

NOTES ON BASE

This map is one in a series covering the entire surface of Mars at a nominal scale of 1:5,000,000. The series was originally compiled from Mariner 9 data (Batson and others, 1979). The original shaded relief base was revised and augmented with image data from Viking Orbiter, but feature positions were not shifted to fit controls derived from Viking.

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 3,393.4 km and a polar radius of 3,375.7 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 $\pm 30^\circ$ and 1:4,306,000 at lat $\pm 65^\circ$. Standard parallels for the Lambert Conformal Conic projection are at lat $\pm 35.8^\circ$ and $\pm 59.2^\circ$. Longitude increases to the west in accordance with astronomical convention for Mars. Latitude is planetographic.

CONTROL

Planimetric control of the shaded relief is provided by photogrammetric triangulation using Mariner 9 images (Davies, 1973; Davies and Arthur, 1973) and the radio-tracked position of the Mariner 9 spacecraft. The first meridian passes through the center of a small crater, Ainy-O (lat 5.19° S., long 0°), within the crater Ainy.

Primary controls used in the network include the Viking Orbiter Secondary Experiment Data Record, radio-occultation measurements from both Mariner 9 and Viking Missions (Lewell and others, 1972; Klore and others, 1973; Lindal and others, 1979). Earth-based radar observations (Pettengill and others, 1971; Downs and others, 1975), and the Mars primary control network of the Rand Corporation (Davies and others, 1978).

MAPPING TECHNIQUE

Shaded relief was portrayed by photointerpretive methods described by Inge and Bridges (1976). Uniform sun illumination from the west was used throughout. The original rendition of feature positions, sizes, and shapes was taken from a controlled base mosaic of Mariner 9 images. Various computer enhancements of many Mariner 9 and Viking Orbiter images besides those in the base mosaic were examined in an attempt to portray the surface as accurately as possible.

Initial shaded relief analysis and representation were made by Patricia M. Bridges; revisions were made by Barbara J. Hall.

