



Plate sits at base of telescope

A perforated metal plate (right) collects extragalactic light for analysis.

Light and Dark

Astronomers can see that our universe is expanding at an increasing rate, and dark energy is what they call the mysterious accelerant. To shed light on its nature, researchers with the Baryon Oscillation Spectroscopic Survey (BOSS) are mapping the sky over the Northern Hemisphere with New Mexico's Sloan telescope, one metal plate at a time.

Every manhole-size disk, customized for each of the telescope's viewing angles, is perforated

with a thousand tiny holes corresponding to the locations of previously identified galaxies. With the plate attached to the base of the telescope, the holes help funnel the light of each galaxy into instruments that yield data being used to map the universe's structure and motion. BOSS leader David Schlegel says the full survey, due to be completed in 2014, will hint at the composition of the universe—including the dark energy that's pushing it apart. —Elizabeth Preston