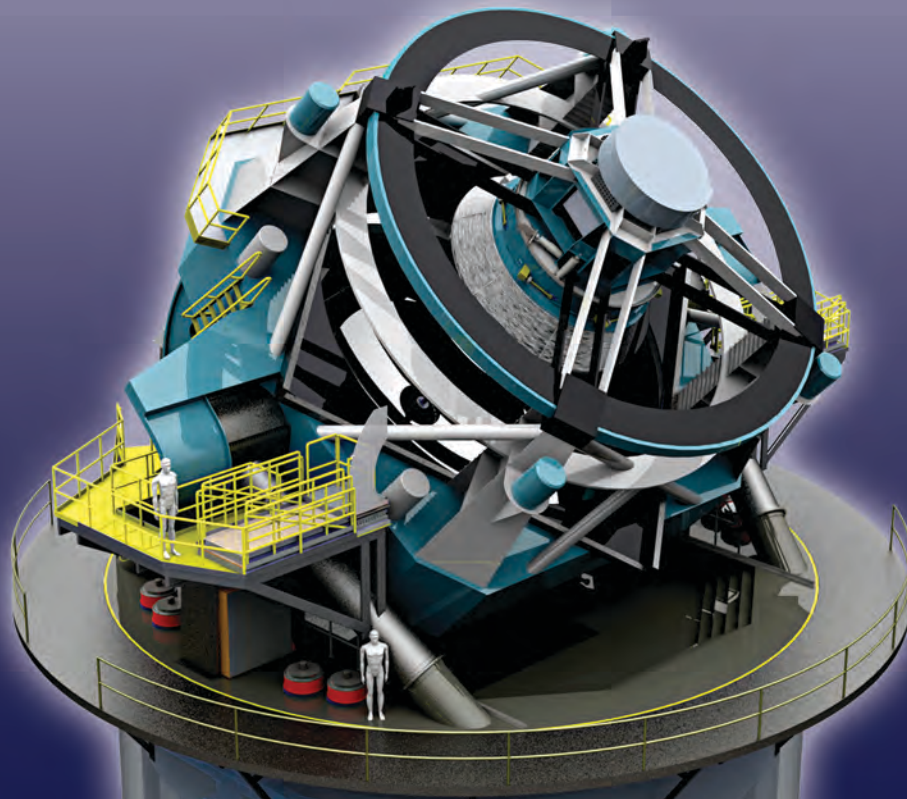


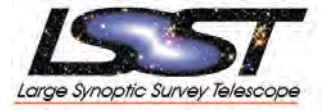
LSST System Overview

Donald Sweeney
Project Manager, LSST
Tucson, Arizona



217th AAS Meeting
Seattle, WA
9-13 January 2011

Technical summary of the Large Synoptic Survey Telescope



- Dedicated optical survey telescope → 6 bands from 320nm - 1050nm
- Etendue of 320 meter²degree² → 3.5 degree FOV, 5.7m effective aperture diameter
- Repeats a pair of 15 sec exposures with 3.2 Gpixel camera every 37 seconds → 18,000deg² survey with 800 repeat visits over 10 years
- Real-time alerts in 60sec
- All data is open access with no proprietary period searchable with sophisticated data management system
- Highest ground-based priority in ASTRO-2010 Decadal Survey

Trillions of measurements of billions of objects

Why is the LSST unique?

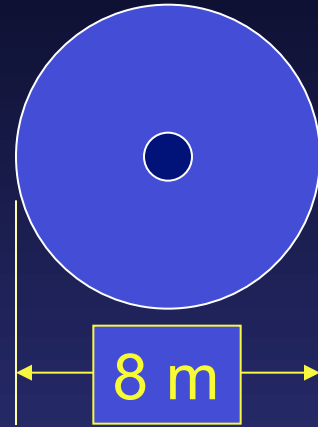


Primary Mirror
Diameter

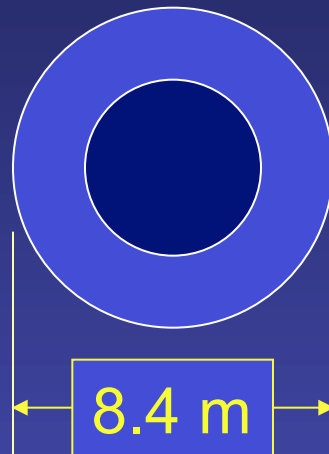
Field of
View



Gemini South
Telescope



LSST



Why is the LSST unique?

