

Publications

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Education:

Ph.D.: Geological Sciences (James Head, PhD), 2012
Brown University, Providence, Rhode Island
Sc.M.: Geological Sciences (James Head, PhD), 2009
Brown University, Providence, Rhode Island
B.A.: Geology (Eric Grosfils, PhD), 2007
Pomona College, Claremont, California

Publications in Review:

Byrne, P., Klimczak, C., Williams, D., **Hurwitz, D. M.**, Solomon, S., Head, J., Preusker, F., Oberst, J. **AN ASSEMBLAGE OF LAVA FLOW FEATURES ON MERCURY.** Submitted to Journal of Geophysical Research – Planets July 11, 2012.

Hurwitz, D.M., Head, J.W., and Hiesinger, H. **LUNAR SINUOUS RILLES: DISTRIBUTION, CHARACTERISTICS, AND IMPLICATIONS FOR THEIR ORIGIN.** Submitted to Planetary and Space Science May 28, 2012.

Hurwitz, D.M and Head, J.W. **TESTING THE LATE-STAGE OUTFLOW CHANNEL ORIGIN HYPOTHESIS: DISTINGUISHING BETWEEN WATER EROSION AND LAVA EROSION ORIGINS FOR ATHABASCA VALLES, MARS.** Submitted to Icarus January 13, 2012, resubmitted to Icarus June 19, 2012.

Hurwitz, D.M., Head J.W., Byrne, P.K., Xiao, Z., Solomon, S.C., Zuber, M.T., Smith, D.E., and Neumann, G.A. **INVESTIGATING THE ORIGIN OF POTENTIAL LAVA CHANNELS ON MERCURY OBSERVED IN MESSENGER DATA: THEORY AND OBSERVATIONS.** Submitted to Journal of Geophysical Research – Planets April 12, 2012, resubmitted to J. Geophys. Res. – Planets August 30, 2012.

Publications:

Hurwitz, D.M., Head, J.W., Wilson, L., and Hiesinger, H. **ORIGIN OF LUNAR SINUOUS RILLES: MODELING EFFECTS OF GRAVITY, SURFACE SLOPE, AND LAVA COMPOSITION ON EROSION RATES DURING THE FORMATION OF RIMA PRINZ.** Journal of Geophysical Research – Planets, vol. 117 (E00H14), doi: 10.1029/2011JE004000, 2012.

Hurwitz, D.M., Head, J.W. **GEOLOGIC MAP OF THE SNEGUROCHKA PLANITIA QUADRANGLE (V-1), VENUS.** U.S. Geological Survey Scientific Investigations Map 3178, scale 1:5,000,000.

- Blewett, D.T., Chabot, N.L., Denevi, B.W., Ernst, C.M., Head, J.W., Izenberg, N.R., Murchie, S.L., Solomon, S.C., Nittler, L.R., McCoy, T.J., Xiao, Z., Baker, D.M.H., Fassett, C.I., Braden, S., Oberst, J., Scholten, F., Preusker, F., **Hurwitz, D.M.** **HOLLOWS ON MERCURY: MESSENGER EVIDENCE FOR GEOLOGICALLY RECENT VOLATILE-RELATED ACTIVITY.** *Science*, vol. 333, pg. 1856, 2012. My contributions involved initial observations of examples of “hollows” features and analogs observed on other planetary surfaces including Mars, Earth, and Venus.
- Head, J.W., Chapman, C.R., Strom, R.G., Fassett, C.I., Denevi, B.W., Blewett, D.T., Ernst, C.M., Watters, T.R., Solomon, S.C., Murchie, S.L., Prockter, L.M., Chabot, N.L., Gillis-Davis, J.J., Whitten, J.L., Goudge, T.A., Baker, D.M.H., **Hurwitz, D.M.**, Ostrach, L.R., Xiao, Z., Merline, W.J., Kerber, L., Dickson, J.L., Oberst, J., Byrne, P.K., Klimczak, C., Nittler, L.R. **FLOOD VOLCANISM IN THE NORTHERN HIGH LATITUDES OF MERCURY REVEALED BY MESSENGER.** *Science*, vol. 333, pg. 1853, 2012. My contributions involved observations of vents adjacent to the volcanic plains and observations and analysis of flow features in the plains.
- Hurwitz, D.M.**, Fassett, C., Head, J.W., and Wilson, L. **FORMATION OF AN ERODED LAVA CHANNEL WITHIN AN ELYSIUM PLANITIA IMPACT CRATER: DISTINGUISHING BETWEEN A MECHANICAL AND THERMAL ORIGIN.** *Icarus*, vol. 210, pg. 626-634, 2010.
- Grosfils, E.B., Long, S.M., Venechuk, E.M., **Hurwitz, D.M.**, Richards, J.W., Kastl, B., Drury, D.E., and Hardin, J. **GEOLOGIC MAP OF THE GANIKI PLANITIA QUADRANGLE (V-14), VENUS:** U.S. Geological Survey Scientific Investigations Map 3121, scale 1:5,000,000, 1 sheet, includes pamphlet [<http://pubs.usgs.gov/sim/3121/>], 2010.
- Head, J.W., Murchie, S.L., Prockter, L.M., Solomon, S.C., Strom, R.G., Chapman, C.R., Watters, T.R., Blewett, D.T., Gillis-Davis, J.J., Fassett, C.I., Dickson, J.L., **Hurwitz, D.M.**, Ostrach, L.R. **EVIDENCE FOR INTRUSIVE ACTIVITY ON MERCURY FROM THE FIRST MESSENGER FLYBY.** *Earth and Planetary Science Letters*, 285(3-4), 251-262, 2009.
- Hurwitz, D.M.**, Long, S.M., Grosfils, E.B. **THE CHARACTERISTICS OF MAGMA RESERVOIR FAILURE BENEATH A VOLCANIC EDIFICE.** *Journal of Volcanology and Geothermal Research*, 188, 379-394, 2009.

