



NOTES ON BASE

This map of part of the northern hemisphere of Venus has been prepared to support planning and operations of the Magellan Mission to Venus. The data used to compile the base were obtained as a result of a joint American and Soviet Venus mapping project (Baskovskiy and others, 1989), conducted under the auspices of the U.S.S.R. Working Group on Solar System Exploration. Image information was taken almost exclusively from Venus 15 and 16 synthetic aperture radar (SAR) image mosaics provided by the U.S.S.R. (Rizhig, 1987; Alexandrov and others, 1988). Ancillary data include Pioneer Venus radar altimetry (Petrov, 1977; Petrov and others, 1979), Venus 15 and 16 radar altimetry (Kozlovskiy and others, 1988), and Earth-based radar images provided by the Arecibo Observatory (Campbell and Burns, 1980; Stofor and others, 1987).

The figure of Venus used for construction of this map projection is a sphere with a mean radius of 6051.8 kilometers and others, 1985).

PROJECTION
The Polar Stereographic projection is used for this map, with a scale of 1:15,000,000 at lat +40° and 1:13,263,561 at lat +90°. Due to the retrograde rotation of Venus, longitude increases from west to east in accordance with usage of the International Astronomical Union (IAU, 1983).

CONTROL
Parametric control is taken from the radar image mosaic provided by the U.S.S.R. that is based on the true position of the spacecraft (Alexandrov and others, 1986; Tufillio and others, 1989). According to current IAU convention, the 0° meridian passes through the center of the Earth (and Venus 15 and 16 S.I. located within Alpha Regio, a feature of the southern hemisphere that is outside the area of this map). Meridian and other features are indicated by a statement for accuracy can be given, but discrepancies are greater than 10 km (0.1°) are likely to exist (Alexandrov and others, 1985; Tufillio and others, 1989).

NOMENCLATURE
To avoid obscuring features on this sheet, place names are omitted. They are shown on the topographic map sheet 1:15,000,000, Venus, center of sheet, lat 90° N, long 0° (G).

GEOMORPHIC/GEOLOGIC MAP
Radar images and semicontrolled and controlled radar image mosaics were provided by the Institute of Radiophysics and Electronics, and the Central Institute of Geography, Aerial Survey, and Cartography, Moscow (Alexandrov and others, 1985; U.S.S.R. Academy of Sciences, 1987; 1988; Burba, 1989b).

The map was compiled in 1989 from unpublished, Venus 15 and 16-based, 1:5,000,000-scale, preliminary geologic maps prepared by several authors from the Vostok Institute and the Geological Institute, U.S.S.R. Academy of Sciences, and from Moscow Lomonosov University. Several authors of the larger scale maps have been combined and revised to provide consistency of portrayal.

Detailed descriptions of the mapped units and their regional settings and geologic history are given in the papers listed below and are indicated by an asterisk. The other papers listed deal with principal questions of Venusian geology as revealed by Pioneer Venus and especially by Venus 15 and 16.

MAP UNITS
The 15 units were mapped on the basis of characteristics observed primarily on Venus 15 and 16 SAR images, supplemented by data from Pioneer Venus and Earth-based radar images obtained by the Arecibo Observatory. The units represent different terrain types classified by physiographic expression. They are not necessarily tectonic and are assigned to a true stratigraphic system. Faults not expressed as specific landforms such as narrow depressions (grabens) or scarps are not shown.

