

Akash Gupta

CONTACT INFORMATION	Department of Earth, Planetary, and Space Sciences University of California, Los Angeles 595 Charles E. Young Drive East Los Angeles, CA 90095-1567	Email: akashgpt@ucla.edu Website: www.akashgpt.com
RESEARCH INTERESTS	Planet formation and evolution (extra-solar and solar); planet atmosphere-interior interactions; <i>ab-initio</i> simulations; celestial mechanics; <i>N</i> -body simulations; planetary habitability.	
EDUCATION	University of California, Los Angeles (UCLA) <i>Ph.D. in Planetary Science</i> [†] <i>Master of Science in Planetary Science</i> [†] Advisor: Prof. Hilke E. Schlichting Indian Institute of Technology (IIT), Kanpur <i>Bachelor's and Master's (Dual degree) in Aerospace Engineering</i> Advisors: Prof. Ishan Sharma and Dr. Sharvari Nadkarni-Ghosh	2017 - present 2019 2016
RESEARCH EXPERIENCE	NASA Future Investigator Graduate Student Researcher Advisor: Prof. Hilke E. Schlichting (2017-) and Prof. Lars Stixrude (2021-) <i>Department of Earth, Planetary, and Space Sciences (EPSS), UCLA</i> Research Assistant Advisor: Prof. Ishan Sharma <i>Mechanics & Applied Mathematics Group, IIT Kanpur</i> Summer Research Student Advisor: Prof. Heikki Salo <i>Astronomy Research Unit, Department of Physics, University of Oulu</i> Undergraduate Researcher Advisors: Prof. Ishan Sharma & Dr. Sharvari Nadkarni-Ghosh <i>Mechanics & Applied Mathematics Group and Dept. of Aerospace Engr., IIT Kanpur</i>	2020 - present 2017 - present 2016-17 Summer 2015 2013-16
SELECTED SCHOLASTIC ACHIEVEMENTS	Selected for the OWL Summer Exoplanet Program 2022 at UC Santa Cruz Travel grant from MIAPP [‡] to attend <i>Planet Formation</i> workshop 2022 in Germany <i>Harold and Mayla Sullwold Scholarship</i> by EPSS [§] , UCLA for excellence in research <i>Future Investigators in NASA Earth and Space Science and Technology (FINESST)</i> grant <i>Constantine and Perina Panunzio Scholarship</i> by EPSS, UCLA for excellence in research <i>UCLA's University Fellowship</i> for three Quarters <i>EPSS Department Scholarship Award, UCLA</i> Travel grant for research from IIT to work with Prof. Heikki Salo, U. of Oulu, Finland Secured 99.61 percentile among ~ 0.5 million candidates in the national exam IIT-JEE [¶]	2022 2022 2020 2020-23 2019 2017-19 2017 2015 2011
PUBLICATIONS	FIRST- AND SECOND-AUTHOR (total citations: 268, as of April 2022) 1. Gupta, A. and Schlichting, H. E. 2022. Under review. <i>MNRAS</i> . <i>Properties of the radius valley around low mass stars: Predictions from the core-powered mass-loss mechanism</i> 2. Rogers, J. G., Gupta, A. , Owen, J. E. and Schlichting, H. E. 2021. <i>MNRAS</i> , 508, 5886. <i>Photoevaporation Vs. core-powered mass-loss: Model comparison with the 3D radius gap</i>	
[†] formally, <i>Geophysics & Space Physics</i> [‡] Munich Institute of Astro- and Particle Physics [§] EPSS stands for Department of Earth, Planetary, and Space Sciences [¶] Indian Institute of Technology - Joint Entrance Examination		

