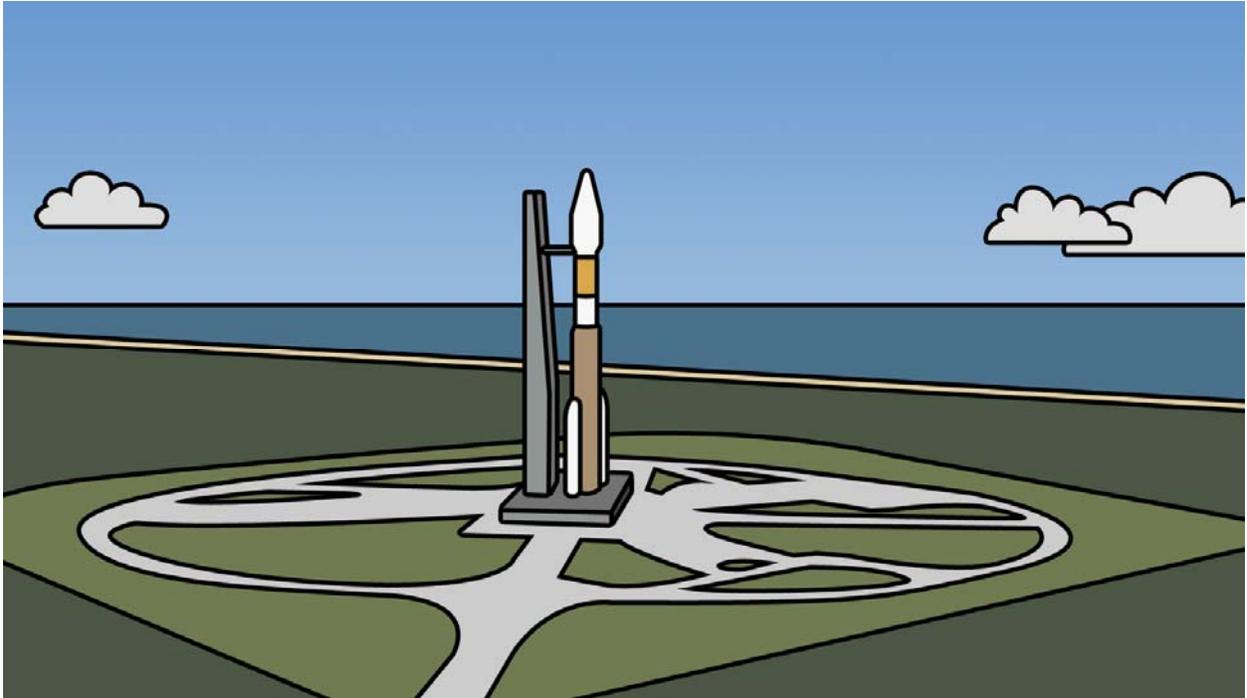


Quick Facts About NASA's Next Mars Rover



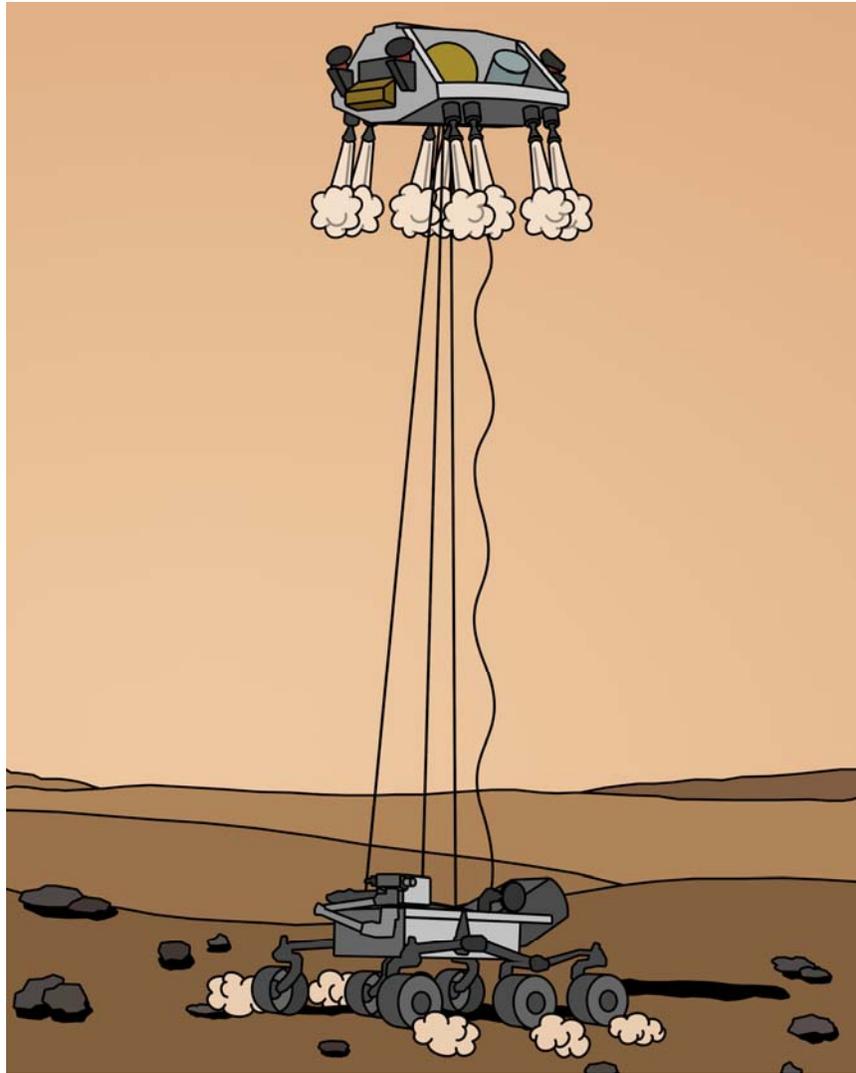
Launch: Fall 2011

- The rover will lift-off from Cape Canaveral, Florida.
- The rover is protected inside a “nose cone” on top of a rocket called an Atlas V.
