

**NANDITA KUMARI**  
317 LINCOLN FIELD BUILDING,  
BROWN UNIVERSITY, PROVIDENCE, RI, 02912  
[WEBSITE](#)

#### PROFESSIONAL EXPERIENCE

<b>Postdoctoral Researcher</b> , Brown University	SUMMER'24-Present
<b>Instructor</b> , Summer@Brown, Brown University <i>Course Name: Travelling through time using the Moon</i>	SUMMER'25
<b>Mentor</b> , LUNASCOPE, Brown University	SUMMER'25
<b>Mentor</b> , GWISE, Stony Brook University	FALL'22-SPRING'23

#### EDUCATION

<b>Stony Brook University</b> <i>PhD in Geosciences and Advanced Certification in Data and Computational Sciences</i>	GPA 3.97/4.0	2024
<b>College of Engineering Guindy, Anna University</b> <i>Bachelor of Engineering in Geoinformatics</i>	GPA 8.93/10	2018

#### AWARDS

- **LEAG Travel Award**, 2022,2023, 2024
- **Goldschmidt Conference Workshop on Exoplanets Travel Award**, 2024
- **McDonnell Centre for Space Sciences Travel Award**, 2024
- **NASA Exploration Science Forum Travel Award**, 2023
- **Zonta International Amelia Earhart Fellowship**, 2023
- **San Francisco Volcanic Field**, Fieldwork Travel Award, 2022
- **Featured Early Career Presentation**, Lunar Exploration Analysis Group (LEAG) Meeting 2022
- **Best Poster Award** in National Space Science Symposium 2019
- **Mike Barnsley Memorial Award**<sup>1</sup> by Alumni Association of CEG
- **Alumni Association Endowment Award 2007-2**<sup>2</sup> in Geoinformatics Engineering batch 2018
- **Merit Scholarship** from Army Welfare Association

#### MISSION INVOLVEMENT

- **Science Team Member**, Diviner Lunar Radiometer Experiment
- **Student Member**, Chandrayaan-2

#### INVITED LECTURES, TALKS AND MEDIA INTERVIEWS

**THERMAL INFRARED SPECTROSCOPY**, REMOTE SENSING, BROWN UNIVERSITY, 2024  
**INTREPID AIR AND SPACE MUSEUM**, NEW YORK, 2025  
**DIVINER MEETING**, OXFORD UNIVERSITY, 2022  
**VELAY MEETING**, STONY BROOK UNIVERSITY, 2023  
**CONTRIBUTIONS TO ARTEMIS III**, [SBU COVERAGE](#) , [LONG ISLAND MEDIA](#)  
**AMELIA EARHART FELLOWSHIP**, [SBU COVERAGE](#)

#### PEER REVIEWED PUBLICATIONS

- [14] **Kumari, N.**, Gary-Bicas, C., Ye, C., Rogers, A.D., Glotch, T. D., Mustard, J. F., (2025). Decoding Felsic Lithologies on the Rocky Worlds: The Silica Story (*In review, AGU Advances*)
- [13] Rogers, A. D., Achilles, C. N., Baldrige, A. M., Honniball, C. I., Knudson, C. A., McAdam, A. C., Henderson, M. J., Hurtado, J., Morse, Z. R., Scheidt, S.P., Whelley, P. L., Young, K. E., Glotch, T. D., Hopkins, R. J., **Kumari, N.**, Raletta, J., Zimmerman, N. A., (2025) Mineralogy and Geochemistry of Xenoliths and Phreatomagmatic Deposits in Portillo

<sup>1</sup> Annual award for highest marks in image processing in theory and lab course

