Rama Subramanian V

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Interest

My primary research interest is in understanding the planetary surface processes. I am always eager to implement new scientific ideas in numerical modeling of planetary surface and leveraging my technical skills to solve the associated challenges. I aim to make the most of the opportunity to contribute to groundbreaking research and further develop my expertise in Planetary Science. I am open to engaging in field and laboratory research, as I believe hands-on expedition and experimentation are critical for conducting geological research.

Research Experience

- **Physical Research Laboratory [i]** — *March 2024 - Present*
  Research Intern, Supervisor: Prof. S Vijayan — Ahmedabad, India
  1. Possible evidence for seismically triggered recent boulder falls on Cerberus Fossae, Mars (***Under-preparation***)
  2. Schomberger A crater, a fresh impact crater on South Pole of Moon (***Ongoing***)
  3. Numerical modeling of the formation of LCROSS crater in Cabeus crater PSR (***Ongoing***)
  4. Evidence for ice transport and loss in Moon Permanently shadowed region by impacts (***Under-preparation***)
  5. Chandrayaan-3 landing site evolution by South Pole-Aitken basin and other impact craters (***Published***)

- **Indian Institute of Astrophysics [i]** — *Jan 2023 - June 2023*
  Master Thesis, Supervisor: Prof. G. C. Anupama and Prof. D. K. Sahu — Bangalore, India
  ◦ Probing The Optical Nature of Type Iax Supernovae

- **Amrita Vishwa Vidyapeetham [i]** — *Jan 2022 - May 2022*
  Mini - Project, Supervisor: Dr. M. Dharani — Coimbatore, India
  ◦ Astrometric Analysis of M67 & M4 Clusters using GAIA EDR3

Education

- **PG Diploma in Space and Atmospheric Science** — *Sep 2023 - May 2024*
  *Physical Research Laboratory, (CGPA: **8.775 / 10**)* — Ahmedabad, India
- **M.Sc Physics** — *Aug 2021 - Aug 2023*
  *Amrita Vishwa Vidyapeetham, (CGPA: **7.25 / 10**)* — Coimbatore, India
- **B.Sc Physics** — *July 2018 - Apr 2021*
  *Guru Nanak College, (CGPA: **8.87 / 10**)* — Chennai, India
- **Higher Secondary School** — *June 2016 - Apr 2018*
  *Modern Senior Secondary School, (CGPA: **8.74 / 10**)* — Chennai, India

Publications

P=Publication, A=Accepted

[P.1] S. Vijayan, K.B. Kimi, Anil Chavan, R. Aditi, U. Thahira, **V. Rama Subramanian**, Rishitosh K. Sinha, Amitabh, Santosh Vadawale, M. Shanmugam, N.P.S. Mithun, Arpit R. Patel, S. Amit Basu, K.V. Iyer, K. Suresh, Ajay Prashar, G. Rima, Anil Bhardwaj. **Chandrayaan-3 landing site evolution by South Pole-Aitken basin and other impact craters**, *Icarus*, 425 (Sep. 2024), p.116329. doi: 10.1016/j.icarus.2024.116329.

Under Preparation

[1] S. Vijayan, **Rama Subramanian V**, Harish., Nehavarthini M, Kimi K.B., Thahira U, Aditi R, Rishav Sahoo, et al. **Evidence for ice transport and loss in Moon Permanently shadowed region by impacts**.

[2] S. Vijayan, Bivas Das, Tuhi S, FNU harish, Kimi K.B., Anil Chavan, Sharini K.S., Thahira U, Aditi R, Rishav Sahoo, **Rama Subramanian**, Sandeep A, Anil Bhardwaj. **Possible evidence for seismically triggered recent boulder falls on Cerberus Fossae, Mars**, *Icarus*, (Nov. 6th 2024).

Media/ Press Release

- **Chandrayaan-3: Pragyan rover discovers ancient 160-km-wide crater on the Moon Surface [i]** — *22nd Sep 2024*
  Media Channel
  ◦ The Hindu , India Today , Times Now , Hindustan Times , ISRO

Conference Abstracts

[1] **Rama Subramanian V**, Rishav Sahoo, Bivas Das, Nehavarthini M, Kimi K.B., Vijayan S, Anil Bhardwaj (2025), **Numerical modelling of impacts on Moon: Permanently shadowed region**, *6th Indian Planetary Science Conference-2025*.

Honors and Awards

- **PGDip. Space and Atmospheric Science** *2024*
  Class merit: 3rd Rank
- **International Astronomical Search Collaboration** *2021*
  Participation in the analysis of near-Earth objects from Pan-STARRS
- **Observational Astronomy and Equipment** *2021*
  SPACE India
- **MATLAB Onramp** *2021*
  MathWorks - Training services
- **PCAP: Programming Essentials in Python** *2021*
  Cisco Networking Academy : self-paced course
- **International Astronomy Astrophysics Competition** *2020*
  Silver Honour Award

Seminars

- **ISRO-Structured Training Program on "Sun-Planet Interactions: A Space Weather Perspective"** *25th - 29th Sep 2023*
  Physical Research Laboratory Ahmedabad, India
  - **Topics on**: solar variability, space weather, planetary atmospheres, ionospheres, and magnetosphere and introduces important aspects of instrumentation and modelling techniques to investigate Sun-Planet interactions.

Extracurricular Activity

- **Moon Watch Outreach** *Aprl. 2023*
  Indian Institute of Astrophysics Bangalore, India
  - In under-served rural areas using our campus telescope.
- **National Science Day Event** *Feb. 2023*
  Indian Institute of Astrophysics Bangalore, India
  - Volunteer in several contests for students from diverse background.
- **Stargazing Perseid Meteor Shower** *Aug. 2021*
  SPACE Chennai Yelagiri, India
  - Astrophotography, Mapping Constellation.
- **Astronomy Computational Workshop** *Jan. 2020*
  SHAASTRA, Indian Institute of Technology Madras Chennai, India
  - Introduction to FITS images and SAOImage DS9, celestial coordinate system, Luminosity and HR Diagram.

Skills

- **Programming:** Python (NumPy, SciPy, Astropy, GeoPandas, GDAL, Matplotlib)
- **Operating Systems:** Windows, Linux
- **Numerical Simulation Tools:** iSALE-2D, TOPCAT
- **Miscellaneous:** Scientific illustration, GitHub, LaTeX, Blogging, Blender

Languages

English (Professional proficiency), **Tamil** (Native proficiency), **Hindi** (Limited Working Proficiency), **Malayalam** (Limited Working Proficiency)

Remarks

I have experience conducting multiple impact cratering simulations under conditions specific to the lunar south polar region. These simulations were performed using the iSALE2D shock physics hydrocode and further analysis using Python.