

## Vitae for John A. Grant III

e-mail: [grantj@si.edu](mailto:grantj@si.edu)

<http://www.nasm.si.edu/research/ceps/staff/jgrant.cfm>

### Education:

- Brown University, Providence, RI; Ph.D., Geology, 1990.
- State University of New York, Board of Trustees, Honorary Ph.D., 2006
- University of Rhode Island, Kingston, RI; M.S., Geology, 1986.
- State University College of New York at Plattsburgh, Plattsburgh, NY; B.A., Geology, 1982, Magna Cum Laude.

### Professional Appointments:

- Geologist, Center for Earth and Planetary Studies, National Air and Space Museum, Smithsonian Institution, Washington, DC (2000 to present).
- Chair, Center for Earth and Planetary Studies, National Air and Space Museum, Smithsonian Institution, Washington, DC (2006 to 2011).
- Mars Science Laboratory mission Participating Scientist, (2012 to present).
- Mars Exploration Rovers Science Operations Working Group Chair and Science Team Member, (2002 to present).
- Co-Investigator, HiRISE High Resolution Camera for the NASA Mars 2005 Reconnaissance Orbiter Mission (2001 to present).
- Co-Chair, Mars Landing Site Steering Committee, Appointed by NASA Mars Exploration Program Lead Scientist (2000 to present).
- Appointed to NASA Planetary Sciences Subcommittee (of the NASA Advisory Council) (2010 to present).
- Appointed to National Academies COMPLEX (Committee on Planetary Exploration) (2006 to 2008).
- Appointed to Executive Committee of the MEPAG (NASA's Mars Exploration Program Analysis Group) (2005-2006).
- Discipline Scientist, NASA Planetary Geology and Geophysics Program, NASA Headquarters, Washington, DC (1998 to 2000).
- Program Scientist, Mars Surveyor 2003 Sample Return Mission to Mars, NASA Headquarters, Washington, DC (1998 to 2000).
- Program Scientist, Mars Global Surveyor Mission to Mars, NASA Headquarters, Washington, DC (1998 to 2000).
- Associate Professor, Earth Science and Science Education SUNY College at Buffalo, Buffalo, NY (1998 to 2000).
- Assistant Professor, Earth Science and Science Education SUNY College at Buffalo, Buffalo, NY (1994 to 1998).

## **PUBLICATIONS:**

### ***Peer-Reviewed Journal Articles and Chapters:***

- Grant, J. A. and Wilson, S. A., 2011, Late alluvial fan formation in southern Margaritifer Terra, Mars: *Geophys. Res. Letts.*, 38, L08201, doi:10.1029/2011GL046844.
- Crumpler, L. S., R. E. Arvidson, S. W. Squyres, T. McCoy, A. Yingst, S. Ruff, W. Farrand, Y. McSween, M. Powell, D. W. Ming, R.V. Morris, J. F. Bell III, J. Grant, R. Greeley, D. DesMarais, M. Schmidt, N. A. Cabrol, A. Haldemann, K. W. Lewis, A. E. Wang, C. Schroder, D. Blaney, B. Cohen, A. Yen, J. Farmer, R. Gellert, E. A. Guinness, K. E. Herkenhoff, J.R. Johnson, G. Klingelhofer, A. McEwen, J. W. Rice Jr, M. Rice, P. deSouza, and J. Hurowitz (2011), Field Reconnaissance Geologic Mapping of the Columbia Hills, Mars Based on MER Spirit and MRO HiRISE Observations, *J. Geophys. Res.*, 116, E00F24, doi:10.1029/2010JE003749.
- Grant, J. A., and Leuschen, C. J., 2011, The *STRATA* ground penetrating radar as a means for constraining the near surface properties of the Moon and Mars: Proceedings of the 2011 IEEE Radar Conference, May 23-27, 2011, Kansas City, MO, paper 3399, 1132-1134.
- Grant, J. A., Irwin, R. P., III, Wilson, S. A., Buczkowski, D., and Siebach, K., 2010, A lake in Uzboi Vallis and implications for late Noachian-Early Hesperian climate on Mars: *Icarus*, 212, 110-122, doi:10.1016/j.icarus.2010.11.024.
- Grant, J. A., Golombek, M. P., Grotzinger, J. P., Wilson, S. A., Watkins, M. M., Vasavada, A. R., Griffes, J. L., and Parker, T. J., 2010, The science process for selecting the landing site for the 2011 Mars Science Laboratory, *Planet. Space Sci.*, 59, 1114-1127, doi:10.1016/j.pss.2010.06.016.
- Grant, J. A., Westall, F., and the MEPAG 2R-iSAG team (2010), Two rovers to the same site on Mars, 2018: Possibilities for cooperative science: *Astrobiology*, 10, 663-685, doi: 10.1089/ast.2010.0526.
- Arvidson, R. E., J.F. Bell III, P. Bellutta, N.A. Cabrol, J. G. Catalano, L. Crumpler, D. J. Des Marais, T. Estlin, W. Farrand, R. Gellert, J. A. Grant, R. Greenberger, E. A. Guinness, K. E. Herkenhoff, J. A. Herman, K. Iagnemma, J. R. Johnson, G. Klingelhöfer, R. Li, K. A. Lichtenberg, S. Maxwell, D. W. Ming, R.V. Morris, M. Rice, S. Ruff, A. Shaw, K. Siebach, P. de Souza, A. Stroupe, S. W. Squyres, R. J. Sullivan, K. Talley, J. Townsend, A. Wang, J. Wright, A. Yen, 2010, Spirit Mars Rover Mission: Overview and Selected Results from the Northern Home Plate Winter Haven to the Side of Scamander Crater, *J. Geophys. Res.*, 115, E00F03, doi:10.1029/2010JE003633.
- Watters, W. A., Grotzinger, J. P., Bell, J., III, Grant, J., Hayes, A. G., Li, R., Squyres, S. W., and Zuber, M. T., 2010, Origin of the structure and platform of small impact craters in fractured targets: Endurance Crater at Meridiani Planum, Mars: *Icarus*, 211, 472-497, doi:10.1016/j.icarus.2010.08.030.
- Pratt, L. M., Allen, C, Allwood, A., Anbar, A., Atreya, S., Carr, M., Des Marais, D., Grant, J., Glavin, D., Hamilton, V., Herkenhoff, K., Hipkin, V., Lollar, B. S., McCollom, T., McEwen, A., McLennan, S., Milliken, R., Ming, D., Ori, G. G., Parnell, J., Poulet, F. and Westall, F. (2010), The Mars Astrobiology Explorer-Cacher (MAX-C): A Potential Rover Mission for 2018; Final Report of the Mars Mid-Range Rover Science Analysis Group. *Astrobiology*, 10(2): 127-163. doi:10.1089/ast.2010.0462.
- Grant, J.A., Irwin, R.P., III, and Wilson, S.A., 2010, Chapter 12: Aqueous depositional settings in Holden crater, Mars: in Cabrol, N.A., and Grin, E.A. (eds.) *Lakes on Mars*, Elsevier,

