



The Giant Magellan Telescope. Status

By

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Observatories in Chile: The beginnings ... a successful experiment



Cerro Tololo Interamerican Observatory AURA, 1962



Magellan telescopes, 2000



Las Campanas Carnegie Institution of Washington, 1968



La Silla ESO, 1969



Observatories in Chile: “Second stage”



Very Large Telescope (VLT)
Cerro Paranal, ESO, 1999



Gemini South
Cerro Pachón, 2002
(AURA)



ALMA
NRAO-ESO-NAOJ, 2013

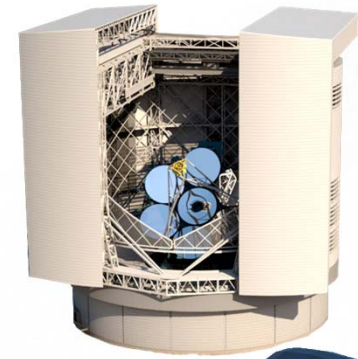


Observatories in Chile: “Stage 3.0” – big, big, big



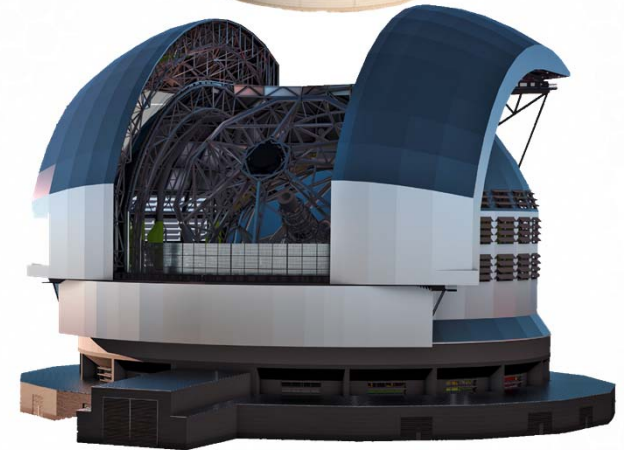
Giant Magellan Telescope (GMT)

Cerro Las Campanas, 2023
(GMTO Corporation)



European- Extremely Large Telescope (EELT)

Cerro Armazones, 2026
(ESO)