VOLCANIC CONSTRUCTS
Large, rough-surfaced, domical uplift
Large, smooth-surfaced, domical uplift
Shield volcanoes with smooth slopes
Smooth plains of lowlands
Hummocky plains of lowlands and foothills
Smooth plateaus

ROUGH-TERRAIN UNITS
High mountain belt
Rhombic tesserae
Chevron-shaped tesserae
Tesserae containing orthogonal or parallel ridges and grooves
Hummocky or chaotic tesserae
Quadrilateral—Circular system of ridges
Ridge belt
Geomorphic boundary
Boundary separating radar-bright and radar-dark areas—Dark indicates brighter side. Interpreted as fault-bound boundary
Ridge
Elongated prominence with gentle slopes
Narrow depression
Scarp—Foothills point down slope
Arachnoid—Circular complex with gently sloping concentric rings and radial lineaments
Volcano
Caldera
Impact crater (c) and impact (x)

Venus's landing site (lat 31.7° N, long 290.8°)
Pioneer Venus 2 north probe landing site (lat 59.3° N, long 4.8°)

SELECTED BIBLIOGRAPHY
References by Soviet authors supplied by U.S.S.R. Academy of Sciences. Location of sheets B-1 through B-27 shown on index map, lower left corner of this sheet.

Alex, E.I., Tufillio, Yu.S., Baskovskiy, E.G., Vlasov, Z.P., Kadishchansky, L.M., Reshetova, S.E., and Sviridovskiy, V.A., 1986, Navigational means (control) and coordinate control of radar survey images from Venus 15 and 16 spacecraft [in Russian]. *Geodesiya i Kartografiya*, 1: p. 48-51.

Alexandrov, Yu.N., Baskovskiy, A.I., Kontonikov, V.A., Petrov, G.M., Rizhig, O.N., and Sidorovskiy, A.I., 1988, A planet retrograde-rotation of Venus radar mapping from the Venus 15 and 16 spacecraft [in Russian]. *Geodesiya i Kartografiya*, 1: p. 48-51.

Alexandrov, Yu.N., Zakharenko, A.I., Kuznetsov, A.I., Kadishchansky, S.A., and Kozlovskiy, L.S., 1988, The geology and geomorphology of the Venus surface as revealed by the radar images obtained by Venus 15 and 16. *Lunar and Planetary Science Conference*, 49th, Houston, March 11-15, 1988, Proceedings, in: *Journal of Geophysical Research*, v. 93, Pt. 1, D219-D228.

Baskovskiy, V.I., Baskovskiy, A.I., Kuznetsov, R.O., Markov, M.S., Kryuchkov, V.P., Nikolaeva, O.V., Pronin, A.A., Sukhanov, A.A., Burba, G.A., and others, 1989, Venus northern hemisphere. The map types of structures [in Russian]. *Astronomicheskii Vestnik*, v. 20, no. 1, p. 1-15. English translation in *Solar System Research*, v. 22, no. 1, p. 1-15.

Baskovskiy, A.I., 1986, Structure of the central and eastern parts of Ishtar Terra and some problems of Venus tectonics [in Russian]. *Geotekhnika*, no. 6, p. 65-83. English translation in *Geotectonics*, v. 20, no. 6, p. 28-38.

Baskovskiy, A.I., 1988, Northern Hemisphere: Photogeologic analysis of Venus 15/16 images and maps, in: Abstracts of papers submitted to the Nineteenth Lunar and Planetary Science Conference, Houston, March 11-15, 1988, *Lunar and Planetary Institute*, p. 41-42.

Baskovskiy, A.I., Burba, G.A., and Rizhig, O.N., 1989, Maps of part of the Venus northern hemisphere: A joint U.S.S.R.-U.S. mapping project, in: Abstracts of papers submitted to the Twentieth Lunar and Planetary Science Conference, Houston, March 13-17, 1989, *Lunar and Planetary Institute*, p. 46-47.

Baskovskiy, A.I., Ivanov, B.A., Burba, G.A., Chernaya, I.M., Kryuchkov, V.P., Nikolaeva, O.V., Campbell, D.B., and Rizhig, O.N., 1987, Impact craters of Venus: A continuation of the analysis of data from the Venus 15 and 16 spacecraft [in Russian]. *Geodesiya i Kartografiya*, v. 92, no. B12, p. 1269-1291.

Burba, G.A., 1988, The Venus topographic features nomenclature [in Russian]. *Geodesiya i Kartografiya*, v. 92, no. B12, p. 1269-1291.

