

NOTES ON BASE
This is one sheet in a series of topographic map sheets covering that part of the surface of Mercury that was illuminated during the Mariner 10 encounters (Davies and Batson, 1975). The source of map data was the Mariner 10 television experiment (Murray, 1975).

ADOPTED FIGURE
The map projections are based on a sphere with a radius of 2439 km.

PROJECTION
The Mercator projection is used for this sheet, with a scale of 1:5,000,000 at the equator. Latitudes are based on the assumption that the spin axis of Mercury is perpendicular to the plane of the orbit. Longitudes are positive westwards in accordance with the usage of the International Astronomical Union (IAU, 1971). Meridians are numbered so that a reference crater named Hun Kal (lat 0.6° S) is centered on long 20° (Murray and others, 1974; Davies and Batson, 1975).

CONTROL
Planimetric control is provided by photogrammetric triangulation using Mariner 10 pictures (Davies and Batson, 1975). Discrepancies between images in the base mosaic and computed control point positions appear to be less than 10 km.

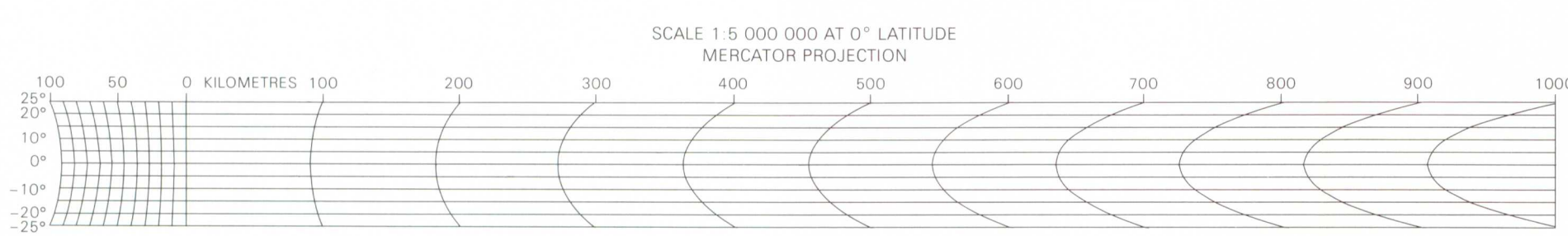
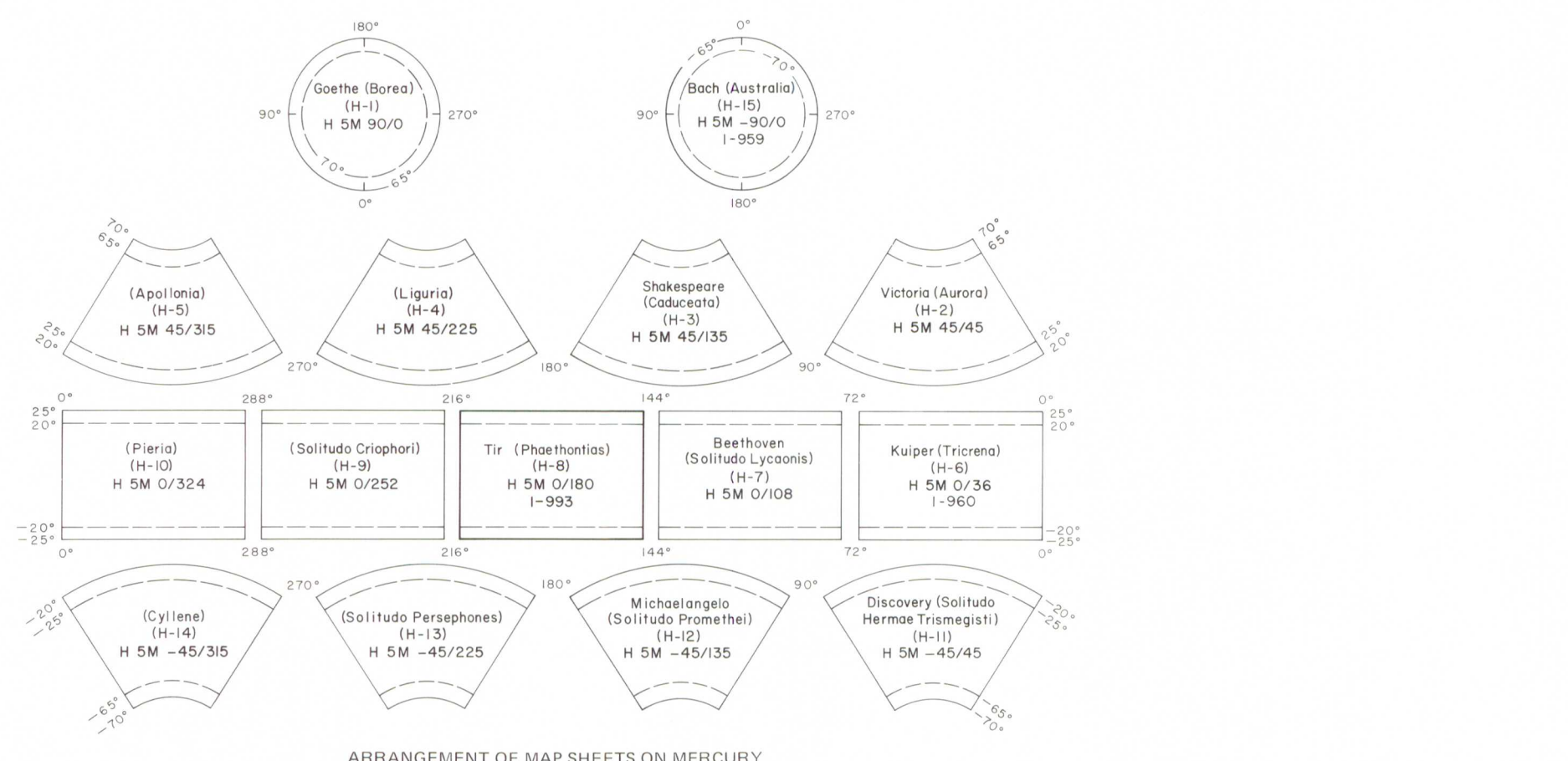
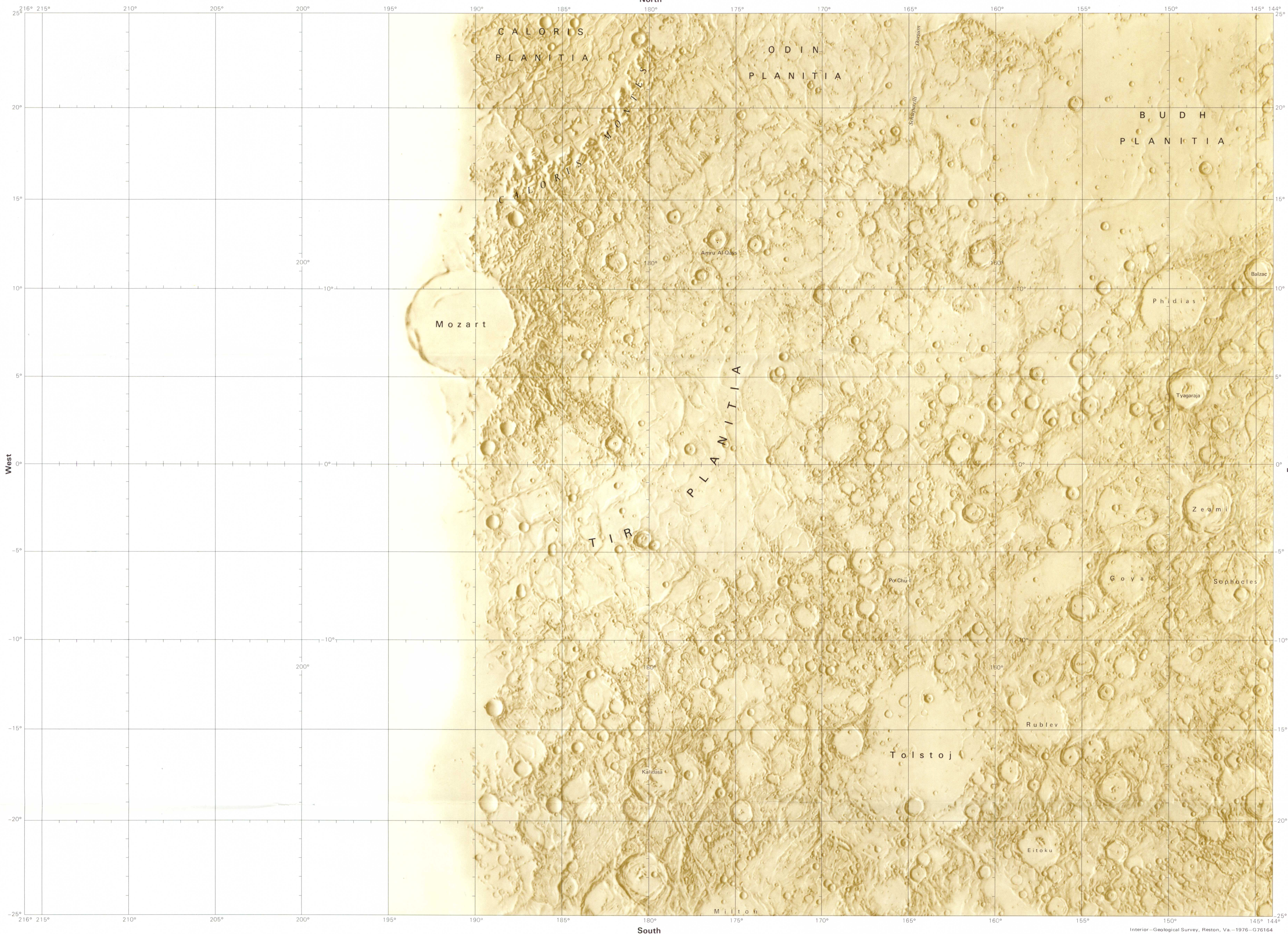
MAPPING TECHNIQUES
Mapping techniques are similar to those described by Batson (1973a, 1973b). A mosaic was made with pictures that had been digitally transformed to the Mercator projection. Shaded relief was copied from the mosaics and portrayed with uniform illumination with the sun to the west. Many Mariner 10 pictures besides those in the base mosaic were examined to improve the portrayal. The color of the relief base was selected for clarity of printing only and does not simulate the color of the surface of Mercury. The shading is not generalized, and may be interpreted with nearly photographic reliability (Inge, 1972; Inge and Bridges, 1975).

