



Sun-Earth connection of the 2017 September CMEs

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At the Early 2017 September, the active region (AR) 12673 pass through the visible side of the Sun. During that period, AR 12673 produced ~ 83 flares. Thus, this is a rough active region in recent years. The GOES X-Ray flux observations from 2017 September 4 to 2017 September 12 show that 83 flare erupted from this active region, in which 24 events are M-class flares and 2 events are X class flares. It should be noted that the two X class flares are ranked as the top two flare in solar cycle 24. By check the corongagraph images from SOHO/LASCO, we found that there are about 20 CMEs erupted from AR 12673 in which 3 of them are halo CMEs which caused high interest in solar physics community. Thus, we can expect that these CME might interacted with others during their propagation from Sun to Earth. In addition, an intense geomagnetic storm was occurred in 2017 September 8 02:00 UT with minimum Dst value (Dst_{min}) of -142 nT seen from the real time Dst observation provided by World Data Center (WDC). In this work, we will show the detail analysis about the Sun-Earth connection of these CMEs and also their space weather effect. In addition, we found that the shock compress previous ICMEs in these events are very important in causing the intense geomagnetic storm and solar energetic particle events. Thus, how such structure influence the space weather effect of CME will be further discussed in this work.