DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

Prepared in Cooperation with the
JET PROPULSION LABORATORY, CALIFORNIA INSTITUTE OF TECHNOLOGY
FOR THE LANGLEY RESEARCH CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

ATLAS OF MARS
1:1,000,000 TOPOGRAPHIC SERIES
CHRYSE REGION
M 1M 20/34 R, 1975
I-939

NOTES ON BASE

This is one map in a set of topographic map sheets covering areas of special interest on Mars at nominal scales of 1:1,000,000 and 1:250,000 (Batson, 1973). 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 transverse Mercator projection is used for this sheet, with a scale of 1:1,000,000 at 34° longitude. 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 (latitude 5.19° S) within the crater Airy. No simple statement is possible for the precision, but local consistency is 2 km.

MAPPING TECHNIQUE

A mosaic of rectified Mariner 9 pictures was assembled at 1:1,000,000.

Shaded relief was copied from the mosaic 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). The shading is not generalized and may be interpreted with photographic reliability (Inge, 1972).

Shaded relief analysis and representation were made by Patricia M. Bridges.

COLOR

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

NOMENCLATURE

Names on this sheet are provisional, except for the following which have been approved by the International Astronomical Union (1974): Ares Vallis, Chryse Planitia, Simud Vallis, and Tiu Vallis. Named craters bearing double letters in parentheses are designated by the same letters on the 1:5,000,000 Oxia Palus sheet which covers this area. The prefix OXI- (identifying the Oxia Palus sheet) is part of the complete designation but, for brevity, is not shown on most craters.

M 1M 20/34 R: Abbreviation for Mars, 1:1,000,000 series; center of sheet, 20° latitude, 34° longitude; shaded relief map, R.

REFERENCES

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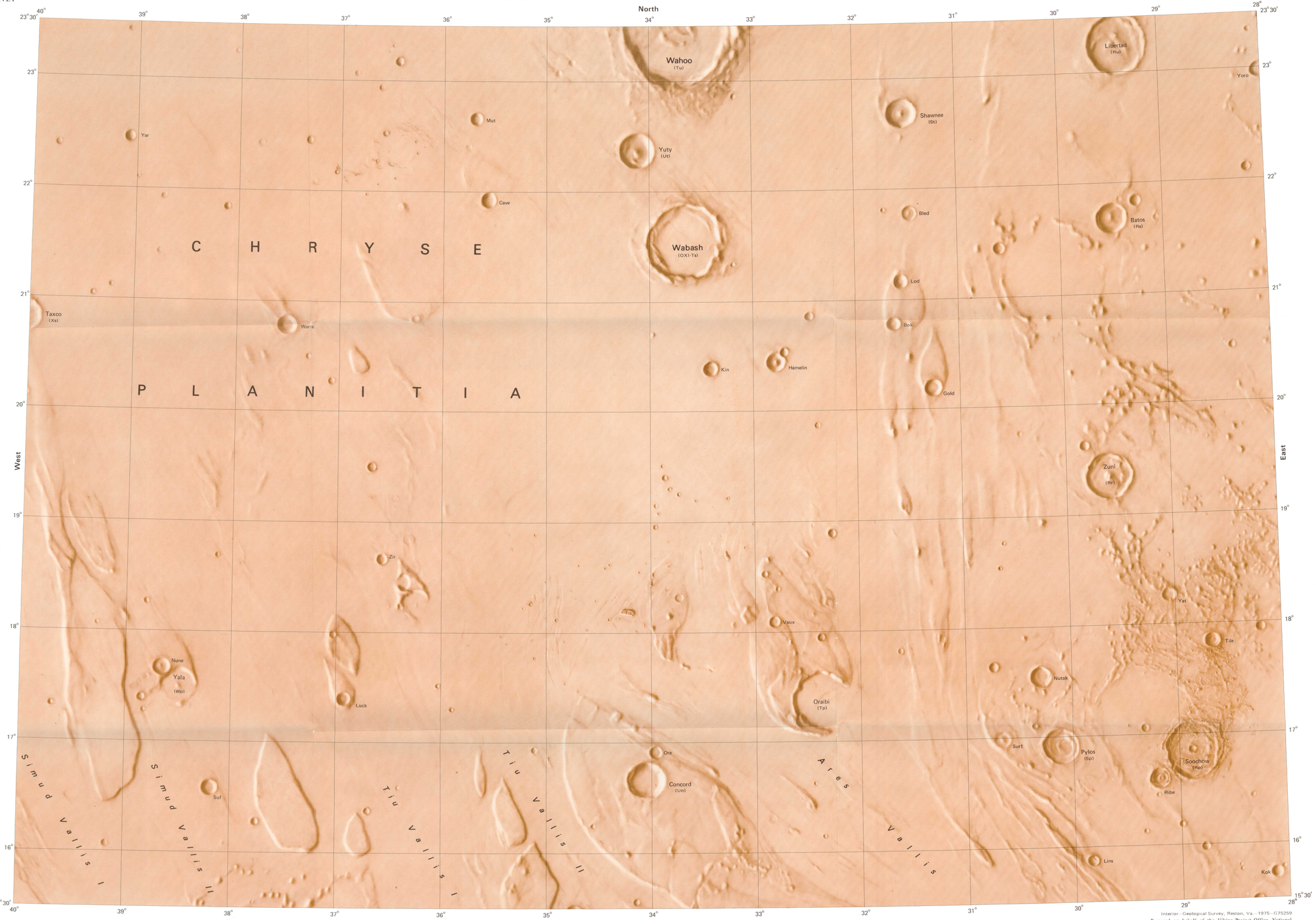
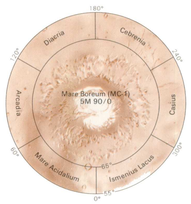
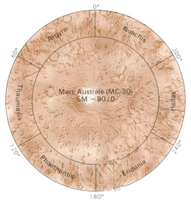
de Vaucouleurs, G. D., Davies, M. E., Sturms, F. M., Jr., 1973, The Mariner 9 areographic coordinate system: Jour. Geophys. Research, v. 78, no. 20, p. 4395-4404.

