Shreyas Vissapragada

Center for Astrophysics | Harvard & Smithsonian, 60 Garden Street, MS-15, Cambridge, MA 02138, USA
shreyas.vissapragada@cfa.harvard.edu

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. (*magna cum laude*), Astrophysics, Columbia University	2013 – 2017
Advisors: Catherine Walsh and Daniel Wolf Savin	

Academic Employment:

51 Pegasi b Fellow, Harvard University, Cambridge, MA	2022 – current
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 – current
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: 7; second/third author: 10; nth author: 8; **(*)** indicates a student that I directly advised]

25. M. Greklek-McKeon, H. Knutson, **S. Vissapragada** et al. 2022, "Constraining the Densities of the Three Kepler-289 Planets with Transit Timing Variations," *The Astronomical Journal*, 165, 48

24. F. Dai et al. (including **S. Vissapragada**), "TOI-1136 is a Young, Coplanar, Aligned Planetary System in a Pristine Resonant Chain," *The Astronomical Journal*, 165, 33

23. **S. Vissapragada** et al. 2022, "The Possible Tidal Demise of Kepler's First Planetary System," *The Astrophysical Journal Letters*, 941, L31

22. J. J. Spake et al. (including **S. Vissapragada**), "Non-detection of He I in the Atmosphere of GJ 1214b with Keck/NIRSPEC, at a Time of Minimal Telluric Contamination," *The Astrophysical Journal Letters*, 939, L11

21. **S. Vissapragada** et al. 2022, "The Upper Edge of the Neptune Desert is Stable Against Photoevaporation," *The Astronomical Journal*, 164, 234

20. A. Boyle, J. Christiansen, **S. Vissapragada** et al. 2022, "An Updated Ephemeris for K2-138d," *Research Notices of the American Astronomical Society*, 6, 71

19. Q. Zhang et al. (including **S. Vissapragada**), 2022, "Dust Evolution in the Coma of Distant, Inbound Comet C/2017 K2 (PANSTARRS)," *The Planetary Science Journal*, 3, 135

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*, 163, 175

17. **S. Vissapragada** et al. 2022, "The Maximum Mass-Loss Efficiency for a Photoionization-Driven Isothermal Parker Wind," *The Astrophysical Journal*, 927, 96

16. L. Kaye, **S. Vissapragada** et al. 2022, "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. 2022, "`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 $HCO^+ + C \rightarrow CH^+ + CO$ Reaction and Some Astrochemical Implications," *The Astrophysical Journal*, 844, 154.

2. **S. Vissapragada** et al. 2016, "Recommended Thermal Rate Coefficients for the C + H_3^+ Reaction and Some Astrochemical Implications," *The Astrophysical Journal*, 832, 31.

1. N. de Ruette et al. (including **S. Vissapragada**) 2016, "Merged-beams Reaction Studies of O + H_3^+," *The Astrophysical Journal*, 816, 31.

Mentoring:

Kiki Sileshi, Cambridge Rindge and Latin School 2022 - 2023
Katerina Triantafyllou, Cambridge Rindge and Latin School 2022 - 2023
Mekeyas Mekuria, Cambridge Rindge and Latin School 2022 - 2023
Kiki, Kat, and Mekeyas are constructing a data reduction pipeline to search for Hα absorption in planetary atmospheres.

Haedam Im, Irvine High School (currently undergraduate student at MIT) 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 $HCO^+ + C$ reaction from astrochemical models of molecular clouds. He showed that recombination with electrons is the primary loss mechanism for HCO^+.

TA Positions:

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:

Exoplanets Group Talk, NASA Jet Propulsion Laboratory (invited talk)	2022
Center for Integrative Planetary Science Seminar, University of California Berkeley (invited talk)	2022
Astronomy Seminar, Carnegie Earth & Planets 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:

MMT Observatory: Hectochelle (4 nights, PI)	2023 - present
Magellan Telescopes: WINERED (2 nights, PI)	2023 - present
WIYN 3.5m Observatory: NEID (55 hrs, PI)	2021 - present
Hale 200-inch Telescope (Palomar Observatory):	2018 - present
WIRC ($>$ 60 nights, PI and Co-I), PARVI (2 nights, PI), CHIMERA (3 nights, Co-I)	
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 2018 - 2022
Discussed various topics in planetary science with and answered questions from K-8 classrooms across the United States over Skype.

Caltech FUTURE and FUTURE Ignited Volunteer 2019 - 2022
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).

Caltech Astronomy Department Outreach Volunteer 2018 - 2022
Coordinated, participated in, and helped organize our Astronomy on Tap program (bringing astrophsyics 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.

Astrobiology Graduate Conference Organizing Committee 2018 - 2021

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.

Caltech Dix Planetary Science Seminar Organizer 2019 - 2020

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.

Caltech Graduate Student Council 2018 - 2020

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.

Caltech-PCC Connection Program 2018

Lectured for an astronomy course at Pasadena City College (our local community college).