



Utopia Planitia's Surface

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The Martian landscape often owes its existence to the influences of liquid water and ice. This observation shows a couple of landforms that may result from the loss of large amounts of ice from subsurface deposits: polygonal patterns of troughs and large scallop-shaped depressions. Collectively, such landforms are referred to as “thermokarst.” Cold ice is generally strong and supports the weight of overlying soil. But when ice is lost through melting or sublimation, the supported surface can subside or collapse into the gradually growing cavity left behind by the lost ice. The shapes of the resulting depressions can offer us with clues (and lingering questions) to the origin of the ice.