microlensing data analysis pipeline using observation statistics that ultimately doubled the pipeline speed.

TEACHING

Teaching Assistant at UCR

GEO 080 - Astrobiology Spring 2020, 2021, 2022, 2023, 2024
 GEO 006 - Planets in Science Fiction Winter 2024

Teaching Fellow at BU

AS 100 - Cosmic Controversies Spring 2018
 AS 203 - Principles of Astronomy II Spring 2017
 AS 109 - Cosmology Fall 2016

AWARDS

Sagan Summer Workshop travel award 2022
 UCR Graduate Student Association travel award 2022
 UCR Graduate Student Association travel award 2021
 Exoplanets in our Backyard workshop travel award 2020
 UCR Graduate Student Association travel award 2019
 UCR Dean's Distinguished Fellowship 2018-2019
 BU Graduate Student Fellowship 2016-2018
 UCSB Undergraduate Honor 2015
 UCSB Dean's Honors 2012,2013,2015

OBSERVING

As PI

- APF, Lick Observatory (4 nights per semester) 2023A, 2023B
- APF, Lick Observatory (4 nights per semester) 2022A, 2022B
- APF, Lick Observatory (4 nights per semester) 2021A, 2021B
- APF, Lick Observatory (4.5 nights, 8 nights) 2020A, 2020B

As Co-I

- APF, Lick Observatory (PI S. R. Kane) 2019B

REFEREED PUBLICATIONS

First author

3. **Li, Z.**, Kane, S. R., Brandt, T. D., Fetherolf, T., Robertson, P. and 13 authors, accepted, *AJ*
 "Revised Architecture and Two New Super-Earths in the HD 134606 Planetary System"
2. **Li, Z.**, Kane, S. R., Dalba, P. A., Howard, A. W. and Isaacson, H. T., 2022, *AJ*, 164, 163
 "New Dynamical State and Habitability of the HD 45364 Planetary System"
1. **Li, Z.**, Hildebrandt, S. R., Kane, S. R., Zimmerman, N. T., Girard, J. H., Gonzalez-Quiles, J. and Turnbull, M. C., 2021, *AJ*, 162, 9

“Direct Imaging of Exoplanets Beyond the Radial Velocity Limit: Application to the HD 134987 System”

Other

22. Hill, M. L., Kane, S. R., Dalba, P. D., MacDougall, M., Fetherolf, T., **Li, Z.** and 31 authors, submitted, *AJ*

“The TESS-Keck Survey. XIX. A Warm Transiting Sub-Saturn Mass Planet and a non-Transiting Saturn Mass Planet Orbiting a Solar Analog”

21. Kane, S. R. and **Li, Z.**, 2023, *PSJ*, 4, 216

“Dynamical Interactions and Mass Loss Within the Uranian System”

20. Jacobson-Galan, W. V. and 67 authors including **Li, Z.**, 2023, *ApJL*, 954, L42

“SN 2023ixf in Messier 101: Photo-ionization of Dense, Close-in Circumstellar Material in a Nearby Type II Supernova”

19. Laliotis, K., Burt, J., Mamajek, E. E., **Li, Z.** and 20 authors, 2023, *AJ*, 165, 176

“Doppler Constraints on Planetary Companions to Nearby Sun-like Stars: An Archival Radial Velocity Survey of Southern Targets for Proposed NASA Direct Imaging Missions”

18. Ostberg, C., Kane, S. R., **Li, Z.**, and 7 authors, 2023, *AJ*, 165, 168

“The Demographics of Terrestrial Planets in the Venus Zone”

17. Hill, M. L. and 7 authors including **Li, Z.**, 2023, *AJ*, 165, 34

“A Catalog of Habitable Zone Exoplanets”

16. Kane, S. R. and **Li, Z.**, 2022, *PSJ*, 3, 179

“The Dynamical Viability of an Extended Jupiter Ring System”

15. Errico, A., Wittenmyer, R. A., Horner, J., **Li, Z.** and 19 authors, 2022, *AJ*, 163, 273

“HD 83443c: A highly eccentric giant planet on a 22-year orbit”

14. Simpson, E. R., Fetherolf, T., Kane, S. R., **Li, Z.**, Pepper, J. and Močnik, T., 2022, *AJ*, 163, 215

“Revisiting BD-06 1339b: A Likely False Positive Caused by Stellar Activity”

13. Dalba, P. A. and 74 authors including **Li, Z.**, 2022, *AJ*, 163, 61

“The TESS-Keck Survey. VIII. Confirmation of a Transiting Giant Planet on an Eccentric 261-day Orbit with the Automated Planet Finder Telescope”

