Errors in Humphreys' cosmological model: Humphreys replies

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While it is good to have more representatives of academia entering this fray, Fackerell and McIntosh have failed to do their homework!

The technical content of their letter resembles that of the article by Conner and Page two years ago in this journal.[1] With their first dozen equations, Fackerell and McIntosh try to prove that the Schwarzschild time element dt becomes imaginary. However, the foundation of their argument is the same equation for Schwarzschild time t with which Conner started in his 1999 letter to this journal.[2] My reply in the very same issue[3] asserted that the equation is not valid in the region of space-time where Conner wanted it to be valid. Yet Fackerell and McIntosh have taken no notice of my 1999 reply, continuing to use the same foundational equation as if it were unquestioned. I would suggest they read my 1999 reply carefully, as well as my re-iteration of it to Conner and Page in this issue, and catch up with the controversy.

What they call my *'second major error'* appears to be my use of the word *'centre'* in the same sense that everybody uses it normally:[4]

> *'centre ... 1. A point equidistant or at the average distance from all points on the sides or outer boundaries of something.'*

By this dictionary definition, the 'big bang' cosmos has no center, since it has no sides or outer boundaries. Fackerell and McIntosh's use of *'centre'* in a different, rather contrived, sense allows them to imply that *every* point in a 'big bang' universe is a centre. But they ignore my main point: their theory has no unique centre, whereas mine does. In their desire to make my theory *'identical'* to theirs, they avoid that obvious difference. They also overlook another obvious difference. In my theory, an observer at the boundary of matter would see half the night sky empty of stars, whereas their theory has no such location.

Their third criticism is that my papers and book do not provide *'a solution with proper mathematical detail'*. However, the details they ask for have already been provided by Klein,[5] to whom I referred repeatedly.

Their thirteenth and fourteenth equations, and the words around them, simply reassert — without proof — their view that there is no Euclidean zone. Assertions without proof require no further rebuttal.

The next error is my alleged *'assertion[19] that the criterion for an event horizon is $g_{tt}=0$'*. Yet in their reference 19 (my book *Starlight and Time*, pages 117 and 119),[6] I can find no such claim. Moreover, I never intended to make such a claim. That disposes of their fifteenth equation and the paragraphs around it.

Now we get to what they call *'the worst error in [Humphreys'] writings,'* my alleged failure to realize that *'...an observer ...will not observe anything peculiar when the horizon is crossed'*. Yet about the same situation I wrote:[7]

> *'As he passes the event horizon, he feels no unusual sensations ....'*

So much for what Fackerell and McIntosh allege that I failed to realize. I am glad that my alleged *'worst error'* turns out to be their overlooking my words. That would suggest that their other allegations of errors could be even more trivial.

In summary, the *'gross errors'* Fackerell and McIntosh attribute to me turn out to be their own: (1) they ignored my replies to Conner, (2) they ignored the ordinary meaning of a key word, (3) they ignored a key reference, (4) they put words in my mouth, and (5) they ignored what I did say. As I said above, it is good to have additional defenders of the 'big bang' weighing in on this controversy, but only if they have done their homework.

References

1. Conner, S.R. and Page, D.N., *Starlight and Time* is the big bang, *CEN Tech. J.* **12**(2):174–194, 1998.

2. Conner, S.R., Vistas — one more, *CEN Tech. J.* **13**(1):56–58, 1999.

3. Humphreys, D.R., Russell Humphreys replies, *CEN Tech. J.* **13**(1):59–60, 1999.

4. Soukhanov, A.H. (ed.), *Webster's II: New Riverside University Dictionary*, Riverside Publishing Company, Boston, p. 242, 1984.

5. Klein, O., Einige Probleme der allgemeinen Relativitätstheorie; in: Bopp, F. (ed.), *Werner Heisenberg und die Physik unserer Zeit*, Vieweg and Sohn, Braunschweig, Germany, pp. 58–72. Complete translation, *Several problems of the theory of general relativity*, 17 pages, available by sending a self-addressed large envelope and US$4.00 to D. Russell Humphreys, Sandia National Laboratories, Box 5800, M.S. 0328, Albuquerque, NM 87185-0328, U.S.A.

6. Humphreys, D.R., *Starlight and Time: Solving the Puzzle of Distant Starlight in a Young Universe*, Master Books, Green Forest, Arkansas, 1994. Sixth Printing, February, 2000.

7. Humphreys, Ref. 6, p. 110.