Auxiliary material for

Sequestered glacial ice contribution to the global martian water budget: geometric constraints on the volume of remnant, mid-latitude debris covered glaciers

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This auxiliary material contains two figures and a zipped collection of ArcMap GIS shapefiles.

FS01.tif is a histogram showing the absolute difference in volume (% difference) between crater volumes measured using the MOLA extraction described in the text versus using pre-computed parameters from the [*Robbins and Hynek*, 2012] database. Median offset for the all craters that were both mapped as containing CCF as well as had precomputed floor and rim statistics is 17%. Volumes estimated using our method can be both greater or smaller than those measured using the [*Robbins and Hynek*, 2012] values. In general, the two methods for computing crater floor elevation and crater rim elevation are in good agreement.

FS02.tif is a map showing the distribution of CCF, LVF, and LDA (all marked in white) over ice accumulation rates for a 35˚ obliquity GCM simulation reported in [*Madeleine et al.*, 2009]. Note that, while some deposits are present in areas of high accumulation, others are not. This suggests that the details of ice accumulation and preservation are strongly dependent on variability in the mid-Amazonian climate system, and that a range of orbital forcings and climate responses resulted in the formation of the glacial landforms mapped in this survey. Grid is 10˚.

LVF_LDA_CCF.zip is a zipped collection of shapefiles showing the mapped distribution and calculated volumes of CCF, LVF, and LDA units. Each landform type is in its own shapefile. CCF_vol_thick.shp contains fields for feature ID, area (m2), latitude of centroid, longitude of centroid, deposit mean elevation (m), model crater depth (km), depth to fill (km), calculated thickness of fill (km), calculated volume (km3), and average thickness (km). LVF_vol_thick.shp contains fields for feature ID, area (m2), latitude of centroid, longitude of centroid, number of decomposed rectangles for volume calculation, calculated volume (km3), and average thickness (km). LDA_vol_thick.shp contains fields for feature ID, latitude of centroid, longitude of centroid, volume (m3), area (m2), volume (km3), area (km2), and average thickness (km).