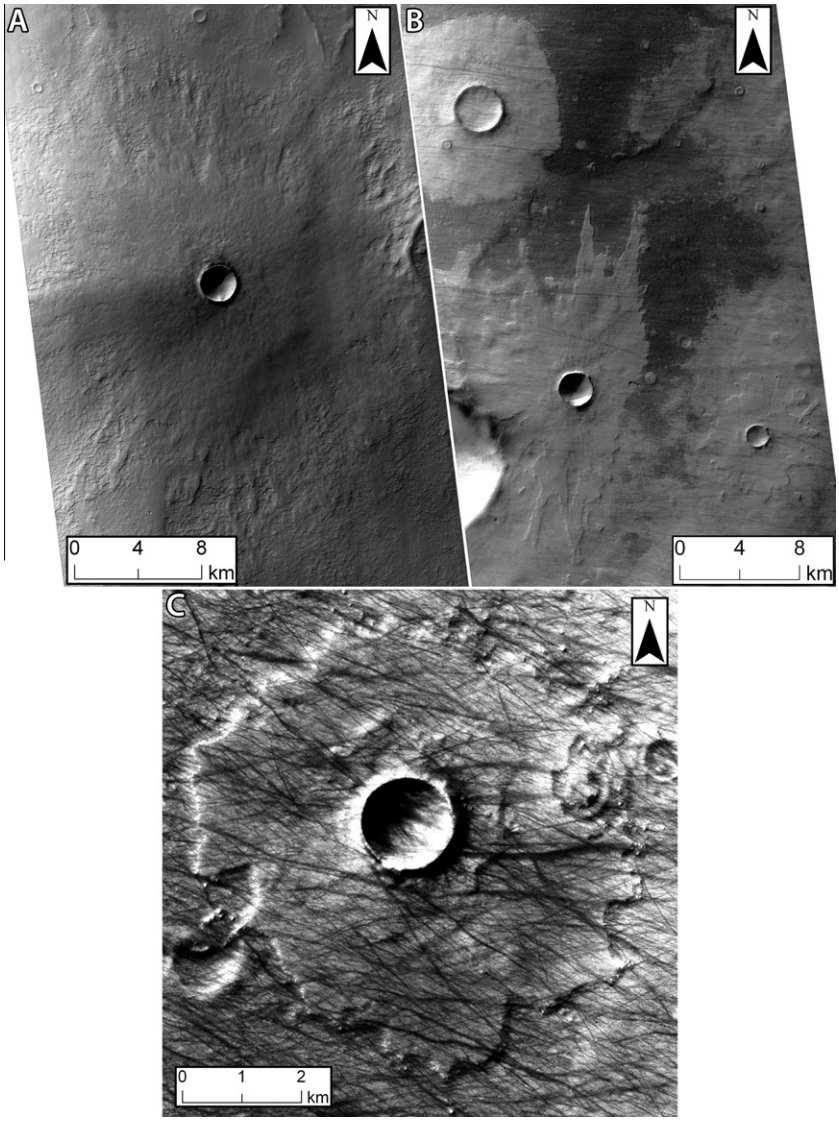

Fig. 11. Images of three of the newly identified excess ejecta craters in the southern hemisphere. Each example is less than 3 km in diameter, and exhibits DLE. (A) Crater #2 in Table 2, shown in CTX image P15_007030_1238. This crater has the largest ejecta area of the four EE identified in this study. The ejecta shows evidence of sublimation pitting, especially near the margins of its outer layer. (B) Crater #4 in Table 2, shown in CTX image P16_007264_1326. This EE is located within tens of km from two Pr, seen in the top left and bottom right of the image. The ejecta of this crater does show some signs of smoothing due to erosion, but it is notably fresher than that of the two Pr, and it maintains long lobes and radial striations. (C) Crater #1 in Table 2, shown in CTX image B11_013819_1162. Although this crater is still considered fresh, it shows the most abundant evidence of erosion of any of the new EE examples. Both layers of the DLE are visible, but the texture appears subdued.

Table 2
Locations and physical attributes of the four newly identified excess ejecta craters.

Crater #	Latitude (°S)	Longitude (°E)	Crater diam. (km)	Avg. ejecta thickness (m)	Ejecta area (km^2)	V_{cavity} (km^3)	V_{ejecta} (km^3)	V_{ejecta}/V_{cavity}
1	63.6	88.4	1.5	16	38	0.046	0.608	13.2
2	55.6	46.3	2.2	23	440	0.448	10.120	22.6
3	46.1	160.3	3.0	26	173	1.017	4.498	4.4
4	49.1	135.7	2.3	18	151	0.096	2.718	28.5

As noted in the Pd survey by Kadish et al. (2009), Pd are much more common in the northern hemisphere (Fig. 10). Our finding that both Pr and EE are also rarer in the southern hemisphere supports the interpretation that the morphologies are genetically related; having comparable relative population concentrations globally suggests that the crater types are similarly inhibited from forming in certain regions while other regions are conducive to the formation of each morphology. The lack of any identified large EE in the southern hemisphere is consistent with the finding by Kadish et al. (2010) that the pedestals of Pd are, on average, thinner (not as tall) in the southern hemisphere. In general, the smaller number of each morphologic crater type (EE, Pd, Pr), their geographic distribution (Fig. 10), and their thinner ejecta deposits/pedestals in the southern hemisphere imply that the ice-rich target material was less common in the southern highlands; specifically, these pieces of evidence support the interpretation that