
Chromospheric magnetic field of an active region filament using the He I triplet and the primary observation of filaments (prominences) using New Vacuum Solar Tower of China

Zhi Xu*¹

¹Yunnan Astronomical Observatory (YNAO) – Kunming City 650011, Yunnan Province, China, China

Abstract

There are two parts in my presentation. In the first part I present the magnetic field measurement of an active region filament using the full Stokes profiles of He I 10830 and Si I 10827 band when the filament is in its stable phase. This observation was fulfilled using German Vacuum Tower Telescope (VTT). The vector magnetic field and Doppler velocity map both in the photosphere and chromosphere were observed and analyzed co-temporally and co-spatially. The observation findings reveal that we were observing the emergence of a flux rope with a subsequent formation of a filament. In the second part, I would like to exhibit another ground-based observation facility, 1m New Vacuum Solar Telescope (NVST) located in Fu-Xian Lake Solar Observatory of China. After the basic introduction including the location and instrumentations, I give some highlights including granulation, faculae, microflares, jets, and filaments or prominence since the first running in 2010, showing our potential ability to do high-resolution solar observation from the ground. Observation proposals from the international solar community are well appreciated in future.

Keywords: Vector magnetic field, infrared spectropolarimetric observation, NVST

*Speaker