

***Interactive comment on “The new sun-sky-lunar
Cimel CE318-T multiband photometer – a
comprehensive performance evaluation” by A.
Barreto et al.***

T. Berkoff

Timothy.A.Berkoff@nasa.gov

Received and published: 24 December 2015

It should be noted that the calibration approach described by Toledano, where a sun-Langley calibration would be transferred to nighttime by determining the instrumental gain factors, results in the residual absolute error of the USGS ROLO lunar model irradiance to appear in the calculated AOD data. While the lunar model data has a stated precision of 1% or better, the absolute error is likely to be larger than this. A lunar-Langley calibration, would incorporate lunar model absolute error into its instrument calibration terms, potentially producing more accurate AOD results, but this needs to be further investigated. The systematic differences in AOD data obtained via Toledano

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calibration compared with AOD data generated from lunar-Langley calibration for the same set of measurements would help determine what the model residual absolute errors are. I would strongly urge such a study as well as other studies to characterize model absolute errors (in addition to precision), since this directly impacts the accuracy of nighttime AOD results.

Interactive comment on Atmos. Meas. Tech. Discuss., 8, 11077, 2015.

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