

(This is a comment to the first three red segments:) Perhaps the decreasing perturbations of homogeneity would have been “huge” in the far past, but we will never know how huge until we verify this by direct calculation. Technically, they become infinite at the initial singularity, but no currently existing (exact) cosmological model applies up to that singularity.¹ Our model could have been used for such a calculation, but the referee knows better: “we know the very early universe was highly homogeneous”, so such attempts should be prohibited. He hints at the origin of his certainty in the second red segment: large inhomogeneities in the early Universe would contradict the inflationary models. This means, for the referee the inflation hypothesis is an established dogma that no-one should dare question.

This is the most offending statement in the whole report. Our paper is an attempt to introduce rigour based on solid calculations into a field dominated by babbling and posturing – and we are being accused of lack of rigour (*scientific* rigour!) by an individual whose knowledge relies on popular hearsay.

And this is a typical example of the babbling that dominates in astrophysics. For the referee a solid mathematical proof is insufficient, he needs the result to be explained in words. In addition, what he says here is basically wrong. The overdensity is not supposed to “physically reproduce” the supernova dimming. This overdensity is not the cause of the dimming,² but a side-effect of the initial conditions that reproduce the dimming in an inhomogeneous model with $\Lambda = 0$. The referee ignored the fact that within the 4 pages allowed by PRL we had no chance to say more than we actually did.

A careful reader will notice the intensity of the referee’s bad will in this segment. A reply to it is contained in the letter we sent to the editor (see below); here I only remark that his description of our calculations is completely mistaken.

Here the referee, who criticised us for the “lack of scientific rigour”, does not accept a rigorous proof and demands an explanation by babbling. True, intuitive explanations help in understanding the results, but there is no place for them in a journal in which maximal conciseness is top priority.

This, in turn, is the most shocking piece evidence of the referee’s incompetence. Our statement, to which he refers here, is stated in the abstract as follows: “the implied density profile at the present time does not exhibit a giant void, but rather a giant hump (which, being in a spacelike relation to us, is not observable)”. *In a spacelike relation* immediately implies, via elementary special relativity, that signals sent from there would need to propagate faster than light to reach us at or before the present time. I wonder whether the referee ever tried to understand special relativity.

This has been shown in *this* paper. Evidently, the referee did not understand it.

¹It is fair to say that the models apply only up to last scattering. Inflation claims to be applicable at 10^{-34} s after the Big Bang, at densities of the order 2.24×10^{68} g/cm³, but this is so far beyond the domain of laboratory physics that it can hardly be taken seriously.

²It cannot be: all of our “great hump” lies to the future of the light cone that carries information about the supernova dimming!