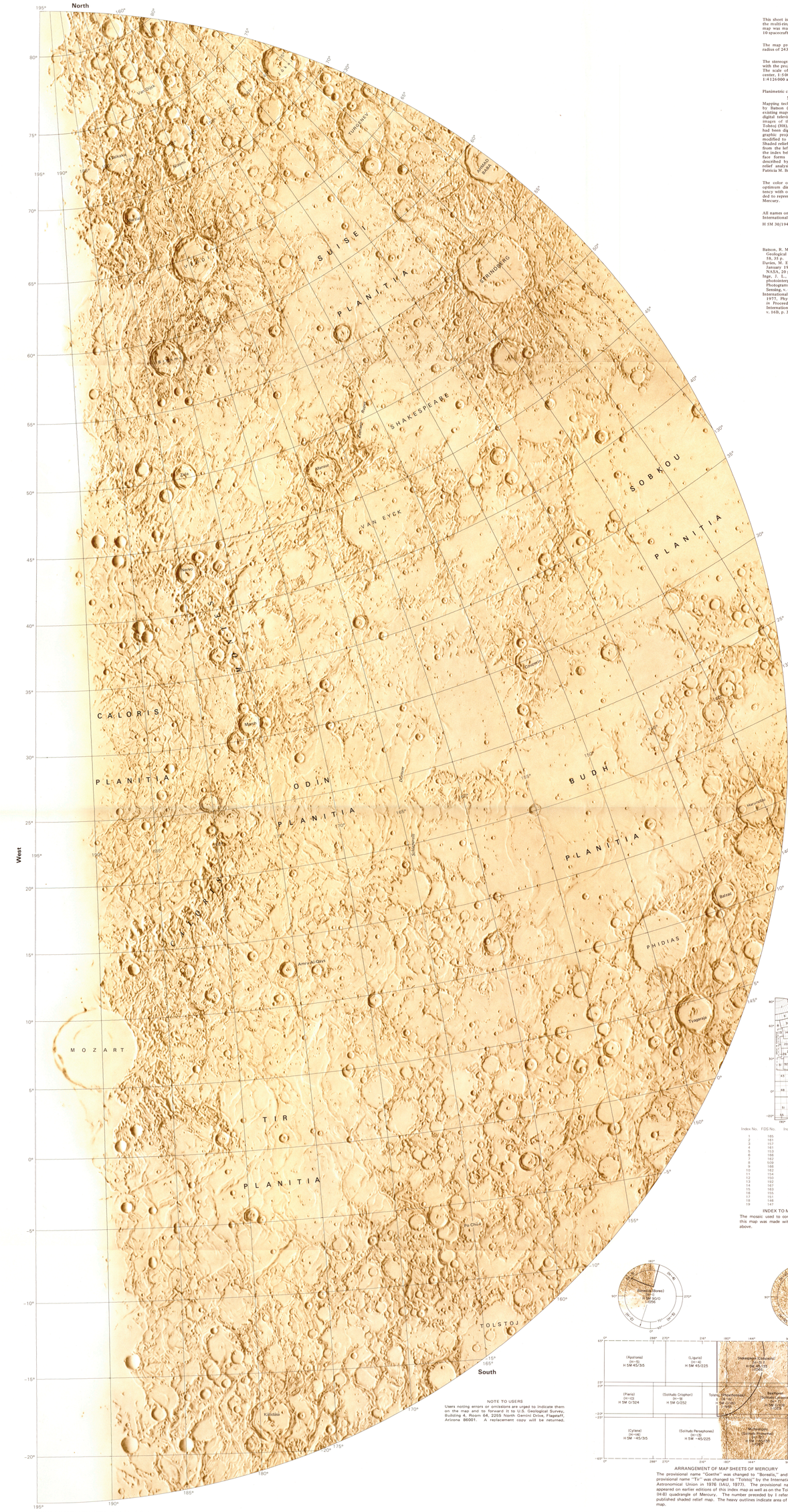
DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

Prepared for the
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

ATLAS OF MERCURY
COMPARATIVE PLANETOLOGY SERIES
CALORIS PLANITIA AREA
H 5M 30/194 R, 1979
I-1172



NOTES ON BASE

This sheet is one in a shaded relief map series of the multi-ring basins on the terrestrial planets. The map was made with data returned by the Mariner 10 spacecraft.

