

NAMYA BAIJAL

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EDUCATION

University of Arizona, USA

Ph.D. Student, Planetary Science; Minor: Geosciences

August 2022- Fall 2027 (expected)

Imperial College London, UK

Integrated Bachelors and Master's of Science (MSci): Geophysics;
Grade: **First Class Honours**

Sept 2018 - June 2022

RELEVANT RESEARCH EXPERIENCE

Graduate Student Collaborator, NASA Psyche Mission

August 2023- Present

Graduate Research Assistant, Advisor: Dr Erik Asphaug

Lunar and Planetary Laboratory, University of Arizona

August 2022 -Present

- 2D and 3D Numerical modeling of basin-scale impacts on large asteroids using iSALE, SPHLATCH, and Bern SPH hydrocodes.
- Quantitative analysis of stress wave propagation, and crater formation for (16) Psyche
- High-pressure-temperature piston-cylinder experiments to assess geochemical evolution of core-mantle boundary materials during planet-forming impacts.

Numerical Simulations of the South Pole-Aitken (SPA) Basin

Sept 2021 - June 2022

MSci Thesis Advisors: Prof. Gareth Collins, Dr Thomas Davison

Dept. of Earth Science and Engineering, Imperial College London

- Performed numerical simulations using iSALE3D hydrocode to model the formation of the SPA basin.
- Modeled the ballistic trajectories of impact ejecta to constrain the fate of the iron impactor, distribution of ejected crust and upper mantle, and the effect of the Moon's thermal state on the impact.

Undergraduate Research Assistant, Advisor: Prof. Gareth Collins

July 2020 - Aug 2020

Dept. of Earth Science and Engineering, Imperial College London

- Simulated complex lunar crater formation in iSALE2D with varying acoustic fluidization parameters.

RELEVANT CONFERENCE ABSTRACTS AND PRESENTATIONS

- C. Bill, T. Davison, G. Collins, N. Baijal, et al., (2024): *Constraining Impact Parameters for the South Pole-Aitken Basin*, 55th LPSC, Woodlands, TX.
- N. Baijal et. al., (2024): *Effect of Asteroid Shape on Basin-scale Collisions: Implications for (16) Psyche*, 55th LPSC, Woodlands, TX.
- Z. Purdie, N. Baijal, et. al., (2024): *Applying Laboratory Studies to 3D Modelling Results of Thermodynamic Evolution During Planet-forming Collisions*, 55th LPSC, Woodlands, TX.
- N. Baijal et. al., (2023): *Seismic Transmission Through Asteroid Interiors: Insights from Impact Models*, Asteroids, Comets, and Meteorites Conference (ACM), Flagstaff, AZ.
- N. Baijal et. al., (2023): *Porosity and Collisional Seismology of Asteroid Interiors*, 54th LPSC, Woodlands TX.
- T.M. Davison, N. Baijal, and G.S Collins (2022): *High-Resolution Oblique Impact Simulations of the Formation of the South Pole-Aitken Basin*. LPSC 2023, Woodlands TX.
- T.M. Davison, N. Baijal, and G.S Collins (2022): *High-Resolution Oblique Impact Simulations of the Formation of the South Pole-Aitken Basin*, Meteoritics and Planetary Science 57, Scotland UK.

INVITED PRESENTATIONS

- **Massachusetts Institute of Technology** - Cambridge, MA *October 2023*
Collisional Modelling of Asteroids: Implications for (16) Psyche and Other Large Asteroids

AWARDS, HONOURS, AND SCHOLARSHIPS

Shirley D. Curson Travel Award	<i>April 2024</i>
Galileo Circle Scholarship Award	<i>April 2024</i>
Associateship of the Royal School of Mines	<i>July 2022</i>
Imperial College Bursary Award	<i>June 2020</i>

TEACHING AND MENTORING EXPERIENCE

Undergraduate Advisee: Zach Purdie *August 2023- Present*
Lunar and Planetary Laboratory, University of Arizona

Mentor for Year 1 Students *Oct 2021 - June 2022*
Dept. of Earth Science and Engineering, Imperial College London

- Prepared lessons on reading scientific papers, tips to excel in exams, and tools to succeed in a professional career.

Teaching Assistant:
Maths Methods 1, Physical and Surface Processes *Oct 2021 - June 2022*
Dept. of Earth Science and Engineering, Imperial College London

OUTREACH AND EXTRACURRICULAR ACHIEVEMENTS

LPL Graduate Student Colloquium Coordinator *April 2024- Present*
● Organize graduate student colloquium days during the semester and chair sessions.

The Art of Planetary Science (TAPS) Team Member *April 2024- Present*
Advertising Lead

- Create engaging content to advertise the TAPS show across social media platforms, held at the Lunar and Planetary Laboratory, Tucson each year.

Lunar and Planetary Laboratory Conference Organizing Member *April 2023- Present*
● Organize the annual departmental conference held at the Lunar and Planetary Laboratory including selection of invited speakers.

Outreach Day: Oro Valley Innovation Academy, Tucson, AZ *April 2023*
● Volunteer program to teach 2nd graders about concepts of Astronomy, lunar phases, and the apparent motion of stars and other objects in the night sky

Member of ESE EDIC *October 2020- October 2022*
Equality, Diversity, Inclusion, and Culture Committee
Dept. of Earth Science and Engineering, Imperial College London

Royal School of Mines Geophysics Society Member *October 2018- October 2022*

TECHNOLOGICAL SKILLS AND LANGUAGES

Specialized Software: iSALE2D, iSALE3D, Bern SPH, SPHLATCH, Seismic Analysis Code (SAC), PuffinPlot, Petrel, SBMT.

Programming Languages: Python (Pandas, NumPy, Matplotlib, Seaborn, SciPy, Scikit-Learn), Linux (UNIX), LaTeX.

Mapping/ Map-making Software: ArcGIS, CartoPy, Generic Mapping Tools (GMT), Inkscape, GIMP