

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	<i>Email:</i> akashgpt@ucla.edu <i>Website:</i> www.akashgpt.com
RESEARCH INTERESTS	Planet formation and evolution (extra-solar and solar); planet atmosphere-surface-interior interactions; planetary dynamics and celestial mechanics; <i>ab-initio</i> simulations; <i>N</i> -body simulations.	
EDUCATION	University of California, Los Angeles (UCLA) <i>Ph.D. in Planetary Science</i> [†] 2017 - present <i>Master of Science in Planetary Science</i> [†] 2019 Advisor: Prof. Hilke E. Schlichting Indian Institute of Technology (IIT), Kanpur <i>Bachelor's and Master's (Dual degree) in Aerospace Engineering</i> 2016 Advisors: Prof. Ishan Sharma and Dr. Sharvari Nadkarni-Ghosh	
RESEARCH EXPERIENCE	NASA Future Investigator 2020 - present Graduate Student Researcher 2017 - present Advisor: Prof. Hilke E. Schlichting (2017-) and Prof. Lars Stixrude (2021-) <i>Department of Earth, Planetary, and Space Sciences (EPSS), UCLA</i> Research Assistant 2016-17 Advisor: Prof. Ishan Sharma <i>Mechanics & Applied Mathematics Group, IIT Kanpur</i> Summer Research Student Summer 2015 Advisor: Prof. Heikki Salo <i>Astronomy Research Unit, Department of Physics, University of Oulu</i> Undergraduate Researcher 2013-16 Advisors: Prof. Ishan Sharma & Dr. Sharvari Nadkarni-Ghosh <i>Mechanics & Applied Mathematics Group and Dept. of Aerospace Engr., IIT Kanpur</i>	
SELECTED SCHOLASTIC ACHIEVEMENTS	Selected for the OWL Summer Exoplanet Program 2022 at UC Santa Cruz 2022 Travel grant from MIAPP [‡] to attend <i>Planet Formation</i> workshop 2022 in Germany 2022 <i>Harold and Mayla Sullwold Scholarship</i> by EPSS [§] , UCLA for excellence in research 2020 <i>Future Investigators in NASA Earth and Space Science and Technology (FINESST)</i> grant 2020-23 <i>Constantine and Perina Panunzio Scholarship</i> by EPSS, UCLA for excellence in research 2019 <i>UCLA's University Fellowship</i> for three Quarters 2017-19 <i>EPSS Department Scholarship Award, UCLA</i> 2017 Travel grant for research from IIT to work with Prof. Heikki Salo, U. of Oulu, Finland 2015 Secured 99.61 percentile among ~ 0.5 million candidates in the national exam IIT-JEE [¶] 2011	
PUBLICATIONS	FIRST- AND SECOND-AUTHOR (total citations: 268, as of April 2022) 1. Gupta, A. and Schlichting, H. E. 2022. <i>In prep.</i> <i>Predicting the fate of the radius valley around low mass stars</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> 3. Gupta, A. and Schlichting, H. E. 2021. <i>MNRAS</i> , 504, 4634. <i>Caught in the act: Core-powered mass-loss predictions for observing atmospheric escape</i>	

[†]formally, *Geophysics & Space Physics*

[‡]Munich Institute of Astro- and Particle Physics

[§]EPSS stands for Department of Earth, Planetary, and Space Sciences

[¶]Indian Institute of Technology - Joint Entrance Examination

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>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
	<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
OBSERVING PROGRAMS	Gemini MAROON-X, 25.7 hrs, Co-I (PI: Erik Petigura)	2022
	<i>Probing the Role of Mass Loss in the Formation of Super-Earths and Sub-Neptunes with MAROON-X</i>	
	HST Cycle 28, 15 primary spacecraft orbits, Co-I (PI: Paul Cauley)	2020
	<i>Measuring mass loss via metal lines from the very young planet AU Mic b.</i>	
OTHER MAJOR PROJECTS	Asymmetry in Lunar 'cold-spot' craters; now led by Sophie Taylor (UCLA)	2017 - present
	Rings around irregularly shaped minor-planets; now led by Shri B. Bharath (IITK)	2016 - present
	Understanding the dynamics of Saturn's F-ring	2015
	Adaptively optimized trajectories for rendezvous with an asteroid	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
	<i>Sagan Exoplanet Workshop: Astrobiology for Astronomers by NExSci at Caltech</i>	2019
	<i>Communicating Science Effectively in Today's World by UCLA and EPSS</i>	2019
	<i>XSEDE HPC Workshop: Summer Boot Camp by XSEDE & PSC at UCLA</i>	2018

**Munich Institute for Astro- and Particle Physics

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: *Planet evolution under core-powered mass-loss around ultra-cool M-dwarfs*
- Sohanjit Ghosh (IITK undergraduate; currently Ph.D. student at U. Maryland) and 2017-18
Project: *Understanding the dynamics of rings around non-spherical minor planets*

MENTORING (OTHER):

- Mentor, *EPSS Family Mentorship Program (EFMP)*, UCLA 2021 - present
- Student Guide, *Counseling Service*, 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, *EPSS Family Mentorship Program* 2021 - present
- Department Representative, *Mathematics & Physical Sciences Council*, UCLA 2017-19
- Departmental Undergraduate Committee, Aerospace Engr., IIT Kanpur 2012-13

OTHER PROFESSIONAL SERVICES AND ACTIVITIES

- Referee: *Nature Astronomy*, *MNRAS*, *AAS journals* 2020 - present
- Member, *American Astronomical Society* and *Division for Planetary Sciences* 2022 - present
- Founder & Organizer, *Planets & Exoplanets Journal Club*, UCLA 2020 - 2022
- Global Organizing Committee Member, *Exoplanets III* conference 2020
- Founded and managed the *UCLA Planets & Exoplanets mailing list* for promoting inter-departmental communication at UCLA 2019 - 2022

OTHER OUTREACH ACTIVITIES

- Invited speaker, *Planning for Graduate School*, 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, *Exploring Your Universe* - 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

'Sangeet Bhushan' (equiv. to Diploma in Music) in playing Harmonium, an Indian classical instrument, from *Pracheen Kala Kendra*, India; 9-10 years of training in playing the instrument.

'Sangeet Bhushan/Visharad II' (equiv. to Diploma in Music) in playing Tabla, an Indian classical instrument, from *Pracheen Kala Kendra*, India; 6-7 years of training in playing the instrument.