

Interactive comment on “Re-evaluating the link between the Laacher See volcanic eruption and the Younger Dryas” by James U. L. Baldini et al.

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Dear authors, This is manuscript of the high overall interest but a statement indicating that Laacher see eruption (LSE) effect could last for some 5 years is in the contrast to surprisingly main conclusion not completely supported by own data and highly speculative that this event could trigger YD cooling. Resulting the title of msc starting with “Reevaluation” is inappropriate to the msc content. I have following comments and suggestions: → You ignore close linkage in referred paper of Fireston et al., 2007 between known (or unknown) events and extinction of great mammals (megafauna) at YD onset. There is an evident fact that LSE could not be a reason. → You do not refer to the paper of Petaev et al., 2013 on the discovery of a platinum layer at YDB in the Greenland ice core. Petaev et al. knew about the Sulphur anomaly but they

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did not consider that LSE could even leave any signs in the Greenland ice. I strongly suggest to pay an attention to Petaev et al. work. Recently published paper of Moore et al., 2017 following Petaev et al. study with crucial findings of widespread platinum anomaly at YD onset is missed as well. As follows from missed Moore et al and referred Fireston et al., Wittke et al and Kennett et al papers ecological disaster of process(es) was more drastic in American continent than in Europe at YD onset (disappearance of Clovis paleoindian culture, megafaunal extinction, black mat on a huge area). There is nothing about it in the msc. Westerly come from west. What was on the west from Europe actually? There are archeological studies on the west coast of Norway that people had inhabited this region in time of extension of continental glacier during YD and they fished for migrating Atlantic salmon. So, the Gulf stream had to work at that time and Central-north Atlantic cold hardly be covered by ice. I visited such place deep in Hardanger fjord providing this information but I have not found a paper. You can see from following information that even this fact may be controversial as everything based on radiocarbon dating in the period of YD onset (<http://sp.lyellcollection.org/content/411/1/9>, <http://onlinelibrary.wiley.com/doi/10.1002/jqs.2781/pdf>). The msc uses European lake archives to support authors' conclusion but the most of these archiver remained undiscovered by the authors. The most of them indicate another event to LSE: Lotter et al., 1993 should be replaced by Lotter et al., 1995 showing the evidence of two perturbations at YD onset, Karponai et al, 2011 showing the first evidence of acidification at YD onset, papers of Andronikov et al., 2013, 2015 on lakes at Baltic region indicating both extraterrestrial impact and volcanic activity in Europe, the most recent study on Merfelder maar = iconic site of tephrologist (Jones et al., 2017) show that LSE was not the only volcanic event at YD onset. (And many other studies) Attached please find cited papers including 3 abstracts produced by our team. They were published in Meteoritics and Planetary Science as predecessors of papers (submitted and in reviewing process). Our abstracts demonstrate complexity of processes at YD onset when natural weathering in lake catchment was blended

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with influence of volcanic activity of LS and supposed extraterrestrial impact event in the form of airburst with the center above East Canada. Please pay attention to the fact that there is synchronicity in geochemical evolution of lakes in American continent and in the central Europe (Norton et al., 2016 reinterpreted by Stuchlik et al., 2017). āč Firestone et al., 2007 supposed that impact event could trigger volcanic activity in the whole earth. There is lack of such information regarding both Americas in your msc. Yellowstone super volcano could be one candidate despite I have not found a scientific evidence of it. I hope you find my comments and suggestions helpful. Good luck. Evzen Stuchlik

Please also note the supplement to this comment:

<https://www.clim-past-discuss.net/cp-2017-147/cp-2017-147-SC1-supplement.zip>

Interactive comment on Clim. Past Discuss., <https://doi.org/10.5194/cp-2017-147>, 2017.

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