DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

Prepared in Cooperation with the
JET PROPULSION LABORATORY, CALIFORNIA INSTITUTE OF TECHNOLOGY
FOR THE LANGLEY RESEARCH CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

ATLAS OF MARS
1:5,000,000 TOPOGRAPHIC SERIES
ARCADIA QUADRANGLE
M 5M 48/90 R, 1975
I-963 (MC-3)

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 (Batson, 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 (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 35.8° and 59.2°. 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, 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 Airy-O (lat 5.19° S) within the crater Airy. 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 mosaics 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 (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 Patricia M. Bridges.

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), except the following names which are provisional: Acheron Catena, Phlegethon Catena, and Tractus Catena. 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-3: Abbreviation for Mars Chart 3.
M 5M 48/90 R: Abbreviation for Mars 1:5,000,000 series; center of sheet, 48° latitude, 90° longitude; shaded relief map, R.

REFERENCES

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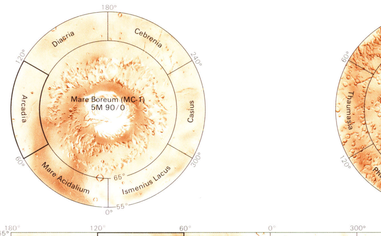
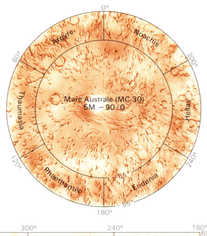
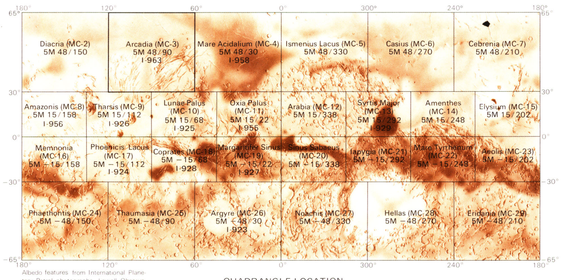
de Vaucouleurs, G. D., Davies, M. E., Sturms, F. M., Jr., 1973, The Mariner 9 areographic coordinate system: Jour. Geophys. Research, v. 78, no. 20, p. 4395-4404.



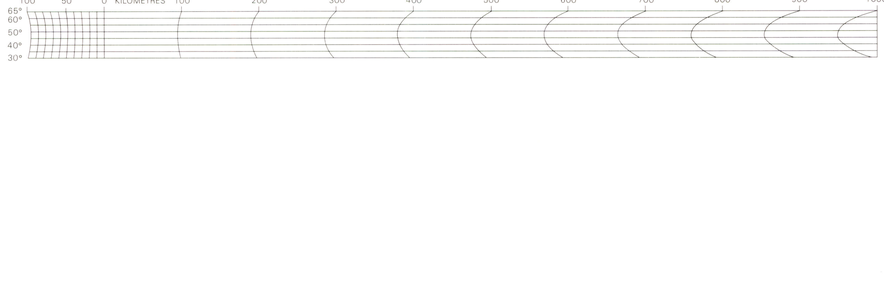




Albedo features from International Planetary Patrol photographs, Lowell Observatory, Flagstaff, Ariz.

QUADRANGLE LOCATION
Number preceded by I refers to published shaded relief map

SCALE 1:4 336 000 AT 30° LATITUDE
LAMBERT CONFORMAL PROJECTION



A-camera pictures

Index No.	DAS No.	Index No.	DAS No.
1	8874784	15	8370994
2	8802824	16	8659114
3	8730864	17	11835571
4	8658834	18	11658540
5	8586874	19	8515124
6	8514844	20	8443164
7	8370854	21	8371134
8	8731144	22	11835711
9	8731004	23	11835991
10	8658974	24	11658890
11	8587154	25	11482114
12	8587014	26	11658400
13	8514984	27	11481764
14	8443024	28	8802964
		29	8442884

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.

Interior—Geological Survey, Reston, Va.—1975—G76035

Prepared on behalf of the Viking Project Office, National Aeronautics and Space Administration under contract L-55232.

SHADED RELIEF MAP OF THE ARCADIA QUADRANGLE OF MARS

MC-3

M 5M 48/90 R

1975

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

Mars (Arcadia quad.): Relief, 1:5,000,000: 1975.
Cop 1