

Aida Behmard

California Institute of Technology · 1200 East California Boulevard, Pasadena, CA 91125
abehmard@caltech.edu · aidabehmard.com

- RESEARCH INTERESTS** Chemical and dynamical conditions of star and planet formation; exoplanet demographics; precision stellar astrophysics, galactic archaeology; machine learning
- EDUCATION**
- California Institute of Technology**, Pasadena, CA Sept. 2017 – present
Advisor: Prof. Heather Knutson
Ph.D. Planetary Science
M.S. Planetary Science
- Yale University**, New Haven, CT Aug. 2011 – May 2015
B.S. Physics
- POSITIONS**
- NSF Graduate Research Fellow** 2017 – present
California Institute of Technology
- Post-Baccalaureate Fellow** 2015 – 2017
Dept. of Astrophysical Sciences, Princeton University
- Summer Undergraduate Researcher** 2015
Center for Astrophysics, Harvard University
- Undergraduate Researcher** 2013 – 2015
Dept. of Astronomy, Yale University
- NSF REU Student** 2013
National Optical Astronomy Observatory
- HONORS AND AWARDS**
- 3-Minute Thesis Competition – 1st Place 2022
NASA ExoExplorers Cohort Member 2022
NSF Graduate Research Fellowship 2018-2021
Keck Institute for Space Studies Affiliate 2019
Harvard Origins of Life Initiative Grant 2015
Science, Technology, and Research Scholars (STARS II) Fellowship 2014
George J. Schulz Fellowship for the Physical Sciences 2013
Yale College Dean’s Undergraduate Research Fellowship 2012
- PUBLICATIONS** *1st/2nd-author* (** directly supervised student):
5. **A. Behmard**, J. Sevilla, J. Fuller, “Planet Engulfment Signatures in Twin Stars, *under review*, *MNRAS*
 4. J. Sevilla**, **A. Behmard**, J. Fuller, “Long-Term Lithium Abundance Signatures Following Planetary Engulfment, *in press*, *MNRAS*, arXiv:2207.13232
 3. **A. Behmard**, F. Dai, A. Howard (2022), “Stellar Companions To TESS Objects of Interest: A Test of Planet-Companion Alignment”, *The Astronomical Journal*, 163, 160
 2. **A. Behmard**, E. Petigura, A. Howard (2019), “Data-Driven Spectroscopy of Cool Stars at High Spectral Resolution”, *The Astrophysical Journal*, 876, 68

1. **A. Behmard**, D. Graninger, E. Fayolle, J. Bergner, K. Öberg (2019), "Desorption Kinetics and Binding Energies of Small Hydrocarbons", *The Astrophysical Journal*, 875, 73

Nth-author:

19. M. MacDougall et al. [including **A. Behmard**] (2022), "The TESS-Keck Survey. XIII. An Eccentric Hot Neptune with a Similar-Mass Outer Companion around TOI-1272", *The Astronomical Journal*, 164, 97
18. A. Chontos et al. [including **A. Behmard**] (2022), "The TESS-Keck Survey: Science Goals and Target Selection", *The Astronomical Journal*, 163, 297
17. E. Petigura et al. [including **A. Behmard**] (2022), "The California-Kepler Survey. X. The Radius Gap as a Function of Stellar Mass, Metallicity, and Age", *The Astronomical Journal*, 163, 179
16. J. Winters et al. [including **A. Behmard**] (2022), "A Second Planet Transiting LTT 1445A and a Determination of the Masses of Both Worlds", *The Astronomical Journal*, 163, 61
15. N. Heidari et al. [including **A. Behmard**] (2022), "HD 207897 b: A dense sub-Neptune transiting a nearby and bright K-type star", *Astronomy & Astrophysics*, 658, A176
14. P. Dalba et al. [including **A. Behmard**] (2022), "The TESS-Keck Survey. VIII. Confirmation of a Transiting Giant Planet on an Eccentric 261 Day Orbit with the Automated Planet Finder Telescope", *The Astronomical Journal*, 163, 61
13. J. Murphy et al. [including **A. Behmard**] (2021), "Another Superdense Sub-Neptune in K2-182 b and Refined Mass Measurements for K2-199 b and c", *The Astronomical Journal*, 162, 294
12. M. MacDougall et al. [including **A. Behmard**] (2021), "The TESS-Keck Survey. VI. Two Eccentric Sub-Neptunes Orbiting HIP-97166", *The Astronomical Journal*, 162, 265
11. A. Polanski et al. [including **A. Behmard**] (2021), "Wolf 503 b: Characterization of a Sub-Neptune Orbiting a Metal-Poor K Dwarf", *The Astronomical Journal*, 162, 238
10. N. Scarsdale et al. [including **A. Behmard**] (2021), "TESS-Keck Survey. V. Twin Sub-Neptunes Transiting the Nearby G Star HD 63935", *The Astronomical Journal*, 162, 215
9. M. Rice et al. [including **A. Behmard**] (2021), "SOLES I: The Spin-Orbit Alignment of K2-140 b", *The Astronomical Journal*, 162, 182
8. F. Dai et al. [including **A. Behmard**] (2021), "TKS X: Confirmation of TOI-1444b and a Comparative Analysis of the Ultra-short-period Planets with Hot Neptunes", *The Astronomical Journal*, 162, 62
7. L. Weiss et al. [including **A. Behmard**] (2021), "The TESS-Keck Survey II: Masses of Three Sub-Neptunes Transiting the Galactic Thick-Disk Star TOI-561", *The Astronomical Journal*, 161, 2

