

IAU COLLOQUIUM 142
PARTICLE ACCELERATION PHENOMENA IN ASTROPHYSICAL PLASMAS
UNIVERSITY OF MARYLAND, 1993 JANUARY 11–15

A G E N D A

Each day invited speakers precede oral presentations

Monday, 1993 January 11

OPENING TALK—*Chair, M. R. KUNDU (UMD)*

0930–1005 R. D. BLANDFORD (USA)—Review of Astrophysical Particle Acceleration Mechanisms

SESSION 1: PLANETARY ENVIRONMENTS—*Chair, G. HAERENDEL (MPE)*

1030–1105 E. MÖBIUS (USA)—Sources and Acceleration of Energetic Particles in Planetary Magnetospheres
1105–1125 R. LOPEZ (USA)—Evidence for Particle Acceleration during Magnetospheric Substorms
1125–1145 A. GALEEV (RUSSIA)—Theory of Substorm Acceleration
1145–1205 M. D. DESCH (USA)—Jovian Radio Bursts
1205–1240 R. SAGDEEV (RUSSIA)—Review of Particle Acceleration in Collisionless Shocks

SESSION 2: INTERPLANETARY MEDIUM—*Chair, M. SCHOLER (MPE)*

1400–1435 M. LEE (USA)—Evidence for Particle Acceleration in the Interplanetary Medium
1435–1455 W. DRÖGE (GERMANY)—Transport of Solar Energetic Particles
1455–1515 K. P. WENZEL (NETHERLANDS)—Evidence and Expectations for Particle Acceleration out of the Plane of the Ecliptic
1545–1605 G. ERDÖS (HUNGARY)—Drift Acceleration at Interplanetary Shocks
1605–1640 F. JONES (USA)—Theoretical Review of Diffusive Shock Acceleration in the Heliosphere
1640–1700 S. KRIMIGIS (USA)—Observational Evidence for Shock Acceleration

Oral Presentations* (10 Minutes Each)

1700–1710 ABRAHAM CHIAN AND XINJI WU—Nonlinear Potential Structures in the Auroral Acceleration Region
1710–1720 HORST FICHTNER, S. RANGA SREENIVASAN, HANS-JÖRG FAHR, DANIEL RUCINSKI, AND S. GRZEDZIELSKI—
On the Asymmetry of the Distribution of the Anomalous Cosmic-Ray Component in the Heliosphere
1720–1730 MATTHEW BARING—Injection Efficiencies of Accelerated Particles at Oblique Shocks
1730–1740 RÜDIGER DUNG AND VAHÉ PETROSIAN—The Influence of the Resonant Particle-Wave Interaction on the
Transport of Charged Particles in Astrophysical Plasmas
1740–1750 G. MANN AND H. LÜHR—Electron Acceleration at Quasi-parallel Shocks in the Solar Corona and Its Signature in
Solar Type II Radio Bursts
1750–1800 MARTIN VOLWERK AND JAN KUIJPERS—Double Layer Annihilation
1800–1810 J. PÉREZ-PERAZA—Reevaluation of Fluctuational Acceleration in Stochastic Processes

* In each case the name of the person who made the presentation is listed first.

Tuesday, 1993 January 12

SESSION 3: SOLAR FLARES—Chair, E. L. CHUPP (UNH)

- 0900–0925 Y. UCHIDA (JAPAN)—A Magnetohydrodynamic Setup for Particle Acceleration Revealed by *Yohkoh* Results
0925–0945 M. R. KUNDU (USA)—Millimeter-Wavelength Observations of Solar Flares
0945–1010 N. VILMER (FRANCE)—Hard X-Ray and Gamma-Ray Observations from *Granat*
1040–1100 G. KANBACH (GERMANY)—High-Energy Solar Gamma-Ray and Neutron Observations on the *Compton Observatory*
1100–1120 R. RAMATY (USA)—Theoretical Models of High-Energy Solar Flare Emissions
1120–1140 D. B. MELROSE (AUSTRALIA)—Turbulent Acceleration in Solar Flares
1140–1200 A. O. BENZ (SWITZERLAND)—Timescales and Fragmentation of Acceleration in Solar Flares

SESSION 4: STARS—Chair, A. O. BENZ (ETH)

- 1330–1355 J. H. SCHMIDT (GERMANY)—*ROSAT* Observations of Stellar Flares
1355–1415 M. GÜDEL (SWITZERLAND)—Nonflaring Stellar Radio Emissions
1415–1435 K. LANG (USA)—Microwave Observations of Stellar Flares
1435–1455 G. HAERENDEL (GERMANY)—Acceleration from Field-aligned Potential Drops
1525–1545 R. F. VAN OSS (NETHERLANDS)—Magnetic Flares in Energetic Radiation Fields
1545–1605 O. C. DE JAGER (SOUTH AFRICA)—VHE Gamma Rays from White Dwarfs
1605–1625 V. ZHELEZNYAKOV (RUSSIA)—Acceleration in Nonaccreting White Dwarf Magnetospheres

Oral Presentations* (10 Minutes Each)

- 1625–1635 SHINZO ENOME AND JUN-ICHI SAKAI—Impulsive Flares of 2358 UT on 1992 August 17 Observed with Nobeyama Radioheliograph and *Yohkoh*, SXT, and HXT
1635–1645 MARKUS J. ASCHWANDEN, ARNOLD O. BENZ, AND BRIAN DENNIS—Pulsed Acceleration in Solar Flares
1645–1655 M. YOSHIMORI—Solar Gamma-Ray Observations from *Yohkoh*
1655–1705 E. RIEGER—Gamma-Ray Precursors of Solar Flares
1705–1715 VAHÉ PETROSIAN, BRIAN PARK, AND RUSSELL HAMILTON—Stochastic Acceleration in Presence of Coulomb Collisions and Synchrotron Losses
1715–1725 JUN-ICHI SAKAI—Particle Acceleration during Two Current Loop Collisions in Solar Flares

