

## Response to Review B

We would like to thank the reviewer for the time spent examining our paper. We greatly appreciate the helpful suggestions. Our responses, and descriptions of changes to the text, are below. For clarity, statements extracted from the review will be *italicized* and enclosed in brackets {}.

*{1. Has the permission been obtained from Nature to reproduce the figures from Steig et al. in this manuscript?}*

Because the figures are not reproductions from the S09 paper in *Nature*, permission is not required. They were calculated and plotted separately using the archived reconstruction on Steig's university website. On the recommendation of one of the other reviewers, Figure 1 has been moved to the Supporting Information to save journal space.

*{2. The voluminous supporting material seems totally unnecessary. The most important parts should be incorporated into the present manuscript. A website could be established where all gory detail is available.}*

We agree that the text relies too much on the Supporting Information. We have amended the text to incorporate the most critical aspects of the SI. However, we do feel that the longer discussions in the SI concerning AVHRR error, differences between the AVHRR data and ground data, sensitivity testing results, and full verification statistics may be interesting and useful to some readers. Providing this online in the same location as the paper would seem to be the most convenient way to make the material available.

*{3. Page 12: What are Chladni patterns?}*

Chladni patterns are spatial plots of standing wave phenomenon. However, during the review process, the procedure used by S09 for determining truncation parameters was clarified. The relevance of this section was greatly reduced and it has been removed.

*{4. Page 14: To what paper does North (1982) refer? North et al. (1982)?}*

This is correct, and the text has been amended.

*{5. Page 16: Don't think Table 2 adds to what is stated in the text.}*

We agree, and Table 2 has been removed.

*{6. Corrected uncertainties for the trend slopes in Steig et al. to take account of serial correlation are reported here:}*

We thank the reviewer for noting this. For our work, all trend calculations were re-performed using the archived reconstruction provided by Steig. Trend uncertainties were

calculated using the degrees-of-freedom adjustment as described by Santer et al. (2000). This is the same procedure used by S09 in their corrigendum.