

NOTES ON BASE
This is one map in a set of topographic map sheets covering areas of special interest on Mars at nominal scales of 1:1,000,000 and 1:250,000 (Bates, 1973). The major source of map data was the Mariner 9 television experiment (Marsky and others, 1970).

ADOPTED FIGURE
The figure of Mars used for the computation of the map projection is an oblate spheroid (distance of 11952 with an equatorial radius of 3393.4 km and a polar radius of 3357.3 km).

PROJECTION
The transverse Mercator projection is used for this sheet, with a scale of 1:1,000,000 at 42° longitude. Longitudes increase to the west in accordance with usage of the International Astronomical Union (IAU, 1971). Latitudes are areographic (de Vausoulou 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-0 (lat 5.1° S) within the crater Airy. No simple statement is possible for the precision, but local consistency is 2 km.

MAPPING TECHNIQUE
A mosaic of occluded Mariner 9 pictures was assembled at 1:1,000,000. Shaded relief was compiled from the mosaic and portrayed with uniform illumination with the sun to the west. Many Mariner 9 pictures besides those in the base mosaic were examined to improve the portrayal (Levitt and others, 1973). The shading is not generalized and may be interpreted with photographic reliability (Iago, 1972). Shaded relief analysis and representation were made by Jay L. Iago.

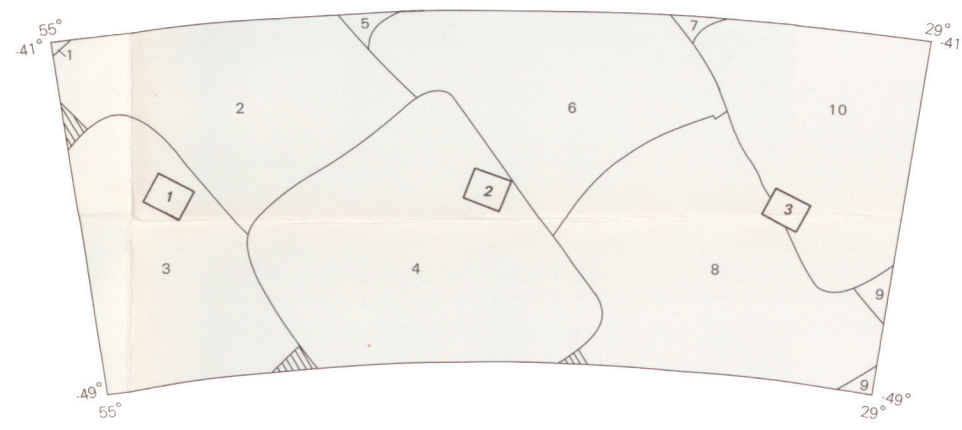
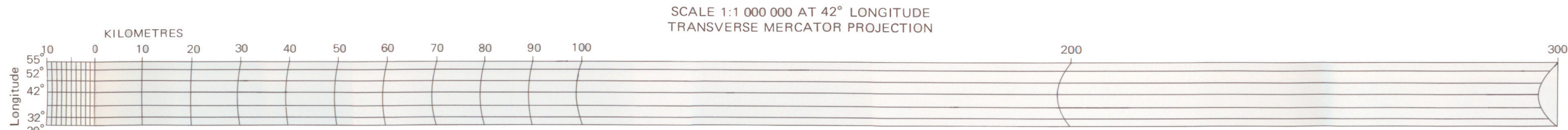
COLOR
No attempt was made on the map to precisely duplicate the color of the Martian surface, although the color used does approximate it.

NOMENCLATURE
Names on this sheet are provisional, except for the following which have been approved by the International Astronomical Union (1974): Argyre Planitia, Nereidum Montes, and Hooke. Named craters bearing double letters in parentheses are designated by the same letters on the 1:250,000 Argyre sheet which covers this area. The prefix ARG- identifying the Argyre sheet is part of the complete designation but, for brevity, is not shown on most craters.

