

## ***Interactive comment on “Tephrostratigraphy and tephrochronology of lakes Ohrid and Prespa, Balkans” by R. Sulpizio et al.***

**A. Newton (Referee)**

anthony.newton@ed.ac.uk

Received and published: 16 July 2010

General Comments:

This is a good paper which is a major step forward in establishing tephrochronology as a routine chronological and stratigraphic tool in the Balkans. The identification and correlation of the 12 tephra layers with other sites and sources in the Mediterranean region is important and will form the basis of much future palaeoenvironmental research in the region. The ability to make teleconnections between regions is well established elsewhere and this paper shows the applicability of this work to the Balkans. As a consequence of this work, the authors have also demonstrated that presence of long Late Pleistocene sediment records in the region which will no doubt be the subject of intense future study. The publication of this paper establishes the basic tephros-

C1853

stratigraphic framework for this area and will no doubt stimulate and help much future research. This paper is acceptable for publication after a few minor modifications.

Specific Comments (minor):

Under the Discussion section (Section 4), I wonder if there is a better way of showing correlations between the tephras in the cores and other published layers. The tables are not that helpful and the only biplot which attempts a comparison is Figure 6. I would suggest that more use of biplots (or similar) would reinforce the correlations discussed in the text. This would also deal with the problem of showing mean and standard deviations of geochemical data in tables. Whilst I appreciate that this is routinely done in these sorts of papers (due to space limitations), mean and standard deviations in themselves are not that informative for non-normally distributed datasets. I would like to see full datasets available somewhere (a link to a website) and the use of graphs to illustrate the properties and correlations).

The authors describe analysing sample powders using ICP-MS on page 3936. They need to state were these were separated in any way (ie, was the whole layer analysed or was the glass fraction separated?). I suspect the former, which is fine, but needs to be explicitly stated. In the future people may analyse glass shards only for example, using grain specific LA ICP-MS and this information is needed to make valid comparisons.

Technical Comments (minor):

Abstract Line 6 - "which spans from the end of the end of the Middle Pleistocene..." is not a great sentence and needs to be rewritten.. Page 3933 Line 9: "Greek" not "Greeks". Line 16: replace "the beginning" with "at an early stage". Page 3935 Line 22: presumably this should read ">40 $\mu$ m" nor "mm". Page 3942 Line 2: whilst I understand the point that multiple data types are needed to make a correlation, is "show striking major element composition" missing the word "similar" after "striking"? In any case it should be "strikingly" and could be dropped as well. Page 3944 Line 28: should read the "Cl/Y-5 tephra layer" not "layers". Page 3946 Line 14: The sentence that begins

C1854

"About 30 ky of ..." is poor and needs to be rewritten. Line 19: delete "anticipates the inception of" with "predates". Figure 8 is a good idea, but not particularly well executed. If this was redrawn it would be a much more useful figure.

---

Interactive comment on Biogeosciences Discuss., 7, 3931, 2010.

C1855