Burba, G.A., 1989a, Crater density in the northern part of Venus: Areal and topographic patterns, in: Abstracts of papers submitted to the Twentieth Lunar and Planetary Science Conference, Houston, March 13-17, 1989, *Lunar and Planetary Institute*, p. 123-124.

Burba, G.A., 1989b, Venus 15 and 16 cartographic products: A review, in: Abstracts of papers submitted to the Twentieth Lunar and Planetary Science Conference, Houston, March 13-17, 1989, *Lunar and Planetary Institute*, p. 125-126.

Burba, G.A., Bobina, N.N., and Shashkina, V.P., 1989, Geologic mapping of the northern Venus: A progress report, in: Abstracts of papers submitted to the Twentieth Lunar and Planetary Science Conference, Houston, March 13-17, 1989, *Lunar and Planetary Institute*, p. 127-128.

Campbell, D.B., and Burns, B.A., 1980, Earth-based radar images of Venus, *Journal of Geophysical Research*, v. 85, no. A13, p. 8271-8281.

International Astronomical Union, 1983, Commission 16, Physical study of the planets and satellites, in: 1981 General Assembly, Paris, 1981, Proceedings, *International Astronomical Union Transactions*, v. 183, Pt. 1, p. 13-15.

Kozlovskiy, L.S., and Baskovskiy, A.I., 1987, Comparison of crater retention ages on the Earth and Venus [in Russian]. *Astronomicheskii Vestnik*, v. 21, no. 2, p. 84-89.

Kozlovskiy, L.S., 1986, The results of morphometric study of tesserae terrain of Venus from Venus 15/16 data, in: Abstracts of papers submitted to the Nineteenth Lunar and Planetary Science Conference, Houston, March 11-15, 1988, *Lunar and Planetary Institute*, p. 337-338.

Kontonikov, V.A., Alex, E.I., Alexandrov, Yu.N., Aronov, N.N., Baskovskiy, A.I., Bogomolov, A.F., Vyshekov, A.S., Didenko, V.N., Zakharenko, L.M., Kuznetsov, R.S., Kozlovskiy, A.P., Kozlov, G.A., Kozlov, A.A., Kozlovskiy, L.S., Kozlovskiy, E.P., Petrov, G.M., Rizhig, O.N., Sidorovskiy, A.S., Sidorovskiy, A.T., Sidorov, V.P., Sidorov, A.V., Sidorov, G.A., Sidorov, P.P., Sidorov, K.G., Tufillio, Yu.S., Tufillio, Yu.S., Tufillio, B.Yu., Shashkina, V.P., and Shubin, V.A., 1984, Investigation of Maxwell Montes region of the planet Venus by Venus 15 and 16 spacecraft. *Soviet Astronomy Letters*, v. 10, no. 6, p. 369-372.

Kontonikov, V.A., Bogomolov, A.F., and Rizhig, O.N., 1985, Radar study of Venus surface by Venus 15 and 16 spacecraft. *Advances in Space Research*, v. 5, no. 8, p. 5-16.

Kryuchkov, V.P., 1987, Analysis of impact crater distribution on the surface of Venus (Venus 15 and 16 SAR images) [in Russian]. *Geodesiya i Kartografiya*, v. 92, no. 1, p. 7-8.

Kryuchkov, V.P., and Baskovskiy, A.I., 1989, Radar bright-line features as possible traces of the lateral volcanic activity on Venus, in: Abstracts of papers submitted to the Twentieth Lunar and Planetary Science Conference, Houston, March 13-17, 1989, *Lunar and Planetary Institute*, p. 548-549.

Kuznetsov, R.S., Burba, G.A., Shashkina, V.P., Bogomolov, A.F., Zakharenko, L.M., Sidorovskiy, A.I., Alexandrov, Yu.N., Baskovskiy, L.M., and Kozlovskiy, M.A., 1986, Topography and geology of the northern polar region of the planet Venus [in Russian]. *Astronomicheskii Vestnik*, v. 20, no. 3, p. 177-186. English translation in *Solar System Research*, v. 20, no. 3, p. 139-152.

