Answer to Anonymous Referee #5

Green – reviewer's comments
Black – authors' reaction to comments

Interactive comment on "Synchronous starphotometry and lidar measurements at Eureka in High Canadian Arctic" by K. Baibakov et al.

Anonymous Referee #5
Received and published: 6 April 2015

There are already 4 reviews..., so I do not want to add another detailed review because my basic criticism is already covered by the other reviews.

The contents of the paper are ok and appropriate for AMT. But as a lidar and photometer expert, I found the paper rather lengthy and thus very boring. It is not necessary to describe the methodological background in such large detail. The shorter the paper, the more readers will be attracted. I am sure, if the present version would be published, almost nobody out of the photometer community would read it. So, please think about this point, and try to shorten the paper to make it much more attractive.
We'll take our chances with "boring". We remain convinced that this work is a significant contribution to the community. As mentioned in the paper, process-level (~ minutes time scale) analysis of synchronously acquired photometry (especially, night-time photometry) and lidar data is rarely addressed in the literature. In particular, we have found no measurement series that deal with process-level analysis of polar winter datasets.

When you state in the introduction that the photometer/lidar synergy has proven to be effective, you MUST give references!
[referring to p2016, line 11] The references were actually given at the end of the paragraph the reviewer refers to:

"The combined use of sunphotometers and lidar, accompanied by supplementary backward trajectories, satellite and other data, has been successfully applied to characterize Arctic aerosol events during the summer time: O'Neill et al. (2008, 2012); Hoffmann et al. (2010); Saha et al. (2010); Stock et al. (2012)."

The first statement on lidar is combined with a reference to Carswell (1983) and nothing else! This is frustrating for lidar scientists. There are so many innovations during the last one-two decades, and the authors give reference to a paper which more than 30 years old, ONLY!

The Carswell (1983) reference was meant as an introduction to the basic principle of lidar operation. The phrase was modified in response to one of the other reviewers to read "(for a basic principle of operation see for example Carswell, 1983)"

The figures (especially the lidar-data color plots) are of very low quality (1980ies standard). Very low information content. I would not publish such low-quality plots.
The graphs were improved in the revised version of the manuscript in response to numerous comments made by all the reviewers.