6. M. Kosiarek et al. [including **A. Behmard**] (2020), "Physical Parameters of the Multi-Planet Systems HD 106315 and GJ 9827", *The Astronomical Journal*, 161, 1
5. F. Dai et al. [including **A. Behmard**] (2020), "The TESS-Keck Survey III: An aligned orbit for TOI-1726 c", *The Astronomical Journal*, 160, 4
4. R. Cloutier et al. [including **A. Behmard**] (2020), "TOI-1235 b: a keystone super-Earth for testing radius valley emergence models around early M dwarfs", *The Astronomical Journal*, 160, 22
3. P. Dalba et al. [including **A. Behmard**] (2020), "The TESS-Keck Survey I: A Warm Sub-Saturn-mass Planet and a Caution about Stray Light in TESS Cameras", *The Astronomical Journal*, 159, 5
2. E. Gaidos et al. [including **A. Behmard**] (2019), "Planetesimals Around Stars with *TESS* (PAST): I. Transient Dimming of a Binary Solar Analog at the End of the Planet Accretion Era", *MNRAS*, 488, 4465
1. M.C.Y. Lau, R. Harris, Y. Oh, M. Joo Yi, **A. Behmard**, T.C. Onstott (2018), "Taxonomic and functional compositions impacted by the quality of meta-transcriptomic assemblies", *FEMS Microbiology Ecology*, 9, 1235

**INVITED
SEMINARS &
COLLOQUIA**

MIT Science Talk Series, Cambridge, MA	Nov. 2022
CU Boulder APS Seminar, Boulder, CO	Oct. 2022
UCLA Planetary Science Seminar, Los Angeles, CA	Sept. 2022
AMNH Astrophysics Seminar, New York, NY	Sept. 2022
Columbia Astronomy Lunch Talk, New York, NY	Sept. 2022
STScI ESPF Seminar Series, (<i>remote</i>)	Aug. 2022
ExoExplorers Science Series, (<i>remote</i>)	June 2022
JPL Exoplanet Journal Club (<i>remote</i>)	April 2022
Yale Exoplanets and Stars Seminar, (<i>remote</i>)	Mar. 2022
Penn State CEHW Seminar, (<i>remote</i>)	Feb. 2022
Carnegie EPL Astronomy Seminar, (<i>remote</i>)	Feb. 2022
TESS Science Team Meeting #27, (<i>remote</i>)	Jan. 2022
Princeton Exoplanet Meeting, (<i>remote</i>)	Nov. 2021
UC Santa Cruz FLASH Seminar, (<i>remote</i>)	Dec. 2020
Carnegie Observatories Tea Talk, Pasadena, CA	Dec. 2018
Harvard Origins of Life Research Symposium, Cambridge, MA	Aug. 2015
Kitt Peak National Observatory REU Symposium, Tucson, AZ	Aug. 2013

