

Volume 2

The Magnetosphere

G. HAERENDEL	
Results from Barium Cloud Releases in the Ionosphere and Magnetosphere	601
<i>Geomagnetic Field</i>	
R. D. REGAN, W. M. DAVIS and J. C. CAIN	
The Detection of "Intermediate Size" Magnetic Anomalies in Cosmos 49 and OGO 2, 4, 6 Data	619
H. H. HILTON	
Secular Magnetic Variation and Inner Zone Protons	625
<i>Magnetospheric Configuration</i>	
D. E. PAGE, V. DOMINGO, D. KÖHN, B. G. TAYLOR, K.-P. WENZEL and P. C. HEDGECOCK	
High-energy Electrons at the Magnetopause above the North Pole: Preliminary Results from the HEOS 2 Satellite	631
A. E. ANTONOVA	
Topology of the Magnetosphere and some Geophysical Phenomena	639
I. M. PODGORNY, I. V. ANDRIANOV and E. M. DUBININ	
Plasma Characteristics near the Magnetosphere Boundary	643
M. K. BIRD	
Observational Comparisons with a Self-Consistent Model of the Geomagnetic Tail .	655
A. BERTHELIER and C. GUERIN	
Influence of the Polarity of the Interplanetary Magnetic Field on Magnetic Activity at High Latitudes.	661
<i>Trapped Protons</i>	
J. MORITZ	
Energetic Protons at Low L -values of the Equatorial Magnetosphere	669
P. VALOT and J. ENGELMANN	
Pitch Angle Distribution of Geomagnetically Trapped Protons for $1.2 < L < 2.1$. .	675
R. S. WHITE, S. MOON, A. M. PRESZLER and G. M. SIMNETT	
Earth Albedo and Solar Neutrons	683
<i>Very Low Frequency Radiophysics</i>	
Y. A. LIKHTER, O. A. MOLCHANOV, V. M. CHMYREV, V. O. RAPOORT, V. YU. TRAKHTENGERTS and V. A. CHEREPOVITSKY	
Modulation of Spectrum and Amplitude of VLF Signal in the Magnetosphere	689
Y. A. LIKHTER, YA. P. SOBOLEV, F. JIŘÍČEK and P. TŘÍSKA	
Early Results from the Intercosmos 5 Satellite VLF Experiment	695

	Page
F. LEFEUVRE and K. BULLOUGH	
Ariel 3 Evidence of Zones of VLF Emission at Medium and Low Invariant Latitudes which co-rotate with the Earth.	699
M. J. RYCROFT	
Enhanced Energetic Electron Intensity associated with a Whistler propagating through the Plasmasphere	707

The Sun

R. TOUSEY	
The Solar Corona	713

Solar Electrons

A. A. KORCHAK	
Sources of Accelerated Electrons on the Sun	731
G. M. SIMNETT	
Relativistic Electrons in Space	745

Solar Protons

Y. HAKURA, Y. TAKENOSHITA and M. OHSHIO	
Solar—Interplanetary Disturbances during 5—18 June 1969 (the PFP Interval/IASY)	763
M. A. SHEA and D. F. SMART	
Prediction of the End of Solar Proton Events	771

X- and UV-radiation

H. F. VAN BEEK and L. D. DE FEITER	
First Results of the Solar Hard X-ray Spectrometer on board the ESRO TD-1A Satellite	777
L. W. ACTON, R. C. CATURA and J. L. CULHANE	
X-ray Study of Solar Plage Regions and a Small Flare	781
Z. KORDYLEWSKI, J. MERGENTALER, J. JAKIMIEC, B. SYLWESTER and J. SYLWESTER	
Observations of the X-Ray Emission of Solar Active Regions on 28 November 1970 and 20 August 1971	787
G. E. KOCHAROV and Yu. E. CHARIKOV	
The Impulsive Increase in the Intensity of Solar X-Rays	793
C. B. OPAL	
Enhancements of the Photoelectron-excited Dayglow during Solar Flares	797

Solar Flare Models and Forecasting

V. BUMBA and J. SÝKORA	
Particle Emitting Flares and the Large-Scale Distribution of Solar Magnetic Fields and Green Corona	803
A. B. SEVERNÝ and N. V. STESHENKO	
Development of Methods of Solar Flare Forecasting.	809
R. T. PODSIADLO	
An Objective Baseline for Flare Prediction	817

