

Bethany Ehlmann Publications

PEER-REVIEWED PUBLICATIONS

- Viles, HA, BL Ehlmann, T Cebula, CF Wilson, M Bourke. **Simulating physical weathering of basalt on Earth and Mars.** in prep
- EHLMANN, BL, JF Mustard, SL Murchie, F Poulet, JL Bishop, AJ Brown, WM Calvin, RN Clark, DJ Des Marais, RE Milliken, LH Roach, TL Roush, GA Swayze, JJ Wray. **Orbital Identification of Carbonate-Bearing Rocks on Mars.** under review, *Science*
- Milliken, RE, G Swayze, R Arvidson, J Bishop, R Clark, B EHLMANN, R Green, J Grotzinger, R Morris, S Murchie, J Mustard, C Weitz. **Opaline silica in (geologically?) young deposits on Mars.** *Geology*, in press.
- Bishop, JL, EZ Noe Dobrea, NK McKeown, M Parente, BL EHLMANN, JR Michalski, RE Milliken, F Poulet, GA Swayze, JF Mustard, SL Murchie, J-P Bibring. **Phyllosilicate Diversity and Past Aqueous Activity Revealed at Mawrth Vallis, Mars.** 2008. *Science* 321, 830-833.
- Wray, J.J., BL EHLMANN, SW Squyres, JF Mustard, RL Kirk. **Compositional Stratigraphy of Clay-Bearing Layered Deposits at Mawrth Vallis, Mars.** 2008. *Geophysical Research Letters* 35, L12202, doi:10.1029/2008GL034385.
- Mustard JF, SL Murchie, SL, SM Pelkey, BL EHLMANN, RE Milliken, JA Grant, J-P Bibring, F Poulet, J Bishop, E Noe Dobrea, L Roach, F Seelos, RE Arvidson, S Wiseman, R Green, C Hash, D Humm, E Malaret, JA McGovern, K Seelos, T Clancy, R Clark, D Des Marais, N Izenberg, A Knudson, Y Langevin, T Martin, P McGuire, R Morris, M Robinson, T Roush, M Smith, G Swayze, H Taylor, T Titus, M Wolff. **Hydrated Silicate Minerals on Mars Observed by the CRISM Instrument on MRO.** 2008. *Nature* 454, 305-309.
- EHLMANN, BL, JF Mustard, CI Fassett, SC Schon, JW Head, DJ Des Marais, JA Grant, SL Murchie, CRISM team. **Clay mineralogy and organic preservation potential of lacustrine sediments from a Martian delta environment, Jezero Crater, Nili Fossae, Mars.** 2008. *Nature Geoscience*
- EHLMANN, B. L., H. A. Viles, and M. C. Bourke. 2008. **Quantitative morphologic analysis of boulder shape and surface texture to infer environmental history: A case study of rock breakdown at the Ephrata Fan, Channeled Scabland, Washington,** *J. Geophys. Res.*, 113, F02012, doi:10.1029/2007JF000872.
- EHLMANN, BL and RE Criss, 2006. **Enhanced Stage and Stage Variability on the Lower Missouri River benchmarked by Lewis and Clark,** *Geology* 34(11), 977-980.
- Arvidson, RE, F Poulet, RV Morris, J-P Bibring, JF Bell III, SW Squyres, PR Chistensen, G Belluci, B Gondet, BL EHLMANN, WH Farrand, RL Fergason, M Golombek, JL Griffes, J Grotzinger, EA Guinness, KE Herkenhoff, JR Johnson, G Klingelhoefer, Y Langevin, D Ming, K Seelos, RJ Sullivan, JG Ward, SM Wiseman, M Wolff. 2006, **Nature and Origin of the Hematite-Bearing Plains of Meridiani Based on Analyses of Orbital and Opportunity Data Sets,** *JGR* 111(E12), E12S08, doi:10.1029/2006JE002728
- Herkenhoff, KE, SW Squyres, R Anderson, BA Archinal, RE Arvidson, JM Barrett, KJ Becker, JF Bell III, C Budney, NA Cabrol, MG Chapman, D Cook, BL EHLMANN, J Farmer, B Franklin, LR Gaddis, DM Galuszka, PA Garcia, TM Hare, E Howington-Kraus, JR Johnson, S Johnson, K Kinch, RL Kirk, EM Lee, C Leff, M Lemmon, MB Madsen, JN Maki, KF Mullins, BL Redding, L Richter, MR Rosiek, MH Sims, LA Soderblom, N Spanovich, R Springer, RM Sucharski, T Sucharski, R Sullivan, JM Torson, A Yen, 2006. **Overview of the Microscopic Imager Investigation during Spirit's first 450 sols in Gusev crater.** *JGR* 111, doi: 10.1029/2005JE002574.
- EHLMANN, BL, et al, 2005, **Hydrologic and Isotopic Modeling of Alpine Lake Waiau, Mauna Kea, Hawaii.** *Pacific Science* 59 (1), p1-15.
- EHLMANN, BL, et al., 2005. **Humans to Mars: A Feasibility and Cost-Benefit Analysis.** *Acta Astronautica* 56 (9-12), p851-858.
- Golombek, MP, RE Arvidson, JF Bell III, PR Christensen, JA Crisp, LS Crumpler, BL EHLMANN, RL Fergason, JA Grant, R Greeley, AFC. Haldemann, DM Kass, TJ Parker, JT Schofield, SW Squyres, RW Zurek, 2005. **Assessment of Mars Exploration Rover Landing Site Predictions and Implications for Climate Change.** *Nature*, 436, 43-46.

