

M02a Properties of H α surges and Optical/EUV brightenings in NOAA 8227

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We present results from a multi-wavelength analysis of the properties of five H α surges observed in and around solar active region NOAA 8227 on 30th May 1998 by the La Palma Swedish Vacuum Solar Telescope. Cotemporal images were obtained in the Ca II 3933Å K-line, the 4305Å G-band and H α (6356Å). Simultaneous magnetograms were derived from Fe I 6302Å data. Additional observations were made by TRACE and Yohkoh.

Previous authors have proposed models for the causal relationship between H α surges and UV brightenings based on observations of cancelling magnetic flux. At least two of the events studied here fit within the general theoretical description of surges. Magnetic flux cancels around bright points observed in H α and Ca II K. Material ejection (possibly rotating) is followed by a coronal brightening observed by TRACE. These TRACE brightenings may be the result of further reconnection in the corona.

However, a separate class of surges is found which do not fit within this picture. They are detected in like-manner in H α but are most prominently observed in the red wing. They do not show clear evidence of magnetic flux cancellation nor are they clearly associated with Ca II K/coronal brightenings. Possible scenarios for their production are discussed.