Dakotah Tyler

Contact

UCLA Department of Physics and Astronomy
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Education

Ph. D. Candidate in Astronomy and Astrophysics, University of California, Los Angeles
Expected Completion Date: May 2025
Thesis Title: *Observational Investigations of Mass-Loss for Close-in Exoplanets*
Thesis Advisor: Dr. Erik Petigura

M.Sc. in Astronomy and Astrophysics, University of California, Los Angeles
Degree Date: May 2022

Dual B.Sc. in Physics and Astrophysics, University of Cincinnati
Degree Date: May 2020

B.Sc. in Community and Leadership Development, University of Kentucky
Degree Date: May 2014
Student Athlete on Football Scholarship

Experience & Honors

2020–Present	Graduate Student Researcher, University of California, Los Angeles
2020–Present	Graduate Student Researcher, California Planet Search [CPS]
2020–Present	Eugene V. Cota Robles Fellow, University of California, Los Angeles
2020 (Fall)	Competitive Edge Scholar, University of California, Los Angeles
2020 (Summer)	Planetary Research Intern, NASA Goddard Space Flight Center
2019–2020	Solar & Heliophysics REU, Harvard-Smithsonian Center for Astrophysics
2017–Present	Stellar Accretion Disk Research Group, University of Cincinnati

Research Interests

Demographics of extrasolar planets; characterization and evolution of planet atmospheres; spectroscopy of planet atmospheres; planet formation and evolution; high-precision radial velocities; pre-main sequence stars and protoplanetary disks; geophysics and planet interiors; astrobiology and the search for life outside of Earth.

Observational/Telescope Experience

Telescope	**Location**	**Instrument**
Keck I	Mauna Kea	KPF
Keck I	Mauna Kea	HIRES
Keck II	Mauna Kea	NIRSPEC
IRTF	Mauna Kea	SpeX

Teaching Experience

Date	**Inst.**	**Role**
2022–	UCLA	Graduate Teaching Assistant: The Evolution of the Cosmos and Life
2022–	UCLA	Graduate Student Instructor and Curriculum Development: "Exoplanets and Multi-Media Science Communication"

Invited Talks & Presentations

2024	49ers EDU Foundation For Success - Keynote Talk, 49ers Stadium, Santa Clara, CA
2024	NASA's Universe of Learning Science Talks - New Orleans, LA
2024	American Astronomical Society 243rd National Meeting - Press Conference, NOLA
2024	American Astronomical Society 243rd National Meeting - Oral Present., NOLA
2023	ExSoCal 5th Annual Meeting - Contributed Talk, Caltech, Pasadena, CA
2023	Glendale Community College Planetarium - "Conversation with the Stars" Series
2023	Exploring Your Universe Science Talk - "The Search for Life", UCLA [EYU]
2023	UCLA Grad Slam Research Presentation Finalist, UCLA, Los Angeles, CA
2022	UCLA Planetarium - "The Universe and You" Series, UCLA, Los Angeles, CA
2022	Center for Computational Astrophysics - Invited Talk, Flatiron Institute, NYC

Media

- **Documentaries/Shows:**
  - "The UFO Movie They Don't Want You to See" (2022) - Featured Astrophysicist,

discussing the scientific perspective on unidentified flying objects - imdb link ○ Atlas Obscura: Skylines Decoded (2023) - Host for a tour at Griffith Observatory Star Party

- **Press Conferences:**
  - Presenter at the 243rd American Astronomical Society National Meeting (2024) - "The Escaping Envelope of WASP-69b is Confined to a Tail Extending 7 Planet Radii" Press Conference Recording
- **Podcast and Radio Interviews:**
  - Universe Today Podcast
  - Solve It! For Kids Podcast
  - Australian Broadcast Channel (ABC) - The Science Show Radio Show
  - Canadian Broadcast Channel (CBC) - Quirks and Quarks Radio Show

- **Profiles:**
  - American Physical Society News
  - University of Cincinnati

- **Social Media Platforms:**
  - Instagram, TikTok, YouTube, X/Twitter, FaceBook - @dtstarkid
    - 250,000+ Followers across all platforms, highlighting significant reach and impact in science communication

Research Impact

"WASP-69b's Escaping Envelope is Confined to a Tail Extending at Least 7 Planet Radii" (Tyler et al. 2024) achieved an exceptional Altmetric score, indicating extensive global attention and engagement. This score places it in the top 0.1% of all research outputs ever scored by Altmetric, showcasing its significance in bringing astronomical discoveries to a wider audience.

