

Temat: Your manuscript DQ12278 Krasinski

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Re: DQ12278

Short-lived flashes of gamma radiation in a quasispherical Szekeres metric

by Andrzej Krasiński

Dear Professor Krasinski,

The above manuscript has been reviewed by one of our referees. Comments from the report appear below.

We regret that in view of these comments we cannot accept the paper for publication in the Physical Review. This concludes consideration of this manuscript.

Yours sincerely,

Alin Tirziu

Associate Editor

Physical Review D

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Report of Referee C – DQ12278/Krasinski

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After reading this paper and previous ones by the author on an idea to explain GRBs as blueshifted CMB radiation, I have not found a place where the basic physics of this idea can be understood in any reasonable way.

For several years now, counterparts of GRBs at other wavelengths have been found and redshifts measured. In several cases we have found the host galaxies of GRBs. The galaxies in which these GRBs occur are normal ones, there is nothing unusual about their redshifts or their appearance. At least for the majority of GRBs that are identified with these known sources, it is clear that GRBs are related to some type of stellar phenomenon inside normal galaxies, that are at a distance indicated by their redshift. It is not clear what the author means when he claims that the redshifts of the afterglows would be affected by the strange metric in his model and would not indicate the true distance, how about the presence of the normal host galaxy?

If the author wants to make a model of GRBs that is totally unrelated to stars inside normal galaxies, he clearly must be applying this only to a small fraction of GRBs that would be of a very different nature. There is no evidence for such a separate class of GRBs with a completely different origin, the only types of GRBs are short and long duration and they both have shown this evidence of originating from stellar objects inside normal galaxies.

The model presented by the author is simply incomprehensible and the physics are not explained. In his previous papers he just jumps directly into a bunch of equations of Lemaitre-Tolman models and Szekeres regions, but why this has any relation to predictions for GRBs with the observed properties is nowhere justified and demonstrated.

Why would GRBs be produced at the epoch of decoupling? Why is emission by hydrogen lines relevant, since the CMB is simply thermal radiation in the expanding universe? Why does the blueshift claimed by the author always have the specific value

needed to produce gamma-rays? How does he explain the observed characteristic spectrum of GRBs? How does he explain the afterglows? How does he get around the well-known physical constraints from the early papers by, e.g, Paczynski and Goodman (1986) that the regions originating GRBs are optically thick to Thompson scattering, pair production, etc.? GRBs arise as fireballs, and the physics of fireballs have been discussed in detail, but the author just ignores all that and makes the incredible claim that the gamma-rays we observe are all rays that were moving exactly radially in some strange region of the universe that is for some reason a nearly spherical perturbation. So, why would these rays not be scattered by electrons?

Apart from the lack of any connection to real physics in previous papers, now in this one the author claims some gravitational lensing effect to say that GRBs would be short because, when being lensed by some intervening object, we would stop seeing the light ray after the deflection changes. But of course, in gravitational lensing there is always at least one image of every source, so after the deflection changes we will simply see the source in some different direction. Statements by the author make as little sense as his entire construction from previous papers.

It is not just that this paper must be rejected: it is a shame that the previous papers on this model by the author were published in this journal, and it is a shame that the author is just ignoring what the referee reports say.