

# *Curriculum Vitae*

## Caleb K. Harada

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### **RESEARCH INTERESTS** (UAT Keywords) —————

Exoplanet detection (489), Habitable planets (695), Exoplanet systems (484), Planet hosting stars (1242), Exoplanet evolution and formation (491, 492), Exomoons (483), Exoplanet rings (494), Exoplanet atmospheres (487)

### **EDUCATION** —————

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

### **RESEARCH APPOINTMENTS** —————

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|---|--------------|
| - <b>Graduate Student Researcher</b> , Dept. of Astronomy, UC Berkeley                        | 2020–Present |
| - <b>NSF Graduate Research Fellow</b> , Dept. of Astronomy, UC Berkeley                       | 2020–2025    |
| - <b>Undergraduate Student Researcher</b> , Dept. of Astronomy, University of Maryland        | 2017–2020    |
| - <b>NSF REU Intern</b> , Center for Astrophysics   Harvard & Smithsonian                     | 2019         |
| - <b>Summer Research Assistant</b> , Dept. of Astronomy, University of Michigan               | 2018         |
| - <b>Summer Research Assistant</b> , Dept. of Astronomy & Astrophysics, University of Chicago | 2017         |

### **AWARDS, SCHOLARSHIPS, & CERTIFICATES** —————

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|---|---------------|
| - UC Berkeley Certificate in Teaching & Learning in Higher Education                | Expected 2026 |
| - AAS Rodger Doxsey Travel Prize ( <i>\$400 award</i> )                             | 2025          |
| - UC Berkeley Outstanding Graduate Student Instructor Award ( <i>\$1000 award</i> ) | 2022          |
| - NSF Graduate Research Fellowship ( <i>\$34k–\$37k annually for 3 years</i> )      | 2020          |
| - UMD University Honors Certificate   | 2019          |
| - NSF Research Experience for Undergraduates ( <i>\$5000 award</i> )                | 2019          |
| - Maryland Space Grant Scholarship ( <i>\$2000 award</i> )                          | 2019          |
| - UMD Monroe Martin Undergraduate Research Showcase Award ( <i>\$250 award</i> )    | 2018, 2019    |
| - UMD Angelo Bardasis Memorial Scholarship ( <i>\$2500 award</i> )                  | 2018, 2019    |
| - UMD President’s Scholarship ( <i>\$5000 annually for 4 years</i> )                | 2016          |

### 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 yr of Precise Doppler Monitoring*,” 2025, [AJ](#), **170**, 343
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 41378f, 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

- 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

## NON-REFEREED OR IN-PREP MANUSCRIPTS

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- Harada**, Dressing, Kane, et al., “*Discovery of an Eccentric Giant in the Habitable Zone of Nearby F Dwarf HD 5015*,” in prep
- Kane, Bott, Gordon, et al. (inc. **Harada**), “*Imaging Venus-like Worlds: Spectral, Polarimetric, and UV Diagnostics for the Habitable Worlds Observatory*,” Submitted to PASP
- Dressing, Savel, Giacalone, et al. (inc. **Harada**), “*Cleaning up the TOIs I: ShARCS Follow-up Adaptive Optics Imaging of 603 TESS Targets*,” Submitted to AJ
- Target Stars & Systems sub-Working group of the HWO WG Living Worlds (Mamajek, Hinkel, et al., inc. **Harada**), “*Providing Context for the ExoEarths Surveyed With Habitable Worlds Observatory: Precursor and Preparatory Science Needs for the HWO Target Star Systems (2025)*,” in prep
- Abbas, Nielsen, Macintosh, et al. (inc. **Harada**), “*Beyond Yield: Orbit Recovery and Demographics with the Habitable Worlds Observatory*,” in prep

