

- Kneissl, T., van Gassel, S., Neukum, G., 2011. Map-projection-independent crater size frequency determination in GIS environments — new software tool for ArcGIS. *Planet. Space Sci.* 59, 1243–1254.
- Kolb, K.J., McEwen, A.S., Pelletier, J.D., 2010. Investigating gully flow emplacement mechanisms using apex slopes. *Icarus* 208, 132–142.
- Korteniemi, J., Kreslavsky, M.A., 2011. Fracture patterns inside small impact craters in the northern patterned ground terrain of Mars. 5th International Conference on Mars Polar Science and Exploration. Sept. 12–16 2011, Fairbanks, Alaska, abs. no. 6046.
- Kostama, V.-P., Kreslavsky, M.A., Head, J.W., 2006. Recent high-latitude icy mantle in the northern plains of Mars: characteristics and ages of emplacement. *Geophysical Research Letters* 33, L11201, <http://dx.doi.org/10.1029/2006GL025946>.
- Kreslavsky, M., 2007. Statistical characterization of spatial distribution of impact craters: implications to present-day cratering rate on Mars. 7th International Conference on Mars, LPI Contribution No. 1353, p. 3325.
- Kreslavsky, M.A., Head, J.W., 2000. Kilometer-scale roughness of Mars: results from MOLA data analysis. *Journal of Geophysical Research* 105, 26,695–26,712.
- Kreslavsky, M.A., Head, J.W., 2002. Mars: nature and evolution of young latitude-dependent water-ice-rich mantle. *Geophysical Research Letters* 29, 1719, <http://dx.doi.org/10.1029/2002GL015392>.
- Kreslavsky, M.A., Head, J.W., 2006. Modification of impact craters in the northern plains of Mars: implications for the Amazonian climate history. *Meteoritics and Planetary Science* 41, 1633–1646.
- Kreslavsky, M.A., Korteniemi, J., Head, J.W., 2011. Recent processes and timing of events in high-latitude patterned ground on Mars. 5th International Conference on Mars Polar Science and Exploration. Sept. 12–16 2011, Fairbanks, Alaska, abs. no. 6048.
- Lang, N.P., Tornabene, L.L., McSween, H.Y., Christensen, P.R., 2009. Tharsis-sourced relatively dust-free lavas and their possible relationship to martian meteorites. *Journal of Volcanology and Geothermal Research* 185, 103–115, <http://dx.doi.org/10.1016/j.volgeores.2008.12.014>.
- Laskar, J., Correia, A.C.M., Gastineau, M., Joutel, F., Levrard, B., Robutel, P., 2004. Long term evolution and chaotic diffusion of the insolation quantities of Mars. *Icarus* 170, 343–364.
- Levrard, B., Forget, F., Montmessian, F., Laskar, J., 2004. Recent ice-rich deposits formed at high latitudes on Mars by sublimation of unstable equatorial ice during low obliquity. *Nature* 431, 1072–1075.
- Levy, J.S., Head, J.W., Marchant, D.R., 2009. Thermal contraction crack polygons on Mars: classification, distribution, and climate implications from HiRISE observations. *Journal of Geophysical Research*, 114, <http://dx.doi.org/10.1029/2008JEO03273>.
- Levy, J.S., Head, J.W., Marchant, D.R., Kowalewski, D.E., 2008. Identification of sublimation-type thermal contraction crack polygons at the proposed NASA Phoenix landing site: implications for substrate properties and climate-driven morphological evolution. *Geophysical Research Letters* 35, L04202, <http://dx.doi.org/10.1029/2007GL032813>.
- Madeleine, J.B., Forget, F., Head, J.W., Levrard, B., Montmessian, F., Millour, E., 2009. Amazonian northern mid-latitude glaciation on Mars: a proposed climate scenario. *Icarus* 203, 390–405.
- Malin, M.C., Edgett, K.S., 2000. Evidence for recent groundwater seepage and surface runoff on Mars. *Science* 288, 2330–2335, <http://dx.doi.org/10.1126/science.288.5475.2330>.
