Caleb K. Harada

Department of Astronomy, University of California, Berkeley

E charada@berkeley.edu
W astro.berkeley.edu/~charada/

Research Interests: Exoplanet detection & characterization • Planetary atmospheres

EDUCATION

2025 (expected) — **Ph.D. in Astrophysics**
University of California, Berkeley
- *Advisor*: Prof. Courtney Dressing

2022 — **M.A. in Astrophysics**
University of California, Berkeley

2020 — **B.S. in Astronomy with High Honors** (*Magna Cum Laude*)
University of Maryland, College Park
- *Advisor*: Prof. Eliza M.-R. Kempton
- *Thesis*: "Signatures of Clouds in Hot Jupiter Atmospheres: Modeled High-Resolution Emission Spectra from 3D General Circulation Models"

2020 — **B.S. in Physics** (*Magna Cum Laude*)
University of Maryland, College Park

RESEARCH APPOINTMENTS

2020 – present — **NSF Graduate Research Fellow**, UC Berkeley, Department of Astronomy
2017 – 2020 — **Undergraduate Researcher,** UMD College Park, Department of Astronomy
2019 — **NSF REU Fellow**, Center for Astrophysics | Harvard & Smithsonian
2018 — **Summer Research Assistant**, University of Michigan, Department of Astronomy
2017 — **Summer Research Assistant**, UChicago, Department of Astronomy and Astrophysics

AWARDS & FELLOWSHIPS

2020 – present — NSF Graduate Research Fellowship
2022 — Outstanding Graduate Student Instructor Award (UC Berkeley)
2019 – 2020 — Maryland Space Grant Scholarship
2018 – 2020 — Angelo Bardasis Memorial Scholarship (University of Maryland)
2016 – 2020 — President's Scholarship (University of Maryland)
2019 — NSF Research Experience for Undergraduates (CfA | Harvard & Smithsonian)
2019 — University Honors Certificate (University of Maryland)
2018 – 2019 — Monroe Martin Undergraduate Research Award (University of Maryland)

REFEREED PUBLICATIONS

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 [DOI]

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 [DOI]

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 [DOI]

4. **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 [DOI]

5. 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 [DOI]

6. 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 [DOI]

7. 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 [DOI]

PROPOSALS & GRANTS

2021 — Co-I: *JWST* Cycle 1 GO Program: **22.8 hours** (PI: Andy Mayo), "Transmission Spectroscopy of the Super-Neptune WASP-166b"

OBSERVING EXPERIENCE

2020 — Co-I: 3.0-m Shane Telescope (ShARCS), Lick Observatory: **1 night**

2017 — Independent Study: 6-in & 7-in Refractors, UMD Campus Observatory: **9 nights**

TALKS & POSTERS

03/2021 — *Contributed talk*: "Cloudy Hot Jupiters: Predictions of High-resolution Thermal Emission Spectra," Bay Area Exoplanet Meeting 36 (virtual)

05/2020 — *Thesis talk*: "Signatures of Clouds in Hot Jupiter Atmospheres: Modeled High-Resolution Emission Spectra from 3D General Circulation Models," UMD College Park, Department of Astronomy (virtual)

01/2020 — *Poster*: "New Insights into the Escaping Atmospheres of HAT-P-11b and WASP-69b: Simulated 10830 Å Helium Line Transmission Spectra," AAS 235th Meeting (Honolulu, HI) [ADS]

10/2019 — *Invited talk*: "Atmospheric Escape in Exoplanets: Simulated 10830 Å Helium Line Absorption," UMD Exoplanet Group Meeting (College Park, MD)

08/2019 — *Contributed talk*: "Atmospheric Escape in Exoplanets: Simulated 10830 Å Helium Line Absorption," SAO REU Symposium, Center for Astrophysics | Harvard & Smithsonian (Cambridge, MA)

02/2019 — *Poster*: "Simulated Emission Spectra of Hot Jupiters with Active Clouds from 3D GCMs," Chesapeake Bay Area Exoplanet Meeting (College Park, MD)

01/2019 — *Poster*: "Simulated Emission Spectra of Hot Jupiters with Active Clouds from 3D GCMs," AAS 233rd Meeting (Seattle, WA) [ADS]

