

## H $\alpha$ observations of active regions using a high-speed CCD camera

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Active regions are one of the interesting subjects in the solar research. They have lots of rapidly varying events and small scale structures that are difficult to observe from the ground because of the atmospheric seeing. To get images of better quality by reducing the effect of the atmospheric disturbance, we have been developing an observing technique using a high speed digital CCD camera 1M30P manufactured by the Dalsa company. It is a 12-bit camera of 1024x1024 pixels, and grabs 30 frames per second. The camera is usually attached to the 26 inch telescope at Big Bear Solar Observatory. At present we are employing the technique of frame selection to minimize the atmospheric seeing effect. We take 30 frames for one second, and saves into the hard disk only the best one which has the highest contrast. This process is repeated every two seconds, and the observation usually runs for about 6 hours each day. So far the images have been taken at the blue wing of the H $\alpha$  line, either at  $-0.6 \text{ \AA}$  or  $-1.3 \text{ \AA}$ . These wavelengths are chosen to study the emergence of active regions ( $-0.6 \text{ \AA}$ ) or the impulsive phase of major flares ( $-1.3 \text{ \AA}$ ). We will present a few preliminary results of our analysis of the observations.