



## Presidents Message – October 2013

NASA's newest lunar probe is officially orbiting the moon; after a month-long journey, the Lunar Atmosphere and Dust Environment Explorer (LADEE) spacecraft, which is designed to probe the moon's thin atmosphere and lunar dust, performed an engine burn on Oct. 6 that took it into orbit around the moon.

While the current government shutdown has nearly stopped all work at NASA, operations for the \$280 million mission are not affected because LADEE is in a critical phase. NASA's federal shutdown plan has furloughed most of the agency's 18,000 employees, but does allow the agency to watch over spacecraft in flight like LADEE and the International Space Station.

Before arriving in lunar orbit, the LADEE spacecraft (pronounced "laddie") made three elliptical orbits around the Earth, moving into a higher orbit on each pass around the planet. Once its orbit was high enough, the moon's gravity took over and LADEE performed its big burn to transfer to lunar orbit, mission managers have said.

LADEE now needs to perform two more lunar orbit insertion maneuvers before the probe's approximately month-long checkout phase can begin. Those engine burns will lower it to an altitude of 155 miles (250 kilometers).

During the checkout period, scientists will test out LADEE's Laser Communication system. The experiment will use laser technology to send large amounts of data back to Earth. The laser communication model would allow spacecraft to send 3D information, high-definition video and other data back to ground controllers.

When LADEE's checkout phase is finished, the probe will begin 100 days of science designed to probe the mysteries of the moon's atmosphere and a moon dust mystery dating back 40 years. Apollo astronauts saw streamers of light on the horizon before sunrise on the moon. LADEE's instrumentation will help scientists understand what could have caused the glow.

LADEE will also investigate the moon's extremely thin atmosphere. Called a surface boundary exosphere, the lunar atmosphere represents the most common kind of atmosphere in the solar system. Some planets (like Mercury), moons, and even certain large asteroids play host to these kinds of atmospheres, making LADEE's research wide reaching. This is a type of atmosphere we don't know much about, so the moon is a convenient place to go and learn about this very common type of atmosphere. (Summarized from NASA mission update)

There is an ongoing debate over whether or not the future of space exploration will be manned missions, or robotic ones. It is clear that the exploration of Mars, which has so far been done by robotic rovers, has been impressive and fruitful. We have also sent unmanned spacecraft all over the solar system. In fact, the Voyager One craft is now leaving the system. The LADEE mission is now another example of such robotic endeavors. However, it is man's nature to see things himself, take the big risks, and push boundaries. Hopefully some day we will once again have humans 'out there', describing what they see.

**Mike Thomas**

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### **September 2013 Meeting Minutes**

The bulk of the meeting was devoted to the RECON Project. Members Jim Bean, Red Sumner, and Jerry Bardecker brought those present up to date on the technical aspects of the project, and explained the Observatory's involvement.

Monthly Membership Meeting 7:00PM, Tuesday, October 15, 2013

### **"Ancient Astronauts"**

Mike Thomas examines the phenomenon of the "belief" by many, that in the past the Earth was visited by Aliens.

~ October 2013 ~						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3 Uranus at Opposition. The blue-green planet will be at its closest approach to Earth	4	5 New Moon  Dark Skies Star Party
6	7 Draconids Meteor Shower	8 Draconids Meteor Shower	9 Mercury at Greatest Eastern Elongation. Mercury will be at its furthest angle from the Sun	10	11 Moon 1 <sup>st</sup> Qtr 	12 Star Party
13	14	15 WNAS Meeting 7pm	16	17	18 Full Moon 	19 Star Party
20	21 Orionids Meteor Shower	22 Orionids Meteor Shower	23	24	25	26 Moon Last Qtr  Star Party
27	28	29	30	31		

~ November 2013 ~						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
Hybrid Solar Eclipse ... Start at the Atlantic Ocean off the eastern coast of the United States and move east across the Atlantic and across central Africa					1	2 Dark Skies Star Party
3 New Moon  Hybrid Solar Eclipse	4 Taurids Meteor Shower	5 Taurids Meteor Shower	6	7	8	9 Star Party
10 Moon 1 <sup>st</sup> Qtr 	11	12	13	14	15	16 Star Party Leonids Meteor Shower
17 Full Moon  Leonids Meteor Shower	18	19 WNAS Meeting 7pm	20	21	22	23 Star Party
24	25 Moon Last Qtr 	26	27	28 Comet ISON Closest Approach to the Sun	29	30 Dark Skies Star Party