

Directions:

1. Mark your confusion.
2. Show evidence of a close reading. Mark up the text with questions and/or comments.
3. Write a one-page reflection on your own sheet of paper.

NASA Launches Sophisticated Rover on Journey to Mars

Source: The Associated Press/*New York Times*/11/26/11

CAPE CANAVERAL, Fla. (AP) — The world’s biggest extraterrestrial explorer, NASA’s Curiosity rover, rocketed toward Mars on Saturday on a search for evidence that the planet might once have been home to microscopic life.

It will take eight and a half months for Curiosity to make the 345-million-mile journey to Mars.

The rover, officially known as the Mars Science Laboratory, was hoisted into a cloudy sky on Saturday morning by an Atlas V rocket. More than 13,000 guests crowded the Cape Canaveral space center for the National Aeronautics and Space Administration’s first mission to Earth’s next-door neighbor in four years, and the first launching of a Martian rover in eight years.

Pan Conrad, a NASA astrobiologist whose instrument seeking carbon compounds is on the rover, had a shirt made for the occasion. The blue blouse was emblazoned with rockets, planets and the words “Next stop Mars!”

The one-ton Curiosity is a mobile, nuclear-powered laboratory holding 10 scientific instruments that will sample Martian soil and rocks, analyzing them on the spot. It also has a drill and a stone-zapping laser machine.

It is “really a rover on steroids,” said Colleen Hartman, assistant associate administrator for science at NASA. “It’s an order of magnitude more capable than anything we have ever launched to any planet in the solar system.”

The primary goal of the \$2.5 billion mission is to see whether Mars might once have been hospitable for microbial life — or might even still be conducive to life. No actual life detectors are on board; rather, the instruments will hunt for organic compounds.

With Mars the eventual goal for astronauts, NASA will also use Curiosity to measure radiation on the planet. The rover also has a weather station that will measure temperature, wind and humidity, and a computer application with daily weather updates is planned.

The world has launched more than three dozen missions to Mars, the planet most like Earth in the solar system. Yet fewer than half of those quests have succeeded.

This month, a Russian spacecraft ended up stuck in orbit around Earth, rather than en route to the Martian moon Phobos.

“Mars really is the Bermuda Triangle of the solar system,” Ms. Hartman said. “It’s the death planet, and the United States of America is the only nation in the world that has ever landed and driven robotic explorers on the surface of Mars, and now we’re set to do it again.”

Curiosity’s landing next August will be particularly hair-raising.

In a protective “aeroshell,” the rover will be lowered onto the Martian surface via a jet pack and a tether system similar to the sky cranes used to lower heavy equipment into remote areas on Earth.

Curiosity is too heavy to use air bags, as its much smaller predecessors, Spirit and Opportunity, did in 2004. Besides, the new method should provide for a more accurate landing. Astronauts will need to make similarly precise landings on Mars one day.

Curiosity will spend at least two years roaming around Gale Crater, chosen as the landing site because it is rich in minerals. Scientists have said that if there is any place on Mars that might have been ripe for life, that would be it.

“I like to say it’s extraterrestrial real estate appraisal,” Ms. Conrad said with a laugh last week.

Curiosity’s seven-foot robotic arm has a jackhammer on the end to drill into the rock, and a seven-foot mast is topped with high-definition and laser cameras. No previous Martian rover has been so sophisticated or capable.

The rover, about 10 feet long and 9 feet wide, should be able to go farther and work harder than any previous Mars explorer because of its power source: 10.6 pounds of radioactive plutonium. The nuclear generator was encased in several protective layers in case of a launching accident.

NASA expects the rover to put at least 12 miles on its odometer.

This is NASA’s third space mission to be launched from Cape Canaveral since the retirement of the space shuttle fleet this summer. The Juno probe is en route to Jupiter, and the Grail mission’s twin spacecraft are set to arrive on the Moon on New Year’s Eve and New Year’s Day.

Reflection ideas:

- Should the U.S. spend \$2.5 billion on this Mars mission in a time of economic uncertainty? Why? Why not?
- Do you believe humans will one day live on Mars? Why? Why not?