

## ***Interactive comment on “Union Glacier: a new exploration gateway for the West Antarctic Ice Sheet” by A. Rivera et al.***

**T. Scambos**

teds@kryos.colorado.edu

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Attached is a .pdf file of the main text and figures with numerous comments embedded.

The paper is a broad observational study of the surface mass balance, ice flow, ice thickness and structure of the Union Glacier region, focussing on the blue ice area that comprises the runway for a private logistical support firm that is collaborating with the Chilean Antarctic program. The paper is a good report on the data, and the data is extensive. While the number of insights or new realizations presented here are few, the study is worthy of publication as a reference and discussion of the data. It sets a baseline of mass balance measurements and ice flow that may be useful in the future.

The title conveys a message that is more or less not mentioned in the text - perhaps a

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bit at the end of the introduction, but it is not a major goal of the paper to emphasize Union Glacier as a new science logistical hub. I think a new title may result if the authors overhaul the text to make it shorter and punchier (i.e. tell as much as possible in as few sentences as possible) — and more importantly, to try to take the interpretation just one or two steps further.

I had several comments about the figures, such as re-arranging panels for clarity and graphical appeal, which will require some work.

Overall, the 100 or so small comments point to a need to re-write. While the English is in general very good, it is a bit laborious and long-winded. An overall of the wording, and more thought to the significance of the data and the analysis; and the observations in the context of past studies, on blue ice, on ice flow and mass balance (the paper dwells only on surface mass balance as far as I could tell), on response to future climate perhaps.

All that said, the paper is close to publishable as a data record and valid, if straightforward, interpretation of the glaciological conditions in the region.

Please also note the supplement to this comment:

<http://www.the-cryosphere-discuss.net/8/C343/2014/tcd-8-C343-2014-supplement.pdf>

Interactive comment on The Cryosphere Discuss., 8, 1227, 2014.

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