Shaded relief analysis and representation were made by Patricia M. Bridges.

NOMENCLATURE
All names on this sheet are provisional.

H-8: Abbreviation for Mercury (Hermes) sheet number 8.
H 5M 0/180 R: Abbreviation for Mercury (Hermes) 1:5,000,000 series; center of sheet, 0° latitude, 180° longitude; shaded relief map, R.

REFERENCES
Batson, R. M., 1973a. Cartographic products from the Mariner 9 mission. *Jour. Geophys. Research*, v. 78, no. 20, p. 4424-4435.
—, 1973b. Television cartography. U.S. Geol. Survey open file rept., 35 p.
Davies, M. E., and Batson, R. M., 1975. Surface coordinates and cartography of Mercury. *Jour. Geophys. Research*, v. 80, no. 17, p. 2417-2430.
Inge, J. L., 1972. Principles of lunar illustration. *Aeronaut. Chart and Inf. Center Ref. Pub.*, RP-72-1, 60 p.
Inge, J. L., and Bridges, P. M., 1975. Applied photointerpretation for airbrush cartography. *in Proc. Amer. Soc. Photogrammetry fall convention*, p. 244-265.
International Astronomical Union, Commission 16, 1971. Physical study of planets and satellites. *in Proc. 14th General Assembly 1970: Internat. Astron. Union Trans.*, v. XIVB, p. 105-108.
Murray, B. C., Belton, M. J. S., Danielson, G. E., Davies, M. E., Gault, D. E., Hapke, Bruce, O'Leary, Brian, Strom, R. G., Suomi, Verner, and Trask, Newell, 1974. Mercury's surface: Preliminary description and interpretation from Mariner 10 pictures. *Science*, v. 185, no. 4146, p. 169-179.
Murray, B. C., 1975. The Mariner 10 pictures of Mercury: An overview. *Jour. Geophys. Research*, v. 80, no. 17, p. 2342-2344.



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.

Index No.	FDS No.
1	503
2	226
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SUPPLEMENTAL SOURCE INDEX

The Mariner 10 pictures outlined above were used to provide additional detail on the map but were not used on the controlled mosaic.

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1	301229	22	009215	43	000982
2	001223	23	000121	44	000056
3	000106	24	029126	45	000064
4	300195	25	000120	46	000064
5	000109	26	000119	47	000052
6	000191	27	000118	48	000065
7	000216	28	000123	49	000066
8	000187	29	000124	50	000067
9	000109	30	166971	51	000068
10	000217	31	000125	52	000069
11	000212	32	166972	53	000070
12	000113	33	166973	54	000071
13	000112	34	166974	55	000072
14	000111	35	166975	56	000050
15	000110	36	029126	57	000051
16	000114	37	166976	58	000052
17	000115	38	000053	59	000053
18	000116	39	000054	60	000054
19	000117	40	000055	61	166978
20	000218	41	000060		
	000212	42	000061		

**SHADED RELIEF MAP OF THE TIR QUADRANGLE OF MERCURY
(PHAETHONTIAS ALBEDO PROVINCE)**

H-8
H 5M 0/180 R
1976