- The Atlas V is used because the rover is heavy, and this rocket is powerful enough to launch it on its trip to Mars.
 - The rover weighs almost 1900 pounds.
 - The rover, the spacecraft it rides in, and its landing system all together weigh 7500 pounds.



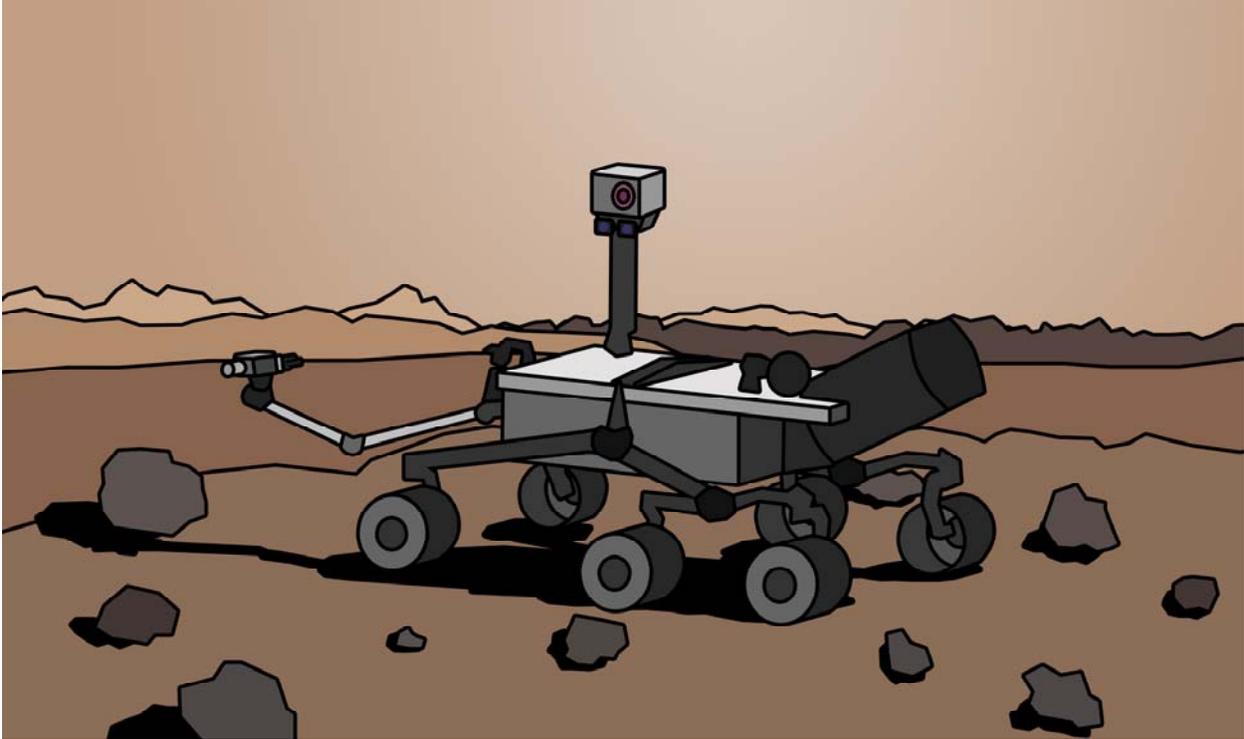
Cruise from Earth to Mars: About 10 Months

