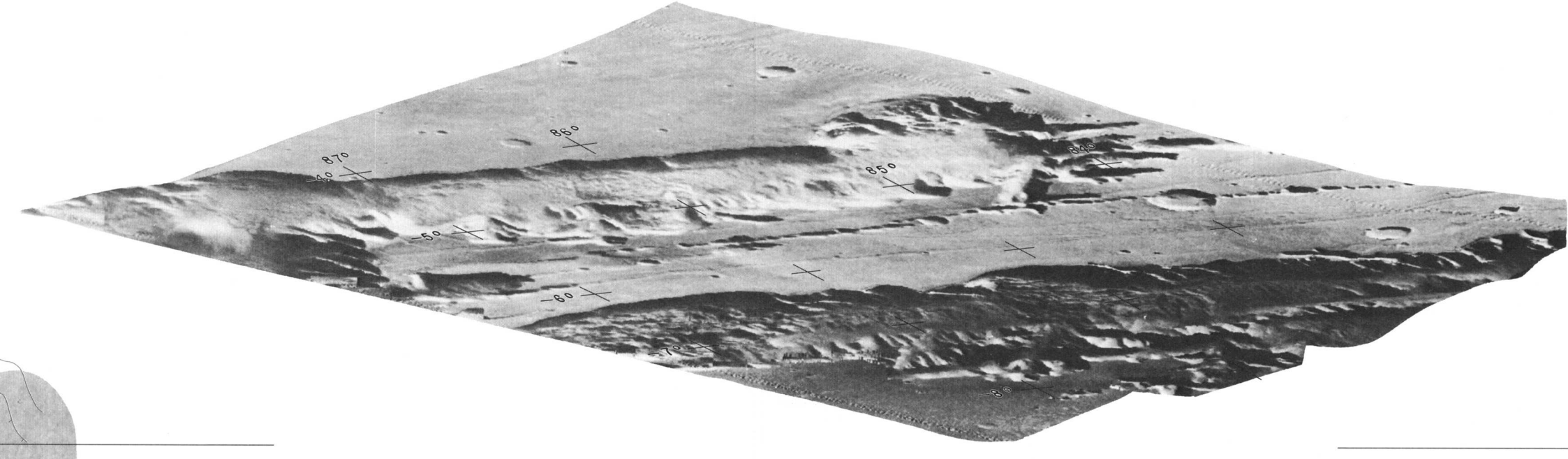
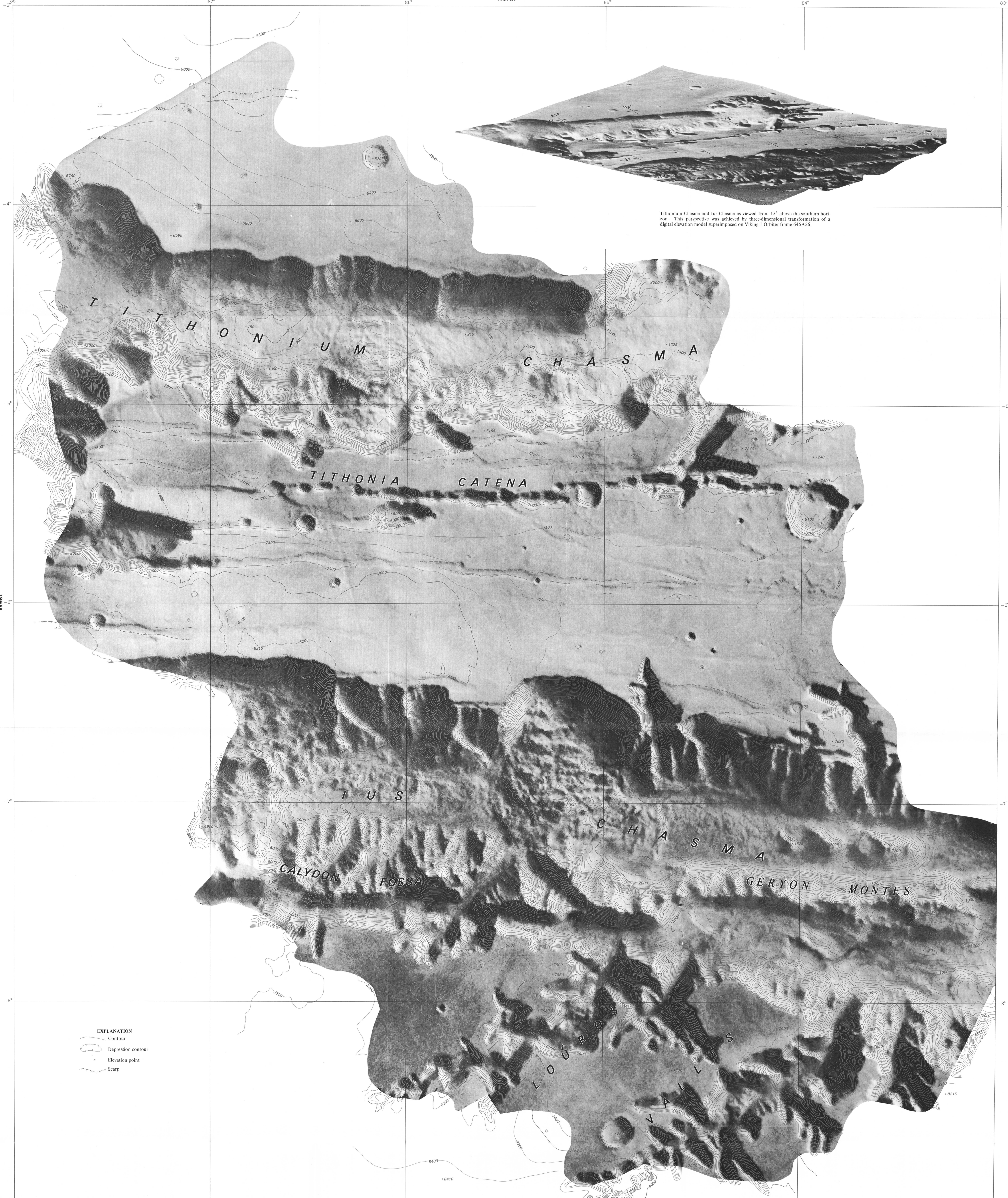