Markov, M.S., Shashkina, V.P., Burba, G.A., Tufillio, Yu.S., Ostrovskiy, M.V., Kontonikov, V.A., Rizhig, O.N., Petrov, G.M., Alexandrov, Yu.N., Sidorovskiy, A.I., Sidorov, V.P., and Sidorovskiy, N.V., 1987, Geological morphological description of the Terra Regio (Photomosaic of Venus 15/16) [in Russian]. *Astronomicheskii Vestnik*, v. 21, no. 1, p. 8-16. English translation in *Solar System Research*, v. 21, no. 1, p. 8-16.

Markov, M.S., Tufillio, Yu.S., Kadishchansky, S.A., Kontonikov, V.A., Rizhig, O.N., Petrov, G.M., Sidorovskiy, A.I., Alexandrov, Yu.N., Sidorovskiy, A.I., and Sidorovskiy, N.V., 1987, Geological morphological description of the Terra Regio (Photomosaic of Venus 15/16) [in Russian]. *Astronomicheskii Vestnik*, v. 21, no. 1, p. 8-16. English translation in *Solar System Research*, v. 21, no. 1, p. 8-16.

Masursky, Harold, Elston, E.M., Petrov, G.I., Schaber, Gerald, and others, 1987, Pioneer Venus orbiter radar results: Geology and radar results, in: Abstracts of papers submitted to the Twentieth Lunar and Planetary Science Conference, Houston, March 13-17, 1989, *Lunar and Planetary Institute*, p. 85, no. A13, p. 8271-8281.

McGill, G.E., Warner, J.L., Main, J.C., Arvidson, E.E., Elston, E.M., Neukum, G., and others, 1987, Topographic surface properties and tectonic evolution of Venus [in Russian]. *Geodesiya i Kartografiya*, v. 92, no. 1, p. 1-15.

Nikolaeva, O.V., Pronin, A.A., Baskovskiy, A.I., and Kuznetsov, R.S., 1987, The structure of the Venusian surface as revealed by the Venus 15 and 16 spacecraft [in Russian]. *Geodesiya i Kartografiya*, v. 92, no. 1, p. 1-15. English translation in *Solar System Research*, v. 22, no. 1, p. 1-15.

Nikolaeva, O.V., Pronin, A.A., Baskovskiy, A.I., and Kuznetsov, R.S., 1987, The structure of the Venusian surface as revealed by the Venus 15 and 16 spacecraft [in Russian]. *Geodesiya i Kartografiya*, v. 92, no. 1, p. 1-15. English translation in *Solar System Research*, v. 22, no. 1, p. 1-15.

Petrov, G.I., 1977, Other radar mapping experiment, in: Cohn, Lawrence, and others, 1977, *Pioneer Venus experiment descriptions: Space Science Review*, v. 20, no. 4, p. 525-528.

Petrov, G.I., Horwood, D.F., and Keller, C.H., 1979, Pioneer Venus orbiter radar mapping: Design and operation, in: *Journal of Electrical and Electronics Engineers Transactions on Geoscience and Remote Sensing*, GE-17, p. 2-12.

 Pronin, A.A., 1986, Structure of Lakshmi Planum as indicated by horizontal |

Burba, G.A., Bobina, N.N., and Shashkina, V.P., 1989, Geologic mapping of the northern Venus: A progress report, in: Abstracts of papers submitted to the Twentieth Lunar and Planetary Science Conference, Houston, March 13-17, 1989, *Lunar and Planetary Institute*, p. 127-128.

Campbell, D.B., and Burns, B.A., 1980, Earth-based radar images of Venus, *Journal of Geophysical Research*, v. 85, no. A13, p. 8271-8281.

International Astronomical Union, 1983, Commission 16, Physical study of the planets and satellites, in: 1981 General Assembly, Paris, 1981, Proceedings, *International Astronomical Union Transactions*, v. 183, Pt. 1, p. 13-15.

