

PRACHI KAR

PhD Candidate | Geological Sciences

CONTACT INFO

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RESEARCH INTEREST

Geodynamics and planetary habitability; Deep Earth structures and dynamics; Evolution of planetary interiors and its coupling with surface processes

EDUCATION

PhD in Geological Sciences	Arizona State University	2022 - present
Advisor: Dr. Mingming Li		
MSc in Applied Geology	Jadavpur University, India	2020 - 2022
BSc in Geological Sciences	Jadavpur University, India	2017 - 2020

PROFESSIONAL EXPERIENCE

Graduate Teaching Associate, Arizona State University	2025 - present
Graduate Research Associate, Arizona State University	2022 - 2024

PRIZES, AWARDS, AND GRANTS

Travel support for the Interior of the Earth: Gordon Research Conference (GRC)	June. 2025
Arizona State University Graduate Student Government (GSG) Travel Grant	April. 2025
School of Earth and Space Exploration (SESE) Exploration Graduate (SEG) Award	Jan. 2025
Travel support for the 2024 Ada Lovelace Workshop	Sept. 2024
Travel Scholarship to the 2023 GAGE/SAGE Community Science Workshop	April. 2023
DST INSPIRE Scholarship For Higher Education, Govt. of India	2017 – 2022
Dharam Hinduja Merit cum Means Scholarship, Hinduja Foundation	2015 – 2017

PEER-REVIEWED PUBLICATIONS

- Kar, P., & Li, M. (2025). Long-term survival of large low velocity provinces (LLVPs) due to internal layering. Physics of the Earth and Planetary Interiors, 107452. <https://doi.org/10.1016/j.pepi.2025.107452>

CONFERENCE ABSTRACTS

- Kar, P., & Li, M. (2026). Hemispheric Thermal Dichotomy in the Lunar Mantle (No. EGU26-860). Copernicus Meetings.
- Kar, P., & Li, M. (2024, September). Prolonged Survival of Large Low Velocity Provinces: Internal Stratification is the Key; ALWS, 2024.
- Kar, P., & Li, M. (2023, December). Long-term Survival of LLVPs due to Internal Layering. In AGU Fall Meeting Abstracts (Vol. 2023, No. 38, pp. D113B-0038).

RESEARCH EXPERIENCE

- **Graduate Research Associate at Arizona State University** 2022 - present
 - Long-term survival of Large Low Velocity Provinces in Earth's lower mantle
 - Role of lighter materials released from Earth's core in shaping mantle dynamics
 - Hemispheric Thermal Dichotomy in the Lunar Mantle
 Advisor: Dr. Mingming Li, Arizona State University
- **Coupled storage for hydrogen and nitrogen in coesite in Earth's mantle** 2022 - 2024
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 Advisor: Prof. S. -H. Dan Shim, Arizona State University
- **Graduate Research Student at Jadavpur University** 2021 - 2022
 - Effects of thermal heterogeneities on convection instabilities in Earth's mantle
 Advisor: Prof. Nibir Mandal, Jadavpur University
- **Summer Research Trainee at Indian Statistical Institute** 2020
 - Study of mafic dyke swarm, Bundelkhand craton, India: Implications in understanding regional tectonics
 Advisor: Dr. Tridib Kumar Mondal, Indian Statistical Institute
- **Undergraduate Non-thesis Project at Jadavpur University** 2019 - 2020
 - Application of topology and graph theory in analysis of fracture network
 Advisor: Dr. Tridib Kumar Mondal, Indian Statistical Institute

TEACHING

Intro to Geology 1 (Spring 2026), Intro to Geology 1: Laboratory (Spring 2026, Fall 2025)

OUTREACH

- Co-chair of Arizona Collaborative Consortium for Earth and Space Science (ACCESS) 2024 - present
- Co-chair of Geophysics Cookie Hour at SESE, ASU 2024 - 2025
- Science communication with school students from Viqarunnisa Noon School & College, Dhaka, Bangladesh 2023
- Blogger & Illustrator at European Geosciences Union - Geodynamics Division 2022 - present
- President at Society of Exploration Geophysicists, Jadavpur University Student Chapter 2021 - 2022
- Secretary at Society of Exploration Geophysicists, Jadavpur University Student Chapter 2020 - 2021
- Convener of World Environment Day - 2020, Jadavpur University Student June 2020

SKILLS

Numerical Modelling	Citcom2D, CitcomS
Programming	C, Python, Shell Scripting, Generic Mapping Tool (GMT)
Software	Comsol Multiphysics, Origin, Adobe Illustrator, Adobe Animate, Corel Draw
Experimental	Multi-anvil Press

MEMBERSHIP

American Geophysical Union, Geological Society of America, European Geosciences Union

REFERENCES

- Dr. Mingming Li, Arizona State University (PhD advisor) Mingming.Li@asu.edu
- Prof. Edward Garnero, Arizona State University (PhD Committee Member) garnero@asu.edu
- Prof. Sang-Heon Shim, Arizona State University (PhD Committee Member) shdshim@asu.edu