3. **Gupta, A.** and Schlichting, H. E. 2021. *MNRAS*, 504, 4634.
Caught in the act: Core-powered mass-loss predictions for observing atmospheric escape
4. **Gupta, A.** and Schlichting, H. E. 2020. *MNRAS* 493, 792.
Signatures of the core-powered mass-loss mechanism in the exoplanet population: Dependence on stellar properties and observational predictions
5. **Gupta, A.** and Schlichting, H.E. 2019. *MNRAS* 487, 24.
Sculpting the valley in the radius distribution of small exoplanets as a by-product of planet formation: The core-powered mass-loss mechanism
6. **Gupta, A.**, Nadkarni-Ghosh, S. and Sharma, I. 2018. *Icarus* 299, 97.
Rings of non-spherical, axisymmetric bodies

OTHERS (total citations: 5, as of April 2022)

1. Owen, J. E., Murray-Clay, R. A., Schreyer, E., Schlichting, H. E., David, A., **Gupta, A.**, Loyd, R. O. P., Shkolnik, E. L., Sing, D. K., Swain, M. R., 2021., In review. arXiv:2111.06094
The fundamentals of Lyman-alpha exoplanet transits
2. Estrada, R. Swain, M., **Gupta, A.**, Sotin, C. and Valio, A.. *ApJ*. 898, 104.
Evolutionary tracks of H/He envelopes of the observed pop. of sub-Neptunes and super-Earths

SEMINARS	<i>Astronomy Seminar, Carnegie Earth & Planets Laboratory</i>	2021
	<i>Disks and Exoplanets Group Seminar, University of Arizona</i>	2020
	<i>Astronomy Seminar, McMaster University</i>	2020
	<i>Planetary Lunch Seminar, Massachusetts Institute of Technology</i>	2020
	<i>Planetary Science Seminar, UCLA</i>	2019, '18
CONFERENCES	<i>240th AAS Meeting, Pasadena, CA, US. Talk.</i>	2022
	<i>Exoplanets IV, Las Vegas, NV, US. Talk.</i>	2022
	<i>Stars and Planets in the Ultraviolet. Talk.</i>	2021
	<i>Exoplanet Demographics. Talk.</i>	2020
	<i>Exoplanets III. Talk.</i>	2020
	<i>Bay Area Exoplanet Meeting. Talk.</i>	2020
	<i>Extreme Solar Systems IV. Reykjavik, Iceland. Poster.</i>	2019
	<i>NASA Sagan Summer Workshop. Pasadena, CA, US. Poster.</i>	2019
	<i>New Horizons in Planetary Systems. Victoria, BC, Canada. Talk.</i>	2019
	<i>Kepler & K2 Science Conference V. Pasadena, CA, US. Poster.</i>	2019
OBSERVING PROGRAMS	<i>11th Annual EPSS Student Research Symposium, UCLA. Los Angeles, CA, US. Poster.</i>	2018
	<i>48th DPS Meeting and 11th EPSC. Pasadena, CA, US. Poster.</i>	2016
	<i>Gemini MAROON-X, 25.7 hrs, Co-I (PI: Erik Petigura)</i>	2022
	<i>Probing the Role of Mass Loss in the Formation of Super-Earths and Sub-Neptunes with MAROON-X</i>	
	<i>HST Cycle 28, 15 primary spacecraft orbits, Co-I (PI: Paul Cauley)</i>	2020
	<i>Measuring mass loss via metal lines from the very young planet AU Mic b.</i>	
OTHER MAJOR PROJECTS	<i>Asymmetry in Lunar 'cold-spot' craters; now led by Sophie Taylor (UCLA)</i>	2017 - present
	<i>Rings around irregularly shaped minor-planets; now led by Shri B. Bharath (IITK)</i>	2016 - present
	<i>Understanding the dynamics of Saturn's F-ring</i>	2015
	<i>Adaptively optimized trajectories for rendezvous with an asteroid</i>	2013-14
TECHNICAL SKILLS	<i>Programming languages: FORTRAN, C, MATLAB, Python, IDL, Shell Script.</i>	
	<i>Selected open-source codes used: VASP, REBOUND, MESA, emcee, dynesty.</i>	
TECHNICAL WORKSHOPS	<i>Planet Formation workshop by MIAPP** in Garching, Germany</i>	2022

