

**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). 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 (Bartlett of 1/192) with an equatorial radius of 3393.4 km and a polar radius of 3357.3 km.

**PROJECTION**  
The Mercator projection is used for this sheet, with a scale of 1:5,000,000 at the equator and 14,336,000 at lat. 30°. Longitudes increase to the west in accordance with usage of the International Astronomical Union (IAU, 1971). Latitudes are areographic (de Vasconcelos 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 Airy-O (latitude 5.19° S) within the crater Airy. No simple statement is possible for the precision, but local consistency is 5.10 km.

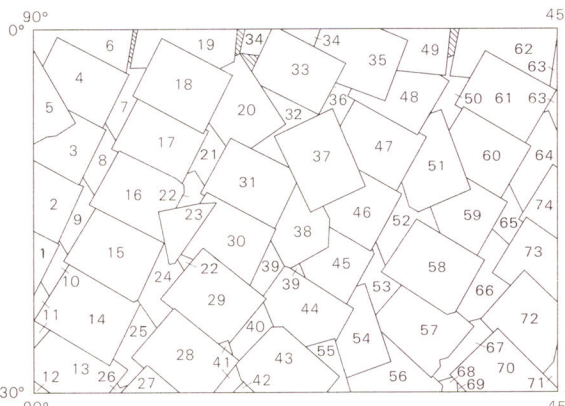
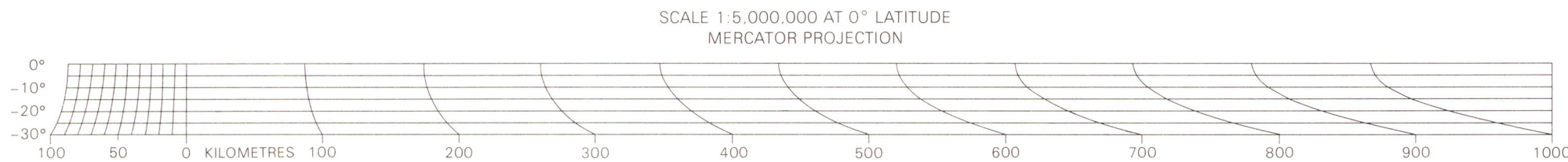
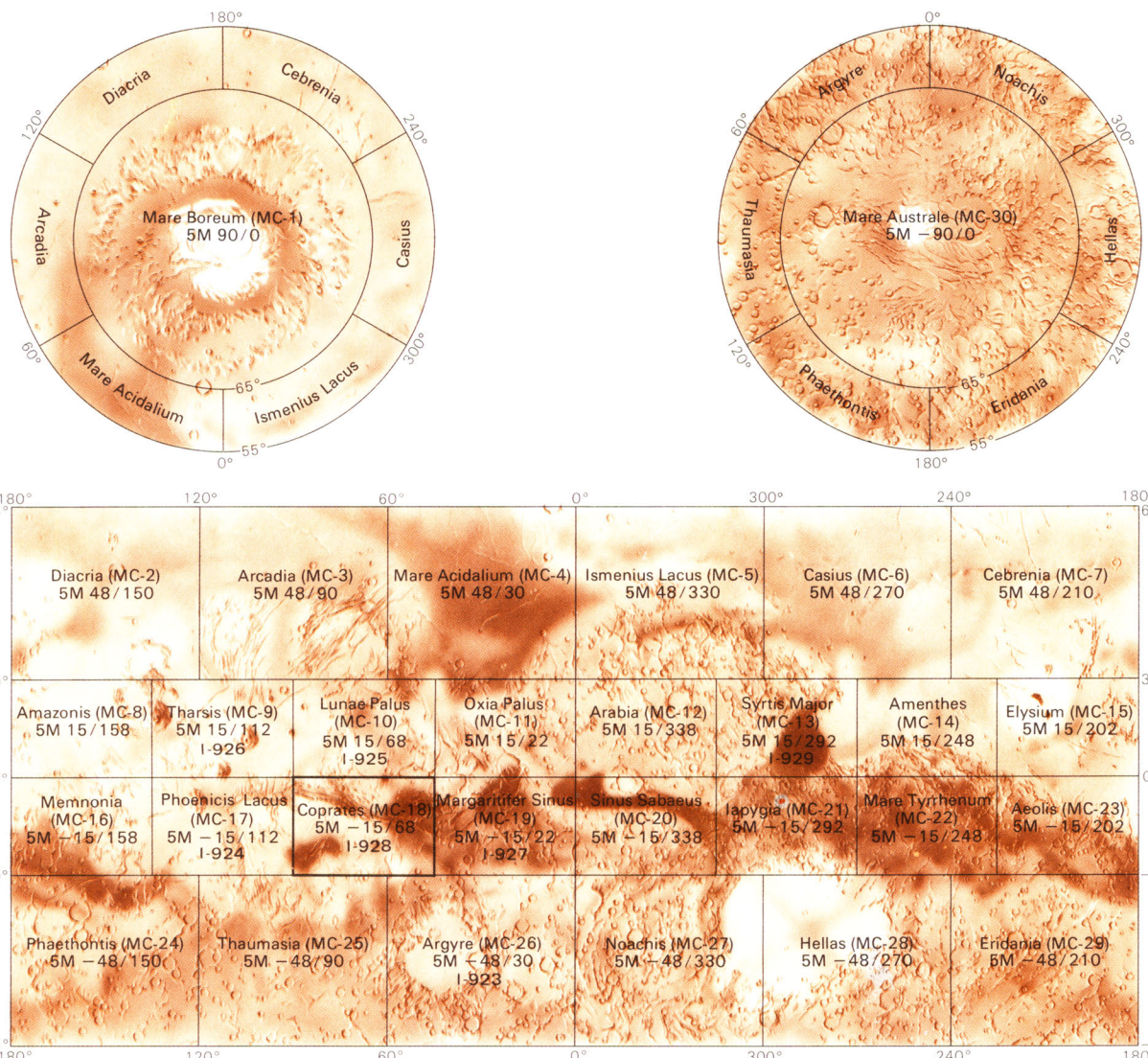
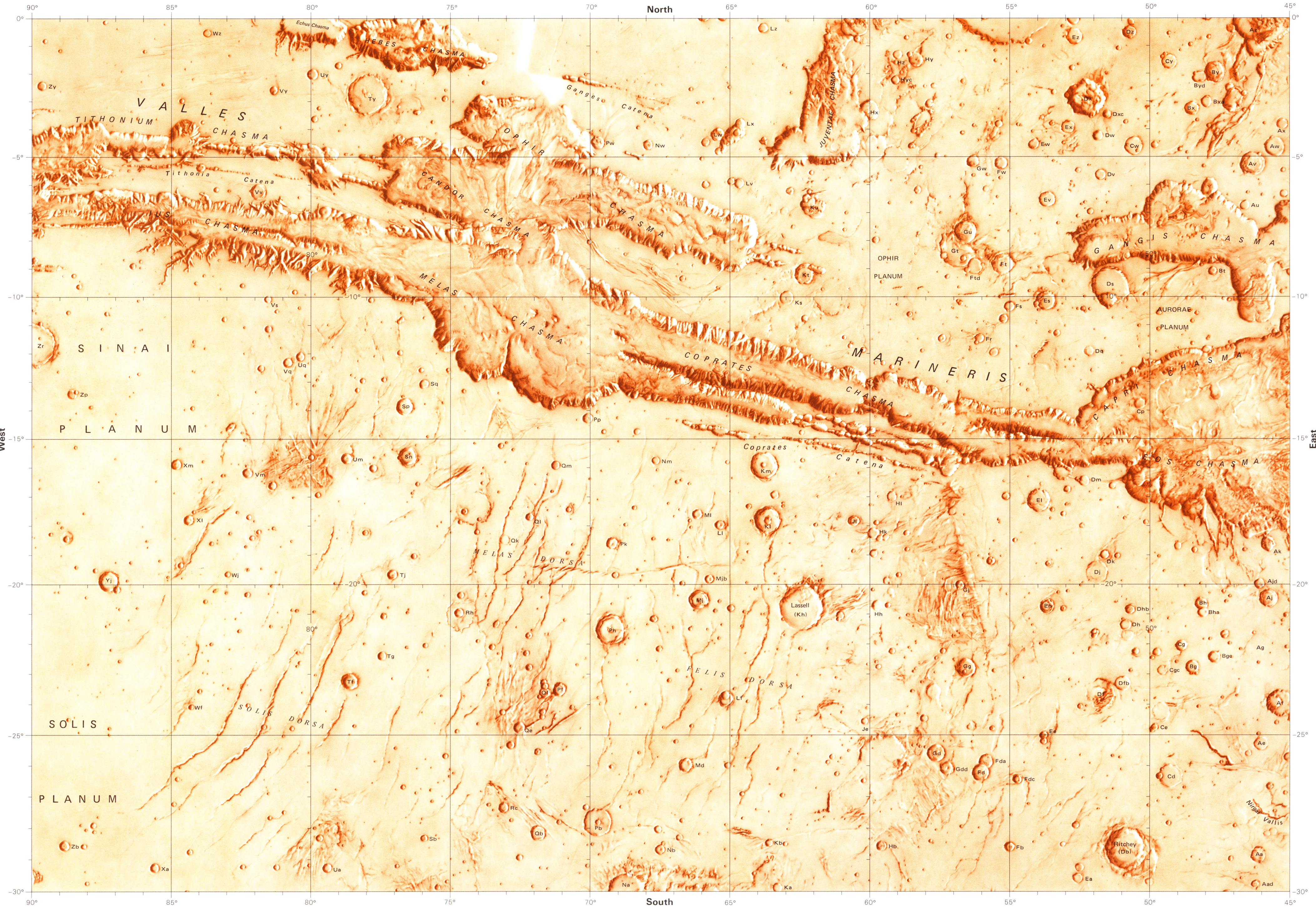
**MAPPING TECHNIQUE**  
A series of mosaics of Mercator projections of Mariner 9 pictures was assembled at 1:5,000,000. Shaded relief was copied from the mosaics and portrayed with uniform illumination from the sun to the west. Many Mariner 9 pictures besides those in the base mosaic were examined to improve the portrayal (Levinthal and others, 1973). The shading is not generalized and may be interpreted with photographic reliability (Dyer, 1973).

