NAMYA BAIJAL
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EDUCATION

University of Arizona, USA *August 2022- Fall 2027 (expected)*
Ph.D. Student, Planetary Science; Minor: Geosciences

Imperial College London, UK *Sept 2018 - June 2022*
Integrated Bachelors and Master's of Science (MSci): Geophysics;
Grade: **First Class Honours**

RELEVANT RESEARCH EXPERIENCE

Graduate Research Assistant, Advisor: Dr Erik Asphaug *August 2022 -Present*
Lunar and Planetary Laboratory, University of Arizona
- 2D and 3D Numerical modelling of basin-scale impacts on large asteroids using iSALE, SPHLATCH, and Bern SPH hydrocodes.
- Quantitative analysis of stress wave propagation, and thermodynamic evolution post impact.
- High-pressure-temperature piston-cylinder experiments followed by SEM analysis on serpentine samples as a proxy for core-mantle boundary geochemical evolution during planet-forming impacts.

Numerical Simulations of the South Pole-Aitken (SPA) Basin *Sept 2021 - June 2022*
MSci Thesis Supervisors: 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.
- Modelled 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, Supervisor: 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 fluidisation parameters.

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

Associateship of the Royal School of Mines *July 2022*
Imperial College Bursary Award *June 2020*

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

Lunar and Planetary Laboratory Conference Organizing Member *April 2023*- Present

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 (Equality, Diversity, Inclusion, and Culture Committee) *2020 -2022*
Dept. of Earth Science and Engineering, Imperial College London

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.