INDUJAA GANESH

Geophysical Institute, University of Alaska Fairbanks
2156 Koyukuk Drive Fairbanks AK 99775
iganesh@alaska.edu **indujaa.com** **github.com/iganache**

PROFESSIONAL APPOINTMENTS

2023-present **Research Assistant Professor**, Geophysical Institute, University of Alaska Fairbanks

2022-2023 **Postdoctoral Research Fellow**, Geophysical Institute, University of Alaska Fairbanks

EDUCATION

2022 **PhD Planetary Sciences**, University of Arizona, Tucson
Thesis: Investigating late-stage explosive eruptions on the volcanic rises of Mars & Venus

2020 **MS (en route) Planetary Science**s, University of Arizona, Tucson

2017 **MTech Geoinformatics & Nat. Resource Eng.**, Indian Institute of Technology, Bombay
Thesis: Morphometric Analysis of Interior Layered Deposits in Valles Marineris, Mars

2014 **BEng Geoinformatics**, Anna University, Chennai

SPACECRAFT MISSION PARTICIPATION

2022-present VenSAR science team member, **EnVision,** ESA medium-class

2022-2025 Postdoc Collaborator, **VERITAS,** NASA Discovery

2021-2022 **Reconnaissance/Science team, Early-career member,** International – Mars Ice Mapper (I-MIM) mission

2017-present Science team collaborator, SHAllow RADar (SHARAD), **Mars Reconnaissance Orbiter**

GRANT FUNDING

2022-2025 VenSAR radiometry observations of Venus: characterizing surface dielectric properties and potential volcanic activity
Principal Investigator, EnVision VenSAR Science Team (VeST) participation via NASA

AWARDS & SCHOLARSHIPS

2021 Amelia Earhart Fellowship, Zonta International

2021, 2018 Lunar and Planetary Laboratory Curson Education Plus Fund Award

2021, 2020 University of Arizona Galileo Circle Scholarship

2019 Venus Exploration and Analysis Group (VEXAG) Travel Award

2019-2022 Future Investigators in NASA Earth & Space Science and Technology (FINESST) Grant

2018 University of Arizona Graduate & Professional Student Council Travel Grant

2015 Government of India Postgraduate Scholarship

2013 German Academic Exchange Service's (DAAD) WISE Scholarship

2012 Indian Academy of Sciences Summer Research Fellowship

RESEARCH EXPERIENCE

2017-2022 **Graduate Research Assistant**, Lunar & Planetary Lab., University of Arizona, Tucson

2020 **Summer Research Intern** (virtual), Lunar & Planetary Institute, Houston

2015-2017 **Graduate Research Assistant**, Indian Institute of Technology, Bombay

2013 **DAAD Summer Intern**, Institute of Geography, Universität Heidelberg

2012 **Summer Research Fellow**, Physical Research Laboratory, Ahmedabad

SERVICE & PROFESSIONAL ACTIVITIES

2023 **AGU Planetary Sciences session convener**, *Radar Investigations of Planetary Surfaces and Subsurfaces,* San Francisco

2023 **Science Organizing Committee member,** *Venus as a System* conference, Albuquerque

2021-present **Outreach & Social media team**, Venus Exploration and Analysis Group (VEXAG)

2020-present **Panel member**, NASA R&A, participating scientist, and FINESST review panels

2020-present **Reviewer**, Journal of Geophysical Research: Planets, Planetary Science Journal, Journal of the Indian Society of Remote Sensing, Icarus, Geology, and Nature Astronomy

2018-2021 **Organizing Committee member**, Lunar & Planetary Laboratory Conference, Tucson

INVITED TALKS

Apr 2023 NASA Goddard Space Flight Center, Friends of DAVINCI Seminar Series

Feb 2023 Georgia Institute of Technology, School of Earth and Atmospheric Sciences Seminar

Jan 2023 University of Texas at San Antonio – Department of Earth and Planetary Sciences Seminar

Oct 2022 Georgia Institute of Technology, School of Earth and Atmospheric Sciences, Planetary Science and Astrobiology Seminar

Feb 2022 Purdue University, Department of Earth, Atmospheric, and Planetary Sciences, Crater Cafe

Feb 2022 University of California Santa Cruz, Institute for Geophysics and Planetary Physics Seminar

TEACHING

Fall 2018 **Graduate Teaching Assistant**, University of Arizona
PTYS 170B2 – The Universe and Humanity: Origin and Destiny

Fall 2016 **Graduate Teaching Assistant**, IIT Bombay
GNR 603 – Introduction to Principles of Remote Sensing

