

## **M30b                      Sunspot Proper Motion Study using a High Resolution CCD Camera**

B. Anwar\* and M. Akioka (Communications Research Laboratory)

A Sunspot Monitoring Telescope with a high resolution CCD camera of  $2k \times 2k$  pixels was recently built at Hiraiso Solar Terrestrial Research Center, CRL. The telescope has started daily observations in November 1996. We have obtained a good quality of the Sun's full disk images taken at 10 minutes cadence which contain a well developed sunspot group. This active region NOAA 7999 was the largest sunspot group ever seen in the beginning of 23th solar cycle. We have measured the sunspot positions and derived their proper motions. We found that the measurements using an image processing technique resulted in accuracy of about 0.1 deg or less in Carrington longitude and latitude. In this paper a comparison of the sunspot motions with the  $H\alpha$ , Soft X-ray and magnetogram data will be presented.

\*Also, Watukosek Solar Observatory, National Institute of Aeronautics and Space, Indonesia.