

Katelyn Horstman

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Education:

California Institute of Technology (Caltech)

Doctor of Philosophy in Astrophysics

Advisor: Dr. Dimitri Mawet

Expected: September 2026

California Institute of Technology (Caltech)

Master of Science in Astrophysics

June 2023

University of California, Los Angeles (UCLA)

Bachelor of Science in Astrophysics

Departmental Honors

June 2021

Selected Publications:

Horstman, K., Ruffio, J. B., Batygin, K., et al. (2024). RV measurements of directly imaged brown dwarf GQ Lup B to search for exo-satellites. *Accepted to the Astronomical Journal (AJ)*, doi.org/10.48550/arXiv.2408.10299.

Horstman, K., Ruffio, J. B., Wang, J., et al. (2024). Fringing analysis and forward modeling of Keck Planet Imager and Characterizer (KPIC) spectra. *SPIE 13096, Ground-based and Airborne Instrumentation for Astronomy X*, 130962E, doi:10.1117/12.3018020.

Ruffio, J. B., **Horstman, K.**, Mawet, D., et al. (2023). Detecting exomoons from radial velocity measurements of self-luminous planets: application to observations of HR 7672 B and future prospects. *Astronomical Journal (AJ)*, 165, 113, doi:10.3847/1538-3881/acb34a

Horstman, K., Fitzgerald, M. P., Lyke, J. E., et al. (2022). Using Non-negative Matrix Factorization to Improve Calibration of the Keck OSIRIS Integral Field Spectrograph. *Publications of the Astronomical Society of the Pacific*, 134:1036, doi.org/10.1088/1538-3873/ac7905.

Horstman, K., Shapley, A. E., Sanders, R. L., et al. (2020). The MOSDEF Survey: Differences in SFR and Metallicity for Morphologically-Selected Mergers at $z \sim 2$. *Monthly Notices of the Royal Astronomical Society*, 501:1, doi.org/10.1093/mnras/staa3502.

Horstman, K. & Trimble, V. (2020). Correlation of Time from Submission to Acceptance of Astronomical Papers with Gender of Lead Author. *Bulletin of the AAS*, 52:2, doi.org/10.3847/25c2cf.907653b3.

Horstman, K. & Trimble, V. (2019) A citation history of measurements of Newton's constant of Gravity. *Scientometrics* 119:527, doi.org/10.1007/s11192-019-03031-0.

Selected Presentations:

Horstman K., Trimble V., Ruffio J. B., et al. **Invited talk** presented at American Physical Society; 2024 April; Sacramento, California.

Horstman K., Ruffio J. B., and Mawet D., et al. *RV measurements of directly imaged brown dwarf GQ Lup B to search for exomoons.* Contributed talk presented at ExSoCal; 2023 November; Pasadena, California.

Horstman K., Ruffio J. B., and Mawet D., et al. *Fringing Analysis and Forward Modeling of Keck Planet Imager and Characterizer (KPIC) Spectra*. Contributed talk presented at Network of Young Researchers in Instrumentation for Astronomy (NYRIA); 2023 November; Marseille, France.

Horstman K. *How to find an Ewok: Detection and characterization of bodies outside our solar system*. **Invited talk** presented at the Jet Propulsion Laboratory (JPL) for the Caltech Associates; 2023 May; Pasadena, California.

Horstman K., Ruffio J. B., and Mawet D., et al. *The prospects of discovering exomoons: Radial velocity measurements around self-luminous planets*. Contributed talk presented at ESO Disks and Planets; 2022 November; Garching, Germany.

Horstman K. and Fitzgerald, M.P. *Using Non-negative Matrix Factorization to Improve Calibration of the Keck OSIRIS Integral Field Spectrograph*. Contributed talk presented at 240th AAS Meeting; 2022 June 13; Pasadena, CA.

Horstman K. and Shapley A. *SFR-M-Z and Merger Relationship at a Redshift of 2.2*. Powerpoint session presented at Undergraduate Research Week 2021; 2021 May 28; Los Angeles, CA.

Awards and Scholarships:

NSF Graduate Research Fellowship Recipient	March 2023
Keck Institute for Space Studies (KISS) Affiliate	September 2022
NSF Graduate Research Fellowship Honorable Mention	February 2021
UCLA Clay Trust Physical Science Scholarship	February 2020

Service and Leadership:

Physics, Math, and Astronomy (PMA) Diversity, Equity, and Inclusion <i>Graduate student task force member</i>	Pasadena, CA <i>Sep 2023 - present</i>
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Gender Minorities in PMA <i>President</i>	Pasadena, CA <i>Sep 2023 - present</i>
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FUTURE of Physics at Caltech <i>Invited speaker</i>	Pasadena, CA <i>Oct 2023</i>
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FUTURE Ignited at Caltech <i>Invited speaker/Student mentor</i>	Pasadena, CA <i>Oct 2022</i>
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Certificate of Practice in University Teaching (CTLO) <i>In progress</i>	Pasadena, CA <i>Sep 2022 - present</i>
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Zeitschrift für Naturforschung A. <i>Peer reviewed journal reviewer</i>	Los Angeles, CA <i>May 2019</i>
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Professional Associations:

SPIE - The International Society for Optics and Photonics	Jan 2024 - present
American Astronomical Society (AAS)	Sep 2021 - present
American Physical Society (APS)	Sep 2017 - present