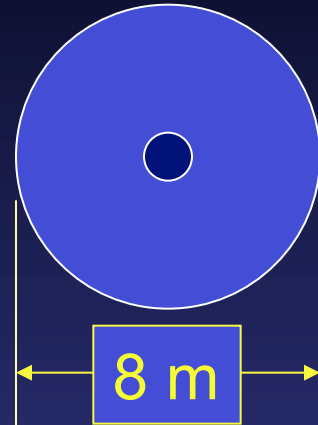


Primary Mirror Diameter

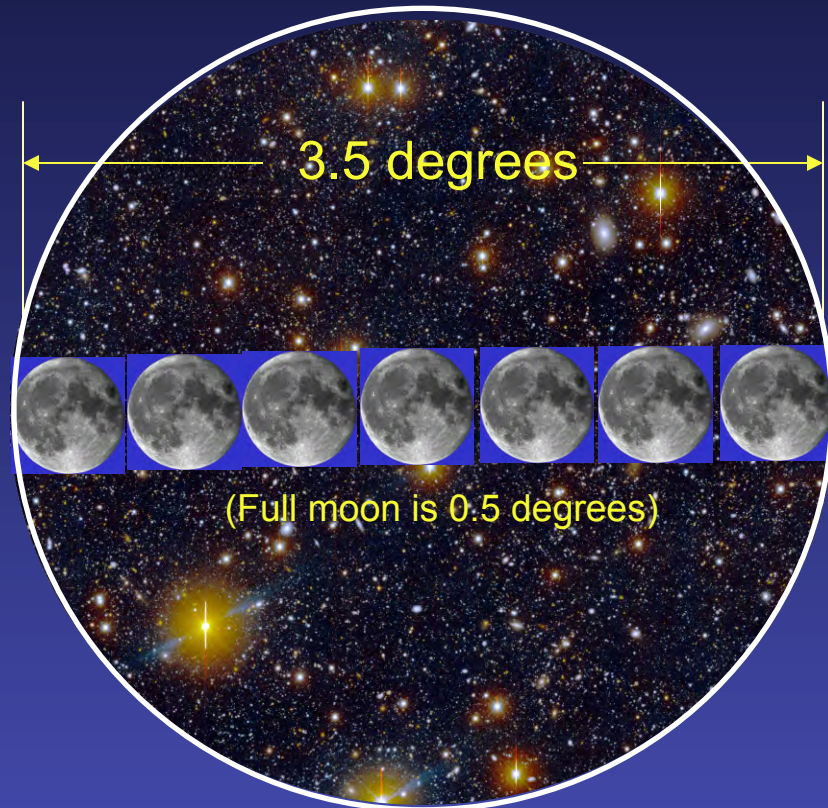
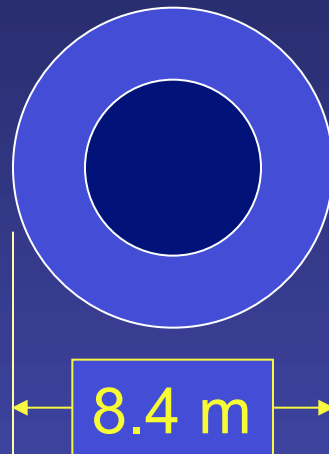
Field of View



