

## **Review of ‘The Oxygen Valve on Hydrogen Escape Since the Great Oxidation Event’**

Thank you for the opportunity to review the revised manuscript. The manuscript has been greatly improved in response to the comments from both reviewers.

I just have a small handful of very minor suggestions remaining, as follows.

L186: “In every simulation... respectively.” I suggest this sentence is moved to somewhere in the paragraph in Section 2.1 beginning “The first simulation we perform...” where the other inputs are described.

L251: Thanks for making the edit I suggested. It’s great that a Fourier analysis has been conducted on the two simulations to support the tape recorder point. If possible, I suggest a further sentence to add a little more detail about what this analysis showed, rather than only mentioning that it was done.

References. Just a small note that there are a few references for which updated reference details are available as they have recently been published in peer-reviewed journals. These include Chaffin and Cangi et al (2024), Graham et al (2024), Malinieme et al (2021), and Sergeev et al (2024). I suggest that the peer-reviewed versions are cited instead, if they provide the same information as the originally-cited conference abstracts or arXiv versions.