

# AIDA BEHMARD

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## EDUCATION

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**California Institute of Technology**, Pasadena, CA Sept. 2017 – June 2023  
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

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**Graduate Research Fellow**, California Institute of Technology 2017 – present  
Supervised by Prof. Heather Knutson

**Post-Baccalaureate Fellow**, Princeton Dept. of Astrophysical Sciences 2015 – 2017  
Supervised by Prof. Gaspar Bakos

**Summer Undergraduate Researcher**, Harvard-Smithsonian Center for Astrophysics 2015  
Supervised by Prof. Karin Öberg

**Undergraduate Researcher**, Yale Dept. of Astronomy 2013 – 2015  
Supervised by Prof. Meg Urry

**NSF REU Student**, National Optical Astronomy Observatory 2013  
Supervised by Dr. Dara Norman

## HONORS AND AWARDS

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Caltech 3-Minute Thesis Competition – 1<sup>st</sup> 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

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*1st/2nd-author* (\*\* directly supervised student):

1. **A. Behmard**, E. Cunningham, M. Bedell, M. Ness, “Elemental Abundances of *Kepler* Objects of Interest in APOGEE DR17”, *under review*, *The Astronomical Journal*, ArXiv:2210.14187
2. **A. Behmard**, F. Dai, J. Brewer, T. Berger, A. Howard, “Planet Engulfment Detections are Rare According to Observations and Stellar Modeling”, *under review*, *MNRAS*, ArXiv:2210.12121
3. **A. Behmard**, J. Sevilla, J. Fuller (2022), “Planet Engulfment Signatures in Twin Stars”, *MNRAS*, 518, 4

4. J. Sevilla\*\*, **A. Behmard**, J. Fuller (2022), “Long-Term Lithium Abundance Signatures Following Planetary Engulfment”, *MNRAS*, 516, 3
5. **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
6. **A. Behmard**, E. Petigura, A. Howard (2019), “Data-Driven Spectroscopy of Cool Stars at High Spectral Resolution”, *The Astrophysical Journal*, 876, 68
7. **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:*

1. F. Dai et al. [including **A. Behmard**] (2023), “TOI-1136 is a Young, Coplanar, Aligned Planetary System in a Pristine Resonant Chain”, *accepted, The Astronomical Journal*, ArXiv:2210.09283
2. M. El Mufti et al. [including **A. Behmard**] (2022), “TOI 560: Two Transiting Planets Orbiting a K Dwarf Validated with iSHELL, PFS, and HIRES RVs”, *The Astronomical Journal*, 165, 1
3. 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
4. A. Chontos et al. [including **A. Behmard**] (2022), “The TESS-Keck Survey: Science Goals and Target Selection”, *The Astronomical Journal*, 163, 297
5. 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
6. 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
7. 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
8. 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
9. 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
10. 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
12. 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
13. M. Rice et al. [including **A. Behmard**] (2021), “SOLES I: The Spin-Orbit Alignment of K2-140 b”, *The Astronomical Journal*, 162, 182

14. 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
15. 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
16. 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
17. 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
18. 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
19. 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
20. 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
21. 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

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Exoplanet Seminar, NASA Goddard	Jan. 2023
TESS Science Talk Series, MIT	Nov. 2022
APS Seminar, CU Boulder	Oct. 2022
Planetary Science Seminar, UCLA	Sept. 2022
Astrophysics Seminar, American Museum of Natural History	Sept. 2022
Astronomy Lunch Talk, Columbia University	Sept. 2022
ESPF Seminar Series, STScI	Aug. 2022
NASA ExoExplorers Science Series	June 2022
Exoplanet Journal Club, NASA Jet Propulsion Laboratory	April 2022
Exoplanets and Stars Seminar, Yale University	Mar. 2022
CEHW Seminar, Penn State	Feb. 2022
EPL Astronomy Seminar, Carnegie Observatories	Feb. 2022
Exoplanet Meeting, Princeton University	Nov. 2021
FLASH Seminar, UC Santa Cruz	Dec. 2020
Tea Talk, Carnegie Observatories	Dec. 2018

## CONFERENCE TALKS & POSTERS

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Exoplanet Systems & Stellar Life Cycles: Late-Stage & Post-MS Systems (talk)	Mar. 2023
Exoplanets in Our Backyard 2 (poster)	Nov. 2022
TESS Science Team Meeting #27 (talk)	Jan. 2022
Exoplanet Demographics (talk)	Nov. 2020
Extreme Precision in Radial Velocity IV (talk)	Mar. 2019
Keck Science Meeting (talk)	Sept. 2018

Exoplanets in Southern California IV (talk)	Sept. 2018
Astrochemistry: Past, Present, and Future (poster)	July 2018
Emerging Researchers in Exoplanet Science IV (poster)	June 2018
AAS Meeting #228, San Diego, CA (poster)	June 2016
Origins of Life Research Symposium, Harvard (talk)	Aug. 2015
AAS Meeting #223, National Harbor, MD (poster)	Jan. 2014
REU Symposium, Kitt Peak National Observatory (talk)	Aug. 2013

## TEACHING & MENTORING

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### 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, 2022
  - Ay/Ge 133: Formation & Evolution of Planetary Systems Spring 2019

### Student Mentoring

- **Jason Sevilla** (Caltech undergraduate) June 2021 - Aug. 2022  
 Publication: J. Sevilla, A. Behrard, J. Fuller (2022), *MNRAS*, 516, 3

## AWARDED TELESCOPE TIME

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

## PROFESSIONAL SERVICE

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NASA XRP Review Executive Secretary (year redacted)

Dix Caltech Planetary Science Seminar 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

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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 SERVICE & OUTREACH

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**Volunteer K-2nd Science Instructor at Pasadena Public Schools** Dec. 2017 - present

- Plan and teach weekly science lessons for K-2nd grade students at underserved Pasadena public 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

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

- Mentored 13 undergraduate students in the WAVE program dedicated to increasing participation of underrepresented students in STEM Ph.D. programs
- Served on the WAVE student council tasked with developing WAVE programming and close mentoring of students

**Caltech Graduate Student (GSC) Council Diversity Chair** May 2018 - Sept. 2021

- Led the GSC Diversity Committee in organizing a visit weekend for ~50 McNair scholars, DEI-related events for graduate orientations, etc. We also created and maintain Caltech's first database of DEI resources
- 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

### **Further Activities**

Caltech GPS Buddy Program Mentor	Sept. 2021 - present
Yale Alumni Interviewer	Feb. 2017 - present
Caltech Title IX Council Member	May 2019 - Sept. 2020
Skype a Scientist Instructor	July 2020 - Aug. 2020
Women Mentoring Women Program Mentor	Nov. 2017 - June 2020

### **Outreach Talks**

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