

## ***Interactive comment on “Column water vapor determination in night period with a lunar photometer prototype” by A. Barreto et al.***

### **Anonymous Referee #2**

Received and published: 8 March 2013

The topic of this paper is very interesting and innovative. It is also very attractive the possibility of using sun-sky radiometers during the night, and the improvement taken by the use of Filter # 2 is clearly demonstrated. However I have some doubts about the following few points:

1) Concerning Figure 3 a) and b) it is stated that points are good correlated, and that “correlation coefficients are similar to those obtained in daytime”. This is not really true being for July 0.97 and 0.90 and for August 0.92 and 0.98, for daytime and night time respectively . Mostly in July, it is visible that more than half of the points at around  $PWV_{LC}=0.9$  have a behavior whose slope is completely reverse to the general slope. This behavior is in contrast with the obtained result provided by the statistical analysis showed in Table III, where comparing GPS and Filter # 2 a mean difference of

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$-0.01 \pm 0.14$  was found. Why this ensemble of points shows this different behavior?

2) A large nighttime discrepancy is found between GPS and Filter#2 or RDS measurements on July 14. Since PWV was not below the GPS detection limit of 0.35 cm, what do you think the reason is?

3) Could the author also explain the reason why aerosol optical dept (AOD) at about 940 nm has been retrieved by extrapolation of AOD at 440 and 870 nm and they didn't use for example 675 and 1020 nm?

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Interactive comment on Atmos. Meas. Tech. Discuss., 6, 767, 2013.

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