

Tuesday, March 22, 2016

[T321]

## POSTER SESSION I: AEOLIAN PROCESSES: SOMETHING IN THE AIR

6:00 p.m. Town Center Exhibit Area

Quintana S. N. Schultz P. H.

POSTER LOCATION #327

[\*A Global Distribution of Impact-Wind Streak Craters on Mars\*](#) [#1548]

We present a global distribution of impact-vapor wind streak craters on Mars and discuss its significance.

Quintana S. N. Schultz P. H. Horowitz S. S.

POSTER LOCATION #328

[\*New Experiments in Martian Impact Vapor-Induced Wind Streak Analysis\*](#) [#1553]

New experimental results explore impacts into layered targets, atmospheric density, and volatile projectiles in the development of vapor in the laboratory.

Reiss D.

POSTER LOCATION #329

[\*First Observations of Terrestrial Dust Devils in Orbital Image Data: Comparison with Dust Devils in Amazonis Planitia, Mars\*](#) [#2912]

Here we report about the first terrestrial dust devil observations with visible and thermal satellite data on an alluvial fan in the Taklimakan desert (China).

Mayer D. P. Kite E. S.

POSTER LOCATION #330

[\*Pacing Wind-Induced Saltation Abrasion on Mars: Using Crater Counts to Constrain Aeolian Exhumation\*](#) [#1479]

Undergrads count craters / Landscape exhumation rate / Organics preserved?

Czaplinski E. Horgan B.

POSTER LOCATION #331

[\*Constraining the Mechanisms of Slipface Failure on Martian Sand Dunes from a New Global Survey\*](#) [#2006]

Mars has global dunes / What causes their odd features? / Wind and grain flows, yes.

Ku Y.-J. Zimelman J. R.

POSTER LOCATION #332

[\*Regional Wind Patterns on Mars Inferred from Dune Field Studies\*](#) [#1868]

We classified 15 types of sand dunes distributed around Mars, providing statistical information of different types and a recent view of wind patterns on Mars.

Charles H. R. Titus T. N. Hayward R. K. Edwards C. S.

POSTER LOCATION #333

[\*Comparison of the Mineral Composition of the Sediment found in Two Mars Dune Fields: Ogygis Undae and Gale Crater\*](#) [#3006]

The mineral composition in two Mars dune fields, Ogygis Undae and Gale crater dune field, are analyzed using thermal emission spectra and thermal imaging.

Charles H. R. Titus T. N. Hayward R. K. Fenton L. K. Horgan B.

POSTER LOCATION #334

[\*Mars Global Digital Dune Database: Adding Mineral Composition to the Mix\*](#) [#2769]

The next addition to the Mars Global Digital Dune Database (MGD3) will include mineral abundances obtained from deconvolving emissivity spectra.

Bennett K. A. Fenton L. Bell J. F. III

POSTER LOCATION #335

[\*The Albedo of Martian Dunes: Insights into Dune Migration and Wind Regimes\*](#) [#2389]

We show that while albedo measurements cannot be used as a proxy for migration rates of martian dunes, they can yield information about the local wind regime.

- Lapotre M. G. A. Ehlmann B. L. Fraeman A. A.  
Minson S. E. Ayoub F. et al. **POSTER LOCATION #336**  
[\*A Quantitative Assessment of Aeolian Fractionation at the Bagnold Dunes of Gale Crater, Mars, from Orbit to the Ground\*](#) [#1513]  
We assess the mineralogy of active sands from orbital visible-near infrared spectra along the traverse of Curiosity and compare our estimates to ground truth.
- Van Kooten S. J. Putzig N. E. O'Shea P. M. Fenton L. K. **POSTER LOCATION #337**  
[\*Investigating the Poleward Trend of Southern Dune Field Stabilization on Mars Using Thermophysical Observations\*](#) [#2528]  
We hunt subsurface martian ice by matching thermal data to thermophysical models, explaining latitude-dependent dune field morphology and tracing local climate.
- Fenton L. K. Bishop J. L. King S. Lafuente B. **POSTER LOCATION #338**  
[\*Aeolian Transport in Olympia Undae, Mars, Based on a Field Study at White Sands National Monument, New Mexico, USA\*](#) [#2183]  
Gypsum on Mars dunes, white crystals blown to the crests. How does wind do that?
- Ballard M. J. Ewing R. C. Lapotre M. G. A. **POSTER LOCATION #339**  
[\*Variations in Bedform Wavelength by Elevation on Mars\*](#) [#2977]  
Dune, TAR, ripple, and protodune wavelengths are measured across a range of elevations on Mars. The wavelength-elevation correlation depends on bedform type.
- Bishop B. B. Lewis C. L. Radebaugh J. R. Christiansen E. H. C. **POSTER LOCATION #340**  
[\*Dune Width and Spacing in Titan's Belet Sand Sea in Relation to Topography Highlights Potential Sediment Transport Patterns\*](#) [#2663]  
Dune width/spacing in Titan's Belet Sand Sea in relation to latitude, distance from upwind margins, and regional topography highlight transport patterns.
- Nield E. V. \* Burr D. M. Bridges N. T. Smith J. K. Emery J. P. et al. **POSTER LOCATION #341**  
[\*A Wind Tunnel Study of the Effect of Pressure on Saltation Threshold Conditions\*](#) [#1028]  
The proportion of grains entrained under fluid and impact conditions is measured using high-speed videography for a range of surface pressures (1–20 bar).
- Burr D. M. Nield E. V. Neakrase L. D. V. **POSTER LOCATION #342**  
[\*A Community Archive of Threshold \(Minimum\) Wind Speed Data from Wind Tunnel Experiments: Initiation of an Aeolian Data Archive\*](#) [#1047]  
Understanding aeolian processes advances by experiment. We are creating an archive of threshold data from wind tunnels and welcome additional contributions.
- Yu X. Horst S. M. He C. Bridges N. T. Burr D. M. **POSTER LOCATION #343**  
[\*Quantifying Water Content and Equilibration Timescale of Wind Tunnel Materials\*](#) [#2683]  
To improve our understanding of the effect of interparticle forces, we measured water content and equilibration timescales for various wind tunnel materials.
- Swann C. Ewing R. C. Sherman D. J. **POSTER LOCATION #344**  
[\*Thresholds for Aeolian Sand Transport on Earth and Mars\*](#) [#2410]  
This study proposes the use of scale dependent threshold to model aeolian transport processes at micro and macro scales.
- Marshall J. R. **POSTER LOCATION #345**  
[\*Longevity of Martian Aeolian Sand: Attrition May Be More Benign than on Earth\*](#) [#1807]  
Sand attrition on Mars may be more benign than on Earth as indicated by abrasion and wind tunnel experiments, fracture analysis, and aerodynamics analysis.