Gemini South Telescope



LSST

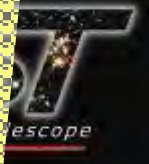


The LSST optical system is 3 mirrors and 3 lenses to form 3.5° field of view

Secondary Mirror

Camera Lenses

Primary and Tertiary Mirrors



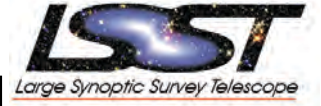
LSST Primary/Tertiary mirror casting



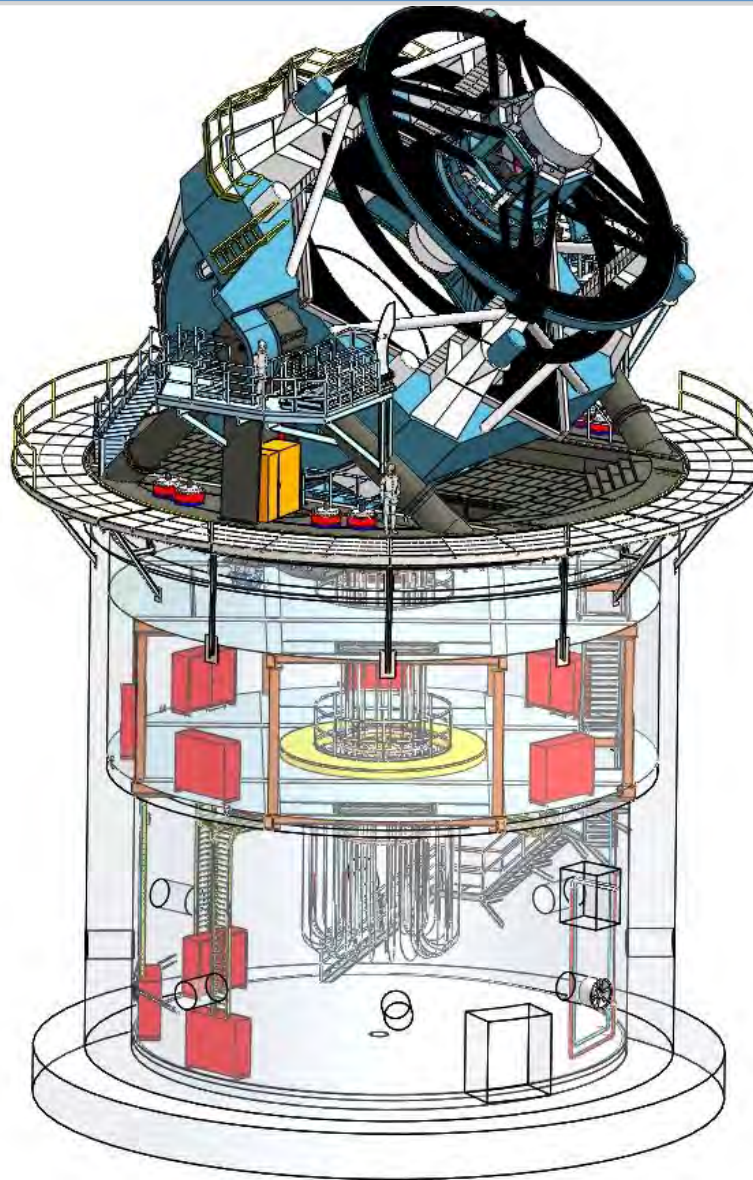
The primary/tertiary mirror is ready to begin loose abrasive grinding



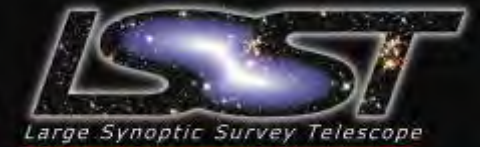
The LSST 5.4m secondary mirror blank at Corning



