Curriculum Vitae

CALEB K. HARADA

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Education

Ph.D. in Astrophysics, University of California, Berkeley	2026 (expected)
M.A. in Astrophysics, University of California, Berkeley	May 2022
B.S. in Astronomy, University of Maryland, College Park *Magna Cum Laude* Honors Thesis: "Signatures of Clouds in Hot Jupiter Atmospheres: Modeled High-Resolution Emission Spectra from 3D General Circulation Models" (advisor: Eliza Kempton)	May 2020
B.S. in Physics, University of Maryland, College Park *Magna Cum Laude*	May 2020

Research Appointments

NSF Graduate Research Fellow, Dept. of Astronomy, UC Berkeley	2020 – 2025
Undergraduate Researcher, Dept. of Astronomy, UMD College Park	2017 – 2020
NSF REU Fellow, Harvard-Smithsonian Center for Astrophysics	Summer 2019
Undergraduate Researcher, Dept. of Astronomy, University of Michigan	Summer 2018
Undergraduate Researcher, Dept. of Astronomy, University of Chicago	Summer 2017

Awards & Fellowships

National Science Foundation Graduate Research Fellowship ($34k/yr, 3 years)	2020 – 2025
Climatebase Fellowship, Cohort 4 (*declined*)	2023
UC Berkeley Outstanding Graduate Student Instructor Award ($1k)	2022
Maryland Space Grant Scholarship ($2k)	2019, 2020
UMD Physics Angelo Bardasis Memorial Scholarship ($1k)	2018, 2019, 2020
National Science Foundation Research Experience for Undergraduates ($6k)	2019
UMD Monroe Martin Undergraduate Research Award	2018, 2019
UMD University Honors Certificate	2019
University of Maryland President's Scholarship ($5k/yr, 4 years)	2016

Refereed Publications

(3 first author; 10 total)

First Author

3. **Harada, C. K.**, Dressing, C. D., Kane, S. R., & Adami Ardestani, B., "Setting the Stage for the Search for Life with the Habitable Worlds Observatory: Properties of 164 Promising Planet Survey Targets," 2024, Accepted in *ApJS*

2. **Harada, C. K.**, Dressing, C. D., Alam, M. K., Kirk, J., López-Morales, M., Ohno, K., Akinsanmi, B., Barros, S. C. C., Buchhave, L. A., Collier Cameron, A., Crossfield, I. J. M., Dai, F., Gao, P., Giacalone, S., Grouffal, S., Lillo-Box, J., Mayo, A. W., Mortier, A., Santerne, A., Santos, N. C., Sousa, S. G., Turtelboom, E. V., Vanderburg, A., & Wheatley, P. J., "Stability and Detectability of Exomoons Orbiting HIP 41378 f, a Temperate Jovian Planet with an Anomalously Low Apparent Density," 2023, *AJ*, 166, 208

1. **Harada, C. K.**, M.-R. Kempton, E., Rauscher, E., Roman, M., Malsky, I., Brinjikji, M., & diTomasso, V., "Signatures of Clouds in Hot Jupiter Atmospheres: Modeled High-Resolution Emission Spectra from 3D General Circulation Models," 2021, *ApJ*, 909, 85

Significant Contributions

2. Desai, A., Turtelboom, E. V., **Harada, C. K.**, Dressing, C. D., Rice, D. R., Brinkman, C. L., Crossfield, I. J. M., Dai, F., Hill, M. L., Fetherolf, T., Giacalone, S., Howard, A. W., Huber, D., Isaacson, H., Kane, S. R., Lubin, J., MacDoudall, M. G., Mayo, A. W., Močnik, T., Akana Murphy J. M., Polanski, A. S., Rice, M., Robertson, P., Rubenzahl, R. A., Van Zandt, J., Weiss, L. M., Bieryla, A., Buchhave, L. A., Jenkins, J. M., Kostov, V. B., Levine, A. M., Lilli-Box, J., Paegert, M., Rabus, M., Seager, S., Stassun, K. G., Ting, E. B., Watanabe, D., & Winn, J. N. "The TESS-Keck Survey. XVIII. A Sub-Neptune and Spurious Long-period Signal in the TOI-1751 System," 2024, Accepted in *AJ*

