ATLAS OF MARS
1:5,000,000 TOPOGRAPHIC SERIES
ELYSIUM QUADRANGLE
M 5M 15/202 RN, 1988
I–2008 (MC–15: REVISED) SHEET 1 OF 2

DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

Prepared for the
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

NOTES ON BASE

A series of maps covering the entire surface of Mars at a nominal scale of 1:5,000,000 was originally compiled from Mariner 9 data (Batson and others, 1979). This original series is now being revised and augmented with image data from Viking Orbiter.

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 Mercator, Lambert Conformal Conic, and Polar Stereographic projections are used for this map series. The scale of the series is 1:5,000,000 at the equator. The projections have common scales of 1:4,336,000 at lat ±30° and 1:4,306,000 at lat ±65°. Standard parallels for the Lambert Conformal Conic projection are at lat ±35.8° and ±59.2°. Longitude increases to the west in accordance with astronomical convention for Mars.

CONTROL

Planimetric control is provided by photogrammetric triangulation by use of Mariner 9 pictures (Davies, 1973; Davies and Arthur, 1973) and the radiotracked position of the Mariner 9 spacecraft. The first meridian passes through the center of a small crater, Airy-0 (lat 5.19° S., long 0°), located within the crater Airy.

MAPPING TECHNIQUE

A series of mosaics of Mariner 9 pictures was assembled at the 1:5,000,000 scale based on projections described above.

Shaded relief was portrayed by use of airbrush techniques detailed by Inge (1972) and photointerpretive methods described by Inge and Bridges (1976). Uniform sun illumination from the west was used throughout. Sizes, shapes, and positions of features were taken from the base mosaic. In the first edition of the map, various computer enhancements of many Mariner 9 pictures, besides those in the base mosaic, were examined in an attempt to portray the surface as accurately as possible. This revised edition was produced by incorporating information derived from various enhancements of higher resolution Viking images of the map area.

Original shaded relief analysis and representation were made by Jay L. Inge. Revisions were made by Patricia M. Bridges.

COLOR

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

NOMENCLATURE

Names on this sheet are approved by the International Astronomical Union (IAU, 1974, 1983, and 1986). 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 ELY (identifying the ELYSIUM 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 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–15: Abbreviation for Mars Chart 15.

M 5M 15/202 RN: Abbreviation for Mars, 1:5,000,000 series; center of sheet, lat 15° N., long 202°; shaded relief map (R) with nomenclature (N).

REFERENCES

Batson, R.M., Bridges, P.M., and Inge, J.L., 1979, Atlas of Mars, The 1:5,000,000 map series: National Aeronautics and Space Administration, Special Publication 438, 146 p.

Davies, M.E., 1973, Mariner 9: Primary control net: Photogrammetric Engineering, v. 39, no. 12, p. 1297–1302.

Davies, M.E., and Arthur, D.W.G., 1973, Martian surface coordinates: Journal of Geophysical Research, v. 78, no. 20, p. 4355–4394.