Solar Wind

J. W. FREEMAN, JR.	
Suprathermal Ion Detector Results from Apollo Missions	821
A. A. FAUS	
The Effect of Electron Pressure on the Wake of the Moon	831

	Page
H. J. FAHR	
The Annual Variation of the Solar Wind He ⁺ Content	837
H. J. FAHR and G. LAY	
Interplanetary He I 584 Å Background Radiation	843

Astronomical Measurements

X-ray Observations

S. MIYAMOTO, Y. OGAWARA, M. MATSUOKA and M. ODA	
Wide Band Energy Spectrum of Sco X-1	851
A. BUI-VAN and G. VEDRENNE	
Hard X-Rays from Coma Cluster and Virgo Cluster	855
M. LANDINI and B. C. MONSIGNORI FOSSI	
X-ray and Radio Emission from Stellar Coronae	859
U. R. RAO, D. P. SHARMA, A. K. JAIN, S. C. CHAKRAVARTY, K. KASTURIRANGAN and K. R. RAMANATHAN	
On the Detection of X-rays from Celestial Sources through their Ionization of the Terrestrial Atmosphere	861

B Type Stars

A. B. UNDERHILL	
The Absolute Energy Flux Envelopes of B Type Stars	867
R. HOEKSTRA, K. A. VAN DER HUCHT, C. DE JAGER, TH. KAMPERMAN and H. J. LAMERS	
Ultraviolet Stellar Spectra obtained with the Utrecht Orbiting Stellar Spectrophotometer S59 aboard the ESRO TD-1A Satellite	871

Interstellar Hydrogen

P. W. BLUM	
Neutral Interstellar Hydrogen and Extraterrestrial Lyman Alpha Radiation	879

The Moon

Global Investigations

R. A. PETRONE and W. T. O'BRYANT	
An Overview of Apollo Program of Lunar Exploration	887
G. F. ESENWEIN and F. I. ROBERSON	
Apollo 15 Orbital Science Summary	903
J. R. ARNOLD, J. I. TROMBKA, L. E. PETERSON, R. C. REEDY and A. E. METZGER	
Lunar Orbital Gamma Ray Measurements from Apollo 15 and Apollo 16	927

Physical Properties of Lunar Surface

D. A. BEATTIE and J. B. HANLEY	
Apollo 15 Surface Science Summary	935
C. T. RUSSELL, P. J. COLEMAN, JR., B. R. LICHTENSTEIN, G. SCHUBERT and L. R. SHARP	
Surface and Orbital Magnetic Results from Apollo 15	951
E. S. GORSHKOV, E. G. GUS'KOVA and V. I. POCHTAREV	
Magnetic Investigations of Lunar Soil delivered by AIS Luna 16	961
M. V. AKHMANOVA, B. V. DEMENTYEV, M. N. MARKOV and M. M. SUSHCHINSKY	
Infrared Reflection Characteristics of Lunar Mare Regolith	965
N. N. KROUPENIO	
Results of Radar Experiments performed on Automatic Stations Luna 16 and Luna 17	969

	Page
V. A. KOCHNEV, M. D. NUSSINOV, E. M. RUDNITZKI, YU. A. SURKOV, V. V. SHVAREV and I. L. ETTINGER Sorption Processes on the Lunar Surface	975

Geochemical Properties of Lunar Soil

G. E. KOCHAROV and S. V. VICTOROV Experimental Data on the Investigation of Lunar Surface Chemical Composition	979
YU. A. SURKOV, G. A. FEDOSEYEV, O. P. SOBORNOV, G. B. NAZARKINA and L. P. BACHINA Gamma-Spectrometric Analysis of Lunar Samples from Luna 16	985
A. K. LAVRUKHINA and V. D. GORIN ²⁶ Al and ²² Na Measurements on Luna 16 Samples by non-destructive Gamma—Gamma Coincidence Spectrometry	991
I. I. ANTIPOVA-KARATAEVA, YU. I. STACHEEV and L. S. TARASOV Absorption Spectra of Luna Sections from Different Lunar Areas	997

