DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

Prepared for the
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

ATLAS OF MARS
1:5 000 000 TOPOGRAPHIC SERIES
ERIDANIA QUADRANGLE
M 5M –48/210 R, 1979
I-1170 (MC-29)

North

West

East

South

TERRA CIMMERIA

SIRENUM FOSSAE

SCOPULUS

DANAIN

Martz (Qw)

Kepler (Rn)

Arrhenius (Ys)

Wells (Yd)

Haldane (Wl)

Vinogradsky (Qf)

Tycho Brahe (Pj)

Huggins (Kl)

Cruls (Gq)

Bjerknes (Gd)

Rossby (Em)

Campbell (Fh)

Mendel (He)

Byrd (AUS-Rz)

AUS-Pz

AUS-Nz

AEO-Ra

AEO-Ma

AEO-Da

AEO-Ba

PHA-Ze

PHA-Zi

PHA-Ka

Eb

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, 1976). The major sources of map data were the Mariner 9 television experiment (Masursky 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 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 –5.1°) 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 Mariner 9 pictures was assembled at 1:5000000, on Lambert conformal conic projections.

Shaded relief was portrayed with uniform illumination with the sun to the west, using airbrush techniques described by Inge (1972) and Inge and Bridges (1976). Sizes, 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 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 sheet are approved by the International Astronomical Union (IAU, 1974, 1977, 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 ERI (identifying the Eridania quadrangle) is part of the complete designation but, for brevity, is not shown on most craters. Some craters have commemorative 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 Priestley which was applied to a very degraded crater centered at lat –50°, long 228° has been deleted.

MC-29: Abbreviation for Mars Chart 29.

M 5M –48/210 R: Abbreviation for Mars 1:5000000 series; center of sheet, lat –48°, long 210°; shaded relief map, R.

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Masursky, Harold, Batson, R. M., Borgeson, W. T., Carr, M. H., McCauley, J. F., Milton, D. J., Wildey, R. L., Wilhelms, D. E., Murray, B. C., Horowitz, N. H., Leighton, R. B., Sharp, R. V., Thompson, T. W., Briggs, G. A., Chandeysson, P. L., Shipley, E. N., Sagan, Carl, Pollack, J. B., Lederberg, Joshua, Levinthal, E. C., Hartmann, W. K., McCord, T. B., Smith, B. A., Davies, M. E., de Vaucouleurs, G. D., and Leovy, C. B., 1970, Television experiment for Mariner Mars 1971: Icarus, v. 12, no. 1, p. 10-45.

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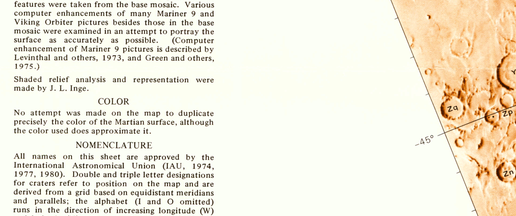
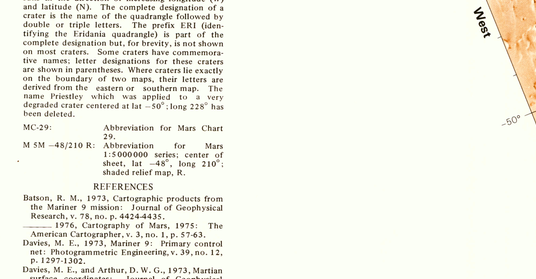




QUADRANGLE LOCATION
Number preceded by I refers to published shaded relief map.

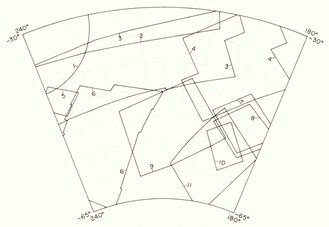
Albedo features from International Planetary Patrol photographs, Lowell Observatory, Flagstaff, Ariz.

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.

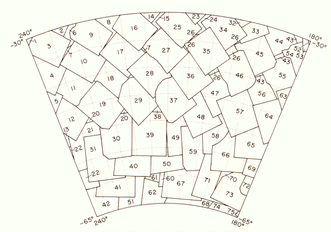
SCALE 1:4336000 AT –30° LATITUDE
LAMBERT CONFORMAL PROJECTION

100 50 0 KILOMETERS 100 200 300 400 500 600 700 800 900 1000



SUPPLEMENTARY SOURCE INDEX
Viking pictures were used where available to clarify Mariner 9 data. The outline for each sequence of pictures is shown.

VIKING 1				VIKING 2	
Index No.	Picture No.	Index No.	Picture No.	Index No.	Picture No.
1	101A19	3	350A52	9	75B33
2	350A06		350A53		75B35
	350A08	4	88A01	10	62B19
	350A10		88A02	11	75B28
	350A12		88A03		
	350A14		88A04		
	350A16		88A05		
	350A18		88A06		
	350A20	5	97A83		
3	350A37	6	97A87		
	350A38		97A89		
	350A39		97A90		
	350A40		97A91		
	350A41		97A92		
	350A42		97A93		
	350A43		97A94		
	350A44		97A95		
	350A45		97A96		
	350A46		97A97		
	350A47		97A98		
	350A48		97A99		
	350A49	7	88A22		
	350A50	8	88A32		
	350A51				



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. The DAS numbers may differ slightly (usually by 5) among various versions of the same picture.

A-camera pictures

Index No.	DAS No.	Index No.	DAS No.	Index No.	DAS No.
1	9052934	26	5776718	51	5202718
2	6247048	27	6462578	52	5275378
3	6246978	28	6462508	53	8081328
4	6246908	29	6462438	54	5275308
5	6246838	30	6462088	55	5275238
6	9124824	31	6462018	56	5275168
7	5632728	32	6534608	57	5275098
8	9196714	33	8009438	58	5274888
9	6318868	34	6534538	59	5274818
10	6318798	35	6534468	60	5274748
11	6318728	36	6534398	61	5274678
12	6318658	37	6534328	62	5921968
13	6318308	38	5848678	63	5347128
14	6390828	39	6533978	64	5347058
15	9268604	40	6533908	65	5346848
16	6390758	41	6533838	66	5346778
17	6390688	42	6533768	67	5346638
18	6390618	43	6064418	68	5448528
19	6390548	44	5203418	69	5418738
20	5632658	45	5203348	70	5418668
21	6390198	46	5203278	71	5418598
22	6390128	47	5203208	72	5490628
23	6462718	48	5203138	73	5490558
24	9340494	49	5202928	74	5562518
25	6462648	50	5202858	75	5634548

SHADED RELIEF MAP OF THE ERIDANIA QUADRANGLE OF MARS

MC-29

M 5M –48/210 R

1979

Interior—Geological Survey, Reston, Va.—1979—G79175

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