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## **LADEE's Low-Cost Approach and Success Contributing to Future Low-Cost Missions**

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The Lunar Atmosphere and Dust Environment Explorer (LADEE) mission was unusual for NASA, and represented a lot of "firsts" for the agency and for Ames. With the success of the LADEE mission, these "firsts" are now realized opportunities for future low-cost missions. LADEE was a Lunar science orbiter mission which launched September 6, 2013 and impacted the Moon on April 18, 2014. The science objectives were to determine the composition of the lunar atmosphere and investigate the processes that control its distribution and variability. LADEE also determined whether dust is present in the lunar exosphere, and revealed the processes that contribute to its sources and variability. What made LADEE unusual, however, is that the mission also had several other non-science objectives. In addition to the science instruments, LADEE flew a laser communications system technology demonstration that could provide high-bandwidth capabilities for future space communications architectures. The LADEE spacecraft was the first flight of a multi-mission spacecraft bus architecture, called the Ames Modular Common Bus, which is adaptable to multiple payloads and destinations. LADEE also launched on a new launch vehicle, the Minotaur V, from a range that normally does not launch planetary missions, the Wallops Flight Facility. With the success of the LADEE mission, these challenging "firsts" provide new capability and benefits for the next generation of low cost missions.