North



Tithonium Chasma and Ius Chasma as viewed from 15° above the southern horizon. This perspective was achieved by three-dimensional transformation of a digital elevation model superimposed on Viking 1 Orbiter frame 645A56.

**EXPLANATION**  
Contour  
Depression contour  
Elevation point  
Scarp

**NOTES ON BASE**

This sheet is one in a series of topographic orthophoto mosaics covering areas of special interest on Mars. The source for the map data was Viking Orbiter images.

**ADOPTED FIGURE**

The figure of Mars used for the computation of the map projection is an oblate spheroid with an equatorial radius of 3393.4 km and a polar radius of 3375.5 km.

**PROJECTION**

The orthographic projection is used for this sheet with a scale of 1:500,000 at the center of the map. Longitudes increase to the west in accordance with usage of the International Astronomical Union (IAU, 1971). The first meridian passes through the crater Airy-0 (lat 5.142° S) within the crater Airy. Latitudes are aerographic (de Vaucouleurs and others, 1973).

**IMAGE PROCESSING**

This map base is a photomosaic of Viking 1 Orbiter frames digitally processed for contrast enhancement and for removal of camera distortions. Relief distortions in the photomosaic were corrected by merging the images with a digital terrain model derived from the contour map utilizing techniques described by Batson and others (1979).

**CONTOURS**

Because Mars has no seas and hence no sea level, the datum (the 0-km contour line) for altitudes is defined by a gravity field described by spherical harmonics of fourth order and fourth degree (Jordan and Lorell, 1973) combined with a 6.1-millibar atmospheric pressure surface derived from radio-occultation data (Kliore and others, 1973; Christensen, 1975; Wu, 1978). Contour lines were compiled with an analytical stereoplotter from Viking 1 Orbiter pictures.

**CONTROL**

Horizontal and vertical controls were established by analytical aerotriangulation using the U. S. Geological Survey GIANI block adjustment program. Primary control for this program was Viking Orbiter tracking data. A systematic error in adjustment placed the vertical datum four km higher than previously published maps (Wu, 1979).

**NOMENCLATURE**

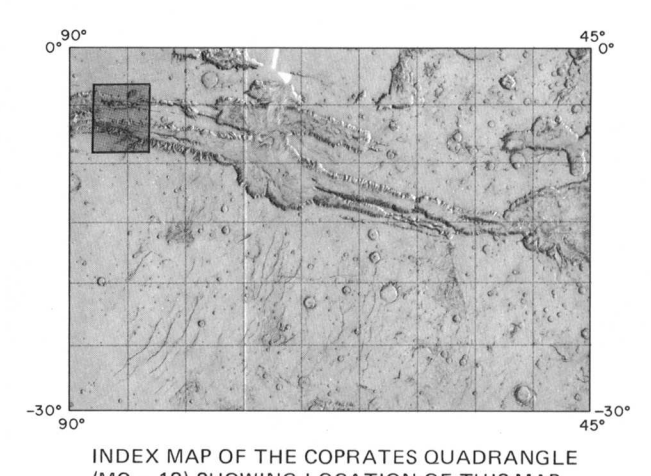
Names on this sheet are approved by the International Astronomical Union (IAU, 1974, 1977, 1980). Provisional names are: Louros Vallis, Calydon Fossa, Geryon Montes.