- The rover will travel a few hundred million miles on its trip to Mars.
- The spacecraft has a “star tracker” that looks at patterns of stars in the sky to know where it is in space.
 - Navigators and seafarers on Earth have used a similar approach to chart their course.
 - The mission team can send a command to fire thrusters during the long voyage to tweak the spacecraft’s direction and keep it on track.



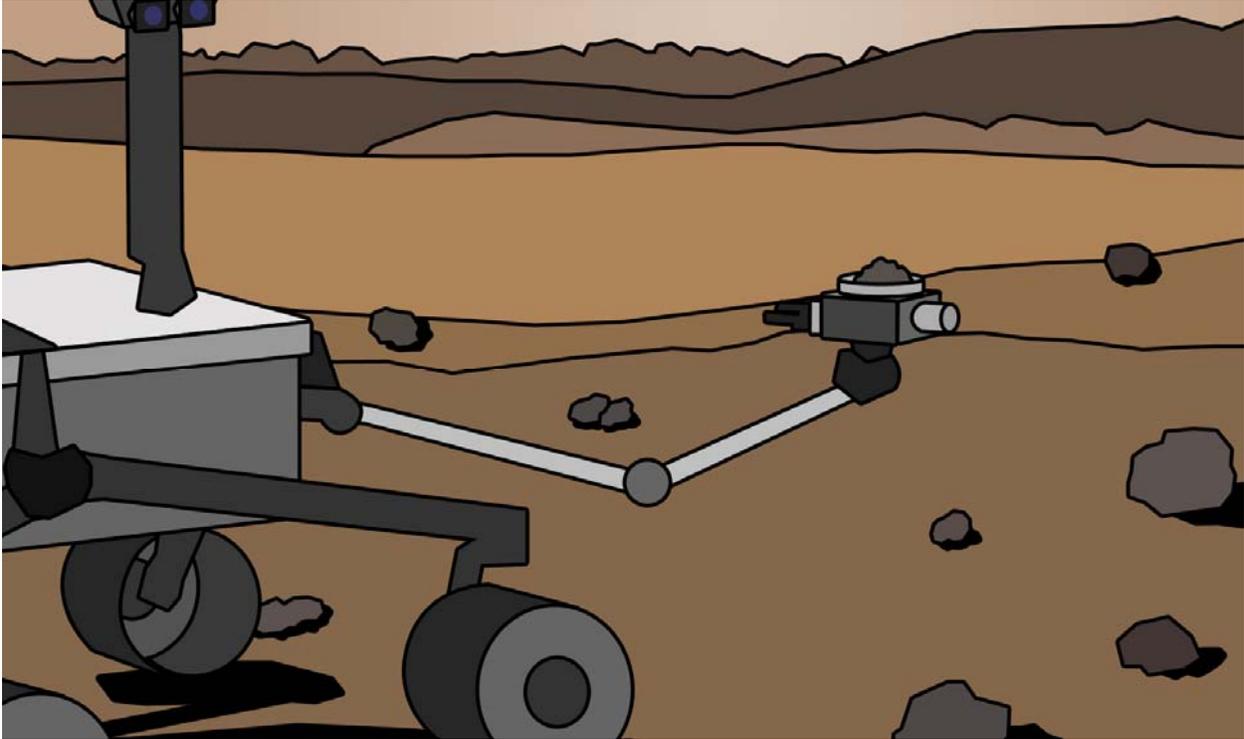
Landing: Summer, 2012

- The landing craft will steer itself as it quickly descends through the thin martian atmosphere.
- In the final seconds before touchdown, the landing craft, often called a sky crane, will lower the rover on tethers.