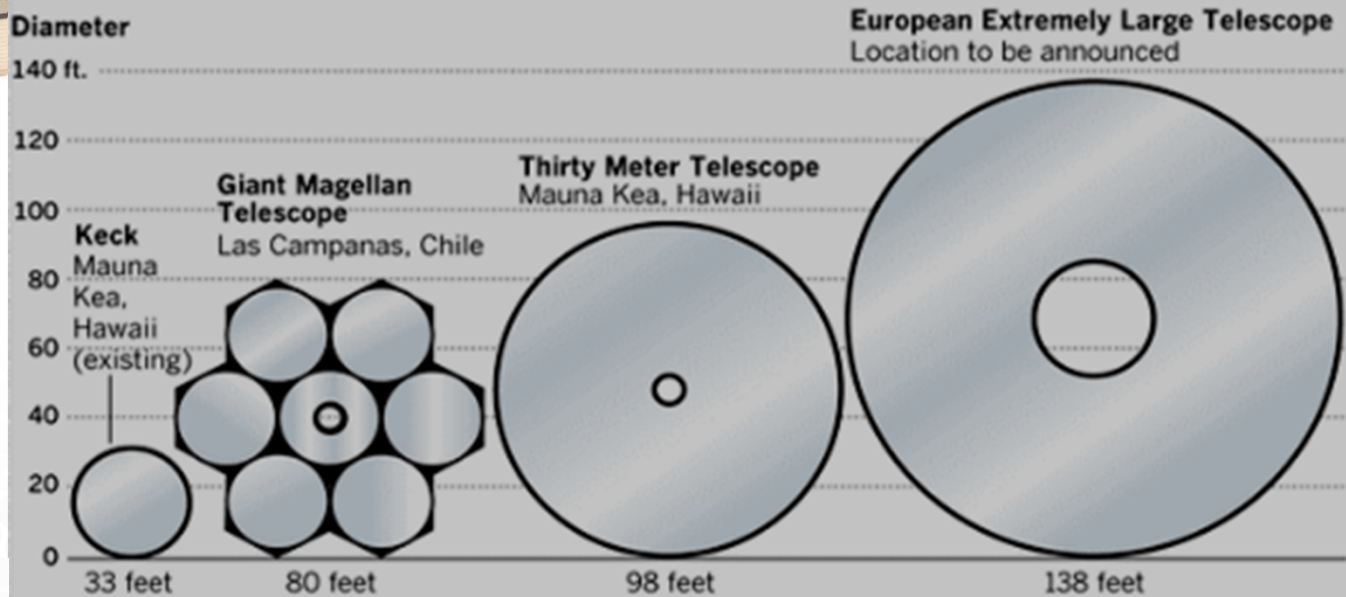
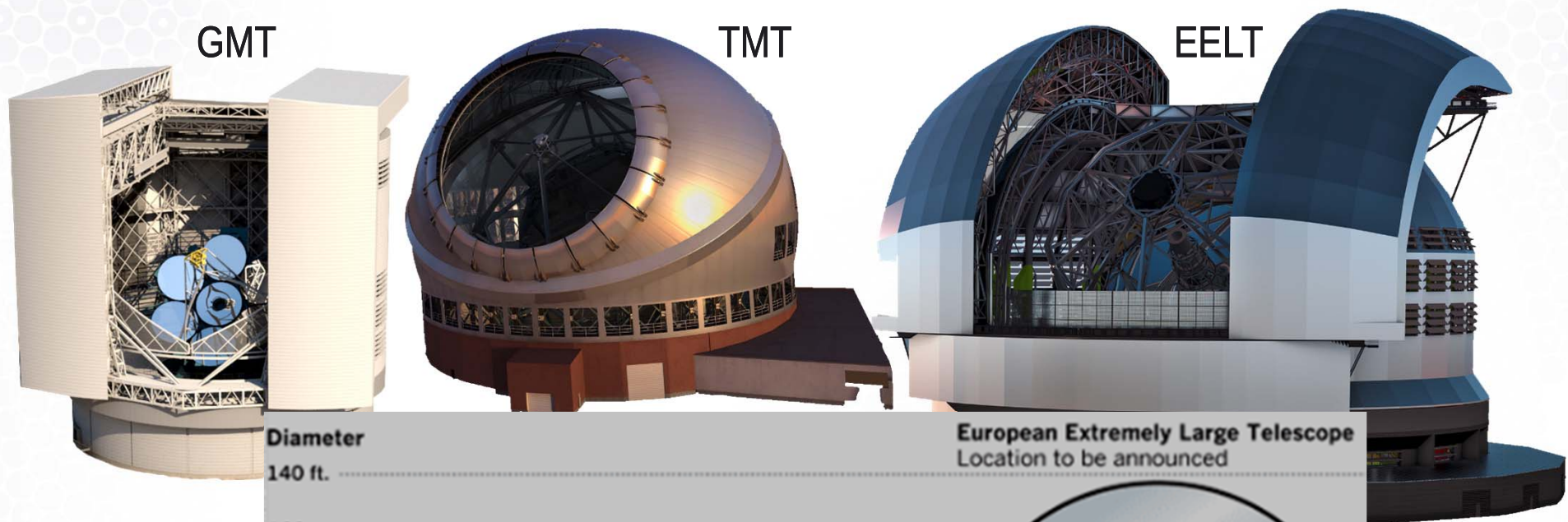
Large Synoptic Survey Telescope (LSST)

Cerro Pachón, 2022
(NSF/AURA-DOE/SLAC)



What next?

Size (physical)



Observatories in Chile: Where?



ALMA
CCAT*
Nanten 2
ASTE
ACT
TAO*
Apex
Polar Bear
Simons Obs.

