ATLAS OF MARS

I-2350 (MC-21) SHEET 1 OF 2

#### **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 ±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; Kliore 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 Barbara J. Hall; revisions were made by Eric L. Blinn and 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

MC-21: Abbreviation for Mars Chart 21. M 5M -15/292 RN: Abbreviation for Mars; 1:5,000,000 series; center of sheet, lat 15° S., long 292°; shaded relief map

## (R) with nomenclature (N). REFERENCES

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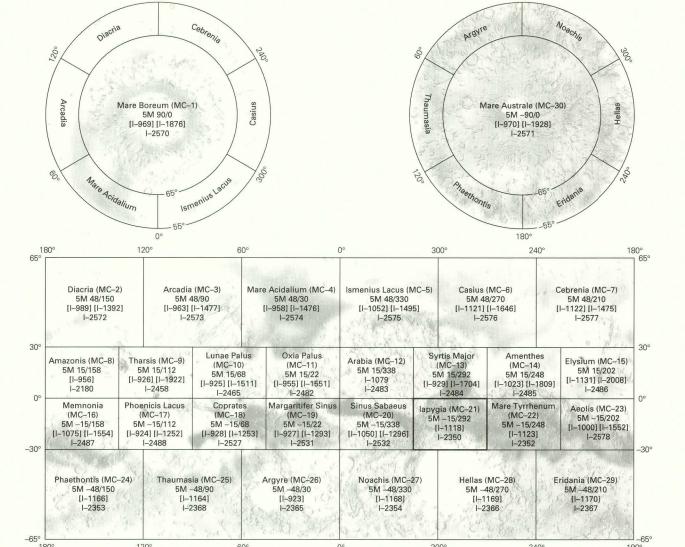
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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION



VIKING 1 1:2,000,000-SCALE CONTROLLED PHOTOMOSAICS I-Series I–1623 I–1438 I–1441 I–1440 461A24 494A42 MC-21 NW MC-21 NE MC-21 SW MC-21 NW MC-21 NE 494A61 494A62 494A64 494A66 496A42 496A43 MC-21 SW MC-21 SE 496A61 496A62 496A64 496A66 798A10 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 vari-

ous enhancements of these pictures are available from National Space Science

Data Center, Code 601, Goddard Space Flight Center, Greenbelt, MD 20771.

DAS No. 8477324 6930738 7075148 8621594 8693274 7074798 7291168 8405434 7074658 8621384 7290748 7290678 7003608 8549354 7219208 5887458 5887388 8549634 7002698 8549564 7218788 8765514 7147178 7218578 8765304 8765234 5815428 8477604 8477534 7146758 7146688 8693624 5959348 7146618 8477464 5959278 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.

replacement copy will be returned.

A-camera pictures