Aida Behmard

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RESEARCH INTERESTS

Chemistry of star and planet formation; origins of life; exoplanet demographics; planet formation and evolution; radial velocities; precision stellar astrophysics, machine learning

EDUCATION

California Institute of Technology, Pasadena, CA — Sept. 2017 – June 2022
Ph.D. Planetary Science

Yale University, New Haven, CT — Aug. 2011 – May 2015
B.S. Physics

HONORS AND AWARDS

National Science Foundation Graduate Research Fellowship	2018-2021
Keck Institute for Space Studies Affiliate	2019
Princeton Dept. of Astrophysical Sciences Post-Baccalaureate Fellowship	2015
Harvard Origins Summer Undergraduate Research Prize	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

First-author:

A. Behmard, F. Dai, A. Howard, "Stellar Companions to TESS Objects of Interest in *Gaia* EDR3", *in prep.*

A. Behmard, E. Petigura, A. Howard (2019), "Data-Driven Spectroscopy of Cool Stars at High Spectral Resolution", *The Astrophysical Journal*, 876, 68

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:

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", *submitted*

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

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

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

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

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

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

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 metatranscriptomic assemblies", *FEMS Microbiology Ecology*, 9, 1235

INVITED SEMINARS & COLLOQUIA

UC Santa Cruz FLASH Seminar, *(remote)*, Dec. 2020
How Common is Planet Engulfment?

Dix Planetary Science Seminar, Pasadena, CA, May 2020
How Common is Planet Engulfment?

Dix Planetary Science Seminar, Pasadena, CA, June 2019
Drawing Correlations Between Star and Hosted Planet Properties with the California-Kepler Survey

Carnegie Observatories Tea Talk, Pasadena, CA, Dec. 2018
Data-Driven Spectroscopy of Cool Stars at High Spectral Resolution

Harvard Origins of Life Summer Research Symposium, Cambridge, MA, Aug. 2015
Desorption Kinetics and Binding Energies of Small Hydrocarbons

Nat'l Optical Astronomy Observatory REU Symposium, Tucson, AZ, Aug. 2013
RESOLVE'd AGN: Refining Nearby Active Galactic Nuclei Classification Techniques

CONFERENCE TALKS

Exoplanet Demographics, *(remote)*, Nov. 2020
How Common is Planet Engulfment?

Extreme Precision Radial Velocity (EPRV) IV, Grindelwald, Switzerland, Mar. 2019
Data-Driven Spectroscopy of Cool Stars at High Spectral Resolution

Keck Science Meeting, Pasadena, CA, Sept. 2018
Data-Driven Spectroscopy of Cool Stars at High Spectral Resolution

ExSoCal, Pasadena, CA, Sept. 2018
Data-Driven Spectroscopy of Cool Stars at High Spectral Resolution

TELESCOPE PROPOSALS

Keck Observatory (HIRES) – 1 night awarded, 2021A
Hot Jupiters: Nature or Nurture?

Keck Observatory (HIRES) – 1 night awarded, 2020B
How Common is Planet Engulfment?

Hubble Space Telescope – 12 months awarded (Co-I), 2016
High spatial resolution imaging of AGN-driven super-bubbles in two low-redshift quasars

TEACHING

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 and Evolution of Planetary Systems Spring 2019

PROFESSIONAL SERVICE

Dix Caltech Planetary Science Co-Organizer — Oct. 2020 - present
Caltech Stars and Planets Astro-ph Co-Organizer — Oct. 2019 - present
Referee for *ApJ* — Sept. 2019 - present

STUDENT MENTORING

Jason Sevilla (SURF program, Caltech undergraduate) — June 2021 - present
Modeling Li enrichment signatures following planet engulfment

INVITED OUTREACH TALKS

NorCal/Nevada American Association of Physics Teachers Annual Meeting, Keynote speaker, *(remote)*, April 2021
Fostering (young) scientist identities through diverse representation in STEM education

OUTREACH & SERVICE

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

- Planned and taught bi-weekly science lessons for K-2 students at Cleveland and Madison Elementary through the Caltech Center for Teaching Learning and Outreach (CTLO) 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

Caltech Graduate Student Council (GSC) Diversity Chair — May. 2018 - present

- We work with students groups such as BSEC, BLAC, Club Latino, and APIDA+, as well as the Center for Inclusion and Diversity (CCID) to create programming geared towards supporting and advocating for minoritized students
- Past activities include planning a visit weekend for $\sim$50 McNair scholars, organizing DEI-related events for graduate orientations, creating and maintaining Caltech's first database of DEI resources, etc.
- Helped create the student group Caltech for Black Lives in the wake of the BLM protests around in June 2020

WAVE Program Mentor and Council Member — June 2019 - present

- So far have mentored 6 undergraduate students participating in Caltech's WAVE program dedicated to increasing the participation of underrepresented students in science and engineering Ph.D. programs
- Currently serve on the WAVE program student council tasked with helping develop WAVE programming and close mentoring of students

Further Activities

- Title IX Council Member — May 2019 - present
- Women Mentoring Women Program, Mentor — Nov. 2017 - present
- Yale Alumni Interviewer — Feb. 2017 - present