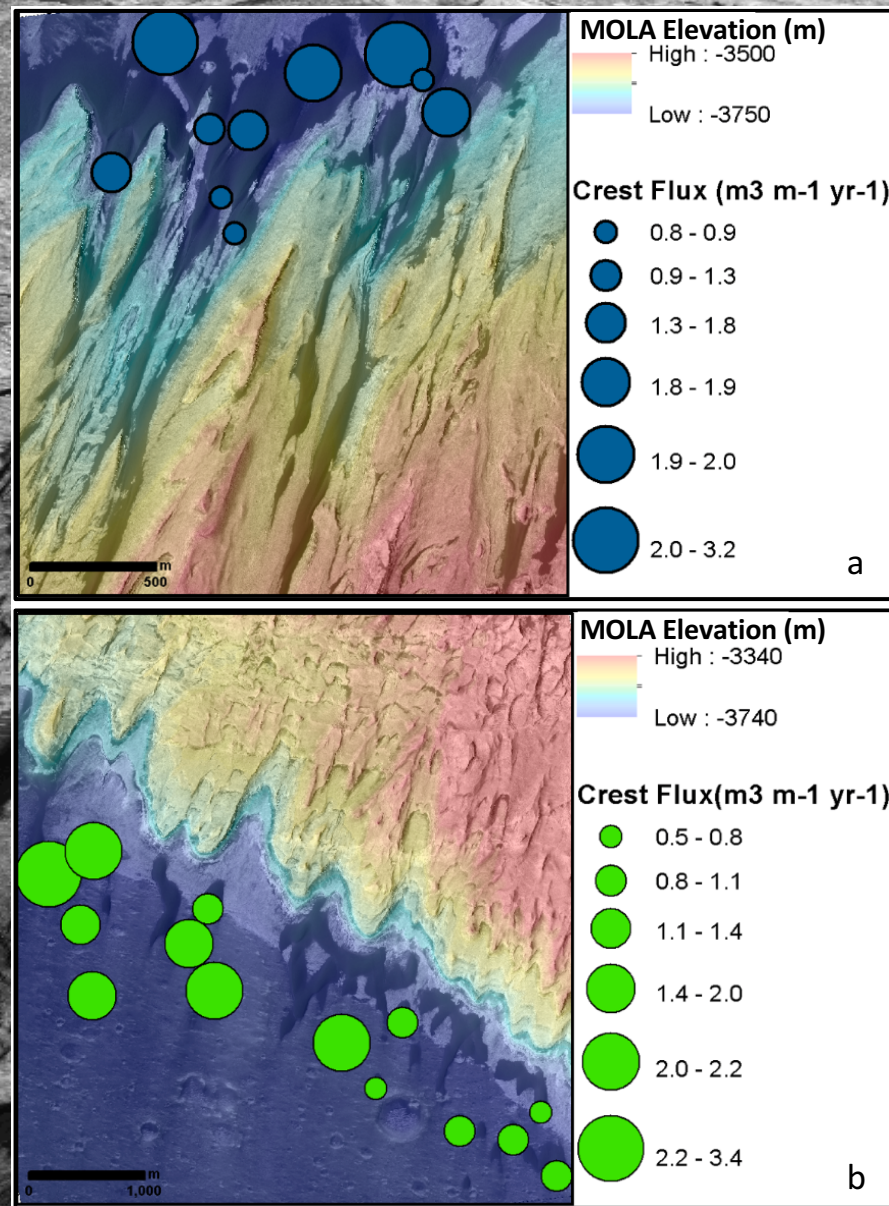


# Dune-Yardang Interactions in Becquerel Crater, Mars



- Active sand dunes in Becquerel crater were studied to better understand landscape evolution and the role of topography in sediment transport on Mars.
- The topographic effects of a 700 m tall layered deposit largely influence dune sediment transport rates in Becquerel crater.
- Migration rates (0.12-0.23 m yr<sup>-1</sup>) and sedimentary fluxes decrease as dunes approach the deposit and increase downwind of the deposit.
- Estimated abrasion rates (16-40 μm yr<sup>-1</sup>) from dune sand fluxes help constrain formation times to 1.8-4.5 Myr for the 70 m deep corridors between yardangs on the deposit's surface.
- Comparisons to terrestrial dune activity and yardang development add to our understanding of yardang formation times for both Earth and Mars.
- This study shows the complexities of sediment transport on uneven terrain and gives examples of contemporary landscape evolution on Mars.

HiRISE images and colorized DTM showing examples of sediment flux rates for individual dunes along the layered deposit. (a) Fluxes decrease as saltation rates are dampened by increased slope. (b) Fluxes increase with distance from the deposit as well as from east to west as the height of the deposit decreases.