

STUDY OF A CORONAL MASS EJECTION USING STEREO/SECCHI AND SOHO/LASCO OBSERVATIONS

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Abstract

The Solar Terrestrial Relations Observatory – STEREO was launched on October 25th, 2006 and is composed of two nearly identical spacecrafts, one ahead of Earth in its orbit, the other trailing behind. Its objective is to study the Sun and the nature of its coronal mass ejections, or CMEs. Each spacecraft has, among others, an instrument package called Sun Earth Connection Coronal and Heliospheric Investigation (SECCHI), which is composed by 4 sets of instruments: SECCHI EUVI: Extreme UltraViolet Imager; SECCHI COR1: Inner Coronagraph; SECCHI COR2: Outer Coronagraph; SECCHI HI: Heliospheric Imager. These instruments are able to study the evolution of CMEs from birth at the Sun's surface through the corona and interplanetary medium to its eventual impact at Earth. Since 1996, the Large Angle and Spectrometric Coronagraph (LASCO), aboard the Solar and Heliospheric Observatory (SOHO), is able to observe the solar corona from 1.1 to 32 solar radii (LASCO C1, C2 and C3 field of view). This observation capability has improved substantially since STEREO SECCHI package is able to observe from 1.4 solar radii up to 1 AU (earth orbit). In this work, we study the evolution of a CMEs occurred on January 8th 2007 from 1.4 to beyond 32 solar radii, using observations from the SECCHI package. Since SOHO is still in operation, and since STEREO was very close proximity of the earth during this event, we were able to compare measurements from both SECCHI and LASCO instruments for this same CME.