Initial results from Hinode Solar Optical Telescope

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The Solar Optical Telescope (SOT) of Hinode satellite, launched on 23-Sep-2006, is the first space solar optical telescope which enables the continuous totally seeing free observations. The SOT consists of a 50 cm aperture telescope, optical telescope assembly (OTA), and a focal plane package (FPP), and can perform broadband, narrowband filtergrams, and spectro polarimetric measurements in photospheric and chromospheric absorption lines and continuum 380-700 nm. SOT also has an image stabilization system of correlation tracker and tip-tilt mirror. It was confirmed that the SOT achieved the spatial resolution of 0.2-0.3 arc-second soon after the opening of the telescope door on 25-Oct-2006; the jitter is suppressed 0.01 arc-second (rms) with the image stabilization system. During the first 3 months operations so far, we observed the evolution of several active regions crossing the disk, prominences on the limb, quite regions, and north and south pole regions, a few X-class flares and so on. We stress that polarization measurement of 0.1% accuracy and high time cadence filtergram with sub-arc-second scale renewed our view of structure, and in particular

dynamical properties of photosphere and chromosphere. In this talk, we summarize the initial results of SOT such as the properties of

photospheric magnetic field from scale size of magnetic elements to sunspots, chromospheric dynamical phenomena, major flares, and so on.