



Space Weather Forecasting: A Brief Overview

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Abstract In 1997, one of NASA's explorer satellite, the Advanced Composition Explorer (ACE), was launched to study the Sun-Earth environment. On board the spacecraft, it carries some of the most advanced scientific payloads to measure the interplanetary plasma environment. In addition, ACE also carries a new type of forecasting system: the Real-Time Solar Wind (RTSW) monitor. This monitor broadcasts real-time solar wind measurement from the Earth's upstream interplanetary space to ground stations at the National Oceanic and Atmospheric Administration (NOAA) in a near-continuous fashion. The NOAA's Space Weather Prediction Center (SWPC), which is now part of the National Weather Service, uses these measurements along with other ground observations to begin forecasting space weather 24/7. A new era on space weather forecast has begun.

As we move into the 21st century, human technologies depend upon on space assets. Not only does our telecommunication depends on satellite, our daily life and travel are also affected by space environment driven by our own Sun. Because of these the importance of space weather has gained considerable public attention in the last 10 years. This presentation will introduce the concept of space weather by showing how much of our society is affected by space weather. It will also show how space research has been steered into addressing the new era of space weather forecasting, and what challenges and opportunities lay ahead in addressing this new type of research. Finally, we will discuss the current state of space weather forecast in the United States.

~ All are Welcome! ~