

NOTES ON BASE
This is one map in a series of topographic map sheets covering the entire surface of Mars at nominal scales of 1:25,000,000 and 1:5,000,000 (Barton, 1973; 1976). The major source of map data was the Mariner 9 television experiment (Masursky and others, 1970).

ADOPTED FIGURE
The figure of Mars used for the computation of the map projection is an oblate spheroid (flattening of 1/192) with an equatorial radius of 3393.4 km and a polar radius of 3375.7 km.

PROJECTION
The Lambert conformal conic projection is used for this sheet with standard parallels at 35° S and 59° S. A scale of 1:4,336,000 at lat 30° was chosen to match the scale at lat 30° of the adjacent Mercator projections. Longitudes increase to the west in accordance with usage of the International Astronomical Union (IAU, 1973). Latitudes are geographic (de Vaucouleurs and others, 1973).

CONTROL
Planimetric control is provided by photogrammetric triangulation using Mariner 9 pictures (Davies, 1973; Davies and Arthur, 1973) and the radio-tracked position of the spacecraft. The first meridian passes through the crater Atry-O (lat 5.19° S) within 199 crater Atry. No simple statement is possible for the precision, but local consistency is about 10 km.

MAPPING TECHNIQUE
A series of mosaics of Lambert conformal conic projections of Mariner 9 pictures was assembled at 1:5,000,000.

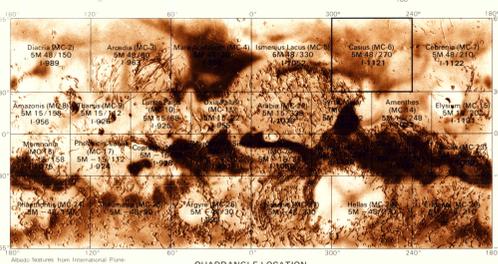
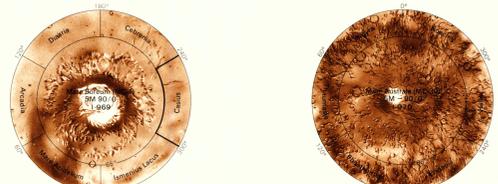
Shaded relief was copied from the mosaic and portrayed with uniform illumination with the sun to the west, using airbrush techniques described by Inge (1972) and Inge and Bridges (1976). To improve portrayal, various computer enhancements of many pictures besides those in the base mosaic were used. (Computer enhancement of Mariner 9 pictures is described by Levinthal and others, 1973, and Green and others, 1975.) Viking orbiter pictures were also examined and used where they significantly clarified Mariner 9 image data. No attempt was made to portray all information in the Viking pictures, however. Shaded relief analysis and representation were made by Patricia M. Bridges.

COLOR
No attempt was made on the map to duplicate precisely the color of the Martian surface, although the color used does approximate it.

NOMENCLATURE
All names on this sheet are approved by the International Astronomical Union (IAU, 1974). Double and triple letter designations for craters refer to position on the map and are derived from a grid based on equidistant meridians and parallels; the alphabet (I and O omitted) runs in the direction of increasing longitude (W) and latitude (N). The complete designation of a crater is the name of the quadrangle followed by a double or triple letter. The prefix CAS (identifying the Casius quadrangle) is part of the complete designation but, for brevity, is not shown on most craters. Some craters have commemorative names; letter designations for these craters are shown in parentheses. Where craters lie exactly on the boundary of two maps, their letters are derived from the eastern or southern map.

