

JAMES R. ZIMBELMAN

EDUCATION:

- 1984: Ph.D. in Geology, Arizona State Univ., Tempe, Arizona
Dissertation: "Geologic interpretation of remote sensing data for the Martian volcano Ascræus Mons"
- 1978: M.S. in Geophysics and Space Physics, University of California at Los Angeles, Los Angeles, California
- 1976: B.A. in Physics and Mathematics (Double major), Northwest Nazarene College, Nampa, Idaho

POSITIONS HELD:

- 1988-Pres. Senior Geologist Emeritus (as of Oct 2020), Center for Earth and Planetary Studies, National Air and Space Museum, Smithsonian Institution, Washington, D.C.
Planetary Geology - Analysis of high resolution remote sensing data of Mars; geologic mapping of Mars and Venus; studies of long lava flows on the terrestrial planets; paleoflood features on Mars and Earth; field studies of volcanic, pluvial and aeolian terrains.
NASM activities - Chair, CEPS (02-07); Earth Sciences Review Committee (1988-90, 2000-2, 4-8); Professional Accomplishments Evaluation Committee (1991-6); public lectures for Smithsonian; Curator, "Exploring The Planets" (Gallery 207, 98-02); Lead Curator, new ETP (Gallery 205; 2016-20), retired (9-30-20); Emeritus status granted with Smithsonian (10-5-20).
- 1986-1988 Staff Scientist, Lunar and Planetary Institute, Houston, Texas
1984-1986 Visiting Post-Doctoral Fellow, L.P.I.
Planetary Geology - Analysis of high resolution thermal infrared and imaging data from the equatorial region of Mars; image processing applications for photogeologic analysis; field studies of volcanic and aeolian features; reduced gravity observations of granular flows.
LPI activities - Co-Director of Summer Intern Program (1985-1988), Seminar Chairman (1985-87), Project Scientist for NASA-sponsored study project: "Mars: Evolution of Volcanism, Tectonism, and Volatiles" (1987-1988), public lectures.
- 1986-1988 Lecturer, University of Houston at Clear Lake, Houston, Texas (Graduate-level classes)
1988: Remote Sensing (with Steve Williams, LPI).
1987: Mars: Geologic and climatic history (with Steve Clifford, LPI).
1986: Remote Sensing.

- 1980-1984 Graduate Research Associate, Arizona St. Univ.
Planetary Geology - Martian surface analysis (with Ron Greeley).
- 1981-1982 Graduate Teaching Assistant, Arizona St. Univ.
Spring, 1982: Optical & X-ray Tech. (with Joe Smyth).
Fall, 1981: Geophysics: Seismology (with David Yuen).
- 1976-1980 Graduate Research Assistant, U.C.L.A.
Planetary Geophysics - Viking IRTM (with Hugh Kieffer), 77-80.
Geochemistry - Chemical separations, INAA (with John Wasson), 76-77.

HONORS AND ACTIVITIES:

G. K. Gilbert Award, GSA Planetary Geology Division (2020)
Promoted to Senior Geologist, Smithsonian/NASM (2018)
Lead Curator for new "Exploring the Planets" (Gallery 205) (2016-2020)
Solar System Workings Review Panel, Week 1, Volcanism group, NASA (2014)
Ronald Greeley Distinguished Service Award, GSA Planetary Geology Division (2013)
Guest Editor, Planetary Dunes special issue of Icarus (2013-14; published 2/15/14)
Member, Editor Search Committee for JGR-Planets, AGU (2010)
Member, Human Exploration of Mars Science Advisory Group, MEPAG (2007-8)
Secretary, Planetary Sciences section, American Geophysical Union (2006-8)
Chairman, CEPS/NASM (2002-7)
Mars Data Analysis Program Review Panel, NASA (01, 04, 08, 09; Grp Chief, 01, 09)
Group Chief, Mars Fundamental Research Review Panel, NASA (2004)
NASA SSES, Strategic Plan Development, Geology Subgroup (2004)
Planetary Sciences representative, Spring AGU Program Committee (2000-2)
Elected Fellow, Geological Society of America (1999)
Chairman, Management Operations Working Group, PG&G, NASA (1999-02)
Chairman, Planetary Geology and Geophysics Review Panel, NASA (1997-9)
Member, Management Operations Working Group, PG&G, NASA (1997-9)
Co-Chairman, Planetary Cartography Working Group, ICA (1997-2009)
Professional Achievement Award, Northwest Nazarene University (1995)
Chair, Mars Surveyor '98 Instrument Review Panel, NASA (1995)
Officer, Planetary Geology Division, Geological Society of America (1994-8)
Chairman, RPIF Directors and Data Managers Group, NASA (1994-7)
Chairman, Professional Accomplishments Evaluation Committee, NASM (1994-5)
Lunar and Planetary Sciences Review Panel, NASA (1992-4)
Planetary Geology and Geophysics Management Operations Working Group (1992-4)
Member, Venus Geologic Mapping Steering Group, NASA (1992-5)
Venus Data Analysis Program Review Panel, Mapping Group Chief, NASA (1992)
Planetary Astronomy Marswatch Review Panel, NASA (1992)
Chairman, Planetary Cartography Working Group, NASA (1991-4; member, 1995)
Mars Geologic Mapping Program Review Panel, NASA (1990-3)
Director, Regional Planetary Imaging Facility, NASM (1989-02)
Magellan Guest Investigator Program Review Panel, NASA (1990)

