

NOTES ON BASE
This sheet is one in a series of special maps covering 94 percent of the surface of Venus at a nominal scale of 1:50,000,000 and was designed specifically to support planning for the Venus Radar Mapper (VRM) mission. Maps in this series are based on radar altimetric data from the Pioneer-Venus spacecraft and on data provided by Earth-based stations at the Arecibo Observatory, Puerto Rico, and the Goldstone Observatory, California. The Pioneer-Venus mission was described by Colin (1979) and Masursky and others (1977). The radar experiment was described by Pettengill (1977) and Pettengill and others (1979).

ADOPTED FIGURE
The figure of Venus used for the computation of the map projection is a sphere with a mean radius of 6051.4 km (Pettengill and others, 1980). Phillips and others (1979) described a preliminary gravity figure with a radius of 6051 km.

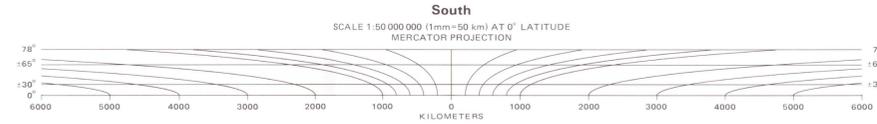
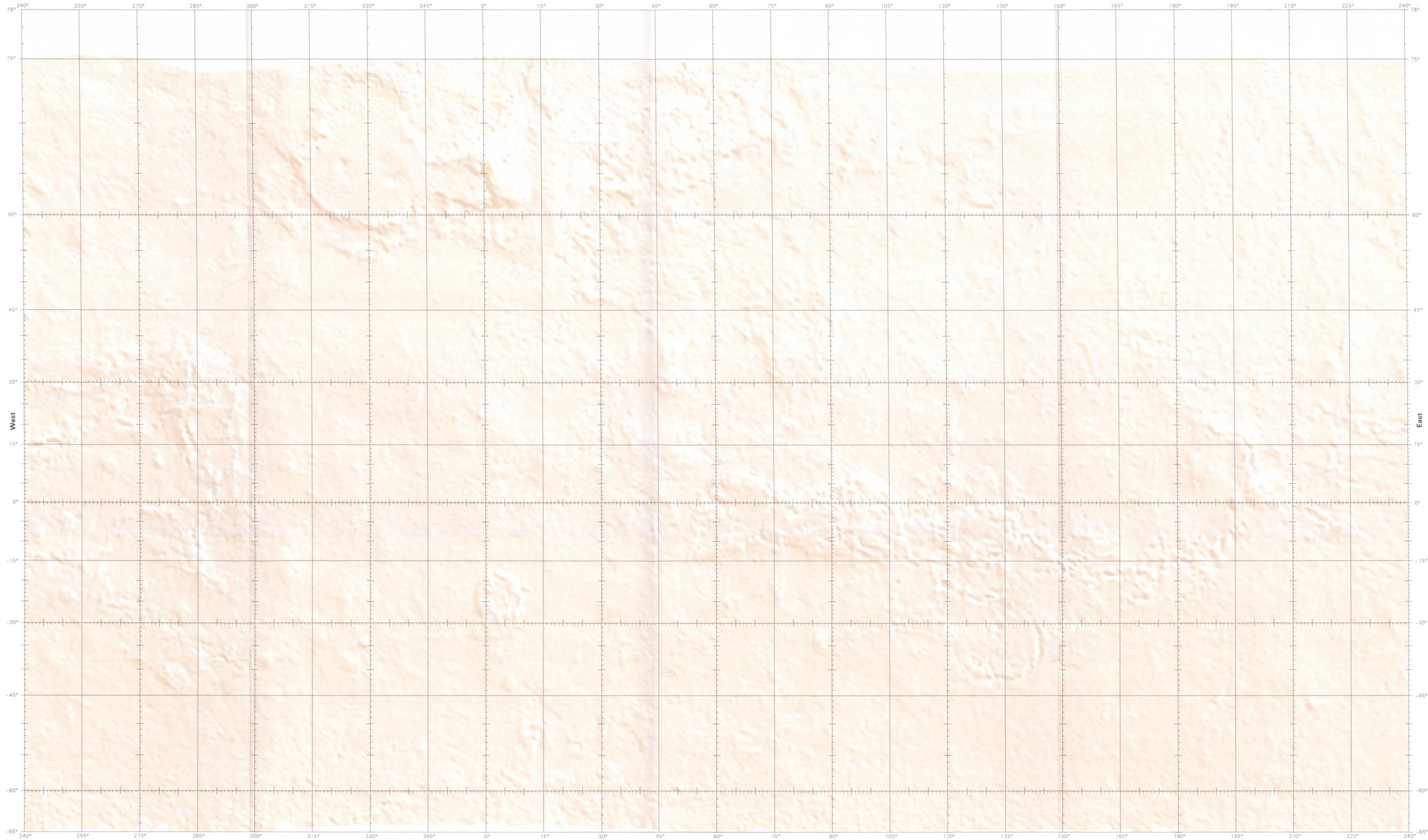
PROJECTION
The Mercator projection is used for this sheet with a scale of 1:50,000,000 at lat 0°. Due to the retrograde rotation of Venus, longitudes increase from west to east in accordance with usage of the International Astronomical Union (IAU, 1971).

