

INTERIOR—GEOLOGICAL SURVEY, RESTON, VA., 1990  
Prepared on behalf of the Planetary Geology Program, Solar System Exploration Division,  
Office of Space Science, National Aeronautics and Space Administration, under contract  
W-15-874.  
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**NOTES ON BASE**

This sheet is one in a series of maps that cover the surfaces of the Galilean satellites of Jupiter at a nominal scale of 1:5,000,000 (Batson and others, 1988). Sources for the series were Voyager 1 and 2 images. Essential features of the mapping are noted below.

**CARTOGRAPHIC CONTROL**

Mercator, Lambert Conformal Conic, and Polar Stereographic projections used for the maps of Callisto are based on a sphere with a radius of 2400 km. The projections have common scales of 1:4,780,000 at lat  $\pm 21.3^\circ$  and 1:4,769,000 at lat  $\pm 65.2^\circ$ . Longitude increases to the west in accordance with astronomical convention. Planimetric control was derived by photogrammetric triangulation using Voyager 1 and 2 pictures (Davies and Katayama, 1981). The meridians are numbered so that the reference crater, Saja, is centered on lat  $0.87^\circ$  N, long  $386^\circ$ .

**MAPPING TECHNIQUE**

Digital mosaics were assembled at a digital scale of 1/32<sup>nd</sup> (1.3 km) per pixel according to methods described by Batson (1987) and Edwards (1987) and transferred to the projections described above. Details from an unpublished, 1:15,000,000 scale, airbrush drawing were combined with the mosaic in regions where image data were very poorly resolved. The mosaic is retouched to obtain uniform tonal balance. Extreme variations in picture resolution precluded comparable display of the images used for the map compilation. Further limitations were imposed by dark albedo markings, which tend to obscure distinctive surface details.

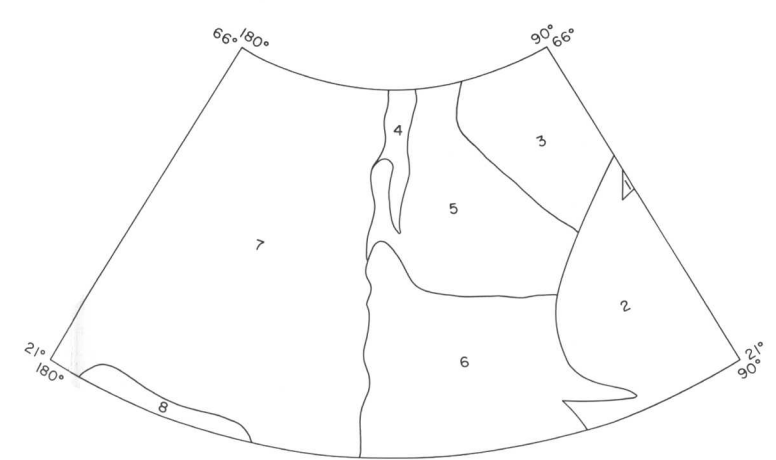
Digital processing and mosaicking were done by Kevin F. Mullis.

**NOMENCLATURE**

Names on this sheet are approved by the International Astronomical Union (1980, 1988).  
Jc 5M 44/135 CMN: Abbreviation for Jupiter, Callisto (satellite); 1:5,000,000 series; center of sheet, lat  $44^\circ$  N, long  $135^\circ$ ; controlled photomosaic (CM), nomenclature (N).  
Jc-3: Abbreviation for Jupiter, Callisto, sheet 3.

**REFERENCES**

Batson, R.M., 1987, Digital cartography of the planets: New methods, its status, and its future: *Photogrammetric Engineering and Remote Sensing*, v. 53, no. 9, p. 1211-1218.  
Batson, R.M., Bridges, P.M., Inge, J.L., Ibell, Christopher, Masursky, Harold, Strobel, M.E., and Tyner, R.L., 1980, Mapping the Galilean satellites of Jupiter with Voyager data: *Photogrammetric Engineering and Remote Sensing*, v. 46, no. 10, p. 1303-1312.  
Davies, M.E., and Katayama, F.Y., 1981, Coordinates of features on the Galilean satellites: *Journal of Geophysical Research*, v. 86, no. A10, p. 8653-8657.  
Edwards, Kathleen, 1987, Geometric processing of digital images of the planets: *Photogrammetric Engineering and Remote Sensing*, v. 53, no. 9, p. 1219-1222.  
International Astronomical Union, 1980, Working Group for Planetary System Nomenclature, in 17th General Assembly, Montreal, 1979, *Transactions: International Astronomical Union Proceedings*, v. 17B, p. 297-304.  
—, 1988, Working Group for Planetary System Nomenclature, in 20th General Assembly, Baltimore, 1988, *Transactions: International Astronomical Union Reports on Astronomy*, v. 20A, p. 706.



