

Table of Contents

Preface	xiii
Organizing committee	xv
Conference photograph	xvi
Conference participants	xix

Topic 1. HISTORICAL INTRODUCTION

Research on Historical Records of Geomagnetic Storms	3
<i>G. S. Lakhina, S. Alex, B. T. Tsurutani and W. D. Gonzalez</i>	

Topic 2. OBSERVATIONS OF CMES

What have learned with SOHO?	19
<i>R. Schwenn</i>	
EUV observations of CME-associated eruptive phenomena with the CORONAS-F/SPIRIT telescope/spectroheliograph	21
<i>V.A. Slenzin, V.V. Grechnev, I.A. Zhitnik, S.V. Kuzin, S.A. Bogachev, A.P. Ignatiev, A.A. Pertsov and D.V. Lisin</i>	
X-Ray and EUV Observations of CME Eruption Onset	27
<i>Alphonse C. Sterling</i>	
Flare-induced Coronal Disturbances Observed with Norikura “NOGIS” Coronagraph	36
<i>K. Hori, K. Ichimoto, T. Sakurai, I. Sano, and Y. Nishino</i>	
Determination of Geometrical and Kinematical Properties of Frontside Halo Coronal Mass Ejections (CMEs)	42
<i>X. P. Zhao</i>	
Geometrical Properties of Coronal Mass Ejections	49
<i>Hebe Cremades and Volker Bothmer</i>	
EIT waves – A signature of global magnetic restructuring in CMEs	55
<i>P. F. Chen and C. Fang</i>	
A Study on the Acceleration of Coronal Mass Ejections	65
<i>Jie Zhang</i>	
UVCS Observations of a Helical CME Structure	71
<i>M. Suleiman, N. U. Crooker, J. C. Raymond and A. van Ballegoijen</i>	
Error Estimates in the Measurements of Mass and Energy in White Light CMEs	76
<i>Angelos Vourlidas</i>	
Post-CME events: Cool Jets And Current Sheet Evolution	77
<i>A. Bemporad, G. Poletto and S. T. Suess</i>	

Low Frequency (30-110 MHz) Radio Imaging Observations Of Solar Coronal Mass Ejections	83
<i>R. Ramesh</i>	
A Special Flare-CME Event on April 21, 2002	95
<i>Huang Guang-Li</i>	
The Occurrence of Solar Radio Burst Fine Structures in 1-7.6 GHz Range Associated with CME Events.	101
<i>Yan Yihua, Liu Yuying, Chen Zhijun, Fu Qijun and Tan Chengmin</i>	
Observations of a Post-eruptive Arcade on October 22, 2001 With CORONAS-F, Other Spaceborne Telescopes, and in Microwaves	108
<i>V.N. Borovik, V.V. Grechnev, O.I. Bugaenko, S.A. Bogachev, I.Y. Grigorieva, S.V. Kuzin, S.V. Lesovoi, M.A. Livshits, A.A. Pertsov, G.V. Rudenko, V.A. Slemzin, A.I. Stepanov, K. Shibasaki, A.M. Uralov, V.G. Zandañov and I.A. Zhitnik</i>	
A Reconsideration of the Classification of Two Types of CMEs	110
<i>A.Q. Chen, C.T. Yeh, J.X. Cheng and P.F. Chen</i>	
A Possible Explanation for the Different Mean Speeds of Halo and Limb CMEs.	112
<i>J.X. Cheng, C.T. Yeh, D.M. Ding and P.F. Chen</i>	
The Three Dimensional Structure of CMEs from LASCO Polarization Measurements.	114
<i>Kenneth Dere and Dennis Wang</i>	
Filament Eruption and Associated Partial Halo CME on 2001 September 17	115
<i>Y. C. Jiang, L. P. Li, S. Q. Zhao, Q. Y. Li, H. D. Chen and S. L. Ma</i>	
Hard X-ray Patterns of CME-related Flares	117
<i>Y. P. Li and W. Q. Gan</i>	
Statistics Analysis of Decimetric Type III Bursts, Coronal Mass Ejections and H α Flares.	119
<i>Y. Ma, D. Y. Wang, M. Wang and Y.H. Yan</i>	
Eruption of a Large Quiescent Prominence and Associated CME on 2001 January 14.	121
<i>S. L. Ma, Y. C. Jiang, Q. Y. Li, S. Q. Zhao, L. P. Li and H. D. Chen</i>	
A CME and Related Phenomena on 2003 October 26	123
<i>Zongjun Ning, C. Fang, M. D. Ding, C. -T. Yeh, H. Li, Y. N Xu, Y. Zhang and C. M. Tan</i>	
Low Coronal Signatures of a Coronal Mass Ejection	125
<i>K. P. Qiu, Y. Dai, and Y. H. Tang</i>	
Shock Wave Driven by an Expanding System of Loops	127
<i>N.-E. Raouafi, S. Mancuso, S. K. Solanki, B. Inhester, M. Mierla, G. Stenborg, J. P. Delaboudinière and C. Benna</i>	
Characteristics of Solar Microwave Bursts Associated with CMEs: a Statistical Study.	129
<i>Chengwen ShaoMin Wang, Ruixiang Xie, Qijun Fu, Yu-ying Liu, Cheng-ming Tan, Ying-na Su and Yuan Ma</i>	

