

Interplanetary Disturbances

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The Sun emits the variable solar wind which interacts with the very local interstellar medium to form the heliosphere. Hence variations in solar activity strongly influence interplanetary space, from the Sun's surface out to the edge of the heliosphere. Superimposed on the solar wind are mass ejections from the Sun and/or its corona which disturb the interplanetary medium - hence the name "interplanetary disturbances".

Interplanetary disturbances are the sources of large-scale particle acceleration, of disturbances in the Earth's magnetosphere, of modulations of galactic cosmic rays, in short, they are the prime focus for space weather studies.

This lecture will give an overview of the relevant physical background including magnetic reconnection, particle acceleration, cosmic-ray modulation, as well as an overview of the properties of the solar wind and of the interplanetary manifestations of coronal mass ejections - the "interplanetary disturbances".