

Curriculum Vitae
CALEB K. HARADA

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

charada@berkeley.edu

<https://w.astro.berkeley.edu/~charada/>

Education

Ph.D. in Astrophysics, University of California, Berkeley	May 2025 (expected)
M.A. in Astrophysics, University of California, Berkeley	May 2022
B.S. in Astronomy, University of Maryland, College Park <i>Magna Cum Laude</i> 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 <i>Magna Cum Laude</i>	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

UC Berkeley Outstanding Graduate Student Instructor Award (\$1k)	2022
National Science Foundation Graduate Research Fellowship (\$34k/yr, 3 years)	2020
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

First Author

1. **Harada, C. K.**, Dressing, C. D., et al. “Stability and Detectability of Exomoons Orbiting HIP 41378 f, a Temperate Jovian Planet with an Anomalously Low Apparent Density,” 2023, *in prep*
2. **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

Contributing Author

1. 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
2. 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. 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
4. 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
5. Vissapragada, S., Knutson, H. A., Jovanovic, N., **Harada, C. K.**, Oklopčić, A., Eriksen, J., Mawet, D., Millar-Blanchaer, M. A., Tinianont, S., & Vasisht, G., “Constraints on Metastable Helium in the Atmospheres of WASP-69b and WASP-52b with Ultra-Narrowband Photometry,” 2020, *AJ*, **159**, 278
6. 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

NASA *James Webb Space Telescope* Cycle 1 (co-investigator) 2021
“Transmission Spectroscopy of the Super-Neptune WASP-166b” (PI: Andrew Mayo)

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

UC Santa Cruz Planetary Lunch Talk Seminar Series 2022
“Two Tales from the Crypt: Signatures of Clouds in Hot Jupiter Atmospheres + Dynamical Stability of Exomoons,” Santa Cruz, CA, 31 October

Contributed Talks

- 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

- 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*

The Planets (ASTRON C12), UC Berkeley Spring 2023
 Graduate Student Instructor**
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 Fall 2022
 Course Reader
Weekly office hours + grading assignments and exams (~15 enrolled students)

Introduction to Astrophysics (ASTRON 7A), UC Berkeley Fall 2022
 Guest Lecturer, 18 October
1.5-hour lecture with ~100 enrolled students

Graduate Student Instructor Fall 2021
Weekly office hours (“TALC”) + two 1-hour discussion sections (~25 enrolled students each)

Introductory Astrophysics II (ASTRO 121), UMD College Park Spring 2020
 Lab Teaching Assistant
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 Fall 2018, Fall 2019
 Lab Teaching Assistant
Weekly office hours + 2-hour lab (~20 enrolled students)

Academic Service

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 – present
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 <i>Monthly meetings with 1-2 new astronomy majors</i>	2018 – 2020
University of Maryland Campus Observatory, Open House Volunteer <i>Led biweekly public observing on 7-inch, 8-inch, and 14-inch telescopes</i>	2016 – 2020
University of Maryland “Maryland Day”, Outreach Volunteer <i>Led public solar observing, & UMD Astronomy Department info booth</i>	2017, 2018, 2019
University of Maryland “Physics is Fun”, Outreach Volunteer <i>Led public physics demo for UMD Physics Department event</i>	2016

Conferences & Workshops Attended

<i>Conference.</i> Bay Area Exoplanet Meeting #41, Santa Cruz, CA, 15 July	2022
<i>Workshop.</i> Other Worlds Laboratory Summer Program, Santa Cruz, CA, 12–13 July	2022
<i>Workshop.</i> TRAIL: SVSH Prevention & Response Training, Berkeley, CA, 16 November	2021
<i>Workshop.</i> UCO/Lick Observational Astronomy Workshop, Mt. Hamilton, CA, 26–28 August	2021
<i>Conference.</i> Exoplanet CloudNineCon, Virtual, 11 August	2021
<i>Conference.</i> TESS Science Conference II, Virtual, 2–6 August	2021
<i>Conference.</i> Bay Area Exoplanet Meeting #37, Virtual, 11 June	2021
<i>Conference.</i> Bay Area Exoplanet Meeting #36, Virtual, 5 March	2021
<i>Conference.</i> Bay Area Exoplanet Meeting #35, Virtual, 18 December	2020
<i>Workshop.</i> UCO/Lick Observational Astronomy Workshop, Virtual, 9–11 October	2020
<i>Conference.</i> Bay Area Exoplanet Meeting #34, Virtual, 4 September	2020
<i>Conference.</i> American Astronomical Society Meeting #235, Honolulu, HI, 4–8 January	2020
<i>Conference.</i> TESS Science Conference I, Cambridge, MA, 29 July–2 August	2019
<i>Conference.</i> Chesapeake Bay Area Exoplanet Meeting, College Park, MD, 15 February	2019
<i>Conference.</i> 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
 Order-of-Magnitude Physics (upper-div undergrad), UC Berkeley
 Pedagogy in Astronomy (grad), UC Berkeley
 Radiative Processes in Astrophysics (grad), UC Berkeley
 Stellar Structure and Evolution (grad), UC Berkeley

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