12. Hill, M. L., Kane, S. R., Campante, T. L., **Li, Z.**, and 23 authors, 2021, *AJ*, 162, 211

“Asteroseismology of iota Draconis and Discovery of an Additional Long-Period Companion”

11. Dalba, P. A., Kane, S. R., **Li, Z.**, MacDougall, M. G., Rosenthal, L. J., and 11 authors, 2021, *AJ*, 162, 154
“Giant Outer Transiting Exoplanet Mass (GOT ’EM) Survey. II. Discovery of a Failed Hot Jupiter on a 2.7 Year, Highly Eccentric Orbit”
10. Turnbull, M. C., Zimmerman, N. T., Girard, J. H., Hildebrandt, S. R., **Li, Z.**, and 5 authors, 2021, *JATIS*, 7, 021218
“Community Exoplanet Imaging Data Challenge for Roman CGI and Starshade Rendezvous”
9. Dalba, P. A., Kane, S. R., Howell, S. B., Horch, E. P., **Li, Z.**, and 7 authors, 2021, *AJ*, 161, 123
“Speckle Imaging Characterization of Radial Velocity Exoplanet Systems”
8. Kane, S. R., **Li, Z.**, Wolf, E. T., Ostberg, C., Hill, M. L., 2021, *AJ*, 161, 31
“Eccentricity Driven Climate Effects in the Kepler-1649 System”
7. Girard, J. H. and 10 authors including **Li, Z.** 2020, *Proc. SPIE*, 11443, 1144337
“The Roman exoplanet Imaging data challenge: a major community engagement effort”
6. Wyrzykowski, L. and 184 authors including **Li, Z.** 2020, *A&A*, 633, A98
“Full Orbital Solution for the Binary System in the Northern Galactic Disk Microlensing Event Gaia16aye”
5. Kane, S. R., Dalba, P. A., **Li, Z.**, and 13 authors, 2019, *AJ*, 157, 252
“Detection of Planetary and Stellar Companions to Neighboring Stars via a Combination of Radial Velocity and Direct Imaging Techniques”
4. Kane, S. R., Dalba, P. A., Horner, J., **Li, Z.**, Wittenmyer, R. A., Horch, E. P., Howell, S. B., Everett, M. E., 2019, *ApJ*, 875, 74
“Discovery of a Compact Companion to a Nearby Star”
3. Hundertmark, M. and 23 authors including **Li, Z.** 2019, *A&A*, 609, A55
“RoboTAP: Target priorities for robotic microlensing observations”
2. Ryu, Y.-H. and 108 authors including **Li, Z.** 2018, *AJ*, 155, 40
“OGLE-2016-BLG-1190Lb: The First *Spitzer* Bulge Planet Lies Near the Planet-Brown dwarf Boundary”
1. Shvartzvald, Y., **Li, Z.** and 91 authors, 2016, *ApJ*, 831, 183
“The First Simultaneous Microlensing Observations by Two Space Telescopes: *Spitzer* & *Swift* Reveal a Brown Dwarf in Event OGLE-2015-BLG-1319”

CONFERENCE Posters

PRESENTATIONS

- “The Identity of Objects Within the HD 134606 System”, **2022 Sagan Summer Workshop**, Pasadena, CA, 2022
- “Dynamics and Habitability in the HD 45364 System”, **Exoplanets IV**, Las Vegas, NV, 2022
- “Direct Imaging of Exoplanets Beyond Radial Velocity Limits”, **Towards the Comprehensive Characterization of Exoplanets: Science at the Interface of Multiple Measurement Techniques**, Online, 2021
- “Direct Imaging of Exoplanets Beyond Radial Velocity Limits”, **Exoplanets in our Backyard**, Houston, TX, 2020
- “Analysis of Exoplanetary Systems as WFIRST Targets”, **Extreme Solar Systems IV**, Reykjavik, Iceland, 2019
- “Analysis of Exoplanetary Systems as WFIRST Targets”, **Science in Our Own Backyard: Exploring the Galaxy and the Local Group with WFIRST**, Pasadena, CA, 2019
- “Analysis of Exoplanetary Systems as WFIRST Targets”, **233rd Meeting of the American Astronomical Society**, Seattle, WA, 2019
- “Full Data Reduction on Microlensing Event OGLE-2014-BLG-1112 with LCOGT”, **ExSoCal 2015: An Exoplanet Orbital Interaction**, Pasadena, CA, 2015

SERVICES

- Executive Secretary for NASA Astrophysics Data Analysis Program Proposal Evaluation Panel 2023
- UCR Graduate Student Association Travel Grant Committee 2020-2021
- Volunteer and Local Organizing Committee
Kepler’s Second Mission Science Conference, Santa Barbara, CA 2015

OUTREACH

- Boston University Public Open Nights 2016-2018
Boston University Coit Observatory