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SOLAR POLAR ORBIT TELESCOPE (SPORT): A POTENTIAL SPACE WEATHER MISSION OF CHINA

Abstract

We describe a spacecraft mission, named Solar Polar ORbit Telescope (SPORT), which is currently under a scientific and engineering background study in China. SPORT was originally proposed in 2004 by the National Space Science Center, Chinese Academy of Sciences. It will carry a suite of remote-sensing and in-situ instruments to observe coronal mass ejections (CMEs), solar high-latitude magnetism, and the fast solar wind from a polar orbit around the Sun. It is intended to be the first mission that carries remote-sensing instruments from a high-latitude orbit around the Sun, the first mission that could image interplanetary CMEs at radio wavelengths from space, and the first mission that could measure solar high-latitude magnetism leading to eruptions and the fast solar wind. The first extended view of the polar region of the Sun and the ecliptic plane enabled by SPORT will provide a unique opportunity to study CME propagation through the inner heliosphere and solar high-latitude magnetism giving rise to eruptions and the fast solar wind.