Response to Anonymous Referee #1:

We thank the reviewer for the feedback and constructive comments on this manuscript. Below, we detail the revisions we will undertake in order to address the reviewer's comments. The original review is copied in **bold text** and our responses appear in plain text. We greatly appreciate the feedback and we believe the revised manuscript will be substantially improved.

- Bronwen Konecky
On behalf of all authors

The Iso2k database presented here represents a massive data synthesis effort and is a valuable contribution to our ability to effectively analyze regional and large-scale patterns in isotopic data. A random spot check of DOIs, LipD, and original data links, suggests that all the references are correct. This dataset will facilitate many new studies and will be well cited. The data quality of each individual record largely depends on the quality of the original work, but the authors are very thorough in providing the necessary metadata about each record that will allow users to evaluate the original data.

It is also good that the data links to the original author's study, since many of the datasets in the compilation are already posted on complementary data repositories like NOAA Paleoclimatology, and includes information on the original authors' interpretation of the isotopic signal. With this as with other data synthesis products, several records may be listed in multiple data synthesis products (e.g. SISAL for speleothems). The authors should be commended for section 6.5: we know that, for better or worse, scientific impact is measured in terms of citations, and so future work that simply cites Iso2k instead of the original studies risks undervaluing the scientific contributions of the researchers who generated the original data that forms the basis of the database, potentially influencing especially ECR career advancement. Providing the original citation information makes this easy.

We really thank the reviewer for recognizing the care we took to preserve the ability for original studies to be cited.

The effort to compile age control points from 'dark literature' is also commendable. I was slightly concerned to see the number of especially lacustrine records where authors did not make age control data available. I wonder if there is a way to permanently host a webform for authors to submit additional information that was requested as part of this version of the database but was not provided, but could be easily included in subsequent revisions. Might be easier than direct emails. This also applies to a few records I know have come out since this paper has been posted - for these large synthesis efforts finding an efficient way to update these databases seems key given the volume of data that is published in each year.

The Reviewer raises two important issues here, the submission of chronological data as well as the overall governance and procedure for submission of future datasets (paleo-isotopic data as well as age control data) to future versions of the Iso2k database.

We heartily agree that the submission of raw chronological data to public repositories should be standard operating procedure when authors submit datasets. Nowadays, many authors do indeed submit age control data in addition to their paleo-observation data, but for older publications this was not customary. We are very pleased to be able to now bring these chronological datasets to the publicly-available sphere.

A submission page for datasets not currently included in the Iso2k database is an excellent idea. A link to a LiPD entry template hosted through http://lipd.net/playground will be added to the official WDS-NOAA landing page for Iso2k, along with instructions for dataset submission. Because the Iso2k database was designed to use LiPD files, and the project was in direct coordination with LinkedEarth, these solutions are relatively straightforward from a technical perspective. When someone submits a new datasets as a LiPD files through http://lipd.net/playground, there is already an option to generate a "NOAA-ready" LiPD file so that users can then submit directly to the NOAA-WDS public repository, rather than having to fill out data entry templates separately. This will encourage broader submission of datasets to public repositories.

Long-term governance of the database and the procedure for community vetting and incorporation of new datasets to the Iso2k database are issues that require more than a technical fix. Those issues are currently being discussed by the group in consultation with other related PAGES groups and with the PAGES 2k coordination team. In the meantime, for purposes of this publication, we have added text to section 6.3 (line 715 of Discussion paper), with a reference to this section at the end of Section 1.3 (line 190), explaining the steps for dataset submission and stating that more detailed instructions and a link to a LiPD entry template will be added to the NOAA-WDS landing page when it is created.

6.3 Database updates, versioning scheme, and submission of new or updated datasets

This publication marks Version 1.0.0 of the Iso2k database (editors and reviewers: please note that you are reviewing version 0.14.7; this will become version 1.0.0 upon publication, following any edits during the review process). Following publication, the database will continue to evolve, as new datasets are added (both new studies and previous records that have been missed) and existing data or metadata are extended, or as necessary, corrected. Readers who know of missing datasets are asked to submit them directly through http://lipd.net/playground. Database users who find errors in individual datasets can submit proposed edits using the "Edit LiPD file" function at http://lipdverse.org/iso2k/current_version/, or they can use the "Report an issue" option for errors that apply to multiple datasets. More detailed instructions for dataset submission and a link to a LiPD entry template hosted through http://lipd.net/playground will be added to the WDS-NOAA landing page when they become available.

We thank the Reviewer again for these helpful suggestions.