

Interactive comment on “The 2009–2010 Arctic polar stratospheric cloud season: a CALIPSO perspective” by M. C. Pitts et al.

Anonymous Referee #2

Received and published: 10 December 2010

This paper presents measurements of PSCs over the Arctic made with the CALIPSO Lidar instrument for the period of 2006–2010, focussing on the 2009–2010 winter with the aim of providing context for the RECONCILE aircraft and balloon measurement campaign which took place that winter.

The abstract and conclusions are quite clear, correspond well with each other, and are well supported by the main text. The analysis of CALIPSO PSC measurements presented is very interesting, and a good overview of an unusual Arctic PSC season. I recommend the publication of this paper in ACP.

Scientific comments:

1) In both the introduction and the conclusions much is made of the CALIPSO mea-

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surement dataset providing context for the finer-scale measurements made during the RECONCILE campaign. However, there is no mention of the RECONCILE measurements in the main body of the text. While this isn't an overview paper for the RECONCILE campaign, it would be good to have a few details in the main body of text of how the RECONCILE and CALIPSO measurements fit together.

2) I agree with referee #1 that some more detail on the authors conclusions about the detection of NAT particles prior to observations of mountain wave ice PSCs would be useful.

Technical comments:

1) Page 24211, line 24: Please expand the SNR acronym.

2) Page 24226, line 13: For Powell et al, JAOT, 2009, the doi should not contain a '-'.

3) Fig 1, 2, 9, and 10: I agree with referee #1 that upper limits to the color bars should be added to help the reader.

4) Fig 2: The bin size of 0.054×0.02 given in the caption differs from that given in the text (page 24211, line 29) - should this be 0.054 or 0.05?

5) Fig 10: The δ characters in the y-axis labels are missing.

6) Fig 11, 12, 14, and 15: I presume that the titles of each subplot include time, as well as date, information. However this is not very understandable, and in some cases (Fig 14 and 15) makes it appear as if you're plotting data from orbits which are separated in time by 24 hours! Please replace these titles with clearer information on the timing of these orbits.

Interactive comment on Atmos. Chem. Phys. Discuss., 10, 24205, 2010.

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