

Tuhin Ghosh

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Institute of Astronomy
University of Cambridge
Madingley Road
Cambridge, CB3 0HA

tg536@cam.ac.uk
Orcid: [0000-0002-3103-2000](https://orcid.org/0000-0002-3103-2000)
[NASA/ADS Publication List](#)
Website: tuhin-ghosh.github.io

EXPERIENCE

Research Associate 2024–Present
Institute of Astronomy, University of Cambridge, UK
– Investigating evolution of giant impact debris and its role in atmospheric erosion of terrestrial planets (with Prof. Mark Wyatt & Prof. Oliver Shorttle).

EDUCATION

Ph.D. in Astrophysics (Advisor: Prof. Sourav Chatterjee) 2024
Tata Institute of Fundamental Research (TIFR), Mumbai, India
M.Sc. in Physics 2018
University of Calcutta, Kolkata, India
B.Sc. in Physics (Honours) 2016
Ramakrishna Mission Vivekananda Centenary College, West Bengal, India

RESEARCH INTERESTS

Exoplanets, Planet Formation, Long-term Evolution & Stability of Planetary Systems, Giant Impacts, Giant Impact Debris, Atmospheric Erosion from Giant Impacts and Debris, Debris Disks

FIRST AUTHOR PUBLICATIONS

4. **Ghosh, T.**, Wyatt, M. C., & Shorttle, O. 2025, Re-accretion of Giant Impact Ejecta Can Drive Significant Atmospheric Erosion on Terrestrial Planets. *Monthly Notices of Royal Astronomical Society*, 544, 2120 (2025); [arXiv:2509.22785](https://arxiv.org/abs/2509.22785)
3. **Ghosh, T.**, Chatterjee, S., & Lombardi, Jr., J. C. 2024, Outcomes of Sub-Neptune Collisions. *The Astronomical Journal*, 168, 238; [arXiv:2312.07648](https://arxiv.org/abs/2312.07648)
2. **Ghosh, T.** & Chatterjee, S. 2023, Orbital Architectures of Kepler Multis From Dynamical Instabilities. *Monthly Notices of the Royal Astronomical Society*, 527, 79; [arXiv:2304.12352](https://arxiv.org/abs/2304.12352)
1. **Ghosh, T.** & Chatterjee, S. 2023, Effects of Planetesimal Scattering: Explaining the Observed Offsets from Period Ratios 3:2 and 2:1. *The Astrophysical Journal*, 943, 8; [arXiv:2209.05138](https://arxiv.org/abs/2209.05138)

TECHNICAL SKILLS

Programming Languages: Python, C, Fortran, Mathematica
Scientific Software: [Rebound](#) (N-body), [StarSmasher](#) (SPH), [MESA](#) (Stellar Evolution), [WOMA](#) (Planet Structure), [emcee](#) (MCMC), [diskcoll](#) (Debris Evolution)

TEACHING & SUPERVISING EXPERIENCE

Master's Project Supervisor: Evolution of Optically Thick Giant Impact Debris, Part-III, University of Cambridge 2024–2025

Examples Class Instructor: Planetary System Dynamics (Course Instructor: Prof. Mark Wyatt), Part-III, University of Cambridge Michaelmas-2024, 2025

Teaching Assistant: Astronomy & Astrophysics I (Course Instructor: Prof. Sourav Chatterjee), TIFR Graduate School Autumn-2021

Teaching Assistant: Astronomy & Astrophysics II (Instructors: Prof. Bhaswati Mookerjee & Prof. Sudip Bhattacharyya), TIFR Graduate School Spring-2020

AWARDS & FELLOWSHIPS

Best Thesis in Physics, Tata Institute of Fundamental Research, India 2024
CSIR-UGC NET-JRF (Junior Research Fellowship), All India Rank: 40 2018
CSIR-UGC NET-LS (Eligibility for Lectureship), All India Rank: 43 2017
Gold Medalist for securing the highest marks in B.Sc.(Hons.) 2016

SERVICE TO COMMUNITY

Journal Referee for The Astronomical Journal
Organizer in LCLU Annual Science Day 2025
Volunteer for Frontiers of Science, TIFR 2018-2023
LOC member in MODEST-20 Conference 2020

SELECTED TALKS

“Giant Impact Ejecta Driving Enhanced Atmospheric Loss,” *Talk*, Smashing It: How Impacts Forge Formation, Dynamics, and Climates of (Exo)Planets, University of Leeds, UK June 2025

“Orbital Architectures of Kepler Multis From Planet-Planet Scattering,” *Contributed Talk*, Strange New Worlds Conference, IISER Pune, India August 2023

“Orbital Architectures of Kepler Multis From Planet-Planet Scattering,” *Contributed Talk*, Asia-Pacific Regional IAU Meeting (APRIM), Koriyama, Japan August 2023

“Sculpting Planetary Systems via Planet-Planet Scattering & Collisions,” *Seminar*, Max Planck Institute for Astronomy, Heidelberg, Germany July 2023

“Dynamical Instabilities and the Orbits of Kepler’s Multis,” *Contributed Talk*, Complex Planetary Systems II Kavli-IAU Symposium, Namur, Belgium July 2023

“Dynamical Instabilities in Multi-Planet Systems,” *Contributed Talk*, 41st Annual Meeting of the Astronomical Society of India, IIT Indore March 2023

“Effects of Planetesimal Scattering on Near-Resonant Planet Pairs,” *Contributed Talk*, 38th Annual Meeting of the Astronomical Society of India February 2020

REFERENCES

Prof. Sourav Chatterjee (Ph.D. Advisor)
Dept. of Astronomy & Astrophysics, Tata Institute of Fundamental Research, India
souravchatterjee.tifr@gmail.com

Prof. Oliver Shorttle (Postdoc Supervisor)
Institute of Astronomy & Dept. of Earth Sciences, University of Cambridge, UK
os258@cam.ac.uk

Prof. Mark Wyatt (Postdoc Supervisor)
Institute of Astronomy, University of Cambridge, UK
wyatt@ast.cam.ac.uk