UNDERGRADUATE MENTORSHIP

2022-present Co-mentoring **Ellen Jesina (current undergraduate student at the University of Arizona)** on mapping potential landslides on Venus

2021-2022 Co-mentored **Triana Henz (currently at the Planetary Science Institute)** on the measurement of radar backscatter properties of pyroclastic deposits on Venus

FIELD EXPEDITIONS

2022 Ground penetrating radar (GPR) measurements of lava flows in the Lava Beds National Monument, northern California

2021 Anisotropy of Magnetic Susceptibility (AMS) measurements of the Nine Hill Tuff outcrops, northern California, and Nevada

2019 NASA Planetary Volcanology Workshop. Studying effusive and explosive mafic deposits as planetary volcanic analogs in Hilo, Hawaii

PEER-REVIEWED PUBLICATIONS

2022 **Ganesh, I.**, Carter, L. M., and Henz, T.N. Radar Backscatter and Emissivity models of proposed Pyroclastic Density Current deposits on Venus. Journal of Geophysical Research: Planets. doi.org/10.1029/2022JE007318

Kumari, N., Bretzfelder, J., **Ganesh, I.**, Lang, A., and Kring, D. Surface Conditions and Resource Accessibility at Potential Artemis Landing Sites 007 And 011. The Planetary Science Journal. doi.org/10.3847/PSJ/ac88c2

2021 McGuire, L. A., Youberg, A. M., Rengers, F. K., Abramson, N. S., **Ganesh, I.**, Gorr, A. N., Hoch, O., Johnson, J. C., Lamom, P., Prescott, A. B., Zanetell, J., Fenerty, B. Extreme Precipitation Across Adjacent Burned and Unburned Watersheds Reveals Impacts of Low Severity Wildfire on Debris-Flow Processes. Journal of Geophysical Research: Earth Surface. doi.org/10.1029/2020JF005997

Ganesh, I., McGuire, L. A., and Carter, L. M. Modeling the dynamics of dense pyroclastic flows on Venus: insights into pyroclastic eruptions. Journal of

Geophysical Research: Planets. doi.org/10.1029/2021JE006943

2020 **Ganesh, I.**, Carter, L. M., and Smith I. B. SHARAD mapping of Arsia Mons caldera. Journal of Volcanology and Geothermal Research. doi.org/10.1016/j.jvolgeores.2019.106748

COMMENTS, REPORTS, & WHITE PAPERS

2022 I-MIM Measurement Definition Team. Final Report of the International Mars Ice Mapper Reconnaissance/Science Measurement Definition Team. 239 pp., posted online https://science.nasa.gov/researchers/ice-mapper-measurement-definition-team

2021 Santos, A. R., Filiberto, J., **Ganesh, I.**, Gilmore, M., Lewis, J. A., and Treiman, A. H. Venus Petrology: The Need for New Data. White Paper #177 Submitted to the Planetary Science and Astrobiology Decadal Survey 2023–2032. Bulletin of the AAS, Vol. 53, Issue 4. doi: 10.3847/25c2cfeb.c73e5040

SELECTED CONFERENCE ABSTRACTS

2023 Akins, A., Bocanegra-Bahamón, T., Butler, B., Dahal, S., **Ganesh, I.**, Siegler, M. Revisiting Venus' Microwave Emission Spectrum: Implications for VenSAR. EnVision International Venus Science workshop (2023), Berlin.

Carter, L. M., Byrne, P. K., **Ganesh, I.,** Hensley, S., Mason, P. J., and the VenSAR Science Team. Studying Sedimentary Processes on Venus using Radar Polarimetry. EnVision International Venus Science workshop (2023), Berlin.

Ganesh, I., Byrne, P. K., Carter, L. M., Whitten J. L. , and the VenSAR Science Team. Detecting recent volcanism on Venus using VenSAR radiometry. EnVision International Venus Science workshop (2023), Berlin.

Bramson, A. M. et al. (including **Ganesh, I.**). CryptEx: A mission concept to test the presence, properties, and geophysical context of lunar cryptomaria. 54th Lunar and Planetary Science Conference (2023). # 1797

Ganesh, I., Herrick, R. R., and Kremic, T. Bounds on Venus's seismicity from theoretical and analog estimations. 54th Lunar and Planetary Science Conference (2023). # 1851

Ganesh, I. and Gilmore, M. S. Detailed Magellan radar reflectivity variations within Sudenitsa Tessera, Venus. 54th Lunar and Planetary Science Conference (2023). #

1847

Jesina, E. L, Carter, L. M., and **Ganesh, I.** Expanding upon the collection of known Venusian landslides. 54th Lunar and Planetary Science Conference (2023). # 2678

