



## **Preliminary results from LADEE's Neutral Mass Spectrometer (NMS)**

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The Neutral Mass Spectrometer (NMS) of the Lunar Atmosphere and Dust Environment Explorer (LADEE) Mission is a high sensitivity quadrupole mass spectrometer designed to measure the composition and variability of the tenuous lunar atmosphere. The instrument has been observing the lunar exosphere since 10/17/2013, initially from a near circular 250 km altitude orbit and since 11/11/2013 from an elliptical orbit that reaches to 30-60 km altitude near the sunrise terminator. During its first four months in orbit, the NMS instrument successfully detected exospheric helium, argon and neon and mapped their spatial and temporal variability. Furthermore, the NMS instrument was able to establish new upper limits for many other exospheric species either sputtered or thermally evolved from the lunar surface. This talk will summarize these preliminary results from the NMS measurements.