**Munich Institute for Astro- and Particle Physics

	<i>Sagan Exoplanet Workshop: Astrobiology for Astronomers</i> by NExSci at Caltech	2019
	<i>Communicating Science Effectively in Today's World</i> by UCLA and EPSS	2019
	<i>XSEDE HPC Workshop: Summer Boot Camp</i> by XSEDE & PSC at UCLA	2018
	<i>High Performance Computing Workshop</i> by Intel at IIT Kanpur	2015
MENTORING, TEACHING, SERVICES AND OUTREACH	MENTORING (RESEARCH):	
	- Lorraine Nicholson, (UCLA undergraduate; currently UC LEADS scholar and joining U. Florida Ph.D. program as NSF GRFP fellow)	2020 - present
	Project: <i>Planet evolution under core-powered mass-loss around ultra-cool M-dwarfs</i>	
	- Sohanjit Ghosh (IITK undergraduate; currently Ph.D. student at U. Maryland) and	2017-18
	Project: <i>Understanding the dynamics of rings around non-spherical minor planets</i>	
	MENTORING (OTHER):	
	- Mentor, <i>EPSS Family Mentorship Program (EFMP)</i> , UCLA	2021 - present
	- Student Guide, <i>Counseling Service</i> , IIT Kanpur	2012-13
	TEACHING:	
	- Solar System and Planets (EPS SCI 9), UCLA	Winter 2019
	- Solar System and Planets (EPS SCI 9), UCLA	Winter 2018
	- Experiments in Aerospace Engineering III (AE451A), IIT Kanpur	Spring 2016
	- Experiments in Aerospace Engineering II (AE351A), IIT Kanpur	Fall 2015
	OTHER DIVERSITY, EQUITY & INCLUSION ACTIVITIES	
	- Founder & Organizing Committee Member, <i>EPSS Family Mentorship Program</i>	2021 - present
	- Department Representative, <i>Mathematics & Physical Sciences Council</i> , UCLA	2017-19
	- Departmental Undergraduate Committee, Aerospace Engr., IIT Kanpur	2012-13
	OTHER PROFESSIONAL SERVICES AND ACTIVITIES	
	- Referee: <i>Nature Astronomy</i> , <i>MNRAS</i> , <i>AAS</i> journals	2020 - present
	- Member, <i>American Astronomical Society</i> and <i>Division for Planetary Sciences</i>	2022 - present
	- Founder & Organizer, <i>Planets & Exoplanets Journal Club</i> , UCLA	2020 - 2022
	- Global Organizing Committee Member, <i>Exoplanets III</i> conference	2020
	- Founded and managed the <i>UCLA Planets & Exoplanets mailing list</i> for promoting inter-departmental communication at UCLA	2019 - 2022
	OTHER OUTREACH ACTIVITIES	
	- Invited speaker, <i>Planning for Graduate School</i> , IIT Bombay, India	2021
	- Invited speaker, Wildwood Institute for STEM Research and Development Poster Presentation and Lecture Series, Wildwood School, Los Angeles, CA	2019
	- Panelist, EPSS Graduate Student Panel, UCLA	2019
	- Volunteer, International Observe the Moon Night, UCLA	2019
	- Participant, <i>Exploring Your Universe</i> - UCLA's Annual Science Outreach Festival	2017-20
	- Panelist, Key to Success: Life and Physical Sciences. Grad Student Orientation, UCLA	2018
	- Executive, Society of Automotive Engineers (SAE) Chapter, IIT Kanpur	2012-13
	- Volunteer, Organizing Team, Undergraduate Orientation Program, IIT Kanpur	2012
OTHER MAJOR ACHIEVEMENTS	<p>'Sangeet Bhushan' (equiv. to Diploma in Music) in playing Harmonium, an Indian classical instrument, from <i>Pracheen Kala Kendra</i>, India; 9-10 years of training in playing the instrument.</p> <p>'Sangeet Bhushan/Visharad II' (equiv. to Diploma in Music) in playing Tabla, an Indian classical instrument, from <i>Pracheen Kala Kendra</i>, India; 6-7 years of training in playing the instrument.</p>	