

JENNIFER BUZ

Department of Physics and Astronomy, Northern Arizona University

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EMPLOYMENT

Postdoctoral Researcher, Dept. of Physics and Astronomy, NAU, 06/18-present

EDUCATION

Ph.D., Geological Sciences, California Institute of Technology, 2018

S.M., Planetary Sciences, Massachusetts Institute of Technology, 2011

S.B., Geological and Planetary Sciences, Massachusetts Institute of Technology, 2010

PROFESSIONAL & MISSION EXPERIENCE

NASA Earth and Space Science Fellowship Recipient, 2015, 2016, 2017

Using remote sensing, laboratory, and in-situ measurements to understand the bedrock geology and past environments in the greater Gale region, Mars

NASA Exobiology Grant collaborator, 2015-Present

Application of New Paleomagnetic and Rock Magnetic Techniques to Test the Origin of Magnetite in ALH84001 Carbonate

Mars Science Laboratory, Science Team Member, Caltech/JPL, 3/14-Present

Caltech Seismological Laboratory, Data Analyst, 10/11-12/12

Lunar Orbiter Laser Altimeter, Research Assistant for Maria Zuber, NASA Goddard, 1/10-9/10

Surface roughness calculations and comparison with neutron detections

Lunar and Planetary Institute, Intern for Patrick McGovern, 6/09-8/09

Investigating Venusian volcano edifice shape using radar data

Paleomagnetism Laboratory, Research Assistant for Ben Weiss, MIT, 2008-2010

TEACHING EXPERIENCE

Teaching Assistant, Paleomagnetism and Magnetostratigraphy (CIT Ge124a/b), 2015, 2017

Teaching Assistant, Field Geology Summer Field Camp (CIT Ge120b), 2016

Teaching Assistant, Hands-on Astronomy (MIT 12.009), 2007

PUBLICATIONS

Buz, J., Ehlmann, B.L., Kinch, K., Johnson, J.R., Rice, M.S., Bell, J.F., Maki, J. (submitted to SPIE Optical Engineering) Photometric characterization of Lucideon and Avian Technologies color standards: Application for calibration of the Mastcam-Z instrument on the Mars 2020 rover

Buz, J., Kirschvink, J.L., Thomas-Keprta, K., Kobayashi, A., (in prep for JGR) Shock origin for magnetization in ALH84001 carbonate

Buz, J., Kirschvink, J.L., Murphy, T. (in prep for JGR) Potential true polar wander observed in ALH84001

Buz, J., Ehlmann, B.L., Pan, L., Grotzinger, J.P., (2017) Mineralogy and stratigraphy of the Gale crater rim, wall, and floor units, *J. Geophys. Res. Planets*, 122, doi:10.1002/2016JE005163.

Buz, J., Weiss, B.P., Tikoo, S.M., Shuster, D.L., Gattacceca, J., Grove, T.L. (2015), Magnetism of a Very Young Lunar Glass, *J. Geophys. Res. Planets*, 120, 1720-1735, doi:10.1002/2015JE004878.

Ehlmann, B.L., **Buz, J.**, (2014) Mineralogy and Fluvial History of the Watersheds of Gale, Knobel, and Sharp craters: A regional context for MSL Curiosity's Exploration, *Geophys. Res. Lett.*, doi: 10.1002/2014GL062553

Tikoo, S.M., Weiss, B.P., **Buz, J.**, Lima, A.E., Shea, E.K., Melo, G., Grove, T.L. (2012) Magnetic fidelity of lunar samples and implications for an ancient core dynamo, *EPSL*, 337-338, 93-103, doi: 10.1016/j.epsl.2012.05.024

Garrick-Bethell, I., Weiss, B.P., Shuster, D.L. and **Buz, J.** (2009) Early lunar magnetism, *Science*, 323, 356-359, doi: 10.1126/science.1166804

SELECT CONFERENCE PRESENTATIONS

Buz, J., Kirschvink, J.K., Thomas-Keprta, K.L., Goldschmidt 2018, Talk, Paleomagnetic Tests to Distinguish the Origin of ALH84001 Magnetite

Buz, J., Murphy, T., Kirschvink, J.K., LPSC 2017, Abstract #2924, Poster, Investigating Potential Martian True Polar Wander with ALH84001

Buz, J., Ehlmann, B.L., Pan, L. GSA 2015, Abstract #71-10, Talk, Mineralogy and stratigraphy of Gale crater rim, wall, and floor units

Buz, J., Kirschvink, J.L., LPSC 2015, Abstract #1961, Poster, Visualizing the Magnetization and Fracture Surfaces in ALH84001 Using SQUID Microscopy

Buz, J., Ehlmann, B.L., Mars 8 2014, Abstract #1223, Poster, Geology of the Greater Gale Region

Buz, J., Ehlmann, B.L., LPSC 2014, Abstract #2810, Poster, Effects of Grain Size on the Reflectance Spectroscopy of Olivine in the Vis-NIR and the Derivation of Olivine Composition Using Modified Gaussian Modeling

Buz, J., Weiss, B.P., Garrick-Bethell, I., AGU 2010, Abstract # GP42A-0, Talk Recent Lunar Magnetism

Torrence, M. H., Mazarico, E., Neumann, G. A., **Buz, J.**, Smith, D. E., Zuber, M. T., Barnouin, O. S., Rosenburg, M. A., AGU 2010, Abstract # P51C-1443, Poster, Surface roughness and slope from the Lunar Orbiter Laser Altimeter

Tikoo, S.M., Weiss, B.P., **Buz, J.**, Garrick-Bethell, I., Grove, T.L., Gattacceca, J., LPSC 2010 Abstract #2705, Talk, Ancient Lunar Dynamo: Absence of Evidence is Not the Evidence of Absence

Buz, J., McGovern, P.J., LPSC 2010, Abstract #1482, Poster, Venusian Volcano Shapes: Implications for Edifice Evolution and the Internal Thermal State of Venus

PROGRAMMING/SOFTWARE

MATLAB (advanced), IDL (experienced), Python (basic), GMT (basic), linux (experienced), ArcGIS (advanced), Agisoft Photoscan

FIELD SAMPLING EXPERIENCE

Paleomagnetic sample collection, Feb-March 2016, James Ross Island, Antarctica

Photogrammetry study, Feb-March 2016, James Ross Island, Antarctica

Photogrammetry study, March 2015, Huckleberry Ridge Ash, Tecopa, CA

Paleomagnetic sample collection, November 2008, Vredefort Crater, South Africa

LANGUAGES

English (Fluent), Spanish (Conversational)

VOLUNTEER WORK

Coconino County Search and Rescue, 2018-Present

Coach, Dynamic Planet, Science Olympiad Sierra Madre Middle School 2016-2017

RISE Tutoring Program (tutor) 2015-2018

Outreach with the Caltech Tectonics Observatory 2011-2012

Science Club for Girls (mentor) 2011

INTERESTS

Geology, Mineralogy, Geologic Mapping, Spectroscopy, Paleomagnetism, Remote Sensing, Mission Operations, Instrument Design, Planetary Surfaces, Astrobiology