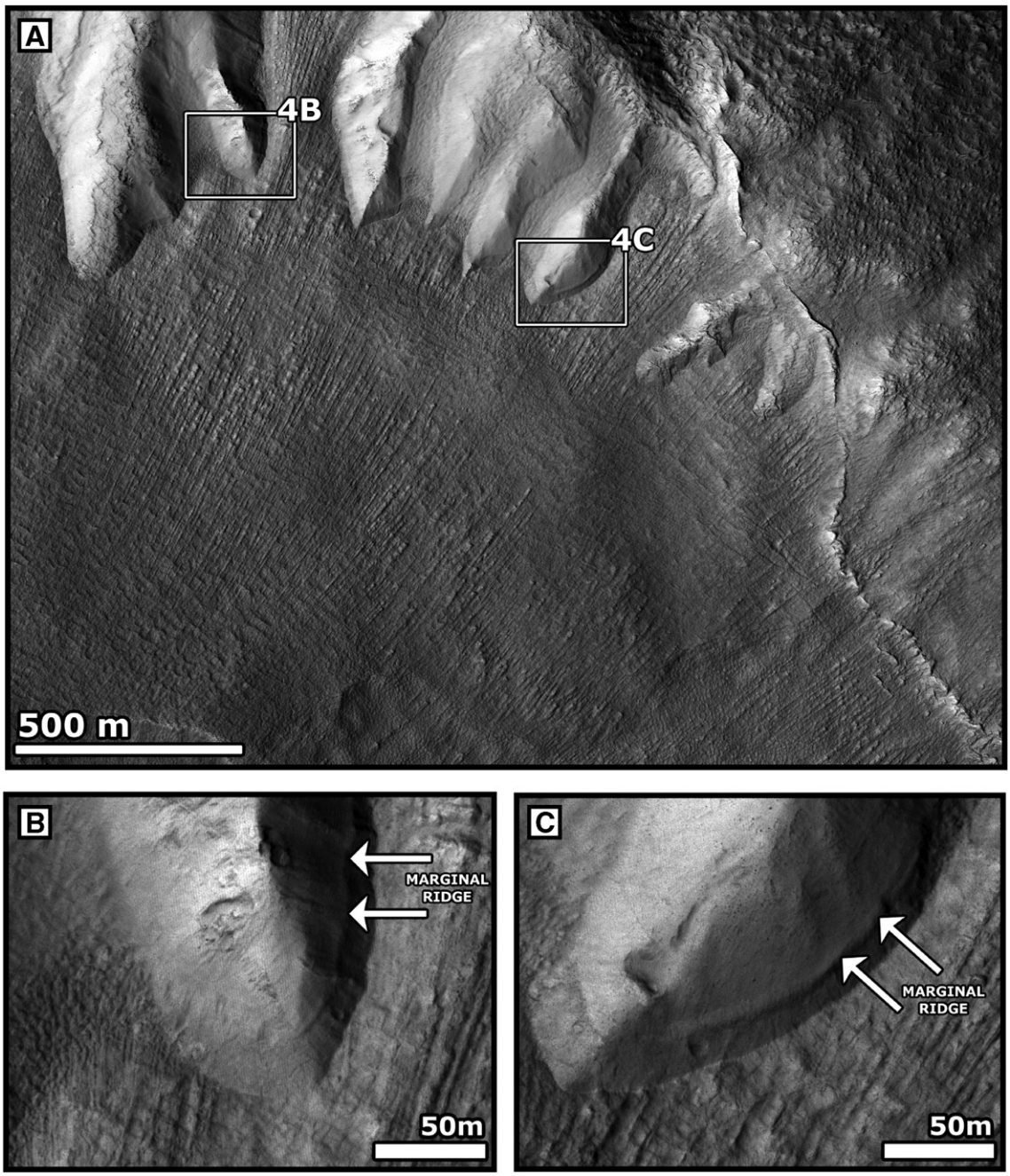

Fig. 4. A) Part of HiRISE image PSP_007500_2235 (Context provided in Fig. 3A). Small valleys contain lineated terrain that is found on convex-up material that trends downslope. At the mouth of each valley is a polygonal mound of material. B). Detail of HiRISE image, showing a marginal ridge on the wall of a valley hosting lineated terrain. C) Detail of HiRISE image showing a similar ridge in a separate valley.

characterized by small-scale polygonally patterned ground that covers and embays portions of a broad unit of hummocky terrain on the crater floor. This hummocky unit is adjacent to the central crater floor, which contains a complex assortment of rimless depressions, heavily modified impact craters, locally linear ridges frequently with central troughs (ridges are ~200 m long at most), linear dune fields, small pit chains, and a low-albedo deposit on the northeastern portion of the crater floor. Fresh craters, even at HiRISE scale, are extremely rare, suggesting a young surface age, easily eroded surface material, or both.

3.3. Surrounding plains

To determine the amount of material that flowed into the superposed smaller crater from the south, we used HRSC and CTX image data along with stereo topography (Fig. 3B) to study the preserved northern walls of the crater and the adjacent plains for evidence of overtopping. While several MOLA orbits cross the rim of the crater (e.g. Fig. 2), significant gaps in the track data have prompted us to use high spatial-resolution (~6 m/px) CTX stereo anaglyphs to decipher detailed topographic relationships. Unless otherwise stated in this section, references to topography are derived from this latter data set.

The northern rim of the smaller crater shows an extensive history of modification and degradation. MOLA track 13024 (Fig. 2B) shows the rim to be ~410 m above the crater floor at its northernmost extent, but a detailed study of the rim using CTX stereo reveals that the rim shows a wide variance in elevation. Directly to the east of this measurement, the rim is depressed for a distance of ~3 km (Fig. 3B, C).