

Contents

Foreword

v

Acknowledgments

vii

I The Activity of the Quiet Sun

1. The History and Morphology of Solar Activity, 1964–1965 <i>H. W. Dodson and E. R. Hedeman</i>	3
2. Energetic Solar Radiations <i>H. Friedman</i>	36
3. Energetic Solar Particles <i>E. N. Parker</i>	57
4. The Magnetospheric Substorm <i>K. A. Anderson</i>	62

II Interplanetary Space

65

5. Origin of the Solar Wind and its Astrophysical Aspects <i>E. R. Mustel</i>	67
6. Direct Measurements of Interplanetary Magnetic Fields and Plasmas <i>N. F. Ness</i>	88
7. Comets, Interplanetary Space, and the Problems of the Solar System <i>S. K. Vsekhsvyatskii</i>	110
8. Studies of Magnetic Inhomogeneities in Interplanetary Space using Solar and Galactic Cosmic-Ray Measurements <i>A. N. Charakhchyan and T. N. Charakhchyan</i>	119
9. Some Comments on the Existence of a Density Gradient of the Cosmic Radiation perpendicular to the Plane of the Ecliptic <i>P. L. Marsden</i>	131

III The Cosmic Radiation

139

10. Ground-Based Synoptic Observations of Cosmic Rays <i>H. Carmichael</i>	141
---	-----

11. Underground Cosmic-Ray Measurements	
<i>H. Elliot</i>	175
12. Some Observations on the 11-year Modulation of Galactic Cosmic Rays	
<i>W. R. Webber</i>	181
13. IQSY Observations of Low-Energy Galactic and Solar Cosmic Rays	
<i>F. B. McDonald</i>	187
14. Cosmic Ray Variations: Theory	
<i>L. I. Dorman</i>	217
15. Some Problems of detecting Galactic Anisotropies	
<i>A. J. Somogyi</i>	269
16. Modulation of Cosmic-Ray Electrons	
<i>S. Hayakawa</i>	274
 IV The Earth's Radiation Belts	
17. The Earth's Radiation Belts	
<i>S. N. Vernov</i>	281
18. Comments and Speculations concerning the Radiation Belts	
<i>C. E. McIlwain</i>	302
19. Some Quantitative Aspects of Electron Precipitation in and near the Auroral Zone	
<i>D. K. Bailey</i>	307
 V Aurora and Airglow	
20. The Phenomenology and Morphology of Aurorae	
<i>Ya. I. Feldstein, S. I. Isaev, and A. I. Lebedinsky</i>	311
21. Spectroscopic Morphology of Aurora	
<i>A. Vallance Jones</i>	349
22. Incoming Lower Energy Particles and their Association with Airglow and Aurorae	
<i>B. J. O'Brien</i>	364
23. Night Airglow Observations during the IQSY	
<i>F. E. Roach, L. L. Smith, and J. R. McKennan</i>	375
24. Airglow Research during and since the IQSY	
<i>G. Weill</i>	388
25. Hydrogen and Hydroxyl Emissions in the Nightglow	
<i>N. N. Shefov and Yu. L. Trutse</i>	400
 Author Index	
 Subject Index	