Oxford, UK.

- Parker, T. J., Grant, J. A., and Franklin, B. J., 2010, Chapter 7: The Northern Plains: A Martian Oceanic Basin?: in Cabrol, N.A., and Grin, E.A. (eds.) *Lakes on Mars*, Elsevier, Oxford, UK.
- Weitz, C.M., R.E. Milliken, J.A. Grant, A.S. McEwen, R.M.E. Williams, J.L. Bishop, and B.J. Thompson. Mars Reconnaissance Orbiter observations of light-toned layered deposits and associated fluvial landforms on the plateaus adjacent to Valles Marineris. *Icarus* doi:10.1016/j.icarus.2009.04.017, 2009
- Grant, J.A., Wilson, S.A., Noe Dobrea, E., Ferguson, R.L., Griffes, J.L., Moore, J.M., and Howard, A.D., 2010, HiRISE views an enigmatic deposit in the Electris region of Mars: *Icarus*, 10.1016/j.icarus.2009.04.009.
- Grant, J.A., Wilson, S.A., Fortezzo, C.M., and Clark, D.A., 2009, Geologic map of MTM -20012 and -25012 quadrangles, Margaritifer Terra region of Mars: U.S. Geological Survey Scientific Investigations Map 3041, scale 1:500,000.
- Squyres, S.W., Ashley, J.W., Bell, J.F., III, Calvin, W.M., Christensen, P.R., Clark, B.C., Cohen, B.A., de Souza, P.A., Jr., Edgar, L., Farrand, W., Fleisher, I., Golombek, M.P., Grant, J.A., Grotzinger, J.P., Hayes, A., Herkenhoff, K.E., Johnson, J.R., Jolliff, B., Klinelhofer, G., Knoll, A., Knudson, A., Li, R., McCoy, T., McLennan, S.M., Ming, D.W., Mittlefehldt, D.W., Morris, R.V., Rice, J., Schroder, C., Sullivan, R.J., Yen, A., and Yingst, R.A., 2009, Exploration of Victoria Crater to the rover Opportunity: *Science*, 324, 1058-1061, doi: 10.1126/science.1170355.
- Banks, M.E., N. P. Lang, N.P., Kargel, J., McEwen, A.S., Baker, V.R., Strom, R., Grant, J.A., Pelletier, J.D., and the HiRISE Team, 2008, An Analysis of the Sinuous Ridges in the Southern Argyre Planitia, Mars with HiRISE, CTX, and MOLA, *J. Geophys. Res.*, 114, E09003, doi:10.1029/2008JE003244, 2009.
- McEwen, A.S., Banks, M., Baugh, N., Becker, K., Boyd, A., Bergstrom, J.W., Beyer, R.A., Bortolini, E., Bridges, N.T., Byrne, S., Castalia, B., Chuang, F.C., Crumpler, L.S., Daubar, I., Davatzes, A., Deardorff, D.G., DeJong, A., Delamer, W.A., Noe Dobrea, E., Dundas, C., Eliason, E.M., Espinoza, Y., Fennema, A., Fishbaugh, K.E., Forrester, T., Geissler, P.E., Grant, J.A., Griffes, J., Grotzinger, J., Gulick, V.C., Hansen, C.J., Herkenhoff, K.E., Heyd, R., Jaeger, W.L., Jones, D., Kanefsky, B., Keszthelyi, L., King, R., Kirk, R.L., Kolb, K., Lasco, J., Lefort, A., Leis, R., Lewis, K., Martinez-Alonzo, S. E., Mattson, S., McArthur, G., Mellon, M.T., Metz, J., Milazzo, M., Milliken, R., Motazedian, T. Okubo, C., Ortiz, A., Plassmann, J., Polit, A., Russell, P.S., Schaller, C., Serls, M., Spriggs, T., Squyres, S.W., Tarr, S., Thomas, N., Thomson, B.J., Tornabene, L.L., Van Houten, C., Verba, C., Weitz, C.M., Wray, J.J., 2009, The High Resolution Imaging Science Experiment (HiRISE) during MRO's Primary Science Phase (PSP), *Icarus*, doi:10.1016/j.icarus.2009.04.023.
- Weitz, C. M., R. E. Milliken, J. A. Grant, A. S. McEwen, R. M. E. Williams, and J. L. Bishop, 2008, Light-toned strata and inverted channels adjacent to Juventae and Ganges chasmata, Mars, *Geophys. Res. Lett.*, **35**, L19202, doi:10.1029/2008GL035317.
- Grant, J. A. Wilson, S.A., Cohen, B.A., Golombek, M.P., Geissler, P.E., Sullivan, R.J., Kirk, R.L., and T.J. Parker, 2008, Degradational modification of Victoria crater, Mars: *J. Geophys. Res.*, **113**, E11010, doi:10.1029/2008JE003155.
- Arvidson, R.E., Ruff, S., Morris, R.V., Ming, D.W., Crumpler, L., Yen, A., Squyres, S.W., Bell, J.F., III, Cabrol, N.A., Farrand, W., Gellert, R., Gorevan, S., Greenberger, R., Grant, J.A., Guinness, E.A., Herkenhoff, K.E., Johnson, J.R., Klingelhofer, G., Li, R., McCoy, T., Moersch, J., McSween, H.Y., Murchie, S., Want, A., Wiseman, S., Madsen, M.B., and Goetz,

