

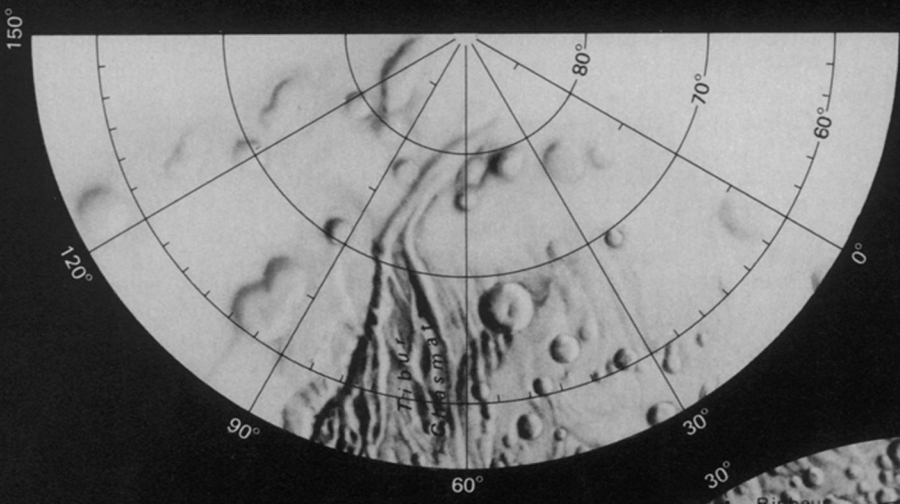
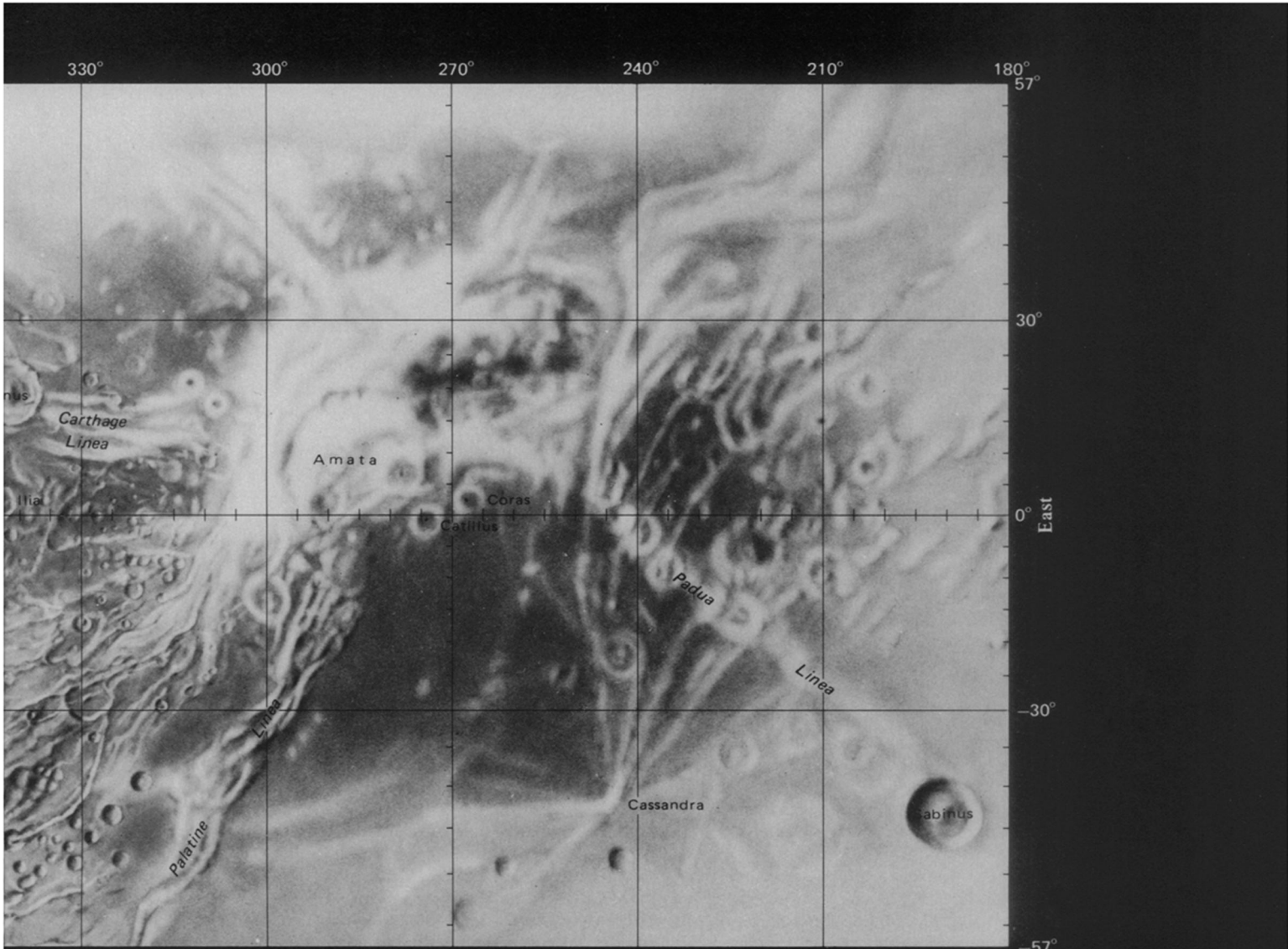
MAPPING THE MOONS OF SATURN  
PART FIVE

