

Recent Hinode Observations of Solar Flares

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With starting the new solar cycle, large flares, i.e., X-class and M-class flares, began to occur on the solar disk in 2011. "Hinode" successfully captured an X2.2 flare in 15 February 2011, followed by other successful observations of some large flares. X-Ray Telescope (XRT) performs high-cadence soft X-ray imaging observations not only during the flares but also in pre-flare phase, by using its flare automatic trigger function. Solar Optical Telescope (SOT) monitors an active region with medium-cadence photospheric magnetic-field and chromospheric Ca II H observations and, in response to the XRT flare trigger, switches to high-cadence observations for white-light flares and chromospheric dynamics. EUV Imaging Spectrometer (EIS) performs so-called flare hunting study, in which an active region is repeatedly and sparsely scanned but with fairly high (about 6 minutes) cadence. The Hinode team is optimizing our flare observations for better observations, although severe limitation of the telemetry volume and narrow telescopes' field of view make it difficult to hunt large flares. Regions with the potential to produce flares will be given the highest observing priority. The target for the observations may utilize the Maximum Millennium Flare Watch target designation. In addition, Hinode began instituting a Hinode Flare Watch that may be called by the representatives in the Hinode team. In this presentation, we will show some observing data from recent large flares and discuss how Hinode observations are important for flare investigations.

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