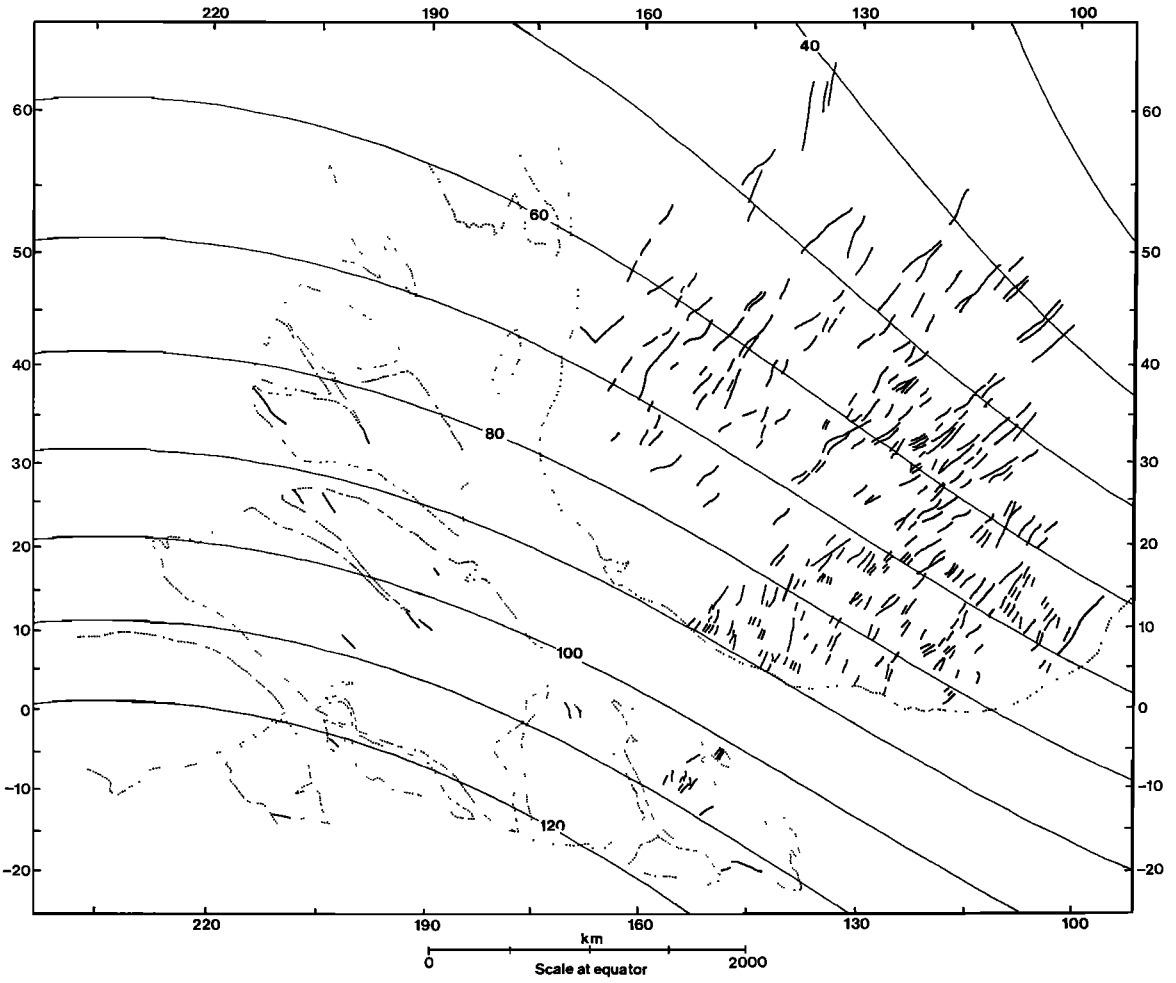

Fig. 14. Mercator map of system I subradial furrows. Curved lines extending throughout the map are small circles placed at 10° intervals and centered on the center of curvature of the older system III furrows.

intermediate-albedo flanks [*Helfenstein*, 1986] that are slightly elevated and appear constructional in origin. For example, at the arrow in Figure 15*f*, material forming the flank of the west-northwest oriented furrow buries the northern portion of a large, highly flattened crater. Depletions in the density of small craters occur below 15 km and 30 km diameters, consistent with a multistage history of dark material resurfacing to a depth of 300 m to 1 km. Together, this evidence suggests that furrows in Galileo Regio formed during the later stages of burial of an older surface by dark volcanic material. If the age of this area is indeed less than Marius Regio, as suggested by calculated crater ages, then the antecedent surface may have been equivalent to that observed in Marius Regio.

Southeastern Galileo Regio and extreme eastern Marius Regio contain dark smooth material with the lowest normalized ≥10-km crater density calculated for any dark terrain, 150±14 x 10^{-6} km^{-2}. In southeastern Galileo Regio, thin, low-albedo smooth materials infilled low areas between high-standing arcuate furrows similar to those occurring in northern and western Galileo Regio (Figure 15*e*). Some portions of individual arcuate furrows are buried, and the density of ≤30-km craters is depleted. In extreme eastern Marius Regio, a preexisting surface has been almost completely buried by similar dark smooth material. These observations are interpreted to indicate that southern Galileo Regio and extreme eastern Marius Regio underwent late-stage dark material resurfacing after dark terrain emplacement and furrow formation had ceased in adjacent areas.

Different relative ages of the major dark terrain areas of the anti-Jovian hemisphere would be interpreted if planetocentric crater-forming bombardment had been assumed, that is, if measured rather than normalized crater densities were used as relative age indicators (Table 1). Briefly, furrowed surfaces of northwestern Marius Regio and Galileo Regio would be of similar age, the surfaces of central and eastern Marius Regio would be somewhat older, and the smooth material in the southwestern part of central Marius Regio would be somewhat younger. However, this age relation of furrowed material in northwestern Marius Regio and smooth material covering most of central Marius Regio is at variance with the earlier interpretation that the smooth material partially buries furrows along the contact of the two deposits.

Comparison to models. In light of the previous discussion of system III, three models are consistent with the dominance in system I of arcuate furrows, the absence of compressional features, the close association of furrows and volcanic materials, and the locally and regionally variable furrow ages: