
Prominence science with the ATST first light instrumentation

Thomas Rimmele^{*1}, Thomas Berger¹, Roberto Casini², Jeff Kuhn³, Haosheng Lin³,
Friedrich Woeger¹, and David Elmore¹

¹National Solar Observatory – PO Box 62 Sunspot, NM 88349, United States

²High Altitude Observatory – P.O. Box 3000 Boulder, CO 80307-3000, United States

³University Hawaii – Institute for Astronomy 2680 Woodlawn Drive Honolulu, HI 96822-1839, United States

Abstract

The 4m Advance Technology Solar Telescope (ATST) is under construction on Maui, HI. With its unprecedented resolution and photon collecting power ATST will be an ideal tool studying prominences and filaments and their role in producing Coronal Mass Ejections. The ATST facility will provide a set of first light instruments that enable imaging and spectroscopy of the dynamic filament and prominence structure at eight times the resolution of Hinode. Polarimeters allow high precision chromospheric and coronal magnetometry of prominence structure at visible and infrared (IR) wavelengths. The infrared is particularly attractive for coronal spectroscopy and magnetometry due to low sky and instrumental background and relatively bright mid-IR coronal emission lines. We will review the design and capabilities of the ATST first light instruments when operated individually or as a system. Current concepts for data products from the instruments and community access to data products will be discussed.

Keywords: prominences, magnetic fields, corona, chromosphere, polarimetry, instrumentation

*Speaker