

Contents

List of Figures	ix
List of Tables	xv
Introduction	
A.T. BASILEVSKY, O.V. NIKOLAYEVA, V.P. VOLKOV	1
Part I. Geology/A.T. Basilevsky, Editor	
Introduction	11
1.1 Volcanism	
E.N. SLYUTA, O.V. NIKOLAYEVA	13
1.2 Hot-Spot Structures	
A.M. NIKISHIN, A.A. PRONIN, A.T. BASILEVSKY	31
1.3 The Lakshmi Phenomenon	
A.A. PRONIN	68
1.4 Tesserae	
A.L. SUKHANOV	82
1.5 Ridge Belts on Plains	
V.P. KRYUCHKOV	96
1.6 Impact Craters	
B.A. IVANOV	113
1.7 Evidence on the Crustal Dichotomy	
O.V. NIKOLAYEVA, M.A. IVANOV, V.K. BOROZDIN	129
1.8 Global Tectonic Style	
A.T. BASILEVSKY	140
1.9 Resurfacing	
A.T. BASILEVSKY, O.V. NIKOLAYEVA, R.O. KUZMIN	153

Part II. Geochemistry/V.K. Volkov, Editor

Introduction	163
2.1 Venusian Igneous Rocks V.L. BARSUKOV	165
2.2 Chemical Processes on the Planetary Surface M.YU. ZOLOTOV, V.P. VOLKOV	177
2.3 Volatiles in Atmosphere and Crust V.P. VOLKOV	200

Part III. Geophysics/V.N. Zharkov, Editor

3.1 Introduction V.N. ZHARKOV	211
3.2 Expansion of Topography into Spherical Harmonics V.N. ZHARKOV	214
3.3 Gravity Field, Loading Coefficients, Anomalous Density Waves, and the Case of Long Waves V.N. ZHARKOV	218
3.4 Rotation V.N. ZHARKOV	228
3.5 Statistical Properties of Topography and Gravity Field V.N. ZHARKOV	231
3.6 Model of the Interior Structure: Earth-like Models V.N. ZHARKOV	233
3.7 A Physical Model of Venus V.N. ZHARKOV	241
3.8 The Stress State of Venusian Crust and Variations of Its Thickness: Implications for Tectonics and Geodynamics V.N. ZHARKOV, K.I. MARCHENKOV	259
3.9 Convection: A Simplified Version V.N. ZHARKOV, V.S. SOLOMATOV	274
3.10 Models of the Thermal Evolution of Venus V.N. ZHARKOV, V.S. SOLOMATOV	280
Conclusion V.L. BARSUKOV, A.T. BASILEVSKY	321

Appendix A. Atlas of Venus Surface Images A.I. SIDORENKO, O.N. RZHIGA, YU.N. ALEXANDROV, A.I. ZAKHAROV, YU.S. TYUFLIN, A.A. PRONIN, G.A. BURBA	325
Appendix B. Names of Topographic Features on Venus G.A. BURBA	383
References	401