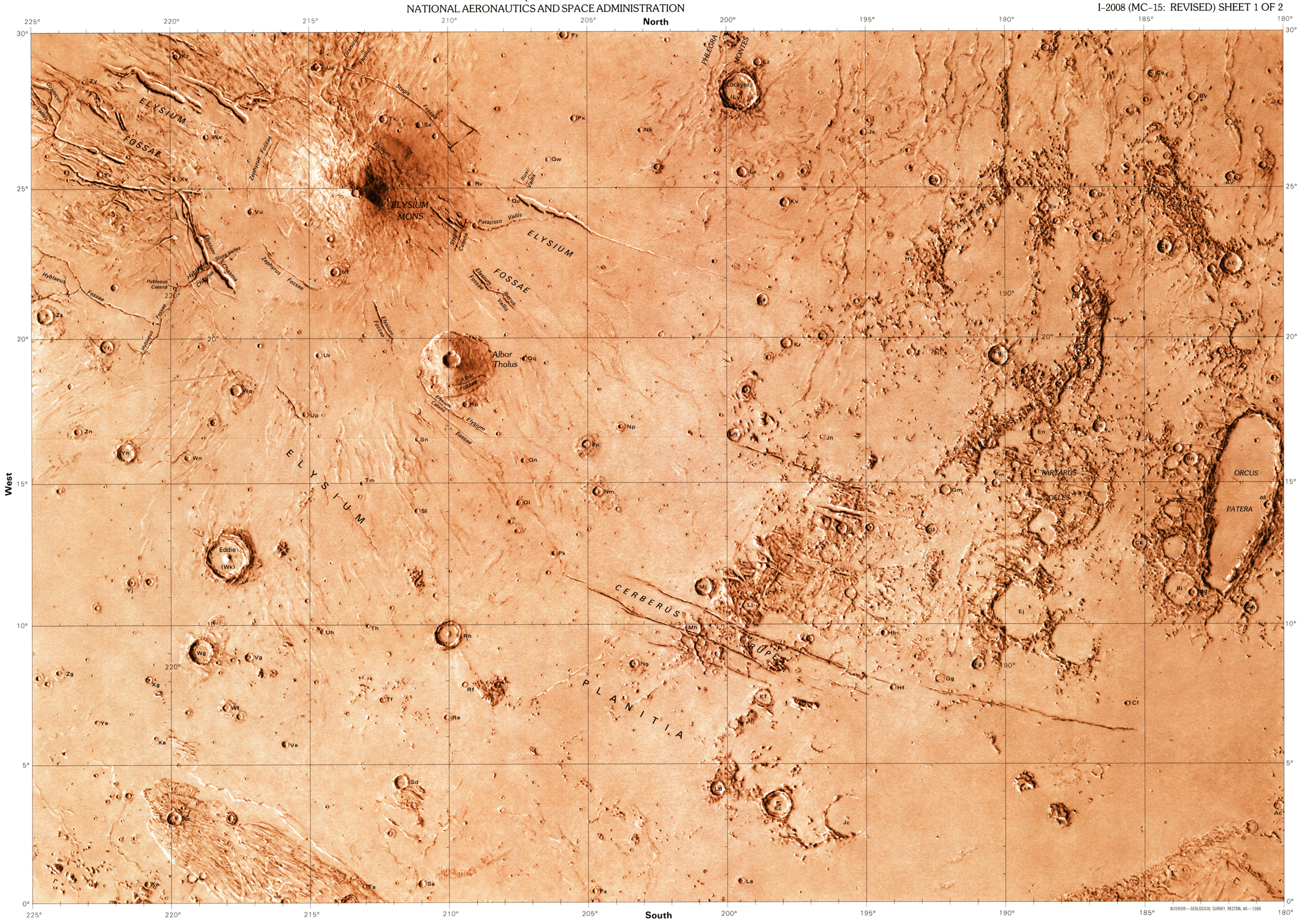
Inge, J.L., 1972, Principles of lunar illustration: Aeronautical Chart and Information Center Reference Publication 72-1, 60 p.

Inge, J.L., and Bridges, P.M., 1976, Applied photointerpretation for airbrush cartography: Photogrammetric Engineering and Remote Sensing, v. 42, no. 6, p. 749–760.

International Astronomical Union, 1974, Commission 16: Physical study of planets and satellites, *and* Lunar and martian nomenclature, *in* 15th General Assembly, Sydney, 1973, Proceedings: International Astronomical Union Transactions, v. 15B, p. 105–108, 217–221.

———1983, Working Group for Planetary System Nomenclature, *in* 18th General Assembly, Patras, 1982, Proceedings: International Astronomical Union Transactions, v. 18B, p. 334–336.

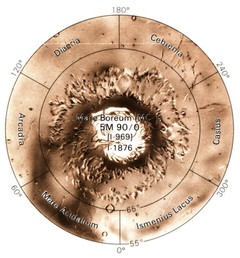
———1986, Working Group for Planetary System Nomenclature, *in* 19th General Assembly, New Delhi, 1985, Proceedings: International Astronomical Union Transactions, v. 19B, p. 347–350.



INTERIOR—GEOLOGICAL SURVEY, RESTON, VA—1988

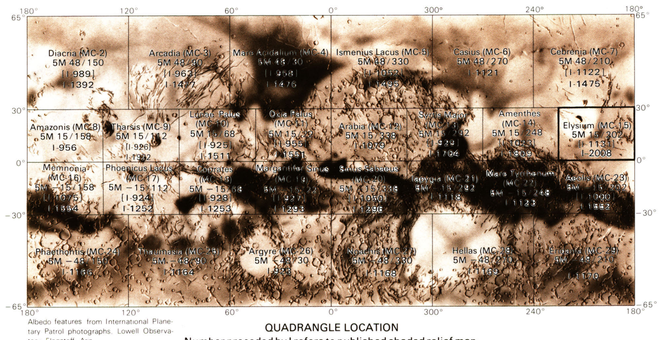
Revised in April 1987 on behalf of the Planetary Geology and Geophysics Program, Planetary Division, Office of Space Science, National Aeronautics and Space Administration, under contract W–15,814. This map supersedes I–1131 (the first edition of this sheet).

