

# Kaustub P Anand

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## RESEARCHER BIO

I am a PhD candidate at Purdue University with research interests in solar system dynamics, especially planetary rings and moons, comets, and small bodies. I have experience with numerical simulations and observations in Planetary Sciences and Astronomy.

## TECHNICAL SKILLS

**Coding** : Python, FORTRAN, NetCDF, HDF5, SHTools, Java, IDL,  $\LaTeX$ , SAOImage DS9, C, C++, Matlab, IRAF  
**Pertinent Course-work**: Computational Physics Lab, Solar System Astronomy, Numerical Modelling of Orbital Dynamics, Quantum Mechanics 1 & 2, Observational Astronomy Techniques, Stellar Evolution, General Relativity  
**Languages** : English, Hindi, French  
**Telescopes Used** : DECCam

## RELEVANT RESEARCH EXPERIENCE

**Evolving the Martian ring under the Yarkovsky-Schach effect** Feb 2026 – Present  
*Advisors: Dr. David A. Minton and Dr. Matija Ćuk*  
**Modelling the sesquinary catastrophe of Deimos to constrain the history of the Martian moons** Jan 2024 – Jan 2026  
*Advisors: Dr. David A. Minton and Dr. Matija Ćuk*  
**Ejected Surface Regolith as a Potential Source Material for rings around ellipsoidal Centaurs** Aug 2022 – Present  
*Advisors: Dr. David A. Minton and Dr. Julie Brisset*  
**Code development for the N-body integrator Swiftest: gravitational harmonics, collisional fragmentation, Yarkovsky, Yarkovsky-Schach effect, and radiation forces** Aug 2022 - Present  
*Advisor: Dr. David A. Minton*  
**Dust-obscured Galaxy Clusters in far-IR & Protoclusters in Simulation** May 2019 – May 2022  
*Advisors: Dr. Kyoung-Soo Lee and Dr. Maria Celeste Artale*

## EDUCATION

**Purdue University** Aug 2017 – May 2021  
*Bachelor of Science in Physics Honors.*  
Minors in Astronomy and Math; Graduated with Distinction.  
Cum. GPA: 3.92/4.00; Major GPA: 3.96/4.00  
**Purdue University** Aug 2021 – Present  
*Doctor of Philosophy (PhD) in Physics.*  
GPA: 3.60/4.00

## SELECTED RESEARCH PAPERS

**Ejected Surface Regolith as a Potential Source Material for Centaur Rings** doi:10.3847/PSJ/ae7724  
*Kaustub P. Anand, David A. Minton, Julie Brisset*  
**The Sesquinary Catastrophe on Deimos Can Reconcile Its Excited Past with Its Dynamically Cool Present** doi:10.3847/PSJ/ae2fba  
*Kaustub P. Anand, Matija Ćuk, David A. Minton*  
**Two Possible Orbital Histories of Phobos** doi:10.3847/PSJ/adc1ba  
*Matija Ćuk, Kaustub P. Anand, David A. Minton*  
**Galaxy populations in protoclusters at cosmic noon** doi:10.1051/0004-6361/202452628  
*Moira Andrews, M. Celeste Artale, Ankit Kumar, Kyoung-Soo Lee, Tess Florek, Kaustub P. Anand, et al.*  
**Swiftest: An N-body Integrator for Gravitational Systems** doi:10.21105/joss.05409  
*Carlisle Wishard, Jennifer Pouplin, Jacob Elliott, Dana Singh, Kaustub P. Anand, David A. Minton*

## SELECTED CONFERENCES PRESENTATIONS

**AAS Division on Dynamical Astronomy (DDA)** 2024, 2025  
**Division of Planetary Sciences-Europlanet Science Congress (DPS-EPSC)** 2023, 2025  
**AAS Division of Planetary Sciences (DPS)** 2024  
**Gordon Research Seminar & Conference** 2025  
**NOIRLab: The Solar System in Context** 2025