

James Webb Space Telescope "Pathfinder" backplane's path to NASA

August 13 2014, by Rob Gutro



The Webb backplane is being unloaded from a trailer truck at the Goddard Space Flight Center in Greenbelt, MD, where it currently resides in Goddard's giant cleanroom. Credit: NASA/Desiree Stover

The "central backbone" of NASA's James Webb Space Telescope practice-model recently took a cross-country trip to be part of a simulation of putting together vital parts of the telescope. The pathfinder recently traveled a path across the country from California to Maryland.

The pathfinder, a non-flight replica of the Webb telescope's center backplane was assembled and tested at Northrop Grumman in Redondo Beach, California. The actual flight backplane comes in three segments, a main part and two wing-like parts, all of which will support large hexagonal mirrors on the Webb telescope. The pathfinder only consists of the center part of the backplane.

The pathfinder was loaded onto a C-5 aircraft and flown to the U.S. Air Force's Joint Base Andrews in Maryland. It was transported by trailer truck to NASA's Goddard Space Flight Center in Greenbelt, Maryland. It now rests in NASA Goddard's giant cleanroom, where over the next several months engineers and scientists will install two spare primary mirror segments and a spare secondary mirror. By installing the mirrors on the replica, technicians are able to practice this delicate procedure for when the actual flight backplane arrives. Installation of the mirrors on the backplane requires precision, so practice is important.

The [flight](#) backplane will hold the telescope's 18-segment, 21-foot-diameter primary mirror nearly motionless while the telescope gazes into deep [space](#). The backplane will also support the telescope's many instruments, thermal control systems, and other hardware throughout its mission.



The Webb telescope backplane "pathfinder" or practice-model was unloaded from a C-5 aircraft at the U.S. Air Force's Joint Base Andrews in Maryland. Credit: NASA/Desiree Stover

Once the tests are complete at NASA Goddard later this year, the [pathfinder](#) backplane will make a new path to NASA's Johnson Space Center in Houston, Texas to undergo tests at bitter cold temperatures in a special cryotesting chamber to simulate the environment of space.

Provided by NASA

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