<sup>2</sup> Department rank 1 for the academic year 2016-2017

- Volcanic Field, New Mexico Determined from Portable Instruments: Applications to Surface Exploration of the Moon and Mars (*Accepted, PSJ*)
- [12] **Kumari, N.**, Mustard, J. F., Glotch, T. D. (2025). Particle Size and Albedo Effects on Emissivity Spectra of Lunar Analog Minerals and Rocks in the Intermediate Infrared Region, *Icarus*, *441*, 116721
- [11] **Kumari, N.**, Breitenfeld, L.B., Shirley, K.A., Glotch, T. D. (2025). Characterizing Extreme Compositions on the Moon Using Thermal Infrared Spectroscopy, *JGR-Planets*, *10.1029/2024JE008814*
- [10] Noe Dobrea, E.Z., Banks, M.E., Clark, R.N., Wettergreen, D., Hendrix, A., Aherns, C., Bell, E., Breitenfeld, A., Bristow, T.F., Buxner, S., Candela, A., Hansen, M., Holsclaw, G., Knightly, P., Kramer, G., **Kumari, N.**, Lane, M.D., Martin, A., Meier, M., Patterson, R., Pearson, N., Prettyman, T., Swayze, G.A., Vaniman, D., Vijayarangan, S., Vilas, F., Wright, S.P. (2024). Rover Science Autonomy in Planetary Exploration: Field Analog Tests. *The Planetary Science Journal*, *6*(2), p. 51.
- [9] **Kumari, N.**, Glotch, T.D., Shirley, K.A., Greenhagen, B.T. and Byron, B.D., (2024). Effects of Space Weathering on the Christiansen Feature Position of Lunar Surface Materials. *Icarus*, *412*, p.115976.
- [8] **Kumari, N.**, Glotch, T.D., Williams, J.P., Sullivan, M.T., Li, S., Greenhagen, B.T., Waller, D., Powell, T., Elder, C.M., Byron, B.D. and Shirley, K.A., (2024). Extended Silicic Volcanism in the Gruithuisen Region—Revisiting the Composition and Thermophysical Properties of Gruithuisen Domes on the Moon. *The Planetary Science Journal*, *5*(6), p.132.
- [7] Mahanti, P., Williams, J.P., Robinson, M.S., Wagner, R., Mazarico, E., Henriksen, M., Brown, H. and **Kumari, N.**, (2024). Dynamic Secondary Illumination in Permanent Shadows within Artemis III Candidate Landing Regions. *The Planetary Science Journal*, *5*(3), p.62.
- [6] **Kumari, N.**, Bretzfelder, J.M., Ganesh, I., Lang, A. and Kring, D.A., (2022). Surface conditions and resource accessibility at potential Artemis landing sites 007 and 011. *The Planetary Science Journal*, *3*(9), p.224.
- [5] Williams, J.P., Greenhagen, B.T., Bennett, K.A., Paige, D.A., **Kumari, N.**, Ahrens, C.J., Rubanenko, L., Powell, T.M., Prem, P., Blewett, D.T. and Russell, P.S., 2022. Temperatures of the Lacus Mortis region of the Moon. *Earth and Space Science*, *9*(2), p.e2021EA001966.
- [4] Glotch, T.D., Jawin, E.R., Greenhagen, B.T., Cahill, J.T., Lawrence, D.J., Watkins, R.N., Moriarty, D.P., **Kumari, N.**, Li, S., Lucey, P.G. and Siegler, M.A., (2021). The Scientific Value of a Sustained Exploration Program at the Aristarchus Plateau. *The Planetary Science Journal*, *2*(4), p.136.
- [3] Thompson, M., Barnes, J., Blewett, D., Cahill, J., Denevi, B., Donaldson Hanna, K., Gillis-Davis, J., Glotch, T., Jha, D., Kramer, G. and **Kumari, N.**, (2021). Space weathering Across the Solar System: Lessons from the Moon and Outstanding Questions. *Bulletin of the American Astronomical Society*, *53*(4), p.172.
- [2] Hurley, D., Blewett, D.T., Cahill, J., Chabot, N., Greenhagen, B., Hibbitts, C., Klima, R., Lawrence, D., Mandt, K., Nunez, J.I. and Patterson, W., Prem, P., Stickle, Angela., Deutsch, Ariel., Delitsky, M., Flahaut, J., Sowers, G., Sefton-Nash, E., Brisset, J., Zacny, K., Shukla, S., Grandidier, J., Hosseini, S., Liu, Y., Bhiravarasu, S., Stopar, J., Barker, D., Gertsch, L., Jha, D., Colaprete, A., Elphic, R., Banks, M., Benna, M., Farrell, W., Saena, P., Tucker, O.J., Mitchell, J., Needham, D., Atkinson, J., Barber, S., Hendrix, A., Kramer, G., Siegler, M., Grava, C., Poston, M., Retherford, K., **Kumari, N.**, Barnes, J., Hayne, P., Li, S., Lucey, P., Livengood, T., 2021. Mission to Characterize Volatiles in Old, Cold, Permanently Shadowed Regions on the Moon. *Bulletin of the American Astronomical Society*, *53*(4), p.365.
- [1] Sinha, R.K., Sivaprahasam, V., Bhatt, M., Harish, **Kumari, N.**, Srivastava, N., Varatharajan, I., Ray, D., Wöhler, C. and Bhardwaj, A., 2020. Geological Characterization of Chandrayaan-2 Landing Site in the Southern High Latitudes of the Moon. *Icarus*, *337*, p.113449.