Kozlovskiy, L.S., and Baskovskiy, A.I., 1987, Comparison of crater retention ages on the Earth and Venus [in Russian]. *Astronomicheskii Vestnik*, v. 21, no. 2, p. 84-89.

Kozlovskiy, L.S., 1986, The results of morphometric study of tesserae terrain of Venus from Venus 15/16 data, in: Abstracts of papers submitted to the Nineteenth Lunar and Planetary Science Conference, Houston, March 11-15, 1988, *Lunar and Planetary Institute*, p. 337-338.

Kontonikov, V.A., Alex, E.I., Alexandrov, Yu.N., Aronov, N.N., Baskovskiy, A.I., Bogomolov, A.F., Vyshekov, A.S., Didenko, V.N., Zakharenko, L.M., Kuznetsov, R.S., Kozlovskiy, A.P., Kozlov, G.A., Kozlov, A.A., Kozlovskiy, L.S., Kozlovskiy, E.P., Petrov, G.M., Rizhig, O.N., Sidorovskiy, A.S., Sidorovskiy, A.T., Sidorov, V.P., Sidorov, A.V., Sidorov, G.A., Sidorov, P.P., Sidorov, K.G., Tufillio, Yu.S., Tufillio, Yu.S., Tufillio, B.Yu., Shashkina, V.P., and Shubin, V.A., 1984, Investigation of Maxwell Montes region of the planet Venus by Venus 15 and 16 spacecraft. *Soviet Astronomy Letters*, v. 10, no. 6, p. 369-372.

Kontonikov, V.A., Bogomolov, A.F., and Rizhig, O.N., 1985, Radar study of Venus surface by Venus 15 and 16 spacecraft. *Advances in Space Research*, v. 5, no. 8, p. 5-16.

Kryuchkov, V.P., 1987, Analysis of impact crater distribution on the surface of Venus (Venus 15 and 16 SAR images) [in Russian]. *Geodesiya i Kartografiya*, v. 92, no. 1, p. 7-8.

Kryuchkov, V.P., and Baskovskiy, A.I., 1989, Radar bright-line features as possible traces of the lateral volcanic activity on Venus, in: Abstracts of papers submitted to the Twentieth Lunar and Planetary Science Conference, Houston, March 13-17, 1989, *Lunar and Planetary Institute*, p. 548-549.

Kuznetsov, R.S., Burba, G.A., Shashkina, V.P., Bogomolov, A.F., Zakharenko, L.M., Sidorovskiy, A.I., Alexandrov, Yu.N., Baskovskiy, L.M., and Kozlovskiy, M.A., 1986, Topography and geology of the northern polar region of the planet Venus [in Russian]. *Astronomicheskii Vestnik*, v. 20, no. 3, p. 177-186. English translation in *Solar System Research*, v. 20, no. 3, p. 139-152.

Markov, M.S., Shashkina, V.P., Burba, G.A., Tufillio, Yu.S., Ostrovskiy, M.V., Kontonikov, V.A., Rizhig, O.N., Petrov, G.M., Alexandrov, Yu.N., Sidorovskiy, A.I., Sidorov, V.P., and Sidorovskiy, N.V., 1987, Geological morphological description of the Terra Regio (Photomosaic of Venus 15/16) [in Russian]. *Astronomicheskii Vestnik*, v. 21, no. 1, p. 8-16. English translation in *Solar System Research*, v. 21, no. 1, p. 8-16.

Markov, M.S., Tufillio, Yu.S., Kadishchansky, S.A., Kontonikov, V.A., Rizhig, O.N., Petrov, G.M., Sidorovskiy, A.I., Alexandrov, Yu.N., Sidorovskiy, A.I., and Sidorovskiy, N.V., 1987, Geological morphological description of the Terra Regio (Photomosaic of Venus 15/16) [in Russian]. *Astronomicheskii Vestnik*, v. 21, no. 1, p. 8-16. English translation in *Solar System Research*, v. 21, no. 1, p. 8-16.