Meeting Contributions:

- Hurwitz, D.M.**, Head, J.W., Byrne, P.K., Xiao, Z. **POTENTIAL FOR LAVA EROSION ON MERCURY: MODELING THE FORMATION OF BOTH SMALL AND LARGE LAVA CHANNELS.** 43rd Lunar and Planetary Science Conference, poster presentation, abstract #1055, March 2012.
- Hurwitz, D.M.**, Head, J.W., **TESTING THE LATE-STAGE OUTFLOW CHANNEL ORIGIN HYPOTHESIS: INVESTIGATING BOTH WATER EROSION AND LAVA EROSION ORIGINS FOR ATHABASCA VALLES, MARS.** 43rd Lunar and Planetary Science Conference, oral presentation, abstract #1056, March 2012.
- Hurwitz, D.M.**, Head, J.W., Hiesinger, H., and Wilson, L., **TIMING OF LUNAR SINUOUS RILLE FORMATION: IMPLICATIONS FOR LUNAR VOLCANIC EVOLUTION.** Lunar Science Forum, July, 2011.

- Hurwitz, D.M.** and Head, J.W., **IMPLICATIONS OF VOLATILES WITHIN LUNAR BASALTS FOR THE ORIGIN OF SINUOUS RILLE SOURCE DEPRESSIONS.** Wet vs. Dry Moon Workshop, poster presentation, June, 2011.
- Hurwitz, D.M.,** Head, J.W., Hiesinger, H., and Wilson, L., **MODELING EFFECTS OF LUNAR SURFACE SLOPE, TEMPERATURE, AND MATERIAL PROPERTIES ON THE EFFICIENCY OF EROSION DURING THE FORMATION OF RIMA PRINZ.** 42nd Lunar and Planetary Science Conference, oral presentation, abstract #1176, March 2011.
- Hurwitz, D.M.,** Head, J.W., Hiesinger, H., and Wilson, L., **IDENTIFYING THE EROSION REGIME PRESENT DURING FORMATION OF LUNAR SINUOUS RILLES.** American Geophysical Union Fall Meeting, December, 2010.
- Hurwitz, D.M.,** Fassett, C.I., Head, J.W., and Wilson, L. **ANALYSIS OF THE ORIGIN OF AN ERODED LAVA CHANNEL IN AN ELYSIUM PLANITIA CRATER.** 1st Moscow Solar System Symposium, October 2010.
- Hurwitz, D.M.,** Head, J.W., Wilson, L., and Hiesinger, H., **MORPHOLOGIC AND TOPOGRAPHIC ANALYSIS OF THE ORIGIN OF LUNAR SINUOUS RILLES: DISTINGUISHING THE RELATIVE ROLES OF THERMAL AND MECHANICAL EROSION.** Lunar Science Forum, July, 2010.
- Hurwitz, D.M.,** Fassett, C.I., Head, J.W., and Wilson, L. **A LAVA CHANNEL WITHIN AN ELYSIUM PLANITIA IMPACT CRATER: MECHANICS OF FLOW AND ORIGIN.** 41st Lunar and Planetary Science Conference, oral presentation, abstract #1021, March 2010.
- Hurwitz, D.M.,** Head, J.W., Wilson, L., and Hiesinger, H. **LUNAR SINUOUS RILLES: ANALYSIS OF MORPHOLOGY, TOPOGRAPHY, AND MINERALOGY, AND IMPLICATIONS FOR A THERMAL EROSION ORIGIN.** 41st Lunar and Planetary Science Conference, abstract #1056, March 2010.
- Hurwitz, D.M.,** Head, J.W., and Wilson, L. **LUNAR SINUOUS RILLES: ANALYSIS OF MORPHOLOGY, TOPOGRAPHY, AND MINERALOGY, AND IMPLICATIONS FOR A THERMAL EROSION ORIGIN.** American Geophysical Union Fall Meeting, December, 2009.
- Hurwitz, D.M.,** Head, J.W., and Wilson, L. **LUNAR SINUOUS RILLES: ANALYSIS OF MORPHOLOGY, TOPOGRAPHY, AND MINERALOGY, AND IMPLICATIONS FOR A THERMAL EROSION ORIGIN.** 50th Brown-Vernadsky Microsymposium, October, 2009.
- Hurwitz, D.M.,** Head, J.W. **GEOLOGIC MAP OF THE SNEGUROCHKA PLANITIA QUADRANGLE (V1): IMPLICATIONS FOR TECTONIC AND VOLCANIC HISTORY OF THE NORTH POLAR REGION OF VENUS.** 40th Lunar and Planetary Science Conference, abstract #1174, March, 2009.
- Hurwitz, D.M.,** Head, J.W. **GEOLOGY OF THE NORTH POLAR REGION OF VENUS: SNEGUROCHKA PLANITIA (V-1) QUADRANGLE.** 3rd European Planetary Science Congress, contribution 00401, October, 2008.