

NOTES ON BASE

This sheet is one in a series of shaded relief maps covering the entire surface of Mars at a scale of 1:15,000,000. The source for the map base was 1:5,000,000 shaded relief maps described by Batson and others (1979). Data used in the map portrayal were obtained from Viking Orbiter images.

ADOPTED FIGURE

The figure of Mars used for computing 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.

PROJECTIONS

The Mercator projection is used between the 57° parallels and the polar stereographic projection is used for the polar regions north and south of the 55° parallels. Scales are 1:15,000,000 at the equator and 1:9,197,800 at the poles. The Mercator and stereographic projections have a common scale of 1:8,418,000 at 56° north and south latitudes. Longitudes increase to the west in accordance with usage of the International Astronomical Union (IAU, 1971). Latitudes are aerographic (de Vaucouleurs and others, 1973).

CONTROL

Planimetric control for the 1:5,000,000 maps used to compile the base for these sheets was derived from photogrammetric triangulations using Mariner 9 pictures (Davies, 1973). This control net was upgraded through the use of Viking data (Davies and others, 1978). At least 85 percent of the image control points lie within 0.5 mm of the positions published in 1978.

MAPPING TECHNIQUE

The mapping base for this series were assembled from 1:5,000,000 shaded relief maps reduced and digitally transformed where necessary to fit the projections. During shaded relief portrayal features on these bases were used to position details taken from Viking Orbiter pictures. Features were drawn with uniform illumination from the west, using airbrush technique described by Inge (1972) and photointerpretive methods described by Inge and Bridges (1976). The shading is not generalized and accurately represents the character of surface features.

Shaded relief analysis and portrayal were made by Susan L. Davis.

COLOR

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

MAP DESIGNATOR

M 15M 0/270 R Abbreviation for Mars; 1:15,000,000 series; center of map, lat 0°, long 270°; shaded relief map, R.

REFERENCES

Batson, R. M., Bridges, P. M., and Inge, J. L., 1979, Atlas of Mars, the 1:5,000,000 map series: National Aeronautics and Space Administration, NASA SP-438, 146 p.

Davies, M. E., 1973, Mariner 9: Primary control net: Photogrammetric Engineering, v. 39, no. 12, p. 1297-1302.

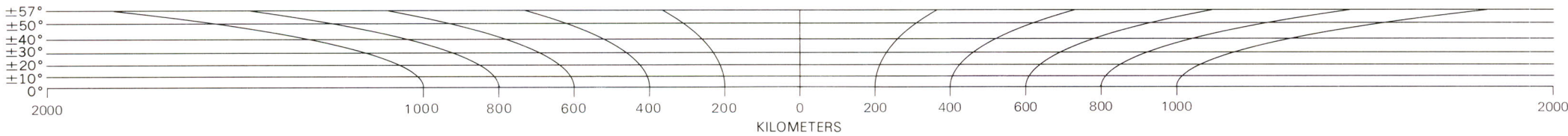
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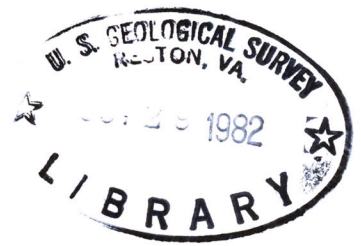
Inge, J. L., and Bridges, P. M., 1976, Applied photointerpretation for airbrush cartography: Photogrammetric Engineering and Remote Sensing, v. 42, no. 6, p. 749-760.

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de Vaucouleurs, G. D., Davies, M. E., and Sturms, F. M., Jr., 1973, The Mariner 9 aerographic coordinate system: Journal of Geophysical Research, v. 78, no. 20, p. 4395-4404.

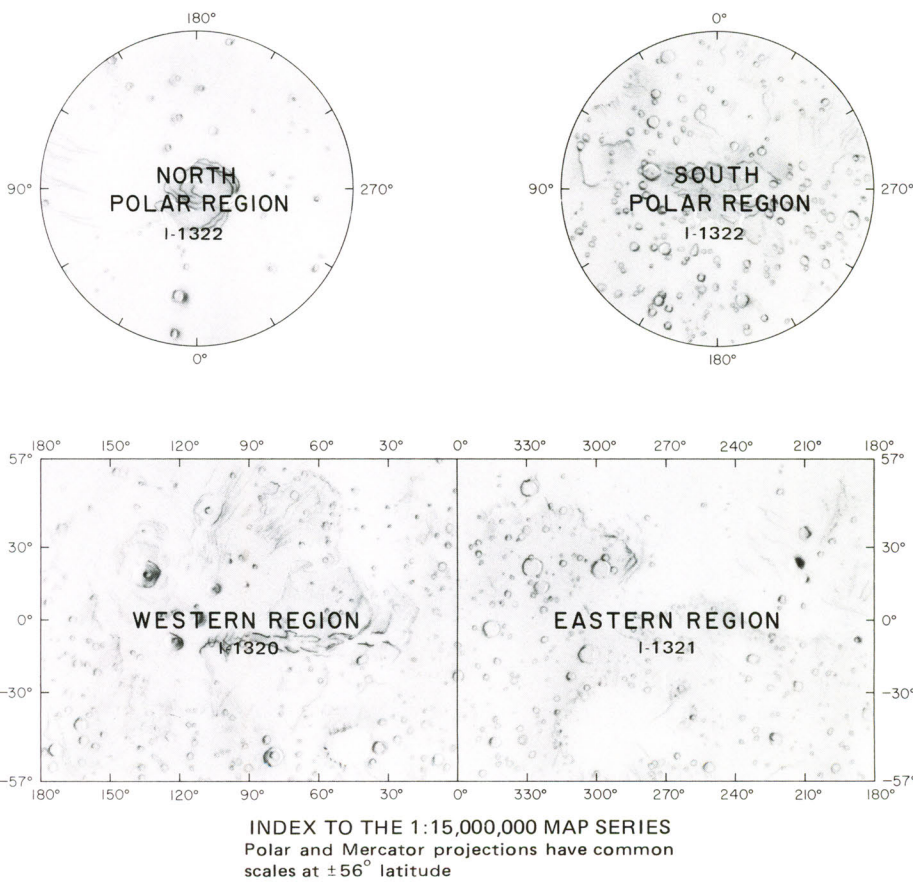


SCALE 1:15,000,000 (1 mm=15 km) AT 0° LATITUDE
1:8,418,000 (1 mm=8.418 km) AT 56° LATITUDE
MERCATOR PROJECTION



SHADE RELIEF MAP OF THE EASTERN REGION OF MARS

M 15M 0/270 R
1982



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