

NORTH POLAR REGION

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 (Bates, 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 compilation of the map projection is an oblate spheroid (flattening of 1/193) with an equatorial radius of 3393.4 km and a polar radius of 3375.7 km.

PROJECTION

The Mercator projection is used between the 65° parallels, and the polar stereographic projection is used for the polar regions north and south of the 15° parallels. The scale at the equator is 1:25,000,000 and 1:12,549,000 at the 60° parallels. Longitudes increase to the west in accordance with usage of the International Astronomical Union (IAU, 1971). Latitudes are areographic (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 Nike (latitude 5.19° S) within the crater Airy. No simple statement is possible for the projection, but local conformity is within 25 km.

MAPPING TECHNIQUE

A series of mosaics of rectified and scaled Mariner 9 pictures was assembled at 1:5,000,000. These mosaics were reduced to 1:25,000,000 and transformed where necessary to the projection of this sheet.

Shaded relief was copied from the mosaics and portrayed with uniform illumination with the sun to the west. Many Mariner 9 pictures besides those in the base mosaic were examined for the portrayal (Levinthal and others, 1973). The shading is not generalized and may be interpreted with photographic reliability (Inge, 1972).

Shaded relief analysis and representation were made by J. L. Inge.

COLOR

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

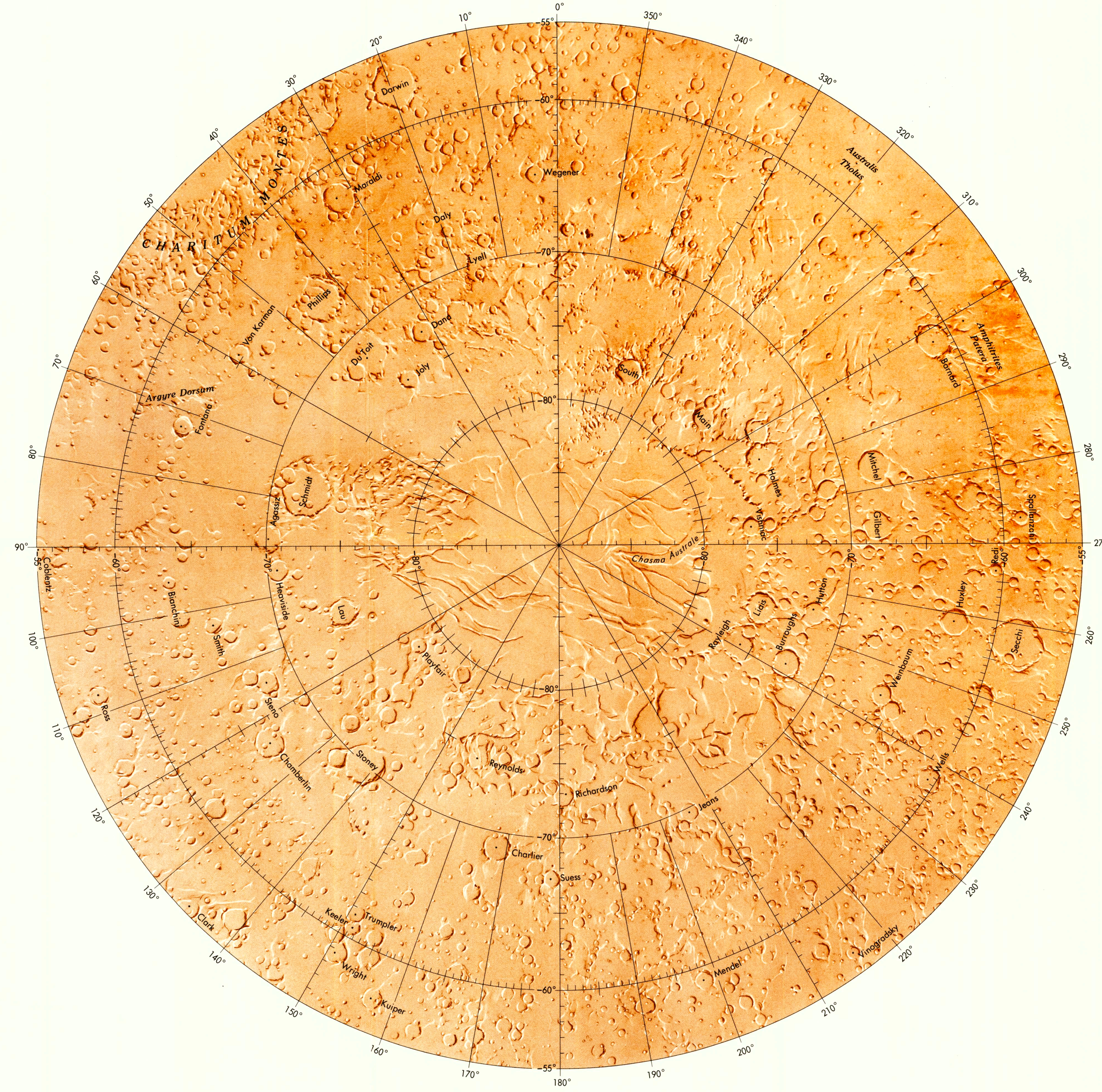
NOMENCLATURE

All names on this sheet are approved by the International Astronomical Union (IAU, 1974).