Ganesh, I. and Carter, L. M. Dynamics of Pyroclastic Density Currents on Venus. IAVCEI Scientific Assembly (2023). #1076

Herrick, R. R. and **Ganesh, I.** Volcanism in the Venus Interior-Surface-Atmosphere System. Venus Surface and Atmosphere Conference – LPI Venus Initiative (2023). #8069

2022 **Ganesh, I.**, Carter, L. M., and Henz, T. N. Radar Backscatter and Emission Models of Possible Pyroclastic Deposits on Venus. 53rd Lunar and Planetary Science Conference (2022). # 1771

2021 **Ganesh, I.**, Carter, L. M., and Henz, T. N. A radiative transfer approach to modeling polarimetric radar backscatter from possible pyroclastic deposits on Venus. AGU Fall meeting (2021). # 92514

Ganesh, I., McGuire, L. A., and Carter, L. M. Modeling the emplacement of pyroclastic density current (PDC) deposits on Venus: a comparison between concentrated and dilute PDC transport regimes. AGU Fall meeting (2021). # 92589

Hager, J., Ort, M. H., Henry, C. D., Silleni, A., and **Ganesh, I.** Using Anisotropy of Magnetic Susceptibility (AMS) to Determine the Flow Characteristics of a Pyroclastic Density Current: The Nine Hill Tuff, Nevada and California. AGU Fall meeting (2021). # 922399

Ganesh, I., Carter, L. M., and Henz, T. N. Radar backscatter models of possible pyroclastic deposits on Venus. 19th Meeting of the Venus Exploration Analysis Group (2021). # 8038

Ganesh, I., McGuire, L., and Carter, L. M. Dynamics of Dense Pyroclastic Flows on Venus – Insights into Pyroclastic Eruptions. 52nd Lunar and Planetary Science Conference (2021). Virtual conference. # 1218

Henz, T., **Ganesh, I.**, and Carter, L, M. Measuring the Radar Properties of Pyroclastic Deposits in Eistla Regio, Venus. 52nd Lunar and Planetary Science Conference (2021). Virtual conference. # 2150

Kumari, N. **Ganesh, I.**, Lang, A., Bretzfelder J., M., and Kring, D. A. Geological Diversity at Two Potential Landing Sites in the Lunar South Pole. 52nd Lunar and Planetary

Science Conference (2021). Virtual conference. # 1197

2020 Bretzfelder J., M., Lang, A., **Ganesh, I.**, Kumari, N., and Kring, D. A. Geological Analysis and Possible EVA Targets for an Artemis III Landing Site Bounded by Shackleton and Slater Craters. 52nd Lunar and Planetary Science Conference (2021). Virtual conference. # 1148

Ganesh, I., McGuire, L. A., and Carter, L. M. Modeling Deposition from Dense Pyroclastic Density Currents on Venus. 18th Meeting of the Venus Exploration and Analysis Group (2020). Virtual conference.

Ganesh, I., McGuire, L. A., and Carter, L. M. Pyroclastic Flow deposition on Venus. 51st Lunar and Planetary Science Conference (2020). Canceled.

McGuire, L. A. et al. (including **Ganesh, I.**). Extreme precipitation reveals impacts of a low severity wildfire on debris-flow processes. AGU Fall meeting (2020). # 736986

2019 **Ganesh, I.**, Carter, L. M., and Smith, I. SHARAD mapping of the Caldera of Arsia Mons. 50th Lunar and Planetary Science Conference (2019), The Woodlands, Texas, # 1859

2018 **Ganesh, I.**, Carter, L. M., and Smith, I. Subsurface Interfaces in the Arsia Mons Caldera - Observations from SHARAD. 49th Lunar and Planetary Science Conference (2018), The Woodlands, Texas, # 2807

2017 **Ganesh, I.** and Porwal, A. A GIS Based Compilation of Morphometric Parameters of Valles Marineris ILDs. 48th Lunar and Planetary Science Conference (2017), The Woodlands, Texas, # 2324

Sarkar, R., Singh, P., **Ganesh, I.**, and Porwal, A. Origin of mass wasting features in Juventae Chasma, Mars. 47th Lunar and Planetary Science Conference (2016), The Woodlands, Texas, # 1876

Singh, P., Sarkar, R., **Ganesh, I.**, and Porwal, A. Origin of fluvial channels in the walls of Juventae Chasma: evidence of groundwater sapping? 47th Lunar and Planetary Science Conference (2016), The Woodlands, Texas, # 1878