



DARK ENERGY SPECTROSCOPIC INSTRUMENT

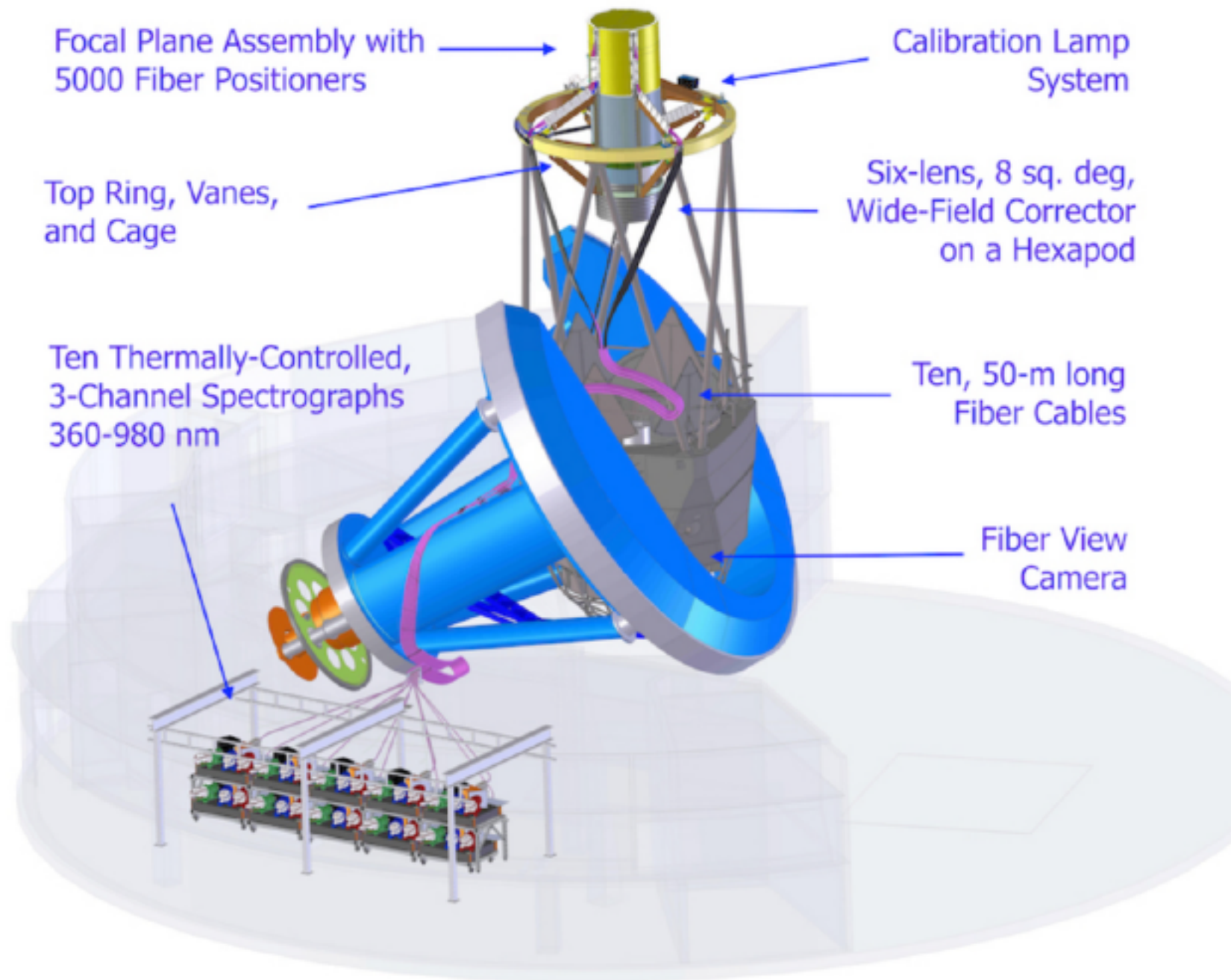
U.S. Department of Energy Office of Science

DESIGN LOGICAL CONSTRAINTS - Aug 24 XIICNFP@Crete, Greece, 2024

UdendentAndrade (UMichian)