ADOPTED FIGURE

The map projection is based on a sphere with a radius of 2439 km.

PROJECTION

The stereographic projection is used for this map, with the projection center at lat 30° N, long 194°. The scale of the projection is 1:1 545 000 at the center, 1:1 000 000 at 823 km from the center and 1:4 126 000 at the edge of the map.

CONTROL

Planimetric control was provided by Davies (1976).

MAPPING TECHNIQUES

Mapping techniques are similar to those described by Batson (1973) except that digital images of existing maps were used as base mosaics instead of digital television images. A mosaic was made of images of the Borealis (H1), Shakespeare (H3), Tolstoj (H6), and Beethoven (H7) quadrangles that had been digitized and transformed to the stereographic projection. The map images were also modified to conform to the 1976 control datum. Shaded relief was drawn with uniform illumination from the left. The Mariner 10 pictures listed in the index below were examined in detail, and surface forms portrayed with airbrush techniques described by Inge and Bridges (1976). Shaded relief analysis and representation were made by Patricia M. Bridges.

COLOR

The color of the shaded relief was selected for optimum discrimination of detail and for consistency with other maps of Mercury. It is not intended to represent or even approximate the color of Mercury.

NOMENCLATURE

All names on this sheet have been approved by the International Astronomical Union (IAU, 1977).

H 5M 30/194 R: Abbreviation for Mercury (Hermes) 1:5 000 000 series; center of map lat 30° N., long 194°; shaded relief map, R.

REFERENCES

Batson, R. M., 1973, Television cartography: U.S. Geological Survey Open-file report, Astrogeology 58, 31 p.

Davies, M. E., 1976, The control net of Mercury: NASA, 28 p. The Rand Corporation R-1914-NASA, 28 p.

Inge, J. L., and Bridges, P. M., 1976, Applied photointerpretation for airbrush cartography: Photogrammetric Engineering and Remote Sensing, v. 42, no. 6, p. 749-760.

International Astronomical Union, Commission 16, 1977, Physical study of planets and satellites, *in* Proceedings 16th General Assembly, 1976, International Astronomical Union Transactions, v. 16B, p. 325-362.

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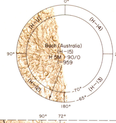
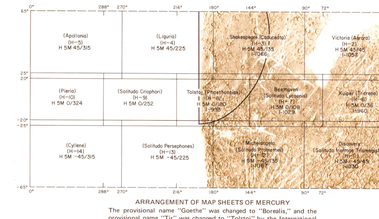
INDEX TO MARINER 10 PICTURES

The mosaic used to control the positioning of features on this map was made with the Mariner 10 pictures outlined above.





ARRANGEMENT OF MAP SHEETS OF MERCURY

The provisional name "Goethe" was changed to "Borealis," and the provisional name "Tir" was changed to "Tolstoj" by the International Astronomical Union in 1976 (IAU, 1977). The provisional names appeared on earlier editions of this index map as well as on the Tolstoj (H-8) quadrangle of Mercury. The number preceded by *I* refers to published shaded relief map. The heavy outlines indicate area of this map.

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 64, 2255 North Gemini Drive, Flagstaff, Arizona 86001. A replacement copy will be returned.

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STEREOGRAPHIC PROJECTION
CENTER 30° N, 194° W

MAP CENTER — MAP BOUNDARY

0 100 200 300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2250
KILOMETERS

SCALE 1:5 000 000

SHADED RELIEF MAP OF THE CALORIS PLANITIA AREA OF MERCURY

H 5M 30/194 R

1979

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