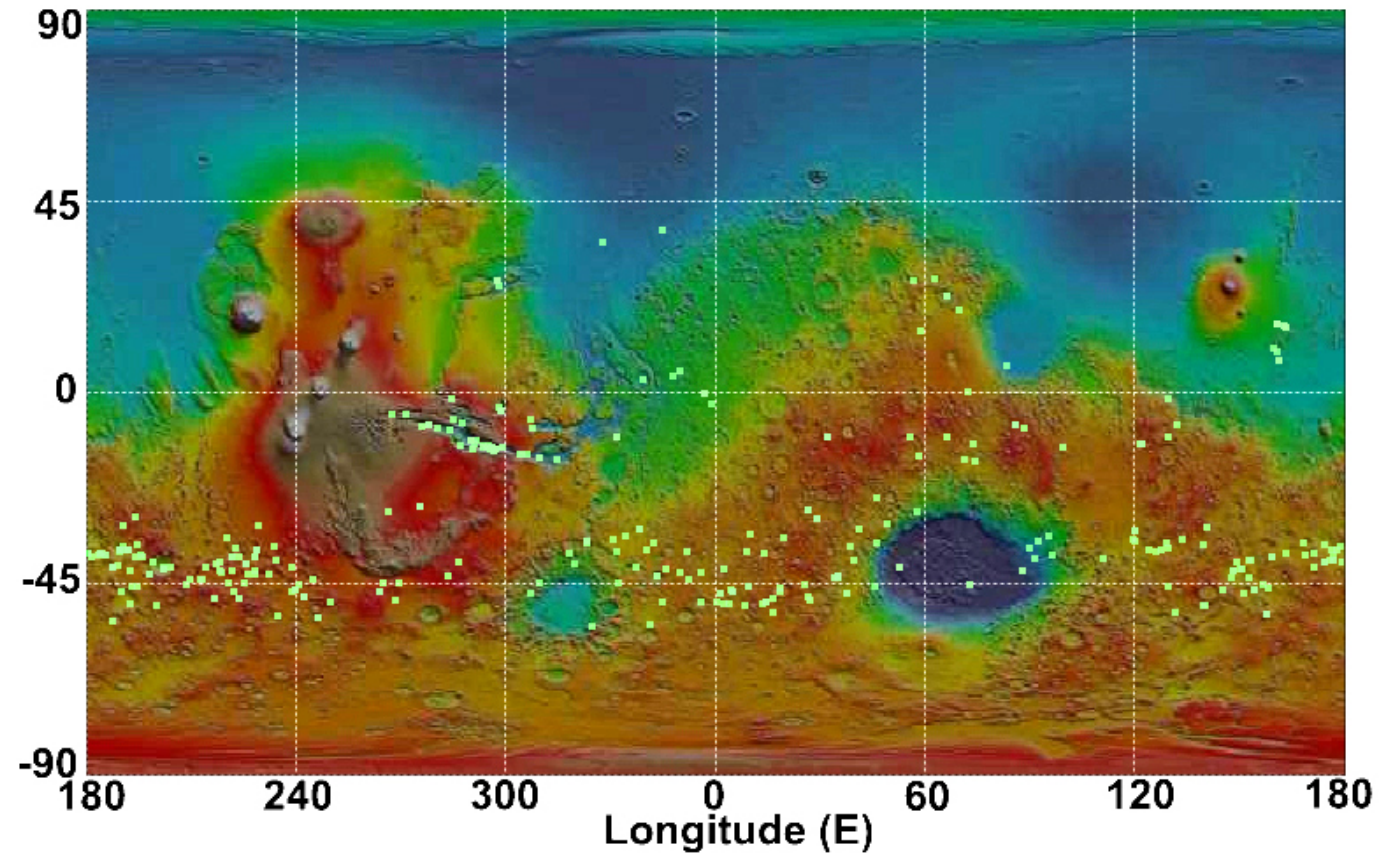


Mars: Abundant Recurring Slope Lineae (RSL) Following the Planet-Encircling Dust Event (PEDE) of 2018

- Recurring slope lineae (RSL) are puzzling active slope features on Mars that resemble seeping water.
- Following the great dust storm of 2018, many more candidate RSL were seen than in typical Mars years.
- These RSL sites usually show evidence for recent dust deposition.
- There are clear dust devil tracks in 73% of post-storm images in the southern middle latitudes in the summer, where and when dust devils are most active.
 - The tracks indicate dust lifting, by several mechanisms.
- We suggest that dust lifting processes on steep slopes may initiate and sustain RSL formed from flows of dust (perhaps clumped) and/or sand that is destabilized by dust movement.
- The otherwise puzzling recurrence and year-to-year variability of RSL activity can be explained by variable yearly dust fallout.



Map of post-PEDE image locations with candidate RSL acquired in MY34, L_s 234-360° (8/2018 to 3/2019). The latitudinal distribution is wider than in prior years within this L_s range. Basemap is colorized elevation over Mars Orbiter Laser Altimeter (MOLA) shaded relief.

McEwen et al. (2021), JGR-Planets, doi: 10.1029/2020JE006575