Evolution of flare ribbons and energy release during a solar flare

Ayumi Asai[1], Satoshi Masuda[2], Hiroki Kurokawa[3], Kazunari Shibata[4]

[1] Dep. Astron, Kyoto Univ., [2] STEL, Nagoya Univ, [3] Kwasan Obs., Kyoto Univ, [4] Kazan Astron. Obs., Kyoto Univ.

We observed an X2.3 solar flare which occurred on 10 April 2001, in H-alpha with the Sartorius Telescope at Kwasan Observatory, Kyoto University. This flare observed with some other instruments, in hard X-ray with the hard X-ray telescope aboard Yohkoh, in microwave with the Nobeyama Radioheliograph.

Using the good data set, we examined the temporal and spatial evolutions of radiation sources seen in each wavelength. We found that the H-alpha kernels appear at the high magnetic field region. Moreover, the hard X-ray sources appear at the region on which magnetic field is especially strong. These show the relation between the released magnetic energy and magnetic field strength.

In this talk, we report the relation between the amount of the released magnetic energy and the environmental effects, such as global magnetic field structure, separating speed of the flare ribbons, and so on.