TMT Week

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Nearly 90 scientists and engineers, drawn from within the Thirty Meter Telescope (TMT) partnership and the broader astronomical community met in Aspen, Colorado, from September 27-30 to assess progress toward achieving the highest priority ground-based goal articulated by the most recent decadal survey: designing a Giant Segmented Mirror Telescope by the middle of this decade, so that construction can begin prior to 2010.

Led by Project Manager Gary Sanders, "TMT Week" participants presented a series of technical status reports on the TMT baseline design, telescope controls and software, site evaluation, adaptive optics (AO) systems, instrumentation design, and operations models. One highlight of the meeting was a simulation of the performance of the first-light AO module, which will deliver high-Strehl images to multiple instruments over a 10-arcsecond field of view at wavelengths longer than one micron.

Another impressive session covered design concepts for the six instruments proposed for the first decade of TMT operations: a 20-arcminute field of view, seeing-limited, kilo-slit optical spectrograph; a diffraction-limited imager/spectrograph for the 1—5 micron region; a deployable integral field unit near-infrared (IR) spectrograph; a seeing-limited, high-resolution optical spectrograph; a high-resolution mid-IR spectrograph; and, a high-performance imager enabling diffraction-limited observations of ultra-high contrast scenes.

Of particular note was broad participation by the US and Canadian communities in developing and advancing these instrument concepts. The importance of engaging the best minds in the community was perhaps best illustrated by the highly creative alternative approach to developing the High Resolution Optical Spectrograph presented by a team from the University of Colorado, who bring extensive experience in designing and building space-based instrumentation.

The TMT project is committed to open participation by the community in developing instrumentation and key subsystem concepts, and to input aimed at ensuring that the planned observatory continues to meet community aspirations as expressed in the decadal survey.

The current schedule for TMT envisions a conceptual design review in May 2006 and a full-cost review in early fall 2006. By keeping to this schedule, the unique public-private TMT partnership anticipates being able to prepare a proposal for funding soon ther eafter in order to begin construction in 2009.

Thirty Meter Telescope Project Manager Gary Sanders addresses team members at TMT Week.

NOAO's roles in the project include participating in the TMT Science Advisory Committee and ensuring additional community representation on it. This key committee is responsible for producing and updating the Science Requirements Document, which informs all design decisions for the telescope. NOAO is also providing major support for ongoing TMT site evaluation, particularly for candidate sites in Northern Chile; developing a design concept for the mid-IR, high-resolution spectrograph in collaboration with scientists and engineers from the universities of Hawaii, Texas, and California at Davis; producing design concepts for the secondary and tertiary mirror support systems; and, supporting development of the Observatory Requirements Documents and operations models for TMT.

The staff of NOAO and its New Initiatives Office (NIO) are eager to interact further with the community regarding TMT and are ready to meet with colleagues throughout the community to describe the potential capabilities of a 30-meter class telescope, proposed operations models, and improved mechanisms for community participation. Requests for colloquia and other talks about TMT will be welcomed by the NIO. Please contact me (*sstrom@noao.edu*), or Larry Daggert (*ldaggert@noao.edu*) about any of these issues.