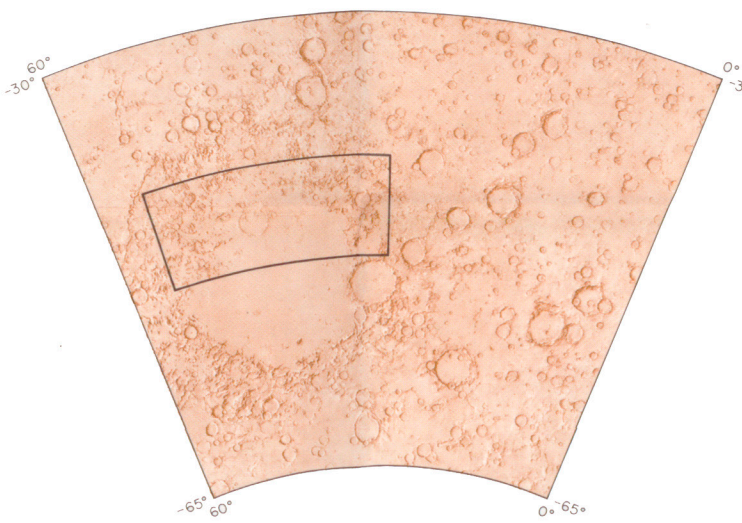
REFERENCES
Bates, R. M., 1973, Cartographic products from the Mariner 9 mission: *Joint Geophysics Research*, v. 78, no. 20, p. 4424-4435.
Davies, M. E., 1973, Mariner 9: Primary control net: *Photogrammetric Engineering*, v. 39, no. 12, p. 1297-1297.
Davies, M. E., and Arthur, D. W. G., 1973, Martian surface coordinates: *Joint Geophysics Research*, v. 78, no. 20, p. 4355-4394.

INDEX TO MARINER 9 PICTURES
Iago, J. L., 1972, Principles of lunar illustration: *Ammann, Chart and Text Center Ref. Pub.*, RP-723, 60 p.
International Astronomical Union, Commission 16, 1971, *Physical study of planets and satellites*, in Proc. 14th General Assembly, 1970: *Internat. Astron. Union Trans.*, v. XXV, p. 128-137.
1974, *Physical study of planets and satellites*, in Proc. 15th General Assembly, 1973: *Internat. Astron. Union Trans.*, v. XXV, p. 185-188.

Levitt, E. C., Green, W. B., Cotts, J. A., Iahedka, E. D., Johansen, R. A., Sander, M. J., Selman, J. B., Young, A. T., and Seibert, L. A., 1973, Mariner 9: Image processing and products: *Science*, v. 180, no. 4, p. 75-101.
Marsden, Harold, Bates, R. M., Burgess, W. L., Carr, M. H., McCauley, J. F., Milton, D. J., Willey, R. L., Wilhelms, D. E., Murray, B. C., Heinow, N. H., Leggett, R. R., Sharp, R. V., Thompson, T. W., Briggs, G. A., Chandrasekar, P., Shultz, E. W., Segur, Carl, Pollack, J. B., Lebedev, Joshua, Levitt, E. C., Hartmann, W. K., McCord, T. B., Smith, B. A., Davies, M. E., de Vausoulou, G. D., and Leary, C. B., 1970, Television experiment for Mariner Mars 1971: *Science*, v. 172, no. 4, p. 1045.
de Vausoulou, G. D., Davies, M. E., Shultz, P. M., Jr., 1973, The Mariner 9 areographic coordinate system: *Joint Geophysics Research*, v. 78, no. 20, p. 4395-4404.



The mosaic used to control the positioning of features on this map was made with the Mariner 9 B-camera pictures outlined above, identified by vertical numbers. Also shown are the high-resolution B-camera pictures, identified by italic numbers. Pictures other than those shown in the mosaic were used for portrayal in the cross-hatched areas.



SHADED RELIEF MAP OF THE NEREIDUM MONTES REGION OF MARS

M 1M-45/42 R
1976

