

## ***Interactive comment on “Speedup and fracturing of George VI Ice Shelf, Antarctic Peninsula” by T. O. Holt et al.***

### **Anonymous Referee #2**

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This is a well-written and thorough examination of George VI Ice Shelf. The Conclusion section is very well presented and the figures are generally quite clear. I have a few minor comments:

- 1) I really like Table 2. I also found that the language throughout the paper, based on this table, was consistent and therefore very easy to follow.
- 2) I really like Figure 2, but the detail of the entire northern half of the ice shelf is lost at the currently published scale. Perhaps a second inset, similar to the one associated with the South ice front is needed.
- 3) Pg 384, line 9 and Fig 8: The authors use a 200 m mask when examining ICESat data on the ice shelf. The zone of flexure is usually twice that, so the authors may

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be including non-hydrostatic ice in their surface-elevation-change analysis. This is especially apparent around the Eklund Islands and the western side of DeAtley Island, where it looks like much less than 200 m was masked. At a minimum, a justification of the 200 m length scale is needed.

4) Pg 387, lines 10-11 and Fig 6: Is there a typo somewhere? The text refers to '2009' while figure times out at 2007.

5) Pg 387, line 21 and Fig 7: Similar comment as above. The text refers to 2009 and the figure shows 2010.

6) Pg 388, line 1 and Fig 7: Same comment as above. The text refers to 2009 and the figure shows 2010.

7) Section 4.4: Generally, deriving surface-elevation change on ice shelves is difficult (Fricker & Padman, 2012). I am most concerned about the advection of surface features (surface highs and lows that migrate with ice-shelf flow between ICESat campaigns, e.g., crevasses). Can you make any comments about this with respect to your analysis of the Central section of the ice shelf (in Figure 8)?

8) Section 4.5: Perhaps a before and after satellite image, that really demonstrates the grounding zone retreat, might be really nice.

9) Pg 391, lines 9-13: I am slightly confused by where exactly the authors are defining as the lee side of the Eklund Islands. Based on Fig 5, my expectation is that the ice-flow lee-side of the islands would be generally to the west. Thus, I expect lower ice-surface elevations on the west side of the islands. However, in Line 12 the authors state that the ice on the (north and) west side is thicker. I think that clarification is needed.

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Interactive comment on The Cryosphere Discuss., 7, 373, 2013.

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