- Malin, M.C., Bell, J.F., Cantor, B.A., Caplinger, M.A., Calvin, W.M., Clancy, R.T., Edgett, K.S., Edwards, L., Haberle, R.M., James, P.B., Lee, S.W., Ravine, M.A., Thomas, P.C., Wolff, M.J., 2007. Context Camera investigation on board the Mars Reconnaissance Orbiter. *Journal of Geophysical Research* 112, E05S04, <http://dx.doi.org/10.1029/2006JEO02808>.
- Malin, M.C., Edgett, K., Posiolova, L., McColley, S., Noe Dobrea, E., 2006. Present impact cratering rate and the contemporary gully activity on Mars: results of the Mars Global Surveyor Extended Mission. *Science* 314, 1573–1577.
- Mangold, N., 2005. High latitude patterned grounds on Mars: classification, distribution, and climatic control. *Icarus* 174, 336–359.
- McEwen, A.S., 14 colleagues, 2007. Mars Reconnaissance Orbiter's High Resolution Imaging Science Experiment (HiRISE). *Journal of Geophysical Research* 112, E05S02, <http://dx.doi.org/10.1029/2005JEO02605>.
- McEwen, A.S., Preblich, B.S., Turtle, E.P., Artemieva, N.A., Golombek, M.P., Hurst, M., Kirk, R.L., Burr, D.M., Christensen, P.R., 2005. The rayed crater Zunil and interpretations of small impact craters on Mars. *Icarus* 176, 351–381, <http://dx.doi.org/10.1016/j.icarus.2005.02.009>.
- Mellon, M.T., 1997. Small-scale polygonal features on Mars: seasonal thermal contraction cracks in permafrost. *Journal of Geophysical Research* 102, 25,617–25,628.
- Mellon, M.T., Feldman, W.C., Prettyman, T.H., 2004. The presence and stability of ground ice in the southern hemisphere of Mars. *Icarus* 169, 324–340, <http://dx.doi.org/10.1016/j.icarus.2003.10.022>.
- Melosh, H.J., 1989. *Impact Cratering: A Geologic Process*. Oxford University Press (Oxford Monographs on Geology and Geophysics, No. 11), New York/Oxford University Press (Oxford Monographs on Geology and Geophysics, No. 11), New York 253 p.
- Milliken, R.E., Mustard, J.F., Goldsby, D.L., 2003. Viscous flow features on the surface of Mars: observations from high-resolution Mars Orbiter Camera (MOC) images. *Journal of Geophysical Research*, 108, <http://dx.doi.org/10.1029/2002JEO02005>.
- Morgan, G.A., Head, J.W., Forget, F., Madeleine, J.-B., Spiga, A., 2010. Gully formation on Mars: two recent phases of formation suggested by links between morphology, slope orientation and insolation history. *Icarus* 208, 658–666, <http://dx.doi.org/10.1016/j.icarus.2010.02.019>.
- Mustard, J.F., Cooper, C.D., Rifkin, M.K., 2001. Evidence for recent climate change on Mars from the identification of youthful near-surface ground ice. *Nature* 412, 411–414.
- Nyquist, L.E., Bogard, D.D., Shih, C.-Y., Greshake, A., Stöffler, D., Eugster, O., 2001. Ages and geologic histories of martian meteorites. In: Kallenbach, R., Geiss, J., Hartmann, W.K. (Eds.), *Chronology and Evolution of Mars*. International Space Science Institute, Bern, pp. 105–164.
- Popova, O., Nemtchinov, I., Hartmann, W.K., 2003. Bolides in the present and past martian atmosphere and effects on cratering processes. *Meteoritics and Planetary Science* 38, 905–925.
- Preblich, B.S., McEwen, A.S., Studer, D.M., 2007. Mapping rays and secondary craters from the martian crater Zunil. *Journal of Geophysical Research* 112, E05006, <http://dx.doi.org/10.1029/2006JEO02817>.