Associate Editor, Proceedings 19th - 22th LPSC (1988-91)
MEVTV Steering Committee, NASA (1987-1990)
Science observer, NASA KC-135 microgravity flights (1985, 87)
Science Flight Team, Viking Mission to Mars (IRTM) (1977-80)
California State Scholarship Commission Fellowship (1976-77)
Summa Cum Laude, Northwest Nazarene College (1976)
Who's Who in American Universities and Colleges (1976)
Freshman Physics Award, Northwest Nazarene College (1973)
Salutatorian, The Dalles High School, The Dalles, Oregon (1972)

Television/radio interviews:

Senate Capitol studio, Sen. Dornan (N. Dakota) (7/97) (Pathfinder)
NBC Nightly News, reporter Robert Hager (2000) (Mary Bourke)
MSNBC, reporter Savannah Guthrie (8/1/08) (Phoenix, Water on Mars)
Fox (Washington, Channel 5), reporter Holly Morris (7/13/10) (Mars Day)
PBS News Hour, reporter Miles O'Brien (3/16/11) (Beyond exhibit)
Fox Channel 5, reporter Doug McElway (4/8/11) (possible Gov shutdown)
CNN (Wolf Blitzer show), ABC 7, CBS 9, VOA, WTOP (6/5/12) (Venus transit)
BBC World News (Washington studio), 5/31/13 (asteroid 1998QE2 close approach)
Noticias Caracol (Columbia), ABC (Washington WJLA), 11/12/14 (Rosetta/Philae)
Deutsche Welle (Germany), 12/2/14 (Mars missions)
German radio (Pluto/New Horizons) 7/8/15
NBC national, ABC DC (New Horizons) 7/13/15
WMAL radio (Perseid meteors) 8/10/15
BBC World News TV and radio (8/2, 8/15) (space theme dance, Kennedy Center)
WMAL radio (9/25/15) (super moon eclipse)
CBS Evening News, reporter Chip Reed (7/25/18) (polar lake on Mars)

Presentations on Capitol Hill:

Mars Geology (House, 7/97)
Spacecraft Tour of the Solar System (Senate, 5/99)
Mars Rovers (House, 7/06, with John Grant)

ORGANIZATION MEMBERSHIPS:

American Geophysical Union (1985-2020)
Geological Society of America (1987-pres)
International Cartographic Association (1995-2009)
International Association of Volcanology and Chemistry of Earth's Interior (1998-2016)
Association of American Geographers (2014)
Association of American Museums (2016)

RESEARCH GRANTS: (JRZ, Principal Investigator)

"1:500,000 scale geologic mapping of the Memnonia region of Mars" NAGW -1390 (NASA) Planetary Geology & Geophysics Program, 1987-90, \$10K.

"Modification processes and extent of bedrock exposure in the cratered highlands of Mars" NAGW-1804 (NASA) PG&G, 1989-90, \$20K.

"Regional Planetary Image Facility" NAGW-1425 and NAG5-4505 (NASA) PG&G, 1989-2002, \$312K (through FY02).

