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Twin APL-Built Spacecraft Prepped for Launch in Florida

by Kristi Marren

On May 3, the twin STEREO (Solar TERrestrial RELations Observatory) spacecraft, designed and built by APL, arrived by truck at the Astrotech Spacecraft Processing Facility just outside NASA's Kennedy Space Center in Florida for pre-launch testing. During the next two months, they will undergo final checks of their systems and instruments before they're loaded onto a Delta II launch vehicle. Mission operations personnel and engineers will rehearse the launch countdown and participate in simulations of critical STEREO operations.

Final pre-launch checks will include: deployment of the solar arrays and high-gain antennas; installation of the flight batteries; a mission simulation involving the Deep Space Network; and a comprehensive performance test, which is an overall test of the spacecraft systems and instruments. Each observatory's propulsion system will then undergo leak and fueling operations tests. Finally, the spacecraft will be vertically stacked in their launch configuration for spin-balance testing before mating with the launch vehicle's upper stage.

Both spacecraft will be transported to the launch complex and loaded onto the Delta II approximately two weeks before launch. Mission operations personnel at APL will begin the final launch countdown 12 hours before launch. Lift-off will occur this summer from Cape Canaveral Air Force Station's Launch Complex 17-B.

Prior to their transport to Florida, the spacecraft completed five months of space-environment tests at NASA Goddard Space Flight Center and at APL. These tests simulated conditions the observatories will undergo during launch and their two-year mission in space.

The third mission in NASA's Solar Terrestrial Probes Program, STEREO will acquire the first-ever, 3-D stereoscopic images of coronal mass ejections – powerful solar eruptions that can blow billions of tons of the sun's atmosphere into interplanetary space, often triggering severe magnetic storms when they collide with Earth. Such storms can cause electrical power outages and damage communications satellites.

For more information on STEREO or to download images, visit stereo.jhuapl.edu. ■



NASA's twin STEREO observatories arrive by truck at the Astrotech Spacecraft Processing Facility near Kennedy Space Center in Florida.



The STEREO spacecraft in Astrotech's clean room, where they are undergoing final preparations and tests for launch this summer.

NASA/Jim Grossmann