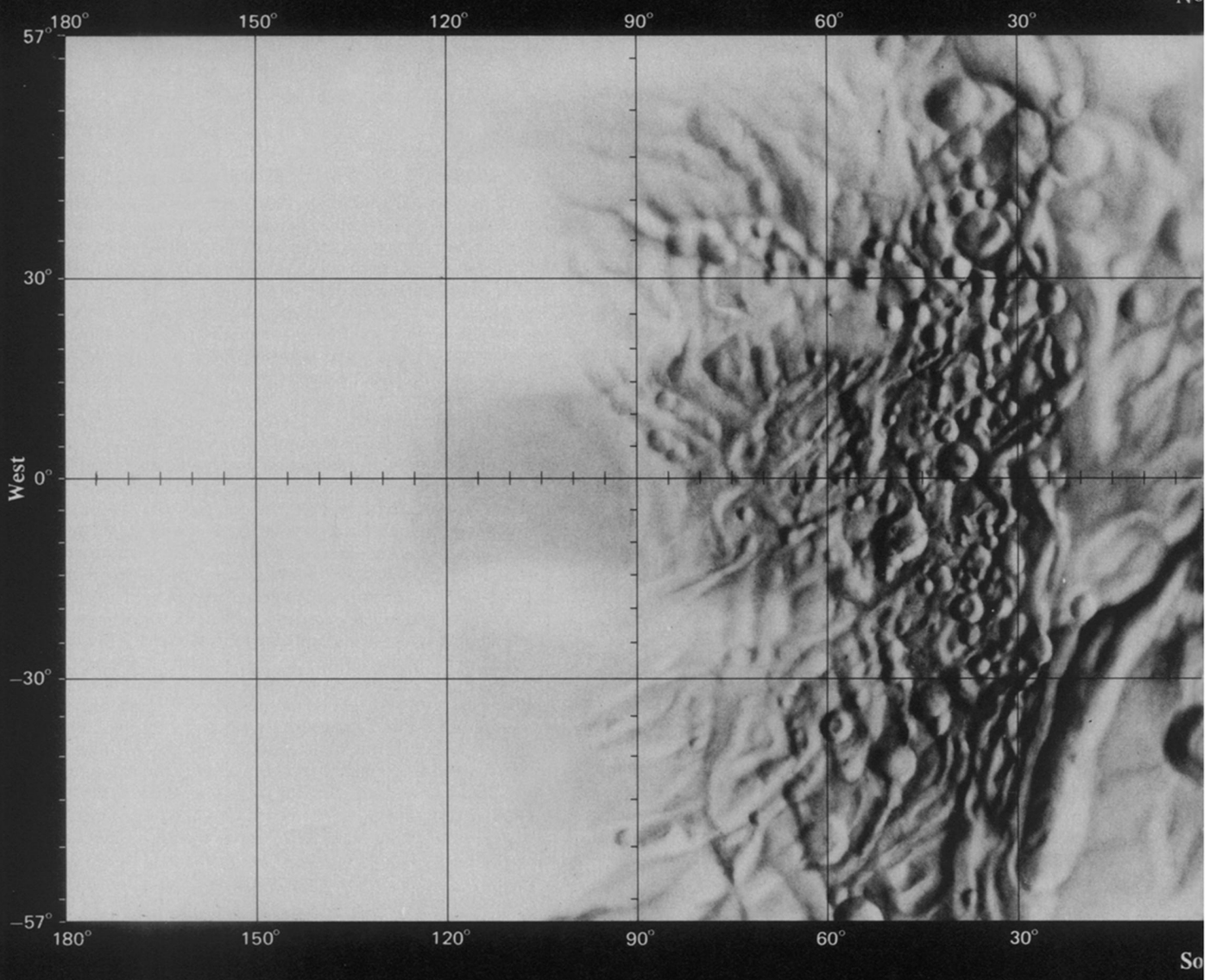
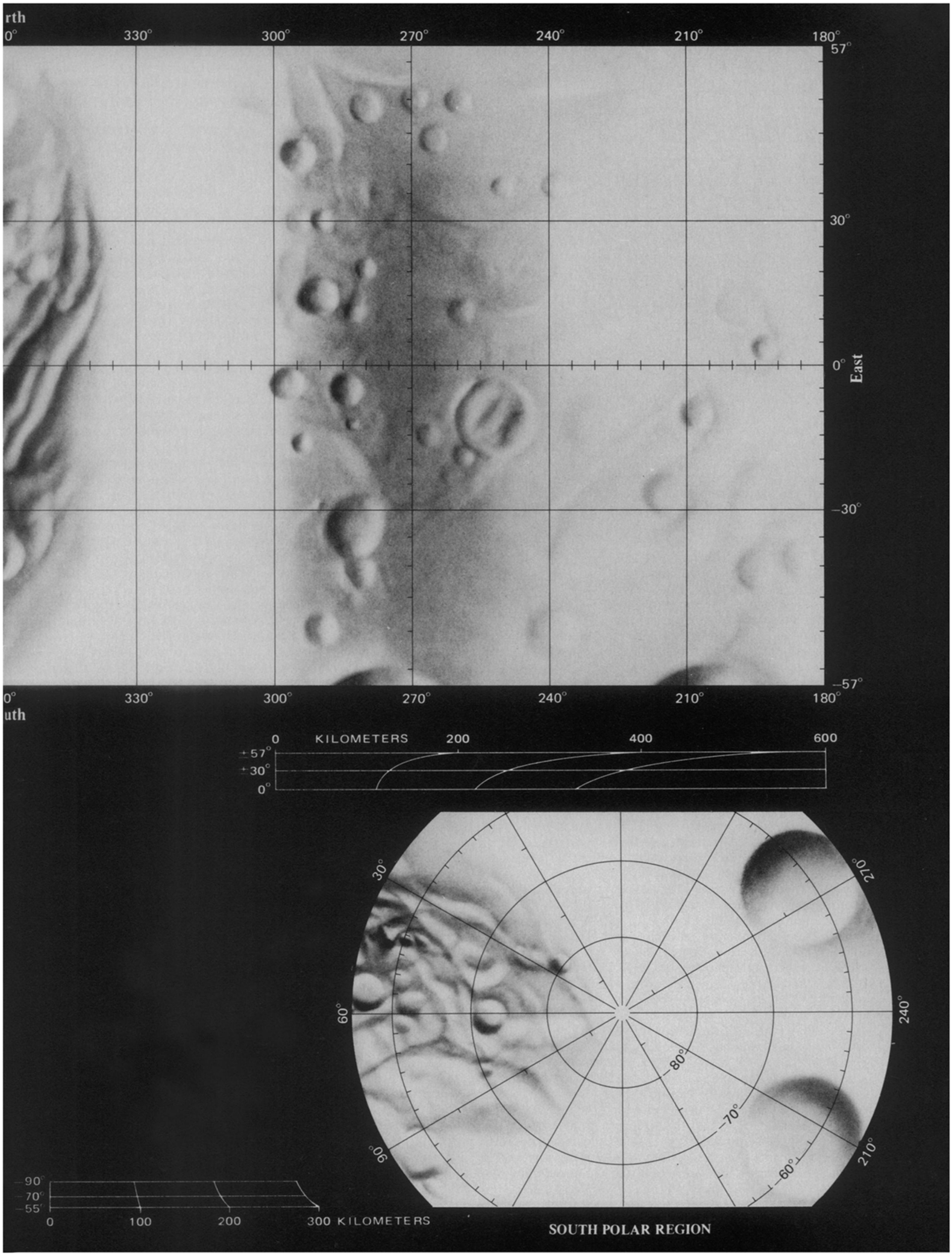


