

## NASA Installs Cosmic Ray Hunter on Space Station

By Irene Klotz | Thu May 19, 2011 03:34 PM ET



A new tool to look at the universe debuted Thursday, with the installation of the [Alpha Magnetic Spectrometer](#), nicknamed AMS, on the International Space Station.

With a large powerful magnet, AMS samples from the stream of cosmic rays flying through space and processes them through a series of detectors to determine particle energy, electrical charge and position. Over time, physicists expect the mountain of data to shed light on dark matter, antimatter and other phenomena that are impervious to traditional telescopes.



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The 600-member science team, headed by Nobel laureate Samuel Ting with the Massachusetts Institute of Technology, plans to take things slow.

With a pricetag of about \$2 billion and a multinational team from 60 research organizations, AMS took 17 years to come together. The effort was nearly derailed after the 2003 Columbia accident when NASA took away its ride on the shuttle.

"This isn't going to happen again, so it's important to do this very, very systematically," Ting said Thursday.

With a few hours of being attached to the outside of the space station, AMS was sending down huge amounts of data, recording the footprints of thousands of cosmic ray particles.

"The detector has 300,000 channels in the electronics, 650 microprocessors and the detectors are aligned to (an accuracy of) one-tenth of a human hair," Ting told reporters. "We immediately checked all the detectors, everything functioned properly. Not a single one was broken, not a single electronic channel was malfunctioning. Right away, we began to see an enormous amount of data coming down."

AMS is designed to operate as long as the space station flies -- at least 10 years and possibly 20.

"We hope we will be able to make an important contribution to our understanding of the origin of the universe," Ting said. "We're entering into a region nobody has entered before, what we will see, nobody knows."

*Image: Special delivery -- Shuttle Endeavour astronauts use cranes to attach the Alpha Magnetic Spectrometer to the outside of the space station. Credit: Spaceflightnow.com*

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