



Searching for Lunar Horizon Glow at 532 nm with the Laser Detector on LOLA

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Dust transport on the Moon affects many aspects of lunar surface science, including the eradication of small craters and rock burial. One observable phenomenon that could yield constraints on dust transport processes is scattered sunlight from exospheric dust grains. The brightest measurements of this, lunar horizon glow (LHG), come from Apollo 15 coronal photographs taken from the Command Module near the surface dawn terminator around the time of a relatively active meteor stream. But these observations have never been confirmed by a different approach. The LOLA instrument in addition to being a laser altimeter has an independent small telescope (LR) attached to the spacecraft HGA that operates at 532 nm. We have been making observations of the lunar horizon with the LR telescope immediately prior lunar sunrise and after lunar sunset when LHG is expected to be a maximum. We are able to see the zodiacal light at around the predicted level but nothing at the LHG level observed by the astronauts. We are now beginning to make observation around the times of major meteor showers, similar to the time of the observations by the astronauts.