Manuscript approved for publication July 22, 1988.



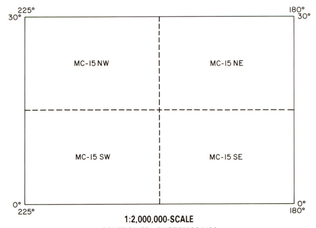
SCALE 1:5 000 000 (1 mm = 5 km) AT 0° LATITUDE
MERCATOR PROJECTION

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



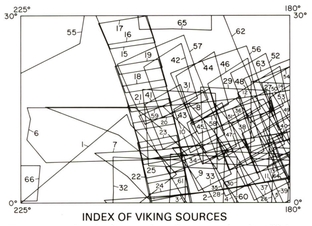
Albedo features from International Planetary Patrol photographs, Lowell Observatory, Flagstaff, Ariz.

QUADRANGLE LOCATION
Number preceded by I refers to published shaded relief map. (Number in brackets refers to earlier map superseded by revised version).



1:2,000,000-SCALE CONTROLLED PHOTOMOSAICS

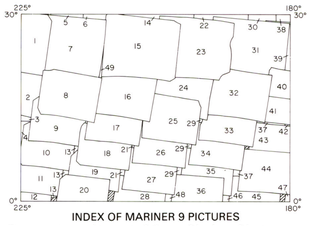
I-Series No.	Quadrangle No.
I–1381	MC–15 NW
I–1385	MC–15 NE
I–1384	MC–15 SW
I–1382	MC–15 SE



INDEX OF VIKING SOURCES
This shaded relief map has been revised utilizing 1:2,000,000-scale controlled photomosaics and supplementary Viking pictures outlined above. Copies of various enhancements of these pictures are available from National Space Science Data Center, Code 601, Goddard Space Flight Center, Greenbelt, MD 20771.

VIKING 1

Index No.	Picture No.	Index No.	Picture No.	Index No.	Picture No.
1	101A60	23	470A17	45	672A85
2	436A01	24	470A18	46	672A86
3	436A03	25	470A19	47	672A87
4	436A05	26	506A32	48	672A88
5	436A07	27	506A33	49	672A89
6	436A21	28	506A34	50	673A90
7	436A22	29	506A35	51	674A01
8	436A23	30	506A36	52	674A02
9	436A74	31	506A37	53	674A03
10	436A25	32	506A38	54	674A04
11	436A26	33	672A61	55	704A63
12	436A27	34	672A62	56	747A71
13	436A28	35	672A63	57	747A72
14	436A29	36	672A64	58	747A73
15	470A08	37	672A65	59	747A74
16	470A10	38	672A66	60	747A75
17	470A11	39	672A67	61	747A76
18	470A12	40	672A68	62	759A82
19	470A13	41	672A81	63	759A84
20	470A14	42	672A82	64	759A86
21	470A15	43	672A83	65	805A07
22	470A16	44	672A84	66	881A21



INDEX OF 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. Useful coverage is not available in cross-hatched areas. The DAS number may vary slightly (usually by 5) among various versions of the same picture.

A-camera pictures

Index No.	DAS No.	Index No.	DAS No.
1	7579563	26	7744743
2	7579213	27	7744673
3	7579493	28	7744603
4	7579423	29	7795093
5	8982649	30	9270209
6	9054539	31	7867123
7	7651453	32	7866773
8	7651103	33	7866703
9	7651033	34	7866633
10	7650963	35	7866563
11	7650893	36	7866493
12	7650823	37	7866983
13	7651313	38	9342104
14	9126429	39	7939013
15	7723343	40	7938663
16	7722993	41	7938593
17	7722923	42	7938943
18	7722853	43	7938523
19	7722783	44	7938453
20	7722713	45	7938383
21	7723203	46	12326306
22	9198319	47	6607333
23	7795233	48	5704753
24	7794883	49	7651593
25	7794813		

SHADED RELIEF MAP OF THE ELYSIUM QUADRANGLE OF MARS

MC–15: REVISED

M 5M 15/202 RN

1988

NOTE TO USERS
Users noting errors or omissions are urged to indicate them on the map and to forward it to U.S. Geological Survey, Building 4, Room 454, 2255 North Gemini Drive, Flagstaff, Arizona 86001. A replacement copy will be returned.

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