

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 (Bateson 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 ±30° and 1:4,306,000 at lat ±45°. 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. 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, Airy-O (lat 5.19° S., long 0°), within the crater Airy. Primary controls used in the network include the Viking Orbiter Secondary Experiment Data Record, radio-occultation measurements from both Mariner 9 and Viking Missions (Lorell and others, 1972; Klone 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 Anthony G. Sanchez; revisions were made by Barbara J. Hall.

COLOR

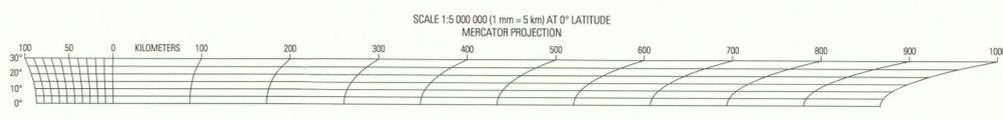
No attempt was made on the map to duplicate precisely the color of the martian surface, although the color used may approximate it.

NOMENCLATURE

Names on this sheet are approved by the International Astronomical Union (1974, 1977, 1980, 1983, 1986).  
MC-12: Abbreviation for Mars Chart 12.  
M 5M 15/338 RN: Abbreviation for Mars; 1:5,000,000 series; center of sheet, lat 15° N., long 338°; shaded relief map (R) with nomenclature (N).

REFERENCES

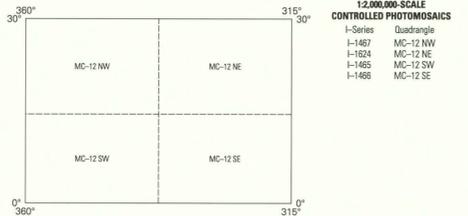
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Shaded relief revised in January 1987 on behalf of the Planetary Geology Program, Solar System Exploration Division, Office of Space Science, National Aeronautics and Space Administration.  
This map supersedes map I-1651.  
Edited by Doris Weir and Derrick D. Hirsch; cartography by Darlene A. Casabier.  
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MC-12 NW	MC-12 NE	MC-12 SW	MC-12 SE
<p><b>Dacia</b> (MC-2) SM 48150 [I-989] [I-1392] I-2572</p> <p><b>Arcadia</b> (MC-3) SM 48150 [I-983] [I-1477] I-2573</p> <p><b>Mare Acidalium</b> (MC-4) SM 48230 [I-1023] [I-1486] I-2574</p> <p><b>Isamenus Lacus</b> (MC-5) SM 48230 [I-1023] [I-1486] I-2575</p> <p><b>Caelius</b> (MC-6) SM 48270 [I-1121] [I-1466] I-2576</p> <p><b>Cebrenia</b> (MC-7) SM 15/202 [I-1131] [I-2008] I-2577</p>	<p><b>Tharsis</b> (MC-8) SM 15/112 [I-924] [I-1922] I-2488</p> <p><b>Lunae Palus</b> (MC-9) SM 15/112 [I-925] [I-1511] I-2489</p> <p><b>Oxia Palus</b> (MC-10) SM 15/222 [I-963] [I-1551] I-2490</p> <p><b>Arabia</b> (MC-11) SM 15/238 [I-1079] [I-1561] I-2491</p> <p><b>Sytis Major</b> (MC-12) SM 15/249 [I-924] [I-1704] I-2492</p> <p><b>Amanethus</b> (MC-13) SM 15/249 [I-1131] [I-1809] I-2493</p> <p><b>Elymus</b> (MC-15) SM 15/202 [I-1131] [I-2008] I-2494</p>	<p><b>Memnonia</b> (MC-16) SM 15/158 [I-1075] [I-1554] I-2487</p> <p><b>Phoenicis Lacus</b> (MC-17) SM 15/158 [I-924] [I-1252] I-2488</p> <p><b>Copertes</b> (MC-18) SM 15/158 [I-928] [I-1253] I-2527</p> <p><b>Margarethae Sinus</b> (MC-19) SM 48230 [I-1023] [I-1293] I-2528</p> <p><b>Sinus Sabaeus</b> (MC-20) SM 15/338 [I-1118] [I-1293] I-2529</p> <p><b>Japygia</b> (MC-21) SM 15/292 [I-1118] [I-1293] I-2396</p> <p><b>Mare Tyrrhenum</b> (MC-22) SM 15/249 [I-1131] [I-1293] I-2397</p> <p><b>Aeolis</b> (MC-23) SM 15/202 [I-1131] [I-1522] I-2398</p>	<p><b>Phaethontis</b> (MC-24) SM 48150 [I-989] [I-1392] I-2383</p> <p><b>Thaumasia</b> (MC-25) SM 48150 [I-989] [I-1392] I-2388</p> <p><b>Argyre</b> (MC-26) SM 48230 [I-1023] [I-1392] I-2389</p> <p><b>Noachis</b> (MC-27) SM 48230 [I-1023] [I-1392] I-2394</p> <p><b>Hellas</b> (MC-28) SM 48270 [I-1121] [I-1392] I-2395</p> <p><b>Eridania</b> (MC-29) SM 48270 [I-1121] [I-1392] I-2397</p>



**12,000-SCALE CONTROLLED PHOTOMOSAICS**

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	491A67		494A49		692A29		756A21
			494A51		692A30		735A11
			494A53	6	694A51		735A12
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