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
ELYSIUM QUADRANGLE
M 5M 15/202 R, 1978
I-1131 (MC-15)

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 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 Mercator projection is used for this sheet, with a scale of 1:5,000,000 at the equator and 1:4,336,000 at lat 30°. 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 Mercator 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; Green and others, 1975; Inge and Bridges, 1976). The shading is not generalized and may be interpreted with nearly photographic reliability (Inge, 1972).

Shaded relief analysis and representation were made by Jay 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) except Cerberus Rupes which is proposed. 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 a double or triple letter. 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 R: Abbreviation for Mars 1:5,000,000 series; center of sheet, lat 15° N., long 202°; shaded relief map, R.

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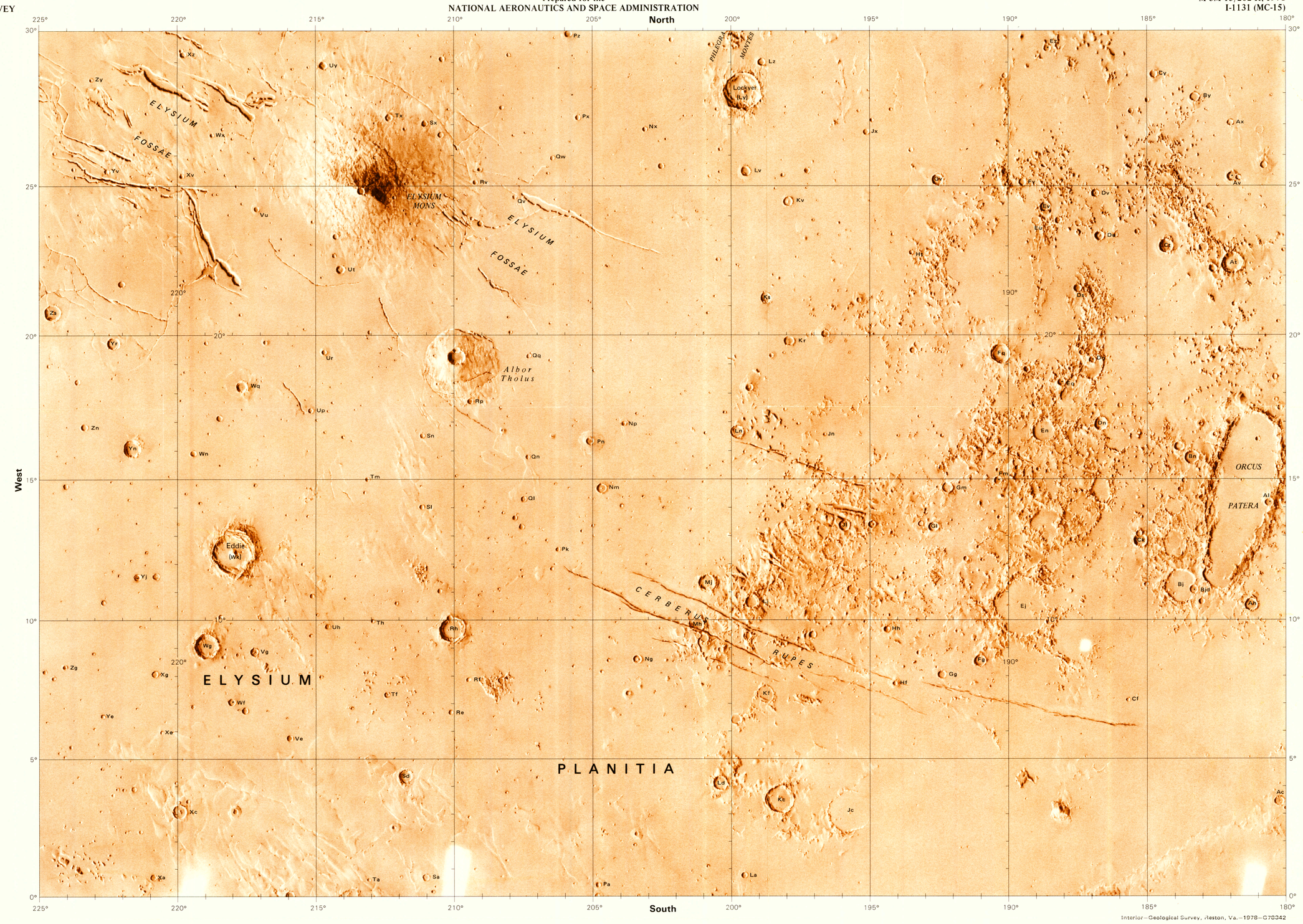
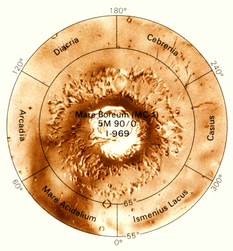
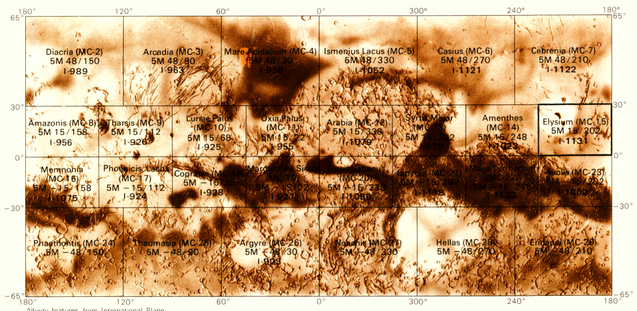


Interior—Geological Survey, Reston, Va.—1978—G78342

Prepared on behalf of the Planetary Geology Program, Planetary Division, Office of Space Science, National Aeronautics and Space Administration under contract W-13,709





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

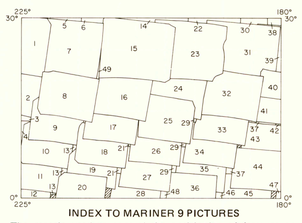
QUADRANGLE LOCATION
Number preceded by I refers to published shaded relief map.

SCALE 1:5 000 000 AT 0° LATITUDE
MERCATOR PROJECTION

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

NOTE TO USERS

Users noting errors or omissions are urged to indicate them on the map and to forward the map to Astrogeologic Studies, Geologic Division, 2255 North Gemini Drive, Flagstaff, Arizona 86001. A replacement copy will be returned.



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. 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

M 5M 15/202 R

1978

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