**CONFERENCE
TALKS &
POSTERS**

Exoplanet Demographics, (<i>remote</i>) (talk)	Nov. 2020
EPRV IV, Grindelwald, Switzerland (talk)	Mar. 2019
Keck Science Meeting, Pasadena, CA (talk)	Sept. 2018
ExSoCal, Pasadena, CA (talk)	Sept. 2018
Astrochemistry: Past, Present, and Future, Pasadena, CA (poster)	July 2018
ERES IV, University Park, PA (poster)	June 2018
AAS Meeting #228, San Diego, CA (poster)	June 2016
AAS Meeting #223, National Harbor, MD (poster)	Jan. 2014

**OBSERVING
PROGRAMS**

Keck Observatory (HIRES) – 1 night awarded, 2021A <i>Hot Jupiters: Nature or Nurture?</i>
Keck Observatory (HIRES) – 1 night awarded, 2020B <i>How Common is Planet Engulfment?</i>

Hubble Space Telescope – 2 nights awarded (Co-I), 2016
High spatial resolution imaging of AGN-driven super-bubbles in two low-redshift quasars

TEACHING & MENTORING

Teaching Assistant

- Held office hours, wrote problem set solutions, graded homework and exams, and substituted for instructor on multiple occasions
 - Ay/Ge 117: Bayesian Statistics and Data Analysis Winter 2020, 2021
 - Ay/Ge 133: Formation & Evolution of Planetary Systems Spring 2019

Student Mentoring

- **Jason Sevilla** (Caltech undergraduate) June 2021 - present
Publication: J. Sevilla, A. Behmard, J. Fuller, 2022, *Long-Term Lithium Abundance Signatures Following Planetary Engulfment*, in press, arXiv:2207.13232

PROFESSIONAL SERVICE

NASA XRP Review Executive Secretary July 2022
Dix Caltech Planetary Science Co-Organizer Oct. 2020 - Jun. 2021
Caltech Stars and Planets Astro-ph Co-Organizer Oct. 2019 - Mar. 2020
Referee for *AAS Journals* Sept. 2019 - present

WORKSHOPS & SUMMER SCHOOLS

MESA Summer School, Santa Barbara, CA Aug. 2022
Gaia DR3 Fête, Flatiron Institute, New York, NY Jun. 2022
NASA Sagan Exoplanet Workshop, Pasadena, CA July 2019
Telluric Line Hack Week, Flatiron Institute, New York, NY Feb. 2019
NASA Sagan Exoplanet Workshop, Pasadena, CA July 2018

SELECTED OUTREACH

K-2 Volunteer Science Teacher, Pasadena, CA Dec. 2017 - present

- Plan and teach weekly science lessons for K-2 students at underserved Pasadena schools through Caltech's Visiting Scientists program
- Lessons are designed to fit Pasadena Unified School District science curriculum standards
- Transitioned to planning and teaching Zoom lessons for the 2020-2021 academic year

WAVE Program Mentor and Council Member June 2019 - Sept. 2021

- Mentored 13 undergraduate students in Caltech's [WAVE](#) program dedicated to increasing participation of underrepresented students in science and engineering Ph.D. programs
- Served on the WAVE student council tasked with developing WAVE programming and close mentoring of students

Caltech Graduate Student Council Diversity Chair May 2018 - Sept. 2021

- Worked with students groups ([BSEC](#), [BLAC](#), [APIDA+](#), and [Club Latino](#)) and the Caltech Center for Inclusion and Diversity to create programming that supports minoritized students
- Past activities include a visit weekend for ~50 McNair scholars, DEI-related events for graduate orientations, creating and maintaining [Caltech's first database of DEI resources](#), etc.

Outreach Talks

- Caltech Seminar Day, Pasadena, CA, May 2022
- Los Altos High School Physics Club, (*remote*), Oct. 2021
- Women of Aeronautics and Astronautics India Chapter (*remote*), Sept. 2021
- FUTURE of Physics Conference, Pasadena, CA, Sept. 2021
- NorCal/Nevada American Association of Physics Teachers Annual Meeting (*remote*), April 2021

Further Activities

- Skype a Scientist Instructor July 2020 - present
- Caltech Title IX Council Member May 2019 - present
- Women Mentoring Women Program Mentor Nov. 2017 - present
- Yale Alumni Interviewer Feb. 2017 - present