



Contribution ID: 363

Type: **Oral Presentation**

## Readout electronics for Hyper Suprime-Cam

*Monday 13 June 2011 15:00 (20 minutes)*

Hyper Suprime-Cam (HSC) is a 1 Giga pixel CCD camera for a wide-field galaxy survey at the Subaru 8-m telescope. It will be mounted on the prime focus of the Subaru telescope and is scheduled to receive its first light in 2011. The primary science goals include a measurement of the equation of state parameter of dark energy based on the weak lensing survey over  $\sim 2,000$  square degrees. HSC has 1.5-degree-diameter field of view, 7 times larger than that of its predecessor Suprime-Cam. It consists of a large corrector lens system and a focal plane equipped with 116 pieces of  $2k \times 4k$  fully depleted CCDs. Combined with the superb image quality and large aperture of Subaru telescope, the survey using HSC can cover a cosmological volume and reach the limiting magnitude of at least one magnitude fainter than the other surveys conducted using 4-m class telescopes.

The readout electronics of HSC consist of two parts: one is the analog front-end electronics (FEE) and the other is the digital back-end Electronics (BEE). The FEE is placed in a vacuum dewar together with the CCDs, and processes the analog CCD signal into 16-bit digital data. The BEE is small and light enough to be integrated into the camera unit, and employs three links of Gigabit Ethernet to readout a 2.3-GByte single exposure within 10 seconds at fast readout operation.

We present the overview of HSC and describe its readout electronics including the detail of BEE.

**Author:** Mr MIYATAKE, Hironao (University of Tokyo)

**Co-authors:** Dr NAKAYA, Hidehiko (National Astronomical Observatory of Japan); Prof. AIHARA, Hiroaki (University of Tokyo); Mr FUJIMORI, Hiroki (University of Tokyo); Prof. MIYAZAKI, Satoshi (National Astronomical Observatory of Japan); Mr MINEO, Sogo (University of Tokyo); Dr UCHIDA, Tomohisa (High Energy Accelerator Research Organization)

**Presenter:** Mr MIYATAKE, Hironao (University of Tokyo)

**Session Classification:** Astrophysics and Space Instr.

**Track Classification:** Astrophysics and Space Instrumentation