"1:500,000 scale geologic mapping of the Tharsis Montes on Mars" NAGW-1390 (NASA) PG&G, 1990-95, \$50K.

"Simulation of lava flow emplacement on the terrestrial planets" NAGW-3364 (NASA) PG&G, 1993-5, \$49K.

"Geologic and tectonic implications for paleoslopes on Venus" NAGW-3734 (NASA), Venus Data Analysis Program, 1993-4, \$64K.

"Topical geologic mapping of Mars and Venus" NAG5-4586 and 11743 (NASA) PG&G, 1996-04, \$213K.

"Evaluation of the controlling influence of topography on the emplacement of large flow fields" NAGW-3364 (NASA), PG&G, 1996-7, \$34K.

"Long lava flows on the terrestrial planets" NAG5-4164 (NASA) PG&G, 1998-03, \$181K.

"Field studies in the Mojave Desert of California" Honda grant for Environmental Studies at NASM, 1998-00, \$20K.

"Evaluation of the paleoflood hypothesis for Mars and Earth through investigation of unconfined fluvial processes" NAG5-8153 (NASA) Mars Data Analysis Program, 1999-01, \$146K.

"Topical studies of Martian sand using Mars Global Surveyor data" NAG5-11075 (NASA) MGSDAP, then MDAP, 2001-4, \$105K.

"Paleoflood geomorphology and timing in central Australia" 140309-3828 (Smithsonian Scholarly Studies Program), 2001-3, \$63K.

"Field investigations of pluvial and aeolian features in the southwestern United States as analogs to features on Mars" NAG5-12746 (NASA) MFRP, 2003-5, \$100K. E/PO augmentation, \$45K over three years.

"Evaluation of lava flow emplacement conditions on the terrestrial planets" NAG5-4164 and NNG04GJ21G (NASA) PG&G, 2005-7, \$101K.

“Evaluation of ripple and dune landforms and processes on Mars using MGS and Odyssey data” NNG04GN88G (NASA) MDAP, 2005-7, \$135K.

“Field study of the 1907 Mauna Loa lava flow in Hawaii” (Smithsonian Endowments), 2007, \$5.9K.

“Geologic mapping of the Medusae Fossae Formation on Mars” NNX07AP42G (NASA) PGG, 2008-10, \$93K.

“Field investigations of pluvial features in the western United States as analogs to features on Mars” NNX07AQ71G (NASA) MFRP, 2007-9, \$126K.

“Field study of the Bruneau Sand Dunes and the Coral Pink Sand Dunes” (Smithsonian Endowments – Sprague), 2008-9, \$5.1K.

“Emplacement of long non-channeled lava flows on the terrestrial planets” NNX08AM18G (NASA) PGG, 2008-9, \$31.5K.

“Morphometric analysis of small sand dunes on Mars” NNX08AK90G (NASA) MDAP, 2008-11, \$174K.

“Investigation of inflation and textural features on basaltic lava flows” (Smithsonian Scholarly Studies program), 2008-11, \$67K.

“Evaluation of the remote identification of inflated lava flows on the terrestrial planets” NNX09AD88G (NASA) PGG, 2009-11, \$198K.

“External base transmitter for Trimble R8 DGPS” (Smithsonian Research Equipment Pool), 2009, \$10K.

“Field study of an inflated lava flow and monitoring of sand dunes” (Smithsonian Endowments – Becker), 2010, \$15.7K.

“Earth analogs for large-volume ash deposits on Mars” (Smithsonian Grand Challenges, level 1), 2011, \$9.7K.

“Field studies of inflated lava flows and reversing sand dunes” (Smithsonian Endowments – Becker), 2011, \$14.5K.

“Characterization of small sand dunes on Mars” NNX12AJ38G (NASA) MDAP, 2012-2018, \$330K.

“Examining the relationship between sand ripples and megaripples on Mars and Earth” (Smithsonian Scholarly Studies Awards, Becker endowment), 2018, \$35.3K.

Outreach funding (NASM):

“Making Tracks on Mars” Smithsonian Channel Mission Critical program, 2020, \$500K.

“Kenneth C. Griffin Exploring the Planets”, gift to fund new gallery, 2021, \$10M.

