

# Steven Giacalone

# Curriculum Vitae

giacalone@astro.caltech.edu  
stevengiacalone.github.io

Cahill Center for Astronomy and Astrophysics  
Pasadena, CA 91125

## RESEARCH INTERESTS

Demographics and architectures of exoplanet systems; statistical validation and vetting of transiting exoplanets; planets orbiting A-type stars; orbital migration of giant planets; dust transport in protoplanetary disks

## RESEARCH POSITIONS AND EMPLOYMENT

<b>NSF Astronomy and Astrophysics Postdoctoral Fellow</b> , California Institute of Technology	2023 - present
<b>Postdoctoral Researcher</b> , University of California, Berkeley	Summer 2023
<b>Ph.D. Candidate</b> , University of California, Berkeley	2021 - 2023
<b>NASA FINESST Future Investigator</b> , University of California, Berkeley	2020 - 2023
<b>Graduate Student Researcher</b> , University of California, Berkeley	2017 - 2020
<b>Undergraduate Research Assistant</b> , The University of Chicago	2014 - 2017
<b>On-Call Technician</b> , Fermi National Accelerator Laboratory	Summer 2014

## EDUCATION

<b>Ph.D. Astrophysics</b> , University of California, Berkeley	May 2023
<i>Advisor:</i> Courtney Dressing	
<i>Thesis:</i> Discovery and Demographics of Hot Planets orbiting Hot Stars	
<b>Graduate Certificate in Applied Data Science</b> , University of California, Berkeley	May 2021
<b>M.A. Astrophysics</b> , University of California, Berkeley	December 2018
<b>B.A. Physics with Honors</b> , The University of Chicago	June 2017
<i>Specialization:</i> Astrophysics	
<i>Advisor:</i> Ariele König	
<i>Thesis:</i> Dust Transport in Protoplanetary Disk Winds	

## SELECTED AWARDS & HONORS

NSF Astronomy and Astrophysics Postdoctoral Fellowship	2023
STScI Lasker Postdoctoral Fellowship (offer declined)	2023
NASA FINESST Award	2020
Sigma Xi	2019
NSF GRFP Honorable Mention	2019
Nathan Sugarman Undergraduate Research Award	2017
The University of Chicago College Research Fellowship	2016
Phi Beta Kappa	2016

## PI TELESCOPE PROGRAMS

### Keck I Telescope

2. S. Giacalone, C. Dressing, A. Howard, F. Dai, N. Vowell, T. Carmichael (2.0 night, KPF)	2024B
1. S. Giacalone, C. Dressing, A. Howard, F. Dai, S. Halverson (0.5 night, KPF)	2023B

### Gemini North Telescope

1. S. Giacalone, A. Howard, F. Dai, N. Vowell, T. Carmichael (6.0 hours, MAROON-X)	2024B
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### Palomar Hale Telescope

2. S. Giacalone, A. Howard (2 nights, PARVI)	2024B
1. S. Giacalone, A. Howard, B. Cale (2 nights, PARVI)	2024A

### WIYN Telescope

1. S. Giacalone, A. Howard, F. Dai, N. Vowell, T. Carmichael (8.0 hours, NEID)	2024B
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### NASA Infrared Telescope Facility

1. S. Giacalone, C. Dressing, E. Abrahams, E. Turtelboom, A. Mayo (19.2 hours, SpeX)	2020B
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### Automated Planet Finder Telescope at Lick Observatory

4. S. Giacalone, C. Dressing, F. Dai (2.75 nights, Levy)	2024B
3. S. Giacalone, C. Dressing, F. Dai (2.75 nights, Levy)	2023B
2. S. Giacalone, C. Dressing (7.25 nights, Levy)	2023B

1. S. Giacalone, C. Dressing (2 nights, Levy)	2023A
<b>SMARTS 1.5-meter Telescope</b>	
1. S. Giacalone, A. Howard, F. Dai, N. Vowell, T. Carmichael (3.7 hours, CHIRON)	2024B
<b>Las Cumbres Observatory 1-meter Telescopes</b>	
6. S. Giacalone, C. Dressing (7.5 hours, NRES)	2023B
5. S. Giacalone, C. Dressing (73.0 hours, NRES)	2023A
4. S. Giacalone, C. Dressing (53.0 hours, Sinistro)	2023A
3. S. Giacalone, C. Dressing (20.0 hours, Sinistro)	2022B
2. S. Giacalone, C. Dressing (50.0 hours, Sinistro)	2022A
1. S. Giacalone, C. Dressing (22.0 hours, Sinistro)	2021A
<b>Nickel Telescope at Lick Observatory</b>	
4. S. Giacalone, C. Dressing, C. Harada (5 nights, Direct Imaging Camera)	2022B
3. S. Giacalone, C. Dressing, C. Harada (18 nights, Direct Imaging Camera)	2022A
2. S. Giacalone, C. Dressing, C. Harada (20 nights, Direct Imaging Camera)	2021B
1. S. Giacalone, C. Dressing (17 nights, Direct Imaging Camera)	2021A
<b>MINERVA-Australis Telescope</b>	
1. S. Giacalone, C. Dressing (5.5 hours, Echelle Spectrograph)	2023B

