

Geologic cartography of Hecates Tholus volcano, Mars. Geomorphologic analysis by GIS.

M.A. de Pablo

Área de Geología. ESCET. Universidad Rey Juan Carlos. 28933 Móstoles, Madrid. Spain.
(miguelangel.depablo@urjc.es)

Hecates Tholus is a volcano located at the Elysium volcanic region. Hecates Tholus was the objective of recent papers focused on different interesting aspects of its geology, glaciology, geomorphology, or volcanology. Some of these works included partial geologic maps based on analysis of new images obtained by sensors onboard of Mars Express. Here is showed a preliminary geologic map of Hecates Tholus volcano elaborated by analysis of THEMIS and high resolution MOC images, and MOLA-derived topographic maps. Map area include Hecates Tholus volcano and its nearest surrounding area. Some geologic units were previously described and mapped on regional geologic maps, but other new units were established in this work. Geologic units include volcanic, fluvial, glacial, tectonic, and impact origins and processes, though other problematic materials and units exist at the map area. Images and topographic maps were integrated into a Geographic Information System in order to allow us a geomorphologic analysis of this volcano, including the study of topographic profiles, slopes and their orientation, impact crater density and its spatial distribution, or location of channels. The geologic map and geomorphologic analysis of Hecates Tholus volcano could be complements to the previously published work for the study of the evolution of this martian volcano.