One single night

200,000 extragalactic redshifts

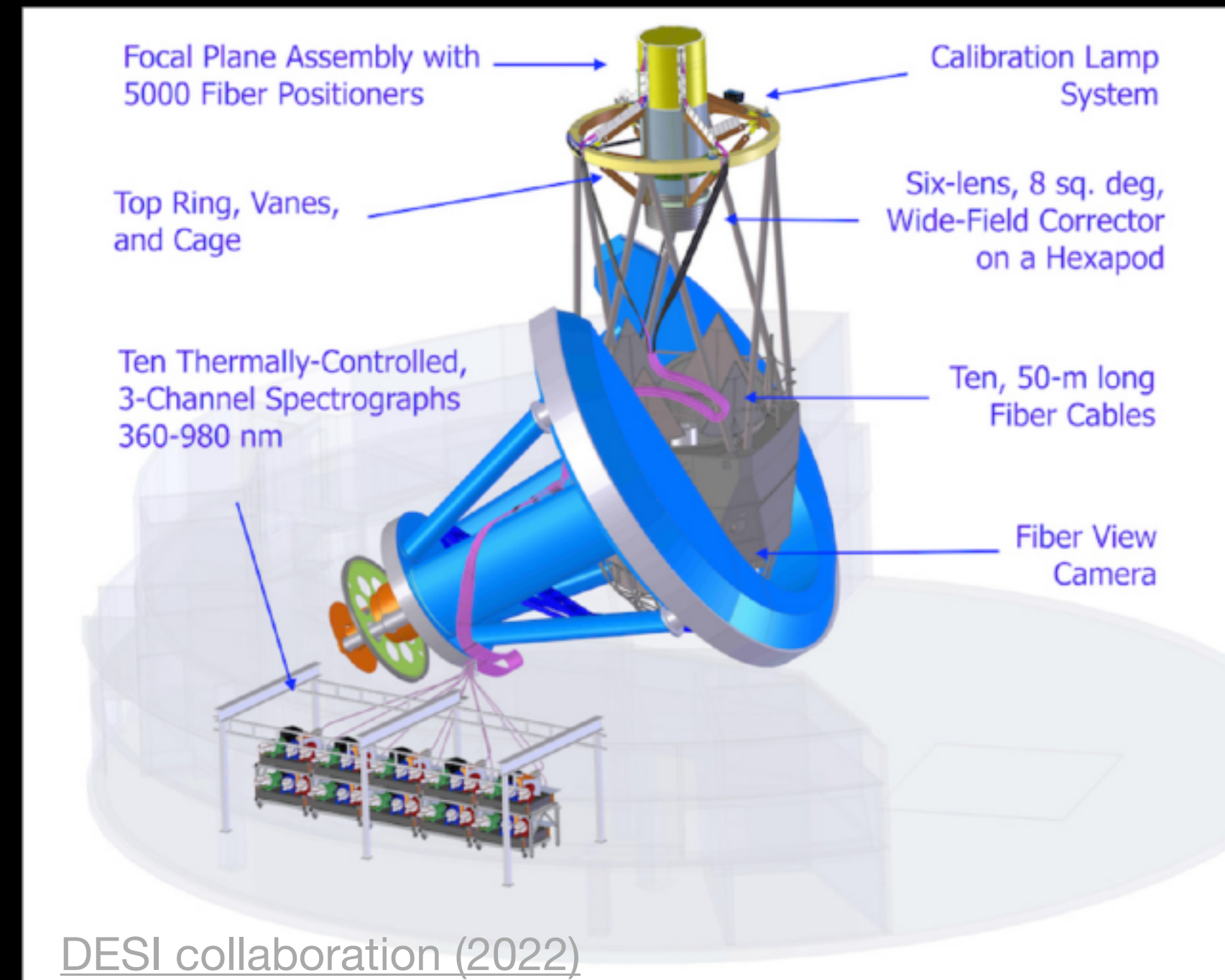
Ten times faster

DESI collaboration (2022)