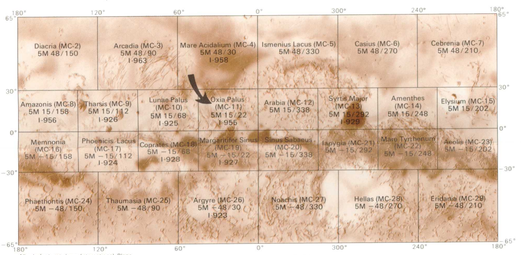


Interior—Geological Survey, Reston, Va.—1975—G75259
Prepared on behalf of the Viking Project Office, National Aeronautics and Space Administration under contract L-55232.

SCALE 1:1 000 000 AT 34° LONGITUDE
TRANSVERSE MERCATOR PROJECTION



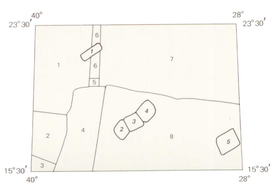




Albedo features from International Planetary Patrol photographs, Lowell Observatory, Flagstaff, Ariz.

QUADRANGLE LOCATION
Arrow indicates map area

MAP OF OXIA PALUS QUADRANGLE SHOWING LOCATION OF THE CHRYSE REGION



A-camera pictures Index No.	DAS No.	High-resolution B-camera pictures Index No.	DAS No.
1	7615478	*1*	*10493079*
2	7615408	*2*	*12188802*
3	9089824	*3*	*12187012*
4	7615428	*4*	*12188872*
5	12187047	*5*	*7687333*
6	10493114		
7	7687368		
8	7687018		

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, identified by vertical numbers. Also shown are the high-resolution B-camera pictures, identified by italic numbers.

SHADED RELIEF MAP OF THE CHRYSE REGION OF MARS

M 1M 20/34 R

1975

For sale by U.S. Geological Survey, Denver, Colo. 80225, and Reston, Va. 22092. price $1.00