The Extragalactic Infrared Background and its Cosmological Implications
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The Sloan Digital Sky Survey

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Abstract. The Sloan Digital Sky Survey (SDSS) is an imaging and spectroscopic survey of 10^4 deg^2 in the North Galactic Cap, currently underway with the 2.5-m SDSS Telescope at the Apache Point Observatory in New Mexico. The data products will include u, g, r, i and z-band imaging of several 10^8 sources and $R = 2000$ spectra of 10^6 galaxies. The imaging will have 10-sigma limiting (AB) magnitudes of $(u, g, r, i, z) = (21.4, 22.6, 22.3, 21.7, 20.1)$. The "Main" sample of 9×10^5 galaxies, selected to have $r < 17.7$ mag, will have spectra with signal-to-noise ratio on the order of ~ 10 per resolution element, and median redshift $z \sim 0.1$. There will also be a sample of 10^5 luminous elliptical galaxies, selected on the basis of apparent color and magnitude, which will extend out to redshift $z \sim 0.4$. The data will be released steadily over the next five years.

On the order of one percent of the eventual data volume has been assembled at the time of this meeting, with a few hundred square degrees of survey-quality 5-band imaging, and over 10^4 survey-quality spectra. In the refereed literature there are detailed descriptions of the survey design, goals and hardware (York et al 2000; Gunn et al. 1998) and first scientific results (e.g., Ivezic et al 2000; Fischer et al. 2000; Leggett et al. 2000; Yanny et al. 2000).

Relevant to measures of the extragalactic background emission, the survey has found many $z > 4$ quasars and has measured the evolution in their space density (e.g., Fan et al. 2000). Measures of bright galaxy counts, the local galaxy luminosity function, and the evolution of elliptical galaxies are in preparation.

References

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