

DR. JULIE D. STOPAR

PLANETARY SCIENTIST

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EXPERIENCE AND EDUCATION

18 years of experience as a Professional Geologist and Planetary Scientist

(in addition to student positions)

Ph.D. Geological Science, Arizona State University, Tempe, AZ - 2016

Dissertation Title: *Ponds, Flows, and Ejecta of Impact Cratering and Volcanism: A Remote Sensing Perspective of a Dynamic Moon* <https://repository.asu.edu/items/38376>

CURRENT POSITION

Sr. Staff Scientist, Lunar and Planetary Institute (LPI, USRA), Houston, TX

Co-Coordinator, LPI Summer Intern Program in Planetary Science

<https://www.lpi.usra.edu/lpiintern/>

MISSION AND TEAM HIGHLIGHTS

Science Team Co-Investigator and Operations Team Member for the Lunar Reconnaissance Orbiter Camera (<https://www.lroc.asu.edu>)

Science Team Member, LRO Mini-RF

Research Co-Investigator, SSERVI Ice-50 <https://sites.wustl.edu/Ice50team/>, CASA Moon, and CLSE <https://www.lpi.usra.edu/exploration/> Teams

Concept Study: Intrepid Long-Duration Rover

Robinson et al. (2020) [Intrepid Planetary Mission Concept Study Report](#), NASA.

Concept Study: Isochron Discovery-Class Sample Return

Draper et al. (2019) [LPSC Abstract 1110](#)

Concept Study: IMPEL Smallsat Lander

Stopar et al. (2019) [Planetary and Space Sciences 171: 1-16](#)

Research Principal Investigator and Co-Investigator on multiple NASA Research and Analysis actively funded grants. Co-Investigator on multiple past grants and awards.

POSTDOCTORAL RESEARCH SUPERVISION

Heather M. Meyer, 2018 - 2020, *Flow Features in Light Plains Deposits on the Moon.*

UNDERGRADUATE RESEARCH SUPERVISION

Jared McCallion, LPI summer intern 2023, Project title: *Morphometric characterization of lunar landing sites.*

Jenna Syposs, LPI intern 2022-2023, Project title: *Impact crater science at the lunar south pole.*

Garrett Wolff, LPI intern 2022-2023, *Roughness variations at different scales within Irregular Mare Patches on the Moon.*

Kyle Ivey, LPI summer intern 2021, *A new global search for lunar pyroclastics and a regional study of Lavoisier.*

Rishi Chandra, SUPPR intern 2019, *A new method for determining melt volumes from lunar craters and investigation of melt volume as a function of target composition.*

Emma (Orion) Hon, LPI summer intern 2019, *Ages of volcanism SE of Lichtenberg and Flamsteed Craters on the Moon.*

Maia Madrid, LPI summer intern 2017, *Age of volcanism north and east of Aristarchus crater, Moon.*

Jason Tremblay, LPI summer intern 2017, *Quantifying morphologic differences between lunar Irregular Mare Patches and mercurian hollows.*

PUBLICATION HIGHLIGHTS

Various maps in LPI's [Lunar South Pole Atlas](#) (2019-current)

Henderson, M. J. B., B. H. N., Horgan, S. J. Lawrence, **J. D. Stopar**, L. R. Gaddis (2023) Mineralogy of explosive and effusive volcanic edifices in the Marius Hills volcanic complex, *Icarus* 404, 115628, <https://doi.org/10.1016/j.icarus.2023.115628>

Giguere, T., J. Boyce, J. Gillis-Davis, D. Trang, **J. Stopar** (2022) Lava flow ages in northeastern Oceanus Procellarum: The need for calibrating crater counting procedures, *Icarus* 375 <https://doi.org/10.1016/j.icarus.2021.114838>.

Vannier, H., B. Horgan, **J. Stopar** (2022). The investigation of 16 Irregular Mare Patches with visible/near-infrared spectra from the Moon Mineralogy Mapper, *LPSC*, abstract #[2311](#).

Ivey, K. R., **J. D. Stopar**, L. R. Gaddis (2022) A new global search for lunar pyroclastics and a regional study of Lavoisier, Lunar and Planetary Science Conference, abstract [1213](#).

Petro, N. E., M. Banks, C. M. Elder, J. Keller, A. M. Stickle, **J. Stopar**, and the LRO Science Team (2022) The Lunar Reconnaissance Orbiter Mission as a new era of lunar exploration begins, plans for extended mission 5, abstract [2326](#).

Giguere, T., J. Gillis-Davis, J. Boyce, B. R. Hawke, M. Lemelin, D. Trang, S. Lawrence, **J. Stopar**, B. Campbell, L. Gaddis, D. Blewett, J. O. Gustafson, C. Peterson, C. Runyon (2020) Volcanic processes in the Gassendi region of the Moon, *JGR-P* <https://doi.org/10.1029/2019JE006034>

Stopar J. D., S. J. Lawrence, L. Graham, et al. (2019). Ina, Moon: geologic setting, scientific rationale, and site characterization for a small planetary lander concept, *Planetary and Space Sciences* 171: 1-16.