- The rover will land on its wheels, the cords will be cut, and the craft will fly away and land where it can't crush the rover.



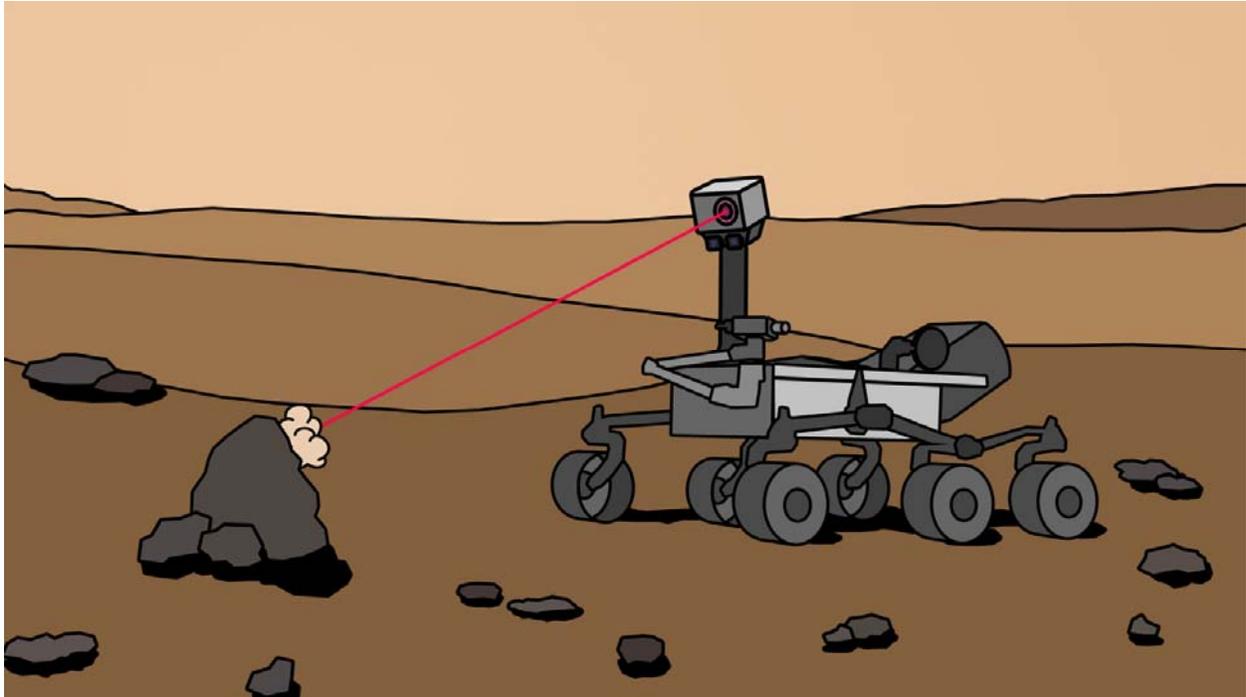
All About NASA'S Next Mars Rover

- The rover is about 7 feet wide and 9 feet long.
- Its camera “eyes” are about 7 feet high, about as tall as a basketball player.
- Overall, the rover is about the size of a small SUV.
- The rover is large so that it can go over really rough terrain, much like an off-road vehicle on Earth, and so that it can also carry a lot more tools for exploring.
- The rover’s wheel system lets it go over large rocks without losing balance and tipping over—they go up and down, but the rover’s body stays steady.



