U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

Prepared for the
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

North

West

East

South

SCALE 1:502 000 (1 mm = 502 m) AT 190° LONGITUDE
TRANSVERSE MERCATOR PROJECTION

10   0   10   20   30   40   50   60   70   80   90   100

KILOMETERS

Prepared on behalf of the Planetary Geology Program, Solar System Explora-
tion Division, Office of Space Science, National Aeronautics and Space
Administration, under contract W-15,814.

Edited by Doris Wise and Darrick D. Hirsch; cartography by Angel Macias, Jr.

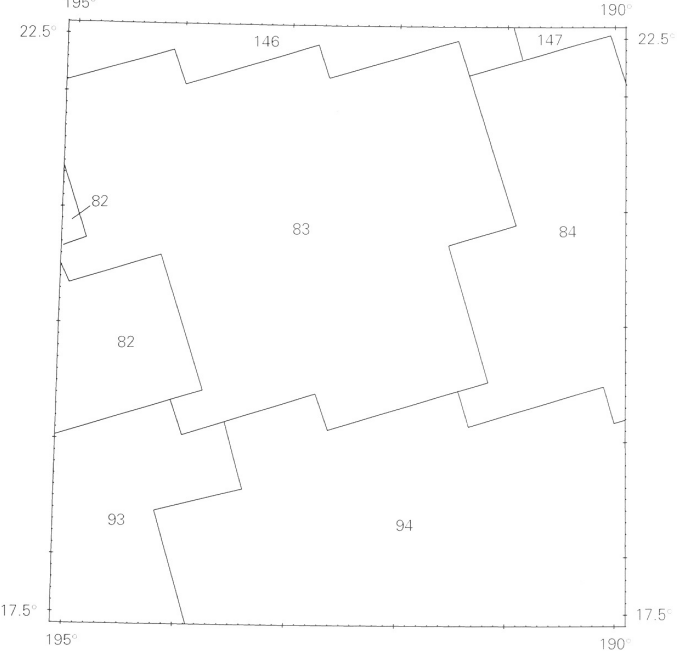Manuscript approved for publication March II, 1993

INDEX OF VIKING PICTURES

The mosaic was made with the Viking pictures indicated
above. Copies of various enhancements of these pic-
tures are available from National Space Science Data
Center, Code 601, Goddard Space Flight Center, Green-
belt, MD 20771.

INDEX MAP OF NOMINAL IMAGE RESOLUTION
(METERS PER PIXEL)

NOTE TO USERS

Users noting errors or omissions are urged to indicate them on
the map and to forward it to U.S. Geological Survey, Building 4,
Room 449, 2255 North Gemini Drive, Flagstaff, AZ 86001. A
replacement copy will be returned.

NOTES ON BASE

This photomosaic covers part of an area of special scientific interest on Mars. It is
published in a series designed to support topical studies, which is not expected to
result in systematic coverage of the planet. The mosaic was compiled by digital
methods described by Batson (1987) and Edwards (1987). Placement of image
data was taken from the Mars digital image map compiled by the U.S. Geological
Survey (1991).

The distribution of Viking Orbiter images suitable for mapping at a scale of
1:500,000 is uneven, as are the quality and distribution of map controls. The
mosaics are usually compiled in blocks of two or more adjacent quadrangles that
are selected on the basis of scientific importance, not necessarily in areas of opti-
mum coverage by high-resolution images or precise map controls. Image place-
ment is based on a planetwide topographic control net that has a published
standard error of 5 km (Wu and Schafer, 1984). A block of mosaics compiled in
an area where controls have optimum distribution and precision is not likely to
match adjacent blocks previously compiled in areas where controls are sparse or
imprecise. Where discrepancies exist between adjacent mosaics, the more recent
compilation is likely to be more accurate.

The projection is part of a Mars Transverse Mercator (MTM) system with 20°
zones. The scale factor at the central meridian of the zone containing this quad-
rangle is 0.9960. The projection scale is based on an oblate spheroid (flattening of
1/192) with an equatorial radius of 3393.4 km and a polar radius of 3375.7 km.

Digital processing and mosaicking were done by Ella M. Lee.