#### MANUSCRIPT IN PROGRESS

- [15] **Kumari, N.**, Head, J.W. (2025). Lunar Laccoliths as Revealed by Impact Crater Floor Doming: A New Class of Shallow Magmatic Lunar Basalt Intrusions and Implications for Magma Ascent and Eruption Dynamics. (*Manuscript in Preparation*)

#### FIRST AUTHORED CONFERENCE ABSTRACTS

- [17] **Kumari, N.**, Robertson, K., Milliken, R. E., Mustard, J. F., (2025). Spectral Characterization of the Lunar Meteorite Northwest Africa (NWA) 11444, *LPSC*

- [16] **Kumari, N.**, Williams, J. P, Bhatt, H., Glotch, T. D. , Jhoti, E., Powell, T. (2024). Probing South Polar Region, *NASA Exploration Science Forum*
- [15] **Kumari, N.**, Williams, J. P, Glotch, T. D. , Jhoti, E., Powell, T., Bhatt, H. (2024). Christiansen Feature Maps of the Lunar Poles, *LPSC #1819*
- [14] **Kumari, N.**, Glotch, T. D. , Greenhagen, B. T., Breitenfeld, L. B. (2023). Bulk Composition Characterization of the Lunar Surface Using Machine Learning: Applications to Ongoing and Upcoming Missions, *NASA Exploration Science Forum*
- [13] **Kumari, N.**, Glotch, T. D. , Greenhagen, B. T., Breitenfeld, L. B. (2023). Brewing Machine Learning Models for Accurate Analysis of Current and Future Datasets, *LPSC #2396*
- [12] **Kumari, N.**, Prettyman, T. H. , Lane, M., Martin, A. C., Patterson, R. V., Meier, M. L., Aherns, C. J., Pearson, N. C., Clark, R. N., Vilas, F., Steckel, A. V., Knightly, J. P., Wettergreen, D., Banks, M. E., Bell, E., Wright, S. P., Noe Dobrea, E. Z., Hendrix, A., (2023). Procedure Standardization for Toolbox for Research and Exploration Field Data Analysis, *LPSC #1814*
- [11] **Kumari, N.**, Glotch, T. D. , Williams, J. P, Greenhagen, B. T., Li, S., Waller D., Shirley, K. A., Sullivan, M. T. (2022). Mineralogical and Thermophysical Properties of Gruithuisen Domes: Preparations Towards Landing, *International Mineralogical Association*
- [10] **Kumari, N.**, Glotch, T. D. , Williams, J. P, Greenhagen, B. T., Li, S., Waller D., Shirley, K. A., Sullivan, M. T. (2022). Gruithuisen Domes: Silicic Volcanic Constructs on the Moon, *Lunar Exploration Analysis Group*
- [9] **Kumari, N.**, Glotch, T. D. , Williams, J. P, Greenhagen, B. T., Sullivan, M. T. (2022). A Holistic View of Gruithuisen Domes Silicic – Constructs on the Moon, *LPSC #2034*
- [8] **Kumari, N.**, Bretzfelder, J.M., Ganesh, I., Lang, A., Kring, D.A., (2021). Surface Illumination, Temperatures and Cold Traps at Two Potential Landing Sites near the Lunar South Pole, *NASA Exploration Science Forum*
- [7] **Kumari, N.**, Bretzfelder, J.M., Ganesh, I., Lang, A., Kring, D.A., (2021). Geological Diversity at Two Potential Landing Sites in the Lunar South Pole, *LPSC #1197*
- [6] Kring, D.A., Bretzfelder, J.M., Ganesh, I., **Kumari, N.**, Lang, A. (2021). Artemis III EVA Opportunities on the Rim of De Gerlache Crater, *NASA Requested Input for Artemis III SDT*
- [5] Kring, D.A., Bretzfelder, J.M., Ganesh, I., **Kumari, N.**, Lang, A. (2021). Alternate Artemis III EVA Near De Gerlache Crater, *NASA Requested Input for Artemis III SDT*
- [4] Kring, D.A., Bretzfelder, J.M., Ganesh, I., **Kumari, N.**, Lang, A. (2021). Artemis III EVA Opportunities on the Lunar Farside Near Shackleton Crater, *NASA Requested Input for Artemis III SDT*
- [3] **Kumari, N.**, Glotch, T. D. , Greenhagen, B. T., Shirley, K. A.,(2020). Different Trends of Variation in Christiansen Feature on the Lunar Surface: Effects of Iron Content and Particle Size, *NASA Exploration Science Forum*
- [2] **Kumari, N.**, Glotch, T. D. , Greenhagen, B. T., Shirley, K. A.,(2020). Investigation of Variation in Christiansen Feature with respect to Albedo on the Moon using the Diviner, M<sup>3</sup> and Kaguya Datasets, *LPSC #1967*
- [1] **Kumari, N.**, Vijayan, S. (2019). Global Distribution and Characteristics of Domical Craters on the Moon, *LPSC #1803*

