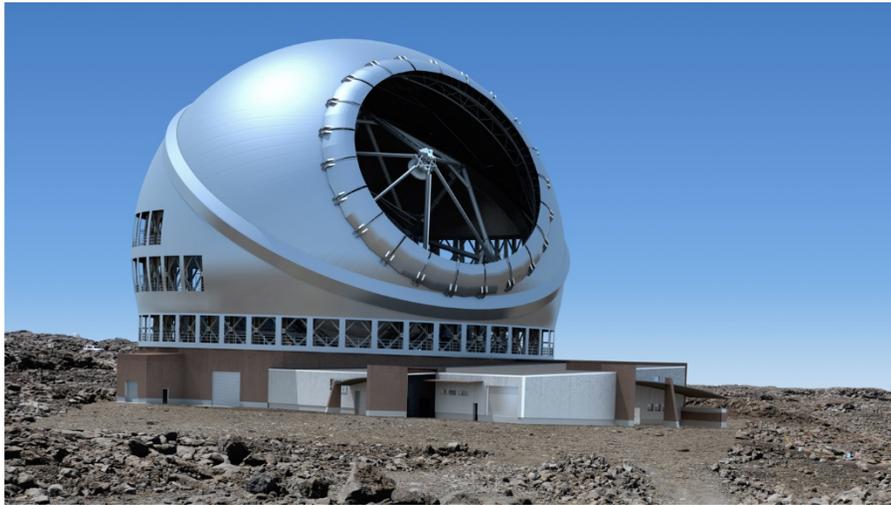


# Thirty Meter Telescope: Engineering Subsystems Observatory Overview

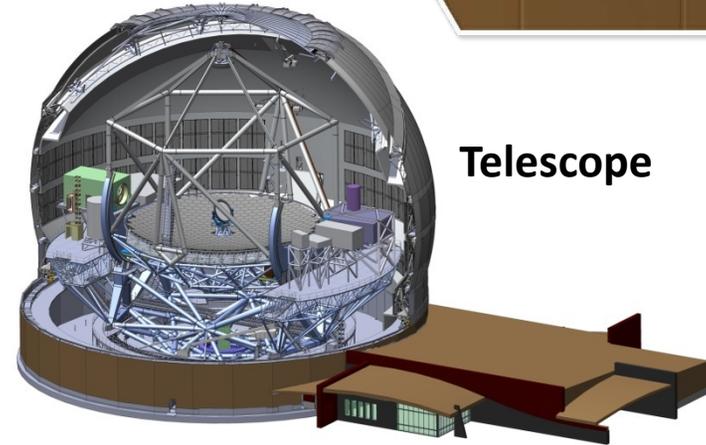


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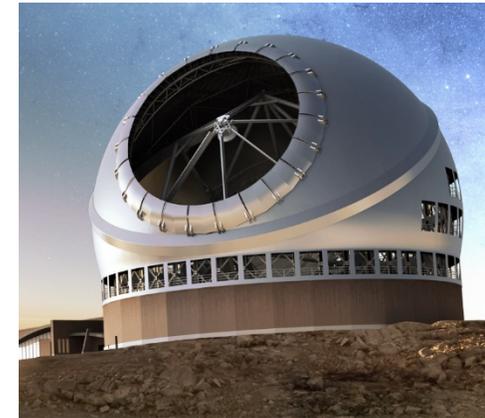
Observatory



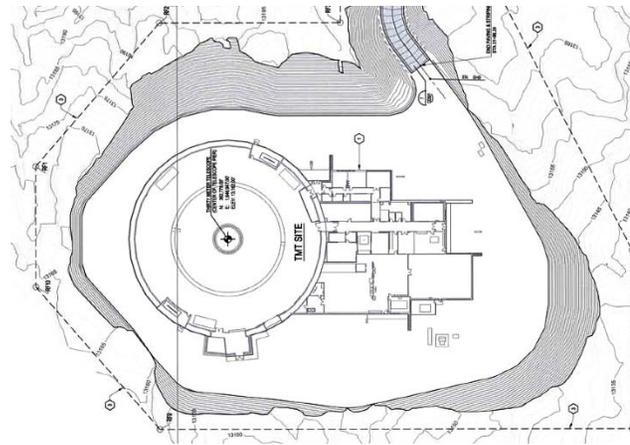
Telescope



Enclosure



Facilities



30 m 望遠鏡  
三十米望远镜  
तीस मीटर दूरबीन  
Thirty Meter Telescope  
Télescope de Trente Mètres

