Dear Prof. Eric Wolff,

Thank you for your decision of accepting our manuscript into Climate of the Past.

We have corrected your comments as follows:

>>Line 55 - you cite Vinther06, but you don't actually explain your use of this abbreviation until line 65. To be honest I don't understand why you use this notation - it saves only 11 characters each time, and seems to be an unnecessary exception. I would recommend removing it (similar with Sigl15).
Reply: Removed Vinther06 and Sigl15 throughout the manuscript.

>>Lines 130-133: the logic is missing here. If the NEEM tephra is different from the GRIP one, and the NEEM one is Alaskan, this doesn't prove that the GRIP one (used in GICC05 I assume) is not Vesuvius. I accept that it isn't but please rewrite this sentence to explain more clearly what the issue is.
Reply: We added the point of Plunkett et al also criticising the GRIP tephra attribution to Vesuvius to strengthen the logical argument.

Line 151. Agreement of GISP2 with GICC is "rather poor". Please define this better eg "with mismatches of up to x years at nnnn years b2k".
Reply: We added the reference to Svensson et al., 2008 since they provide wider discussion of the topic of GISP2-GICC05 agreement. We added that GISP2 is -40 years at 8000 years b2k.

Line 168. Since you no longer think the peak is Vesuvius, this is a confusing wording. I suggest "the part younger than the eruption peak previously assigned to Vesuvius".
Reply: We have made the edit.

Table 2. There is an error in line 1. You say this is Laki - Hekla which would have an N of 261. If N is 306 then I guess you mean Laki-Barda. Please correct.
Reply: We have corrected to Barda.

Line 417. "we tested the correlation between Dye 3 and GRIP" - of what? I assume isotopes? Please say this.
Reply: We have specified it’s isotopes.

Fig 3. Should we see the error, delta-t as a 1 sigma? It says so in the sup spreadsheet at sheet 1, section 2, but not in the text as far as I can see. Please clarify.
Reply: We specified that dt should be taken as 1σ.

Line 692: "The transfer function". Do you mean "The transfer function between GICC05 and GICC21"?
Reply: We have made the edit.

References in text: you occasionally gibe two authors followed by et al. This is an unusual format and I think incorrect. Normally its "Smith and Jones 2000" but if 3 authors "Smith et al 2000". Please check this.
Reply: We went through the citations and found some cases of 3+ authors being listed, which were changed to a format like “Smith et al.”. We verified that only one author was cited in the other citations, and that only citations with 2 authors had both names “Smith & Jones”.

Supplementary spreadsheet sheet 5 (transfer function). Anyone who picks this up and hasn't carefully read the paper won't know that delta-t is the uncertainty (as it's not a very common terminology). I can

see it stated n sheet 1 under section 2, but would prefer to see it stated as an extra row on sheet 5 (or at minimum under section 5 on sheet 1 as well).
Reply: We added a column description at the top of the sheet, referring to the uncertainty formula in the paper.

Supp spreadsheet. At first I looked in vain for the actual depth-age data, ie the key data from the paper. It took me quite a while to realise it was hiding under the obscure title "layer boundaries". Could you rename this tab to "depth vs age for GICC2021" to direct the reader to the right sheet easily please.
Reply: Yes, we agree. We have changed the sheet name and the header in the description to “Depth vs. Age GICC21”

I have decided to accept your data availability statement even if it isn't very satisfying for readers of this paper. Please be sure this paper is clearly referred to for all the datasets when they are finally released at Pangaea. I would also encourage you to put the ECM data listed as being available at CIC onto Pangaea.
Reply: Thank you for accepting our data comment. The paper will be referred in Pangaea. We will aim at reproducing the CIC ECM data also in Pangaea in the future.

Kind regards,
Sinnl et al.