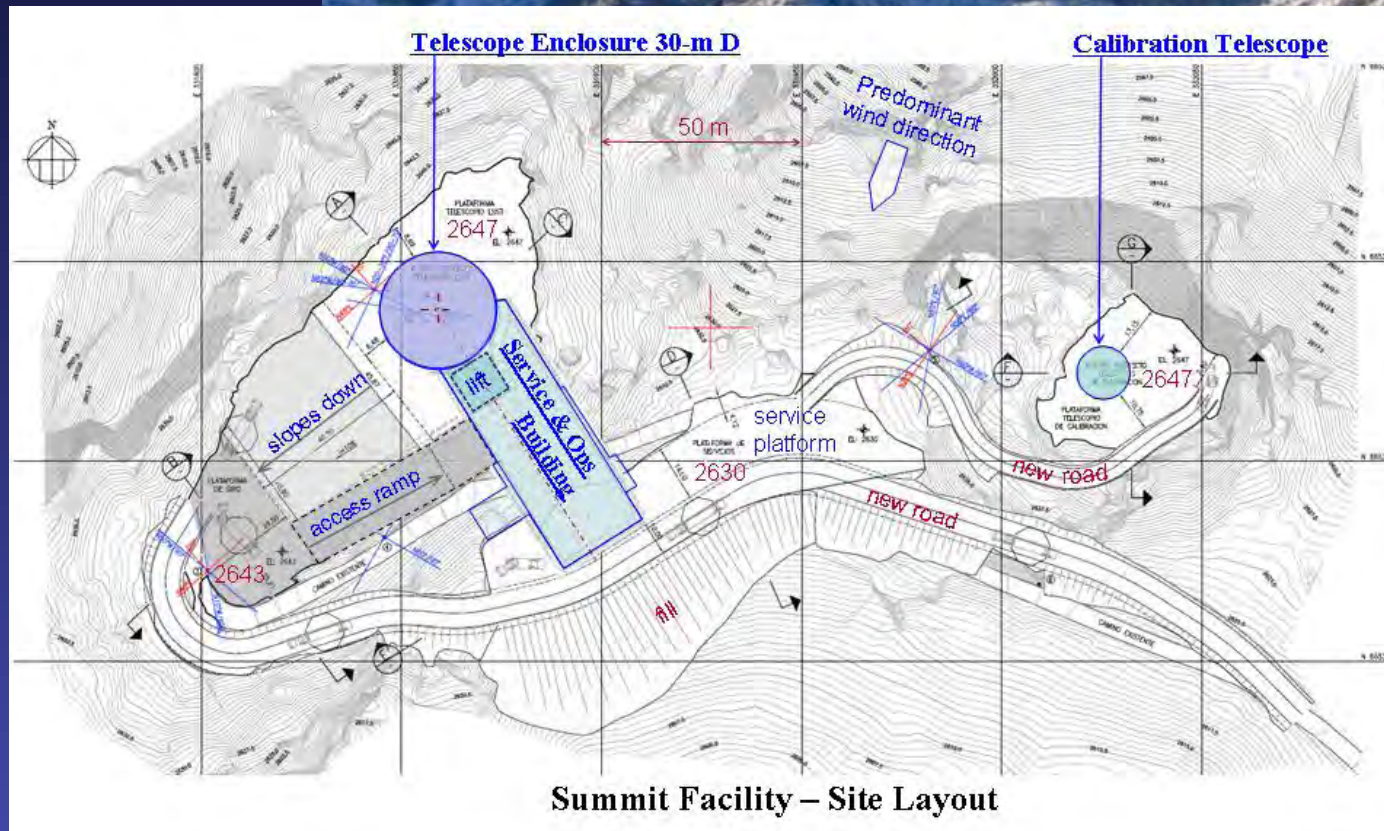
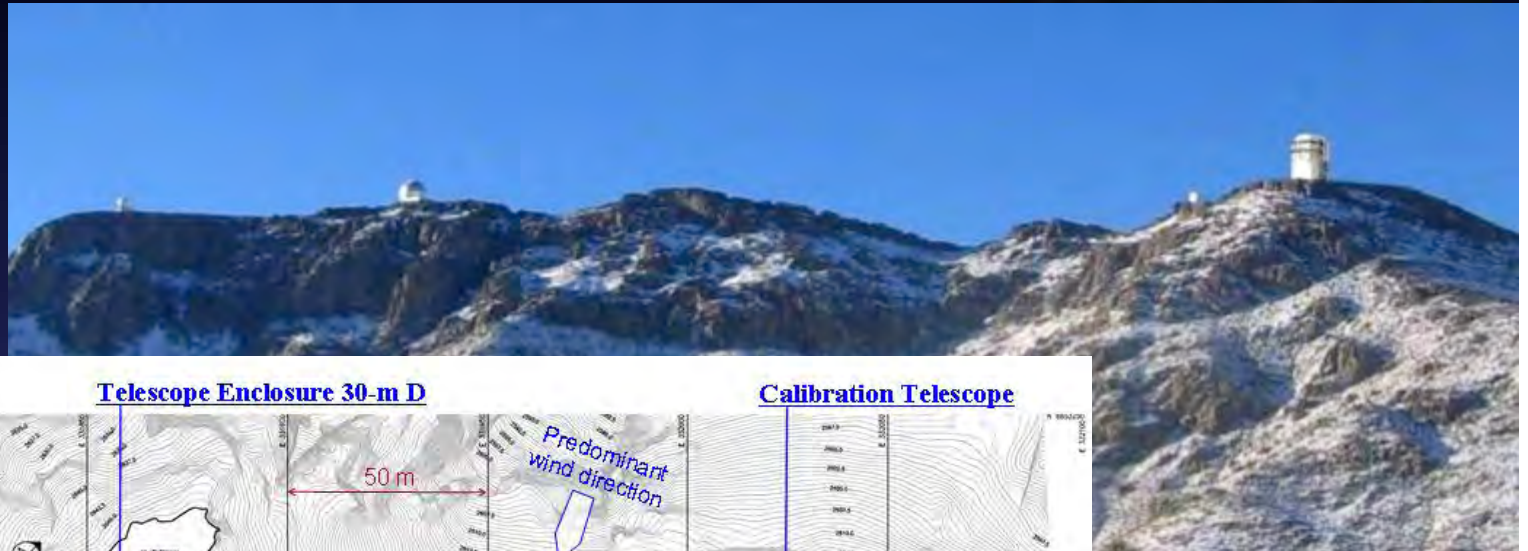
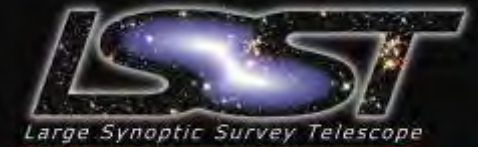
The LSST optical mount and pier