- W., 2008, Spirit Mars Exploration Rover mission to Gusev Crater, Columbia Hills: Mission overview and selected results from Backstay to Home Plate: *J. Geophys. Res.*, **113**, E12S33, doi:10.1029/2008JE003183.
- Irwin, R. P., III, and Grant, J. A., 2008, Chapter 11: Large Basin overflow floods on Mars, in *Megaflooding on Earth and Mars*, Burr, D. M., Baker, V. R., and Carling, P. A., (eds.), Cambridge University Press, p. 209-224.
- Grant, J. A., R. P. Irwin, III, J. P. Grotzinger, R. E. Milliken, L. L. Tornabene, A. S. McEwen, C. M. Weitz, S.W., Squyres, T. D. Glotch, and B.J. Thomson, 2008, HiRISE imaging of impact megabreccia and sub-meter aqueous strata in Holden Crater, Mars, *Geology*, **36**, 195-198, doi: 10.1130/G24340A.
- McCoy, T. J., Sims, M., Schmidt, M. E., Edwards, L., Tornabene, L. L., Crumpler, L. S., Cohen, B. A., Soderblom, L. A., Blaney, D. L., Squyres, S. W., Arvidson, R. E., Rice, J. W., Jr., Treguier, E., d'Uston, C., Grant, J. A., McSween, H. Y., Jr., Golombek, M. P., Haldemann, A. F. C., and de Souza, P. A., Jr., 2008, Structure, stratigraphy, and origin of Husband Hill, Columbia Hills, Gusev Crater, Mars: *J. Geophys. Res.*, **113**, doi:10.1029/2007JE003041.
- Ehlmann, B.L., Mustard, J.F., Fassett, C.I., Schon, S.C., Head, J.W., III, Des Marais, D.J., Grant, J.A., Murchie, S.L., and the CRISM team, 2008, Clay mineralogy and organic preservation potential of lacustrine sediments from a Martian delta environment, Jezero crater, Nili Fossae, Mars: *Nature Geoscience*, **1**, doi:10.1038/ngeo207.
- Mustard, J. F., S. L. Murchie, S. M. Pelkey, B. L. Ehlmann, R. E. Milliken, J. A. Grant, J.-P. Bibring, F. Poulet, J. Bishop, E. Noe Dobrea, L. Roach, F. Seelos, R. E. Arvidson, S. Wiseman, R. Green, C. Hash, D. Humm, E. Malaret, J. A. McGovern, K. Seelos, T. Clancy, R. Clark, D. D. 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, and M. Wolff (2008), Hydrated silicate minerals on Mars observed by the Mars Reconnaissance Orbiter CRISM instrument, *Nature*, **454**, 305–309, doi: 10.1038/nature07097.
- McEwen, A. S., Hansen, C., Delmere, A., Eliason, E., Herkenhoff, K., Keszthelyi, L., Gulick, V., Kirk, R., Mellon, M., Grant, J., Thomas, N., Weitz, C., Squyres, S., Bridges, N., Murchie, S., Seelos, F., Seelos, K., Okubo, C., Milazzo, M., Tornabene, L., Jaeger, W., Byrne, S., Russell, P., Griffes, J., Martinez-Alonso, S., Devatzes, A., Chuang, F., Thomson, B., Fishbaugh, K., Dundas, C., Kolb, K., Banks, M., and Wray, J., 2007, A closer look at water-related geologic activity on Mars: *Science*, **317**, 1706-1709.
- Wilson, S. A., A. D. Howard, J. M. Moore, and J. A. Grant (2007), Geomorphic and stratigraphic analysis of Crater Terby and layered deposits north of Hellas basin, Mars, *J. Geophys. Res.*, **112**, E08009, doi:10.1029/2006JE002830.
- Williams K.K. and J.A Grant, 2007 1:500,000 Geologic Maps of MTM -10022 and -15022 in Margaritifer Terra, Mars, USGS, Flagstaff, AZ (in revision).
- McEwen, A. S., Eliason, E.M., Bergstrom, J.W., Bridges, N.T., Hansen, C.J., Delamere, W.A., Grant, J.A., Gulick, V.C., Herkenhoff, K.E., Keszthelyi, L., Kirkm R.L., Mellon, M.T., Squyres, S.W., Thomas, N., and Weitz, C.M., 2007, Mars Reconnaissance Orbiter's High Resolution Imaging Science Experiment (HiRISE), *J. Geophys. Res.*, **112**, doi:10.1029/2005JE002605.
- Squyres, S.W., O. Aharonson, B.C. Clark, B. Cohen, L. Crumpler, P.A. de Souza, W.H. Farrand, R. Gellert, J. Grant, J.P. Grotzinger, A. Haldemann, J.R. Johnson, G. Klingelhöfer, K. Lewis, R. Li, T. McCoy, A.S. McEwen, H.Y. McSween, D.W. Ming, J. Moore, R.V. Morris, T.J. Parker, J. Rice, S. Ruff, M. Schmidt, C. Schröder, L.A. Soderblom, A. Yen (2007),