- **Press Coverage:**
  - Smithsonian Magazine
  - USA Today
  - Forbes
  - Big Think
  - UCLA
  - Keck

Publications

1. **Tyler, Dakotah**, Erik A. Petigura, Antonija Oklopcic, Trevor David 2024. "WASP-69b's Escaping Atmosphere is Confined to a Tail Extending at Least 7 Planet Radii." *The Astrophysical*

Journal 960 (203). https://doi.org/10.3847/1538-4357/ad11d0

2. Murphy, Joseph M. Akana, Natalie M. Batalha, Nicholas Scarsdale, Howard Isaacson, David R. Ciardi, Erica J. Gonzales, Steven Giacalone, **et al.** 2023. "The TESS-Keck Survey. XVI. Mass Measurements for 12 Planets in Eight Systems." arXiv. https://doi.org/10.48550/ARXIV.2306.16587.

3. Filipe Pereira, Samuel K Grunblatt, Angelica Psaridi, Tiago L Campante, Margarida S Cunha, **et al.** 2023. "TESS Giants Transiting Giants V - Two Hot Jupiters Orbiting Red Giant Hosts." *Monthly Notices of the Royal Astronomical Society* 527 (3). https://doi.org/10.1093/mnras/stad3449.

4. Dai, F., K. Masuda, C. Beard, P. Robertson, M. Goldberg, K. Batygin, L. Bouma, **et al.** 2023. "TOI-1136 Is a Young, Coplanar, Aligned Planetary System in a Pristine Resonant Chain." *Astronomical Journal* 165 (2). https://doi.org/10.3847/1538-3881/aca327

5. Hon, Marc, Daniel Huber, Nicholas Z. Rui, Jim Fuller, Dimitri Veras, James S. Kuszlewicz, **et al.** 2023. "A Close-in Giant Planet Escapes Engulfment by Its Star." *Nature* 618 (7967): 917–20. https://doi.org/10.1038/s41586-023-06029-0.

6. Rice, Malena, Songhu Wang, Konstantin Gerbig, Xian-Yu Wang, Fei Dai, **Dakotah Tyler**, Howard Isaacson, and Andrew W. Howard. 2023. "The Orbital Architecture of Qatar-6: A Fully Aligned Three-Body System?" *The Astronomical Journal* 165 (2): 65. https://doi.org/10.3847/1538-3881/aca88e.

7. MacDougall, Mason G., Erik A. Petigura, Tara Fetherolf, Corey Beard, Jack Lubin, Isabel Angelo, Natalie M. Batalha, **et al.** 2022. "The TESS–Keck Survey. XIII. An Eccentric Hot Neptune with a Similar-Mass Outer Companion around TOI-1272." *The Astronomical Journal* 164 (3): 97. https://doi.org/10.3847/1538-3881/ac7ce1.

8. Dalba, Paul A., Stephen R. Kane, Diana Dragomir, Steven Villanueva, Karen A. Collins, **et al.** 2022. "The TESS-Keck Survey. VIII. Confirmation of a Transiting Giant Planet on an Eccentric 261 Day Orbit with the Automated Planet Finder Telescope\ast." *The Astronomical Journal* 163 (2): 61. https://doi.org/10.3847/1538-3881/ac415b.

9. Turtelboom, Emma V., Lauren M. Weiss, Courtney D. Dressing, Grzegorz Nowak, Enric Pallé, Corey Beard, **et al.** 2022. "The TESS-Keck Survey. XI. Mass Measurements for Four Transiting Sub-Neptunes Orbiting K Dwarf TOI–1246." *The Astronomical Journal* 163 (6): 293. https://doi.org/10.3847/1538-3881/ac69e5.

10. Yang, Y., H. Yan, L. Wang, J.C. Wheeler, D. Baade, H. Isaacson, A. Cikota, **et al.** 2022. "Spectropolarimetry of the Thermonuclear Supernova SN 2021rhu: High Calcium Polarization 79 Days after Peak Luminosity." *Astrophysical Journal* 939 (1).

11. Yee, Samuel W., Joshua N. Winn, Joel D. Hartman, Joseph E. Rodriguez, George Zhou, **et al.** 2022. "The TESS Grand Unified Hot Jupiter Survey. I. Ten TESS Planets." *The Astronomical Journal* 164 (2): 70. https://doi.org/10.3847/1538-3881/ac73ff.

12. Fernandes, Rachel B., Zachary C. Long, Monika Pikhartova, Michael L. Sitko, Carol A. Grady, **et al.** 2018. "Variability of Disk Emission in Pre-Main-Sequence and Related Stars. IV. Investigating the Structural Changes in the Inner Disk Region of MWC 480." *The Astrophysical Journal* 856 (2): 103. https://doi.org/10.3847/1538-4357/aaaae7.