MULTI-SPACECRAFT OBSERVATION OF SUPRA-THERMAL ELECTRONS FOR THE WIDE CME ON MARCH 12, 2012

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On March 12, 2012, a very fast Coronal Mass Ejection (CME) with a speed of about 2000 km/s was released from the Sun. Its interplanetary counterpart (ICME) was detected in-situ on March 15, 2012 by spacecraft located at L1 close to the Earth, and by STEREO A. When the ICME arrived, they had an angular separation of ~100 degrees. The Earth crossed the East flank of the structure and showed unambiguous ICME in-situ signatures, while STEREO A crossed the West flank and showed less clear markers. At the moment of the eruption, the CME was surrounded by three different coronal holes, which were located with respect to the CME launch site East (negative polarity), South-West (positive polarity) and West (positive polarity). This matches with the polarity observed in-situ at 1 AU. Apart from this, supra-thermal electrons show both signatures of bidirectionality and its absence as the spacecraft transits the ICME, indicating that only part of ICME remained a closed structure, whereas the other parts were eroded, possibly due to interaction with the fast solar wind. We investigate the early kinematics of the CME using the Graduated Cylindrical Shell (GCS) model, the differences between the signatures of the ICME observed by Earth and STEREO A at 1 AU and the interaction process with the surrounding CHs.