Microwave Fine Structures in the Initial Phase of Solar Flares and CMEs.	131
<i>C.M Tan, Y.H. Yan, Q.J. Fu, Y.Y. Liu, H.R. Ji and Z.J. Chen</i>	
SoHO/EIT Observation of a Coronal Inflow	133
<i>D. Tripathi, V. Bothmer, S. K. Solanki, R. Schwenn, M. Mierla and G. Stenborg</i>	
A Trans-equatorial Filament and the Bastille Day Flare/CME Event	135
<i>Jingxiu Wang, Guiping Zhou, Yayuan Wen, Yuzong Zhang, Jun Zhang, Huaning Wang and Yuanyong Deng</i>	
Diagnostics of Coronal Magnetic Field in Terms of Radio Burst and Fine Structures	137
<i>M. Wang, C. Xu, R. X. Xie and Y. H. Yan</i>	
Multi-Wavelength Radio Features Associated with Large CMEs on Oct. 26-28, 2003	139
<i>S. J. Wang, Y. Yan, Q. Fu, Y. Liu and Z. Chen</i>	
A Type I Noise Storm and the Bastille Day CME	141
<i>Yayuan Wen and Jingxiu Wang</i>	
Correlation of the Observational Characteristics of Microwave Type III Bursts with CMEs	143
<i>Y. Ma, R. X. Xie, X. M. Zheng, Y. Y. Liu, Y. H. Yan and Q. J. Fu</i>	
The Successive Ejection of Several Halo CMEs from NOAA AR 652 July 2004, a Physical Study	145
<i>Shahinaz Yousef, Mostafa M. El-Nazer and Aisha Bebars</i>	

Topic 3. CME SOURCE REGIONS

Source Regions of Coronal Mass Ejections.	149
<i>B. Schmieder and L. van Driel-Gesztelyi</i>	
Formation of Non-Potential Magnetic Field and Flare-CMEs Eruption	161
<i>Hongqi Zhang</i>	
Large-Scale Activity Initiated BY Halo CMEs	167
<i>I. Chertok and V. Grechnev</i>	
The Evolution of Photospheric Source Regions of CMEs	179
<i>K. Muglach and K. Dere</i>	
The Evolution of Vector Magnetic Fields and the Origin of Coronal Mass Ejections (CMEs)	184
<i>Jun Zhang, Guiping Zhou and Jingxiu Wang</i>	
The Association of Big Flares and Coronal Mass Ejections: What is the Role of Magnetic Helicity?	194
<i>A. Nindos and M.D. Andrews</i>	
The Large-Scale Source Regions of Coronal Mass Ejections.	200
<i>Guiping Zhou, Jingxiu Wang, Jun Zhang and Chijie Xiao</i>	
On the Radio Signatures Associated with the Development of Coronal Mass Ejections.	206
<i>Dalmiro Jorge Filipe Maia</i>	

Solar Cycle Variation of the Internal Magnetic Field Structure of CMEs	208
<i>Volker Bothmer</i>	
Study of Filament Eruption and its Relationship to a CME on 2003 August 25	209
<i>H. D. Chen, Y. C. Jiang, Q. Y. Li and S. Q. Zhao</i>	
Variability of Coronal Mass Ejections	211
<i>Probhas Raychaudhuri</i>	
Cross-correlations between CMEs and other Solar Activity Indices	213
<i>W.B. Song and J.X. Wang</i>	
CMEs and Flux Appearance in the Periphery of Two Unipolar Sunspots	215
<i>X.L. Yang, W.B. Song, G.P. Zhou, J. Zhang and J.X. Wang</i>	
Parametric Survey of Emerging Flux for Triggering CMEs	217
<i>X. Y. Xu, P. F. Chen, C. Fang and M. D. Ding</i>	
The Evolving Features of the Source Region of a Fast Halo CME with Strong Geo-effects.	219
<i>Zhang Guiqing</i>	
Correction of Large-Spread-Angle Stray Light for Measurements of Longitudinal Magnetic Signals.	221
<i>Jiangtao Su and Hongqi Zhang</i>	
Four Corona Mass Ejections and their Associated Surface Activity Observed on 26 October 2003.	223
<i>Xingming Bao, Hongqi Zhang and Jun Lin</i>	
A Test of the Tanaka Model with NOAA 10488	225
<i>Hui Zhao, Yuzong Zhang, Jie Jiang and Jingxiu Wang</i>	
The Relationship Between Magnetic Helicity and Current Helicity.	227
<i>J.H. Liu, Y. Zhang and H.Q. Zhang</i>	
The Relationship Between Photospheric Magnetic Field Evolution and Major Flares	229
<i>Y. Zhang, J.H. Liu and H.Q. Zhang</i>	
Spectral Features in Solar Microwave Emission Preceding CME Onset	233
<i>O.A.Sheiner and V.M.Fridman</i>	
Quasi-Periodic Components of Solar Microwave Emission Preceding the CME Onset on 19 October, 2001	235
<i>O.A.Sheiner and V.M.Fridman</i>	