1. Duck, A., **Harada, C. K.**, Harrell, J., Morris, R. A., Williams, E., Crossfield, I., Werner, M., & Deming, D., "K2, Spitzer, and TESS Transits of Four Sub-Neptune Exoplanets" 2021, *AJ*, 162, 136

Other Publications

5. Turtelboom, E. V., et al. (78 co-authors, including **Harada, C. K.**), "The TESS-Keck Survey. XI. Mass Measurements for Four Transiting Sub-Neptunes Orbiting K-dwarf TOI 1246," 2022, *AJ*, 163, 293

4. Malsky, I., Rauscher, E., M.-R. Kempton, E., Roman, M., Long, D., & **Harada, C. K.**, "Modeling the High-Resolution Emission Spectra of Clear and Cloudy Nontransiting Hot Jupiters," 2021, *ApJ*, 923, 62

3. Roman, M. T., M.-R. Kempton, E., Rauscher, E., **Harada, C. K.**, Bean, J. L., & Stevenson, K. B., "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, S., Knutson, H. A., Jovanovic, N., **Harada, C. K.**, Oklopčić, A., Eriksen, J., Mawet, D., Millar-Blanchaer, M. A., Tinyanont, S., & Vasisht, G., "Constraints on Metastable Helium in the Atmospheres of WASP-69b and WASP-52b with Ultra-Narrowband Photometry," 2020, *AJ*, 159, 278

1. Collins, K., et al. (110 co-authors, including **Harada, C. K.**), "The KELT Follow-Up Network and Transit False Positive Catalog: Pre-vetted False Positives for TESS," 2018, *AJ*, 156, 234

Funded Proposals

(CoI) NASA *James Webb Space Telescope*, Cycle 1 GO Program ID 2062 (PI: Mayo) 2021
"Transmission Spectroscopy of the Super-Neptune WASP-166b"

Observing Experience

3.0-meter Shane Telescope (ShARCS), Lick Observatory: *1 night*

7-inch Astrophysics Refractor (SBIG CCD), UMD Campus Observatory: *9 nights*

Selected Talks

Invited Talks

HWO Current Status and Opportunities for Engagement (AAS Meeting #243 splinter) 2024
"A Pathway to Planet Properties: Maximizing Precursor Knowledge of Potential HWO Targets," New Orleans, LA, 10 January

UC Santa Cruz Planetary Lunch Talk Seminar Series 2022
"Two Tales from the Crypt: Signatures of Clouds in Hot Jupiter Ahhh!-tmospheres + Dynamical Stability of ExomoOoOons," Santa Cruz, CA, 31 October

Contributed Talks

American Astronomical Society Meeting #243 2024
"Stability of exomoons orbiting HIP 41378 f, a temperate super-puff in a multi-planet system," New Orleans, LA, 10 January

Code/Astro Summer Workshop 2023
"LTEpy: an open source Python tool for simple LTE calculations," Evanston, IL, 14 July

UC Berkeley Astronomy Lunch Talks 2022
"Stability of exomoons orbiting HIP 41378 f, a temperate super-puff in a multi-planet system," Berkeley, CA, 20 October

Bay Area Exoplanet Meeting #36 2021
"Cloudy Hot Jupiters: Predictions of High-resolution Thermal Emission Spectra," Virtual, 5 March

UMD Astronomy Honors Thesis Talks 2020
"Signatures of Clouds in Hot Jupiter Atmospheres: Modeled High-Resolution Emission Spectra from 3D General Circulation Models," Virtual, 17 April

UMD Joint Exoplanet Group Meeting 2019
"Atmospheric Escape in Exoplanets: Simulated 10830 Å Helium Line Absorption," College Park, MD, 2 October

SAO/Harvard-Smithsonian Center for Astrophysics REU Symposium 2019
"Atmospheric Escape in Exoplanets: Simulated 10830 Å Helium Line Absorption," Cambridge, MA, 8 August

UMD Astronomy Summer Research Talks 2018
"Simulated Emission Spectra of Hot Jupiters with Cloudy Atmospheres," College Park, MD, 14 September

UChicago Astronomy Summer Research Talks 2017
"Photometry of M-Dwarf Binaries in Young Moving Groups," Chicago, IL, 18 August

Public Talks

UMD Observatory Open House 2017
"Exploring the Cepheid Period-Apparent-Magnitude Relation in M31 with iPTF," College Park, MD, 5 December

