

# Curriculum Vitae

## Caleb K. Harada

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### EDUCATION

- **Ph.D. in Astrophysics**, University of California, Berkeley Expected May 2026  
Dissertation: “*The Astrophysical Environments of Habitable Worlds*”  
Advisor: Prof. Courtney Dressing
- **M.A. in Astrophysics**, University of California, Berkeley May 2022
- **B.S. in Astronomy w. High Honors (*Magna c. Laude*)**, University of Maryland May 2020  
Honors Thesis: “*Signatures of Clouds in Hot Jupiter Atmospheres*”  
Advisor: Prof. Eliza M.-R. Kempton
- **B.S. in Physics (*Magna c. Laude*)**, University of Maryland May 2020

### RESEARCH APPOINTMENTS

- **Graduate Student Researcher**, Dept. of Astronomy, UC Berkeley 2020-Present
- **NSF GRFP Fellow**, Dept. of Astronomy, UC Berkeley 2020-2025
- **NSF REU Intern**, Center for Astrophysics | Harvard & Smithsonian 2019
- **Undergraduate Student Researcher**, Dept. of Astronomy, University of Maryland 2017-2020

### HONORS, AWARDS, & CERTIFICATES

- UC Berkeley Certificate in Teaching & Learning in Higher Education Expected 2026
- UC Berkeley Outstanding Graduate Student Instructor Award 2022
- National Science Foundation Graduate Research Fellowship 2020
- National Science Foundation Research Experience for Undergraduates 2019
- Maryland Space Grant Scholarship 2019, 2020
- UMD Monroe Martin Undergraduate Research Award 2018, 2019
- UMD Angelo Bardasis Memorial Scholarship 2018, 2019, 2020

### REFEREED PUBLICATIONS (20 total; 4 first author) [ADS Search Q](#)

#### Major contributions

20. **Harada**, Dressing, Turtelboom, et al., “*SPORES-HWO. II. Companion Mass Limits and Updated Planet Properties for 120 Future Exoplanet Imaging Targets from 35 Years of Precise Doppler Monitoring*,” [Accepted in AJ](#), in press
19. **Harada**, Dressing, Kane, & Ardestani, “*Setting the Stage for the Search for Life with the Habitable Worlds Observatory: Properties of 164 Promising Planet Survey Targets*,” 2024, [ApJS](#), **272**, 30
18. **Harada**, Dressing, Alam, et al., “*Stability and Detectability of Exomoons Orbiting HIP 41378 f, a Temperate Jovian Planet with an Anomalously Low Apparent Density*,” 2023, [AJ](#), **166**, 208
17. **Harada**, M.-R. Kempton, Rauscher, et al., “*Signatures of Clouds in Hot Jupiter Atmospheres: Modeled High-Resolution Emission Spectra from 3D General Circulation Models*,” 2021, [ApJ](#), **909**, 85
16. Tuchow, **Harada**, Mamajek, et al., “*HWO Target Stars and Systems: A Prioritized List of Potential Stellar Targets for the Habitable Worlds Observatory’s ExoEarth Survey*,” 2025, [PASP](#), **137**, 10
15. Desai, Turtelboom, **Harada**, et al., “*The TESS-Keck Survey. XVIII. A Sub-Neptune and Spurious Long-period Signal in the TOI-1751 System*,” 2024, [AJ](#), **167**, 194

14. Duck, **Harada**, Harrell, Morris, Williams, Crossfield, Werner, & Deming, “K2, Spitzer, and TESS Transits of Four Sub-Neptune Exoplanets,” 2021, [AJ](#), **162**, 136

