



Fig. 13. Mercator map of system I subradial furrows. Curved lines extending throughout the map are small circles placed at 10° intervals and centered on the center of curvature of system I arcuate furrows.

furrows which average 6 km in width and 22 km in spacing [Zuber and Parmentier, 1984a]. This unit occurs in areas 3500-5500 km distant from the center of curvature of the older system III furrows, comparable to the location of Nicholson Regio. However, no segmented remnants of system III furrows are observed between the system I arcuate furrows here or anywhere else. In addition, the density of small craters is depleted, and a few furrows cut the rims of flattened older craters (arrows, Figure 15a) whose ejecta blankets have apparently been superposed by the furrowed dark material [cf. Murchie and Head, 1989]. These observations suggest that dark resurfacing materials buried small older craters and preexisting system III furrows and partly infilled large craters, shortly before or during furrow formation. The ≤ 20 -km size of craters whose density was depleted implies a thickness of the resurfacing material of 300-800 m.

Central and eastern Marius Regio have somewhat lesser calculated crater ages, with normalized ≥ 10 -km crater densities of $299 \pm 22 \times 10^{-6} \text{ km}^{-2}$ and $252 \pm 27 \times 10^{-6} \text{ km}^{-2}$ respectively. The lesser crater ages of these areas is consistent with the observation of morphologically subdued furrows that appear partially infilled, located along the contact with the furrowed terrain of northwestern Marius Regio (black arrows, Figure 15c). In eastern Marius Regio (Figure 15b), arcuate furrows are topographically subdued and appear to be partially buried by intermediate-albedo material. The small-crater density is at

most slightly depleted (Figure 4), suggesting that antecedent dark material resurfacing, local furrow formation, and subsequent resurfacing all occurred within a geologically short time. In central Marius Regio (Figure 15c), older furrows and craters are generally completely buried by intermediate-albedo material. Only a few younger arcuate furrows, which are similar in morphology and orientation to nearby older furrows, cut this resurfacing material (white arrows, Figure 15c). No small-crater depletion is observed over most of the deposit (Figure 4), suggesting that the bulk of the material is at least 600 m to 2 km in thickness. However, the southwestern portion of the deposit is depleted in ≤ 20 -km craters, suggesting that the resurfacing material thins locally to a few hundred meters in thickness.

Galileo Regio exhibits the lowest calculated crater ages of all large dark terrain areas in either hemisphere. Northern and western Galileo Regio (Figure 15d) contain low-albedo material with a normalized ≥ 10 -km crater density of $173 \pm 17 \times 10^{-6} \text{ km}^{-2}$. Furrows here possess several hundred meters of relief and sometimes raised sharp rims, and they have a significantly greater width (10 km) and spacing (50-100 km) than do the furrows in Marius Regio. The furrows typically are not significantly infilled yet they crosscut no well preserved older craters, suggesting that only a brief period elapsed between burial of the preexisting surface and the beginning of furrow formation. Many of the arcuate furrows have