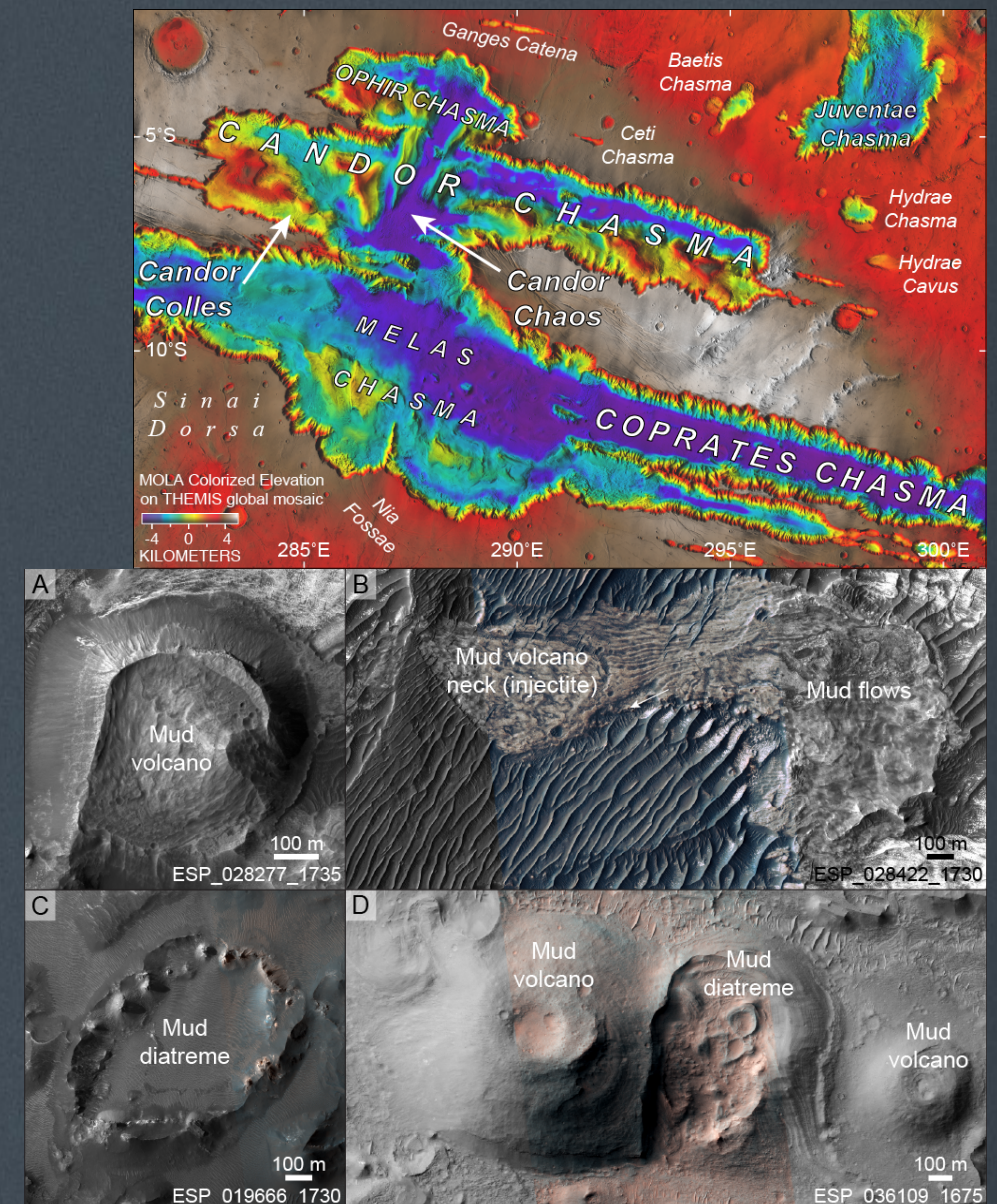


Mars Reconnaissance Orbiter images show subsurface sediment mobilization and mud volcanism in Candor and Coprates Chasmata

- Populations of knobs, rings and lobate structures in the Candor Colles (A & B), the Candor Chaos (C), and Coprates Chasma (D), regions of Valles Marineris are interpreted as mud volcanoes, exhumed injectites and mud flows based on their facies, morphologies, superposition and cross-cutting relationships.
- Mud volcanoes and mud flows occur when water-saturated sediments in the subsurface are mobilized, injected upward, and erupted onto the ground surface. Processes such as earthquakes, impact cratering, and rapid sedimentation can trigger subsurface sediment mobilization.
- Subsurface sediment mobilization is also interpreted as the primary mechanism for the formation of Candor Chaos, providing impetus for future investigations of mud volcanism in other chaotic terrains in the Valles Marineris region.
- Mud volcanoes and mud flows on Earth are key sites for the migration of volatiles and biosignatures from subsurface reservoirs to the surface environment. Thus mud volcanoes and flows on Mars are key sites for investigations of past habitability and future surface exploration.



Okubo, C.H. (2016) *Icarus*, <http://dx.doi.org/10.1016/j.icarus.2015.12.051>.