- Pyroclastic activity at Home Plate in Gusev Crater, Mars: *Science*, 316, 738-742.
- Grant, J. A., S. A. Wilson, S. W. Ruff, M. P. Golombek, and D. L. Koestler (2006), Distribution of rocks on the Gusev Plains and on Husband Hill, Mars, *Geophys. Res. Lett.*, **33**, L16202, doi:10.1029/2006GL026964.
- Squyres, S.W., R.E. Arvidson, D. Bollen, J. F. Bell III, J. Brückner, N. A. Cabrol, W. M. Calvin, M. H. Carr, P. R. Christensen, B. C. Clark, L. Crumpler, D. J. Des Marais, C. d'Uston, T. Economou, J. Farmer, W. H. Farrand, W. Folkner, R. Gellert, T.D. Glotch, M. Golombek, S. Gorevan, J. A. Grant, R. Greeley, J. Grotzinger, K. E. Herkenhoff, S. Hviid, J. R. Johnson, G. Klingelhöfer, A. H. Knoll, G. Landis, M. Lemmon, R. Li, M. B. Madsen, M. C. Malin, S. M. McLennan, H. Y. McSween, D. W. Ming, J. Moersch, R. V. Morris, T. Parker, J. W. Rice Jr., L. Richter, R. Rieder, C. Schröder, M. Sims, M. Smith, P. Smith, L. A. Soderblom, R. Sullivan, N.J. Tosca, H. Wänke, T. Wdowiak, M. Wolff, A. Yen (2006) Overview of the Opportunity Mars Exploration Rover Mission to Meridiani Planum: Eagle Crater to Purgatory Ripple: *J. Geophys. Res.*, **111**, doi:10.1029/2006JE002771.
- Squyres, S. W., O. Aharonson, R. E. Arvidson, J. F. Bell, III, P. R. Christensen, B. C. Clark, J. A. Crisp, W. Farrand, T. Glotch, M. P. Golombek, J. Grant, J. Grotzinger, K. E. Herkenhoff, J. R. Johnson, B. L. Jolliff, A. H. Knoll, S. M. McLennan, H. Y. McSween, J. M. Moore, J. W. Rice, Jr and N. Tosca, (2006) Bedrock formation at Meridiani Planum, *Nature*, **443**, E1, doi:10.1038/nature05212.
- Golombek, M.P, J. A. Grant, L. S. Crumpler, R. Greeley, R. E. Arvidson, J. F. Bell III, C. M. Weitz, R. Sullivan, P. R. Christensen, L. A. Soderblom and S. W. Squyres (2006) Erosion rates at the Mars Exploration Rover landing sites and long-term climate change on Mars: *J. Geophys. Res.*, **111**, doi:10.1029/2006JE002754
- Space Studies Board, National Research Council, *Assessment of NASA's Mars Architecture 2007-2016*, National Academies Press, Washington, D.C., 2006.
- MEPAG (2006), Mars Scientific Goals, Objectives, Investigations, and Priorities: 2006, J. Grant, ed., 31 p. white paper posted February, 2006 by the Mars Exploration Program Analysis Group (MEPAG) at <http://mepag.jpl.nasa.gov/reports/index.html>.
- Grant, J.A., R. Arvidson, L.S. Crumpler, M.P. Golombek, B. Hahn, A.F.C. Haldemann, R. Li, L.A. Soderblom, S.W., Squyres, S.P. Wright, and W.A. Watters, 2006, Crater gradation in Gusev crater and Meridiani Planum, Mars, *J. Geophys. Res.*, **111**, doi:10.1029/2005JE002465.
- Golombek, M. P., L. S. Crumpler, J. A. Grant, R. Greeley, N. A. Cabrol, T. J. Parker, J. W. Rice Jr., J. G. Ward, R. E. Arvidson, J. E. Moersch, R. L. Fergason, P. R. Christensen, A. Castaño, R. Castaño, A. F. C. Haldemann, J. F. Bell III, and S. W. Squyres (2006), Geology of the Gusev cratered plains from the Spirit rover traverse, *J. Geophys. Res.*, **111**, doi:10.1029/2005JE002503.
- Li, R., B. A. Archinal, R.E. Arvidson, J. Bell, P. Christensen, L. Crumpler, D. J. Des Marais, K. Duxbury, M. Golombek, J. Grant, R. Greeley, J. Guinn, A. Johnson, R. L. Kirk, M. Maimone, L. H. Matthies, M. Malin, T. Parker, M. Sims, S. Thompson, S. W. Squyres, L. A. Soderblom (2006), Spirit rover localization and topographic mapping at the landing site of Gusev crater, Mars, *J. Geophys. Res.*, **111**, doi:10.1029/2005JE002483.
- Arvidson, R. E., S. W. Squyres, R. C. Anderson, J. F. Bell III, J. Brückner, N. A. Cabrol, W. M. Calvin, M. H. Carr, P. R. Christensen, B. C. Clark, L. Crumpler, D. J. Des Marais, C. d'Uston, T. Economou, J. Farmer, W. H. Farrand, W. Folkner, M. Golombek, S. Gorevan, J. A. Grant, R. Greeley, J. Grotzinger, E. Guinness, B. C. Hahn, L. Haskin, K. E. Herkenhoff, J. A. Hurowitz, S. Hviid, J. R. Johnson, G. Klingelhöfer, A. H. Knoll, G. Landis, C. Leff, M.

