

The CME-productivity associated with flares from two ARs

S. Akiyama (1,2), N. Gopalswamy (2), and S. Yashiro (1,2)

(1) Catholic University of America, (2) NASA/GSFC
(akiyama@ssedmail.gsfc.nasa.gov/301-286-1681)

NOAA active region (AR) 10039 appeared at the east limb on 21 July 2002 and rotated out of the earthside on 4 August. This AR was magnetically complex consisting of a spot group with a beta-gamma delta (BGD) configuration from the start. It produced 3 X- and 8 M-Class X-ray flares during its disk passage. NOAA AR 10044, located just to the southwest of AR 10039, developed gradually into a BGD configuration on 26 July and produced 9 M-class flares. We examined the coronal mass ejection (CME) associations rate (R) of these X-ray flares using data from the Large Angle Spectrometric Coronagraph (LASCO) on board the Solar and Heliospheric Observatory (SOHO). We found the CME-productivity to be different between the two ARs. AR 10039 was CME-rich with 72% association with flares, while AR 10044 was CME-poor with an association rate of only 13%. We also calculated the average velocity and angular width of CMEs from the two ARs. On the average, the CMEs from the CME-rich AR were faster (1195 km/s) and wider (246 deg.) than the ones from the CME-poor AR (282 km/s and 12 deg.). We discuss the characteristics of the ARs, which might have resulted in the observed differences.