

Optimization of notification system for bright meteor signals by using wide angle images at multiple sites

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1. Purpose and Background

The sky monitoring system by using wide angle images have been maintained until Nov. 2011 at Okayama University of Science. The CCD camera system provides the slow shutter images every 3 second, and they have been transferred simultaneously to data storage server via the Internet connection. This system enables to monitor the real time condition of the sky. In the obtained images, bright meteors and sometimes fire balls were registered. We have been developing our new system which can provide quick analysis results for meteor and fire ball at the moment of observations. In this report, we describe the new sensor systems of thermography and low frequency sounds to increase the detection efficiency of brighter meteors and fire balls.

2. System

In the sky monitor system, CCD camera with wide angle lens and image server system have been operated in 24 hours/day. The exposure of CCD cameras has been set to be 4 second. The acquired image data have been stored in PC system via the internet ftp command. 28,800 images(500MB data

size) are stored in each day. In offline mode, images are processed with contrast enhancement module, image differentiating and object detection module. To detect meteors and fire balls effectively, we activated the IR image sensors and low frequency sound sensors as well as imaging devices.

3. Development

Our purposes are that new analysis system for online processing of images, IR sensors and low frequency sensors have been developed in order to provide the information of the arrival of meteor and fireballs, arrival directions and brightness profiles. We are going to present new system and analysis result in this reports

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