

NORTH POLAR REGION

SCALE 1:50,000,000 (1:10,000,000 @ 1:12,500)



NOTES ON BASE

This sheet is one in a series of maps of Venus at nominal scales of 1:50,000,000 and 1:25,000,000 (Planetary Cartographic Working Group, 1984, 1985; Nelson and others, 1995). It is based on data from the Magellan Synthetic Aperture Radar (SAR) and radar altimetry instruments. The Magellan Mission was described by Saunders and Pätzold (1991). Magellan radar characteristics were described by Pätzold and others (1991).

ADOPTED FIGURE

The figure of Venus used for the construction of the map projection is a sphere with a mean radius of 6,051.8 km, consistent with the astrometric gravity figure reported by Phillips and others (1977) that was used for previous maps of Venus. Slightly larger values of the mean radius of Venus have subsequently been reported based on Pioneer Venus Pätzold and others, 1985 and Magellan altimetry; Ford and Pätzold, 1992.

PROJECTION

The Mercator projection is used between the 37° parallels, and the polar stereographic projection is used for the polar regions north and south of the 37° parallels. The scale is 1:50,000,000 at the 0° (meridian) and 1:30,000,000 at 180° (true equator). Half-angles of the true radius of Venus were used at 1.07608483 at 180°. Due to the intrinsic nature of Venus, longitude increases from west to east in accordance with usage of the International Astronomical Union (1977).

CENTERS

Planimetric control is derived from the reflected position of the spacecraft. The true meridian passes through the eastern peak of the outer Borealis, at 63.0° W, according to current International Astronomical Union convention. Absolute longitude is the historic "True" value, at the same longitude, equals, from the location of the outer Borealis (Dines and others, 1986). The Venusian geographic coordinate system was described by Dines and others (1992).

NOTING ISOFILES

The map image base is compiled from the synthetic aperture radar (SAR) image mosaic (row 1) overlaid upon the relief image used as a relief base in sheet 1. Magellan SAR details were originally produced by the Jet Propulsion Laboratory. Full-resolution (250 m) SAR image data were compressed and reprojected to a 1:50,000,000 scale. Compressed data were then used for the SAR image mosaic. Details (1000 m) SAR image data were used in the (2000) image mosaic. The SAR image mosaic was produced by Pätzold and others (1991). SAR image mosaic details were used in the (2000) image mosaic. The SAR image mosaic was produced by Pätzold and others (1991). SAR image mosaic details were used in the (2000) image mosaic.

The underlying relief image was compiled by interpolation and digital resampling of computer-generated relief images from the Magellan altimetry data. Topographic information obtained from Magellan radar altimetry measurements was used as a shaded relief image by comparing the slope segments between elevations, values to reference values, using methods described by Edwards (1987). All landforms were shown as if illuminated from the east. Data for shaded relief were derived from computer processing of radar altimetry information provided by the Planetary Cartographic Working Group (Pätzold and others, 1991). Interpretive image processing was then used to remove artifacts and to enhance the digital image details by use of contrast and white-contrast methods described by Sage and Bridges (1978). Synthetic aperture radar (SAR) images were used to enhance topographic features and control as well as to add additional detail to the shaded relief image. The shaded relief image was then used to create the shaded relief image. The shaded relief image was used to create the shaded relief image.

NOMENCLATURE

Names on this sheet are approved by the International Astronomical Union (IAU), 1986, 1987, 1988, 1992, and 1995 except for provisional names, which are shown by an asterisk.

V 50M 0/0 CMRN: Abbreviation for Venus 1:50,000,000 series, column of map, row 0, long 0° (meridian), 0/0 (true equator), 0/0 (true meridian).

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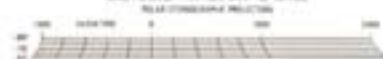
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SOUTH POLAR REGION

SCALE 1:50,000,000 (1:10,000,000 @ 1:12,500)



SCALE 1:50,000,000 (1:10,000,000 @ 1:12,500)



RADAR IMAGE AND SHADED RELIEF MAP OF VENUS

V 50M 0/0 CMRN

1997

Approved by the U.S. Planetary Cartographic Working Group and the U.S. Geological Survey. Prepared by the U.S. Geological Survey, Earth Resources Laboratory, Reston, VA 20192. Source: Venus 1:50,000,000 series, column 0, row 0, long 0° (meridian). Prepared by the U.S. Geological Survey, Earth Resources Laboratory, Reston, VA 20192.