

NOTES ON BASE

This is one map in a series of topographic map sheets covering the entire surface of Mars at nominal scales of 1:2,500,000 and 1:5,000,000 (Barton, 1973, 1976). The major sources of map data were the Mariner 9 television experiment (Masnyk 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 1/92) 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 -35.5° 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. Longitude increases 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; Davis and Arthur, 1973) and the radio-tracked position of the spacecraft. The first meridian passes through the crater Mar-2 (lat -51°) within the crater rim. 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 portrayed with uniform illumination with the sun to the west, using airbrush techniques described by Inge (1972) and Inge and Bridger (1976). Sites, shapes, and positions of features were taken from the base mosaic. Various 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 Susan L. Davis.

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 sheet 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 equatorial 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 PHA (identifying the Phaethontis quadrangle) is part of the complete designation but, for brevity, is not shown on most craters. Some craters have commemorative names. Crater designations for these craters are shown in parentheses. Where craters lie exactly 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.

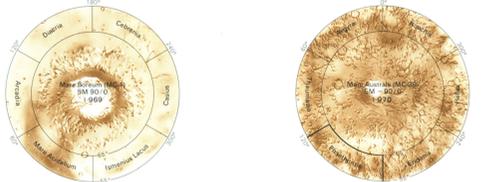
MC-24: Abbreviation for Mars Chart 24.
M 5M -48/150 R: Abbreviation for Mars 1:5,000,000 series, center of sheet, lat -48°, long 150° shaded relief map, R.

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Interior-Geological Survey, Reston, Va.—1979—G79171
Prepared on behalf of the Planetary Geology Program,
Planetary Division, Office of Space Science, National
Aeronautics and Space Administration under contract
W-13,709

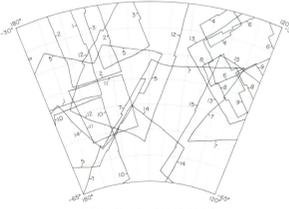
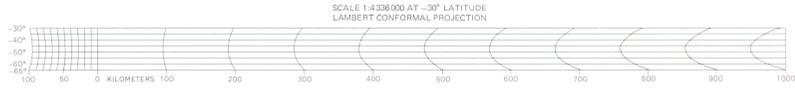


QUADRANGLE LOCATION

Number preceded by 1 refers to published shaded relief map.

Amazon (MC-2)	Amazon (MC-3)	Amazon (MC-4)	Amazon (MC-5)	Amazon (MC-6)	Amazon (MC-7)
SM 48/150 1980					
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SM 48/150 1980					
Amazon (MC-14)	Amazon (MC-15)	Amazon (MC-16)	Amazon (MC-17)	Amazon (MC-18)	Amazon (MC-19)
SM 48/150 1980					
Amazon (MC-20)	Amazon (MC-21)	Amazon (MC-22)	Amazon (MC-23)	Amazon (MC-24)	Amazon (MC-25)
SM 48/150 1980					

Shaded relief map from International Planetary Photogrammetric Office, Flagstaff, Arizona. Number preceded by 1 refers to published shaded relief map.



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, 2255 North Gemini Drive, Flagstaff, Arizona 86001. A replacement copy will be returned.

Viking 1		Viking 2	
Index No.	Picture No.	Index No.	Picture No.
1	312486	12	167818
2	312487	13	167819
3	312488	14	248000
4	312489	15	248001
5	312490	16	248002
6	312491	17	248003
7	312492	18	248004
8	312493	19	248005
9	312494	20	248006
10	312495	21	248007
11	312496	22	248008
12	312497	23	248009
13	312498	24	248010
14	312499	25	248011
15	312500	26	248012



INDEX TO MARINER 9 PICTURES

The mosaic used to control the positioning of features on this map was made with the Mariner 9 camera pictures outlined above. Useful coverage is not available in the cross-hatched areas. The DAS number may differ slightly locally by 51 among various versions of the same picture.

Index No.	DAS No.	Index No.	DAS No.
1	5270370	27	5490980
2	8081328	28	5490981
3	5270371	29	5490982
4	8081329	30	5490983
5	5270372	31	5490984
6	8081330	32	5490985
7	5270373	33	5490986
8	8081331	34	5490987
9	5270374	35	5490988
10	8081332	36	5490989
11	5270375	37	5490990
12	8081333	38	5490991
13	5270376	39	5490992
14	8081334	40	5490993
15	5270377	41	5490994
16	8081335	42	5490995
17	5270378	43	5490996
18	8081336	44	5490997
19	5270379	45	5490998
20	8081337	46	5490999
21	5270380	47	5491000
22	8081338	48	5491001
23	5270381	49	5491002
24	8081339	50	5491003
25	5270382	51	5491004
26	8081340	52	5491005

SHADED RELIEF MAP OF THE PHAETHONTIS QUADRANGLE OF MARS
MC-24
M 5M -48/150 R
1979

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