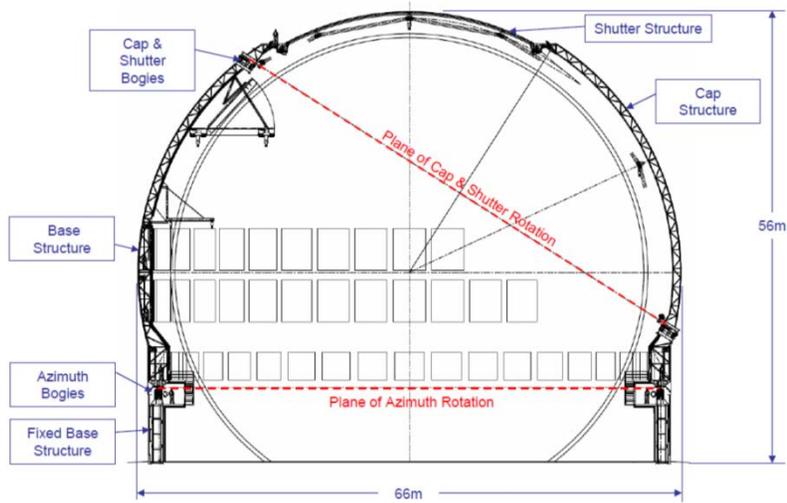
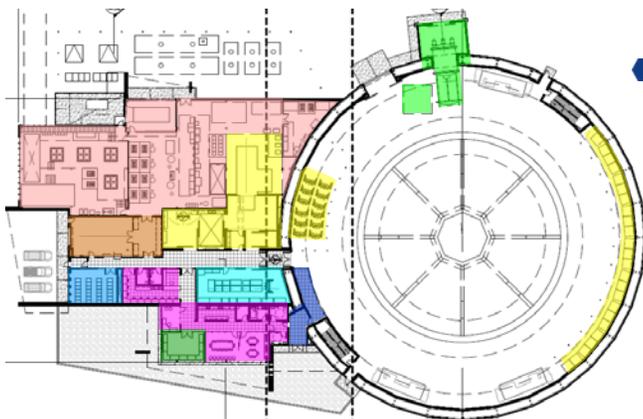


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# Observatory Subsystems

## Facilities:

- Road
- Pad
- Pier
- Base of dome
- M2/3 maintenance, coating
- M1 staging and storage
- Support building
- Utilities, telescope bearing & instrument cooling
- Shipping/receiving & machine shop
- M1 maintenance, coating
- Computer room
- Offices, kitchen, rest rooms, conference room
- Laboratory
- Visitor's gallery
- Control room



## Enclosure - Calotte

- Pointing by two rotations
  - Azimuth rotation of dome on fixed base ring
  - Rotation of cap structure on tilted bearing ring
- Minimal size round aperture protects telescope in high-wind conditions
- Shutter, vents and deployable flaps
  - Round shutter rotates out of the aperture
  - 88 large (e.g., 4 x 5 m) vents can be individually controlled
  - Aerodynamically designed aperture flaps direct air flow over the aperture

## Telescope

- F/15 Ritchey-Chrétien optical design
- Single azimuth track
- Central pintle bearing for lateral resistance
- Elevation axis 3.5m above M1 vertex
- 21.5m diameter elevation journals
- On both axes:
  - Hydrostatic bearings
  - Direct drive motors
  - Tape encoders
- Reconfigurable science instruments
- Maintenance features:
  - Aerial service platform in azimuth assembly
  - M1 segment handling system in elevation assembly
  - Cleaning wands for primary mirror

