

NASA prepping next Mars spacecraft for fall launch

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Curiosity, the Mars Science Laboratory mission's rover, along with the mission's descent stage, arrived at NASA's Kennedy Space Center, Fla., on June 22, 2011, aboard a U.S. Air Force C-17 transport plane. Image Credit: NASA

(PhysOrg.com) -- NASA's next Mars rover has completed the journey from its California birthplace to Florida in preparation for launch this fall.

The Mars Science Laboratory rover, also known as Curiosity, arrived late Wednesday night at NASA's Kennedy Space Center aboard an Air Force C-17 transport plane. It was accompanied by the rocket-powered

descent stage that will fly the rover during the final moments before landing on Mars. The C-17 flight began at March Air Reserve Base in Riverside, Calif., where the boxed hardware had been trucked from NASA's Jet Propulsion Laboratory in Pasadena, Calif.

The rover's aeroshell -- the protective covering for the trip to the Red Planet -- and the cruise stage, which will guide it to Mars, arrived at Kennedy last month. The mission is targeted to launch from Cape Canaveral Air Force Station between Nov. 25 and Dec. 18. The car-size rover will land on Mars in August 2012.

"The design and building part of the mission is nearly behind us now," said JPL's David Gruel, who has managed Mars Science Laboratory assembly, test and launch operations since 2007. "We're getting to final checkouts before sending the rover on its way to Mars."

The rover and other spacecraft components will undergo more testing before mission staff stack them and fuel the onboard propulsion systems. Curiosity should be enclosed in its aeroshell for the final time in September and delivered to Kennedy's Launch Complex 41 in early November for integration with a United Launch Alliance Atlas V rocket.

Curiosity is about twice as long and more than five times as heavy as any previous Mars rover. Its 10 science instruments include two for ingesting and analyzing samples of powdered rock delivered by the rover's robotic arm. During a prime mission lasting one Martian year -- nearly two Earth years -- researchers will use the rover's tools to study whether the landing region has had environmental conditions favorable for supporting microbial life and favorable for preserving clues about whether life existed.

Provided by NASA

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