Topic 4. THEORETICAL MODELS OF CMEs

Theories of Eruptive Flares	241
<i>K. Shibata</i>	
The Effects of Gravity of an Loss-of-Equilibrium CME Initiation Model	250
<i>Katharine K. Reeves and Terry G. Forbes</i>	
Study of the Relationship between Magnetic Helicity and Solar Coronal Activity	256
<i>Kanya Kusano</i>	

Magnetic Structure Equilibria and Evolution due to Active Region Interactions.	257
<i>J. Lin and A. A. van Ballegoijen</i>	
The Catastrophe of Coronal Magnetic Flux Ropes in CMEs	263
<i>Y. Q. Hu</i>	
Exact Solution of Jump Relations at Discontinuities in a Two-And-Half-Dimensional Compressible Reconnection Mode.	274
<i>Marina Skender</i>	
On the Coronal Current-Free Global Field Configuration	277
<i>Yihua Yan</i>	
Neoclassical Effects on Solar Plasma Loops.	279
<i>B.L.Tan and G.L.Huang</i>	
Coronal Magnetic Flux Ropes in Quadrupolar Magnetic Fields	281
<i>Yingzhi Zhang, Youqiu Hu and Jingxiu Wang</i>	
The Effect of Viscosity on Magnetic Generation in Solar Plasmas	283
<i>Zhiliang Yang and Hairong Jing</i>	

Topic 5. COMPARISONS OF CME MODELS AND OBSERVATIONS

The Connections Between CME Models and Observations	289
<i>Terry Forbes</i>	
A Three-Dimensional Magnetohydrodynamic (MHD) Model of Active Region Evolution.	291
<i>S. T. Wu, A. H. Wang and D. A. Falconer</i>	
The Importance of Topology and Reconnection in Active Region CMEs	302
<i>Robert J. Leamon</i>	
Progress in the Heating of Active Region Loops.	309
<i>L. Feng, and W.Q. Gan</i>	
Magnetic Reconnection Inflow near the CME/Flare Current Sheet	311
<i>J. Lin, Y.-K. Ko, L.Sui, J. C. Raymond, G. A.Stenborg, Y. Jiang, S.Zhao and S. Mancuso</i>	
Energetics of Coronal Mass Ejections.	314
<i>Prasad Subramanian and Angelos Vourlidas</i>	

Topic 6. CMES AND ENERGETIC PARTICLES

Transport and Acceleration of Solar Energetic Particles from Coronal Mass Ejection Shocks	319
<i>David Ruffolo</i>	
Transport and Acceleration of Solar Energetic Particles from Coronal Mass Ejection Shocks	330
<i>Allan J. Tylka</i>	

