TMT Thirty Meter Telescope Astronomy's Next-Generation Observatory A Great New Opportunity for Canada's People

- Canada is poised to become a vital partner in building and operating the TMT the Thirty Meter Telescope far larger and more powerful than any telescope in existence. The project is scheduled to begin construction in 2014 and to be in full operation in 2022.
- Canada's contribution of \$300M over 9 years will be key to maintaining Canadian leadership in the field of Astronomy & Astrophysics, main gateway for stimulating interest in science and technology by all people, especially for the very young.
- The TMT offers Canada an opportunity to enter a new Asia-Pacific partnership in astronomy, with potential for enhancing cultural and economic ties with our important emerging trading partners.



Caltech, UC, China, India, Japan 80.4%

> Canada 19.6%

> > TMT contributions percentages by participating partners

Previous investments by Canada in astronomy with major contributions by Canadian industry:

Enclosure for the 8.1 m Gemini Telescope, 1993



CFHT Telescope 3.6 m, 1979



laskett Telescope, 1.8 m, 1918

"With a history that reaches back over a century, Canadian astronomy has arisen to become one of the country's research success stories."

 Astronomy in Canada, Hickling, Arthurs and Low (HAL report 2011)

TMT Thirty Meter Telescope Astronomy's Next-Generation Observatory

A Great New Opportunity for Canada's Technology

"Anything you can dream... we can build."

- The TMT will benefit Canadian science, and also Canadian industry. Canadian industry will build the telescope's gigantic enclosure. Also, the TMT's new optics system NFIRAOS (Narrow-Field Infrared Adaptive Optics System) is being designed and built by a consortium of Canadian industry, universities and national labs.
- Some 100 times more powerful than current space and ground-based telescopes, the TMT will yield transformative insights into the formation of stars and planets, the evolution of the universe over cosmic time, and quite probably the properties of Earth-like planets orbiting nearby stars.



Narrow-Field Infrared Adaptive Optics System (NFIRAOS)





Past projects in design and construction of steel structures by Canadian industry resulting directly from previous investments in astronomy:

Rendering of the 200-foot wide, 22-storey tall enclosure for the TMT to be built by Canadian industry



Canadarm – the Canadian-built Shuttle Remote Manipulator System

"The fields of Clinical Medicine, Information Communications
Technology, Physics and Astronomy are among the largest
research enterprises in the country in terms of
output of scientific papers."

 The State of Science and Technology in Canada, Council of Canadian Academies (2012)



Association of Canadian Universities for Research in Astronomy Association canadienne d'universités pour la recherche en astronomie

www.tmt.org