

**A VERY SMALL TWO-RIBBON FLARE OF GOES X-RAY CLASS  
B6.7**

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**Extended Abstract**

We obtained some new results on the evolution of coronal magnetic field configuration related to a subflare in an active region. The observation was made on 9 May 1992, simultaneously by Yohkoh/Soft X-ray Telescope (SXT) and the Solar Tower Telescope at National Solar Observatory/Sacramento Peak with a universal birefringent filter, giving magnetograms and velocitygrams as well as  $H\beta$  and  $H\alpha$  filtergrams, and CN filter.

In this subflare, several points were progressively flared up in  $H\beta$  and  $H\alpha$  which possibly correspond to footpoints of coronal magnetic loops, while an arch-like structure in soft X-rays changed its direction during the flare. The energy involved in this subflare is very small (GOES X-ray class B6.7), and it is likely that a trigger mechanism for this subflare is different from that for a large so-called two-ribbon flare.

The magnetograms show that the footpoint regions of flaring arch have very weak magnetic field strength, and hence it is very difficult to see any change in photospheric magnetic fields during the subflare. This is confirmed also by the CN filtergrams, which give information of magnetic field distribution; the CN emission is very weak at the footpoint regions. On the other hand, the photospheric velocitygrams show distinct upward motion at an innermost region of the subflare before and during the subflare.

Together with  $H\alpha$  and  $H\beta$  filtergrams which indicate emergence of magnetic flux tubes in the chromosphere, we tentatively conclude that this subflare was produced by the direct magnetic field reconnection between newly emerging bipole and its overlying weak coronal magnetic fields, because we can delineate the expected change of magnetic field configuration with help of SXT images according to this scenario.