**INDEX OF MAPPING SOURCES**

Supplemental source images used during the compilation are listed separately. Copies of various enhancements of these pictures are available from National Space Science Data Center, Code 601, Goddard Space Flight Center, Greenbelt, MD 20771.

**VOYAGER 1**

Index No.	Picture No.	Primary Source	Index No.	Picture No.
1	178J1+1	7	418J2-2	
2	328J1+1	8	426J2-2	
3	343J1+1			
4	363J1+1			
5	524J1+1			
6	576J1+1			

**VOYAGER 2**

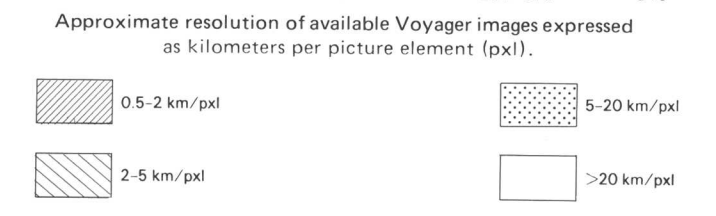
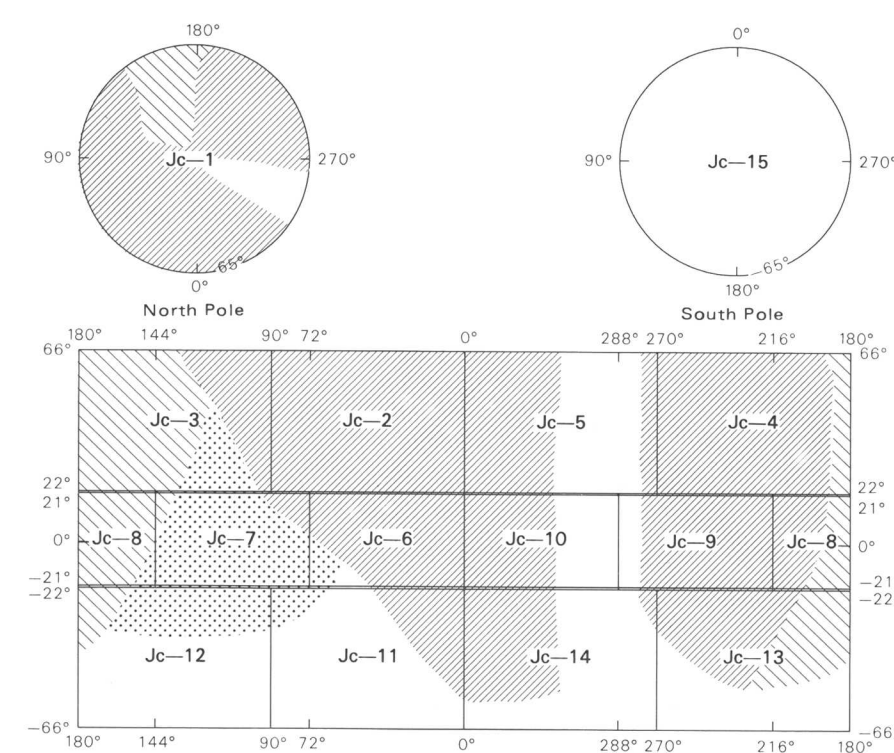
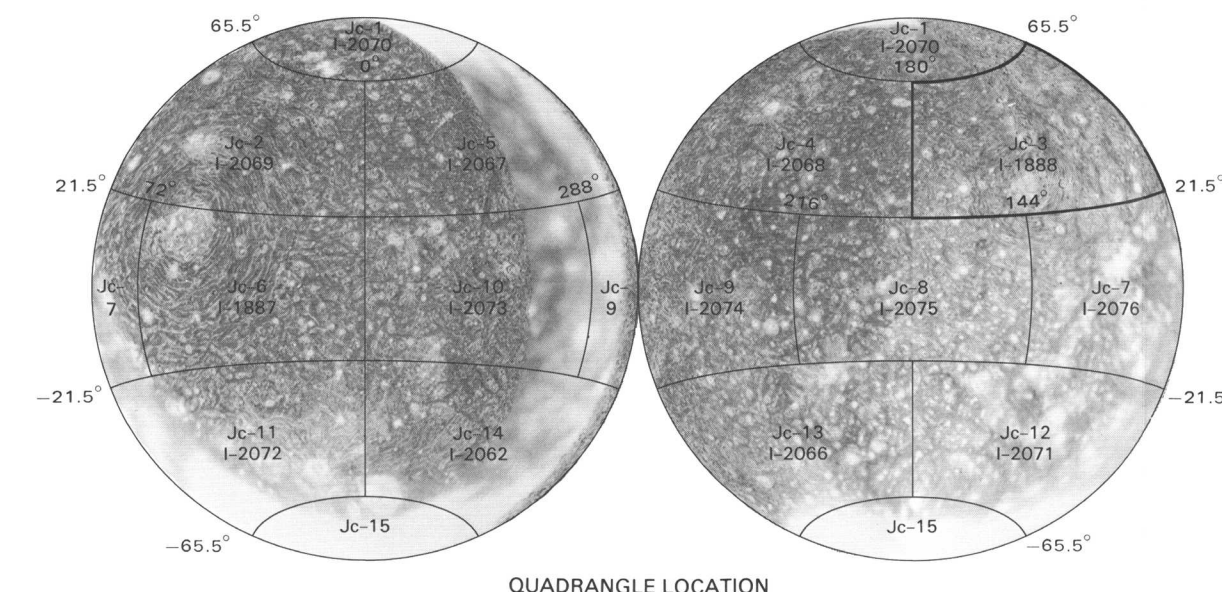
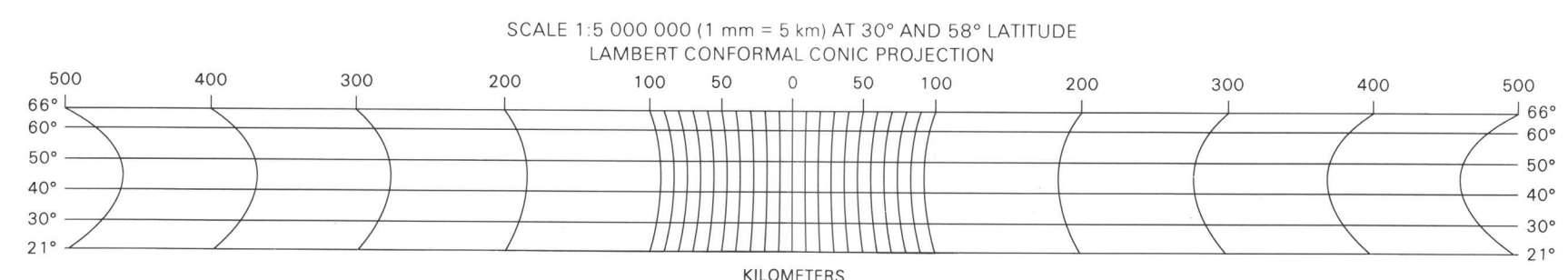
Index No.	Picture No.	Primary Source	Index No.	Picture No.
7	843J2-2	1148J2-2		
8	873J2-2	1153J2-2		
9	883J2-2	1161J2-2		
10	887J2-2	1173J2-2		
11	1145J2-2	1188J2-2		

