TABLE OF CONTENTS

Foreword	V
List of Participants	XIII
Introduction by E. A. Trendelenburg 1. SUMMARY LECTURE	1
A Survey of Interplanetary and Terrestrial Phenomena Associated with Solar Flares by W. I. Axford	7
2. SOLAR PARTICLES AND ELECTROMAGNETIC RADIATION	
High Energy Flare Radiation by C. de Jager	25
Satellite Observations of Solar Cosmic Rays by F. B. McDonald	34
Propagation of Solar and Galactic Cosmic Rays of Low Energies in Interplanetary Medium by S. N. Vernov, A. E. Chudakov, P. V. Vakulov, E. V. Gorchakov, N. N. Kontor, Yu. I. Logachev, G. P. Lyubimov, N. V. Peresligina, and G. A. Timofeev	53
Particle Event Forecasting by Z. Švestka	90
Proposed Solar Proton Event Classification System by D. F. Smart and M. A. Shea	102
3. SOLAR WIND VARIATIONS DURING AND AFTER SOLAR EVENTS	
Solar Wind Disturbances Associated with Solar Activity by A. J. Hundhausen	111
Variations of Solar Wind Fluxes Observed on Board Venera-5 and Venera-6 from January 21 to March 21 1969, and Pulsations of the Earth's Electromagnetic Field Caused by these Variations by K. I. Gringauz, V. A. Troitskaya, E. K. Solomatina, and R. V. Shchepetnov	130

by J. M. Wilcox	140
4. BOW SHOCK VARIATIONS FOLLOWING SOLAR EVENTS	
Plasma Measurements Across the Bow Shock and in the Magnetosheath by A. J. Hundhausen	155
Interaction of Solar Energetic Particles with the Earth's Bow Shock and Magnetopause by S. Singer	170
Magnetic and Electric Field Changes Across the Shock and in the Magnetosheath by F. L. Scarf, P. J. Coleman, R. W. Fredricks, C. F. Kennel, and C. T. Russell	181
5. THE MAGNETOSPHERE DURING AND AFTER SOLAR EVENTS	
Solar Particle Observations over the Polar Caps by G. A. Paulikas, J. B. Blake, and A. L. Vampola	193
Access of Solar Particles to Synchronous Altitude by L. J. Lanzerotti	205
Entry of Low Energy Solar Protons into the Magnetosphere by C. O. Bostrom	229
Trapped Particle Population Changes Associated with Solar Events by J. G. Roederer	239
Geomagnetic Storms at ATS 1 by P. J. Coleman, Jr.	251
Magnetospheric Electric Fields by H. Völk and G. Haerendel	280
5A. THE MAGNETOTAIL	
Experimental Observations in the Magnetotail during an Interplanetary Disturbance	200
by E. W. Hones, Jr.	299
Tearing Instabilities in the Magnetosphere by K. Schindler	309

6. SOME IONOSPHERIC EFFECTS FOLLOWING SOLAR EVENTS

Current Problems in Polar-Cap Absorption by G. C. Reid	319
Interdisciplinary Investigations of the Auroral Phenomena by I. A. Zhulin	335
Aspects of Auroral Morphology by T. N. Davis	341
Acceleration and Precipitation of Van Allen Electrons During Magnetospheric Substorms by G. K. Parks	351
7. SATELLITE AND ROCKET RESULTS FOR THE FEBRUARY 25, 1969 EVENT	
Introduction to the ESRO Spacecraft ESRO-II/IRIS, ESRO-I/AURORAE and HEOS-1 by D. E. Page	367
Ground Observations of the Solar Event of February 25, 1969 by K. G. Lenhart	382
Substorm Influences on VHF Continuous Wave Auroral Backscatter by P. Czechowsky and G. Lange-Hesse	405
X-Ray Observations between 1 and 55 Å of the February 25th Flare by A. C. Brinkman, W. de Graaff, and M. L. Shaw	413
The Solar Particle Event of February 25, 1969 by P. C. Hedgecock	419
Interplanetary Magnetic Field Measured by Pioneer 8 during the 25 February 1969 Event by F. Mariani, B. Bavassano, and N. F. Ness	427
Observation of Solar Wind Discontinuities from February 24 to February 28, 1969 by A. Bonetti, G. Moreno, M. Candidi, A. Egidi, V. Formisano, and G. Pizzella	436
Observations of the Spectra and Time History of Protons in Interplanetary Space, February 25–28, 1969 by F. Barouch, J. Engelmann, M. Gros, J. Koch, and P. Masse	448

Solar Cosmic Ray Increase on 25 February-5 March, 1969 According to Measurements from Venus-5 and Venus-6 Space Probes by S. N. Vernov, N. N. Kontor, G. P. Lyubimov, N. V. Pereslegina, and	
E. A. Chuchkov	460
Low Energy Proton Measurements in Interplanetary Space on Board the HEOS-1 Satellite by A. Balogh and R. J. Hynds	471
	471
The Solar Particle Events of 25 February, 1969. Directional Measurements of Solar Protons with Energies Greater than 360 MeV on HEOS-1 by A. R. Engel	478
Observations Recorded by the Leeds University Cosmic Ray Detector on Board the ESRO-II Spacecraft during the Solar Flare of February 25th, 1969 by R. Jakeways, P. L. Marsden, and I. R. Calder	486
ESRO-I Satellite Observations of 1–30 MeV Protons During the 25th February 1969 Solar Event	402
by G. R. Thomas, R. Dalziel, and W. Donaldson	492
Rocket Measurements of Protons and α-Particles During the February 25, 1969 Solar Event by G. Wibberenz and M. Witte	499
Rocket Observations of Protons and α-Particles at Andøya after the Solar Flares of 24th–25th February 1969 by H. F. van Beek and G. A. Stevens	508
Electron Density Observations During the PCA Event of 25 February 1969 by M. Jespersen, J. Trøim, and B. Landmark	515
Rocket-Borne D-Region Probe Measurements by J. Murdin and T. S. Bowling	520
Electron Density Measurements in the Thermal Plasma of the Magnetosphere Using a Langmuir Probe by R. Freeman, K. Norman, and A. P. Willmore	524
Ionospheric Measurements by the ESRO-I Satellite During the February 25th 1969 Solar Proton Event	
by W. J. Raitt	535
ESRO-I Satellite Observations of 45-450 keV Electrons During the Period 24th February – 3rd March, 1969 by G. R. Thomas, P. A. Smith, and R. Dalziel	549
	J 17
ESRO-I Measurements of Low-Energy Auroral Particles from February 23 to March 2, 1969 by W. Riedler	557

An Observation of the February 26, 1969 Interplanetary Shock Wave by A. J. Hundhausen, S. J. Bame, and M. D. Montgomery	567
The Association of Energetic Storm Particles with Interplanetary Shock Waves by S. Singer	571
GM Observations of Auroral Particles and Ground Observations During the February 25th Solar Event by P. Stauning, G. Skovli, and A. Bahnsen	583
Observation of Low-Energy Solar Protons During the February 25, 1969 Event by F. Søraas, K. Aarsnes, and H. R. Lindalen	592
High Energy Solar Electrons by C. J. Bland, G. Degli Antoni, C. Dilworth, D. Maccagni, E. G. Tanzi, Y. Koechlin, A. Raviart, and L. Treguer	599
OGO-5 Measurements of Electrons Above 500 MeV by B. N. Swanenburg	610
8. LECTURE IN CONCLUSION	
Suggestions for Future Observations by W. I. Axford	617
Index of Names	621