M 500K -6/85.5 OMT: Abbreviation for Mars 1:500,000 series; center of sheet, 6° S lat, 85.5° W long; orthophoto mosaic; OM; with contours and names, T.

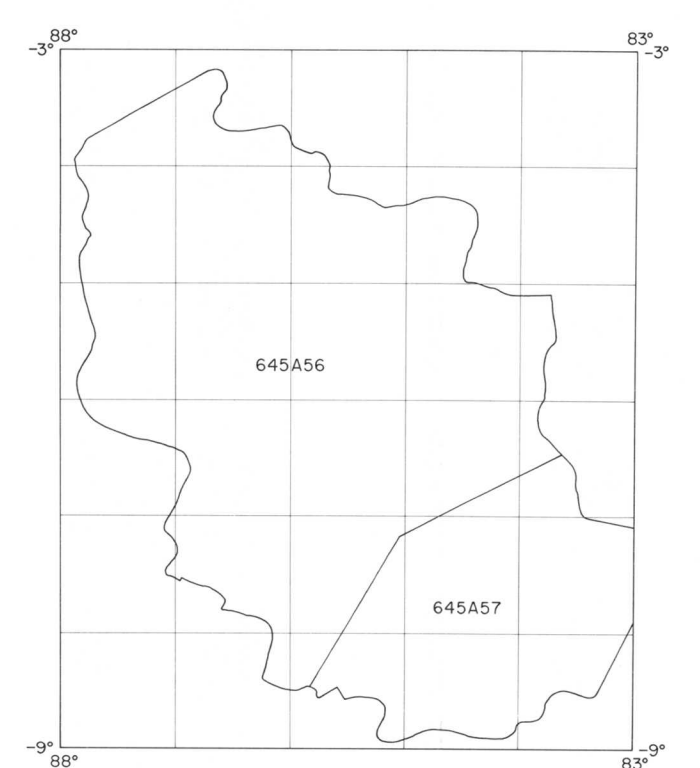
**REFERENCES**

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SCALE 1:500,000 (1mm = 500m)  
ORTHOGRAPHIC PROJECTION  
CONTOUR INTERVAL 200 METERS

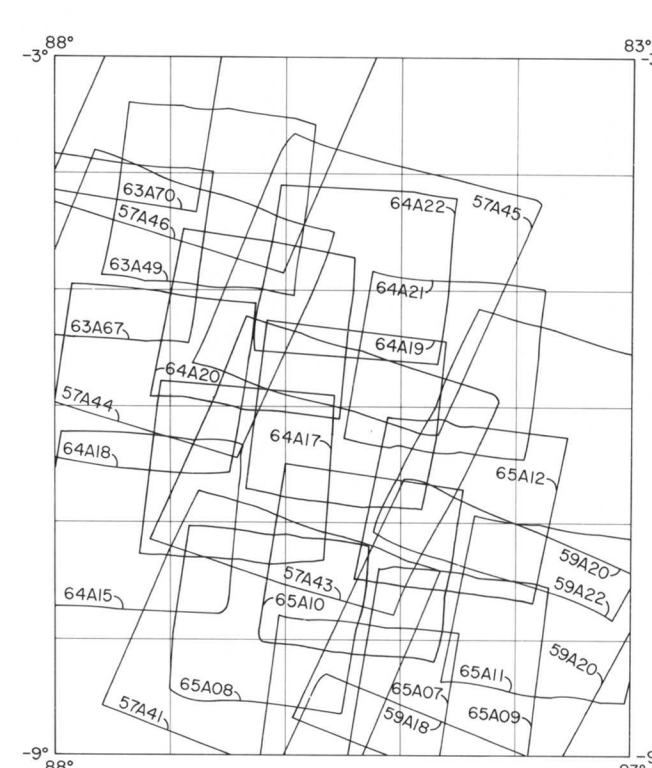


INDEX MAP OF THE COPRATES QUADRANGLE (MC - 18) SHOWING LOCATION OF THIS MAP



INDEX OF VIKING 1 ORBITER PICTURES USED IN THE ORTHOPHOTO MOSAIC

Interior—Geological Survey, Reston, Va.—1980—G80397  
Prepared on behalf of the Planetary Geology Program, Planetary Division, Office of Space Science, National Aeronautics and Space Administration under contract W-13,709



INDEX OF VIKING 1 ORBITER PICTURES USED TO COMPLETE THE CONTOUR LINES

**TOPOGRAPHIC ORTHOPHOTO MOSAIC OF THE TITHONIUM CHASMA REGION OF MARS**  
M 500K -6/85.5 OMT  
1980

For sale by Branch of Distribution, U. S. Geological Survey, 1200 South East Street, Arlington, VA 22202, and Branch of Distribution, U. S. Geological Survey, Box 25286, Federal Center, Denver, CO 80229.