Masursky, Harold, Elston, E.M., Petrov, G.I., Schaber, Gerald, and others, 1987, Pioneer Venus orbiter radar results: Geology and radar results, in: Abstracts of papers submitted to the Twentieth Lunar and Planetary Science Conference, Houston, March 13-17, 1989, *Lunar and Planetary Institute*, p. 85, no. A13, p. 8271-8281.

McGill, G.E., Warner, J.L., Main, J.C., Arvidson, E.E., Elston, E.M., Neukum, G., and others, 1987, Topographic surface properties and tectonic evolution of Venus [in Russian]. *Geodesiya i Kartografiya*, v. 92, no. 1, p. 1-15.

Nikolaeva, O.V., Pronin, A.A., Baskovskiy, A.I., and Kuznetsov, R.S., 1987, The structure of the Venusian surface as revealed by the Venus 15 and 16 spacecraft [in Russian]. *Geodesiya i Kartografiya*, v. 92, no. 1, p. 1-15. English translation in *Solar System Research*, v. 22, no. 1, p. 1-15.

Nikolaeva, O.V., Pronin, A.A., Baskovskiy, A.I., and Kuznetsov, R.S., 1987, The structure of the Venusian surface as revealed by the Venus 15 and 16 spacecraft [in Russian]. *Geodesiya i Kartografiya*, v. 92, no. 1, p. 1-15. English translation in *Solar System Research*, v. 22, no. 1, p. 1-15.

Petrov, G.I., 1977, Other radar mapping experiment, in: Cohn, Lawrence, and others, 1977, *Pioneer Venus experiment descriptions: Space Science Review*, v. 20, no. 4, p. 525-528.

Petrov, G.I., Horwood, D.F., and Keller, C.H., 1979, Pioneer Venus orbiter radar mapping: Design and operation, in: *Journal of Electrical and Electronics Engineers Transactions on Geoscience and Remote Sensing*, GE-17, p. 2-12.

Pronin, A.A., 1986, Structure of Lakshmi Planum as indicated by horizontal

Pronin, A.A., Burba, G.A., Bobina, N.N., Tufillio, Yu.S., Sidorovskiy, A.I., Kadishchansky, S.A., Ostrovskiy, M.V., Kontonikov, V.A., Rizhig, O.N., Petrov, G.M., Sidorovskiy, A.I., Alexandrov, Yu.N., Sidorovskiy, A.I., and Sidorovskiy, N.V., 1987, Geological morphological description of the Terra Regio (Photomosaic of Venus 15/16) [in Russian]. *Astronomicheskii Vestnik*, v. 21, no. 1, p. 8-16. English translation in *Solar System Research*, v. 21, no. 1, p. 8-16.

Pronin, A.A., Burba, G.A., Bobina, N.N., Tufillio, Yu.S., Sidorovskiy, A.I., Kadishchansky, S.A., Ostrovskiy, M.V., Kontonikov, V.A., Rizhig, O.N., Petrov, G.M., Sidorovskiy, A.I., Alexandrov, Yu.N., Sidorovskiy, A.I., and Sidorovskiy, N.V., 1987, Geological morphological description of the Terra Regio (Photomosaic of Venus 15/16) [in Russian]. *Astronomicheskii Vestnik*, v. 21, no. 1, p. 8-16. English translation in *Solar System Research*, v. 21, no. 1, p. 8-16.

Pronin, A.A., Burba, G.A., Bobina, N.N., Tufillio, Yu.S., Sidorovskiy, A.I., Kadishchansky, S.A., Ostrovskiy, M.V., Kontonikov, V.A., Rizhig, O.N., Petrov, G.M., Sidorovskiy, A.I., Alexandrov, Yu.N., Sidorovskiy, A.I., and Sidorovskiy, N.V., 1987, Geological morphological description of the Terra Regio (Photomosaic of Venus 15/16) [in Russian]. *Astronomicheskii Vestnik*, v. 21, no. 1, p. 8-16. English translation in *Solar System Research*, v. 21, no. 1, p. 8-16.