# DIONE

Map of Dione, Saturn's fourth nearest and fourth largest satellite (diameter 1,120 km), was prepared from photos taken by the Voyager 1 and 2 spacecraft. Drawn at 1:10,000,000 scale by Patricia M. Bridges of the U.S. Geological Survey's Branch of Astrogeologic Studies, the map is reproduced here in original size (1 cm = 100 km at the equator). The 0° meridian of longitude always faces Saturn, and the left half of the map shows the side of Dione 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  $\pm 50$  km over 66 percent of the mapped area. The photos used in preparing the map range in resolution from about 4 to 40 km per line pair, with lower-resolution and unphotographed areas left blank.

The diffuse, wispy streaks on Dione's trailing hemisphere show a striking similarity to the same face of another Saturnian moon, Rhea. One possibility is that the streaks represent material released from the interior through cracks formed by expansion or other crustal stress. Some researchers have suggested that the markings may once have covered all of Dione's surface, but were later erased from the leading hemisphere by meteorite bombardment. Some craters visible through the streaks suggest possible signs of a separate, earlier bombardment episode, while yet a third episode (though its inferred craters are too small to see) may be represented by an albedo (reflectivity) pattern bridging the leading and trailing sides. (Map names are provisional, pending International Astronomical Union approval.)

— JONATHAN EBERHART



**NORTH POLAR REGION**

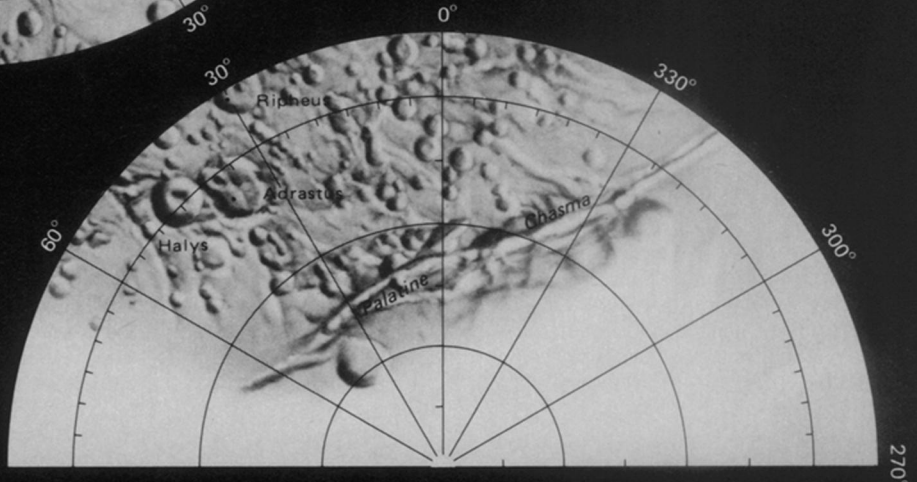
90°  
70°  
55°  
0 100 200 300  
KILOMETERS

POLAR STEREOGRAPHIC PROJECTION

**SOUTH POLAR REGION**

90°  
70°  
55°  
0 100 200 300  
KILOMETERS

POLAR STEREOGRAPHIC PROJECTION



270°