Selected Posters

Extreme Solar Systems V 2024
Harada, C. K., Dressing, C. D., & Kane, S. R., "Habitable Worlds Observatory SPORES: Stellar Properties & Observational Reconnaissance for Exoplanet Studies"
Ōtautahi/Christchurch, Aotearoa/New Zealand, 17–21 March

American Astronomical Society Meeting #243 2024
Adami Ardestani B., **Harada, C. K.**, & Dressing, C. D., "Habitable Worlds Observatory: Synthesizing Knowledge of Target Stars to Prepare for the Search for Habitable Exoplanets" (iPoster)
New Orleans, LA, 11 January

NExScI Sagan Summer Workshop 2023
Mayo, A., **Harada, C. K.**, & Dressing, C. D., "Enriching Out View of Multiplanet Systems with High-Cadence Observations of 914 TESS Targets" (Online version)
Pasadena, CA, 25 July

American Astronomical Society Meeting #241 2023
Hellum Bye, C., Eiden, K., Gardiner, E., **Harada, C. K.**, Isaacson, H., & Sandford, N., "Organizing in Astronomy and Academia: Tales from UCB Astronomy" (iPoster)
Seattle, WA, 9 January

American Astronomical Society Meeting #235 2020
Harada, C. K., & Oklopčić, A., "New Insights into the Escaping Atmospheres of HAT-P-11b and WASP-69b: Simulated 10830 Å Helium Line Transmission Spectra" (ADS abstract)
Honolulu, HI, 6 January

Chesapeake Bay Area Exoplanet Meeting 2019
Harada, C. K., M.-R. Kempton, E., Rauscher, E., & Roman, M., "Simulated Emission Spectra of Hot Jupiters with Active Clouds from 3D GCMs"
College Park, MD, 15 February

American Astronomical Society Meeting #233 2019
Harada, C. K., M.-R. Kempton, E., Rauscher, E., & Roman, M., "Simulated Emission Spectra of Hot Jupiters with Active Clouds from 3D GCMs" (ADS abstract)
Seattle, WA, 8 January

American Astronomical Society Meeting #233 2019
Duck, A. E., **Harada, C. K.**, Harrell, J., Williams, E., Morris, R. A., Deming, D., Werner, M., & Crossfield, I., "K2 and Spitzer Joint Analysis of 4 Transiting Exoplanets" (ADS abstract)
Seattle, WA, 8 January

UMD Undergraduate Research Day 2018
Harada, C. K., & Warner, E., "KELT-FUN: Hunting for Hot Exoplanets at the UMD Observatory"
College Park, MD, 25 April

Teaching Experience

*** Indicates head GSI*

Introduction to Astrophysics (ASTRON 7A), UC Berkeley
Guest Lecturer, 5 September Fall 2023
Guest Lecturer, 18 October Fall 2022
1.5-hour lectures (∼100 enrolled students)
Graduate Student Instructor Fall 2021
Weekly office hours ("TALC") + two 1-hour discussion sections (∼25 enrolled students each)

The Planets (ASTRON C12), UC Berkeley
Graduate Student Instructor** Spring 2023
Weekly office hours ("TALC") + one 1-hour discussion section (∼20 enrolled students)
Lead weekly GSI meetings, delegate GSI tasks, manage communications between course staff

Atmospheric Physics and Dynamics (EPS C181), UC Berkeley
Course Reader Fall 2022
Weekly office hours + grading assignments and exams (∼15 enrolled students)

Introductory Astrophysics II (ASTRO 121), UMD College Park
Lab Teaching Assistant Spring 2020
Weekly office hours + 2-hour lab (∼20 enrolled students)
Course Tutor Spring 2018
Weekly 1-hour tutoring sessions

Observational Astronomy (ASTRO 310), UMD College Park
Lab Teaching Assistant Fall 2018, Fall 2019
Weekly office hours + 2-hour lab (∼20 enrolled students)

Academic Service

AAS Chambliss Poster Competition Judge, AAS Meeting 243 (January) 2024

Graduate Student Representative, UC Berkeley Astronomy Climate Advisors Committee 2021, 2022

