Performance of the LSST Camera

D.K. Gilmore (SLAC), S. Kahn (SLAC), N. Kurita (SLAC), P. O’Connor (BNL), M. Nordby (SLAC), V. Riot (LLNL), J. Oliver (Harvard), and the LSST Camera Team

The LSST camera will be the largest digital camera ever built. As such, its design presents a number of challenges. The field of view will be 3.5 degrees in diameter and will be sampled by a 3.2 billion pixel array of sensors. The entire array will be read-out in under 2 seconds, which all lead to demanding constraints on the sensor architecture and the read-out electronics. In addition, given the fast, optical beam (f/1.2), the camera tolerances on the assembly and alignment of the focal plane and optics are tight. The camera also incorporates three large refractive lenses, an array of five, wide-band large filters mounted on a carousel, and a mechanical shutter. We present an overview of the baseline camera design, with an emphasis on the requirements and expected performance of the design that will allow the camera to meet its scientific objectives.

LSST Sensor Characterization Results

LSST sensor requirements and characterization of the prototype LSST CCDs, Journal of Instrumentation, Vol. 4, No. 03. (01 March 2009), P03002, by V. Radeka, J. Frank, J. C. Geary, et al.

Science Goals Drive Sensor Requirements