

# SHASHANK DHOLAKIA

✉ [dholakia.shashank@berkeley.edu](mailto:dholakia.shashank@berkeley.edu) ◇ [Twitter](#) AstroShashank ◇ [GitHub](#) shashankdholakia ◇ [ORCID](#) 0000-0001-9145-8444

## EDUCATION

---

### B.A. Astrophysics

Minor in CalTeach

University of California, Berkeley

August 2017 - Present

### High School Diploma

Wilcox High School

July 2013 - June 2017

## RESEARCH POSITIONS

---

### Undergraduate Researcher, Flatiron Institute

Topic: Fast transit models for rapidly-rotating stars (see paper 4)

Advisor: Dr. Rodrigo Luger

Fall 2020 - Present

### Research Intern, NASA AMES

Topic: Earth analogs from *Kepler* mission (see paper 3)

Funding: SETI Institute

Advisor: Dr. Jack Lissauer

Summer 2020 - Present

### Research Intern, Mazin Lab

Funding: University of California, Santa Barbara

Topic: Microwave Kinetic Inductance Detector (MKID) simulations

Advisor: Prof. Ben Mazin

Summer 2020

### Undergraduate Researcher, PALS Group, UC Berkeley

Topic: Long-period planets in *K2* and *TESS* (see paper 2)

Advisor: Prof. Courtney Dressing

January 2017 - Present

### Research Intern, NASA AMES

Topic: Planets in stellar clusters

Funding: SETI Institute

Advisor: Ann Marie Cody

Summer 2017

### Research Intern, NASA AMES

Topic: Discovery and follow-up of planet 2MASS J06101557+2436535 (see paper 1)

Advisor: Ann Marie Cody and Steve Howell

July 2015 - June 2018

## PUBLICATIONS

---

- [4] **Dholakia, Shashank.**; Luger, Rodrigo; Dholakia, Shishir; *Fast Posterior Inference for Rapidly-rotating Stars: Semi-analytic Transit Models for Oblate, Gravity-darkened Stars* in starry. **manuscript in prep.**
- [3] Rowe, Jason F.; Lissauer, Jack J.; Jontof-Hutter, Daniel; Dholakia, Shishir; **Dholakia, Shashank**; Livingston, John H. *Assessment of 's Candidate Earth Analog Planets*. **manuscript in prep.**
- [2] Dholakia, S.<sup>1</sup>; **Dholakia, S.**<sup>1</sup>; Mayo, A. W.; Dressing, C. D.; *Constraining Orbital Periods from Nonconsecutive Observations: Period Estimates for Long-Period Planets in Six Systems Observed by K2 During Multiple Campaigns*. *Astron. J.*, 2020.
- [1] **Dholakia, S.**<sup>1</sup>; Dholakia, S.<sup>1</sup>; Cody, A.M; Howell, S. B.; Johnson, M. C.; Isaacson, H.; Everett, M. E.; Ciardi, D. R.; Howard, A. W; Shporer, A.; *A Substellar Companion to a Hot Star in K2's Campaign 0 Field*. *PASP*, 2019.

## TALKS AND POSTERS

---

### Invited Talks

- Dholakia, S.<sup>1</sup>; Dholakia, S.<sup>1</sup>; *A Search for Exoplanets in the Open Cluster Messier 35 and Koposov 62 Using a Novel Large-Scale Photometric Algorithm for the K2 Mission*. Kepler & K2 Mission Science Team, NASA AMES Research Center, CA, July. 2015.
- Dholakia, S.<sup>1</sup>; Dholakia, S.<sup>1</sup>; *A Search for Exoplanets in the Open Cluster Messier 35 and Koposov 62 Using a Novel Large-Scale Photometric Algorithm for the K2 Mission*. Lick Observatory VAN Talks, CA, Oct. 2015.
- Dholakia, S.<sup>1</sup>; Dholakia, S.<sup>1</sup>; *Citizen Science and Photometry on Exoplanets*. San Jose Astronomical Association Imaging SIG Talks, CA, May. 2016.

### Contributed Talks

- Dholakia, S.<sup>1</sup>; Dholakia, S.<sup>1</sup>; *Mind the Gap: Period Constraints for Long Period Planets in Overlapping Fields with K2*. Bay Area Exoplanet Meeting, NASA AMES Research Center, CA, Sept. 2019.
- Dholakia, S.<sup>1</sup>; Dholakia, S.<sup>1</sup>; *Long Period Planets and Planetary Formation*. SPS Undergraduate Seminar, Berkeley, CA, Feb 2019.
- Dholakia, S.<sup>1</sup>; Dholakia, S.<sup>1</sup>; *A Substellar Companion to a Hot Star in K2's C0 M35 Field*. Bay Area Exoplanet Meeting, NASA AMES Research Center, CA, March 2018.
- Dholakia, S.<sup>1</sup>; Dholakia, S.<sup>1</sup>; *A Substellar Companion to a Hot Star in K2's C0 M35 Field*. CIPS Seminar Talk, Berkeley, CA, Feb 2018.