NOMENCLATURE

All names shown on the reduced base mosaic are approved by the International
Astronomical Union (IAU, 1986).

M 500k 20/192 CM: Abbreviation for Mars 1:500,000 series: center of sheet
lat 20° N., long 192°; controlled photomosaic (CM).

REFERENCES

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Edwards, Kathleen, 1987. Geometric processing of digital images of the planets:
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Wu, S.S.C., and Schafer, F.J., 1984. Mars control network: American Society of
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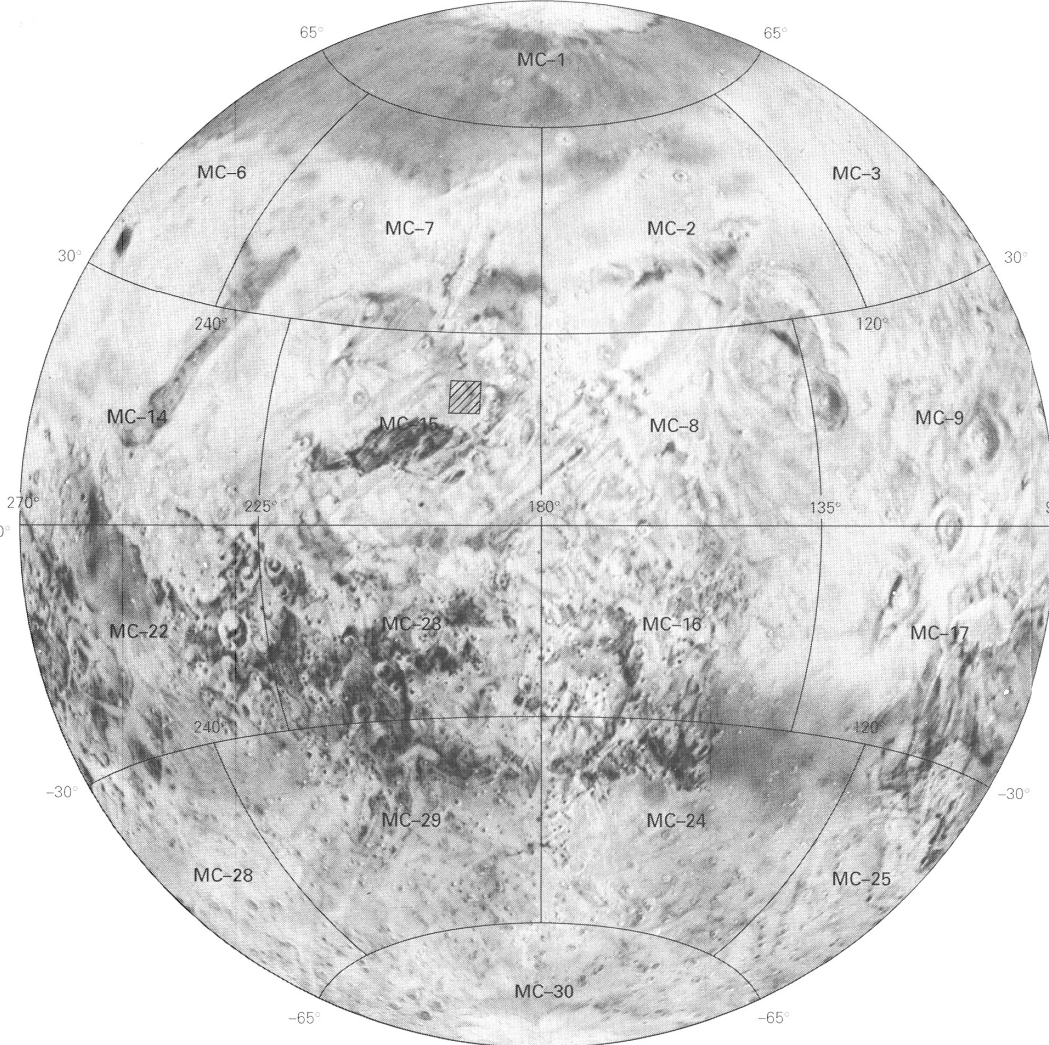
QUADRANGLE LOCATION

