

Dwayne Brown  
Headquarters, Washington  
(202) 358-1726

December 11, 2006

Cynthia O'Carroll  
Goddard Space Flight Center. Md.  
(301) 286-4647

George Diller  
Kennedy Space Center, Fla.  
(321) 867-2468

Robert Sanders  
UC Berkeley, Calif.  
(510) 643-6998

**RELEASE:**

**THEMIS ARRIVES IN FLORIDA FOR LAUNCH PREPARATIONS**

NASA's Time History of Events and Macroscale Interactions During Substorms (THEMIS) spacecraft arrived in Florida today, to begin final testing and launch preparations. THEMIS is scheduled to liftoff on February 15 aboard a Delta II rocket from Launch Complex 17-B on Cape Canaveral Air Force Station, Fla.

THEMIS consists of five identical probes, the largest number of scientific satellites ever launched aboard a single rocket. This unique constellation of satellites will resolve the tantalizing mystery of what causes the spectacular sudden brightening of the auroral borealis – the fiery skies over the Earth's northern pole. These lights are the visible manifestations of invisible energy releases, called substorms, in near-Earth space. THEMIS will not only seek to answer the "holy grail" of space physics – where and when do substorms start, but will also provide clues as to how and why these space storms create havoc on satellites, power grids, and communication systems.

THEMIS is the fifth medium-class mission under NASA's Explorer Program, which provides frequent flight opportunities for world-class scientific investigations from space within the Heliophysics and Astrophysics science areas. The Explorers Program Office at Goddard Space Flight Center in Greenbelt, Md., manages this NASA-funded mission. The University of California, Berkeley's Space Sciences Laboratory and Swales Aerospace built the THEMIS probes.

Now that THEMIS has arrived at the Astrotech payload processing facility in Florida, each of the five probes will be removed from the shipping container in preparation for six weeks of

testing and launch preparations. This includes a functional performance test to verify the state of health of each of the five probes, installation of bolt cutters that will separate each probe from the payload carrier and pressurization and leak checks of the reaction control systems.

Each probe will then be moved to the hazardous processing facility and placed on a stand in preparation for fueling operations. Once fueling is complete, each probe will be weighed and individually mated to the payload carrier before pyrotechnics are installed. The fully integrated THEMIS spacecraft is then ready for spin balance testing and weighing of the completed payload. The final milestone is mating THEMIS to its upper stage booster. THEMIS will be transported to Pad 17-B for mating to the Delta II rocket on February 1.

The rocket that will launch THEMIS is a Boeing Delta II 7925-10. The first stage is scheduled to be erected on Pad 17-B the first week of January. The nine strap-on solid rocket boosters will be erected for attachment to the first stage during the second week of January. The second stage, which burns hypergolic propellants, will be hoisted atop the first stage during the third week of January. Finally, that same week, the fairing which surrounds the spacecraft will be hoisted into the clean room of the mobile service tower.

Next, several tests of the Delta II will be performed. In the last week of January, as a leak check, the first stage will be loaded with liquid oxygen during a simulated countdown. The next day, a Simulated Flight test will be performed, simulating without fuel aboard the vehicle's post-liftoff flight events. The electrical and mechanical systems of the entire Delta II will be exercised during this test. Once the THEMIS payload is atop the launch vehicle, a final major test will be conducted, an integrated test of the Delta II and THEMIS working together. This will be a combined minus count and plus count, simulating all events as they will occur on launch day, but without propellants aboard the vehicle.

For information about NASA and the THEMIS program on the Web, visit:

<http://www.nasa.gov/home>  
<http://sprg.ssl.berkeley.edu/themis/flash.html>