Review of: "Phylogenetic Evidence for the Early Origin of the Homeostatic Influence of the Biota on Planetary-Scale Geophysical Processes"

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Potential competing interests: No potential competing interests to declare.

This paper uses empirical evidence to address the subject of when and how Gaia arose. To set the scene for this, the paper first proposes two core necessary attributes for Gaia: each individual having control systems and joint action of groups of such individuals producing results that are more beneficial to the group than would have arisen from the isolated action of each individual. We make the case that the predominantly recognised “planetary” nature of Gaia is a contingent rather than necessary attribute. The paper next identifies representative examples in contemporary organisms of each of the two core attributes of Gaia in operation. For each of these examples, genes making up part of the genetic specification of the example were identified. We then sought these same genes in the earliest examples of life that have been genetically characterised in empirical terms - the Last Universal Common Ancestor (LUCA) and the Last Bacterial Common Ancestor (LBCA).

Include the objective of the study

add the necessity of the work

Give reasons in the conclusion