Wednesday, 1993 January 13

SESSION 5: PULSARS, SUPERNOVAE, AND SNRS—Chair, V. ZHELEZNYAKOV

- 0900–0935 J. HALPERN (USA)—Optical and X-Ray Observations of the γ -Ray Pulsar Geminga
0935–0955 J. MIDDLEDITCH (USA)—Optical and Infrared Observations of Young Pulsars
0955–1015 M. ULMER (USA)—Gamma-Ray Observations of Pulsars
1045–1120 J. ARONS (USA)—Acceleration in Pulsars
1120–1140 B. ASCHENBACH (GERMANY)—X-Ray Observations of SNRs
1140–1200 J. KIRK (GERMANY)—Radio Emission from SNR 1987A

Oral Presentations* (10 Minutes Each)

- 1200–1210 RUSSELL HAMILTON AND M. COLEMAN MILLER—Disk Accreting Magnetic Neutron Stars as High-Energy Particle Accelerators
1210–1220 I. A. GRENIER AND R. N. HENRIKSEN—The Spectral Variability of the Vela and Geminga Gamma-Ray Pulsars and Its Implications
1220–1230 D. A. GREEN—The Spectral Turnover of the “Filled Center” Supernova Remnant 3C 58: Implications for When Acceleration Occurs
1230–1240 THOMAS K. KATSOULEAS—Summary of Laboratory Plasma Accelerators

* In each case the name of the person who made the presentation is listed first.

- 1240–1250 DONALD C. ELLISON, J. GIACALONE, D. BURGESS, AND S. J. SCHWARTZ—Direct Comparison between Monte Carlo and Hybrid Shock Simulations
- 1250–1300 STEPHEN P. REYNOLDS AND DONALD C. ELLISON—Numerical Simulations of Electron Acceleration in Supernova Remnants
- 1300–1310 M. VANDAS—Acceleration of Electrons at a Curved Shock

Thursday, 1993 January 14

SESSION 6: GAMMA-RAY BURSTS, UHE SOURCES, AND CYGNUS X-1—*Chair, R. RAMATY (GSFC)*

- 0900–0935 K. HURLEY (USA)—Review of Gamma-Ray Burst Observations
- 0935–1010 A. K. HARDING (USA)—The Status of Gamma-Ray Burst Theory
- 1010–1030 I. G. MITROFANOV (RUSSIA)—Acceleration Processes for Gamma-Ray Bursts
- 1100–1120 J. LING (USA)—Gamma Rays from Cygnus X-1
- 1120–1140 D. EICHLER (ISRAEL)—Particle Acceleration in High-Energy Gamma-Ray Sources
- 1140–1200 R. PROTHEROE (AUSTRALIA)—Observations of UHE Sources

SESSION 7: ACTIVE GALAXIES AND QSOs—*Chair, R. PROTHEROE (UNIV. ADELAIDE)*

- 1330–1405 M. ELVIS (USA)—*ROSAT* Observations of Quasars to $z = 3$
- 1405–1425 W. B. SPARKS (USA) AND J. BIRETTA (USA)—*HST* and VLA Observations of Synchrotron Jets
- 1425–1445 C. FICHTEL (USA)—Gamma-Ray Observations of QSOs
- 1445–1505 R. A. SUNYAEV (RUSSIA)—*Granat* Observations of the Broad-Band Hard X-Ray Spectra and Time Variability of the Galactic Black Hole Candidates: *Granat* and *MIR-KVANT* Results
- 1535–1610 C. NORMAN (USA)—Acceleration in Active Galactic Nuclei
- 1610–1630 M. SIKORA (POLAND)—Status of AGN Theory
- 1630–1655 R. SCHLICKEISER (GERMANY)—Cosmic-Ray Transport and Acceleration
- 1655–1720 W. I. AXFORD (GERMANY)—Cosmic-Ray Acceleration above the Knee

Oral Presentations* (10 Minutes Each)

- 1720–1730 LEWIS BALL—Electron Acceleration in Short-lived Radio Transients
- 1730–1740 D. HARTMANN—Gamma-Ray Burst Origin(s)
- 1740–1750 MARK MC CONNELL ON BEHALF OF THE COMPTEL COLLABORATION—COMPTEL Observations of Cygnus X-1
- 1750–1800 STEFAN J. WAGNER—Radio to Gamma-Ray Spectra of Rapid Flares in Compact Active Galaxies

Friday, 1993 January 15

SESSION 8: SIMULATION OF PARTICLE ACCELERATION: NEW THEORETICAL APPROACHES—*Chair, P. MACNEICE (GSFC/STX)*

- 0900–0935 T. FORBES (USA)—Simulation of Reconnection in Solar Flares
- 0935–0955 M. SCHOLER (GERMANY)—Proton and Heavy-Ion Acceleration in Quasi-parallel Shocks
- 0955–1015 P. CARGILL (USA)—Simulation of Heating Acceleration at Quasi-perpendicular Shocks

Oral Presentations* (10 Minutes Each)

- 1045–1055 J. MILLER—Ion Acceleration and Abundance Enhancements by Electron Beam Instabilities in Impulsive Solar Flares
- 1055–1105 D. REAMES—Abundances of Particles from Impulsive Solar Flares
- 1105–1115 C. DERMER—On the Location of the Acceleration and Emissions Sites in Gamma-Ray Blazars
- 1115–1125 M. KAFATOS—Particle Acceleration in Hot Accretion Disks from Active Galactic Nuclei
- 1125–1140 E. L. CHUPP—Closing; Instructions on Proceedings

* In each case the name of the person who made the presentation is listed first.