#### **Additional contributions**

13. Li, Kane, Blunt, & **Harada**, “Radial Velocity Strategies for the Orbital Refinement of Exoplanet Direct Imaging Targets,” 2025, [PASP](#), **137**, 10
12. Turtelboom, Dietrich, Dressing, & **Harada**, “Searching for Additional Planets in TESS Multiplanet Systems: Testing Empirical Models Based on Kepler Data,” 2025, [AJ](#), **170**, 3
11. Mayo, Fortenbach, Louie, Dressing, Turtelboom, Giacalone, & **Harada**, “Detection of H<sub>2</sub>O and CO<sub>2</sub> in the Atmosphere of the Hot Super-Neptune WASP-166b with JWST,” 2025, [AJ](#), **170**, 50
10. Wittenmyer, Errico, Holt, Horner, **Harada**, Kane, Li, & Fetherolf, “Optimising Radial Velocity Detection Limits for Southern Habitable Worlds Observatory Targets,” 2025, [MNRAS](#), **539**, 1
9. Grouffal, Santerne, Bourrier, et al. (inc. **Harada**), “The Star HIP 41378 Potentially Misaligned With Its Cohort of Long-period Planets,” 2025, [A&A](#), **701**, A173
8. Blunt, Nielsen, Newton, et al. (inc. **Harada**), “A Statistical Method for Constraining the Capability of the Habitable Worlds Observatory to Understand Ozone Onset Time in Earth Analogs,” 2025, [JATIS](#), **11**, 4
7. Sagynbayeva, Abbas, Kane, et al. (inc. **Harada**), “Requirements for Joint Orbital Characterization of Cold Giants and Habitable Worlds with Habitable Worlds Observatory,” 2025, [AJ](#), **170**, 208
6. Kane, Li, Turnbull, Dressing, & **Harada**, “Dynamical Viability Assessment for Habitable Worlds Observatory Targets,” 2024, [AJ](#), **168**, 195
5. Turtelboom, Weiss, Dressing, et al. (inc. **Harada**), “The TESS-Keck Survey. XI. Mass Measurements for Four Transiting Sub-Neptunes Orbiting K-dwarf TOI 1246,” 2022, [AJ](#), **163**, 293
4. Malsky, Rauscher, M.-R. Kempton, Roman, Long, & **Harada**, “Modeling the High-Resolution Emission Spectra of Clear and Cloudy Nontransiting Hot Jupiters,” 2021, [ApJ](#), **923**, 62
3. Roman, M.-R. Kempton, Rauscher, **Harada**, Bean, & Stevenson, “Clouds in Three-Dimensional Models of Hot Jupiters Over a Wide Range of Temperatures I: Thermal Structures and Broadband Phase Curve Predictions,” 2021, [ApJ](#), **908**, 101
2. Vissapragada, Knutson, Jovanovic, **Harada**, et al., “Constraints on Metastable Helium in the Atmospheres of WASP-69b and WASP-52b with Ultra-Narrowband Photometry,” 2020, [AJ](#), **159**, 278
1. Collins, Collins, Pepper, et al. (inc. **Harada**), “The KELT Follow-Up Network and Transit False Positive Catalog: Pre-vetted False Positives for TESS,” 2018, [AJ](#), **156**, 234

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#### **SELECTED PRESENTATIONS** (\* = Future talk)

<b>*Invited talk</b>	<b>UC Riverside Astrobiology Seminar</b> , Riverside, CA	Nov. 15, 2025
<b>*Invited talk</b>	<b>Caltech/IPAC Lunch Seminar</b> , Pasadena, CA	Nov. 12, 2025
<b>Invited talk</b>	<b>CfA/Harvard Special Seminar</b> , Cambridge, MA	Oct. 16, 2025
<b>Invited talk</b>	<b>UC Santa Cruz PLUNCH Talk</b> , Santa Cruz, CA	Sep. 29, 2025
Contributed talk	<b>HWO25 Conference</b> , Washington, DC	Jul. 30, 2025
Poster	<b>Sagan Summer Workshop 25</b> , Pasadena, CA	Jul. 21-25, 2025
Contributed talk	<b>Bay Area Exoplanet Meeting #48</b> , Santa Cruz, CA	Jul. 18, 2025
<b>Invited talk</b>	<b>HWO TSS-SWG Multiplicity Group Meeting</b> , Remote	Jul. 16, 2025
Poster	<b>EPRV6 Conference</b> , Porto, Portugal	Jul. 1-3, 2025
Poster	<b>Know Thy Star; Know Thy Planet 2</b> , Pasadena, CA	Feb. 3-7, 2025
Contributed talk	<b>AAS Meeting #245</b> , National Harbor, MD	Jan. 15, 2025
<b>Invited talk</b>	<b>Yale Exoplanets &amp; Stars Seminar</b> , New Haven, CT	Oct. 30, 2024