Lunar Laser Ranging

A. ORSZAG Aspects récents de la télémétrie laser lune	1001
J. D. MULHOLLAND, H. H. PLOTKIN, E. C. SILVERBERG, D. T. WILKINSON, C. O. ALLEY, P. L. BENDER, D. G. CURRIE, R. H. DICKE, J. E. FALLER, W. M. KAULA and J. G. WILLIAMS A Self-Consistent Set of Surface Coordinates for the Apollo Lunar Laser Retroreflectors deduced from Laser Range Measures	1009
I. I. MUELLER, F. A. FAJEMIROKUN and H. B. PAPO The Influence of Laser Ranging on Selenodetic Control	1015

Cosmic Dust*Cosmic Dust Data from Satellites and Space Probes*

R. D. MERCER, L. DUNKELMAN, C. L. ROSS and A. WORDEN Lunar Orbital Photography of Astronomical Phenomena	1025
T. N. NAZAROVA, A. K. RYBAKOV, S. I. BAZAZYANTS and A. I. KUZMICH Investigations of Meteoritic Matter in the Vicinity of the Earth and the Moon from the Orbiting Station Salyut and the Moon Satellite Luna 19	1033
W. M. ALEXANDER, C. W. ARTHUR, J. L. BOHN and J. C. SMITH Four Years of Dust Particle Measurements in Cislunar Selenocentric Space from Lunar Explorer 35 and OGO 3	1037
O. E. BERG and E. GRÜN Evidence of Hyperbolic Cosmic Dust Particles	1047
E. GRÜN, O. E. BERG and J. S. DOHNANYI Reliability of Cosmic Dust Data from Pioneers 8 and 9	1057
D. K. BEDFORD and J. SAYERS The Near Earth Micrometeoroid Flux from the Satellite Prospero	1063

Erosion Processes of Lunar Material including Micrometeorites

D. G. ASHWORTH and J. A. M. McDONNELL Lunar Surface Micro-erosion related to Interplanetary Dust Particle Distributions . .	1071
D. E. GAULT, F. HÖRZ and J. B. HARTUNG Abrasion and Catastrophic Rupture of Lunar Rocks: Some Implications to the Micro- meteoroid Flux at 1 AU	1085

	Page
F. DI BENEDETTO, A. CARUSI and A. CORRADINI Preliminary Measurements of Spherules of the Pontina Plain and of Micrometeorites of Apollo 12 and related Impact Studies	1095
<i>Cosmic Dust from Rockets and near the Earth</i>	
D. S. HALLGREN, C. L. HEMENWAY, V. A. MOHNEN and C. D. TACKETT Preliminary Results from the Noctilucent Sampling from Kiruna in 1970	1099
D. S. HALLGREN, D. C. SCHMALBERGER and C. L. HEMENWAY Noctilucent Cloud Sampling by a Multi-experiment Payload	1105
B. A. LINDBLAD, G. ARINDER and T. WIESEL Continued Rocket Observations of Micrometeorites	1113
C. L. HEMENWAY, J. W. ERKES, J. M. GREENBERG, D. S. HALLGREN and D. C. SCHMALBERGER Do some of the Sub-Micrometer Cosmic Dust Particles come from the Sun?	1121
P. RAUSER and H. FECHTIG Dust Measurements in the Upper Atmosphere during and in the absence of Noctilucent Cloud Display	1127
F. LINK Cosmic Dust in the Upper Atmosphere	1135
D. E. BROWNLEE and P. W. HODGE Ablation Debris and Primary Micrometeoroids in the Stratosphere	1139
N. H. FARLOW, G. V. FERRY and H. Y. LEM Analysis of Individual Particles collected from the Stratosphere	1153
<i>Distribution and Comparative Studies of Interplanetary, Cometary and Interstellar Dust</i>	
G. S. HAWKINS Micrometeorite and Cosmic Dust Data near the Earth's Orbit	1159
R. H. GLESE Optical and Mechanical Models of Interplanetary Dust	1165
V. VANÝSEK The Composition of Cosmic Dust in Comets	1173
W. KOKOTT Improved Model of Asteroidal Dust Population	1181
J. L. WEINBERG, M. S. HANNER, H. M. MANN, P. B. HUTCHISON and R. FIMMEL Observations of Zodiacial Light from the Pioneer 10 Asteroid—Jupiter Probe: Preliminary Results	1187
List of Papers presented at the XVth COSPAR Plenary Meeting and published, but not in this Volume	1193
Index of Authors	1195

