

The authors present a valuable dataset from the Ross Sea region that offers insights into the dynamics of the West Antarctic Ice Sheet over the past ~780,000 years. While they provide a substantial amount of data, there are several issues that need to be addressed.

1. General Comments

1.1 Age Model:

In Lines 90-99, the authors state that the age model for RS15-LC47 is based on correlating magnetic susceptibility (MS) to a nearby core referenced in Bollen et al. (2022). They assert a "noteworthy" similarity between their MS records and those from Bollen et al. (2022) in Line 119 and mention a "comprehensive approach utilizing 12 tie points" (Line 114) to align their records with the Bollen et al. (2022) record. However, the authors do not clearly demonstrate how they tested this "similarity" or explain the methods and rationale behind correlating the MS records.

For instance, in Figure 2C, the patterns older than 250 ka, according to the current age model, appear quite different. Bollen et al. (2022) show a relatively muted signal during ~300-550 ka, yet the LC42 record still displays numerous high-frequency peaks. Given the potential for bioturbation and hiatus/event layers in LC47, how can the authors confidently assert that these correlations are "robust"?

This issue is fundamental since an unreliable age constraint undermines the entire discussion. The authors are encouraged to meticulously re-examine their sedimentation records, incorporating more biostratigraphic controls as in Bollen et al. (2022), before making further interpretations.

2. Typos and Other Comments:

2.1 The manuscript frequently repeats full names and acronyms. For instance, "Middle-Pleistocene Transition (MPT)" is repeated in Lines 50, 229, 399, 449, and 457, and numerous other terms (AABW, MS, CDW, ASC, etc.) are also redundantly mentioned. The authors should carefully review the manuscript for such repetitions before resubmission.

2.2 The discussion on the MPT event is also perplexing since the record in this manuscript only covers a very brief portion of the later part of the MPT. The authors should consider comparing their records with well-dated ice core records instead. Although the introduction suggests a lack of records for the past few hundred thousand years, especially in the Ross Sea, many high-quality records exist that are not referenced in this manuscript.

2.3 Another point of confusion is the extensive discussion on the importance of Be isotope measurement and principles in Lines 65-75. By the end of the manuscript, Be isotopes do not seem to play a significant role in the model the authors propose, instead serving a supportive role that requires support from other evidence.

2.4 The correlation presented in Figure 6 lacks clarity and statistical robustness due to the limited data points for each time period. The authors should consider grouping some of the time periods and providing clear descriptive statistical tests to support their arguments. A similar issue is present in Figure 3, where there is no clear evidence indicating which correlations are strong and which are not.

Finally, Figure 4 is difficult to read due to an overload of poorly organized information, and the color labeling is inconsistent with Figure 2.