

SHREYAS VISSAPRAGADA

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EDUCATION:

Ph.D., Planetary Science, California Institute of Technology	2017 – 2022
Advisor: Heather Knutson	
M.S., Planetary Science, California Institute of Technology	2017 – 2019
B.A. (<i>magna cum laude</i>), Astrophysics, Columbia University	2013 – 2017
Advisors: Catherine Walsh and Daniel Wolf Savin	

ACADEMIC EMPLOYMENT:

51 Pegasi b Fellow, Harvard University, Cambridge, MA	2022 – 2025
Graduate Research Fellow, California Institute of Technology, Pasadena, CA	2017 – 2022
Undergraduate Researcher, Columbia Astrophysics Laboratory, New York, NY	2014 – 2017
LEAPS Summer Student, Leiden, The Netherlands	2016
REU Student, Nevis Laboratories, Irvington, NY	2015

AWARDS AND HONORS:

51 Pegasi b Fellowship	2022 – 2025
NSF Graduate Research Fellowship	2019 – 2022
Paul & Daisy Soros Fellowship	2019 – 2021
Barry M. Goldwater Scholarship	2016 – 2017
USRA James B. Willett Educational Memorial Scholarship	2016 – 2017
James J. and Jovin C. Lombardo Scholarship	2013 – 2017
National Merit Scholarship	2013 – 2017

PUBLICATIONS: [First author: 5; second/third author: 9; *n*th author: 5; (*) indicates a student that I directly advised]

19. Q. Zhang et al., L. Kolokolova, & **S. Vissapragada** 2021, “Dust Evolution in the Coma of Distant, Inbound Comet C/2017 K2 (PANSTARRS),” *The Planetary Science Journal*, in review
18. I. Wong, A. Shporer, **S. Vissapragada** et al. 2022, “TESS Revisits WASP-12: Updated Orbital Decay Rate and Constraints on Atmospheric Variability,” *The Astronomical Journal*, in review (arXiv: 2201.08370)
17. **S. Vissapragada** et al. 2021, “The Maximum Mass-Loss Efficiency for a Photoionization-Driven Isothermal Parker Wind,” *The Astrophysical Journal*, 927, 96
16. L. Kaye, **S. Vissapragada** et al. 2021, “Transit Timings Variations in the three-planet system: TOI-270,” *Monthly Notices of the Royal Astronomical Society*, 510, 5464
15. L. dos Santos, A. Vidotto, **S. Vissapragada** et al. 2021, “p-winds: an open-source Python code to model planetary winds and upper atmospheres,” *Astronomy & Astrophysics*, 659, A62
14. I. Wong et al. (including **S. Vissapragada**) 2021, “TOI-2109b: An Ultra-Hot Gas Giant on a 16-Hour Orbit,” *The Astronomical Journal*, 162, 256
13. **S. Vissapragada** et al. 2021, “A Search for Planetary Metastable Helium Absorption in the V1298 Tau System,” *The Astronomical Journal*, 162, 222
12. Q. Zhang, Q. Ye, **S. Vissapragada** et al. 2021, “Preview of Comet C/2021 A1 (Leonard) and Its Encounter with Venus,” *The Astronomical Journal*, 162, 194
11. K. Paragas (*), **S. Vissapragada** et al. 2021, “Metastable Helium Reveals an Extended Atmosphere for the Gas Giant HAT-P-18b,” *The Astrophysical Journal Letters*, 909, L10
10. **S. Vissapragada** et al. 2020, “Constraints on Metastable Helium in the Atmospheres of WASP-69b and WASP-52b with Ultranarrowband Photometry,” *The Astronomical Journal*, 159, 278
9. A. Piro & **S. Vissapragada** 2020, “Exploring Whether Super-Puffs Can Be Explained as Ringed Exoplanets,” *The Astronomical Journal*, 159, 131

8. **S. Vissapragada** et al. 2020, “Diffuser-Assisted Infrared Transit Photometry for Four Dynamically Interacting *Kepler* Systems,” *The Astronomical Journal*, 159, 108
7. S. Yee et al. (including **S. Vissapragada**) 2020, “The Orbit of WASP-12b is Decaying,” *The Astrophysical Journal Letters*, 888, L5
6. S. Tinyanont et al. (including **S. Vissapragada**) 2019, “WIRC+Pol: A Low-Resolution Near-Infrared Spectropolarimeter,” *Publications of the Astronomical Society of the Pacific*, 131, 025001
5. C. Walsh, **S. Vissapragada**, & H. McGee 2018, “Methanol formation in TW Hya and future prospects for detecting larger complex molecules in disks with ALMA,” *Proceedings of the International Astronomical Union*, 332, 395
4. N. F. W. Ligterink et al. (including **S. Vissapragada**) 2018, “Methanol ice co-desorption as a mechanism to explain cold methanol in the gas phase,” *Astronomy & Astrophysics*, 612, A88.
3. D. W. Savin, R. Bhaskar (*), **S. Vissapragada**, & X. Urbain 2017, “On the Energetics of the $\text{HCO}^+ + \text{C} \rightarrow \text{CH}^+ + \text{CO}$ Reaction and Some Astrochemical Implications,” *The Astrophysical Journal*, 844, 154.
2. **S. Vissapragada** et al. 2016, “Recommended Thermal Rate Coefficients for the $\text{C} + \text{H}_3^+$ Reaction and Some Astrochemical Implications,” *The Astrophysical Journal*, 832, 31.
1. N. de Ruelle et al. (including **S. Vissapragada**) 2016, “Merged-beams Reaction Studies of $\text{O} + \text{H}_3^+$,” *The Astrophysical Journal*, 816, 31.