Stopar, J. D., B. Jolliff, E. Speyerer, et al. (2018). Potential Impact-induced Water-solid Reactions on the Moon, *Planetary and Space Sciences* 162: 157-169. [doi:10.1016/j.pss.2017.05.010](https://doi.org/10.1016/j.pss.2017.05.010)

Stopar, J. D., M. S. Robinson, O. S. Barnouin, et al. (2017). Relative depths of simple craters and the nature of the lunar regolith, *Icarus* 298: 34-48. [doi:10.1016/j.icarus.2017.05.022](https://doi.org/10.1016/j.icarus.2017.05.022)

Ashley, J. W., M. S. Robinson, **J. D. Stopar**, T. D. Glotch, B. R. Hawke, C. H. van der Bogert, H. Hiesinger, S. J. Lawrence, B. L. Jolliff, B. T. Greenhagen, T. A. Giguere, D. A. Paige (2016) The Lassell Massif - A silicic lunar volcano, *Icarus* 273: 248-261. [doi:10.1016/j.icarus.2015.12.036](https://doi.org/10.1016/j.icarus.2015.12.036)

Speyerer, E. J., S. J. Lawrence, **J. D. Stopar**, P. Glaser, M. S. Robinson, B. L. Jolliff (2016) Optimized traverse planning for future polar prospectors based on high resolution lunar topography, *Icarus* 273: 337-345. [doi:10.1016/j.icarus.2016.03.011](https://doi.org/10.1016/j.icarus.2016.03.011)

Stopar, J. D., B. R. Hawke, M. S. Robinson, et al. (2014). Occurrence and mechanisms of impact melt emplacement at small lunar craters, *Icarus* 243: 337-357. [doi:10.1016/j.icarus.2014.08.011](https://doi.org/10.1016/j.icarus.2014.08.011)

- Braden, S. E., **J. D. Stopar**, M. S. Robinson, S. J. Lawrence (2014). Evidence for recent basaltic volcanism on the Moon, *Nature Geoscience* 7: 787-791. [doi:10.1038/ngeo2252](https://doi.org/10.1038/ngeo2252)
- Stopar, J. D.**, G. J. Taylor, M. A. Velbel, et al. (2013). Element abundances, patterns, and mobility in Nakhelite Miller Range 03346 and implications for aqueous alteration, *Geochim. Cosmochim. Acta* 112: 208-225. [doi:10.1016/j.gca.2013.02.024](https://doi.org/10.1016/j.gca.2013.02.024)
- Lawrence, S. J., **J. D. Stopar**, B. R. Hawke, et al. (2013) LRO observations of morphology and surface roughness of volcanic cones and lobate lava flows in the Marius Hills, *JGR-Planets* 118: 615-634.
- Taylor, G. J., **J. D. Stopar**, W. V. Boynton, et al. (2006), Variations in K/Th on Mars, *J. Geophys. Res.* 111, E03S06, [doi:10.1029/2006JE002676](https://doi.org/10.1029/2006JE002676) [printed 112(E3), 2007].
- Stopar, J. D.**, G. J. Taylor, V. E. Hamilton, L. Browning (2006). Kinetic model of olivine dissolution and extent of aqueous alteration on Mars, *Geochim. Cosmochim. Acta* 70, p. 6136-6152.

PROFESSIONAL SERVICE HIGHLIGHTS

- Vice-Chair (current), Mapping and Planetary Spatial Infrastructure Team (MAPSIT) Steering Committee <https://www.lpi.usra.edu/mapsit/>
- LEAG Continuous Lunar Orbital Capabilities Specific Action Team, 2022, Final Report: https://www.lpi.usra.edu/leag/reports/CLOC-SAT_Report.pdf
- Invited panelist for LunGradCon "Young Scientist and Engineers Panel", July 2022
- LEAG-MAPSIT Lunar Critical Data Products Specific Action Team, Co-Chair, Aug-Sep 2021 https://www.lpi.usra.edu/mapsit/reports/leag_mapsit_report_2022-01-11.pdf
- White Paper submitted to the Science Definition Team for Artemis, 2020 <https://www.lpi.usra.edu/announcements/artemis/whitepapers/2101.pdf>
- AGU Fall Meeting session co-convener & co-chair, 2018 & 2017 & 2016
- Planetary Science Vision 2050: Science Org., session co-chair, panelist, 2017
- Back to the Moon workshop, LPI Topical Workshop, co-convener, 2017

OUTREACH AND MEDIA HIGHLIGHTS

- Guest speaker for the Southwest Florida Astronomical Society, Sept 2023
- Invited speaker for New Jersey Concordia Astronomy Club, June 2022
- Houston, We Have a Podcast*, "[Moon Geology](#)", March 2022 (with Gary Jordan and David Krings)
- LPI Virtual Exploration Experiences with Planetary Scientists and International Observe the Moon Night, Oct 2021, "[Cool Moon!](#)" (YouTube live event)
- Invited speaker for Cleveland Astronomical Society, April 2021
- Moon 101 (Aerospace Corp.) Video Lecture "[Surface Geology](#)", in production 2019-2020
- LPI Gallery Feature "[Exploring the Moon's South Pole](#)" 2019-2020
- Invited speaker for the Friends of Lunar Volatiles SSERVI focus group, 2019
- Invited speaker for the Pacific Planetarium Association, 2018 "[Lunar Volcanism](#)"

AWARDS, FELLOWSHIPS, AND HONORS

- NASA SSERVI Susan Mahan Niebur Early Career Award, 2023
USRA Spot Award for exceptional work supporting LPI Education and Public Engagement, 2021
NASA PSD recognition for service and contributions to NASA's Regional Planetary Image Facilities (RPIFs), 2020
ASU College of Liberal Arts & Sciences Graduate Excellence Award, 2016
NASA Group Achievement Award (LRO), 2015
ASU College of Liberal Arts & Sciences Graduate Excellence Award, 2015
GSFC Robert H. Goddard Award (LRO), 2013
NASA Group Achievement Award (LRO), 2011
University of Michigan Class Honors and James B. Angell Scholar Award, 2000
University of Michigan Board of Regents Alumni Distinction Scholarships, 1997-1999