Bourke M. C. Nield J. M. Diniega S.  
 Hansen C. J. McElwain J. N. et al. **POSTER LOCATION #346**  
[The Geomorphic Effect of Sublimating CO<sub>2</sub> Blocks on Dune Lee Slopes at Grand Falls, Arizona](#) [#2407]  
 On steep desert dunes / The ice block hovers downslope / Leveed grains flowing.

Titus T. N. Hayward R. K. Bogle R. **POSTER LOCATION #347**  
[Grand Falls Dune Field — An Analog Lesson about Sediment Flux](#) [#1201]  
 This work focuses on the characterization of sediment flux and what lessons are to be learned from the Mars analog site - Grand Falls dune field, AZ.

Sullivan R. Hallet B. Herkenhoff K. Zimbelman J. **POSTER LOCATION #348**  
[Evaluating Wind Strengths Required to Mobilize Martian Coarse-Grained Ripples: Gusev, Meridiani Planum, and Gale](#) [#2918]  
 We propose a method to estimate wind conditions prevailing when megaripples were last active, and apply this on Mars at Gusev, Meridiani Planum, and Gale.

Baker M. Lewis K. W. Bridges N. Newman C. Van Beek J. et al. **POSTER LOCATION #349**  
[Aeolian Transport of Coarse Sediment in the Modern Martian Environment](#) [#2894]  
 We use Mastcam images from seven sites along Curiosity's traverse to show that aeolian transport is controlled by local topography and seasonal variability.

Silvestro S. Vaz D. A. Yizhaq H. Esposito F. **POSTER LOCATION #350**  
[Non-Transverse Aeolian Ripples on Mars](#) [#1905]  
 In this report we show the presence of non-transverse (oblique and longitudinal) wind ripple migration in Herschel Crater on Mars.

Zimbelman J. R. Johnson M. B. **POSTER LOCATION #351**  
[Ripple Orientations as Indicators of Recent Surface Winds on Martian Sand Dunes](#) [#1157]  
 Wind ripple patterns on sand dunes from 40 sites widely distributed around Mars are presented and discussed.

Ashley J. W. Golombek M. P. **POSTER LOCATION #352**  
[Analog Studies of Iron Meteorites Found on Mars — Features, Processes, and Comparisons](#) [#2461]  
 Highly weathered meteorites found on Mars by roving spacecraft are compared with terrestrial analogs to enhance understanding of martian surface processes.

Northrup D. Radebaugh J. Christiansen E. H. Fowler B. Kerber L. et al. **POSTER LOCATION #353**  
[Comparisons of Yardangs on Titan with Mega and Mesoyardangs in Argentina and China](#) [#2629]  
 Detailed analysis of straight wind carved ridges known as yardangs yields valuable insights to similar features seen on Titan and their conditions of formation.

Kerber L. **POSTER LOCATION #354**  
[Controls on the Morphology of Yardangs on the Earth and Mars](#) [#2708]  
 Yardangs are being shaped / By many different things / Water, wind, collapse.

Urso A. C. Chojnacki M. **POSTER LOCATION #355**  
[Dune-Yardang Interaction in Becquerel Crater, Mars](#) [#3026]  
 Sand fluxes of dunes appear to be influenced by their location relative to layered deposits. Results suggest yardangs were carved geologically recently.