MENTORING:

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| Haedam Im, Irvine High School | 2020 - 2022 |
| Haedam is using a 1-m telescope to observe objects of interest from the TESS mission, with a goal of ruling out false positives. She was named a 2022 Regeneron STS scholar for her work. | |
| Kimberley Paragas, Wesleyan University (currently PhD student at Caltech) | 2020 - 2021 |
| Kim helped perfect our exoplanet atmospheric escape measurements at Palomar Observatory during the SURF program at Caltech. She implemented Hamiltonian Monte Carlo methods for analysis and determined a novel correction for water vapor contamination. Kim used these insights to discover the escaping atmosphere of the gas giant planet HAT-P-18b. | |
| Roshan Bhaskar, Columbia University (currently PhD student at Stanford University) | 2016 - 2017 |
| Roshan studied the impacts of removing the energetically-forbidden $\text{HCO}^+ + \text{C}$ reaction from astrochemical models of molecular clouds. He showed that recombination with electrons is the primary loss mechanism for HCO^+ . | |

TA POSITIONS:

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| Caltech Planetary Science Department: | 2019 - 2020 |
| Planet Formation and Evolution, Planetary Physics | |
| Columbia University Computer Science Department: | 2016 |
| Introduction to Computing (Python); Discrete Mathematics | |
| Columbia University Astronomy Department: | 2015 - 2016 |
| Earth, Moon, and Planets; Stars and Atoms; Life in the Universe; Stars, Galaxies, and Cosmology | |

SELECTED PRESENTATIONS:

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| Exoplanets Group Talk, NASA Jet Propulsion Laboratory (invited talk) | 2022 |
| Center for Exoplanets and Habitable Worlds Seminar, Pennsylvania State University (invited talk) | 2022 |
| Stars and Planet Formation Meeting, University of Michigan (invited talk) | 2021 |
| Astronomy Department Seminar, American Museum of Natural History (invited talk) | 2021 |
| Origins Seminar, University of Arizona (invited talk) | 2021 |
| Brown Bag Lunch Talk, Massachusetts Institute of Technology (invited talk) | 2021 |
| FLASH Talk, University of California Santa Cruz (invited talk) | 2021 |
| ELSI Seminar, Tokyo Institute of Technology (invited talk) | 2021 |
| Bromery Seminar, Johns Hopkins University (invited talk) | 2021 |
| Exoplanets and Stars Seminar, Yale University (invited talk) | 2021 |
| Astronomy Seminar, University of Connecticut (invited talk) | 2021 |
| Astronomy & Space Physics Seminar, University of Kansas (invited talk) | 2021 |

Exoplanet Seminar, University of Chicago (invited talk)	2021
Spring Symposium, STScI (poster)	2021
Lunch Talk, Indiana University (invited talk)	2021
FUTURE Ignited, Caltech (invited talk)	2020
ExSoCal, UC Riverside (contributed talk)	2020
Exoplanets III, Heidelberg (poster)	2020
Kepler & K2 Science Conference V, Glendale CA (poster)	2019
Tea Talk, Carnegie Observatories (invited talk)	2019, 2021
Dix Planetary Science Seminar, Caltech (talk)	2019, 2020, 2021
Greenway Talk, Palomar Observatory (talk)	2019, 2020, 2022
Astrobiology Graduate Conference, Virginia/Utah/Tokyo (talk)	2017, 2019, 2021

TELESCOPE TIME:

WIYN 3.5m Observatory: NEID (2.5 nights, PI)	2021 - present
Hale 200-inch Telescope (Palomar Observatory): WIRC (57 nights, PI and Co-I), PARVI (2 nights, PI), CHIMERA (3 nights, Co-I)	2018 - present
Las Cumbres Observatory (1-m network): Sinistro imagers (24 hrs, PI)	2020 - 2021
Atacama Large Millimeter/submillimeter Array, 1 hr (PI)	2018

SERVICE:

Skype a Scientist Volunteer Discussed various topics in planetary science with and answered questions from K-8 classrooms across the United States over Skype.	2018 - present
Caltech FUTURE and FUTURE Ignited Volunteer Helped optimize CVs and personal statements for undergraduate women interested in graduate school (FUTURE). Additionally lectured for students of color interested in graduate school (FUTURE Ignited).	2019 - 2022
Caltech Astronomy Department Outreach Volunteer Coordinated, participated in, and helped organize our Astronomy on Tap program (bringing astrophysics to a popular bar in Pasadena once a month); participated in multiple panels for our monthly lecture series, helped inaugurate our “Science Train” program (bringing astrophysics to public transit), and led solar telescope observations during Caltech’s “March for Science” event.	2018 - 2022
Astrobiology Graduate Conference Organizing Committee Fund-raised for the 2019 Utah and 2021 Tokyo conferences, coordinated the undergraduate flash talk competition, and reviewed conference abstracts. My primary goal was to ensure that students could attend these conferences free of financial hardship.	2018 - 2021
Caltech Dix Planetary Science Seminar Organizer Organized our department’s lecture series, including coordinating speakers, managing finances, and ensuring a smooth transition to a virtual lecture format during the COVID-19 pandemic.	2019 - 2020
Caltech Graduate Student Council Served as secretary, advocacy committee member, and diversity committee member. My primary goals were to ensure pay raises commensurate with rising rents, to ensure every graduate student was able to access affordable healthcare, and to ensure Caltech was taking active steps towards diversifying our graduate student body.	2018 - 2020
Caltech-PCC Connection Program Lectured for an astronomy course at Pasadena City College (our local community college).	2018