Pronin, A.A., Burba, G.A., Bobina, N.N., Tufillio, Yu.S., Sidorovskiy, A.I., Kadishchansky, S.A., Ostrovskiy, M.V., Kontonikov, V.A., Rizhig, O.N., Petrov, G.M., Sidorovskiy, A.I., Alexandrov, Yu.N., Sidorovskiy, A.I., and Sidorovskiy, N.V., 1987, Geological morphological description of the Terra Regio (Photomosaic of Venus 15/16) [in Russian]. *Astronomicheskii Vestnik*, v. 21, no. 1, p. 8-16. English translation in *Solar System Research*, v. 21, no. 1, p. 8-16.

Pronin, A.A., Burba, G.A., Bobina, N.N., Tufillio, Yu.S., Sidorovskiy, A.I., Kadishchansky, S.A., Ostrovskiy, M.V., Kontonikov, V.A., Rizhig, O.N., Petrov, G.M., Sidorovskiy, A.I., Alexandrov, Yu.N., Sidorovskiy, A.I., and Sidorovskiy, N.V., 1987, Geological morphological description of the Terra Regio (Photomosaic of Venus 15/16) [in Russian]. *Astronomicheskii Vestnik*, v. 21, no. 1, p. 8-16. English translation in *Solar System Research*, v. 21, no. 1, p. 8-16.

Pronin, A.A., Burba, G.A., Bobina, N.N., Tufillio, Yu.S., Sidorovskiy, A.I., Kadishchansky, S.A., Ostrovskiy, M.V., Kontonikov, V.A., Rizhig, O.N., Petrov, G.M., Sidorovskiy, A.I., Alexandrov, Yu.N., Sidorovskiy, A.I., and Sidorovskiy, N.V., 1987, Geological morphological description of the Terra Regio (Photomosaic of Venus 15/16) [in Russian]. *Astronomicheskii Vestnik*, v. 21, no. 1, p. 8-16. English translation in *Solar System Research*, v. 21, no. 1, p. 8-16.

Pronin, A.A., Burba, G.A., Bobina, N.N., Tufillio, Yu.S., Sidorovskiy, A.I., Kadishchansky, S.A., Ostrovskiy, M.V., Kontonikov, V.A., Rizhig, O.N., Petrov, G.M., Sidorovskiy, A.I., Alexandrov, Yu.N., Sidorovskiy, A.I., and Sidorovskiy, N.V., 1987, Geological morphological description of the Terra Regio (Photomosaic of Venus 15/16) [in Russian]. *Astronomicheskii Vestnik*, v. 21, no. 1, p. 8-16. English translation in *Solar System Research*, v. 21, no. 1, p. 8-16.

Pronin, A.A., Burba, G.A., Bobina, N.N., Tufillio, Yu.S., Sidorovskiy, A.I., Kadishchansky, S.A., Ostrovskiy, M.V., Kontonikov, V.A., Rizhig, O.N., Petrov, G.M., Sidorovskiy, A.I., Alexandrov, Yu.N., Sidorovskiy, A.I., and Sidorovskiy, N.V., 1987, Geological morphological description of the Terra Regio (Photomosaic of Venus 15/16) [in Russian]. *Astronomicheskii Vestnik*, v. 21, no. 1, p. 8-16. English translation in *Solar System Research*, v. 21, no. 1, p. 8-16.

Pronin, A.A., Burba, G.A., Bobina, N.N., Tufillio, Yu.S., Sidorovskiy, A.I., Kadishchansky, S.A., Ostrovskiy, M.V., Kontonikov, V.A., Rizhig, O.N., Petrov, G.M., Sidorovskiy, A.I., Alexandrov, Yu.N., Sidorovskiy, A.I., and Sidorovskiy, N.V., 1987, Geological morphological description of the Terra Regio (Photomosaic of Venus 15/16) [in Russian]. *Astronomicheskii Vestnik*, v. 21, no. 1, p. 8-16. English translation in *Solar System Research*, v. 21, no. 1, p. 8-16.