Photomosaic location is shown in the eastern
hemisphere of Mars. An outline of 1:5,000,000-scale
quadrangles is provided for reference.
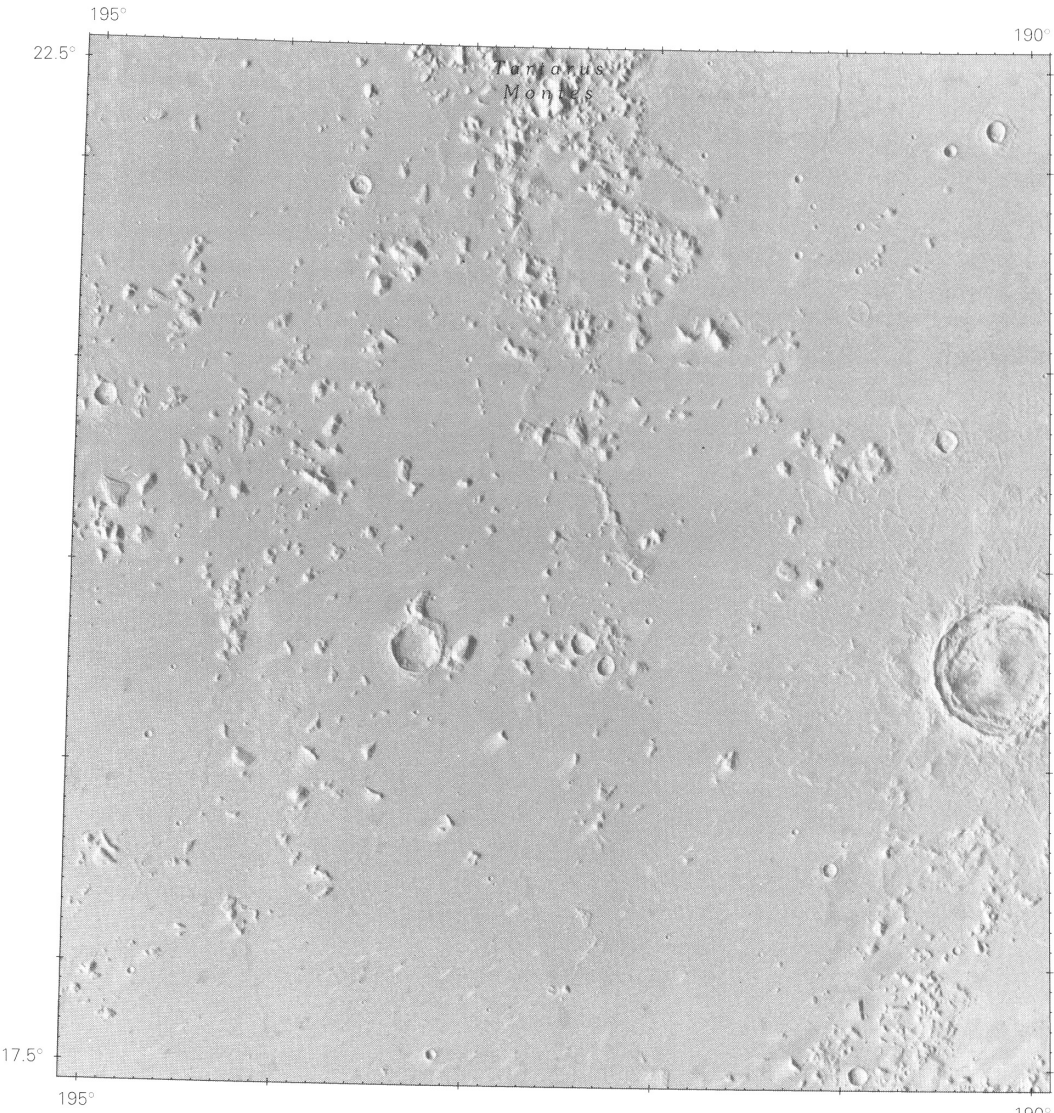
LOCATION OF SELECTED FEATURES

Contrast in the reduced base mosaic was purposely suppressed to
emphasize the names

CONTROLLED PHOTOMOSAIC OF THE MTM 20192 QUADRANGLE,
ORCUS PATERA REGION OF MARS