



Lineated Valley Fills and Lobate Debris Aprons in Coloe Fossae: Evolutionary characteristics and time-stratigraphic relationships.

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Mid-latitude regions of Mars, especially the crustal dichotomy boundary between highlands and northern lowlands are characterized by lineated valley fills (LVF) and lobate debris aprons (LDA). These features reveal evidence of ice-rich deposits. LDAs are assumed to consist of a mixture of ice and rock/debris consistent with models of apron formation such as rock glacier ice assisted creep of talus, ice-rich landslides, or debris-covered glaciers. Deposition of ice at these latitudes is consistent with atmospheric circulation models and predictions of spin axis and orbital variations for the past history of Mars. In this study we measured crater size frequency distributions of LVS and LDA including unrelaxed glacier-like convex bodies in the Coloe Fossae region (35°N, 55°E) and determined late amazonian crater retention ages of 30-50 Ma and 80-100 Ma which gives evidence of repeated deposition of mantling material from surrounding head walls with continuous resurfacing between active periods.

We use new HRSC data for topography and imaging in conjunction with high resolution CTX imaging data.