

## ***Interactive comment on* “Location controls the findings of ground-based PSC observations” by Matthias Tesche et al.**

### **Anonymous Referee #1**

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#### Referee comment (2)

The answers of the authors to my first comments have been all addressed in a satisfactory way and appropriate corrections have been made. I still have some minor remarks, however.

I still find the title not very descriptive. I think that the title I suggested does not exclude any locations. The best locations can be determined from Figures 3 and 6, without specifying existing stations.

Among the reasons for performing or not performing a measurement from the ground, the authors mention “(ii) the decision to start a measurement, i.e. the assessment of tropospheric cloudiness, is made subjectively by the operator “, While the other two

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reasons are “random” with respect to the possibility to observe PSCs, the decision of the operator to perform the measurement in absence of tropospheric clouds is not random, since it already selects a favourable condition.

we randomly selected one third of those CALIPSO profiles that represent what would be observable from ground, i.e. the optimum yield. I don't understand why the authors randomly select one third of useful measurements, taking into account the number of pixels where PSCs are present. It would be sufficient to state that the ground based lidars should be able to perform at least one third of the optimum yield.

In Figures 4 and 7 two kinds of information are mixed. The first is the relative number of possible observations by CALIOP, ground-based lidar and one third of the latter. The second is the relative occurrence rate of the different PSC types at the various stations, as observed by CALIOP (the other columns are derived from CALIOP data). The question is if the small differences of the relative occurrence rates between the three columns is “real” or just “casual”.

The caption of Figure 6 should read “Same as Figure 3 but for the Antarctic.”

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