

Development of a 3.2 GPixel Camera for the Large Synoptic Survey Telescope (LSST)

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The LSST is an 8.4 meter survey telescope currently under development for operation on the 2,700 meter Cerro Pachon mountaintop in central Chile. LSST will have features which make it uniquely capable of carrying out multiple science missions including “Type 1A” supernovae surveys to constrain dark energy parameters, weak lensing probes for dark matter tomography, transient phenomena, galactic structure, and “Near Earth Asteroid”(NEA) discovery. These science goals impose strict requirements and challenges for the LSST camera. These include a wide-field (3.2 GPixel), high quantum efficiency focal plane, and 3,200 channels of high speed, low noise readout electronics contained within the camera. This paper describes those challenges and the development of the camera, its sensors, and the readout electronics required to meet them.

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