- Lemmon, R. Li, M. B. Madsen, M. C. Malin, S. M. McLennan, H. Y. McSween, D. W. Ming, J. Moersch, R. V. Morris, T. Parker, J. W. Rice Jr., L. Richter, R. Rieder, D. S. Rodionov, C. Schröder, M. Sims, M. Smith, P. Smith, L. A. Soderblom, R. Sullivan, S. D. Thompson, N. J. Tosca, A. Wang, H. Wänke, J. Ward, T. Wdowiak, M. Wolff, and A. Yen (2005), Overview of the Spirit Mars Exploration Rover Mission to Gusev Crater: Landing Site to the Methuselah Outcrop in the Columbia Hills, *J. Geophys. Res.*, **111**, doi:10.1029/2005JE002499.
- Crumpler, L.S., S.W. Squyres, R.E. Arvidson, J.F. Bell, III, D. Blaney, N.A. Cabrol, P.R. Christensen, D.J. DesMarais, J.D. Farmer, R. Fergason, M.P. Golombek, F.D. Grant, J.A. Grant, R. Greeley, B. Hahn, K.E. Herkenhoff, J.A. Hurowitz, A.T. Knudson, G.A. Landis, R. Li, J. Maki, H.Y. McSween, D.W. Ming, J.E. Moersch, M.C. Payne, J.W. Rice, L. Richter, S.W. Ruff, M. Sims, S.D. Thompson, N. Tosca, A. Wang, P. Whelley, S.P. Wright and M.B. Wyatt (2005), Mars Exploration Rover Geologic traverse by the Spirit rover in the Plains of Gusev Crater, Mars, *Geology*, **33**, 809–812.
- Golombek, M.P., R. E. Arvidson, J. F. Bell, III, P. R. Christensen, J. A. Crisp, L. S. Crumpler, B. L. Ehlmann, R. L. Fergason, J. A. Grant, R. Greeley, A. F. C. Haldemann, D. M. Kass, T. J. Parker, J. T. Schofield, S. W. Squyres and R. W. Zurek (2005), Assessment of Mars Exploration Rover landing site predictions and implications for climate change, *Nature*, **436**, 44-48.
- Haskin, L.A., Wang, A., Jolliff, B. L., McSween, H. Y., Clark, B.C., Des Marais, D.J., McLennan, S.M., Tosca, N.J., Hurowitz, J.A., Farmer, J.D., Yen, A., Squyres, S.W., Arvidson, R.E., Klingelhöfer, G., Schröder, de Souza, C.P.A., Jr, Ming, D.W., Gellert, R., Zipfel, J., Brückner, J., Bell, J.F., III, Herkenhoff, K., Christensen, P.R., Ruff, S., Blaney, D., Gorevan, S., Cabrol, N.A., Crumpler, L.C., Grant, J.A., and Soderblom, L., 2005, Water alternation of rocks and soils at the Spirit rover site in Gusev Crater, Mars, *Nature*, **436**, 66-69.
- Li, R., S. W. Squyres, R.E. Arvidson, B. A. Archinal, J. Bell, Cheng, Y., L. Crumpler, D. J. Des Marais, K. Di, T.A. Ely, M. Golombek, E. Graat, J.A. Grant, J. Guinn, A. Johnson, R. Greeley, R. L. Kirk, M. Maimone, L. H. Matthies, M. Malin, T. Parker, M. Sims, L. A. Soderblom, S. Thompson, J. Wang, P. Whelley, and F. Xu, 2005, Initial results of rover localization and topographic mapping for the 2003 Mars Exploration Rover mission, *Photogrammetric Engin. and Remote Sensing*, **71**, 1129-1142.
- Grant, J.A., R. Arvidson, J.F. Bell III, N.A. Cabrol, M.H. Carr, P. Christensen, L. Crumpler, D.J. Des Marais, B.L. Ehlmann, J. Farmer, M. Golombek, F.D. Grant, R. Greeley, K. Herkenhoff, R. Li, H.Y. McSween, D.W. Ming, J. Moersch, J.W. 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.
- Grant, J. A., Maxwell, T.A., Johnston, A.K., Kilani, A., and Williams, K.K., 2004, Documenting Drainage Evolution in Bir Kiseiba, Southern Egypt: Constraints from Ground Penetrating Radar and Implications for Mars: *J. Geophys. Res.* 109, 10.1029/2003JE002232.
- Grant, J. A., Golombek, M. P., Parker, T. J., Crisp, J. A., Squyres, S. W., and Weitz, C. M., 2004. Selecting landing sites for the 2003 Mars Exploration Rovers: *Planet. Space Sci.*, **52**, 11-21.
- Squyres, S. W., R.E. Arvidson, J.F. Bell III, J. Bruckner, N.A. Cabrol, W. Calvin, M.H. Carr, P.R. Christensen, B.C. Clark, L. Crumpler, D.J. Des Marais, C. d’Uston, T. Economou, J. Farmer, W. Farrand, W. Folkner, M. Golombek, S. Gorevan, J. A. Grant, R. Greeley, J. Grotzinger, L. Haskin, K.E. Herkenhoff, S. Hviid, J. Johnson, G. Klingelhofer, A.H. Knoll, G.

