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Geoeffectiveness of two CMEs interacting with the same CH

A. Guerrero (1), C. Cid (1), Y. Cerrato (1), E. Saiz (1), J. Palacios (1), and D. Seaton (2)

(1) Space Research Group-Science, University of Alcala, Spain (agoronda@gmail.com), (2) Royal Observatory of Belgium, Solar Physics, Ringlaan 3, B-1180 Brussels, Belgium

From 8th to 20th September, 2011 two Coronal Mass Ejections (CMEs) reached the Earth causing two moderate geomagnetic storms (Dst < -50 nT). The sources of the CMEs were two different active regions (AR) separated by a Coronal Hole (CH) (the first one coming from the western AR and the second one from the eastern AR). The interplanetary counterparts of the CMEs and the fast stream from the CH interacted in their way out. At Lagrangian point L1, two ICMEs appear influenced by the leading and trailing boundaries of the High Speed Stream. We study the event all the way from the Sun to the Earth, looking for features that could have enhanced the geoeffectiveness of the ICMEs. Data from ACE and WIND spacecraft for the interplanetary medium transients are used, as well as data from STEREO, SOHO, PROBA2 and SDO missions for the solar sources of the events.