

Cosmic Frontier

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[Supernova Cosmology](#)

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Supernova Cosmology

The SCP is conducting a search for very distant (redshifts greater than 1.2) Type Ia supernovae using the Advanced Camera for Surveys (ACS) on the Hubble Space Telescope.

[Visit the SCP site](#)

[Learn More](#)

[Nearby Supernova Factory](#)

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Nearby Supernova Factory

The Nearby Supernova Factory (SNfactory) is designed to address a wide range of supernova issues using detailed observations of low-redshift SN.

[Visit the Nearby Supernova Factory site](#)

[Learn More](#)

[LUX/LZ](#)

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LUX/LZ

The LUX experiment is a 350 kg liquid xenon time-projection chamber that aims to directly detect galactic dark matter in an underground laboratory 1 mile under the earth, in the Black Hills of South Dakota, USA.

[Visit the LUX/LZ site](#)

[Learn More](#)

[CMB Astrophysics Theory](#)

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CMB Astrophysics Theory

The most conclusive and carefully examined evidence for The Big Bang is the existence of an isotropic radiation bath that permeates the entirety of the universe known as the cosmic microwave background (CMB).

[Visit the CMB site](#)

[Learn More](#)

[DESI: Dark Energy Spectroscopic Instrument](#)

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DESI: Dark Energy Spectroscopic Instrument

DESI will measure the effect of dark energy on the expansion of the universe. It will obtain spectra for tens of millions of galaxies and quasars, constructing a 3D map of the universe to 10 billion light years.

[Visit the DESI site](#)

[Learn More](#)

[BOSS: Baryon Oscillation Spectroscopic Survey](#)

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BOSS: Baryon Oscillation Spectroscopic Survey

The Baryon Oscillation Spectroscopic Survey (BOSS) will map the spatial distribution of luminous red galaxies (LRGs) to detect the scale imprinted by early universe oscillations.

[Visit the BOSS site](#)
[Learn More](#)