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- Arvidson, RE, RC Anderson, P Bartlett, JF Bell III, PR Christensen, P Chu, K Davis, BL EHLMANN, MP Golombek, S Gorevan, EA Guinness, AFC. Haldemann, KE Herkenhoff, G Landis, R Li, R Lindemann, DW Ming, T Myrick, T Parker, L Richter, FP Seelos IV, LA Soderblom, SW Squyres, RJ Sullivan, J Wilson, 2004. **Localization and Physical Properties Experiments Conducted by Opportunity at Meridiani Planum.** *Science* 306, 1730-1733.
- Arvidson, RE , RC Anderson, P Bartlett, JF Bell III, D Blaney, PR Christensen, P Chu, L Crumpler, K Davis, BL EHLMANN, R Fergason, MP Golombek, S Gorevan, JA. Grant, R Greeley, EA Guinness, AFC. Haldemann, KE Herkenhoff, J Johnson, G Landis, R Li, R Lindemann, H McSween, DW Ming, T Myrick, L Richter, FP Seelos IV, SW Squyres, R Sullivan, A Wang, J Wilson, 2004. **Localization and physical properties experiments conducted by Spirit at Gusev crater.** *Science* 305, 821-824.
- Grant, JA , R Arvidson, JF Bell, III, NA Cabrol, MH Carr, P Christensen, L Crumpler, DJ Des Marais, BL EHLMANN, J Farmer, M Golombek, FD Grant, R Greeley, K Herkenhoff, R Li, HY McSween, DW Ming, J Moersch, JW Rice, Jr., S Ruff, L Richter, S Squyres, R Sullivan, C Weitz, 2004. **Surficial Deposits at Gusev Crater Along Spirit Rover Traverses.** *Science* 305, 807-810.
- Herkenhoff, KE, SW Squyres, R Arvidson, DS Bass, JF Bell III, P Bertelsen, BL EHLMANN, W Farrand, L Gaddis, R Greeley, J Grotzinger, AG Hayes, SF Hviid, JR Johnson, B Jolliff, KM Kinch, AH Knoll, MB Madsen, JN Maki, SM McLennan, HY McSween, JW Rice, Jr., L Richter, M Sims, PH Smith, LA Soderblom, N Spanovich, R Sullivan, S Thompson, T Wdowiak, C Weitz, P Whelley, 2004. **Evidence from Opportunity's Microscopic Imager for Ancient Water on Meridiani Planum.** *Science* 306, 1727-1730.
- Soderblom, LA, RC Anderson, RE Arvidson, JF Bell III, NA Cabrol, W Calvin, PR Christensen, BC Clark, T Economou, BL EHLMANN, WH Farrand, D Fike, R Gellert, TD Glotch, MP Golombek, R Greeley, JP Grotzinger, KE Herkenhoff, DJ Jerolmack, JR Johnson, B Jolliff, G Klingelhöfer, AH Knoll, ZA Learner, R Li, MC Malin, SM McLennan, HY McSween, DW Ming, RV Morris, JW Rice Jr., L Richter, R Rieder, D Rodionov, C Schröder, FP Seelos IV, JM Soderblom, SW Squyres, R Sullivan, WA Watters, CM Weitz, MB Wyatt, A Yen, J Zipfel, 2004. **Soils of Eagle Crater and Meridiani Planum at the Opportunity Rover Landing Site.** *Science* 306, 1723-1726.
- Solar System Exploration Survey, National Academy of Sciences, Space Studies Board, 2003. (Brian Dewhurst, BETHANY EHLMANN, and David Smith, text ed.), ***New Frontiers in Solar System Exploration.*** National Academies Press.
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FIRST-AUTHOR CONFERENCE PUBLICATIONS AND PRESENTATIONS

