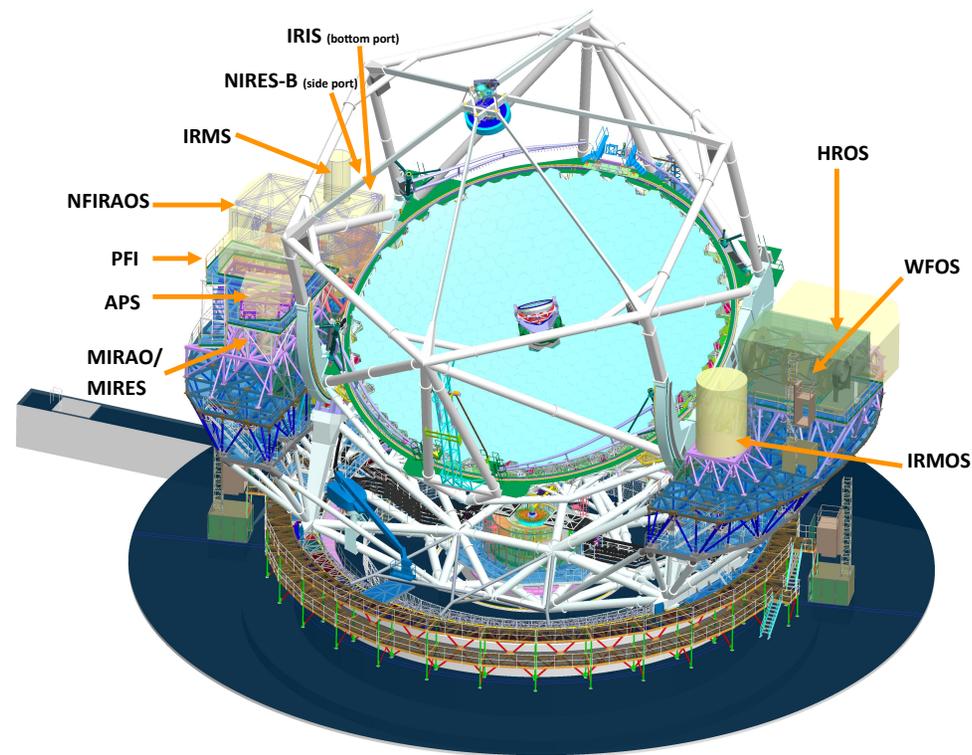
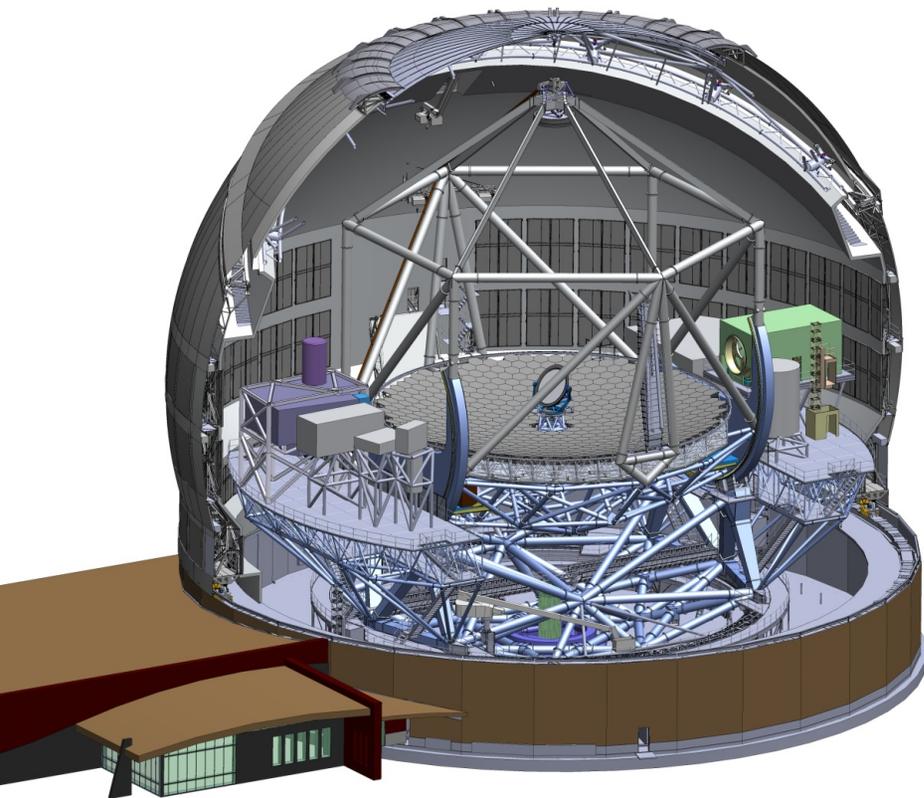


