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PreCam, the Precursor to the Dark Energy Camera: Instrumentation and First Results

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Abstract content

The Dark Energy Survey (DES) is designed to measure with unprecedented accuracy the time-independent and time-dependent parameters of the Dark Energy Equation of State. Utiliziing the Dark Energy Camera (DECam), DES will scan 1/4 of the southern hemisphere in order to detect millions of faint galaxies and thousands of supernovae. In order to measure the brightnesses of these objects accurately, the DECam must be calibrated with standard stars throughout the DES footprint. PreCam, the precursor to the DECam, has already observed millions of stars, and will provide the needed photometric accuracy for a catalogue of standard stars prior to DEcam's first light, thus saving the DES as much as 10% of its scheduled observing time. We describe the PreCam instrument design, construction, and first year of operation, along with some preliminary results that will be incorporated into the PreCam Standard Star Catalog.

Summary

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