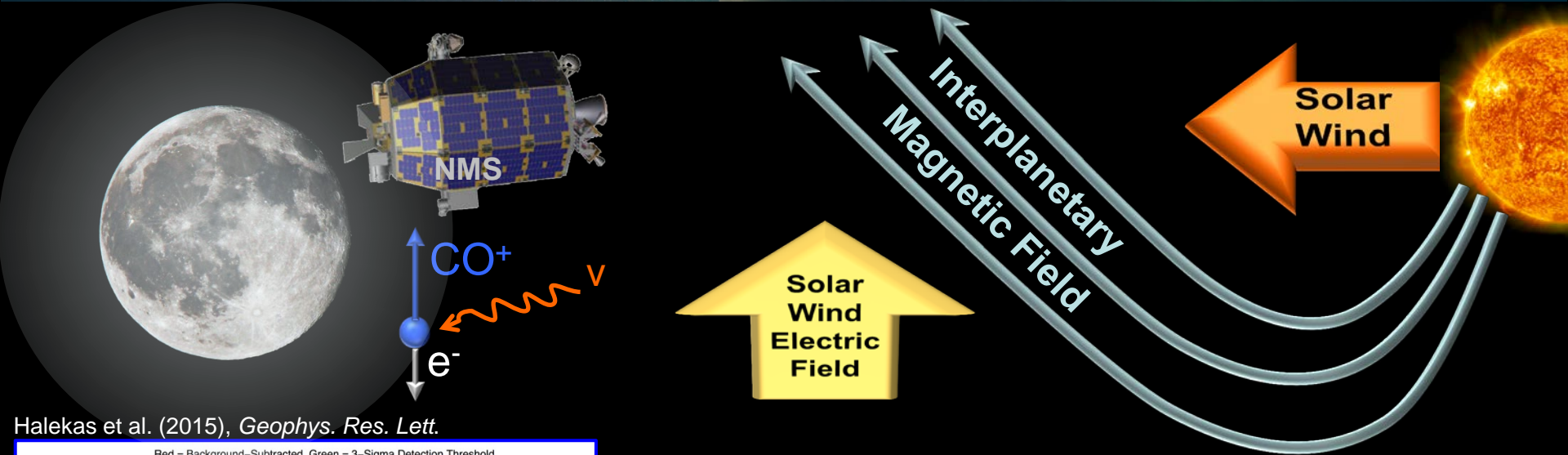
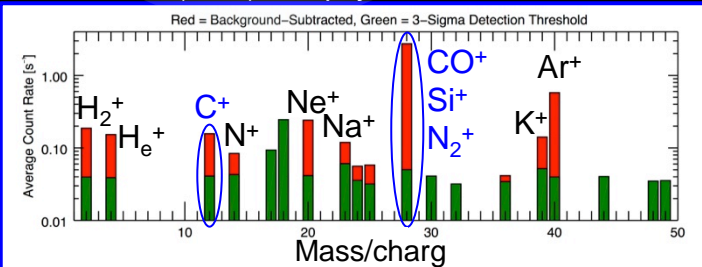


# Unexpected Carbon compounds in the Moon's Exosphere

08/21/2015



Halekas et al. (2015), *Geophys. Res. Lett.*



The Neutral Mass Spectrometer (NMS) instrument on the Lunar Atmosphere and Dust Environment Explorer (LADEE), operating in ion mode, utilized the Sun as an ionization source and the solar wind as an accelerator to detect new species in the lunar exosphere.

- By organizing the NMS data with plasma and magnetic field measurements from the Acceleration, Reconnection, Turbulence, and Electrodynamics of the Moon's Interaction with the Sun (ARTEMIS) significant detections of a number of ions were made.
- Unlike previous detections, the alignment of the spacecraft relative to the Moon indicates that these ions originated in the exosphere as opposed to from the Moon's surface.
- Carbon-bearing molecules in the exosphere preserve a signature of the delivery of volatiles to the lunar regolith by solar wind and micrometeorite bombardment over the Moon's history.