## CO-I TELESCOPE PROGRAMS

**James Webb Space Telescope:** PI A. Mayo. Cycle 1 GO 2062 (23.0 hours, NIRISS and NIRSpec)

**Hubble Space Telescope:** PI C. Dressing. Cycle 28 GO 16267 (18.0 orbits, WFC3); PI P. Loyd. Cycle 29 GO 16731 (12.0 orbits, STIS); PI P. Loyd. Cycle 32 GO 17801 (29.0 orbits, STIS and COS)

**Keck I Telescope:** PI C. Dressing. 2022B\_U089 (0.75 nights, HIRES); PI S. Kane. 2024A\_U288 (3 nights, KPF); PI T. Carmichael. 2024A\_H373 (3 nights, KPF); PI C. Dressing. 2024B\_U277 (2 nights, KPF); PI T. Carmichael. 2024B\_H331 (1.5 nights, KPF)

**Gemini North Telescope:** PI E. Turtelboom. 2024B-Q-123 (19.8 hours, MAROON-X)

**WIYN Telescope:** PI E. Turtelboom. 2024B-662476 (17.5 hours, NEID)

**NASA Infrared Telescope Facility:** PI: E. Turtelboom. 2023B048 (38.4 hours, SpeX)

**SMARTS 1.5-meter Telescope:** PI N. Vowell. 2024B-447397 (17.5 hours, CHIRON)

**Shane Telescope at Lick Observatory:** PI C. Dressing. 2018B\_S008, 2019A\_S018, 2019B\_S018, 2020A\_S015, 2020B\_S009, 2021A\_S020, 2021B\_S009, 2022A\_S014 (70 nights, ShaneAO/ShARCS NGS and LGS)

## SERVICE & LEADERSHIP

NASA Proposal Review Participant	2021 - present
Journal Referee: PASP, A&A, AAS Journals	2022 - present
UC Berkeley Astronomy Department Graduate Student Representative	2021 - 2023
Respect is Part of Research Workshop Astronomy Department Representative	2020 - 2022
Peer-led harassment and discrimination prevention workshop for new graduate students.	
Respect is Part of Research Workshop Discussion Facilitator	2018 - 2020

## TEACHING & MENTORING

Mentor, Caltech WAVE Fellows Program	Summer 2024
Architect and Instructor, PCC Python for Physics/Astro Workshop	Spring 2024
Guest Lecturer, UC Berkeley Astro 7A: Intro to Astrophysics	September 2022
Guest Lecturer, UC Berkeley Astro 9: Intro to Scientific Computing with Python	July 2022
Head Graduate Student Instructor, UC Berkeley Astro C162/C249: Planetary Astrophysics	Fall 2019
Mentor, UC Berkeley Compass Undergraduate Mentorship Program	Spring 2019
Head Graduate Student Instructor, UC Berkeley Astro 7B: Intro to Astrophysics	Spring 2019
Graduate Student Instructor, UC Berkeley Astro C12: The Planets	Spring 2018
Graduate Student Instructor, UC Berkeley Astro C10: Intro to General Astronomy	Fall 2017
Student, UC Berkeley Astro 375: Instruction Techniques in General Astronomy	Fall 2017

## OUTREACH

Guest Speaker, UC Berkeley Astronomy Night	August 2023
Guest Speaker, Science at Cal Midday Science Cafe	September 2022
Guest Speaker, Chabot Space & Science Center Galaxy Explorers Program	February 2020
Head Organizer and Host, UC Berkeley Astronomy Night	2019 - 2022
Monthly event consisting of a public lecture and a stargazing party on the top floor balcony of	

the UC Berkeley Astronomy Department with a 17-inch Cassegrain telescope. Events are regularly attended by 100+ members of the Berkeley community.

Lectures can be viewed at: [youtube.com/channel/UCI2z7hDra2RuAC8iPIQCS8w](https://youtube.com/channel/UCI2z7hDra2RuAC8iPIQCS8w).

Volunteer, UC Berkeley Astronomy Night

2017 - 2019

Volunteer Instructor, Splash at Berkeley

2017 - 2022

Annual event at which I gave a lecture titled “The Search for Habitable Exoplanets” for local high school students. More info at: [berkeley.learningu.org](https://berkeley.learningu.org).