**COLOR**  
Shaded relief analysis and representation were made by Susan L. Davis.  
No attempt was made on the map to precisely duplicate 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), except the following names which are provisional: Echus Chasma, Felis Dorsa, Melas Dorsa and Solis Dorsa. Double and triple letter designations for craters refer to position on the map. Some craters have commemorative names; letter designations for these craters are shown in parentheses. Where craters lie mostly on an adjoining map, their letters are derived from the other map; where craters lie exactly on the boundary of two maps, their letters are derived from the eastern or southern map.

**MC-18**  
Abbreviation for Mars Chart 18  
M 5M-15/68 R. Abbreviation for Mars 1:5,000,000 series; center of sheet, 15° S latitude, 68° longitude; shaded relief map, R.

**REFERENCES**  
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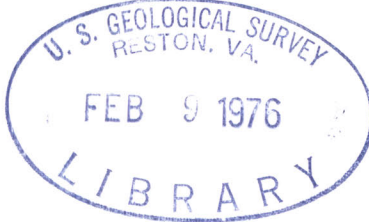
A-camera pictures			
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6	7327143	31	7470503
7	8801569	32	7470503
8	8801569	33	7470503
9	8801419	34	7471063
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22	8801419	47	8945409
23	8801419	48	8945409
24	8801419	49	8945409
25	8801419	50	8945409

**INDEX TO MARINER 9 PICTURES**  
The mosaic used to control the positioning of features on this map was made with the Mariner 9 A-camera pictures outlined above. Useful coverage is not available in some cross-hatched areas. Pictures other than those shown in the mosaic were used for portrayal in the other cross-hatched areas.

## SHADED RELIEF MAP OF THE COPRATES QUADRANGLE OF MARS

MC-18  
M 5M - 15/68 R  
1975

For sale by U. S. Geological Survey,  
Denver, Colo. 80225; and Reston, Va. 22092; price \$1.00



Mars (Coprates quad). Relief. 1:5,000,000. 1975.  
Cop. 1  
G3700  
SV 1  
C438  
1-928  
Cop. 1



M(200)  
1-928