The radial grooves on the inner ejecta layer show systematic geomorphic trends that indicate that they probably did not form as a result of flow in that layer.

Coogoon Valles has clear indications of past water activity, including flow channels of special interest because their associate origin with aqueous solutions. Proposed landing site ellipse for ExoMars mission is centered at 16º 29´N 23º 28´W.

Connecting surface imaging and topography with IR spectral mineral identification provides useful possibility for paleo-environment reconstruction. A project to compile a database of such indicators is started, the system’s background is outlined.

Large-scale polygons in offshore, passive margins on Earth are a credible analog for the giant polygons of Mars. This analog supports the concept that the martian features formed in an ancient ocean.

Today most workers favor water as the major outflow channel forming medium, however considerable uncertainty remains about the amount of sediment involved (e.g., sediment-charged floods or water-rich debris flows).

The present work briefly reviews the recent studies on long-term survival potential of Halobacterium salinarum in ancient terrestrial halite and studies the possible survival ability of this poly-extremophilic archaeon inside martian halite.

We examine the crystal chemistry of and key differences between merrillite in martian and lunar basalts and address what these observations reveal about the nature of magmatism on these bodies.