An advanced scientific payload set to fly aboard space shuttle Endeavour in 2011 is beginning final preparations for its upcoming flight to the International Space Station.

The pioneering Alpha Magnetic Spectrometer-2 experiment arrived at NASA's Kennedy Space Center on Aug. 26 aboard a U.S. Air Force C-5M cargo aircraft.

Known as AMS, the high-tech device could lead to new discoveries about the universe and its origin.

AMS will use a powerful magnet and cutting-edge particle physics detector to measure the charged particles within cosmic rays.

The project is a longtime dream of the experiment's principal investigator, Nobel Prize-winner Samuel Ting of the Massachusetts Institute of Technology.

He and other scientists are excited about the possibility of finding signatures of dark matter and antimatter among those particles.

These particles carry charge. Because it carries a charge, it must have a mass.

Because it has a mass, it's absorbing Earth's atmosphere. Therefore, you have to go to space.
Scientists and engineers from 16 countries contributed to AMS, making it a perfect addition to the International Space Station.

Led by Commander Mark Kelly, all six STS-134 astronauts were at Kennedy to watch as their payload arrived.

The nearly 15,000-pound experiment will be robotically installed on the station's main truss during shuttle Endeavour's final scheduled mission.

We're going to pick it up with the Canadian robotic arm that's inside the space shuttle, just pick it right up, stretch out the arm. And then the space station robotic arm, also made by Canada, Canadarm 2, is going to take the AMS and it's called a handoff, just like in football.

grab it and we're going to put it right on the space station.

AMS will go through a few months of final testing in Kennedy's Space Station Processing Facility before it is loaded into Endeavour's payload bay.

Once it reaches its final destination in orbit, the experiment is expected to operate for at least a decade, until the end of the station's life.
From NASA's Kennedy Space Center, I'm George Diller.