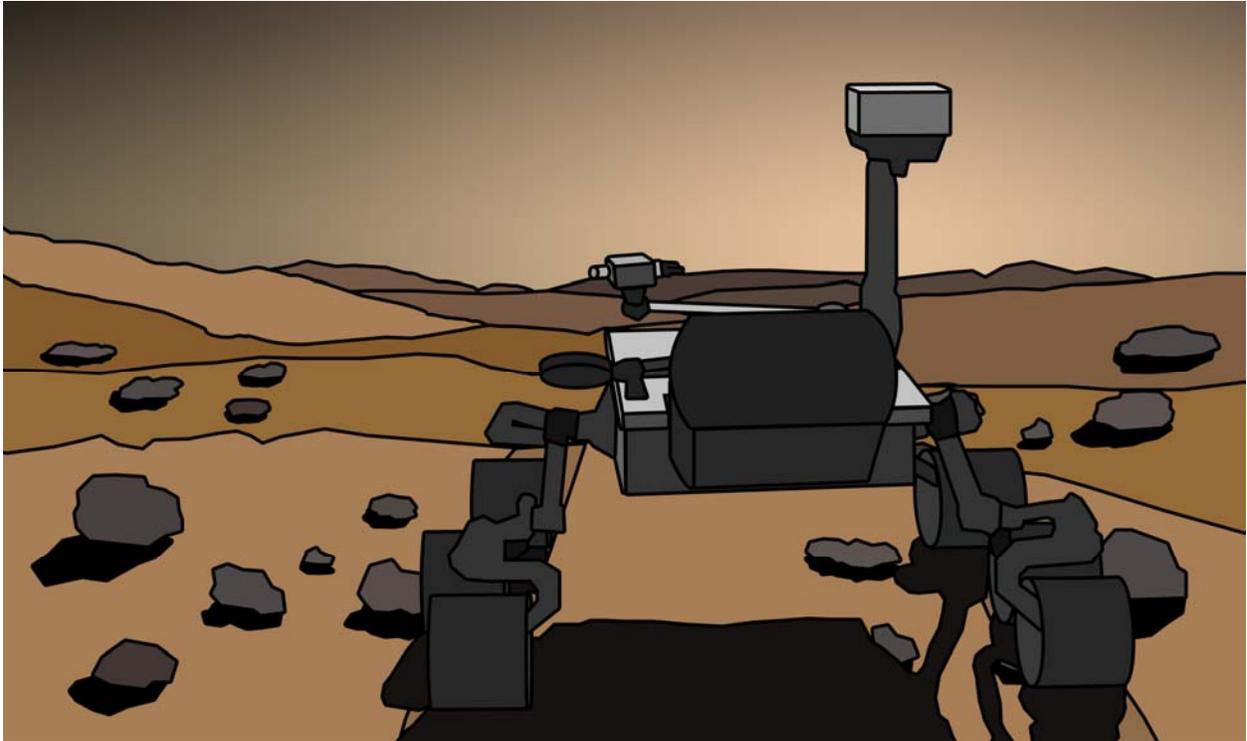
Looking for Habitats for Life

- The rover will look for places on Mars where small life forms called microbes might have lived long ago...or might even exist still today!
- Studying rocks is important, because they hold a lot of clues:
 - Did they form in water, which life needs to survive?
 - Do they have special, complex molecules called “organics,” which are the building blocks of life?
- The rover can drill into rocks, scoop up samples, and use tools carried on its arm and back to study them to see if Mars ever had water and organics to support life.



Zapping Rocks from a Distance

- The rover doesn't want to waste its time studying rocks that aren't important.
- It has a laser that will fire at rocks from up to 30 feet away and turn them into a cloud of hot vapor.
- The rover can then study the vapor to see what the rock is made of, and whether it wants to drive over to take a look at it up close or pass on by.
- Because it can tell a lot about rocks from far away, it can study rocks high on a cliff, or down in a crater, or in other places that might be too hard to reach - even for this rover!



Roving on Mars: Potentially Years of Discovery

- The rover is designed to last one Mars year, which is about 2 Earth years, but it may last even longer than that.
- The rover may be able to travel about 12 miles, much farther than any rover ever sent to Mars, showing us many landscapes we've never seen before.
- The rover will also show that we can land safely on Mars with very large, heavy loads – that's important if we ever want to send humans and the equipment they would need to survive on Mars!