Pronin, A.A., Burba, G.A., Bobina, N.N., Tufillio, Yu.S., Sidorovskiy, A.I., Kadishchansky, S.A., Ostrovskiy, M.V., Kontonikov, V.A., Rizhig, O.N., Petrov, G.M., Sidorovskiy, A.I., Alexandrov, Yu.N., Sidorovskiy, A.I., and Sidorovskiy, N.V., 1987, Geological morphological description of the Terra Regio (Photomosaic of Venus 15/16) [in Russian]. *Astronomicheskii Vestnik*, v. 21, no. 1, p. 8-16. English translation in *Solar System Research*, v. 21, no. 1, p. 8-16.

Pronin, A.A., Burba, G.A., Bobina, N.N., Tufillio, Yu.S., Sidorovskiy, A.I., Kadishchansky, S.A., Ostrovskiy, M.V., Kontonikov, V.A., Rizhig, O.N., Petrov, G.M., Sidorovskiy, A.I., Alexandrov, Yu.N., Sidorovskiy, A.I., and Sidorovskiy, N.V., 1987, Geological morphological description of the Terra Regio (Photomosaic of Venus 15/16) [in Russian]. *Astronomicheskii Vestnik*, v. 21, no. 1, p. 8-16. English translation in *Solar System Research*, v. 21, no. 1, p. 8-16.

Pronin, A.A., Burba, G.A., Bobina, N.N., Tufillio, Yu.S., Sidorovskiy, A.I., Kadishchansky, S.A., Ostrovskiy, M.V., Kontonikov, V.A., Rizhig, O.N., Petrov, G.M., Sidorovskiy, A.I., Alexandrov, Yu.N., Sidorovskiy, A.I., and Sidorovskiy, N.V., 1987, Geological morphological description of the Terra Regio (Photomosaic of Venus 15/16) [in Russian]. *Astronomicheskii Vestnik*, v. 21, no. 1, p. 8-16. English translation in *Solar System Research*, v. 21, no. 1, p. 8-16.

Pronin, A.A., Burba, G.A., Bobina, N.N., Tufillio, Yu.S., Sidorovskiy, A.I., Kadishchansky, S.A., Ostrovskiy, M.V., Kontonikov, V.A., Rizhig, O.N., Petrov, G.M., Sidorovskiy, A.I., Alexandrov, Yu.N., Sidorovskiy, A.I., and Sidorovskiy, N.V., 1987, Geological morphological description of the Terra Regio (Photomosaic of Venus 15/16) [in Russian]. *Astronomicheskii Vestnik*, v. 21, no. 1, p. 8-16. English translation in *Solar System Research*, v. 21, no. 1, p. 8-16.

Pronin, A.A., Burba, G.A., Bobina, N.N., Tufillio, Yu.S., Sidorovskiy, A.I., Kadishchansky, S.A., Ostrovskiy, M.V., Kontonikov, V.A., Rizhig, O.N., Petrov, G.M., Sidorovskiy, A.I., Alexandrov, Yu.N., Sidorovskiy, A.I., and Sidorovskiy, N.V., 1987, Geological morphological description of the Terra Regio (Photomosaic of Venus 15/16) [in Russian]. *Astronomicheskii Vestnik*, v. 21, no. 1, p. 8-16. English translation in *Solar System Research*, v. 21, no. 1, p. 8-16.

Pronin, A.A., Burba, G.A., Bobina, N.N., Tufillio, Yu.S., Sidorovskiy, A.I., Kadishchansky, S.A., Ostrovskiy, M.V., Kontonikov, V.A., Rizhig, O.N., Petrov, G.M., Sidorovskiy, A.I., Alexandrov, Yu.N., Sidorovskiy, A.I., and Sidorovskiy, N.V