

Fine-scale solar magnetic activities observed with HINODE SOT

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HINODE (SOLAR-B) spacecraft was successfully launched on September 2006. The Solar Optical Telescope (SOT) aboard HINODE, which is the largest solar telescope ever launched in the world, has a capability to observe fine-scale magnetic activities on the solar surface with the highest and uniform image quality. In addition, SOT has a great advantage compared with ground-based telescopes because of no interruption by earth atmospheric effects nor day/night. A diagnostic capability of magnetic fields is also an important advantage of the telescope. We can follow not only emergence and disappearance of fine magnetic elements, but also large-scale evolution of sunspot magnetic structures owing to its superior performance. Combined with observations of coronae by the X-Ray Telescope (XRT) and EUV Imaging Spectrometer (EIS), SOT will provide precious observational data to investigate various research targets including mass ejection, heating of coronae, and flare triggering mechanisms etc.