The Giant Magellan Telescope. Status 2020

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What next?
Size (physical)

- GMT
- TMT
- EELT

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>140 ft.</td>
<td>European Extremely Large Telescope</td>
</tr>
<tr>
<td>120 ft.</td>
<td>Mauna Kea, Hawaii</td>
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<tr>
<td>100 ft.</td>
<td>Keck, Mauna Kea, Hawaii</td>
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<tr>
<td>80 ft.</td>
<td>Giant Magellan Telescope</td>
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<tr>
<td>60 ft.</td>
<td>Thirty Meter Telescope</td>
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<tr>
<td>33 feet</td>
<td>Las Campanas, Chile</td>
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<tr>
<td>80 feet</td>
<td>Mauna Kea, Hawaii (existing)</td>
</tr>
<tr>
<td>98 feet</td>
<td></td>
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<tr>
<td>138 feet</td>
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Giant Magellan Telescope (GMT): Will be the largest in the world in 2022

- 25 meters in diameter
- “Price”: US$1950 million
- First light: 2029
- Enclosure: 62 m high
- Groundbreaking research in:
  - Exoplanets and their atmospheres
  - Dark matter
  - Distant objects
  - Unknown unknowns
Just how tall is the GMT?

46 meters
Giant Magellan Telescope (GMT): The world’s largest optical telescope

New partners are welcome!

Korea

Sao Paulo, Brazil

Texas A&M

Arizona

Our university partners: Smithsonian Institution, FAPESP, ATM, Carnegie Science, Harvard University, Australian National University, Texas A&M, NSF, Arizona State University, the University of Texas at Austin.
Enclosure and wind screen design concept
Central mirror casting – Sep 2015

Ohara glass, Japan
Photo by Ray Bertram
Casting of Mirror #5 – Nov 2017
GMTO Mirror #5
Test Cell at Mirror Lab in Tucson
(August 27, 2019)

Barbara Fischer, M1 Manager
Mirror Simulator moved to Tucson
(February 27, 2020)
Las Campanas Observatory

Enclosure diameter
GMT – 56 m

Telescope foundation – 22 m

Meteorological towers

Summit offices
Excavation of the telescope enclosure
August 2018-January 2019
Water Tank
In January 2020
How it looks today
(since February 2020)
GMT Enclosure

Altura: 60,5 m
GMT Facilities

- **Site**
  - 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 enclose and auxiliary buildings is ready
  - Water and telescope/enclosure cooling system utilities

- **IT**
  - Datacenter:
    - Main: Pasadena
    - Backup: Las Campanas, Chile
  - AWS
    - Corporate services
    - Non-Profit
  - Wifi: WiFi 6 – 5G
  - Communications: TBD
¡Muchas gracias!