Workshop on Basic Plasma Processes in Solar-Terrestrial Activities

(The First Announcement)

Place: Luoyang, P. R. China (Zhuogeng Yuan Hotel: International Academic Exchange Center, Luoyang Normal College)

Date: June 21-24, 2011

Motivation and Topic:

In the universe, more than 99% of all observable matter is in the plasma state, which is often in a highly dynamic state far from thermal equilibrium. In our nearest cosmic plasma coupling system--the solar-terrestrial space, various plasma phenomena, such as solar flares, coronal mass ejections, coronal heating, solar wind acceleration, magnetic clouds and collisionless shock waves in interplanetary space, geomagnetic storms, and the Earth's aurora, have unique value in astrophysics, space physics, plasma physics and other related fields. They are not only the most important key factors leading to changes in solar-terrestrial environment and space weather, but also a natural laboratory for astrophysical and plasma physics researches.

With the improvement of solar observation equipment and space satellite instrument technology, the observational data for these plasma phenomena have higher resolution, greater precision, and more systematic and integral characteristics than before. The related data analysis and numerical simulations attract much attention of many researchers and have made remarkable progress. Meanwhile, many basic plasma problems involved in these phenomena are still in need of special attentions and great efforts, such as: (1) Microphysical mechanisms and energetic processes of magnetic field reconnections; (2) Acceleration mechanisms and transport processes of energetic particle beams in magnetized plasmas; (3) Physical mechanisms for the formation and dissipation of collisionless shock waves and discontinuities; (4) Emission mechanisms for solar radio bursts and relevant magneto-plasma diagnostic messages; (5) Formation and maintenance mechanisms for various fine magnetic structures (i.e., solar coronal loops, discrete auroral arcs, zonal flows, vortices, filaments); (6) Microphysical pictures of plasma particle energization and thermalization, and associated linear and nonlinear instabilities, resonant and non-resonant wave-particle interactions, dissipative and non-dissipative turbulent processes, and so on.

In recent years, there is a growing trend that meeting talks and discussions in the fields of space and solar physics major focus on the analysis of observational data of various plasma phenomena or the numerical simulation of associated processes, and a remarkable lack of theoretical studies on basic plasma processes. Contemporary scientific studies rest on the three foundation stones, theory, observation, and simulation. Of them, the theory is the least attention-getting one. In consideration of this situation, we plan to organize a workshop on "**basic plasma processes in solar-terrestrial activities"** in order to offer an opportunity for exchanges in theoretical studies.

The proceedings presented in this workshop, including invited reports and contributions, will be published in a special issue of Chinese Science Bulletin.

Organization and Other Information for the workshop

Sponsors: Purple Mountain Observatory, CAS; Center for Space Science and Applied Research, CAS; National Astronomical Observatories, CAS

Local Organizations: Purple Mountain Observatory, CAS; Luoyang Normal College

Scientific Advisory Committee: Jih-Kwin Chao, Liu Chen, Cheng Fang, Zu-Ying Pu, De-Yu Wang, Sui Wang, Jing-Xiu Wang, Feng-Si Wei, Ching-Sheng Wu

Scientific Organizing Committee: Peng-Fei Chen (Nanjing University), Yao Chen (Shandong University), Ming-De Ding (Nanjing University), Xue-Shang Feng (The Research Center of Space Science and Application, CAS), Jian-Yong Lu (Meteorology Administration of China), Quan-Ming Lu (University of Science and Technology of China), Zhi-Wei Ma (Zhejiang University), Jih-Hong Shue (National Central University), Xiao-Gang Wang (Peking University), De-Jin Wu (Purple Mountain Observatory, CAS), Fu-Liang Xiao (Changsha University of Science and Technology), Yi-Hua Yan (National Astronomical Observatories, CAS), Jun Zhang (National Astronomical Observatories, CAS)

Local Organizing Committee: Heng-Qiang Feng, Qiang Liu, Jing Lu, Feng Peng, Yong-Gang Tan

Convener: Dr. De-Jin, Wu (Post address: Purple Mountain Observatory, 2 West Beijing Road, Nanjing 210008, P. R. China; E-mail address: djwu@pmo.ac.cn; Tel phone number: +86-25-83332129)

Schedule:
Registration Deadline: Mar. 31, 2011
The 2nd Announcement: Apr. 30, 2011
Abstract Submission Deadline: May. 30, 2011
June 20: Registration and reception
June 21: Invited reports
June 22-23: Contributing talks
June 24: Free discussions and social events
June 25: Departure

Registration:

Please return the attached registration form through email before March 31, 2011 to the contact address: djwu@pmo.ac.cn