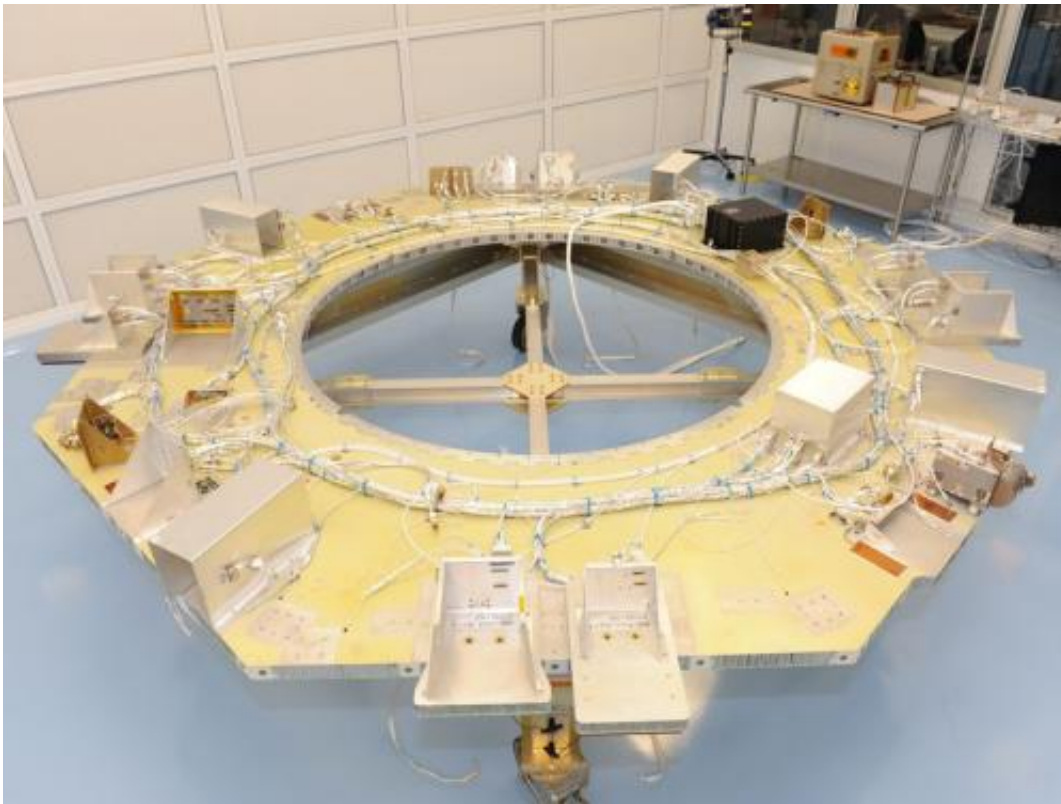


Instrument integration begins at Goddard on MMS spacecraft

June 8 2012



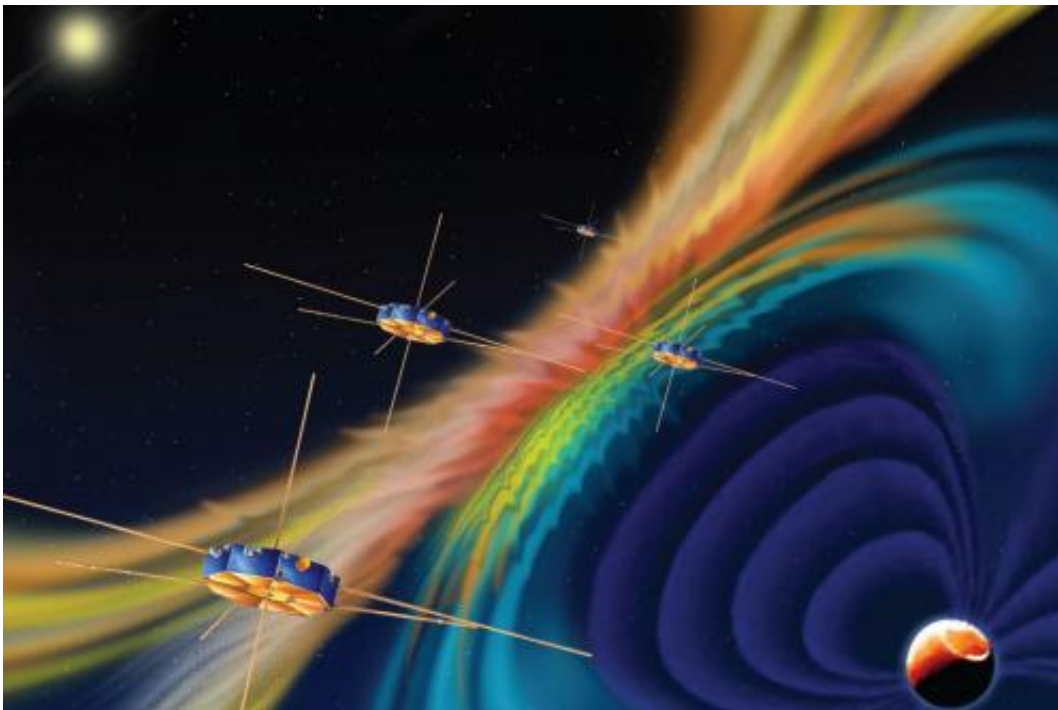
An instrument deck for NASA's Magnetospheric Multiscale mission is readied for installation of instruments. Two instruments have already been installed: the white box on the lower right is the Energetic Ion Spectrometer; the black box in the upper right is the Central Instrument Data Processor. Credit: NASA\GSFC\Lambert

(Phys.org) -- The decks have arrived. Engineers working on NASA'S

Magnetospheric Multiscale (MMS) mission have started integrating instruments on the first of four instrument decks in a newly fabricated cleanroom at Goddard Space Flight Center in Greenbelt, Md. The MMS mission consists of four identical spacecraft, and each instrument deck will have 25 sensors per spacecraft.

"This is the first time NASA has ever built four satellites near simultaneously like this," says Craig Tooley, project manager for MMS at Goddard. "It feels like we're planning a giant game of musical chairs to produce multiple copies of a spacecraft. One instrument deck might be 2/3 finished, while another one is 1/3 finished, and the same people will have to test a nearly complete deck one day, and install large components on another one another day."

MMS will fly the four spacecraft in formation to investigate how the sun's and Earth's magnetic fields connect and disconnect, explosively transferring energy from one to the other -- a process that occurs throughout the universe, known as magnetic reconnection.



Artist's rendition of MMS in orbit. Credit: NASA

By going into space to observe [magnetic reconnection](#) where it is happening, MMS will both study a fundamental physical process that occurs throughout the universe as well as observe one of the ultimate drivers of our [space weather](#), which affects modern technological systems such as communications networks, [GPS navigation](#), and electrical [power grids](#).

Goddard manages the MMS mission and is building the spacecraft in-house on-site in a specially designed cleanroom. Dr. James L. Burch at Southwest Research Institute (SWRI) in San Antonio, Texas is the principal investigator for the MMS [science investigation](#). SWRI oversees the entire MMS instrument suite for NASA, with various instruments being built at other institutions, including the Fast Plasma Instrument, which is being built at Goddard.

Provided by NASA's Goddard Space Flight Center

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