# Thirty Meter Telescope Development of 2<sup>nd</sup> Generation Instrumentation



# TMT



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

Caltech

INDIA  
TMT



国立天文台  
NAOJ  
National Astronomical  
Observatory of Japan



Significant funding provided by the Gordon and Betty Moore Foundation

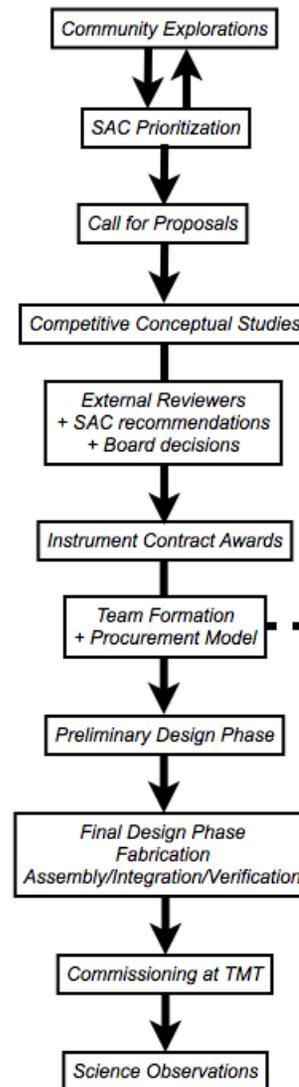
# Development of 2<sup>nd</sup> Generation Instrumentation

Regular augmentation of observatory capabilities is recognized as being essential in order to maintain TMT's scientific competitiveness. The first 2<sup>nd</sup> generation instrument is envisioned to arrive at TMT two years after 1<sup>st</sup> light.

The TMT Instrument Development Program has been developed to ensure that the TMT observatory remains at the forefront of astronomical research over the lifetime of the observatory. This program will be managed by the TMT Instrument Development Office and includes calls for proposals and the coordination of community-based activities.

Community explorations will inform the TMT Science Advisory Committee (SAC), and the SAC will set instrumentation priorities. These explorations will include feasibility studies, technology prototypes and scientific explorations.

The first call for proposals took place in September 2017.



Some concepts for potential future instruments have already been discussed (see list below), but there will be many opportunities to participate in the definition and design of the actual instruments that will be commissioned on TMT.

Instrument	FOV/slit length	$\lambda/\delta\lambda$	$\lambda$ ( $\mu\text{m}$ ) (goal)
Multi-IFU imaging Spectrometer	3" IFUs over 5' field	2000-10000	0.8-2.5
Mid-IR AO-fed Echelle Spectrometer	3" slit length 10" imaging	5000-100000	8-18 (4.5-28)
Planet Formation Instrument ( $10^8$ - $10^9$ )	1" OWA, 0.05" IWA	$R \leq 100$	1-2.5 (1-5)
Near-IR AO-fed Echelle Spectrometer	2" slit length	20000-100000	1-5
High-Resolution Optical Spectrometer	5" slit length	50000	0.31-1.1 (0.31-1.3)
"Wide"-field AO Imager	30" imaging field	5-100	0.8-5.0 (0.6-5.0)

Teams within the existing TMT partnership and within the US are encouraged to communicate and coordinate with the TMT project to prepare to respond to calls for proposals. Inquiries regarding TMT instrument development can be sent to:

[inquiry@tmt.org](mailto:inquiry@tmt.org)

Science operations with the Thirty Meter Telescope are expected to begin in the late 2020s.