PUBLICATIONS:

Books

Zimbelman, J.R., and T.K.P. Gregg, Eds. (2000) Environmental effects on volcanic eruptions: From deep oceans to deep space, Kluwer Academic/Plenum Publishers, New York, 260 p., ISBN 0-306-46233-8.

Lorenz, R.D., and J.R. Zimbelman (2014) Dune Worlds: How windblown sand shapes planetary landscapes, Springer/Praxis Publishers, New York, 308 p, ISBN 978-3-540-89724-8.

Zimbelman, J.R., D.A. Crown, P.J. Mouginis-Mark, T.K.P. Gregg (2021) The Volcanoes of Mars, Elsevier Pub., New York, 246 p., ISBN 978-0-12-822876-0.

Zimbelman, J.R. (2023) Waypoints, 273 p. Self-published (OceanofPDF.com); <https://oceanofpdf.com/genres/biography/pdf-waypoints-by-jim-zimbelman-download/?id=001795117063>.

Refereed Articles and Maps

Zimbelman, J.R., H.H. Kieffer (1979) Thermal mapping of the north equatorial and temperate latitudes of Mars, J. Geophys. Res. **84**, 8239-8251.

Zimbelman, J.R., R. Greeley (1981) High resolution visual, thermal, and radar observations in the northern Syrtis Major region of Mars, Proc. Lunar Planet. Sci. Conf. **12B**, 1419-1429.

Zimbelman, J.R., R. Greeley (1982) Surface properties of ancient cratered terrain in the northern hemisphere of Mars, J. Geophys. Res. **87**, 10181-10189.

Zimbelman, J.R. (1984) Planetary impact probabilities for long period comets, Icarus **57**, 48-54.

Zimbelman, J.R. (1985) Estimates of rheologic properties for flows on the Martian volcano Ascraeus Mons, Proc. Lunar Planet. Sci. Conf. 16th, J. Geophys. Res. **90**, D157-D162.

Zimbelman, J.R. (1986) Surface properties of the Pettit wind streak on Mars: Implications for sediment transport, Icarus **66**, 83-93.

Fink, J.H., J.R. Zimbelman (1986) Rheology of the 1983 Royal Gardens basalt flows, Kilauea volcano, Hawaii, Bull. Volc. **48**, 87-96.

- Zimbelman, J.R. (1986) The role of porosity in thermal inertia variations on basaltic lavas, Icarus **68**, 366-369.
- Zimbelman, J.R., L.A. Leshin (1987) A geologic evaluation of thermal properties for the Elysium and Aeolis quadrangles of Mars, Proc. Lunar Planet. Sci. Conf. 17th, J. Geophys. Res. **92**, E588-E596.
- Zimbelman, J.R. (1987) Spatial resolution and the geologic interpretation of Martian morphology: Implications for subsurface volatiles, Icarus **71**, 257-267.
- Forsythe, R.D., J.R. Zimbelman (1988) Is the Gordii Dorsum escarpment on Mars an exhumed transcurrent fault?, Nature **336**, 143-146.
- Mouginis-Mark, P.J., L. Wilson, J.R. Zimbelman (1988) Polygenic eruptions on Alba Patera, Mars, Bull. Volc. **50**, 361-379.
- Wells, G.L., J.R. Zimbelman (1989) Extra-terrestrial arid surface processes, In Arid Zone Geomorphology (D. Thomas, ed.), pp. 335-358, Belhaven Press, London.
- Zimbelman, J.R., S.M. Clifford, S.H. Williams (1989) Concentric crater fill on Mars: An aeolian alternative to ice-rich mass wasting, Proc. Lunar Planet. Sci. Conf. 19th, pp. 397-407, Cambridge Press.
- Fink, J.H., J.R. Zimbelman (1990) Longitudinal variations in rheologic properties of lavas: Puu Oo basalt flows, Kilauea volcano, Hawaii, In IAVCEI Proceedings in Volcanology, Vol. 2, Lava Flows and Domes, (J.H. Fink, ed.), Springer-Verlag, New York, 157-173.
- Zimbelman, J.R. (1990) Outliers of dust along the southern margin of the Tharsis region, Mars, Proc. Lunar Planet. Sci. Conf. 20th, pp. 525-530, Lunar and Planetary Institute, Houston.
- Zimbelman, J.R., S.C. Solomon, V.L. Sharpton (1991) The Evolution of Volcanism, Tectonics, and Volatiles on Mars: An overview of recent progress, Proc. Lunar Planet. Sci. **21**, pp. 613-626, Lunar and Planetary Institute, Houston.
- Zimbelman, J.R., R.A. Craddock (1991) Bedrock exposure in the Sinus Meridiani region of the Martian highlands, in Proc. Lunar Planet. Sci. **21**, pp. 645-655, Lunar and Planetary Institute, Houston.
- Zimbelman, J.R., K.S. Edgett (1992) The Tharsis Montes, Mars: Comparison of volcanic and modified landforms, Proc. Lunar Planet. Sci. **22**, pp. 31-44, Lunar and Planetary Institute, Houston.
- Squyres, S.W., S.M. Clifford, R.O. Kuzmin, J.R. Zimbelman, F. Costard (1992) Ice in the Martian megaregolith, in Mars (H. Kieffer et al., eds.), pp. 523-554, U of A Pr.