Rank-and-file Organizer, SRU/UAW-2865 Astronomy Organizing Committee (Fall) 2022

Discussion Facilitator, UC Berkeley Queer Grads in Astronomy Info Session (17 March) 2022

Panel Chair, Berkeley Astronomy Prospective Grad Visit Q&A Panel (18 March) 2021

Committee Member, Berkeley Astronomy Prospective Grad Visit Planning Committee (Spring) 2021

Visiting Member, University of Michigan Astronomy DEI Committee (Summer) 2018

Outreach & Mentoring

POWER Bay Area Organizing Committee, Mentor Coordinator 2022 – 2023
Recruiting and matching UC Berkeley grad student mentors with undergraduate students from local community colleges

Society of Women in the Physical Sciences at UC Berkeley, Grad Student Mentor 2022
Monthly meetings with 3 undergraduate mentees

UMD Astronomy Peer Mentoring Program, Undergraduate Mentor 2018 – 2020
Monthly meetings with 1-2 new astronomy majors

University of Maryland Campus Observatory, Open House Volunteer 2016 – 2020
Led biweekly public observing on 7-inch, 8-inch, and 14-inch telescopes

University of Maryland "Maryland Day", Outreach Volunteer 2017, 2018, 2019
Led public solar observing, & UMD Astronomy Department info booth

University of Maryland "Physics is Fun", Outreach Volunteer 2016
Led public physics demo for UMD Physics Department event

Conferences & Workshops Attended

Conference. Extreme Solar Systems V, Ōtautahi, Aotearoa (New Zealand), 17–21 March	2024
Conference. American Astronomical Society Meeting #243, New Orleans, LA, 7–11 January	2024
Meeting. ExoPAG 29, New Orleans, LA, 6–7 January	2024
Meeting. HWO START & TAG Kick-off Meeting, Washington, DC, 31 Oct.–2 Nov.	2023
Workshop. NExScI Sagan Summer Workshop, Pasadena, CA, 24–28 July	2023
Workshop. Code/Astro Workshop at NU-CIERA, Evanston, IL, 10–14 July	2023
Conference. Bay Area Exoplanet Meeting #41, Santa Cruz, CA, 15 July	2022
Workshop. Other Worlds Laboratory Summer Program, Santa Cruz, CA, 12–13 July	2022
Workshop. TRAIL: SVSH Prevention & Response Training, Berkeley, CA, 16 November	2021
Workshop. UCO/Lick Observational Astronomy Workshop, Mt. Hamilton, CA, 26–28 August	2021
Conference. Exoplanet CloudNineCon, Virtual, 11 August	2021
Conference. TESS Science Conference II, Virtual, 2–6 August	2021
Conference. Bay Area Exoplanet Meeting #37, Virtual, 11 June	2021
Conference. Bay Area Exoplanet Meeting #36, Virtual, 5 March	2021
Conference. Bay Area Exoplanet Meeting #35, Virtual, 18 December	2020
Workshop. UCO/Lick Observational Astronomy Workshop, Virtual, 9–11 October	2020
Conference. Bay Area Exoplanet Meeting #34, Virtual, 4 September	2020
Conference. American Astronomical Society Meeting #235, Honolulu, HI, 4–8 January	2020
Conference. TESS Science Conference I, Cambridge, MA, 29 July–2 August	2019
Conference. Chesapeake Bay Area Exoplanet Meeting, College Park, MD, 15 February	2019
Conference. American Astronomical Society Meeting #233, Seattle, WA, 6–10 January	2019

Selected Coursework

Astronomy Data Science Lab (grad), UC Berkeley
Astrophysical Fluid Dynamics (grad), UC Berkeley
Astrophysics of Exoplanets (upper-div undergrad), UMD College Park
Atmospheric Physics and Dynamics (upper-div undergrad), UC Berkeley
Computational Astrophysics (upper-div undergrad), UMD College Park
Cosmology and Extragalactic Astronomy (grad; audit), UC Berkeley
Galactic Structure and Stellar Dynamics (grad), UC Berkeley
High Energy Astrophysics (upper-div undergrad), UMD College Park
Pedagogy in Astronomy (grad), UC Berkeley
Planetary Astrophysics (grad; audit), UC Berkeley
Radiative Processes in Astrophysics (grad), UC Berkeley
Stellar Structure and Evolution (grad), UC Berkeley

Revised 03/25/2024