---

#### TECHNICAL SKILLS & MISSION EXPERIENCE

---

<b>PROGRAMMING</b>	Python(Spatial and Non-spatial Data Analysis/Machine Learning, Proficient)
<b>INSTRUMENTS</b>	FTIR, Micro-FTIR, ASD, SEM(BSE and EDS mapping), EPMA
<b>SOFTWARE</b>	ArcGIS, QGIS, ENVI, Bruker FTIR softwares, ERDAS Imagine, ISIS, Davinci
<b>DATA PROFICIENCY</b>	Earth: LANDSAT <sup>3</sup> (VIS, THERMAL, PAN), ASTER Thermal InfraRed Data; Moon: LRO (WAC, NAC, WAC-DTM, Diviner, LOLA), Chandrayaan-1(M <sup>3</sup> ), Kaguya SELENE(MI, TC) ; Mars: MRO (CRISM, CTX, HiRISE), MGS(MOLA), Mars Odyssey (THEMIS)

---

#### FIELD WORK

---

KILBOURNE AND HUNTS HOLE, SSERVI (RISE4) 2022;2023

SAN FRANCISCO VOLCANIC FIELD, SSERVI (CLSE) 2022

---

<sup>3</sup> LANDSAT Data from 5 to 8

UTAH YELLOWCAT SITE, SSERVI(TREX),2022

MOUNT ASCUTNY, *NEW ENGLAND NEIGC FIELD TRIP 2019, 2022*

---

**LEADERSHIP SKILLS**

---

<b>SENATOR</b>	GRADUATE STUDENT ORGANIZATION OF SBU	[2021-2023]
<b>STUDENT DIRECTOR</b>	<i>CEG TECH FORUM</i>	[2014-2018]

---

**PROFESSIONAL EXPERIENCES & SERVICES**

---

<b>CHAIR</b>	<i>LPSC, 2024, LEAG 2022, NESF 2020,2024</i>	
<b>REVIEWER</b>	<i>JGR:PLANETS, ICARUS, PSJ, GRL, MAPS</i>	
<b>EXTERNAL REVIEWER</b>	<i>NASA PANEL 2023</i>	
<b>EXECUTIVE SECRETARY</b>	<i>NASA PANEL 2022, 2024, 2025</i>	
<b>SUMMER INTERN</b>	<i>LUNAR AND PLANETARY INSTITUTE</i>	[MAY'20-AUG'20]
<b>VISITING STUDENT</b>	<i>PHYSICAL RESEARCH LABORATORY</i>	[MAY'18-JUL'19]