



DESI

Dark
Energy
Spectrographic
Instrument



Credit: Marilyn Chung, photographer

National Optical Astronomy Observatory
www.noao.edu



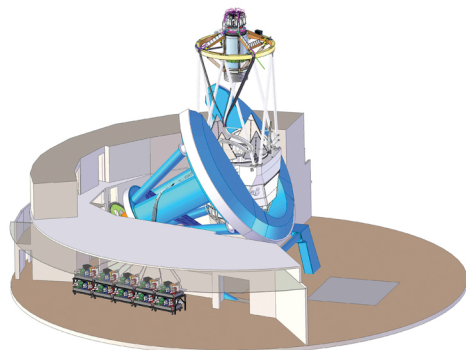


DESI

The Dark Energy Spectroscopic Instrument (DESI) will measure the effect of dark energy on the expansion of the universe. It will obtain optical spectra for tens of millions of galaxies and quasars.

DESI seeks to map the large-scale structure of the universe over an enormous volume and a wide range of look-back times (based on “redshift,” or the shift in the light of distant objects toward redder wavelengths of light). Targeting about 30 million pre-selected galaxies across one-third of the night sky, scientists will use DESI’s redshifts data to construct 3D maps of the universe.

The DESI Survey will be conducted on the Mayall 4-meter telescope at Kitt Peak National Observatory starting in 2019. DESI is supported by the Department of Energy Office of Science to perform this Stage IV dark energy measurement using baryon acoustic oscillations and other techniques that rely on spectroscopic measurements.



DESI Hardware:

- 8 square degree FOV
- 5000 spectra simultaneously
- 390nm-980nm continuous coverage
- $3500 \leq R \leq 5000$

DESI Survey:

- 5 years
- 14,000 square degrees
- 30M - 35M redshifts
- Dark Energy equation of state parameters to ~2%

Important Dates:

- Full system commissioning begins Sept 2019
- Survey begins mid-2020