CONTROL
Planimetric control is derived from the tracked position of the spacecraft. The first meridian passes through the center of a craterlike feature adjacent to the "Alpha" region of Venus according to current International Astronomical Union convention. No simple statement for accuracy can be given, but discrepancies as great as 100 km (1.5°) are likely to exist (Masursky and others, 1980).

MAPPING TECHNIQUES
Data for the surface relief were derived from computer processing of radar altimetric and reflectance information received from NASA's Ames Research Center. Processed data were geometrically corrected and fitted to a Mercator projection.

NOMENCLATURE
V 50M 6/60 R Abbreviation for Venus; 1:50,000,000 series; center of map, lat 6° N, long 60° shaded relief (R).

REFERENCES
Batson, R. M., Edwards, Kathleen, and Eliason, E. M., 1975. Computer-generated shaded relief images. U.S. Geological Survey Journal of Research, v. 3, no. 4, p. 401-408.
Colin, Lawrence, 1979. Encounter with Venus. Science, v. 205, no. 4401, p. 44-46.
International Astronomical Union, 1971. Commission 16: Physical study of planets and satellites, in 14th General Assembly, Sydney, 1970. Proceedings. International Astronomical Union Transactions, v. 149, p. 128-137.
Pettengill, G. H., Schaber, Gerald, and Schubert, Gerald, 1980. Pioneer-Venus radar results: Geology from images and altimetry. Journal of Geophysical Research, v. 85, no. A13, p. 8233-8260.
Masursky, Harold, Kaula, W. M., Pettengill, G. H., Phillips, R. J., Russell, C. T., Schubert, Gerald, and Shapiro, I. L., 1977. The surface and interior of Venus. Space Science Reviews, v. 20, no. 4, p. 431-449.
Pettengill, G. H., 1977. Orbiter radar mapper instrument, in Colin, Lawrence, and Hintzen, D. M., eds., Pioneer-Venus experiment descriptions. Space Science Reviews, v. 20, no. 4, p. 512-515.
Pettengill, G. H., Eliason, E. M., Ford, P. G., Lonn, G. B., Masursky, Harold, and McGill, G. E., 1980. Pioneer-Venus radar results: Altimetry and surface properties. Journal of Geophysical Research, v. 85, no. A13, p. 8261-8270.
Pettengill, G. H., Horwood, D. E., and Keller, C. H., 1979. Pioneer-Venus orbiter radar mapper: Design and operation. Institute of Electrical and Electronics Engineers Transactions on Geoscience and Remote Sensing, GE 18, p. 2-32.
Phillips, R. J., Sjogren, W. L., Abbott, E. A., Smith, J. L., Wimberly, R. M., and Wagner, C. A., 1979. The gravity field of Venus: A preliminary analysis. Science, v. 205, no. 4401, p. 93-96.



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Contrast in this map was purposely subdued in order to facilitate plotting of VRM data.

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 454, 2255 North Gemini Drive, Flagstaff, Arizona 86001. A replacement copy will be returned.

SHADED RELIEF MAP OF VENUS
VRM PLANNING CHART
V 50M 6/60 R
1984