<b>Invited talk</b>	<b>MIT Kavli Monday Afternoon Talk</b> , Cambridge, MA	Oct. 28, 2024
Poster	<b>Sagan Summer Workshop 24</b> , Pasadena, CA	Jul. 22-26, 2024
Poster	<b>Exoplanets 5 Conference</b> , Leiden, The Netherlands	Jun. 20, 2024
Poster	<b>Extreme Solar Systems V</b> , Ōtautahi, Aotearoa	Mar. 17-21, 2024
Contributed talk	<b>AAS Meeting #243</b> , New Orleans, LA	Jan. 10, 2024
<b>Invited talk</b>	<b>AAS #243 HWO Splinter Session</b> , New Orleans, LA	Jan. 10, 2024
<b>Invited talk</b>	<b>UC Santa Cruz PLUNCH Talk</b> , Santa Cruz, CA	Oct. 31, 2022
Contributed talk	<b>UC Berkeley Astronomy Lunch Talk</b> , Berkeley, CA	Oct. 20, 2022
Contributed talk	<b>Bay Area Exoplanet Meeting #36</b> , Remote (COVID-19)	Mar. 5, 2021
Poster	<b>AAS Meeting #235</b> , Honolulu, HI	Jan. 6, 2020
Contributed talk	<b>CfA/SAO Summer REU Symposium</b> , Cambridge, MA	Aug. 8, 2019
Poster	<b>Chesapeake Bay Exoplanet Meeting #4</b> , College Park, MD	Feb. 15, 2019
Poster	<b>AAS Meeting #233</b> , Seattle, WA	Jan. 8, 2019

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### APPROVED OBSERVING PROPOSALS (\* = Science PI)

**\*2.4-m Automated Planet Finder (APF)**, Lick Observatory, “*Probing Planetary System Architectures Around Neglected Nearby Stars in Preparation for HWO*,” (Levy; 6 nights across 2025A/B; PI: **Harada**)

**\*10-m Keck I Telescope**, Mauna Kea Observatory, “*Confirming an Eccentric Sub-Saturn Planet Around the Bright Nearby Star HD 219623*,” (KPF; 0.25 nights across 2025A; PI: **Harada**)

**10-m Keck I Telescope**, Mauna Kea Observatory, “*Piecing Together the Puzzling TOI-880 System*,” (KPF; 1.0 nights across 2025B; PI: Turtelboom)

**2.4-m Automated Planet Finder (APF)**, Lick Observatory, “*The APF Survey of the Habitable Worlds Observatory’s Neglected Targets*,” (Levy; 8 nights across 2025A/B; PI: Holden)

**3-m Shane Telescope**, Lick Observatory, “*Looking for Close Stellar Companions to Potential Targets for Future Searches for Life with HWO*,” (ShARCS AO, 10 nights across 2025A/B; PI: Dressing)

**8.1-m Gemini-N Telescope**, Mauna Kea Observatory, “*Characterizing TOI 2104, one of the highest-multiplicity TESS systems*,” (MAROON-X, 40 hrs across 2024B, 2025B; PI: Turtelboom)

**3.5-m WIYN Telescope**, Kitt Peak National Observatory, “*Characterizing TOI 2104, one of the highest-multiplicity TESS systems*,” (NEID, 18 hrs across 2024B; PI: Turtelboom)

**10-m Keck I Telescope**, Mauna Kea Observatory, “*The Obliquity of the HIP 41378 Planetary System*,” (HIRES; 18 hrs in 2022B; PI: Dressing)

