

Thursday, March 23, 2017

[R504]

ATMOSPHERE AND LOATHING: AEOLIAN PROCESSES ON MARS

8:30 a.m. Waterway Ballroom 5

Chairs: Matthew Chojnacki
Jani Radebaugh

- 8:30 a.m. Banham S. G. * Gupta S. Rubin D. M. Watkins J. A. Sumner D. Y. et al.
[*The Stimson Formation: Determining the Morphology of a Dry Aeolian Dune System and Its Significance in Gale Crater, Mars*](#) [#2014]
The Stimson formation, Gale Crater, is interpreted to represent a dry aeolian dune system: Liquid water played no role in the accumulation of this unit.
- 8:45 a.m. Bridges N. T. * Sullivan R. Navarro S. van Beek J. Ewing R. C. et al.
[*Martian Aeolian Activity at the Bagnold Dunes, Gale Crater: The View from the Surface and Orbit*](#) [#1983]
Aeolian change detection observations conducted in the Bagnold Dunes, Mars by MSL show some correlation to REMS measurements, HiRISE data, and GCM predictions.
- 9:00 a.m. Lemmon M. T. * Newman C. E. Renno N. Mason E. Battalio M. et al.
[*Dust Devil Activity at the Curiosity Mars Rover Field Site*](#) [#2952]
Dust devils and convective vortices are common on Aeolis Mons relative to the nearby Aeolis Palus.
- 9:15 a.m. Jackson B. * Lorenz R.
[*A Framework for Mitigating the Biases in Barometric Dust Devil Surveys*](#) [#2729]
Pressure time-series surveys of martian dust devils recover biased populations. We present an analytic model to de-bias those surveys.
- 9:30 a.m. Sullivan R. * Kok J. F.
[*Aeolian Saltation on Mars at Low Wind Speeds*](#) [#2422]
Numerical experiments and rover observations identify how relatively low wind friction speeds can initiate and sustain saltation on Mars.
- 9:45 a.m. Runyon K. D. * Bridges N. T. Newman C. E.
[*Eroding Dunes? Characterization and Implications of Martian Sand Sheets*](#) [#2187]
Characterizing a martian sand sheet and modeling the local winds suggest upwind barchan sand dunes are actively eroding into downwind sand sheets.
- 10:00 a.m. Kim J. R. *
[*Measurement of Aeolian Dune Migration Over Martian Surface by High Precision Photogrammetric Techniques*](#) [#2546]
We developed a generic procedure to precisely measure the dune migration and applied for three martian dune fields. Measured migrations were close to static.
- 10:15 a.m. Chojnacki M. * Urso A. C. Banks M. E. Tornabene L. L. Bridges N. T.
[*Sand Flux Estimates and Aeolian-Driven Landscape Evolution on Mars*](#) [#2627]
Results demonstrate substantial geographic heterogeneity in dune sediment fluxes across the planet. Abrasion rate estimates and implications will be discussed.
- 10:30 a.m. Fernandez-Cascales L. * Lucas A. Rodriguez S. Narteau C. Spiga A.
[*From Martian Dunes to Martian Winds*](#) [#2219]
The morphology of dunes can be used to deduce the winds blowing at the surface of Mars. So can we imagine to use them as planetary climatic observatories?

- 10:45 a.m. Banks M. E. * Fenton L. K. Bridges N. T. Geessler P. E. Chojnacki M. et al.
[*Patterns in Mobility and Modification of Middle and High Latitude Southern Hemisphere Dunes*](#) [#2918]
High south latitude dune fields decrease in sand mobility with increasing latitude and prevalence of non-aeolian modification suggesting stability.
- 11:00 a.m. Foroutan M. * Zimbelman J. R.
[*Characteristics of More Than One Million TARs on Mars*](#) [#2591]
We present results from measurements of more than one million Transverse Aeolian Ridges on Mars, comparing them to previous studies.
- 11:15 a.m. Kerber L. * Radebaugh J.
[*The Role of Water and Wind in Yardang Formation in Iran and on Mars*](#) [#2571]
Yardangs in Iran / A pretty good analogue / But a bit wetter.
- 11:30 a.m. Radebaugh J. * Kerber L. Narteau C. Rodriguez S. Gao X.
[*Yardangs and Dunes of Iran's Lut Desert Reveal Winds on Planetary Surfaces*](#) [#1061]
Iran's Lut desert / Yardangs, dunes and winds align / Planet analogue.