

INDUJAA GANESH

University of Alaska Fairbanks Geophysical Institute
2156 Koyukuk Drive Fairbanks AK 99775

✉ iganesh@alaska.edu  indujaa.com  github.com/iganache

PROFESSIONAL APPOINTMENTS

- 2023– present **Affiliate Faculty**, School of Earth & Atmospheric Sciences, Georgia Institute of Technology
- 2023– present **Research Assistant Professor**, Geophysical Institute, University of Alaska Fairbanks
- 2022–2023 **Postdoctoral Fellow**, Geophysical Institute, University of Alaska Fairbanks

EDUCATION

- 2022 **PhD Planetary Sciences, University of Arizona**
Thesis: Investigating late-stage explosive eruptions on the volcanic rises of Mars & Venus
- 2020 **MS (en route) Planetary Sciences, University of Arizona**
- 2017 **MTech Geoinformatics & Natural Resources Engineering, IIT Bombay**
Thesis: Morphometric Analysis of Interior Layered Deposits in Valles Marineris, Mars
- 2014 **BEng Geoinformatics, Anna University**

GRANT FUNDING

- 2022–2027 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 and Space Science and Technology (FINESST)
- 2018 University of Arizona Graduate and 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

SPACECRAFT MISSION PARTICIPATION

- 2022–2027 **VenSAR science team member**, EnVision, ESA medium-class
- 2022–2025 **Collaborator**, VERITAS, NASA Discovery
- 2017– present **Science team collaborator**, SHallow RADar (SHARAD), Mars Reconnaissance Orbiter

SERVICE & PROFESSIONAL ACTIVITIES

- 2024– present Venus Exploration and Analysis Group (VEXAG) steering committee member
- 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
- 2021–2022 Measurement Definition Team, Early-career member, International – Mars Ice Mapper (I-MIM) mission
- 2021– present Outreach and 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, Icarus, Geology, Nature Astronomy, Space Science Reviews, and Nature Communications
- 2018–2021 Organizing Committee member, Lunar and Planetary Laboratory Conference, Tucson

INVITED TALKS

- Oct 2023 University of Texas at Austin, UT Institute of Geophysics Seminar
- 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

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

- In prep. **Ganesh, I.** and Gilmore, M. S. Spatial Patterns of Radar Emissivity Variations across Ovda Regio, Venus. (for submission to JGR: Planets)
- Jessina, E., Carter, L.M., and **Ganesh, I.** Identifying Landslides in Atla Regio on Venus. (for submission to JGR: Planets)
- 2022 **Ganesh, I.**, Carter, L. M., and Henz, T. N. (2022b). Radar backscatter and emissivity models of proposed pyroclastic density current deposits on venus. *Journal of Geophysical Research: Planets*, 127(10):e2022JE007318
- 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):224
- 2021 **Ganesh, I.**, McGuire, L. A., and Carter, L. M. (2021d). Modeling the dynamics of dense pyroclastic flows on venus: insights into pyroclastic eruptions. *Journal of Geophysical Research: Planets*, 126(9):e2021JE006943
- 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., et al. (2021). Extreme precipitation across adjacent burned and unburned watersheds reveals impacts of low severity wildfire on debris-flow processes. *Journal of Geophysical Research: Earth Surface*, 126(4):e2020JF005997
- 2020 **Ganesh, I.**, Carter, L. M., and Smith, I. B. (2020a). Sharad mapping of arsia mons caldera. *Journal of Volcanology and Geothermal Research*, 390:106748

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.
- 2020 Santos, A. R., Filiberto, J., **Ganesh, I.**, Gilmore, M. S., Lewis, J. A., Treiman, A. H., et al. (2020). Venus petrology: The need for new data

CONFERENCE ABSTRACTS

- 2023 **Ganesh, I.**, Flynn, Ian, T., Akins, A., Byrne, P. K., and Carter, L. (2023a). On the detectability of young lava flows on venus using orbital microwave radiometry. In *AGU Fall Meeting Abstracts*, volume 2023, page 1360944
- Ganesh, I.** and Gilmore, M. S. (2023b). Spatial patterns of radar emissivity variations across ovda regio, venus. In *Venus as a System Conference*, page 8024
- Jesina, E. L., Carter, L. M., and **Ganesh, I.** (2023a). Expanding upon the collection of known venusian landslides. In *Venus as a System Conference*, page 8023
- Akins, A., Bocanegra-Bahamón, T., Butler, B., Dahal, S., **Ganesh, I.**, and Siegler, M. (2023). Revisiting venus' microwave emission spectrum: Implications for vensar. In *2023 International EnVision Venus science workshop*