**VOYAGER 1**

Picture No.	Supplemental Source	Picture No.	Supplemental Source
182J1+1	426J1+1	843J2-2	1148J2-2
313J1+1	434J1+1	873J2-2	1153J2-2
342J1+1	518J1+1	883J2-2	1161J2-2
358J1+1	570J1+1	887J2-2	1173J2-2
361J1+1	522J1+1	1145J2-2	1188J2-2
365J1+1	526J1+1		
370J1+1	536J1+1		
418J1+1	542J1+1		
422J1+1			

**VOYAGER 2**

Picture No.	Supplemental Source	Picture No.	Supplemental Source
843J2-2	1148J2-2		
873J2-2	1153J2-2		
883J2-2	1161J2-2		
887J2-2	1173J2-2		
1145J2-2	1188J2-2		



**CONTROLLED PHOTOMOSAIC OF THE ÁSGARD QUADRANGLE OF CALLISTO**

Jc 5M 44/135 CMN

(Jc-3)  
1990

**NOTE TO USERS**  
Users noting errors or omissions are urged to indicate them on the map and to forward it to U.S. Geological Survey, Building 4, Room 454, 2255 North Gemini Drive, Flagstaff, Arizona 86001. A replacement copy will be returned.

For sale by U.S. Geological Survey, Map Distribution, Box 25286, Federal Center, Denver, CO 80225