Instrument design



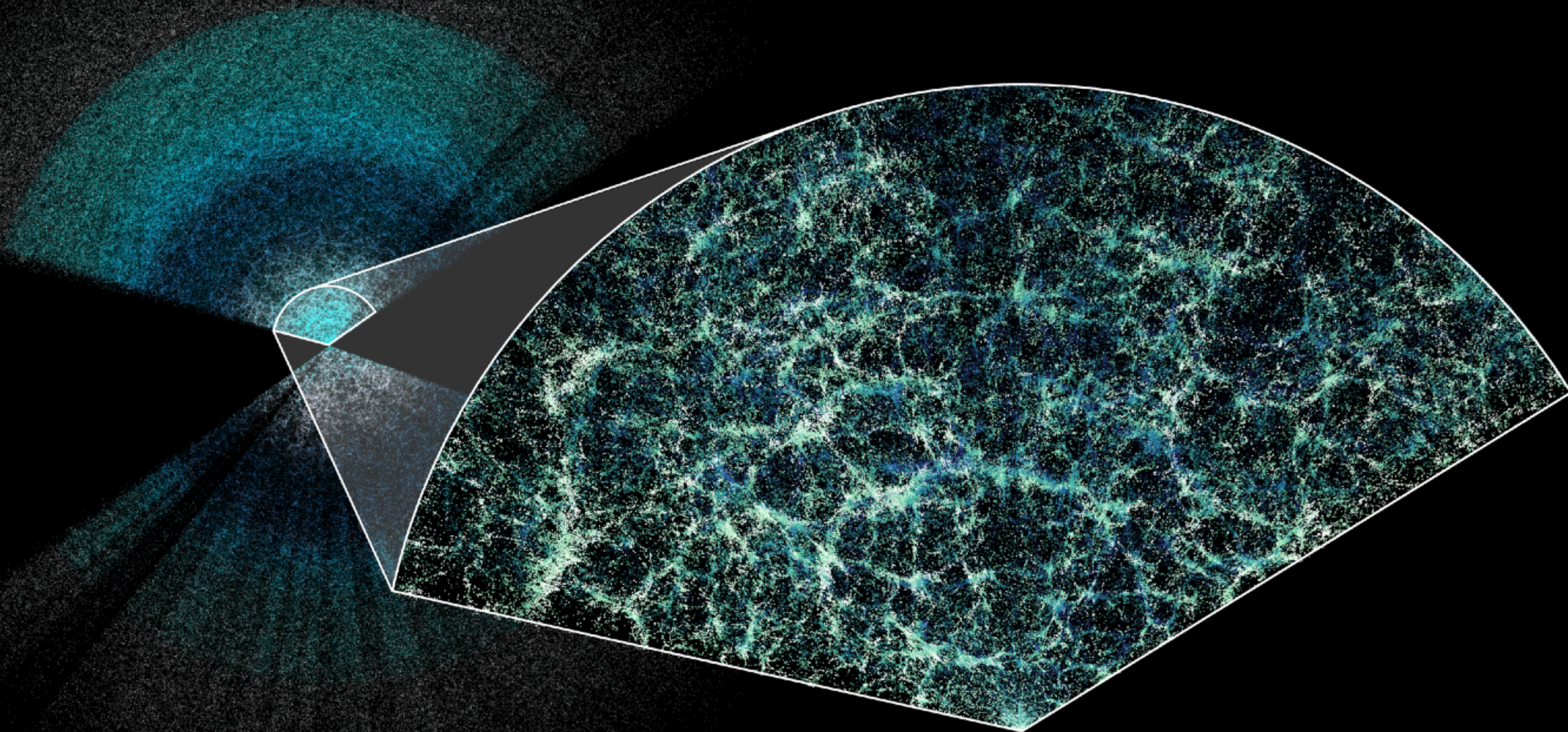
Credit: LBL/KPNO/NOIRLab/NSF/AURA



Overall, DESI surpasses its predecessors in terms of speed and quality of data:

- **One single night** collects **200,000 extragalactic redshifts** (same order as the entire 6dF Galaxy Survey (6dFGS), which operated between 2001 and 2006)
- **Ten times faster** to collect photos than SDSS

The largest 3D map of our Universe to date, constructed by DESI



Claire Lamman | DESI Collaboration

A slice of galaxy positions from DESI's Year One data, colored by galaxy type. The magnified section is colored by declination, which spans 14 degrees. Colormap from cmastro.