

# Tessmann Focal Points

## Kaguya Crashes into the Moon

*One of Three Crafts to Impact the Lunar Surface*



A Japanese space probe, named Kaguya, was deliberately crashed into the Moon's surface. Commands for the final descent were sent on June 11. Telescopes around the world were focused on the impact zone.

Kaguya orbited the Moon for 19 months and studied its gravity and magnetic field. The spacecraft, also known as Selene, took high-definition photography of the Moon's surface. Scientists hope to use this information to better understand the origin and evolution of our Moon. Japanese scientists have recently announced that the spacecraft detected the presence of uranium on the Moon.

The probe was sent crashing into the soil at a shallow angle, so it would skip across the surface and create a long

gash to expose material hidden beneath the lunar topsoil.

NASA launched a Moon spacecraft on June 18<sup>th</sup>, called the Lunar Crater Observation and Sensing Satellite or LCROSS. NASA plans to crash LCROSS onto the lunar surface on October 9<sup>th</sup>. The impact is intended to create a dust cloud that may reveal the presence of water ice or water vapor, hydrocarbons and hydrated materials.

In addition, India has a spacecraft orbiting the Moon called Chandrayaan, which is Sanskrit for "Moon vehicle." The spacecraft has mapped the Moon's surface in high-definition, including the Apollo landing sites, and has taken over 40,000 images.

### Let My Rover Go!

At the beginning of May, the Mars Rover, known as Spirit, got stuck hub-deep in a patch of soft Martian soil. To make matters worse, a rock appears to sticking right beneath Spirit's undercarriage, posing a further threat to the rover's mobility.

But scientists at JPL in Pasadena, haven't given up on the Spirit, which has traveled 4.8 miles since Jan. 2004. They have built a simulation of the Martian landscape to mimic where Spirit is stuck and filled it with a soil mix similar to that under the rover.

To avoid getting Spirit stuck permanently, scientists are trying out several different possible maneuvers here on Earth before sending final commands up to the immobile rover.

While one group of scientists is working to free Spirit, another group is still using it to do science. Fortunately, Spirit is stuck in an interesting area of Mars. Because Spirit's wheels have dug deeply into the soil, it has allowed scientists to study material underneath the topsoil layer. Scientists said that initial readings suggest that iron is present at the location.

To find out more, go to <http://www.jpl.nasa.gov/freespirit/>

*Photo: Earthrise by Chandrayaan.  
Credit: JAXA / NHK*