01/2019	*Poster*: "K2 and Spitzer Joint Analysis of 4 Transiting Exoplanets," AAS 233rd Meeting (Seattle, WA) [ADS]
09/2018	*Contributed talk*: "Simulated Emission Spectra of Hot Jupiters with Cloudy Atmospheres," UMD College Park, Astronomy Summer Research Talks (College Park, MD)
04/2018	*Poster*: "KELT-FUN: Hunting for Hot Exoplanets at the UMD Observatory," UMD College Park, Undergraduate Research Day (College Park, MD)
12/2017	*Invited talk*: "Exploring the Cepheid Period-Apparent-Magnitude Relation in M31 with iPTF," UMD College Park, Observatory Public Open House (College Park, MD)
08/2017	*Contributed talk*: "Photometry of M-Dwarf Binaries in Young Moving Groups," UChicago Astronomy Summer Research Talks (Chicago, IL)

TEACHING EXPERIENCE

2022	*Reader:* Earth and Planetary Science C181: Atmospheric Physics and Dynamics (UC Berkeley)
2021	*Graduate Student Instructor (GSI):* Astronomy 7A: Introduction to Astrophysics (UC Berkeley)
2020	*Lab Teaching Assistant (TA):* Astronomy 121: Introductory Astrophysics II (UMD, College Park)
2018 – 2019	*Lab TA:* Astronomy 310: Observational Astronomy (UMD, College Park)
2018	*Tutor:* Astronomy 121: Introductory Astrophysics II (UMD, College Park)

ACADEMIC SERVICE

2022 – present	*Mentor Coordinator:* POWER Bay Area (UC Berkeley)
2022 – present	*Mentor:* Society of Women in the Physical Sciences (SWPS; UC Berkeley)
2021 – present	*Grad Student Representative:* Astronomy Climate Advisors Committee (UC Berkeley Astronomy)
03/2022	*Facilitator*: Queer Grads in Astronomy Breakout Session (prospective grad visit; UC Berkeley)
03/2021	*Committee Member:* Prospective Grad Visit Planning Committee (UC Berkeley Astronomy)
03/2021	*Panel Chair:* Prospective Grad Visit Q&A Panel (UC Berkeley Astronomy)
2018 – 2020	*Peer Mentor:* Astronomy Peer Mentoring Program (APM; UMD Astronomy)

COMMUNITY SCIENCE OUTREACH

2017 – 2020	*Outreach Staff:* University of Maryland Campus Observatory (College Park, MD)
2016 – 2017	*Outreach Volunteer:* University of Maryland Campus Observatory (College Park, MD)
2017 – 2019	*Volunteer Presenter:* "Maryland Day," University of Maryland (College Park, MD)
2016	*Volunteer Presenter:* "Physics is Phun," University of Maryland (College Park, MD)

PROFESSIONAL DEVELOPMENT

07/2022	*Conference:* Bay Area Exoplanet Meeting #41 (Santa Cruz, CA)
07/2022	*Workshop:* OWL Summer Program (Santa Cruz, CA)
11/2021	*Workshop:* TRAIL: SVSH Prevention & Response Training (PATH to Care Center, Berkeley, CA)
08/2021	*Workshop:* UCO/Lick Burbidge Observational Astronomy Workshop, Pt. 2 (Mount Hamilton, CA)
08/2021	*Conference:* CloudNineCon (virtual)

08/2021 *Conference:* TESS Science Conference II (virtual)
06/2021 *Conference:* Bay Area Exoplanet Meeting #37 (virtual)
03/2021 *Conference:* Bay Area Exoplanet Meeting #36 (virtual)
12/2020 *Conference:* Bay Area Exoplanet Meeting #35 (virtual)
10/2020 *Workshop:* UCO/Lick Burbidge Observational Astronomy Workshop, Pt. 1 (virtual)
09/2020 *Conference:* Bay Area Exoplanet Meeting #34 (virtual)
01/2020 *Conference:* American Astronomical Society 235th Meeting (Honolulu, HI)
07/2019 *Conference:* TESS Science Conference (Cambridge, MA)
02/2019 *Conference:* Chesapeake Bay Area Exoplanet Meeting (College Park, MD)
01/2019 *Conference:* American Astronomical Society 233rd Meeting (Seattle, WA)