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Night sky weather monitoring system using Fish-eye CCD

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Telescope Array (TA) is international joint experiment observing ultra-high energy cosmic rays. TA employs fluorescence detection technique to observe cosmic rays. In this technique, the existence of cloud significantly affects quality of data. Therefore, cloud monitoring provides important information. We are developing two new methods for evaluating night sky weather with pictures taken by charge-coupled device (CCD) camera. One is evaluating the amount of cloud with pixels brightness. The other is counting the number of stars with contour detection technique. The results of these methods show clear correlation, and we concluded both the analyses are reasonable methods for weather monitoring. We discuss reliability of the star counting method. In order to verify the reliability, we compared the result with man counting number of stars. We found reasonable correlation between these two numbers. It shows usability of this method for night sky weather monitoring.

Presentation type

poster

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