Development of Extremely Wide-Field CMOS Camera Tomo-e: Contribution to Meteoroids

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We are developing an ultra wide-field fast camera, Tomo-e Gozen, which will be set up on the 105cm (F3.1) Schmidt telescope in Kiso Observatory at the University of Tokyo. Tomo-e equipped with 84 CMOS image sensors, which work in a room temperature, has a 20 square degree field of view and a fast readout speed of ~2 Hz. The purpose of this camera is the observation of the transient objects such as the counterpart of the gravitational wave events, the ultra wide-field capability with a high survey efficiency is also useful for small solar system bodies; NEOs, occultation events of the TNOs, and meteors. In the presentation, the specifications of Tomo-e are shown together with some preliminary results of the experimental observation run by using the prototype covering 2 square degrees.







Figure 1: Design of the Focal Plane of Tomo-e Camera.



sensor / package area = 0.3

Figure2: CMOS chip used for Tomo-e camera.



Figure 4. Trail of a meteor and its persistent train detected by the Tomo-e prototype camera during the test run in December 2015.