Special Issue

Solar Physics and Plasma Physics: Topics and Advances

Message from the Guest Editors

The outer solar atmosphere, called the corona, is mysteriously at a million degrees and, therefore, it is a natural laboratory to study highly ionized plasma. Images taken in high energy bands from satellite missions reveal a strongly structured and dynamic environment where the bright plasma is confined and heated by the magnetic field. We see steadily bright active regions but also highly transient and explosive events, such as flares. There are also solar regions where the magnetic field opens toward the interplanetary space and releases the solar wind and other transient massive outflows, such as jets, solar eruptions and coronal mass ejections. These end up interacting with the circumterrestrial medium and, therefore, directly with human activities. Mass acceleration and energy transport and release, both in closed and open magnetic structures, are challenging because they involve processes at different temporal and spatial scales at once; this is a state-of-the-art issue.

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Message from the Editor-in-Chief

Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

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