## CONFERENCE & SEMINAR TALKS

IPAC Lunch Seminar, Caltech/IPAC	October 2024
Keck Science Conference, Caltech	September 2024
TESS Science Conference III, MIT	July 2024
Astrobiology Seminar, UC Riverside	January 2024
American Astronomical Society Meeting # 243, New Orleans LA	January 2024
22nd NSF-AST Fellow Symposium, New Orleans LA	January 2024
Exoplanet Lunch Seminar, UC Los Angeles	October 2023
Emerging Researchers in Exoplanetary Science Conference VIII, New Haven CT	June 2023
American Astronomical Society Meeting # 241, Seattle WA	January 2023
Dix Planetary Science Seminar, Caltech	November 2022
Special Seminar, Harvard CfA	October 2022
TESS Science Talk, MIT	October 2022
TESS Science Team Meeting #29, Virtual/MIT	October 2022
Exoplanet Journal Club, The University of Chicago	September 2022
Lunch Talk Seminar, UC Berkeley	September 2022
Lunch Talk Seminar, UC Berkeley	April 2022
CHAMPs Early Career Researcher Highlight Seminar, Virtual	January 2022
Bay Area Exoplanet Meeting #39, NASA Ames	December 2021
Exoplanet Science Institute Journal Club, Virtual/NASA JPL	August 2021
Bay Area Exoplanet Meeting #31, NASA Ames	December 2019
Center for Integrative Planetary Science Seminar, UC Berkeley	September 2019
Bay Area Exoplanet Meeting #28, NASA Ames	March 2019
Graduate Student – Postdoc Seminar, UC Berkeley	November 2018
Center for Integrative Planetary Science Seminar, UC Berkeley	December 2017
Nathan Sugarman Award Seminar, The University of Chicago	May 2017

## CONFERENCE POSTERS

Exoplanets V, Lieden NL	June 2024
Extreme Solar Systems V, Christchurch NZ	March 2024
ExSoCal, Caltech	December 2023
Exoplanets IV, Las Vegas NV	May 2022
Division of Planetary Science Meeting #53, Virtual	October 2021
TESS Science Conference II, Virtual	August 2021
Advanced School for Exoplanet Science III, Salerno IT	May 2019
Sagan Exoplanet Summer Workshop, Caltech	July 2018

## PUBLICATIONS

More than 90 peer-reviewed publications. Full and up-to-date list available on [NASA ADS](https://nasa.ads).

### Leading-Author Refereed Papers

- Gore, R., **Giacalone, S.**, et al. 2024, “Metallicities and Refined Stellar Parameters for 52 Cool Dwarfs with Transiting Planets and Planet Candidates,” ApJS, 271, 48  
DOI: [10.3847/1538-4365/ad2c0c](https://doi.org/10.3847/1538-4365/ad2c0c)
- Giacalone, S.**, et al. 2022, “HD 56414 b: A Warm Neptune Transiting an A-type Star,” ApJL, 935, L10  
DOI: [10.3847/2041-8213/ac80f4](https://doi.org/10.3847/2041-8213/ac80f4)
- Giacalone, S.**, et al. 2022, “Validation of 13 Hot and Potentially Terrestrial TESS Planets,” AJ, 163, 99  
DOI: [10.3847/1538-3881/ac4334](https://doi.org/10.3847/1538-3881/ac4334)

4. **Giacalone, S.**, et al. 2021, “Vetting of 384 TESS Objects of Interest with TRICERATOPS and Statistical Validation of 12 Planet Candidates,” AJ, 161, 24  
DOI: [10.3847/1538-3881/abc6af](https://doi.org/10.3847/1538-3881/abc6af)
3. **Giacalone, S.**, et al. 2019, “Dust Transport and Processing in Centrifugally Driven Protoplanetary Disk Winds,” ApJ, 882, 33  
DOI: [10.3847/1538-4357/ab311a](https://doi.org/10.3847/1538-4357/ab311a)
2. **Giacalone, S.**, Matsakos, T., & Königl, A. 2017, “A Test of the High-Eccentricity Migration Scenario for Close-In Planets,” AJ, 154, 192  
DOI: [10.3847/1538-3881/aa8c04](https://doi.org/10.3847/1538-3881/aa8c04)
1. Königl, A., **Giacalone, S.**, & Matsakos, T. 2017, “On the Origin of Dynamically Isolated Hot Earths,” ApJL, 846, L13  
DOI: [10.3847/2041-8213/aa861f](https://doi.org/10.3847/2041-8213/aa861f)

#### Software

1. **Giacalone, S.** & Dressing, C. D. 2020, “triceratops: Candidate exoplanet rating tool,” ASCL, ascl:2002.004  
GitHub: <https://github.com/stevengiacalone/triceratops>