

B21a Solar-B/EIS observations of EUV blinkers

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Using coordinated observations by SOHO/CDS (Coronal Diagnostic Spectrometer) and the Hida/DST (Domeless Solar Telescope) we have been studying the dynamical characteristics of EUV blinkers and their counterparts in $H\alpha$. Blinkers tend to show red-shifted relative Doppler velocities and line broadening indicative of some dynamical characteristics in common with other active phenomena such as explosive events. However, the magnitudes of these velocities are smaller. Some authors have proposed that blinkers and explosive events are in fact produced by the same magnetic reconnection process, and that the difference in velocities is attributable to the magnetic field geometry. In addition, conflicting results have been found with SOHO/SUMER (Solar Ultraviolet Measurements of Emitted Radiation) which show line narrowing during a blinker.

The EIS spectral resolution will be superior to that of the SOHO instruments so a more accurate measurement of the blinker velocity and line width changes will become possible. Blinkers are easily detected in transition region lines of O v (formed at $\log T=5.4$) and so a line such as Mg vi 270 Å ($\log T=5.6$) would be the appropriate target for detection with EIS. We estimate that an exposure of only a few seconds would provide sufficient counts for analysis and much higher time cadence observations than previously will be possible. We will discuss these results and plans in more detail, and we will also discuss strategies for discriminating between different models for blinkers with EIS.