## RESEARCH PRESENTATIONS

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Contributed talk	<b>AAS Meeting #247</b> , Phoenix, AZ	Jan. 5, 2026
<b>Invited talk</b>	<b>UC Berkeley CIPS Seminar</b> , Berkeley, CA	Dec. 3, 2025
<b>Invited talk</b>	<b>UC Riverside Astrobiology Seminar</b> , Riverside, CA	Nov. 14, 2025
<b>Invited talk</b>	<b>Caltech/IPAC Lunch Seminar</b> , Pasadena, CA	Nov. 12, 2025
<b>Invited talk</b>	<b>Harvard/CfA Special Seminar</b> , Cambridge, MA	Oct. 16, 2025
<b>Invited talk</b>	<b>UC Santa Cruz PLUNCH Seminar</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
Contributed talk	<b>UC Santa Cruz PLUNCH Seminar</b> , Santa Cruz, CA	Oct. 31, 2022
Contributed talk	<b>UC Berkeley Astronomy Lunch Talk</b> , Berkeley, CA	Oct. 20, 2022
Poster	<b>Bay Area Exoplanet Meeting #36</b> , Remote (COVID-19)	Mar. 5, 2021
Contributed talk	<b>AAS Meeting #235</b> , Honolulu, HI	Jan. 6, 2020
Poster	<b>CfA/SAO Summer REU Symposium</b> , Cambridge, MA	Aug. 8, 2019
Contributed talk	<b>Chesapeake Bay Exoplanet Meeting #4</b> , College Park, MD	Feb. 15, 2019
Poster	<b>AAS Meeting #233</b> , Seattle, WA	Jan. 8, 2019

## 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; 9 nights across 2025A/B, 2026A; 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 Neptune-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)

## PROFESSIONAL SERVICE ---

- <b>Scientific Reviewer</b> , AAS Journals	2025–Present
- <b>Chambliss Poster Competition Judge</b> , AAS Winter Meetings	2024, 2025, 2026
- <b>Catalogs &amp; Databases Co-Lead</b> , NASA HWO Target Stars & Systems Group	2024–2025
- <b>Target Stars &amp; Systems Laiason</b> , NASA HWO Exoplanet Demographics Group	2024–2025

## DEPARTMENTAL SERVICE ---

- <b>Co-Organizer</b> , UC Berkeley Astro-Q Coffee Hour	2023–Present
- <b>Grad Representative</b> , UC Berkeley Astrophysics Graduate Admissions Committee	2025, 2026
- <b>Lead Organizer</b> , UC Berkeley Astronomy RV Hunters Community Science Project	2025
- <b>Grad Representative</b> , UC Berkeley Astronomy DEI & Climate Committee	2021–2022
- <b>Grad Representative</b> , UC Berkeley Astro Grad Prospective Visit Planning Committee	2021

### **TEACHING EXPERIENCE**

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

## **MENTORING & OUTREACH PROGRAMS**

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|--|---|
| <b>Astro Grad Mentoring</b> (for UC Berkeley 1st-year grads)                                   |   |
| Senior Graduate Student Mentor   | 2025–Present                              |
| <b>- Mathematical &amp; Physical Sciences (MPS) Scholars</b> (for UC Berkeley undergrads)      |   |
| Graduate Student Mentor  | 2024–Present                              |
| Workshop Panelist  | Dec. 3, 2024, Oct. 10, 2024, Aug. 8, 2024 |
| <b>- Letters to a Pre-Scientist</b> (K-12 outreach program for low-income students)            |   |
| Pen Pal (letter writer)  | 2024–Present                              |
| <b>- Cal-Bridge</b> (California-wide bridge program for underrepresented undergrads)           |   |
| Graduate Student Tutor   | Fall 2024                                 |
| <b>- Scientist in Every Florida School</b> (K-12 outreach program for Florida public schools)  |   |
| Guest Speaker  | Oct. 7, 2024                              |
| <b>- POWER Bay Area</b> (mentoring program for underrepresented community college students)    |   |
| Mentor Coordinator   | 2022–2023                                 |
| <b>- Astronomy Peer Mentoring (APM)</b> (for UMD undergrads)                                   |   |
| Undergraduate Student Mentor   | 2018–2020                                 |
| <b>- University of Maryland Observatory</b> (bimonthly public open house events and observing) |   |
| Observatory Staff Member   | 2017–2020                                 |
| Observatory Volunteer  | 2016–2017                                 |
| <b>- Maryland Day</b> (campus-wide UMD public outreach event)                                  |   |
| Astronomy Department Volunteer   | 2017–2019                                 |

**References available upon request.**

Last updated January 2026.