### Poster Presentations

- **Dholakia, S.**; Dholakia, S.; Mayo, A. W.; Dressing, C. D.; *Mind the Gap 2: Period Constraints for Long-Period Planets in Overlapping Fields*. Kepler-K2 Science Conference V, March 2019.
- Dholakia, S.; **Dholakia, S.**; Mayo, A. W.; Dressing, C. D.; *Mind the Gap 1: New Constraints for Six Planet Candidate Systems in K2 C5, C16, and C18 data* Kepler-K2 Science Conference V, March 2019.
- **Dholakia, S.<sup>1</sup>**; Dholakia, S.<sup>1</sup>; Cody, A.M; *A Search for Exoplanets in the Open Star Clusters Messier 35 and Koposov 62 Using A Photometric Algorithm for the K2 Mission*. AAS 229, Grapevine TX, Jan 2017.
- Dholakia, S.; **Dholakia S.**; Cody, A. M.; *A Search and Exploration of Multi-Exoplanet Systems Via Transit Timing Variation (TTV) Algorithms for the K2 Mission* AAS 229, Grapevine TX, Jan 2017.

## AWARDS

---

- 1st Place Grand Award in Physics, Intel International Science and Engineering Fair (2015)
- California State Science Fair Project of the Year (2015)
- Pricilla and Bart Bok Award 1st place, Intel International Science and Engineering Fair (2016 & 2015)
- Young Astronomy Photographer of the Year (Royal Greenwich Observatory) (2014)

## RESEARCH SKILLS & EXPERIENCE

---

<b>Observation</b>	Photometry, Speckle Interferometry, AO imaging, RV Spectroscopy
<b>Software</b>	Python (Astropy, Scipy, Pandas, Lightkurve, Emcee, Vespa, etc.), LaTeX
<b>Instrumentation</b>	Soldering, breadboard circuits, telescope control
<b>Other</b>	Astrophotography

**Relevant Coursework (IP = In progress):**

Planetary Astrophysics (ASTRON162), Stellar Astrophysics (ASTRON160), Advanced Instrumentation Lab (PHYS111a), Quantum Mechanics (PHYS5c, PHYS137a), Intro to Experimental Physics (PHYS 5b PHYS5c), Structure and Interpretations of Computer Science (CS61a).

**Awarded Telescope Time:**

Co-I: Gran Telescopio Canarias (2019B), 2 nights; Doppler tomography (PI E. Palles)

Co-I: Gemini/GRACES (2018B), 10 hours; Doppler tomography (PI M. Johnson)

Co-I: NASA-Keck (2017A), 1 night; Radial Velocity spectroscopy (PI A. M. Cody)

Co-I: LCOGT 0.4m (2016B), 6 hours; Transit photometry (PI D. Ciardi)

**Observed on:**

WIYN 3.5-meter/DSSI: Speckle Interferometry

Lick ShaneAO/ShARCS: Adaptive Optics Imaging

Leuschner 30": Transit photometry

iTelescope 17" CDK: Transit photometry

10", 4" refractor & others: Transit photometry, low-res spectroscopy, astrophotography, outreach public viewing

**Analyzed or Reduced Data From:**

Kepler Space Telescope: Photometry, Images:

Spitzer Space Telescope: Photometry, Images

W. M. Keck Observatory: Radial velocity spectra

LCOGT 0.4-meter telescope, iTelescope 0.5-meter: Transit photometry

## TEACHING AND OUTREACH

---

**Democratic Education at CAL**

Fall 2019, Spring 2020

- Started and co-taught a class on physics/astrophysics for nonmajors called A Beginner's Guide to the Universe (along with students Nicholas Rui, Shishir Dholakia and Yonna Kim).

**Berkeley Astro Nights**

Fall 2018- Fall 2019

- Operated portable telescopes and rooftop 17" telescope monthly for Berkeley Astro Nights. Objects observed included Jupiter, Saturn, Venus, Andromeda Galaxy (M31).

**CalTeach Field Placements**

Fall 2019, Spring 2020

- Visited and taught 1<sup>st</sup>-12th graders science for three semesters at local Berkeley public schools (Thousand Oaks Elementary, Willard Middle School, Albany High).

---

<sup>1</sup>Equal contribution to the work or jointly given talk