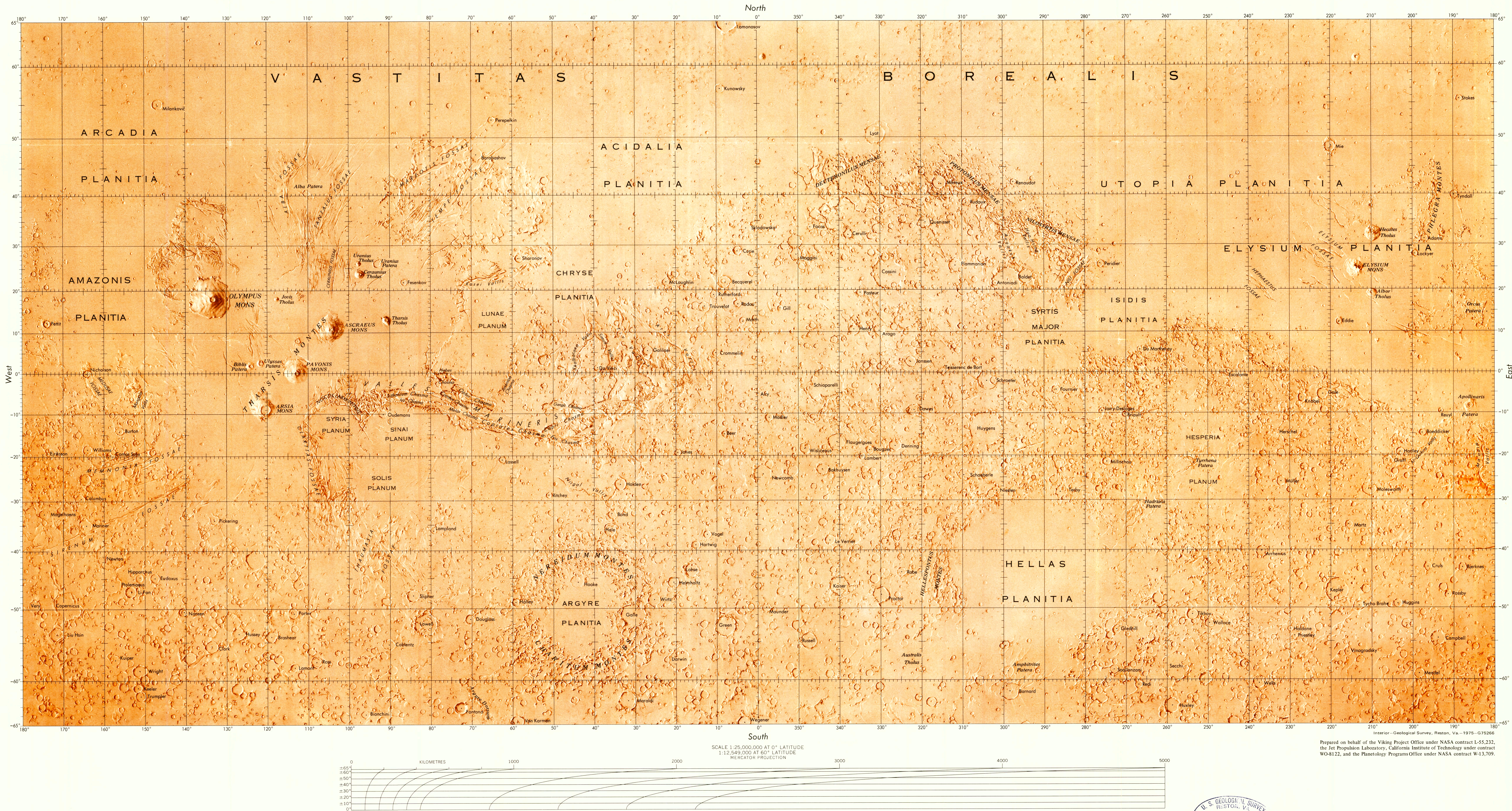
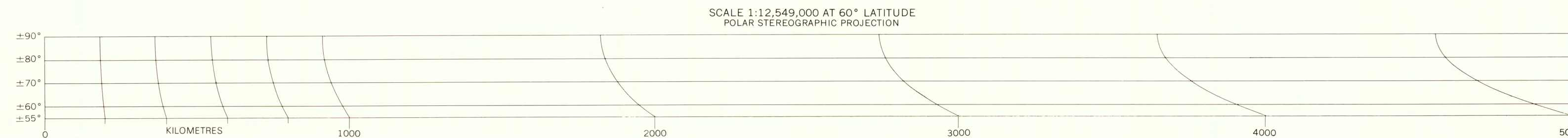
M 25M 2R: Abbreviation for Mars 1:25,000,000 series, 2nd edition, with shaded relief.

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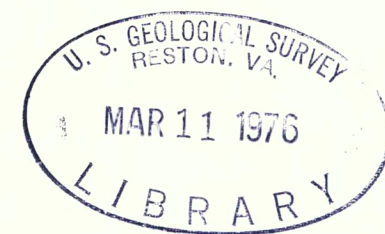


SOUTH POLAR REGION



SHADED RELIEF MAP OF MARS

M 25M 2R
1975



Prepared on behalf of the Viking Project Office under NASA contract 1-55-232, the Jet Propulsion Laboratory, California Institute of Technology under contract W0-8122, and the Planetary Programs Office under NASA contract W-13,709.

For sale by U. S. Geological Survey
Denver, Colo. 80226, and Reston, Va. 22092, price \$1.00

Mars Relief, 1:25,000,000, 1975.
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