[구SE-07] The role of magnetic flux variations in the evolution of EUV bright points

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We report three types of evolutions of EUV bright points (EBPs) which are characterized by their height variations. We analyzed three EBPs during their lifetimes observed by STEREO/SECCHI/EUVI and we obtained heights, sizes, and intensities. Moreover, we investigated their underlying magnetic bipoles observed by SOHO/MDI and we measured distances and fluxes of the two opposite fragments. We found three distinct changes in the heights of the EBPs: upward, downward, and flat. In the upward case, the EBP showed a small and dark structure first, and then changed to a large and bright loop. In the downward case, the EBP first appeared as a large and dark loop structure, and then evolved to a compact and bright loop system. Finally, in the flat case, the height and the size of the EBP didn't change significantly. We found that those EBPs were associated with three distinct contact types of their underlying magnetic fragments, emerging, cancelling, and shearing, respectively. In all cases, both flux emergences and flux cancellations were observed during the lifetimes of the BPs. The flux emergence was dominant in the initial phase and the flux cancellation was significant when the intensity reached its maximum. In addition, we found a remarkable correlation between the heights of the EBPs and the distance of the opposite magnetic fragments.

[구SE-08] EUV Imaging Spectroscopic Study of a CME Source Region by HINODE EIS

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The Extreme ultraviolet Imaging Spectrometer (EIS) on board Hinode provide us with excellent imaging spectroscopic data with very good spatial and spectral resolutions, which can be used for detecting Doppler flows in transition region and coronal lines as well as diagnosing plasma properties such as temperature, density, and non-thermal velocity. In this study we have made an EUV-imaging spectroscopic study of the source region of a partial halo coronal mass ejection (CME) that occurred on 2007 July 9 in NOAA 10961. Dopplergrams are obtained before and after the CME eruption using 12 EIS spectral lines (Log T= 4.9 ~ 7.2). Major results are summarized as follows. First, it is noted that either red shifts disappeared or blue shifts newly appeared for all spectral lines lower than Log T =6.0. Second, there were significant intensity increases for all wavelengths. Third, there were no significant variations in non-thermal motions for all wavelengths. We found one interesting bright point that newly appeared after the CME eruption. We discuss the implication on the results in terms of the CME eruption.