

NOTES ON BASE

This is one map in a series of topographic map sheets covering the entire surface of Mars at nominal scales of 1:2500000 and 1:5000000 (Barton, 1973, 1976). The major sources of map data were the Mariner 9 television experiment (Marsky and others, 1970) and Viking Orbiter pictures.

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 3373.7 km.

PROJECTION
The Lambert conformal conic projection is used for this sheet with standard parallels at -25.0 and -59.2°. A scale of 1:4336000 at -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, 1971). Latitudes are geocentric (de Vaucouleurs and others, 1973).

CONTROL
Planimetric control is provided by photogrammetric triangulation using Mariner 9 pictures (Fisher, 1973; Davies and Arthur, 1973) and the radio-tracked position of the spacecraft. The first meridian passes through the crater Aky. No statement is possible for the precision, but total consistency is about 10 km.

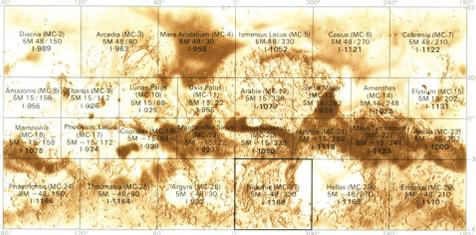
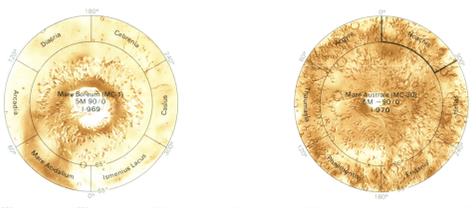
MAPPING TECHNIQUE
A series of mosaics of Mariner 9 pictures was assembled at 1:5000000, on Lambert conformal conic projection. Shaded relief was portrayed with uniform illumination with the sun to the west, using airbrush techniques described by Inge (1973) and the radiotracked position of the spacecraft. Sizes, shapes, and positions of features were taken from the base mosaic. Computer enhancements of many Mariner 9 and Viking Orbiter pictures besides those in the base mosaic were examined in an attempt to portray the surface as accurately as possible. Computer enhancement of Mariner 9 pictures is described by Levinthal and others, 1973, and Green and others, 1975. Shaded relief analysis and representation were made by J. L. Inge.

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 map are approved by the International Astronomical Union (IAU), 1974, 1980. 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 double or triple letters. The prefix NOA (identifying the Noachis quadrangle) is not shown on most craters. Some craters have alternative 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. The name Auroralis Trobia has been removed from the list located at lat. -57.5°, long. 322°. Viking images show it to be an impact crater rather than a tholus.

MC-27: Abbreviation for Mars Chart 27.
M 5M-48/330R: Abbreviation for Mars 1:5000000 series, center of sheet, lat. -48°, long. 330°; shaded relief map, R.

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Quadrangle location. Number preceded by I refers to published shaded relief map.

Source: Materials from International Flats, Inc. from photographs, United States Geological Survey, Flagstaff, Arizona.

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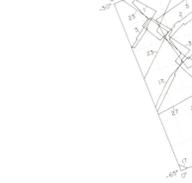
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SCALE 1:4336000 AT -30° LATITUDE
LAMBERT CONFORMAL PROJECTION



NOTE TO USERS
Users noting errors or omissions are urged to indicate them on the map and to forward it to Astrogeologic Studies, Geologic Division, 2265 North Gemini Drive, Flagstaff, Arizona 86001. A replacement copy will be returned.



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

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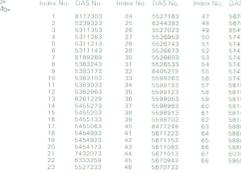
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SHADED RELIEF MAP OF THE NOACHIS QUADRANGLE OF MARS

MC-27
M 5M-48/330 R
1979



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