[PSO-03] Multi-wavelength Analysis of Two Near-limb Solar Flares Associated with Coronal Mass Ejection

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It is now widely accepted that magnetic reconnection in the corona powers solar flares and coronal mass ejections. However, the various observational features detected from multi-wavelength measurements during the flare evolution put constraints on our theoretical understanding about solar eruptive phenomena. In this paper, we discuss the evolution of two near-limb solar flares utilizing a multi wavelength data. The flares under investigation are: M7.6/1N flare from AR 10486 on October 24, 2003 and X2.7/2B flare from AR 10488 on November 3, 2003. Both the events show many common observational features including recent RHESSI finding, i.e., the apparent altitude decrease of X-ray looptop source at the beginning of the impulsive phase before changing to commonly observed upward expansion of flare loop system. The paper presents a detailed comparative study of multi-wavelength and multi-instrumental data including HXR, EUV, microwave, H-alpha and white light during the flare-CME evolution and we discuss the possible explanation for triggering of flare and associated CME in terms of tether-cutting and break-out scenarios.

[PSO-04] Re-examination of the Geometrical Relationships between the Interplanetary Magnetic Clouds and Their Solar Origins

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The solar sources of interplanetary magnetic clouds (MCs) are CMEs, and the orientations of MC axes had been believed to be nearly parallel to the magnetic neutral lines in the solar regions where CMEs are generated. Recently, however, it has become controversial if such a relationship can be taken as a general rule, because numbers of MCs were reported in which the above relationships are not obvious. We attempt to re-examine the geometrical relationships between the topology of MCs and the solar magnetic field structure based on our recent analysis of the MC geometries. The analysis showed that there are many magnetic clouds (MCs) for which the geometries obtained by the fitting method can be completely different depending on the models used in the fitting. More precisely, when we use a flux rope model with the curvature taken into account, the fitting results can, sometimes, yield the orientations of MCs that are completely different from those obtained with a straight cylindrical flux rope model. This finding provides us a new tool by which we may get matching between the possible orientations of MC axes and the neutral lines of solar magnetic fields. We can show many cases in which the fitting with a curved flux rope model yield matching between the MC axis orientations and the solar magnetic field distribution.