- Landis, M. Lemmon, R. Li, M.B. Madsen, M.C. Malin, S.M. McLennan, H.Y. McSween, D.W. Ming, J. Moersch, R.V. Morris, T. Parker, J.W. Rice, Jr., L. Richter, R. Rieder, M. Sims, M. Smith, P. Smith, L.A. Soderblom, R. Sullivan, H. Wanke, T. Wdowiak, M. Wolff, A. Yen, 2004, The Opportunity rover's Athena science investigation at Meridiani Planum, Mars: *Science*, **306**, 1698-1722.
- Squyres, S.W., R.E. Arvidson, J.F. Bell III, J. Bruckner, N.A. Cabrol, W. Calvin, M.H. Carr, P.R. Christensen, B.C. Clark, L. Crumpler, D.J. Des Marais, C. d'Uston, T. Economou, J. Farmer, W. Farrand, W. Folkner, M. Golombek, S. Gorevan, J. A. Grant, R. Greeley, J. Grotzinger, L. Haskin, K.E. Herkenhoff, S. Hviid, J. Johnson, G. Klingelhofer, A.H. Knoll, G. Landis, M. Lemmon, R. Li, M.B. Madsen, M.C. Malin, S.M. McLennan, H.Y. McSween, D.W. Ming, J. Moersch, R.V. Morris, T. Parker, J.W. Rice, Jr., L. Richter, R. Rieder, M. Sims, M. Smith, P. Smith, L.A. Soderblom, R. Sullivan, H. Wanke, T. Wdowiak, M. Wolff, A. Yen, 2004, The Spirit rover's Athena science investigation at Gusev Crater, Mars: *Science*, **305**, 794-799.
- Bell, J.F. III, S.W. Squyres, R.E. Arvidson, H.M. Arneson, D. Bass, D. Blaney, N. Cabrol, W. Calvin, J. Farmer, W.H. Farrand, W. Goetz, M. Golombek, J.A. Grant, R. Greeley, E. Guinness, A.G. Hayes, M.Y.H. Hubbard, K.E. Herkenhoff, M.J. Johnson, J.R. Johnson, J. Joseph, K.M. Kinch, M.T. Lemmon, R. Li, M.B. Madsen, J.N. Maki, M. Malin, E. McCartney, S. McLennan, H.Y. McSween Jr., D.W. Ming, J.E. Moersch, R.V. Morris, E.Z. Noe Dobrea, T.J. Parker, J. Proton, J.W. Rice Jr., F. Seelos, J. Soderblom, L.A. Soderblom, J.N. Sohl-Dickstein, R.J. Sullivan, M.J. Wolff, A. Wang, Pancam multispectral imaging results from the Spirit rover at Gusev Crater, *Science*, **305**, 800-806.
- Greeley, R., S.W. Squyres, R.E. Arvidson, P. Bartlett, J.F. Bell III, D. Blaney, N.A. Cabrol, J. Farmer, B. Farrand, M.P. Golombek, S.P. Gorevan, J.A. Grant, A.F.C. Haldemann, K.E. Herkenhoff, J. Johnson, G. Landis, M.B. Madsen, S.M. McLennan, J. Moersch, J.W. Rice, Jr., L. Richter, S. Ruff, R.J. Sullivan, S.D. Thompsan, A. Wang, C.M. Weitz, P. Whelley, Athena Science Team, 2004, Wind-related processes detected by the Spirit rover at Gusev Crater, Mars, *Science*, **305**, 810-821.
- Arvidson, R.E., R.C. Anderson, P. Bartlett, J.F. Bell III, D. Blaney, P.R. Christensen, P. Chu, L. Crumpler, K. Davis, B.L. Ehlmann, R. Fergason, M.P. Golombek, S. Gorevan, J.A. Grant, R. Greeley, E.A. Guinness, A.F.C. Haldemann, K. Herkenhoff, J. Johnson, G. Landis, R. Li, R. Lindemann, H. McSween, D.W. Ming, T. Myrick, L. Richter, F.P. Seelos IV, S.W. Squyres, R.J. Sullivan, A. Wang, J. Wilson, 2004, Localization and physical properties experiments conducted by Spirit at Gusev Crater, *Science*, **305**, 821-824.
- McSween, H.Y., R.E. Arvidson, J.F. Bell III, D. Blaney, N.A. Cabrol, P.R. Christensen, B.C. Clark, J.A. Crisp, L.S. Crumpler, D.J. Des Marais, J.D. Farmer, R. Gellert, A. Ghosh, S. Gorevan, T. Graff, J. Grant, L.A. Haskin, K.E. Herkenhoff, J.R. Johnson, B.L. Jolliff, G. Klingelhofer, A.T. Knudson, S. McLennan, K.A. Milam, J.E. Moersch, R.V. Morris, R. Rieder, S.W. Ruff, P.A. de Souza Jr., S.W. Squyres, H. Wanke, A. Wang, M.B. Wyatt, A. Yen, J. Zipfel, 2004, Basaltic rocks analysed by the Spirit rover in Gusev Crater, *Science*, **305**, 842-845.
- Golombek, M. P., Grant, J. A., Parker, T. J., Kass, D. M., Crisp, J. A., Squyres, S. W., Haldemann, A. F. C., Adler, M., Lee, W., Bridges, N. T., Arvidson, R. E., Carr, M. H., Kirk, R. L., Knocke, P. C., Roncoli, R. B., Weitz, C. M., Schofield, J. T., Zurek, R. W., Christensen, P. R., Fergason, R. L., Anderson, F. S., and Rice Jr., J. W., 2003, Selection of

