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Interactive comment on "The asymmetric geospace as displayed during the geomagnetic storm on August 17, 2001" *by* Nikolai Østgaard et al.

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First, we will like to thank the referee for carefully reading our manuscript and for providing very useful comments. We will respond to the comments one by one, and also indicate the changes we will make in the manuscript. At this point we are asked to only provide response, not a marked-up new version, so we will point to where in the original version we suggest to make the changes.

1. In Figure 3 and 4 we have already encircled the auroral features we claim to be conjugate. In addition we have marked two other features in Figure 3A with numbers. To accommodate the reviewers suggestion, we will add a table summarizing the asym-

metries from Figure 3 and 4 at the end of Section 4.2. These are the ΔMLTs shown by diamonds in Figure 10 as well.

2. As there are many people in the community that would be skeptical to such large asymmetries as we have identified here, we have decided to show supporting data for our interpretation and to also explore alternative interpretations. As you correctly state, we do not find sufficient support for these alternative interpretations, and consequently they do not change the conclusions, but rather strengthen them. For this reason we prefer to keep the manuscript as is in this regard.

3. Discussion of Figure 12. This figure is included to show that the OCB in the north does NOT move in the two sectors where we claim to have dayside (11-15 MLT) and tail reconnection (18-22 MLT), which means that the flows in these regions (Figure 11A) are indeed across the OCB, which means that these are reconnection locations. To make this clear we will add a sentence

"To check whether the flow pattern between 11-15 MLT and 18-22 MLT seen in Figure 11A is really flows across the OCB and not only a motion of the OCB itself, we show, in Figure 12, the time evolution . . .."

4. Green line: we will add a reference to Figure 11A: "In Figure 11A, we have marked lobe reconnection by a green line from 15-17.5 MLT"

5. We have marked the different regions of flows in Figure 14 and will make proper references to these in the text. The text will then read:

"The derived convection shown by blue arrows in Figure 14 indicates sunward flow at very high latitudes (75°, marked with a red circle), just where we see the spot and the upward field-aligned current from CHAMP. The LFM model also predicts a strong upward current on open field lines between 70° and 80° at 17-18 MLT (not shown). Flow across the OCB (Figure 14, marked with a blue circle) indicating dayside reconnection is seen around 15 MLT and $< 70^\circ$ with downward current (CHAMP) and proton precip-

itation (SI12 image). Flow across the OCB is also seen at 11 MLT and $< 70^{\circ}$ (green circle) consistent with the dayside reconnection region we have indicated by the red line in Figure 11A. ”

We have uploaded a revised figure 14.

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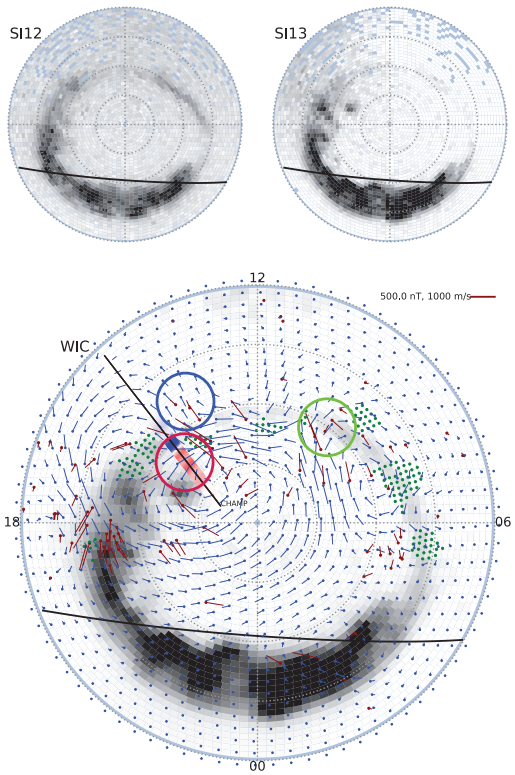

Fig. 1. Revised Figure 14