



Slope Morphologies of the Hellas Montes Constructs, Eastern Hellas Planitia, Mars

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In 2004, the High Resolution Stereo Camera (HRSC) onboard Mars Express has obtained about a dozen of large-area image strips with a resolution of 12 to 25 metres per pixel that cover the Eastern Hellas Planitia region - a region which is characterised by large constructs of remnant hills and adjacent debris aprons. Although lobate debris aprons (LDA) in general have been interpreted to consist of rock debris and interstitial ice in varying proportions image data from the Mars Orbiter Camera (MOC), THEMIS instruments and HRSC unequivocally show that these landforms are morphologically complex and that a variety of slope processes, such as gelifluction, dry avalanches, various subsets of ice-assisted creep phenomena, i.e. rock glaciers, and other viscous flow features have to be taken into account when interpreting LDAs. Based upon measurements on the crater-frequency distribution ages for slope morphologies are far below 1 Ma. It is suggested that through time, varying amounts of available water or ice caused a retreat and movement of surficial deposits with varying rheologic behaviours. We found further evidence for a retreat of a mantling deposit and substantial changes in the water/ice-balance of that region.