COLOR

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

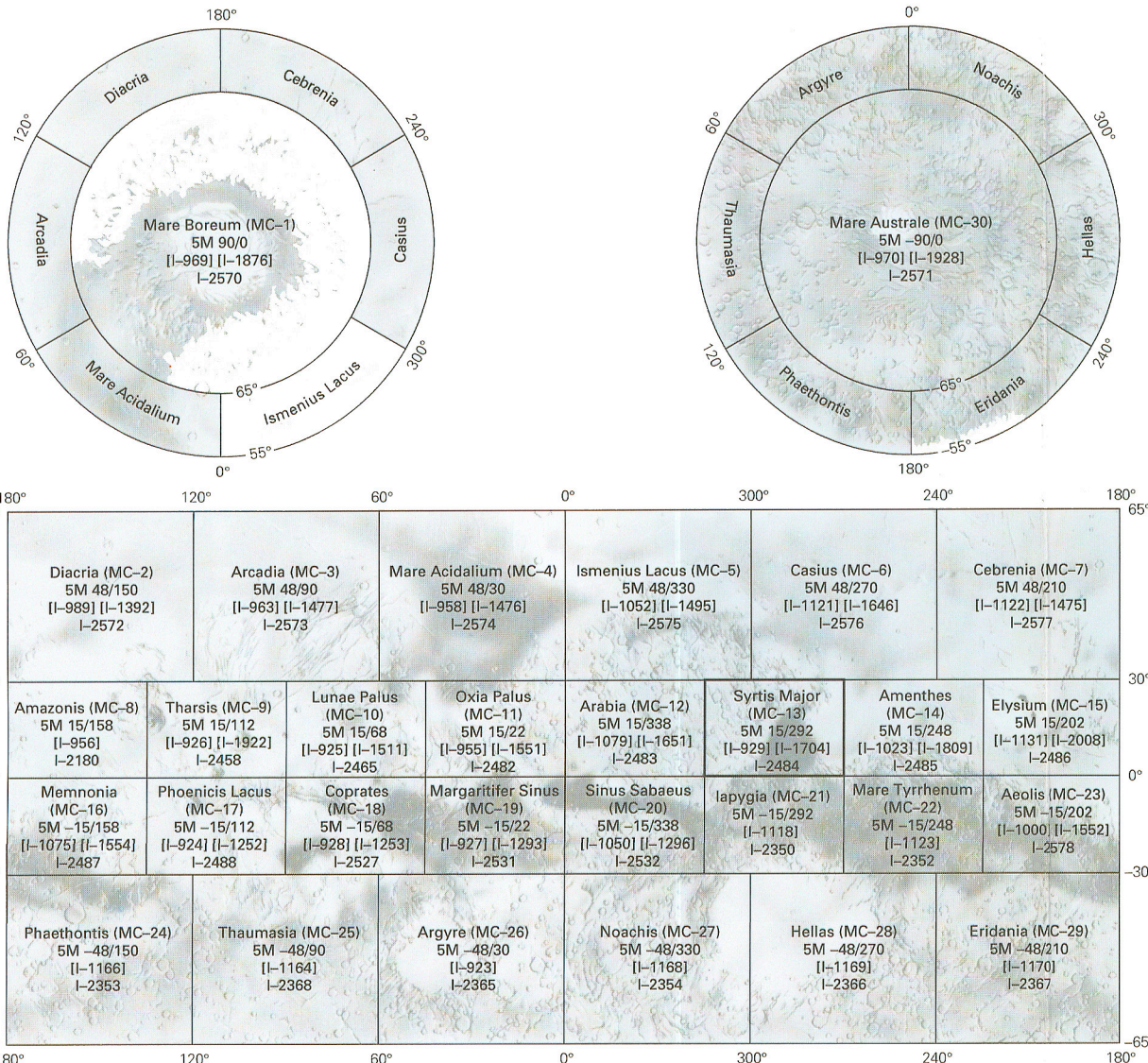
NOMENCLATURE

Names on this sheet are approved by the International Astronomical Union (IAU, 1974, 1977, 1980, 1983, 1986).

MC-13: Abbreviation for Mars Chart 13.
M 5M 15/292 RN: Abbreviation for Mars, 1:5,000,000 series; center of sheet, lat 15° N., long 292° ; shaded relief map (R) with nomenclature (N).

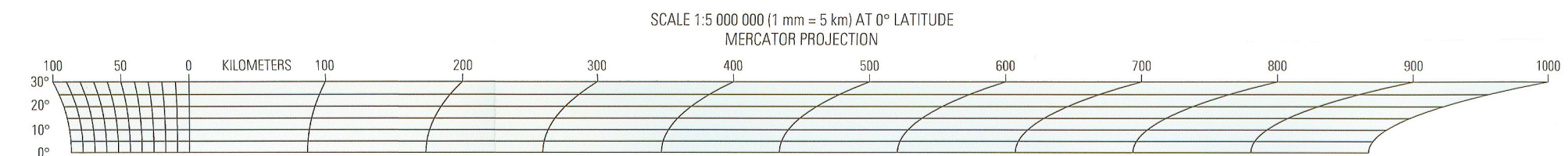
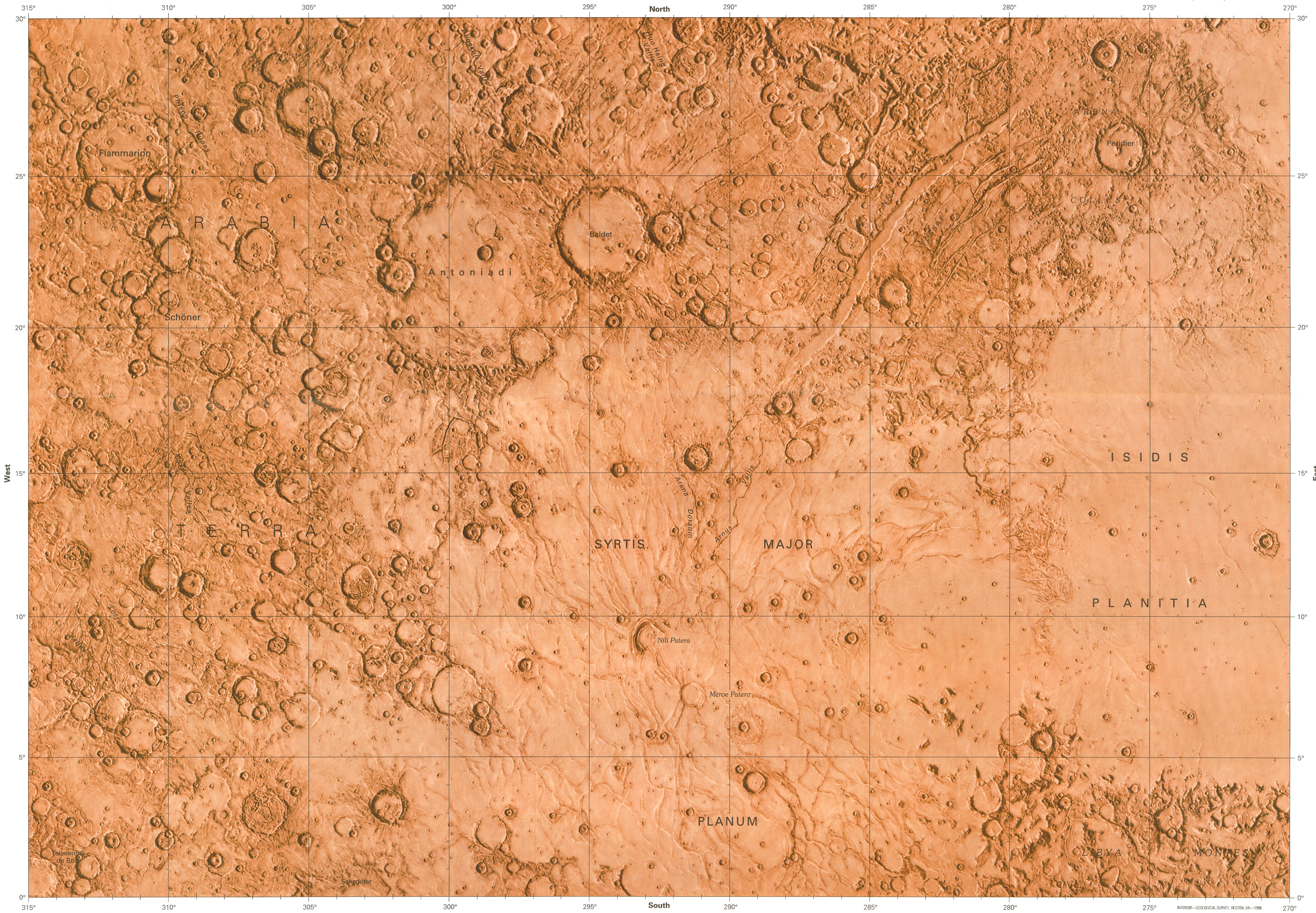
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NOTE TO USERS