Some aspects of particle acceleration and transport at CME-driven shocks	332
<i>G. Li and G. P. Zank</i>	
The Production of Near-Relativistic Electrons by CME-Driven Shocks	338
<i>S.W. Kahler, H. Aurass, G. Mann, and A. Klassen</i>	
Analysis of the Acceleration Process of SEPs by an Interplanetary Shock for Bastille Day Event	346
<i>G.M.Le and Y.B.Han</i>	
Propagation of Energetic Particles to High Heliographic Latitudes.	350
<i>T. R. Sanderson</i>	
Energetic Particle Tracing of Interplanetary CMEs: ULYSSES/HI-SCALE and ACE/EPAM Results	361
<i>Olga E. Malandraki, D. Lario, T.E. Sarris, N. Tsaggas and E.T. Sarris</i>	
CME Interaction and the Intensity of Solar Energetic Particle Events	367
<i>N. Gopalswamy, S. Yashiro, S. Krucker and R. A. Howard</i>	
Prompt Solar Energetic Particles with Large-Scale Cross-Disk Coronal Disturbance	374
<i>Y. Dai, Y.H. Tang, and K.P. Qiu</i>	
Coronal Mass Ejections and the Largest Solar Energetic Particle Events.	379
<i>Ruiguang Wang and Jingxiu Wang</i>	
Solar Relativistic Proton Fluxes in the Solar Flare of 14 July 2000	381
<i>Ruiguang Wang and Jingxiu Wang</i>	
On the Possibility of Acceleration of Heavy Solar and Cosmic Nuclei To GeV, TeV Energies and Beyond	384
<i>Shahinaz M. Yousef</i>	
Topic 7. ICMEs IN THE HELIOSPHERE	
Modeling Interplanetary Coronal Mass Ejections	389
<i>Pete Riley</i>	
A Direct Method to Estimate Magnetic Helicity in Magnetic Clouds	403
<i>S. Dasso, C. H. Mandrini, A.M. Gulisano and P. Démoulin</i>	
Effect of Coronal Mass Ejection Interactions on the SOHO/CELIAS/MTOF Measurements	409
<i>X. Wang, P. Wurz, P. Bochsler, F. Ipavich, J. Paquette and R. F. Wimmer-Schweingruber</i>	
Correlations between CME Associated Flare Magnitude and <i>in situ</i> Quantities .	414
<i>A. Reinard</i>	
Bidirectional Proton Flows and Comparison of Freezing-in Temperatures in ICMEs and Magnetic Clouds	420
<i>L. Rodriguez, J. Woch, N. Krupp, M. Fränz, R. von Steiger, C. Cid, R. Forsyth and K.-H. Glaßmeier</i>	
Magnetic Field Configuration Around Large Flux Ropes.	428
<i>E. Romashets and M. Vandas</i>	

Propagation of Magnetic Clouds – MHD Simulations of Real Events	430
<i>M. Vandas, D. Odstrcil, S. Watari and A. Geranios</i>	
Initial Speeds of CMEs Estimated by Using Solar Wind Observations Near 1 AU	433
<i>S. Watari, M. Vandas and T. Watanabe</i>	

Topic 8. CMES AND GEOMAGNETIC STORMS

Solar Sources of Geoeffective CMEs: a SOHO/EIT View.	437
<i>A. N. Zhukov</i>	
Orientation and Geoeffectiveness of Magnetic Clouds as Consequences of Filament Eruptions	448
<i>Yuming Wang, Guiping Zhou, Pinzhong Ye, S. Wang and Jingxiu Wang</i>	
A Study of Intense Geomagnetic Storms and their Associated Solar and Interplanetary Causes	454
<i>S. C. Kaushik</i>	
Geoeffectiveness of CMEs in the Solar Wind.	455
<i>E. Huttunen</i>	
Double Star Program in China	457
<i>Z. X. Liu</i>	
The Possible Sources of the Relativistic Electrons in the Magnetosphere	458
<i>L. Xie, Z.Y.Pu and Y.Lu</i>	
CMEs Associated with Eruptive Prominences: How to Predict ?	464
<i>B.P. Filippov, O.G. Den and A.M. Zagnetk</i>	
Helicity of Magnetic Clouds and Solar Cycle Variations of their Geoeffectiveness	470
<i>Katya Georgieva and Boian Kirov</i>	
Energetic Electrons in Magnetosphere during Gradual Solar Energetic Particle Event Observations by Cluster	473
<i>C. J. Xiao, Z. Y. Pu, H. F. Chen, L. Xie, Q. G. Zong, T. A. Fritz and P. W. Daly</i>	
CMEs and Long-Lived Geomagnetic Storms: A Case Study	475
<i>H. Xie, N. Gopalswamy, P.K. Manoharan, S. Yashiro, A. Lara and S. Lepri</i>	
Successive Impacts Of The Earth by Several Halo CMEs From Active Region NOAA 652	477
<i>Shahinaz Yousef, M. S. El Nawawy, M. El-Nazer and Mohamed Yousef</i>	
Topic 9. STELLAR EJECTIONS	
Winds and Ejecta from Cool Stars	481
<i>Moira Jardine</i>	
Disks and winds in Young Solar-Type Stars: the Magnetic Connection	491
<i>C. Dougados, J. Bouvier, J. Ferreira and S. Cabrit</i>	

Plage and flare Activity of the RS CVn-type Star UX Arietis during 2001-2002	501
<i>Sheng-hong Gu</i>	
A Two-Temperature Model for LBVs.	506
<i>J. H. Guo, Y. Li and H. G. Shan</i>	
Prominence Mapping of the RS CVn system HR 1099.	511
<i>P. Petit, J.-F Donati, M. Jardine and A. Collier Cameron</i>	