- Zimbelman, J.R., R.A. Craddock, R. Greeley, R.O. Kuzmin (1992), Volatile history of Mangala Valles, Mars, J. Geophys. Res. **97**, 18,309-18,317.
- Dollfus, A., M. Deschamps, J.R. Zimbelman (1993), Soil texture and granulometry at the surface of Mars, J. Geophys. Res. **98**, 3413-3429.
- Robinson, M.S., P.J. Mouginis-Mark, J.R. Zimbelman, S.S.C. Wu, K.K. Ablin, A.E. Howington-Kraus (1993), Chronology, eruption duration, and atmospheric contribution of the Martian volcano Apollinaris Patera, Icarus **104**, 301-323.
- Williams, S.H., J.R. Zimbelman (1994), "White Rock:" An eroded Martian lacustrine deposit (?), Geology **22**, 107-110.
- Williams, S.H., J.R. Zimbelman (1994), Desert pavement evolution: An example of the role of sheetflood, J. Geology **102**, 243-248.
- Tanaka, K.L., H.J. Moore, G.G. Schaber, M.G. Chapman, E.R. Stofan, D.B. Campbell, P.A. Davis, J.E. Guest, G.E. McGill, P.G. Rogers, R.S. Saunders, J.R. Zimbelman (1994) The Venus Geologic Mappers' Handbook, U.S. Geol. Survey Open-File Report 94-438, 64 p.
- Zimbelman, J.R., R.A. Craddock, R. Greeley (1994), Geologic map of the MTM -15147 quadrangle, Mangala Valles region of Mars, U.S. Geol. Survey Misc. Invest. Series Map I-2402, scale 1:500,000.
- Forsythe, R.D., J.R. Zimbelman, A case for ancient evaporite basins on Mars (1995) J. Geophys. Res. **100**, 5553-5563.
- Scott, D.H., J.R. Zimbelman (1995), Geologic map of Arsia Mons volcano, Mars, U.S. Geol. Survey Misc. Invest. Series Map I-2480, scale 1:1,000,000.
- Zimbelman, J.R., S.H. Williams, V.P. Tchakerian (1995), Sand transport paths in the Mojave Desert, southwestern United States, in Desert Aeolian Processes (V. Tchakerian, Ed.), pp. 101-129, Chapman and Hall, New York.
- Zimbelman, J.R., S.H. Williams (1996) Wind streaks: Geological and botanical effects on surface albedo contrast, Geomorph. **17**, 167-185.
- Craddock, R.A., L.S. Crumpler, J.C. Aubele, J.R. Zimbelman (1997) Geology of central Chryse Planitia and the Viking 1 landing site: Implications for the Mars Pathfinder mission, J. Geophys. Res. **102**, E2, 4161-4183.
- Wells, G.L., J.R. Zimbelman (1997) Extraterrestrial arid surface processes, in Arid Zone Geomorphology: Process, Form and Change in Drylands, 2nd Ed. (D.S.G. Thomas, ed.), pp. 659-690, John Wiley & Sons, New York.