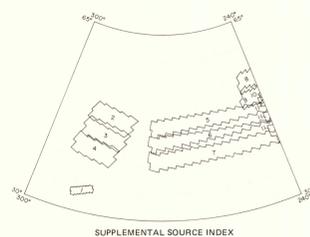
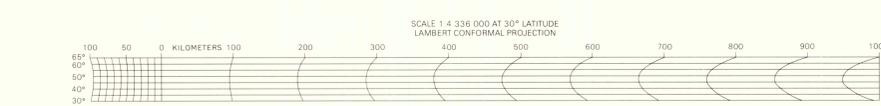
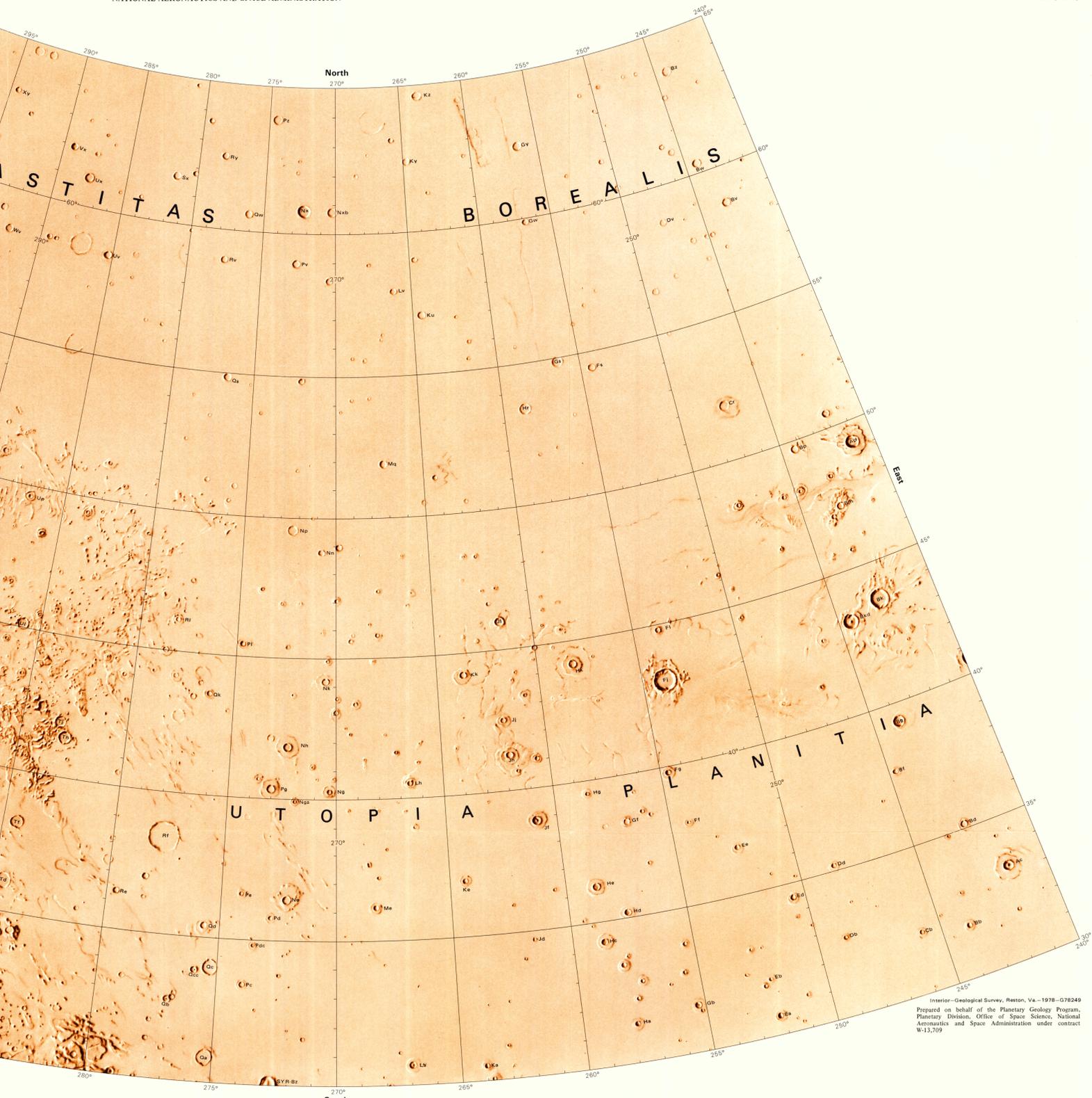
MC-6: Abbreviation for Mars Chart 6.
M 5M 48/270 R: Abbreviation for Mars 1:5,000,000 series; center of sheet, lat 48° W, long 270° E; shaded relief map, R.

REFERENCES
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Green, W. B., Jensen, F. L., Krezser, J. S., Katz, R. M., Schwartz, A. A., and Seidman, J. B., 1975, Removal of instrument signatures from Mariner 9 television images of Mars: Applied Optics, v. 14, no. 1, p. 105-114.
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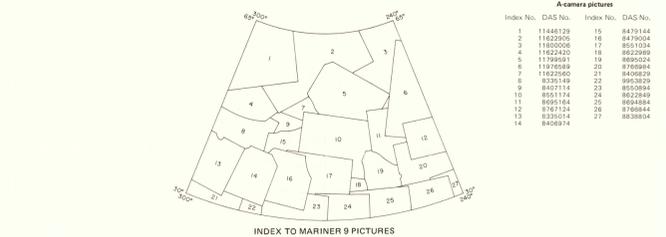
Albedo features from International Plane.
SM = Planetographic Spheroid Coordinates; Flagstaff, Ariz.
Number preceded by 1 refers to published shaded relief map.

NOTE TO USERS
Users noting errors or omissions are urged to indicate them on the map and to forward the map to Astrogeologic Studies, Geologic Division, 2255 North Gemini Drive, Flagstaff, Arizona 86001. A replacement copy will be returned.



Viking pictures were used where available to clarify Mariner 9 data. The outline for each sequence of pictures is shown.

Viking 1				Viking 2			
Index No.	Picture No.						
1	844.1	1	10810	6	10840	11	10870
	844.2		10811		10841		10871
	844.3		10812		10842		10872
	844.4		10813		10843		10873
	844.5		10814		10844		10874
	844.6		10815		10845		10875
	844.7		10816		10846		10876
	844.8		10817		10847		10877
	844.9		10818		10848		10878
	844.10		10819		10849		10879
	844.11		10820		10850		10880
	844.12		10821		10851		10881
	844.13		10822		10852		10882
	844.14		10823		10853		10883
	844.15		10824		10854		10884
	844.16		10825		10855		10885
	844.17		10826		10856		10886
	844.18		10827		10857		10887
	844.19		10828		10858		10888
	844.20		10829		10859		10889
	844.21		10830		10860		10890
	844.22		10831		10861		10891
	844.23		10832		10862		10892
	844.24		10833		10863		10893
	844.25		10834		10864		10894
	844.26		10835		10865		10895
	844.27		10836		10866		10896
	844.28		10837		10867		10897
	844.29		10838		10868		10898
	844.30		10839		10869		10899



The mosaic used to control the positioning of features on this map was made with the Mariner 9 camera pictures outlined above. The DAS number may vary slightly (usually by 5) among various versions of the same picture.

SHADED RELIEF MAP OF THE CASIUS QUADRANGLE OF MARS

MC-6
M 5M 48/270 R
1978



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M(200)
1-1121
C 100
C 2