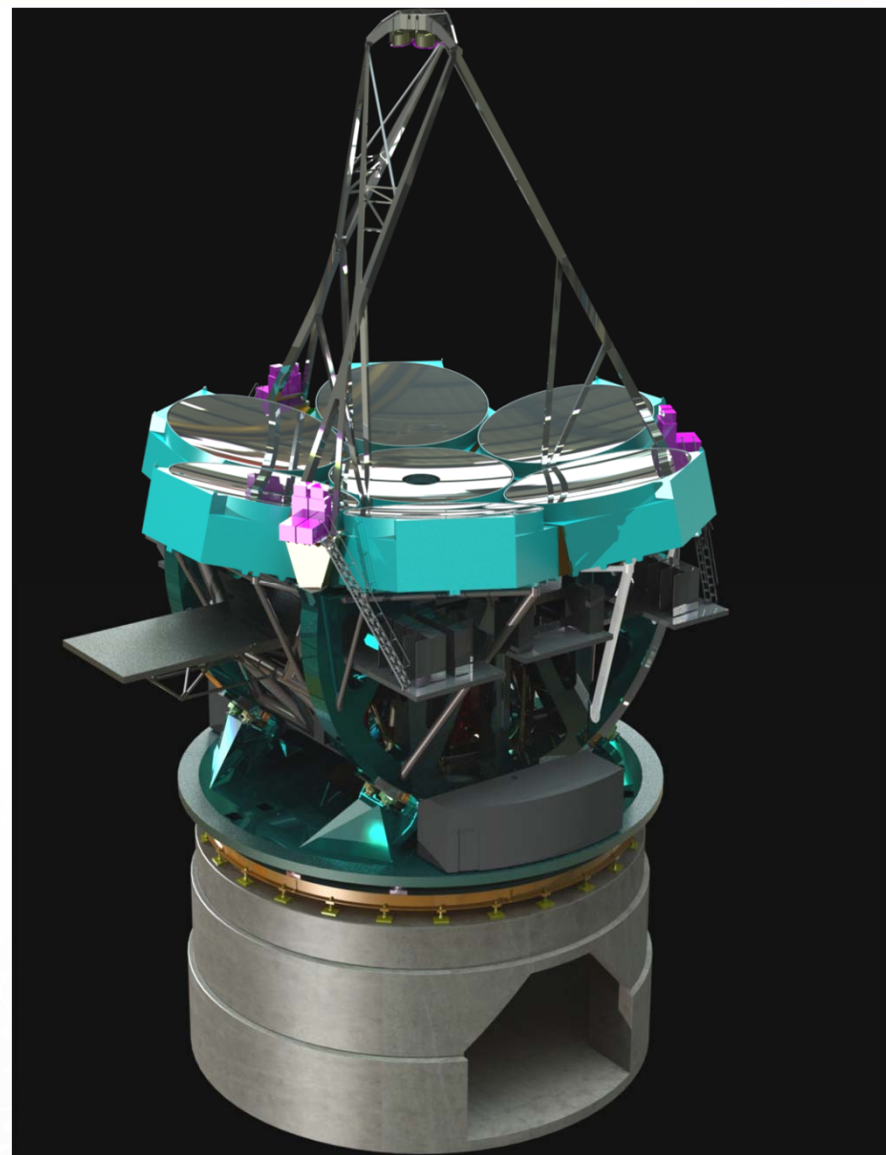
Giant Magellan Telescope (GMT): Will be the largest in the world in 2022



- 25 meters in diameter
- “Price”: US\$1340 million
- First light: 2023
- Enclosure is 62 m high
- Groundbreaking research in:
 - Exoplanets and their atmospheres
 - Dark matter
 - Distant objects
 - Unknown unknowns



Just how tall is the GMT?



Giant Magellan Telescope (GMT): The world's largest optical telescope



New partners are welcome!

