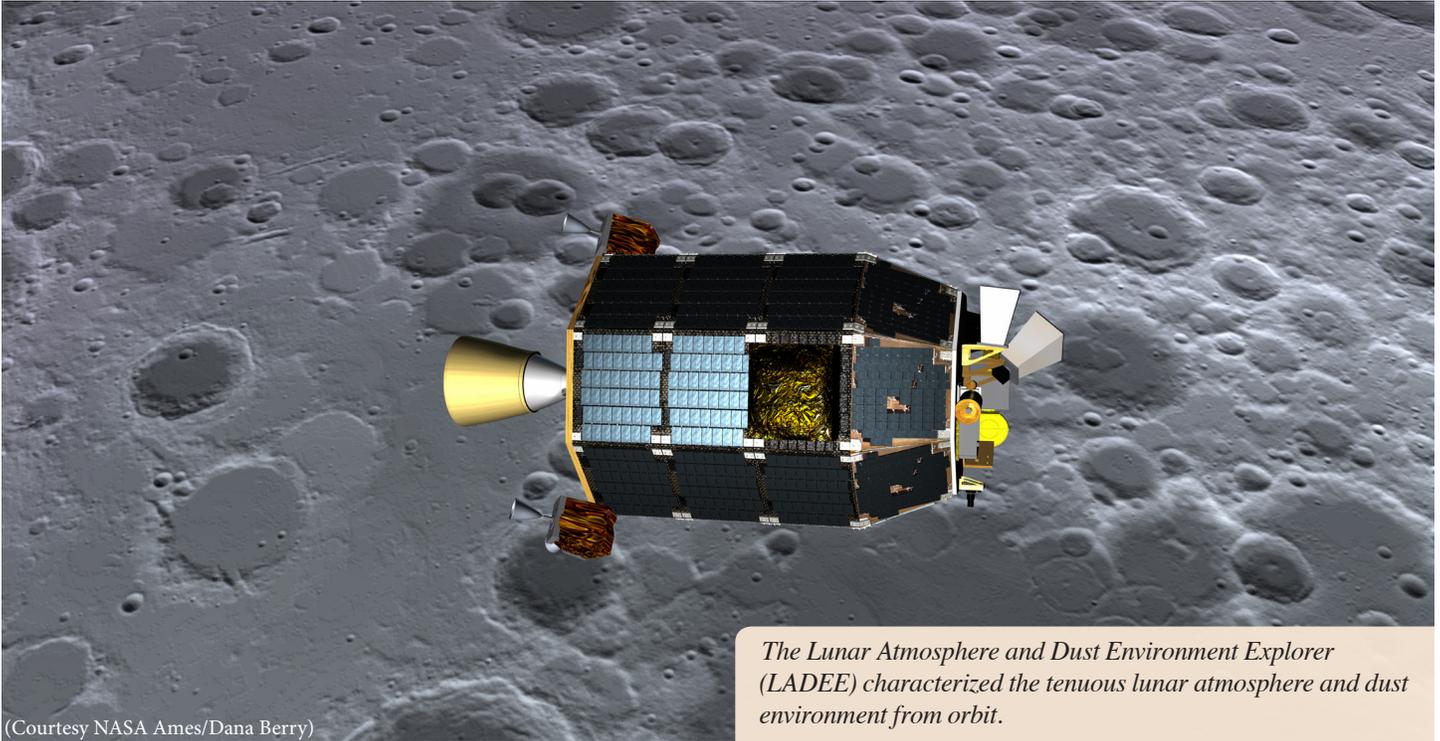


# LADEE

Lunar Atmosphere and Dust Environment Explorer



*The Lunar Atmosphere and Dust Environment Explorer (LADEE) characterized the tenuous lunar atmosphere and dust environment from orbit.*

## Frequently Asked Questions

### What was the purpose of LADEE?

The scientific objectives of the mission were to determine the global density, composition, and time variability of the fragile lunar atmosphere before it is perturbed by further human activity and to determine the size, charge, and spatial distribution of electrostatically transported dust grains and assess their likely effects on lunar exploration and lunar-based astronomy.

### Why is it important to study the moon's atmosphere?

A thorough understanding of the structure and composition of our celestial neighbor will help researchers address enduring unknowns and better understand other bodies in the solar system, such as large asteroids, Mercury, and the moons of outer planets.

### What did the LASP-built LDEX instrument do?

The Lunar Dust Experiment (LDEX) collected and analyzed samples of lunar dust particles in the tenuous lunar atmosphere. These measurements will help scientists address a longstanding mystery: was lunar dust, electrically charged by solar ultraviolet light, responsible for



(Courtesy LASP)

## Quick Facts

**Launch date:** Sept. 6, 2013

**Launch location:** Wallops Flight Facility, Wallops Island, Va.

**Launch vehicle:** Minotaur V

**Mission target:** Earth's Moon

**Mission duration:** 225 days (LADEE impacted the lunar surface, as planned, on April 17, 2014)

**Project description:** LADEE orbited the moon with three science instruments designed to gather detailed information about the structure and composition of the thin lunar atmosphere, and to determine whether dust is being lofted into the lunar sky

#### LASP provided:

- The Lunar Dust Experiment (LDEX)
- LDEX principal investigator, Mihály Horányi

#### Other organizations involved:

- NASA Ames Research Center
- NASA Goddard Space Flight Center
- NASA Marshall Space Flight Center

the presunrise horizon glow that the Apollo astronauts saw? Data from LDEX will provide new information on the physical characteristics of lunar dust, from its interactions with the moon's atmosphere and the solar wind to astronaut safety issues.

To read more about the LADEE mission, visit: <http://lasp.colorado.edu/home/quick-facts-ladee/>.

*The Laboratory for Atmospheric and Space Physics (LASP) combines all aspects of space exploration through our expertise in science, engineering, mission operations, and data management. As an institute at the University of Colorado Boulder, LASP includes students throughout our activities. Learn more at <http://lasp.colorado.edu>.*