the Mars Exploration Rover landing sites: *J. Geophys. Res.* **108**, 8072, doi:10.1029/2003JE002074.

Weitz, C., Parker, T., Bulmer, M., Anderson, F.S., Grant, J., 2003. Geology of the Melas Chasma candidate landing site for MER. *J. Geophys. Res.*, **108**, 10.1029/2002JE002022.

Golombek, M.P., Grant, J.A., Parker, T.P., Crisp, J.A., and Squyres, S.W., 2003, Landing the Mars Exploration Rovers: *Geotimes*, **48**, 18-23.

Grant, J.A., Schutz, A.E., and Campbell, B.A., 2003, Ground penetrating radar as a tool for probing the shallow subsurface of Mars: *J. Geophys. Res.*, **108**, 10.1029/2002JE001856.

Grant, J.A., and Parker, T.J., 2002, Drainage Evolution of the Margaritifer Sinus Region, Mars, *J. Geophys. Res.*, **107**, 10.1029/2001JE001678.

Grant, J.A., 2000, Valley formation in Margaritifer Sinus, Mars, by precipitation-recharged ground-water sapping: *Geology*, **28**, 223-226.

Grant, J.A., 1999, Evaluating the evolution of process specific degradation signatures around impact craters: *Int. J. Impact Engineering*, **23**, 331-340.

Grant, J.A., Brooks, M.J., and Taylor, B.E., 1998, New constraints on the evolution of Carolina Bays from ground penetrating radar: *Geomorphology*, **22**, 325-345.

Grant, J.A., Koeberl, C., Reimold, W.U., Schultz, P.H., Brandt, D., 1997, Degradation history of the Roter Kamm impact crater, Namibia: *J. Geophys. Res.* **102**, 16,327-16,388.

