

INTERPLANETARY CORONAL MASS EJECTIONS AT SOLAR MINIMUM: STEREO OBSERVATIONS

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Interplanetary coronal mass ejections (ICMEs) have been a subject of extensive investigation for several decades. Due to intense magnetic fields and smooth rotation of the magnetic field direction ICMEs are the most important causes of magnetic storms at the Earth's magnetosphere. At the orbit of the Earth ICMEs are huge structures, with typical radial diameters about third of an astronomical unit and longitudinal dimensions of several tens of degrees. In this talk I will present new results based on the multi-spacecraft observations of ICMEs from the STEREO observatory. STEREO was launched in October 2006 and it consists of two functionally identical satellites, one that leads the Earth, and one that lags the Earth in its orbit around the Sun with gradually increasing angular separation. Combined with the observations at the L1 (Wind, ACE, SOHO) the STEREO mission offers the unprecedented opportunity to address important questions related to the large-scale structure of ICMEs. STEREO was launched at the brink of the long and deep solar minimum. However, during its first two years STEREO and L1 spacecraft have observed almost 40 ICMEs. I will give an overview of the characteristics of these ICMEs. I will also discuss how two-point measurements can be used to increase our understanding of the global ICME geometry and to improve the ICME models.

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