

Interactive comment on “Vegetation and fire anomalies during the last 70 ka in the Ili Basin, Central Asia, and their implications for the ecology change caused by human activities” by Yunfa Miao et al.

Anonymous Referee #2

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This manuscript focuses on vegetation changes and fire dynamics in Central Asia (Ili Basin) from 70 to 0 ka BP reconstructed by means of pollen/spores and microscopic charcoal fragments analysis of a 20 meters loess section. The final aim is to understand the driving factors of the presented changes considering both climate and human activity. Due to the geographic area, the time interval studied, and also to the fact that there was not a previous complete palynological record, this manuscript presents an important and interesting scientific topic. The structure of the manuscript is generally clear and references are adequate. The main issue is that the interpretations and

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conclusions are only partly supported by the pollen and microcharcoal results. The conclusion that the main vegetation change occurring at 36 ka is to be attributed to increased local fire activity caused by human activity remains speculative at this point, without direct archaeological evidences. Specific questions that might help to re-focus the discussions (thus conclusions and the title) are: 1) are there any anthropogenic indicators present in the palynological records? 2) what is the reason for the increase in the sedimentation rates during the interval \sim 47.5-41 ka (Fig.2)? More dust supply from the Westerlies? I do see an increase in the grain size in your Nileke section record. How does it influence the pollen and microcharcoal records? 3) You say that "no anomalies occurred during 41-36 ka" (line 238, Fig. 6 caption), but what is then the peak between \sim 41-39 ka evident in your records (Fig.6)? I do see indication of a slight increase of aridity in the Ice Core Guliya from the Tibetan Plateau after 36 ka, which is in agreement with the increased fire occurrence indicated by your records (Fig.6). Minor comments: In the caption of Figure 1 it is better to indicate the names of the wind systems shown with the arrows. Figures. 3 and 4 could be a bit bigger. Figure 6 must be bigger to allow an easier proxy comparison. It would be helpful to add an horizontal line indicating 47.5 ka (also if is not a CONISS division). Figure 5 needs a more complete caption with a bit more explanation..the reader will understand why curves are oranges /blu just in the discussion. The paragraph of lines 218- 226 is very important to understand all the discussion, probably you can move it before, in section 4. Technical corrections: 1) "-e" is missing in "Nilke" line 90, caption Fig.1, 2)line 179, Asteracea"-e" is missing. 3) line 190, caption Fig. 5, R:... "round" is missing. 4) a verb is missing in the sentence from line 255 and line 257 (section 4.2). 5) within references: something is probably missing at reference "Conard NJ (2008)" line 383. 6) double reference for Song YG, Chen XL, Qian LB et al. 2014, Quaternary Int.

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