- Edgett, K.S., B.J. Butler, J.R. Zimbelman, V.E. Hamilton (1997) Geologic context of the Mars radar “Stealth” region in southwestern Tharsis, J. Geophys. Res. **102**, E9, 21545-21568.
- Chapman, M.G., J.R. Zimbelman (1998) Corona associations and their implications for Venus, Icarus **132**, 344-361.
- Scott, D.H., J.Dohm, J.R. Zimbelman (1998) Geologic map of Pavonis Mons volcano, Mars, U.S. Geological Survey Misc. Invest. Series Map I-2561.
- Zimbelman, J.R. (1998) Emplacement of long lava flows on planetary surfaces, J. Geophys. Res. **103**, B11, 27503-27516.
- Zimbelman, J.R. (1999) Planetary Cartography, Carto. Geogr. Inform. Sci. **26** (3), 182.
- Zimbelman, J.R. (2000) Chapter 51: Volcanism on Mars, in Encyclopedia of Volcanoes (H. Sigurdsson et al., Eds.), pp. 771-783, Academic Press, San Diego.
- Zimbelman, J.R. (2000) Non-active dunes in the Acheron Fossae region of Mars between the Viking and Mars Global Surveyor eras, Geophys. Res. Lett. **27(7)**, 1069-1072.
- Zimbelman, J.R., T.K.P. Gregg (2000) Volcanic diversity throughout the solar system, in Environmental effects on volcanic eruptions: From deep oceans to deep space, pp. 1-8, Kluwer Academic/Plenum Publishers, New York.
- Zimbelman, J.R., S.A. Fagents, T.K.P. Gregg, C.R. Manley, S.K. Rowland (2000) Subaerial terrestrial volcanism: Eruptions in our own backyard, in Environmental effects on volcanic eruptions: From deep oceans to deep space, pp. 9-37, Kluwer Academic/Plenum Publishers, New York.
- Greeley, R., S.A. Fagents, N.T. Bridges, D.A. Crown, L.S. Crumpler, P.J. Mouginis-Mark, J.R. Zimbelman (2000) Volcanism on the red planet: Mars, in Environmental effects on volcanic eruptions: From deep oceans to deep space, pp. 75-112, Kluwer Academic/Plenum Publishers, New York.
- Gregg, T.K.P., J.R. Zimbelman (2000) Volcanic vestiges: Pulling it together, in Environmental effects on volcanic eruptions: From deep oceans to deep space, pp. 243-251, Kluwer Academic/Plenum Publishers, New York.
- Zimbelman, J.R. (2001) Image resolution and the evaluation of genetic hypotheses for planetary landscapes, Geomorphology **37**, Nos. 3-4, 179-199.
- Dohm, J.M., R.C. Anderson, V.R. Baker, J.C. Ferris, L.P. Rudd, T.M. Hare, J.W. Rice, R.R. Casavant, R.G. Strom, J.R. Zimbelman, D.H. Scott (2001) Latent outflow activity for western Tharsis, Mars: Significant flood record exposed, J. Geophys. Res. **106**(E6), 12301-12314.