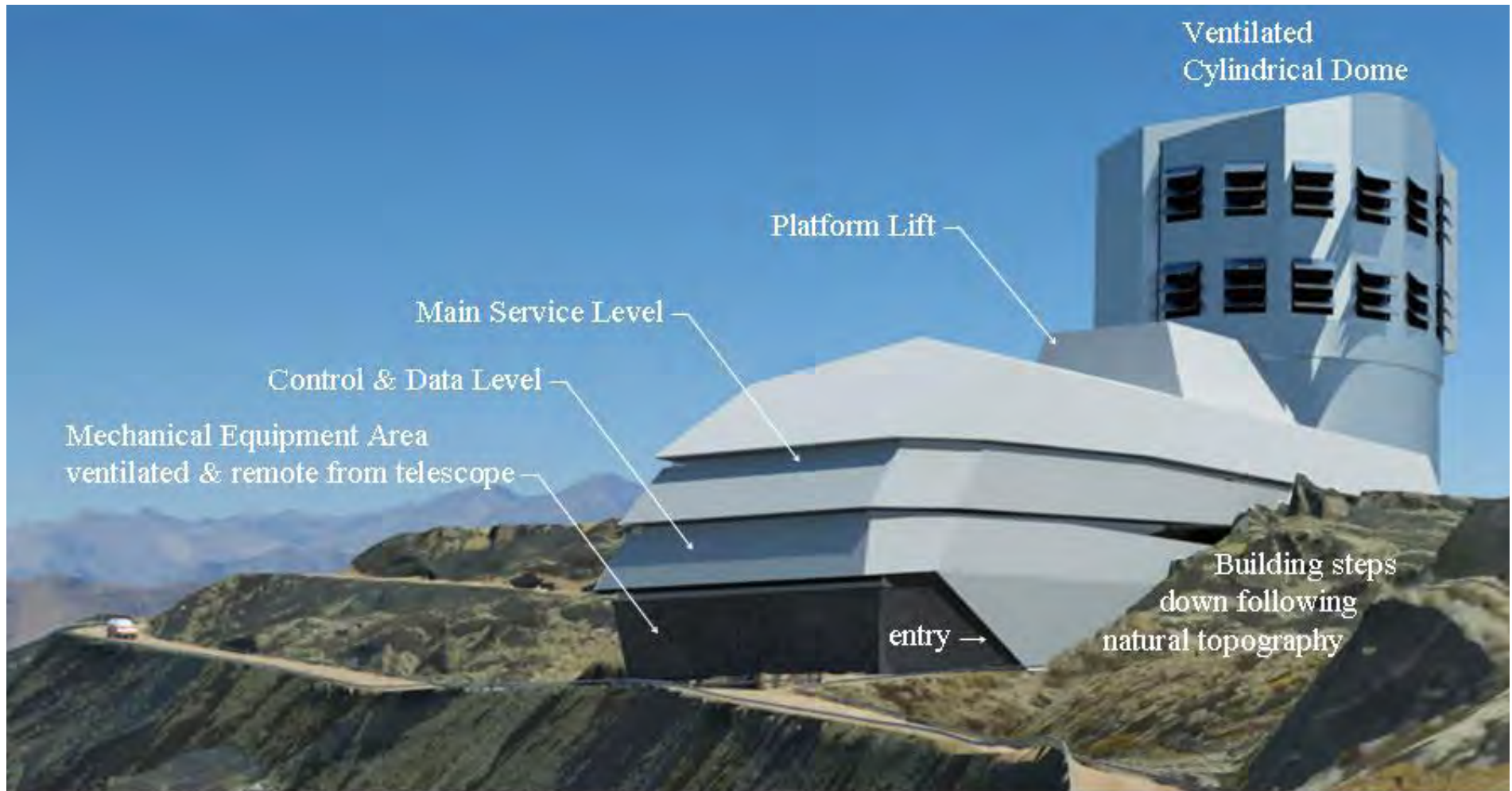
LSST Site Selected from Worldwide Competitive Search: **Cerro Pachón, Chile**



