Did you know...



The Moon experiences space weather because it has virtually no atmosphere to protect it.

The atmosphere of the Moon, called a surface boundary exosphere, is likely the same type of atmosphere found on many other planets.

Meteorite impacts are believed to be one of the major sources for the lunar exosphere and lofted dust.

## NEWS from the Moon





In 1940, the Diana Project, was the first experiment to successfully bounce radio signals off the Moon.

The density of the Moon's atmosphere is equivalent to the density of the outermost part of the Earth's atmosphere where the International Space Station orbits.

Did you know that lunar dust levitates because of electrostatic charges. This levitating dust causes a twilight glow over the lunar horizon! National Aeronautics and Space Adminstration



## Earth's **New** MOON

## Did you know...

It will take LADEE approximately 30 days to travel to the Moon from Earth.

Not only will LADEE tell us more about the lunar atmosphere, but it will allow us to better understand our own atmosphere & that of other planets!

LADEE's mission will last approximately 160 days, 30 days each way for travel to and from the Moon and 100 days for science operations.





## LADEE a mission of firsts

In order to get to the Moon, LADEE will loop around Earth. This serves to gradually raise its orbit until it reaches a position in which the engines can fire allowing it to enter the lunar orbit.

LADEE will determine the composition of the lunar atmosphere by using ultraviolet and visible light spectroscopy.

Unlike past missions, LADEE will be using lasers instead of radio waves to communicate with mission control.





# Did you Know . . .





**Our Moon has protected Earth for billions of** years from impacts. What hit the Moon did not impact us—and that material still resides on the Moon today.

The very thin atmosphere of the Moon, called a surface-boundary exosphere, is the same type of atmosphere found on many other moons, asteroids, and planets.

By studying this type of atmosphere right in our own celestial "backyard" we will gain insights into the basic processes that will help us understand the creation and evolution of atmospheres of all types, including our own here on Earth.

# 

from the Moon



The density of the Moon's atmosphere is roughly equivalent to the density of the outermost part of the Earth's atmosphere where the International **Space Station orbits.** 

Meteorite impacts are believed to be one of the major sources for the lunar exosphere and lofted dust.



Lunar dust is thought to levitate because of electrostatic charges. This levitating dust might be the cause of the twilight glow over the lunar horizon that was seen by the Apollo astronauts.

http://moon.nasa.gov



## National Aeronautics and Space Administration





www.nasa.gov





# Did vou know . . .

It will take LADEE approximately 30 days to travel to the Moon from Earth. In order to get to the Moon, LADEE will loop around Earth three times. This serves to gradually raise its orbit until it reaches a position in which the engines can fire allowing it to enter lunar orbit.

LADEE's mission will last approximately 160 days, 30 days to get to the Moon, 30 days to check out the instruments, and 100 days for science operations.





The LADEE mission will end with a controlled impact to the lunar surface.



a mission of firsts

LADEE will use two different instruments to determine the composition of the lunar atmosphere, an ultraviolet and visible light spectrometer and a neutral mass spectrometer.

The LADEE Lunar Dust Experiment will collect and analyze samples of lunar dust particles to help scientists address a longstanding mystery: was lunar dust, electrically charged by solar ultraviolet light, responsible for the pre-sunrise horizon glow that the Apollo astronauts saw?





LADEE will be testing a method to use lasers instead of radio waves to communicate, which will dramatically increase the amount of data that we can send both to and from the Moon on future missions.