

Curriculum Vitae

Caleb K. Harada

Department of Astronomy
University of California, Berkeley
501 Campbell Hall #3411
Berkeley, CA 94720-3411

 <https://w.astro.berkeley.edu/~charada/>
 0000-0001-5737-1687
 charada@berkeley.edu

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

- **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 Cum 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 Cum Laude)**, University of Maryland May 2020

RESEARCH APPOINTMENTS

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

AWARDS, SCHOLARSHIPS, & CERTIFICATES

- UC Berkeley Certificate in Teaching & Learning in Higher Education Expected 2026
- AAS Rodger Doxsey Travel Prize (\$400 award) 2025
- UC Berkeley Outstanding Graduate Student Instructor Award (\$1000 award) 2022
- NSF Graduate Research Fellowship (\$34k–\$37k annually for 3 years) 2020
- UMD University Honors Certificate 2019
- NSF Research Experience for Undergraduates (\$5000 award) 2019
- Maryland Space Grant Scholarship (\$2000 award) 2019
- UMD Monroe Martin Undergraduate Research Showcase Award (\$250 award) 2018, 2019
- UMD Angelo Bardasis Memorial Scholarship (\$2500 award) 2018, 2019
- UMD President’s Scholarship (\$5000 annually for 4 years) 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 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 H₂O and CO₂ 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

NON-REFEREED OR IN-PREP MANUSCRIPTS

5. **Harada**, Dressing, Kane, et al., “*Discovery of an Eccentric Giant in the Habitable Zone of Nearby F Dwarf HD 5015*,” in prep
4. Kane, Bott, Gordon, et al. (inc. **Harada**), “*Imaging Venus-like Worlds: Spectral, Polarimetric, and UV Diagnostics for the Habitable Worlds Observatory*,” Submitted to PASP
3. 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
2. 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
1. Abbas, Nielsen, Macintosh, et al. (inc. **Harada**), “*Beyond Yield: Orbit Recovery and Demographics with the Habitable Worlds Observatory*,” in prep

RESEARCH PRESENTATIONS

Contributed talk	AAS Meeting #247 , Phoenix, AZ	Jan. 5, 2026
Invited talk	UC Berkeley CIPS Seminar , Berkeley, CA	Dec. 3, 2025
Invited talk	UC Riverside Astrobiology Seminar , Riverside, CA	Nov. 14, 2025
Invited talk	Caltech/IPAC Lunch Seminar , Pasadena, CA	Nov. 12, 2025
Invited talk	Harvard/CfA Special Seminar , Cambridge, MA	Oct. 16, 2025
Invited talk	UC Santa Cruz PLUNCH Seminar , Santa Cruz, CA	Sep. 29, 2025
Contributed talk	HWO25 Conference , Washington, DC	Jul. 30, 2025
Poster	Sagan Summer Workshop 25 , Pasadena, CA	Jul. 21-25, 2025
Contributed talk	Bay Area Exoplanet Meeting #48 , Santa Cruz, CA	Jul. 18, 2025
Invited talk	HWO TSS-SWG Multiplicity Group Meeting , Remote	Jul. 16, 2025
Poster	EPRV6 Conference , Porto, Portugal	Jul. 1-3, 2025
Poster	Know Thy Star; Know Thy Planet 2 , Pasadena, CA	Feb. 3-7, 2025
Contributed talk	AAS Meeting #245 , National Harbor, MD	Jan. 15, 2025
Invited talk	Yale Exoplanets & Stars Seminar , New Haven, CT	Oct. 30, 2024
Invited talk	MIT Kavli Monday Afternoon Talk , Cambridge, MA	Oct. 28, 2024
Poster	Sagan Summer Workshop 24 , Pasadena, CA	Jul. 22-26, 2024
Poster	Exoplanets 5 Conference , Leiden, The Netherlands	Jun. 20, 2024
Poster	Extreme Solar Systems V , Ōtautahi, Aotearoa	Mar. 17-21, 2024
Contributed talk	AAS Meeting #243 , New Orleans, LA	Jan. 10, 2024
Invited talk	AAS #243 HWO Splinter Session , New Orleans, LA	Jan. 10, 2024
Invited talk	UC Santa Cruz PLUNCH Seminar , Santa Cruz, CA	Oct. 31, 2022
Contributed talk	UC Berkeley Astronomy Lunch Talk , Berkeley, CA	Oct. 20, 2022
Contributed talk	Bay Area Exoplanet Meeting #36 , Remote (COVID-19)	Mar. 5, 2021
Poster	AAS Meeting #235 , Honolulu, HI	Jan. 6, 2020
Contributed talk	CfA/SAO Summer REU Symposium , Cambridge, MA	Aug. 8, 2019
Poster	Chesapeake Bay Exoplanet Meeting #4 , College Park, MD	Feb. 15, 2019
Poster	AAS Meeting #233 , 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 Netptune-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

- Scientific Reviewer , AAS Journals	2025–Present
- Chambliss Poster Competition Judge , AAS Winter Meetings	2024, 2025, 2026
- Catalogs & Databases Co-Lead , NASA HWO Target Stars & Systems Group	2024–2025
- Target Stars & Systems Liaison , NASA HWO Exoplanet Demographics Group	2024–2025

DEPARTMENTAL SERVICE

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

- **Astro Grad Mentoring** (*for UC Berkeley 1st-year grads*)
Senior Graduate Student Mentor 2025–Present
- **Mathematical & Physical Sciences (MPS) Scholars** (*for UC Berkeley undergrads*)
Graduate 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 low-income students*)
Pen Pal (letter writer) 2024–Present
- **Cal-Bridge** (*California-wide bridge program for underrepresented undergrads*)
Graduate Student Tutor Fall 2024
- **The Compass Project** (*UC Berkeley talk series for undergraduates in the physical sciences*)
Guest Lecturer Oct. 25, 2024
- **Scientist in Every Florida School** (*K-12 outreach program for Florida public schools*)
Guest Speaker Oct. 7, 2024
- **POWER Bay Area** (*mentoring program for underrepresented community college students*)
Mentor Coordinator 2022–2023
- **Astronomy Peer Mentoring (APM)** (*for UMD undergrads*)
Undergraduate Student Mentor 2018–2020
- **University of Maryland Observatory** (*bimonthly public open house events and observing*)
Observatory Staff Member 2017–2020
Observatory Volunteer 2016–2017
- **Maryland Day** (*campus-wide UMD public outreach event*)
Astronomy Department Volunteer 2017–2019

References available upon request.

Last updated January 2026.