Caleb K. Harada

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EDUCATION

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

2022 (expected) **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 Research Assistant,** UMD College Park, Department of Astronomy

2019 **NSF REU Intern**, 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 – 2025 NSF Graduate Research Fellowship

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 *(6 total; 1 first author; 1 submitted)*

1. 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 Non-Transiting Hot Jupiters," 2021, *submitted to AAS Journals*

2. 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, *in press*

3. **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]

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 [DOI]

5. 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]

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 [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**

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]

04/2018 *Poster*: "KELT-FUN: Hunting for Hot Exoplanets at the UMD Observatory," UMD College Park, Undergraduate Research Day (College Park, MD)

09/2018 *Contributed talk*: "Simulated Emission Spectra of Hot Jupiters with Cloudy Atmospheres," UMD College Park, Astronomy Summer Research Talks (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

2021 *Graduate Student Instructor:* Astronomy 7A: Introduction to Astrophysics (UC Berkeley)

2020 *Teaching Assistant:* Astronomy 121: Introductory Astrophysics II (UMD, College Park)

2018 – 2019 *Teaching Assistant:* Astronomy 310: Observational Astronomy (UMD, College Park)

2018 *Tutor:* Astronomy 121: Introductory Astrophysics II (UMD, College Park)

ACADEMIC SERVICE

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 (UMD, College Park)

PUBLIC 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)

Updated 08/2021