

SNAP Near Infrared Detectors

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ABSTRACT

The SuperNova/Acceleration Probe (SNAP) will measure precisely the cosmological expansion history over both the acceleration and deceleration epochs and thereby constrain the nature of the dark energy that dominates our universe today. The SNAP focal plane contains equal areas of optical CCDs and NIR sensors and an integral field spectrograph. Having over 150 million pixels and a field-of-view of 0.34 square degrees, the SNAP NIR system will be the largest yet constructed. With sensitivity in the range 0.9–1.7 μm , it will detect Type Ia supernovæ between $z = 1$ and 1.7 and will provide follow-up precision photometry for all supernovæ. HgCdTe technology, with a cut-off tuned to 1.7 μm , will permit passive cooling at 140 K while maintaining noise below zodiacal levels. By dithering to remove the effects of intrapixel variations and by careful attention to other instrumental effects, we expect to control relative photometric accuracy below a few hundredths of a magnitude. Because SNAP continuously revisits the same fields we will be able to achieve outstanding statistical precision on the

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