NASA launches observatory to study sun

(AP) -- The most advanced solar observatory ever built rocketed into space Thursday on a five-year quest to shed light on Earth's star.

It was NASA's second launch in four days. On Monday, Endeavour blasted off to the International Space Station.

The shuttle-station complex was orbiting over the Atlantic, near Africa, when the observatory shot into a cloudy wintry sky aboard an unmanned rocket, a day late.

At a cost of $856 million, the Solar Dynamics Observatory is the first mission in NASA's Living with a Star program. Scientists want to better understand the violent activity on the sun that influences life on Earth. This so-called space weather can disrupt communications, knock out power and disable satellites, and endanger astronauts in orbit.

The spacecraft, nicknamed SDO, is designed to transmit unprecedented reams of data from an extremely high Earth orbit. It should send back 150 million bits of data every second of every day, more than any other NASA Mission. That's equivalent to downloading 500,000 songs a day.

Two 59-foot satellite dishes in New Mexico will handle the massive information load. NASA set up these radio antennas expressly for this mission.

The observatory has three science instruments, including an array of telescopes to watch the surface and atmosphere of the sun. The observatory will measure fluctuations in the amount of ultraviolet radiation emitted from the sun, map solar magnetic fields and even peek beneath the sun's surface.

"Our sun affects our lives more and more as we depend more and more on technology," said NASA project scientist William Dean Pesnell. He said the observatory hopefully will result in better predictions of solar weather and, as a result, minimize sun-induced disruptions to everyday life.

SDO is a whopper of a spacecraft. It weighs 3 tons and stretches 7 feet - 21 feet with its solar wings.

The price is also super-sized. The $856 million includes the Atlas V rocket that hoisted the observatory and the pair of radio antennas that will gather all the findings.

Wednesday's countdown was halted by high wind that crept close to the limit Thursday morning.

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