- Sagan, C., Toon, O.B., Gierasch, P.J., 1973. Climatic change on Mars. *Science* 181, 1045–1049, <http://dx.doi.org/10.1126/science.181.4104.1045>.
- Schon, S.C., Head, J.W., 2011a. Keys to gully formation processes on Mars: relation to climate cycles and sources of meltwater. *Icarus* 213, 428–432, <http://dx.doi.org/10.1016/j.icarus.2011.02.020>.
- Schon, S.C., Head, J.W., 2011b. Gasa impact crater, Mars: chronology of gully development and derivation of meltwater from latitude dependent mantle and excavated debris-covered glacier deposits. *Icarus*, in review.
- Schon, S.C., Head, J.W., Milliken, R.E., 2009a. A recent ice age on Mars: evidence for climate oscillations from regional layering in midlatitude mantling deposits. *Geophysical Research Letters* 36, L15202, <http://dx.doi.org/10.1029/2009GL038554>.
- Schon, S.C., Head, J.W., Fassett, C.I., 2009b. Unique chronostratigraphic marker in depositional fan stratigraphy on Mars: evidence for ca. 1.25 Ma gully activity and surficial meltwater origin. *Geology* 37, 207–210.
- Schorghofer, N., 2007. Dynamics of ice ages on Mars. *Nature* 449, 192–195, <http://dx.doi.org/10.1038/nature06082>.
- Schorghofer, N., Aharonson, O., 2005. Stability and exchange of subsurface ice on Mars. *Journal of Geophysical Research* 110, E05003, <http://dx.doi.org/10.1029/2004JEO02350>.
- Smith, P.H., et al., 2009. H₂O at the Phoenix landing site. *Science* 325, 58–61, <http://dx.doi.org/10.1126/science.1172339>.
- Soderblom, L.A., Kreidler, T.J., Masursky, H., 1973. Latitudinal distribution of a debris mantle on the martian surface. *Journal of Geophysical Research* 78, 4117–4122, <http://dx.doi.org/10.1029/JB078i020p04117>.
- Strom, R.G., Croft, S.K., 1992. The Martian Impact Cratering Record. In: Kieffer, H.H., Jakosky, B.M., Snyder, C.W., Matthews, M.S. (Eds.), *University of Arizona, Mars*. Tucson, pp. 383–423.
- Toon, O.B., Pollack, J.B., Ward, W., Burns, J.A., Bilski, K., 1980. The astronomical theory of climate change on Mars. *Icarus* 44, 552–607.
- Tornabene, L.L., Moersch, J.E., McSween, H.Y., McEwen, A.S., Piatek, J.L., Milam, K.A., Christensen, P.R., 2006. Identification of large (2–10 km) rayed craters on Mars in THEMIS thermal infrared images: implications for possible Martian meteorite source regions. *Journal of Geophysical Research* v. 111 <http://dx.doi.org/10.1029/2005JEO02600>.
- Touma, J., Wisdom, J., 1993. The chaotic obliquity of Mars. *Science* 259, 1294–1297, <http://dx.doi.org/10.1126/science.259.5099.1294>.
- Vincendon, M., Mustard, J., Forget, F., Kreslavsky, M., Spiga, A., Murchie, S., Bibring, J.-P., 2010. Near-tropical subsurface ice on Mars. *Geophysical Research Letters* 37, L01202, <http://dx.doi.org/10.1029/2009GL041426>.
- Ward, W.R., 1973. Large-scale variations in the obliquity of Mars. *Science* 181, 260–262, <http://dx.doi.org/10.1126/science.181.4096.260>.
- Werner, S.C., Ivanov, B.A., Neukum, G., 2009. Theoretical analysis of secondary cratering on Mars and an image-based study on the Cerberus Plains. *Icarus* 200, 406–417, <http://dx.doi.org/10.1016/j.icarus.2008.10.011>.