After delay, NASA preparing Mars rover for launch

April 4 2011

(AP) -- NASA engineers are putting the finishing touches on a mega-rover to Mars before shipping it off to Florida for launch later this year.

A small army of technicians dressed in protective bunny suits has been working around the clock inside a clean room at the Jet Propulsion Laboratory near Los Angeles assembling the craft, called Curiosity, and testing its science instruments.

The $2.5 billion mission was supposed to launch in 2009, but problems during construction forced a two-year delay.

With launch scheduled for late November, engineers have been busy testing the spacecraft's various systems - all the while making sure that contamination from Earth doesn't accidentally hitch a ride to Mars.

The nuclear-powered Curiosity - the size of a small SUV - will probe rocks and soil to determine whether the red planet ever had the right environment to support primitive life. It will carry the most high-tech instruments to the Martian surface including a laser that can zap boulders from afar.

To the dismay of some space fans, Curiosity won't carry a high-resolution 3-D camera that "Avatar" director James Cameron was helping to build. NASA recently nixed it because there wasn't enough time to fully test the zoom lens before launch.

Scientists expect Curiosity to build on the discoveries of the twin rovers Spirit and Opportunity, which have uncovered geologic evidence of ancient water and the Phoenix lander, which found ice at its Martian north pole landing site.

Curiosity's road to the launch pad has been bumpy. Engineers had to redesign the rover's heat shield and fix problems with the parachute. NASA also faced delivery delays from subcontractors that affected the launch timetable and raised the mission price tag.

Part of the reason why Curiosity is so technically challenging is because NASA has never built such an advanced rover before.

While the cruise to Mars and descent through the fiery atmosphere are similar to past missions, NASA is testing a brand-new technology for landing.

Instead of using airbags to bounce to a stop, the 2,000-pound Curiosity will be gently lowered to the surface by a sky crane.

NASA will begin shipping spacecraft parts to Cape Canaveral beginning next month. The three-week launch window opens on Nov. 25.

In preparation for launch, Curiosity has been on a publicity blitz.

NASA last October installed a camera in a viewing gallery overlooking the clean room that allows anyone with a computer to watch a live stream of the rover construction. There's no audio feed, but the space agency hosts periodic online chats with viewers to explain what's going on.

Curiosity also has its own Twitter feed with more than 29,000 followers