THE MOONS OF SATURN: Preliminary Maps – 3

Tethys

Map of Tethys, third closest to Saturn of the planet's major satellites, was prepared from photos taken by the Voyager 1 spacecraft. Drawn at 1:10,000,000 scale by Patricia M. Bridges of the U.S. Geological Survey's Branch of Astrogeologic Studies, it is reproduced here at 1:9,000,000 (1 centimeter = 90 kilometers at the equator). The 0° meridian of longitude always faces Saturn, and the left half of the map shows the side of Tethys that faces ahead as it moves around the planet. The placement of surface features shown (still being refined) is estimated to be accurate to within ± 50 km over 66 percent of mapped area. The photos used in preparing the map range in resolution from about 40 to 11 km per line pair, with lower-resolution and unphotographed areas left blank.

Almost as large as nearby Dione (1,050 ± 20 km vs. 1,120 ± 20), Tethys is far less dense (about 1.0 g/cc vs. nearly 1.5), suggesting a substantially higher ice content that might also be more rigid, due to a smaller amount of heat-producing radionuclides at its rocky core (if even Dione has such heat sources). The most prominent feature seen on Tethys is the vast groove running down the map's center, stretching as much as a third of the way around the satellite, and a thick, brittle ice blanket would be consistent with the speculation that the groove is a crack formed by the expansion of the interior as it froze. A rigid crust would also support some researchers' impression that craters on Tethys seem deeper for their diameters than do craters on Dione. – **Jonathan Eberhart**



SOUTH POLAR REGION