Brooks, M.J., Taylor, B.E., and Grant, J.A., 1996, Carolina Bays and Holocene landscape evolution on the upper coastal plain of South Carolina: *GeoArcheology*, **11**, 481-504.

Grant, J.A., Cheng, A., Delemere, A., Gorevan, S., Korotev, R., McKay, D., Schmitt, H., Zarnecki, J., 1995, *Regoliths in 3-D*, Chapter 9 in: Meyer, C., Treiman, A.H., and Kostiuk, T., Lunar and Planetary Institute Rpt. 95-, LPI, Houston, TX.

Grant, J.A. and Schultz, P.H., 1993, Erosion of Ejecta at Meteor Crater, Arizona: *J. Geophys. Res.*, **98**, 15,033-15,047.

Grant, J.A. and Schultz, P.H., 1993, Gradation of selected terrestrial and Martian impact craters: *J. Geophys. Res.*, **98**, 11,025-11,042.

Schultz, P.H., Koeberl, C., Bunch, T., Grant, J., and Collins, W., 1994, Evidence for the impact origin of the Rio Cuarto Crater Field, Argentina: *Geology*, **22**, 889-892

Grant, J. A. and Schultz, P. H., 1990, Gradational Epochs on Mars: Evidence from West-Northwest of Isidis Basin and Electris: *Icarus*, **84**, 166-195.

Grant, J. A. and Schultz, P. H., 1987, Possible tornado-like tracks on Mars: *Science*, **237**, 883-885.

#### ***Proceedings/Other Articles:***

Grant, J.A., and Golombek, M.P. (eds.), 2002, Summary Report of 4<sup>th</sup> MER Landing Site Workshop, January 8<sup>th</sup>-10<sup>th</sup>, 2003, Arcadia, CA (posted on USGS and NASA AMES Landing Site Support Websites).

Grant, J.A., and Golombek, M.P. (eds.), 2002, Summary Report of 3<sup>rd</sup> MER Landing Site Workshop, March 26<sup>th</sup>-28<sup>th</sup>, 2002, Arcadia, CA (posted on USGS and NASA AMES Landing Site Support Websites).

- Grant, J.A., and Golombek. M.P. (eds.), 2001, Summary Report of the 2nd Mars 2003 Landing Site Workshop, October 18-19<sup>th</sup>, 2001, Pasadena, CA (posted on USGS and NASA AMES Landing Site Support Websites).
- Grant, J.A., and Golombek. M.P. (eds.), 2001, Summary Report of the 1<sup>st</sup> Mars 2003 Landing Site Workshop, January 24-25, 2001, NASA Ames Research Center, Moffett Field CA (posted on USGS and NASA AMES Landing Site Support Websites).
- Beaty, D.W., Farr, T.G., Gogineni, P., Grant, J., Grimm, B., Leuschen, C., Olhoeft, G.R., and Safaeinili, A., 2001, Report of the Virtual Instrument Science Definition Team on Surface EM Experiments for Mars 2007: JPL White Paper produced for NASA Headquarters.
- Beaty, D.W., Coradini, A., Clifford, S., Grant, J., Gogineni, P., Plaut, J., Raney, K., Safaeinili, A., 2001, Analysis of the Potential of a Mars Orbital Ground-Penetrating Radar Instrument in 2005: JPL White Paper produced for NASA Headquarters.
- Grant, J.A., Brooks, M.J., and Taylor, B.E., 1995, Evolution of Carolina Bays on the Savannah River Site, South Carolina: New Constraints from Ground Penetrating Radar: p. 21 and 24, in *Annual Report of the DOE Savannah River Site Archeology Division*, Savannah River Site, S.C.
- Grant, J.A., and Schultz, P.H., 1994, Erosion of ejecta at Meteor Crater: Constraints from ground penetrating radar: p. 789-803, in GPR '94, *Proceedings of the Fifth International Conference on Ground Penetrating Radar*, June 12-16, 1994, University of Waterloo, Kitchener, Ontario, Canada.
- Brooks, M.J., Taylor, B.E., Grant, J.A., and Gaiser, E., 1993, Upland wetlands investigation of Pleistocene-Holocene environmental change on the SRS: 1993: *Annual Report of the DOE Savannah River Site Archeology Division*, Savannah River Site, S.C.
- Grant, J. A. and Treiman, A.H., 1992, Summary of Workshop on Innovative Instrumentation for the *In Situ Study of Atmosphere-Surface Interactions on Mars*: LPI Tech. Rept. **92-07**, p. 1-8, Lunar and Planetary Institute, Houston, Texas.
- Grant, J. A., 1987, The geomorphic evolution of Eastern Margaritifer Sinus, Mars: *Advances in Planetary Geology*, NASA Tech. Memo. **89871**, p. 1-268.

***Theses:***

- Grant, J. A., 1990, *Erosional evolution of impact craters on the Earth and Mars* (Ph.D. Dissertation): Brown University, Providence, Rhode Island, 401p.
- Grant, J.A., 1985, *Geomorphic Evolution of Eastern Margaritifer Sinus Mars*: (Masters Thesis) University of Rhode Island, Kingston, Rhode Island, 253p.