



Lunar images from the University of Stuttgart "Flying Laptop" satellite: Scattered-light analysis.

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The presence of scattered light in photometric instruments reduces the accuracy of quantitative measurements. On Earth there are contributions from scattering in the atmosphere and from the instrument optics. In space there are only the contributions from the instrument optics - that is diffraction and optical imperfections.

We are studying the limitations placed on lunar photometry due to light scattering by various optical system design choices, and placement of instruments (on Earth or in space). We have images of the Moon from an earth-based telescope on Mauna Loa, Hawaii, and we have images of the Moon taken with the MICS instrument and the autonomous stellar compass (ASC) camera on the small satellite known as the "Flying Laptop" from Universität Stuttgart Institut für Raumfahrtssysteme, and in this poster we discuss how much scattered light is avoided by observing from low Earth orbit.

We introduce the satellite and its instruments. We discuss the shape and slope of the scattered-light halo around the lunar disk, in terms of the halo-shape possible given power-law distributions of light around point sources due to diffraction and optical imperfections, and compare to the halo shape we obtain using through-the-atmosphere observations.