

INDUJAA GANESH

Georgia Institute of Technology

School of Earth and Atmospheric Sciences

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PROFESSIONAL APPOINTMENTS

- 2024 – present **Assistant Professor**, School of Earth & Atmospheric Sci., Georgia Institute of Technology
2023 – 2024 **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

AWARDS & SCHOLARSHIPS

- 2023 NASA Group Achievement Award, International Mars Ice Mapper – Measurement Definition Team
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

PEER-REVIEWED PUBLICATIONS

- In prep. **Ganesh, I.**, Herrick, R. R., and Kremic, T. Limits on the detection of seismic activity on Venus from a surface platform.
In revision **Ganesh, I.** and Gilmore, M. S. Spatial Patterns of Radar Emissivity Variations across Ovda Regio, Venus. (submitted to JGR: Planets)
 Jessina, E., Carter, L.M., and **Ganesh, I.** Identifying Landslides in Atla Regio on Venus. (submitted 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

- 2024 **Ganesh, I.**, Christoffersen, M. S., and Sava, P. (2024a). Migration velocity analysis of rimfux observations of jezero crater's subsurface. In *AGU Fall Meeting Abstracts*, volume 2024, page 1671361
- Ganesh, I.**, Flynn, I. T., Akins, A., Byrne, P. K., and Carter, L. M. (2024b). Lava flow cooling on venus and implications for microwave emission. In *55th Lunar and Planetary Science Conference*, volume 2024, page 1354
- 2023 **Ganesh, I.**, Flynn, I. T., Akins, A., Byrne, P. K., and Carter, L. M. (2023b). 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 (2023a). 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 diversity 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 juventae 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

GRANT FUNDING

- 2024–2027 **Principal Investigator**, *Surface properties of Venus’ highlands and impact craters from Magellan altimetry*, NASA Discovery Data Analysis Program
- 2022–2027 **Principal Investigator**, *VenSAR radiometry observations of Venus: characterizing surface dielectric properties and potential volcanic activity*, NASA VenSAR Science Team

SPACECRAFT MISSION PARTICIPATION

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

INVITED TALKS

- Sep 2024 Georgia Institute of Technology, Astrobiology Distinguished Lecture Fall 2024

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 2024	Physical Volcanology , Georgia Institute of Technology, Instructor
Fall 2018	Universe and Humanity, University of Arizona, Graduate Teaching Assistant
Fall 2016	Introduction to Principles of Remote Sensing, IIT Bombay, Graduate Teaching Assistant

PROFESSIONAL SERVICE & ACTIVITIES

2024 – present	Venus Exploration and Analysis Group (VEXAG) steering committee member
2023 – present	AGU annual meeting session convener, Radar Investigations of Planetary Surfaces & Subsurfaces
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, Nature Communications, and Geophysical Research Letters
2018 – 2021	Organizing Committee member, Lunar and Planetary Laboratory Conference, Tucson

INSTITUTIONAL SERVICE & ACTIVITIES

2024 – present	Graduate admission committee member, Georgia Institute of Technology, School of Earth and Atmospheric Sciences
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