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 450, 2295 North Gemini Drive, Flagstaff, Arizona 86001. A replacement copy will be returned.



Shaded relief revised in January 1987 on behalf of the Planetary Geology Program, Solar System Exploration Division, Office of Space Science, National Aeronautics and Space Administration
This map supersedes map I-1704
Edited by Doris Weir and Derrick D. Hirsch; cartography by Darlene A. Casseiber
Manuscript approved for publication April 18, 1994

12,000,000 SCALE
CONTROLLED PHOTOMOSAICS

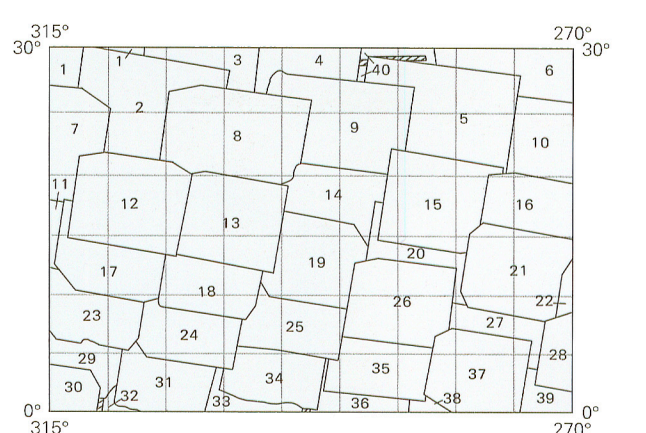
I-Series Quadrangle
I-1415 MC-13 NW
I-1414 MC-13 NE
I-1413 MC-13 SW
I-1412 MC-13 SE



INDEX OF VIKING SOURCES

This shaded relief map has been revised by 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.
1	461A10	21	49A474
2	461A12	22	49A475
3	46A43	23	49A476
4	46A44	24	49A477
5	46A45	25	49A478
6	46A46	26	49A479
7	46A47	27	49A480
8	46A48	28	49A481
9	46A49	29	49A482
10	46A50	30	49A483
11	46A51	31	49A484
12	46A52	32	49A485
13	46A53	33	49A486
14	46A54	34	49A487
15	46A55	35	49A488
16	46A56	36	49A489
17	46A57	37	49A490
18	46A58	38	49A491
19	46A59	39	49A492
20	46A60	40	49A493



A-camera pictures			
Index No.	DAS No.	Index No.	DAS No.
1	8262839	21	7219343
2	8263183	22	7291360
3	8263869	23	8531253
4	9853829	24	7003253
5	7147803	25	7075283
6	8550889	26	7147113
7	6859753	27	7219273
8	7003743	28	7291233
9	7075773	29	8531223
10	7219763	30	8531153
11	6859403	31	7003183
12	7003133	32	7003113
13	7003283	33	7075143
14	7075423	34	7075213
15	7147463	35	7147463
16	7219413	36	7147173
17	6831363	37	7219203
18	7003253	38	7219153
19	7075353	39	7291163
20	7147383	40	8466829

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 the crosshatched areas. The DAS number may vary slightly (usually by 5) among different versions of the same picture.