

## **Evaluation of the Amplitude and Restoring the Temporal Profile of the Bastille Day Solar Flare in the 19.5 nm from the Saturated EIT Images**

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SOHO/EIT images taken during extreme solar flares show bright areas stretched mainly along the E-W direction with the signals close to the saturation level (blooming) of the CCD camera. A comparison of a pre-flare and flare images allows us to see both pre-flare and flare's distinctive features. Pre-flare sources correspond to areas between strong magnetic fields on the SOHO/MDI magnetic field images. A location of the modeled flare 'center' was found as a center of gravity of an unsaturated widening area of the flare.

The amplitude of the peak in the 19.5-nm passband for the extreme Bastille Day flare of July 14, 2000 was modeled on the assumption that the CCD blooming had redistributed some of the EUV photo-electrons above the pixel capacity level from the center of the flare position on the CCD to other pixels. This assumption allows us to determine the lower limit for the amplitude of the peak if some electrons were lost during the blooming and the peak shape corresponds to the modeled one. For the simplest case we interpreted the flare's peak intensity distribution as a symmetrical paraboloid. Any other shape of the peak may change the modeled amplitude, leaving the same number for the total photoelectrons from the bloomed area as an integral characteristic of the flare.

The modeled peak amplitude of the Bastille Day flare is about 256-K DNs compare to about 16-K DNs of the EIT camera top limit. The restored flare's temporal profile in the 19.5-nm spectral window was determined for a sequence of observed images with the cadence of about 12 min at the time of the flare by counting photoelectrons trapped in the blooming areas of the flare.