- Zimbelman, J.R., A.K. Johnston (2001) Improved topography of the Carrizozo lava flow: Implications for emplacement conditions, Volcanology in New Mexico, New Mexico Mus. Nat. Hist. Sci. Bull. **18**, (L.S. Crumpler and S.G. Lucas, Eds.), p. 131-136.
- Zimbelman, J.R., S.H. Williams (2002) Chemical indicators of separate sources for eolian sands in the eastern Mojave Desert, California, and western Arizona, Bull. Geol. Soc. Am. **114**, no. 4, 490-496.
- Bradley, B.A., S.E.H. Sakimoto, H. Frey, J.R. Zimbelman (2002) The Medusae Fossae Formation: New perspectives from Mars Global Surveyor, J. Geophys. Res. Planets **107**, E6, 10.1029/2001JE001587.
- Zimbelman, J.R., A.K. Johnston (2002) New precision topographic measurements of the Carrizozo and McCarty basalt flows, New Mexico, New Mexico Geol. Soc. Guidebook, 53rd Field Conference, p. 121-127.
- Zimbelman, J.R. (2003) Flow field stratigraphy surrounding Sekmet Mons volcano, Kawelu Planitia, Venus, J. Geophys. Res. Planets **108**, E5, 10.1029/2002JE001965.
- Wilson, S.A., J.R. Zimbelman (2004) The latitude-dependent nature and physical characteristics of transverse aeolian ridges on Mars, J. Geophys. Res. Planets **109**, E10003, 10.1029/2004JE002247.
- Irwin, R.P., A.D. Howard, T.R. Watters, J.R. Zimbelman (2004) Sedimentary resurfacing and fretted terrain development along the crustal dichotomy boundary, Aeolis Mensae, Mars, J. Geophys. Res. Planets **109**, E09011, doi: 10.1029/2004JE002248.
- Shingareva, K.B., J. Zimbelman, M. Buchroithner, H.I. Hargitai (2005) The realization of ICA commission projects on planetary cartography, Cartographica **40**, n. 4, 105-114.
- Williams, R.M.E., J.R. Zimbelman, A.K. Johnston (2006) Morphological attributes of alluvial fans indicative of formation process: A case study in southwestern California with application to Mojave Crater fans on Mars, Geophys. Res. Lett. **33**, L10201, doi: 10.1029/2005GL025618.
- Bourke, M.C., M. Balme, R.A. Beyer, K.K. Williams, J. Zimbelman (2006) A comparison of methods used to constrain the height of sand dunes on Mars, Geomorph. **81**, 440-452, doi: 10.1016/j.geomorph.2006.04.023.
- Ghatan, G.J., J.R. Zimbelman (2006) Paucity of candidate coastal constructional landforms along proposed shorelines on Mars: Implications for a northern lowlands-filling ocean, Icarus **185**, 171-196, doi: 10.1016/j.icarus.2006.06.007.

- Crumpler, L.S., J.C. Aubele, J.R. Zimbelman (2007) Chapter 4: Volcanic features of New Mexico analogous to volcanic features on Mars, in The Geology of Mars: Evidence from Earth-based Analogs (M. Chapman, Ed.), Cambridge Univ. Pr., 95-125.
- Zimbelman, J.R., S.H. Williams (2007) Chapter 9: Aeolian features in the western United States as analogs to wind-related features on Mars, in The Geology of Mars: Evidence from Earth-based Analogs (M. Chapman, Ed.), Cambridge Univ. Pr., 232-264.
- Garry, W.B., J.R. Zimbelman, T.K.P. Gregg (2007) Analysis of a long channelled lava flow near Ascræus Mons volcano, Mars, J. Geophys. Res. Planets **112**, E08007, doi: 10.1029/2006JE002803.
- Zimbelman, J.R., W.B. Garry, A.K. Johnston, S.H. Williams (2008) Emplacement of the 1907 Mauna Loa basalt flow as derived from precision topography and satellite imaging, J. Volc. Geotherm. Res. **177**, 837-847, doi: 10.1016/j.volgeores.2008.01.042.
- Balme, M., D.C. Berman, M.C. Bourke, J.R. Zimbelman (2008) Transverse aeolian ridges (TARs) on Mars, Geomorph. **101**, 707-720, doi: 10.1016/j.geomorph.2008.03.011.
- Mandt, K.E., de Silva, S.L., Zimbelman, J.R., Crown, D.A. (2008) The origin of the Medusae Fossae Formation, Mars: Insights from a synoptic approach, J. Geophys. Res. Planets **113**, E12011, doi: 10.1029/2008JE003076.
- Williams, R.M.E., R.P. Irwin, J.R. Zimbelman (2009) Evaluation of paleohydrologic models for terrestrial inverted channels: Implications for application to martian sinuous ridges, Geomorph. **107**, 300-315, doi: 10.1016/j.geomorph.2008.12.015.
- Burr, D.M., M.T. Enga, R.M.E. Williams, J.R. Zimbelman (2009) Pervasive aqueous paleoflow features in the Aeolis Mensae/Western Medusae Fossae Formation, Mars, Icarus **200**, 52-76, doi: 10.1016/j.icarus.2008.10.014.
- Garvin, J. and 28 co-authors (including JRZ) (2009) Human Exploration of Mars Science Advisory Group results, in Human Exploration of Mars: Design Reference Architecture 5.0 (B. Drake, ed.), NASA Special Publication NASA-SP-2009-566, 100 p. (HEM-SAG results on pp. 10-17). [Full 387-page report: NASA-SP-2009-566-ADD, HEM-SAG results on pp. 10-32]
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