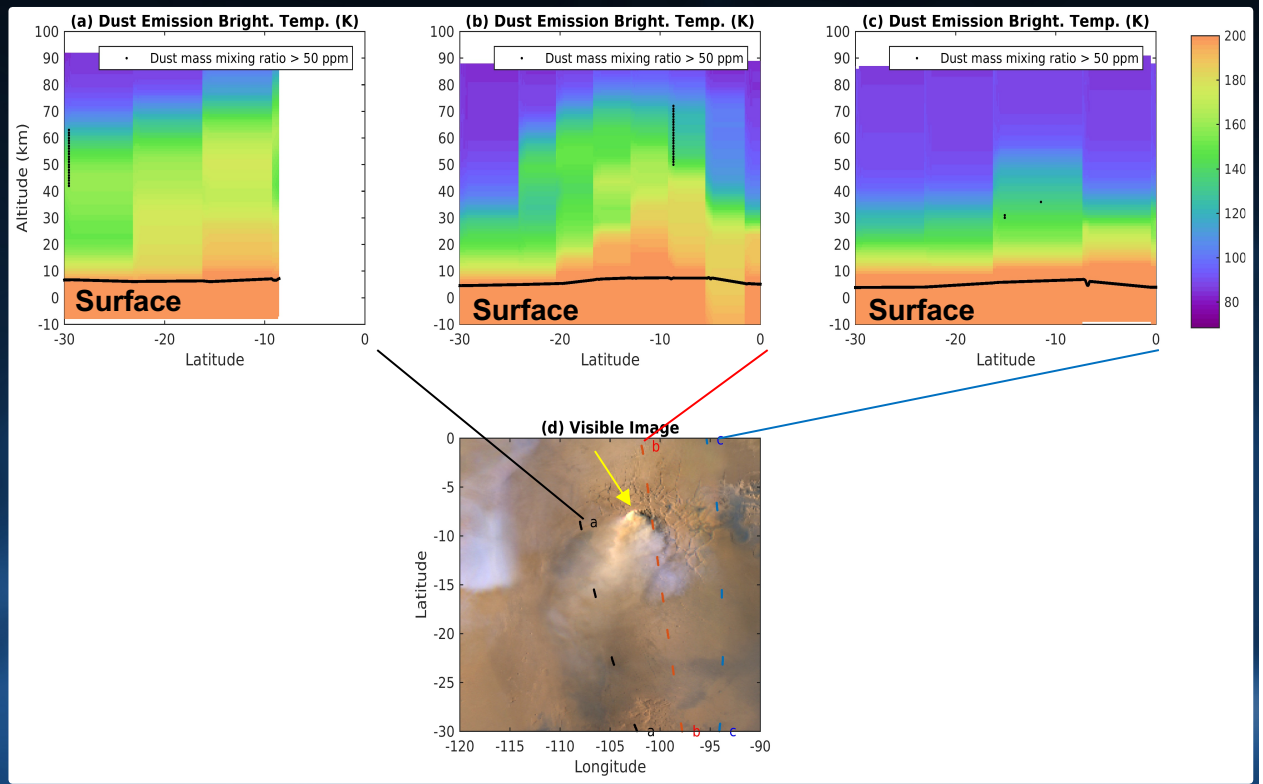
Towering Dust Clouds on Mars: Volcanic Peaks Not Required

Towering dust clouds reaching 70 km altitude were found using Mars Climate Sounder (MCS) and Mars Color Imager (MARCI) on board MRO.

- Past observations showed that immense dust clouds in storms on Mars's Tharsis volcanoes could bring dust to altitudes of 50-80 km.
- Looming dust clouds on volcanoes were attributed to dust starting at high surface elevation and radially symmetric daytime upslope winds exclusive to volcanoes.
- These new observations on flatter surfaces indicate that soaring dust clouds are not limited to unusual circulations on volcanic summits.



MRO observations of towering dust clouds in Noctis Labyrinthus. (a-c, top): infrared emission in the dust-sensitive MRO-MCS A5 channel, expressed as brightness temperature (K) (color contours). The solid black lines indicate the local surface elevation. The bottom of the color scale in each case is saturated at 2.5 times the noise level of the channel, while the top of the color scale is saturated at 200 K; (d, bottom) MRO Map, plotted with the ground tracks of observations. The dust storm is indicated with a yellow arrow.

Heavens, et al., 2019, *J. Atmos. Sci.*