- Carter, L. M., Byrne, P. K., **Ganesh, I.**, Hensley, S., Mason, P. J., and the VenSAR science team (2023). Studying sedimentary processes on venus using radar polarimetry. In *2023 International EnVision Venus science workshop*
- Ganesh, I.**, Byrne, P. K., Carter, L. M., Whitten, J. L., and the VenSAR science team (2023b). Detecting recent volcanism on venus using vensar radiometry. In *2023 International EnVision Venus science workshop*
- Bramson, A. et al. (2023). Cryptex: A mission concept to test the presence, properties, and geophysical context of lunar cryptomaria. In *54th Lunar and Planetary Science Conference*, page 1797
- Jesina, E. L., Carter, L. M., and **Ganesh, I.** (2023b). Expanding upon the collection of known venusian landslides. 54th lunar and planetary science conference. In *54th Lunar and Planetary Science Conference*, page 2678
- Ganesh, I.**, Herrick, R. R., and Kremic, T. (2023c). Bounds on venus's seismicity from theoretical and analog estimations. In *54th Lunar and Planetary Science Conference*, page 1851
- Ganesh, I.** and Gilmore, M. S. (2023a). Detailed magellan radar reflectivity variations within sudenitsa tessera, venus. In *54th Lunar and Planetary Science Conference*, page 1847
- Ganesh, I.** and Carter, L. M. (2023). Dynamics of pyroclastic density currents on venus. In *IAVCEI Scientific Assembly*, page 1076
- Herrick, R. R. and **Ganesh, I.** (2023). Volcanism in the venus interior-surface-atmosphere system. In *Venus Surface and Atmosphere Conference – LPI Venus Initiative II*, volume 2807, page 8069
- 2022 **Ganesh, I.**, Carter, L. M., and Henz, T. N. (2022a). Radar backscatter and emission models of possible pyroclastic deposits on venus. In *53rd Lunar and Planetary Science Conference*, volume 2678, page 1771
- 2021 **Ganesh, I.**, Carter, L., and Henz, T. (2021a). A radiative transfer approach to modeling polarimetric radar backscatter from possible pyroclastic deposits on venus. In *AGU Fall Meeting Abstracts*, volume 2021, pages P32D–04
- Hager, J., Ort, M., Henry, C., Silleni, A., and **Ganesh, I.** (2021). Using anisotropy of magnetic susceptibility (ams) to determine the flow characteristics of a pyroclastic density current: The nine hill tuff, nevada and california. In *AGU Fall Meeting Abstracts*, volume 2021, pages GP25B–0409
- Ganesh, I.**, McGuire, L. A., and Carter, L. M. (2021e). Modeling the emplacement of pyroclastic density current (pdc) deposits on venus: a comparison between concentrated and dilute pdc transport regimes. In *AGU Fall Meeting Abstracts*, volume 2021, pages P42B–03
- Ganesh, I.**, Carter, L. M., and Henz, T. N. (2021b). Radar backscatter models of possible pyroclastic deposits on venus. In *19th Meeting of the Venus Exploration Analysis Group (VEXAG)*, volume 2628, page 8038

- Kumari, N., **Ganesh, I.**, Lang, A., Bretzfelder, J. M., and Kring, D. A. (2021). Geological diveristy at two potential landing sites in the lunar south pole. In *52nd Lunar and Planetary Science Conference*, number 2548, page 1197
- Ganesh, I.**, McGuire, L. A., and Carter, L. M. (2021c). Dynamics of dense pyroclastic flows on venus—insights into pyroclastic eruptions. In *52nd Lunar and Planetary Science Conference*, number 2548, page 1218
- Henz, T. N., **Ganesh, I.**, and Carter, L. M. (2021). Measuring the radar properties of pyroclastic deposits in eistla regio, venus. In *52nd Lunar and Planetary Science Conference*, number 2548, page 2150
- Bretzfelder, J. M., Lang, A., **Ganesh, I.**, Kumari, N., and Kring, D. A. (2021). Geological analysis and possible eva targets for an artemis iii landing site bounded by shackleton and slater craters. In *52nd Lunar and Planetary Science Conference*, number 2548, page 1148
- 2020 McGuire, L., Youberg, A., Rengers, F. K., Abramson, N. S., **Ganesh, I.**, Gorr, A., Hoch, O., Johnson, J., Lamom, P., Prescott, A. B., et al. (2020). Extreme precipitation reveals impacts of a low severity wildfire on debris-flow processes. In *AGU Fall Meeting Abstracts*, volume 2020, pages H087–0023
- Ganesh, I.**, McGuire, L. A., and Carter, L. M. (2020b). Modeling deposition from dense pyroclastic density currents on venus. In *18th Meeting of the Venus Exploration Analysis Group (VEXAG)*, volume 18, page 8043
- Kring, D. A., Bretzelder, J. M., **Ganesh, I.**, Kumari, N., and Lang, A. (2020b). Artemis iii eva opportunities on the lunar farside near shackleton crater
- Kring, D. A., Bretzelder, J. M., **Ganesh, I.**, Kumari, N., Lang, A., and Siegler, M. (2020c). Artemis iii eva opportunities on the rim of de gerlache crater
- Kring, D. A., Bretzelder, J. M., **Ganesh, I.**, Kumari, N., and Lang, A. (2020a). Alternative artemis iii eva opportunities near de gerlache crater
- Ganesh, I.**, McGuire, L. A., and Carter, L. M. (2020c). Pyroclastic flow deposition on venus. In *51st Lunar and Planetary Science Conference*, number 2326, page 1750
- 2019 **Ganesh, I.**, Carter, L. M., and Smith, I. B. (2019). Sharad mapping of the caldera of arsia mons. In *50th Lunar and Planetary Science Conference*, number 2132, page 1859
- 2018 **Ganesh, I.**, Carter, L. M., and Smith, I. B. (2018). Subsurface interfaces in the arsia mons caldera—observations from sharad. In *49th Lunar and Planetary Science Conference*, number 2083, page 2807
- 2017 **Ganesh, I.** and Porwal, A. (2017). A gis based compilation of morphometric parameters of valles marineris ilds. In *48th Lunar and Planetary Science Conference*, number 1964, page 2324
- 2016 Sarkar, R., Singh, P., Porwal, A., and **Ganesh, I.** (2016a). Mass wasting features in juvenae chasma, mars. volume 41, pages B0–2

Sarkar, R., Singh, P, and **Ganesh, I.** (2016b). Origin of mass wasting features in juventae chasma, mars. In *47th Lunar and Planetary Science Conference*, number 1903, page 1876

Singh, P, Sarkar, R., **Ganesh, I.**, and Porwal, A. (2016). Origin of fluvial channels in the walls of juventae chasma: Evidences of groundwater sapping? In *47th Lunar and Planetary Science Conference*, number 1903, page 1878