

# Caleb K. Harada

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## EDUCATION

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| 2025 (expected) | <b>Ph.D. in Astrophysics</b><br>University of California, Berkeley<br>- <i>Advisor</i> : Prof. Courtney Dressing   |
| 2022 (expected) | <b>M.A. in Astrophysics</b><br>University of California, Berkeley  |
| 2020            | <b>B.S. in Astronomy with High Honors</b> ( <i>Magna Cum Laude</i> )<br>University of Maryland, College Park<br>- <i>Advisor</i> : Prof. Eliza M.-R. Kempton<br>- <i>Thesis</i> : “Signatures of Clouds in Hot Jupiter Atmospheres: Modeled High-Resolution Emission Spectra from 3D General Circulation Models” |
| 2020            | <b>B.S. in Physics</b> ( <i>Magna Cum Laude</i> )<br>University of Maryland, College Park  |

## RESEARCH APPOINTMENTS

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

## AWARDS & FELLOWSHIPS

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|             |  |
|-------------|--|
| 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 (7 total — 1 *first author*; 1 *submitted*)

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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,” *submitted to AAS Journals*
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

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

## OBSERVING EXPERIENCE

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

## TALKS & POSTERS

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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 235<sup>th</sup> 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 233<sup>rd</sup> Meeting (Seattle, WA) [ADS]

01/2019 *Poster*: “K2 and Spitzer Joint Analysis of 4 Transiting Exoplanets,” AAS 233<sup>rd</sup> 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)

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| 12/2017 | <i>Invited talk:</i> “Exploring the Cepheid Period-Apparent-Magnitude Relation in M31 with iPTF,” UMD College Park, Observatory Public Open House (College Park, MD) |
| 08/2017 | <i>Contributed talk:</i> “Photometry of M-Dwarf Binaries in Young Moving Groups,” UChicago Astronomy Summer Research Talks (Chicago, IL)                             |

## TEACHING EXPERIENCE

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|-------------|---|
| 2021        | <i>GSI:</i> Astronomy 7A: Introduction to Astrophysics (UC Berkeley)          |
| 2020        | <i>TA:</i> Astronomy 121: Introductory Astrophysics II (UMD, College Park)    |
| 2018 – 2019 | <i>TA:</i> Astronomy 310: Observational Astronomy (UMD, College Park)         |
| 2018        | <i>Tutor:</i> Astronomy 121: Introductory Astrophysics II (UMD, College Park) |

## ACADEMIC SERVICE

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|----------------|--|
| 2021 – present | <i>Grad Student Representative:</i> Astronomy Climate Committee (UC Berkeley Astronomy)    |
| 03/2021        | <i>Committee Member:</i> Prospective Grad Visit Planning Committee (UC Berkeley Astronomy) |
| 03/2021        | <i>Panel Chair:</i> Prospective Grad Visit Q&A Panel (UC Berkeley Astronomy)               |
| 2018 – 2020    | <i>Peer Mentor:</i> Astronomy Peer Mentoring Program (UMD Astronomy)                       |

## PUBLIC OUTREACH

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|-------------|--|
| 2017 – 2020 | <i>Outreach Staff:</i> University of Maryland Campus Observatory (College Park, MD)      |
| 2016 – 2017 | <i>Outreach Volunteer:</i> University of Maryland Campus Observatory (College Park, MD)  |
| 2017 – 2019 | <i>Volunteer Presenter:</i> “Maryland Day,” University of Maryland (College Park, MD)    |
| 2016        | <i>Volunteer Presenter:</i> “Physics is Phun,” University of Maryland (College Park, MD) |

## PROFESSIONAL DEVELOPMENT

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| 11/2021 | <i>Workshop:</i> TRAIL: SVSH Prevention & Response Training (PATH to Care Center, Berkeley, CA) |
| 08/2021 | <i>Workshop:</i> UCO/Lick Burbidge Observational Astronomy Workshop, Pt. 2 (Mount Hamilton, CA) |
| 08/2021 | <i>Conference:</i> CloudNineCon (virtual)   |
| 08/2021 | <i>Conference:</i> TESS Science Conference II (virtual)   |
| 06/2021 | <i>Conference:</i> Bay Area Exoplanet Meeting #37 (virtual)                                     |
| 03/2021 | <i>Conference:</i> Bay Area Exoplanet Meeting #36 (virtual)                                     |
| 12/2020 | <i>Conference:</i> Bay Area Exoplanet Meeting #35 (virtual)                                     |
| 10/2020 | <i>Workshop:</i> UCO/Lick Burbidge Observational Astronomy Workshop, Pt. 1 (virtual)            |
| 09/2020 | <i>Conference:</i> Bay Area Exoplanet Meeting #34 (virtual)                                     |
| 01/2020 | <i>Conference:</i> American Astronomical Society 235 <sup>th</sup> Meeting (Honolulu, HI)       |
| 07/2019 | <i>Conference:</i> TESS Science Conference (Cambridge, MA)                                      |
| 02/2019 | <i>Conference:</i> Chesapeake Bay Area Exoplanet Meeting (College Park, MD)                     |
| 01/2019 | <i>Conference:</i> American Astronomical Society 233 <sup>rd</sup> Meeting (Seattle, WA)        |

*Updated 12/2021*