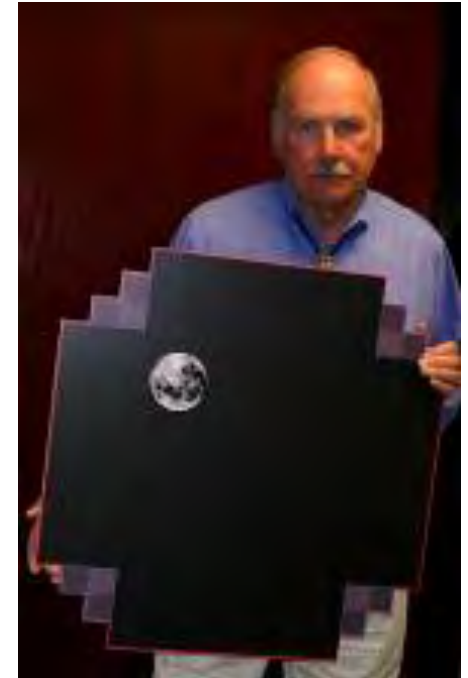
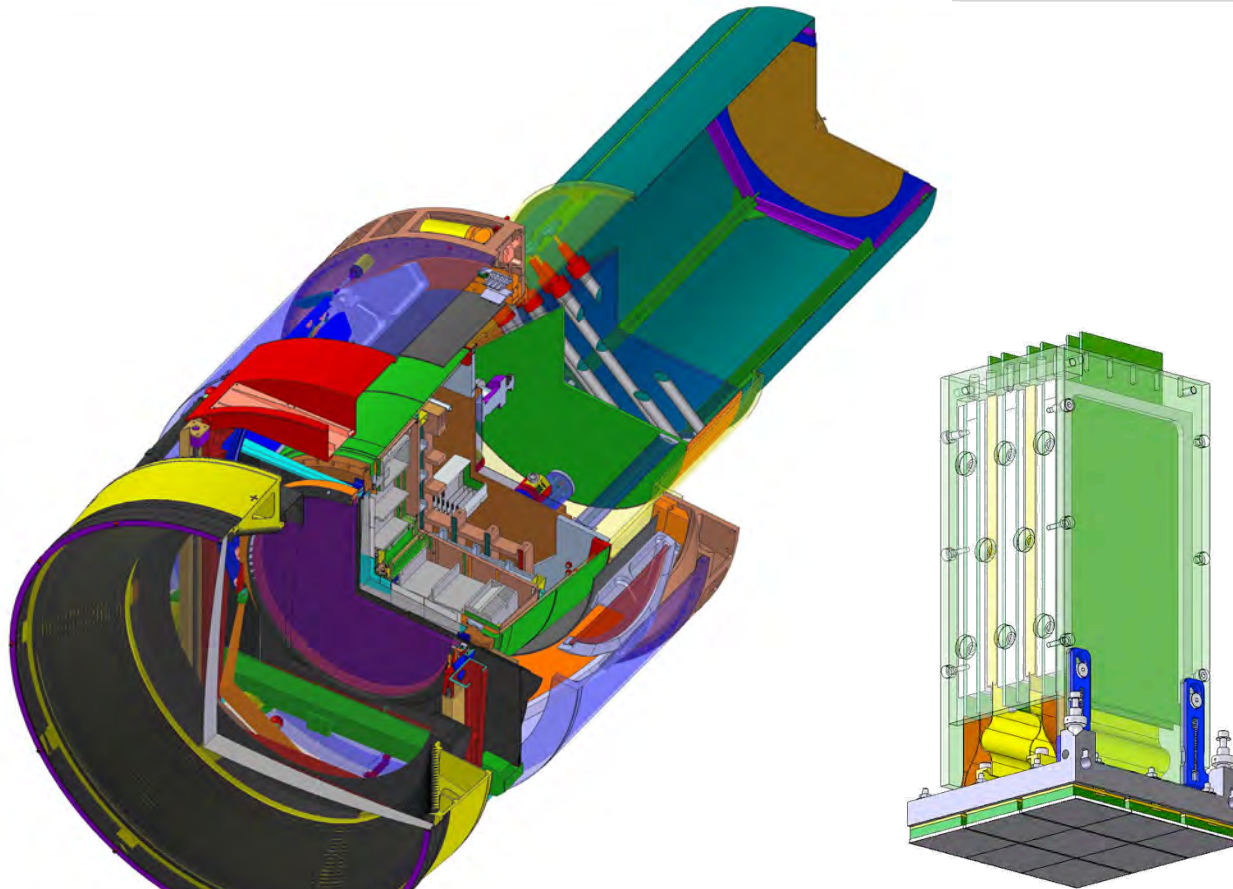
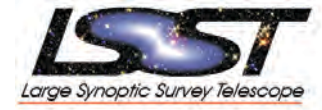
All permits in-hand and site excavation will begin in a few weeks