- (invited) EHLMANN, BL et al. "Orbital Identification of Carbonate-Bearing Rocks on Mars" AGU Fall Mtg. 2008
- (invited) EHLMANN, BL et al. "Diverse Alteration Minerals Around Martian Impact Craters Revealed by MRO-CRISM: Indicators of Hydrothermal Activity or Subsurface Aqueous Alteration?" AGU Fall Mtg. 2008
- EHLMANN, BL et al. "Phyllosilicates, zeolites, and carbonate near Nili Fossae: evidence for distinct environments of aqueous alteration. Workshop on Martian Phyllosilicates, Paris, October 2008.
- EHLMANN, BL, et al. "Distinct provinces of aqueous alteration in the western Isidis region identified with MRO-CRISM" LPSC 38, Houston, Texas, March 10-14, 2008, Abstract #2326
- EHLMANN, BL, et al. "Infrared spectra of impact products from Lonar Crater: the effects of weathering and implications for Mars." LPSC 38, Houston, Texas, March 10-14, 2008, Abstract #2437
- EHLMANN, BL, et al. "Mineralogic diversity and geomorphology of CRISM-detected phyllosilicate bearing materials in Nili Fossae, Mars: Implications for aqueous alteration." *Eos Trans. AGU* 88(52), 2007 Fall Meet. Suppl., Abstract H43H-01 (talk).
- EHLMANN, BL, et al. "New secondary minerals detected by MRO CRISM and their geologic settings: kaolinite, chlorite, illite/muscovite, and the possibility of serpentine or carbonate in Nili Fossae" Seventh International Conference on Mars, Pasadena, California, July 9-13, 2007, Abstract #3270. (talk)

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- EHLMANN, BL, et al. "New phyllosilicate mineral signatures from west of Nili Fossae, Mars through combined OMEGA-CRISM analysis" LPSC 38, Houston, Texas, March 12-15, 2007, Abstract #2078. (poster)
- EHLMANN, BL, et al. "Quantifying boulder shape and surface texture: A case study using geomorphology to infer environmental history at the Ephrata Fan, Channeled Scablands, Washington" LPSC 38, Houston, Texas, March 12-15, 2007, Abstract #1325. (poster)
- EHLMANN, BL and RE Criss. "Enhanced Stage Variability on the Lower Missouri River as benchmarked by Lewis and Clark: Implications for Ecosystem Restoration" *Eos Trans. AGU* 87(52), 2006 Fall Meet. Suppl., Abstract H43H-01 (talk).
- EHLMANN, BL and HA Viles. "Fluvial feature persistence and lichen weathering rates on basalt boulders, Ephrata Fan, Washington" *Geomorphology & Earth Systems Science*, BGRG International Conference, Loughborough, UK, June 28-30, 2006 (poster).
- EHLMANN, BL et al., "Terrain Roughness from MER Traverse Profiles at Gusev Crater and Meridiani Planum" *Eos Trans. AGU*, 85(47), 2004 Fall Meet. Suppl., Abstract P21A-0201. (poster)
- Sullivan, R. et al., 2004. (talk by B. EHLMANN) "Rock and Soil Physical Properties at the MER Terra Meridiani Landing Site". European Geophysical Union Meeting, Nice, France, April 25-30, 2004
- EHLMANN, BL and RE Criss. "Stage Variability of the Missouri River as recorded by Lewis and Clark." *Geological Society of America Abstracts with Programs*, Vol. 36, No. 3, p. 7, GSA Regional Meeting, St. Louis, April 1-2, 2004. (talk)
- EHLMANN, BL et al., 2002. "Hydrology of Lake Waiiau" *Eos. Trans. AGU*, 83(19), 2002 Spring Meet. Suppl., Abstract H51E-06. (talk)