Central mirror casting – Sep 2015



Ohara glass, Japan
Photo by Ray Bertram

Casting of Mirror #5 – Nov 2017





Las Campanas Observatory



Meteorological towers

Summit
offices

Enclosure diameter
GMT – 56 m

Telescope
foundation –
22 m

Excavation of the telescope enclosure

August 2018-January 2019





GMT

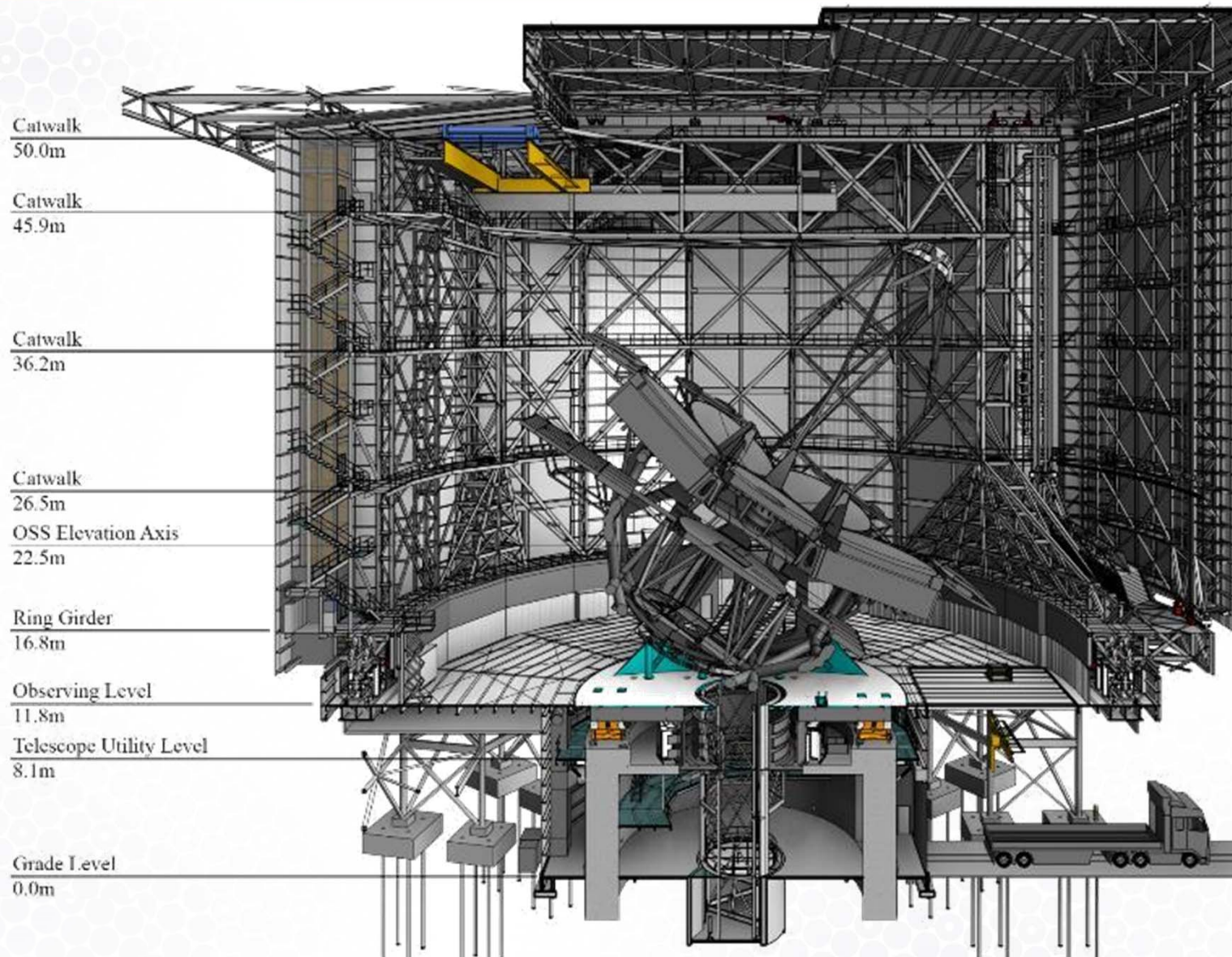




GMT Enclosure



Altura: 60,5 m



GMT Facilities

■ Safety first

- Residence with 92 rooms – maximum capacity: 228 ✓
 - Large kitchen and dining room
 - Recreation area
- Wide road ready – allows access to wide loads ✓
- Hard-rock excavation for telescope enclosure and auxiliary buildings is ready ✓
- Water and telescope/enclosure cooling system utilities



■ IT

- Datacenter: AWS
- Chile backup (Las Campanas & Santiago)



Water & Utilities Package Construction



¡Muchas gracias!



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