The LSST summit facility



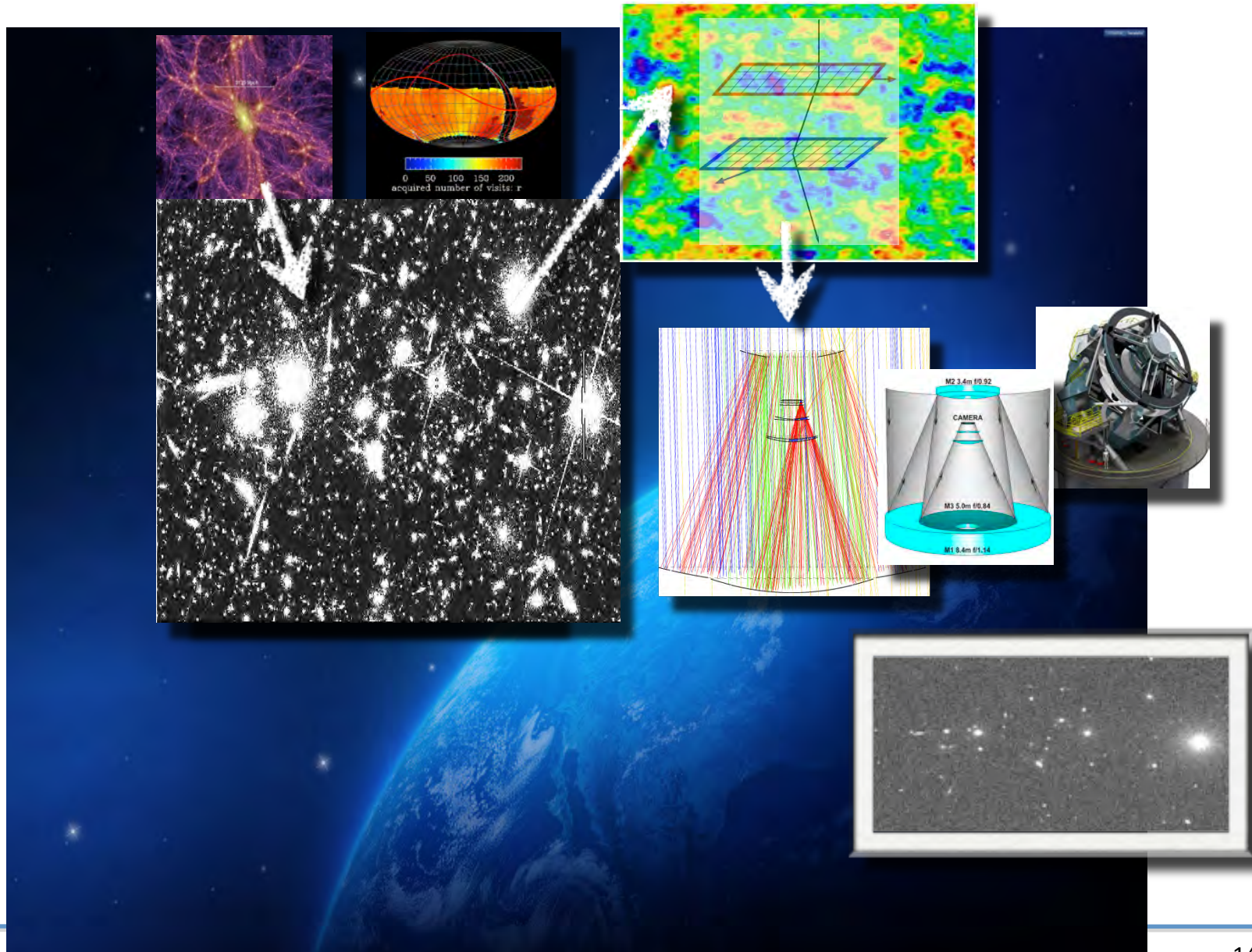
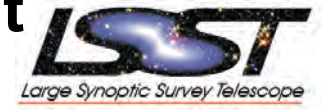
The camera team is lead by SLAC – a DOE National Laboratory



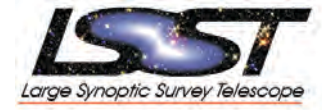
Camera Focal plane

- 64 cm diameter
- 189 Sensors
- 3.2 billion pixels

End-to-end simulation support data management and scientific participation



The proposed timeline has federal construction funding starting in October, 2013



Federal share of construction \$465M as-spent USD
Annual operations budget ~\$40.5M/yr

