

NOTES ON BASE MAP
This is one photomosaic of a set of topographic map sheets covering areas of special interest on Mars at nominal scale of 1:1,000,000 and 1:1,000,000 series. The major source of map data was the Viking 1 spacecraft.

ADOPTED FIGURE

The figure of the map projection is an oblate spheroid (flattening of 1/192) with an equatorial radius of 3393.4 km and polar radii of 3376.0 km along the $\pm 45^\circ$ lines of longitude and 3376.3 km along the $\pm 90^\circ$ lines of longitude. The height datum defined below under the heading "CONTROLS".

PROJECTION

The transverse Mercator projection is used for this sheet, with a scale of 1:1,000,000. Longitude increases to the east. The projection is computed with the usage of the International Astronomical Union (IAU, 1973) standard angular coordinates and others. 1973). The first meridian passes through the crater Argy-O at 19° S within the $\pm 90^\circ$ range.

CONTROLS

Planimetric control was derived from the primary networks (Ortsnet, 1973) of Mars. Mariner 9 pictures were tied to the primary net. The positions of Viking 1 and 2 were determined by the Mizar system. No simple statement is possible for the precision, but local consistency is about 2 km.

IMAGE PROCESSING

Two hundred and two Viking 1 frames were specially processed in the computer and mosaicked. Processing included atmospheric correction, contrast enhancement, and spatial filtration to remove camera shading and to enhance fine details in the images.

CONTOURS

Since Mars has no sea level, the elevation reference surface is a reference ellipsoid defined by a gravity field described by spherical harmonics of fourth order and fourth degree (Christensen, 1973; Lemoine, 1974). The ellipsoid has a mean radius of 3394.5 km and a millibar atmospheric pressure surface derived from returns of Mariner 9 and others, 1973; Christensen, 1975; Wu, 1975).

The contour lines were compiled by stereophotogrammetric methods using stereoplotted images taken on revolution 22. Special stereoplotter methods were applied to this extremely narrow strip. The terrain and the appropriate parameters for setting stereomodels in analytical plotters were provided by the same procedures and validation performed with the U.S. Geological Survey GIANT computer program, the prototype of USGS, 1973. Photometric effects were blends photo-grammetric coordinate measures with position and orientation data from the Mariner 9 Preliminary Experiment Data Record (SLED) with appropriate weights for the individual observations.

NOMENCLATURE

Nomina on sheet are approved by the International Astronomical Union (1974, 1975). Names of craters, regions and other features are designated by the same letters on the 1:5,000,000 Lander and 1:1,000,000 series maps. These double letter designations refer to position on the 1:5,000,000 sheet and are derived from a grid based on equatorial coordinates and partly the alphabet (I and O omitted) runs in the direction of increasing longitude (increasing east).

The complete designation of a crater is the name of the quadrangle followed by a double letter. The suffix LUN identifies the LUN Palus.

The complete designation for brevity, is not shown.

M 1M 23/50 CMC: Abbreviations for Mars, 1:1,000,000 series; center of lander, center of landing, landing controlled mosaic, CM with colors.

SPACECRAFT LOCATION

The spacecraft location shown on the map (22.27° N, 47.82° W) was derived by Doppler tracking of signals from the Viking 1 lander. The approximate precision of the location is ± 0.06 degrees. The exact location of the landing site has not yet been identified unambiguously by comparison of pictures taken from orbit with those taken from the lander.

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