Construction of the Advanced Technology Solar Telescope - A Progress Report.

[1]Thomas Rimmele, [1]Steve Keil, [1]Joseph McMullin, [2]Phillip Goode, [3]Michael Knoelker, [4]Jeff Kuhn, [5]Robert Rosner, [1]ATST Team *([1]National Solar Observatory, [2]New Jersey Institute of Technology, [3]High Altitude Observatory, [4]Institute for Astronomy, [5]University of Chicago)*

rimmele@nso.edu

Session: SpS6 Science with large solar telescopes

Type of presentation: Oral

The 4m Advance Technology Solar Telescope (ATST) will be the most powerful solar telescope and the world's leading ground-based resource for studying solar magnetism that controls the solar wind, flares, coronal mass ejections and variability in the Sun's output. The ATST will provide high resolution and high sensitivity observations of the dynamic solar magnetic fields throughout the solar atmosphere, including the corona at infrared wavelengths. With its 4 m aperture, ATST will resolve magnetic features at their intrinsic scales. A high order adaptive optics system delivers a corrected beam to the initial set of five state-of-the-art, facility class instrumentation located in the coude laboratory facility. Photopheric and chromospheric magnetometry is part of the key mission of four of these instruments. Coronal magnetometry and spectroscopy will be performed by two of these instruments at infrared wavelengths. The ATST project has transitioned from design and development to its construction phase. Site construction is expected to begin in the first half of 2012. The project has awarded design and fabrication contracts for major telescope subsystems. A robust instrument program has been established and all instruments have passed preliminary design reviews or critical design reviews. A brief summary of the science goals and observational requirements of the ATST will be given, followed by a summary of the project status of the telescope and discussion of the approach to integrating instruments into the facility.