**1-m Nickel Telescope**, Lick Observatory, “*Validating Netpune-size planets around A-type stars*,” (Direct Imaging Camera; 43 nights across 2021B, 2022A/B; PI: Giacalone)

**6.5-m James Webb Space Telescope (JWST)**, “*Transmission Spectroscopy of the Super-Neptune WASP-166b*,” (NIRISS & NIRSpec; 23 hrs Cycle 1 GO Program 2062; PI: Mayo)

**3-m Shane Telescope**, Lick Observatory, “*A Closer Look at the Host Stars of Transiting Planets*,” (ShARCS AO, 25 nights across 2021A/B, 2022A; PI: Dressing)

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### PROFESSIONAL & DEPARTMENTAL SERVICE

- <b>Scientific Reviewer</b> , The Astronomical Journal	2025-Present
- <b>Grad Representative</b> , UC Berkeley Astrophysics Graduate Admissions Committee	2025
- <b>Organizer</b> , UC Berkeley Astronomy RV Hunters Community Science Project	2025
- <b>Catalogs &amp; Databases Co-Lead</b> , NASA HWO Target Stars & Systems Group	2024-2025
- <b>Target Stars &amp; Systems Liaison</b> , NASA HWO Exoplanet Demographics Group	2024-2025
- <b>Chambliss Poster Competition Judge</b> , AAS Winter Meetings	2024-2025
- <b>Co-Organizer</b> , UC Berkeley Astro-Q Coffee Hour	2023-Present

- **Grad Representative**, UC Berkeley Astronomy DEI & Climate Committee 2021-2022
- **Grad Member**, UC Berkeley Astro Grad Prospective Visit Planning Committee 2021

## TEACHING EXPERIENCE

- **The Planets** / ASTRON-C12 (*UC Berkeley undergrad non-majors*)
  - Guest Lecturer Apr. 1, 2025
  - Head Graduate Student Instructor Spring 2023
- **Introduction to Astrophysics** / ASTRON-7A (*UC Berkeley undergrad majors*)
  - Guest Lecturer Nov. 14, 2024, Sep. 5, 2023, Oct. 18, 2022
  - Graduate Student Instructor Fall 2021
- **Atmospheric Physics and Dynamics** / EPS-C181 (*UC Berkeley undergrad majors*)
  - Course Reader Fall 2022
- **Introductory Astrophysics II** / Astro-121 (*University of Maryland undergrad majors*)
  - Lab Teaching Assistant (remote due to COVID-19) Spring 2020
  - Course Tutor Spring 2018
- **Observational Astronomy** / Astro-310 (*University of Maryland undergrad majors*)
  - Lab Teaching Assistant Fall 2018, 2019

## MENTORING & OUTREACH

- **Astro Grad Mentoring Program** (*UC Berkeley 1st-year grads*)
  - Grad Student Mentor 2025-Present
- **Mathematical & Physical Sciences (MPS) Scholars Program** (*UC Berkeley undergrads*)
  - Undergrad Student Mentor 2024-Present
  - Workshop Panelist Dec. 3, 2024, Oct. 10, 2024, Aug. 8, 2024
- **Letters to a Pre-Scientist** (*K-12 outreach program for primarily minority students*)
  - Pen Pal letter writer 2024-Present
- **Cal-Bridge Program** (*California-wide bridge program for underrepresented students*)
  - Undergrad Tutor/Mentor Fall 2024
- **Scientist in Every Florida School** (*K-12 outreach program for Florida public schools*)
  - Guest Speaker Oct. 7, 2024
- **POWER Bay Area** (*Community college mentorship program for underrepresented students*)
  - Mentor Coordinator 2022-2023
- **Astronomy Peer Mentoring Program** (*University of Maryland undergrads*)
  - Undergrad Peer Mentor 2018-2020
- **University of Maryland Observatory** (*Bi-monthly public outreach nights*)
  - Open House Volunteer/Staff 2016-2020

**References available upon request.**

*Last updated October 2025.*