

Dear Bryan,

Is it all too hard for you Bryan? You won't even supply three little answers to three little questions. It was you who raised the Bland-Hawthorn et al paper, not I. I didn't write to Bland-Hawthorn et al about it. I wrote, I reiterate yet again, about Bland-Hawthorn's USYD press release and his ABC television interview. Now you have a list of false statements made in the Bland-Hawthorn et al paper.

I note that you won't apply the same rules to yourself that you applied to me, despite my compliance with your demands. As for textbooks, anybody can do that. I asked you to actually use your own brains. Alas, too much to ask of you?

Your book is not above accountability either. You wrote it, so you defend it.

Perhaps Joss Bland-Hawthorn will explain to us all about his escape velocity assertions. But I bet he'll do the same as you – bail out.

Yours faithfully,

Steve Crothers

On Sat, Dec 7, 2013 at 12:28 AM, Bryan Gaensler <bryan.gaensler@sydney.edu.au> wrote:

Dear Stephen,

"Extreme Cosmos" was a popular science book, which aimed to summarise current consensus for the lay reader. It was not a scholarly manuscript. If you want derivations of black holes etc, I refer you to any standard astronomical textbook.

Given that you fail to appreciate this distinction and that you clearly have an agenda that does not relate in any way either to my book or Joss' paper, I think we're done here. I won't be participating in this correspondence any further.

regards

Bryan

Dear Bryan,

You asked this,

“What is incorrect about Bland-Hawthorn's statement #3 in your list below?”

Let's look at the Bland-Hawthorn et al statement #3,

“The supermassive black hole associated with the Galactic Centre source Sgr A* has a well established mass¹ with 10% uncertainty ($M \cdot 4 \times 10^6 M_{\odot}$)”.

You next say,

“An error is a miscalculation or an incorrect application of the assumptions. If you're starting with different assumptions, you'll come to a different conclusion. That is not an error on my or Joss' part.”

Science however, is very concerned with the truth or falsehood of the premises and conclusions in an argument, not just in the logical consistency of an argument. Logical consistency alone might satisfy the logician, but not science. Science is not just a system of formal logic. The following argument is

logically consistent, but is it true?

All astronomers are clowns. (Premise)

Bryan Gaensler is an astronomer. (Fact)

Ergo, Bryan Gaensler is a clown. (Logical conclusion)

As you say, the premise can be changed and different conclusions drawn. For instance, replace “clowns” with “geniuses”. But the question still remains, is it true?

From the scientific perspective, if the premises are false the argument is false. Recall that I gave you a list of false statements by Bland-Hawthorn et al, not a list of illogical arguments. So an error is not simply, as you claim, “a miscalculation or an incorrect application of the assumptions.” The false premise in the statement by Bland-Hawthorn et al is that there is a “supermassive black hole associated with the Galactic Centre source Sgr A*.” They merely assert the existence of their black hole and proceed as if this premise is true, but it isn’t.

So your additional remarks,

“If you don't agree with the background work, fine, but that's hardly an error in the present paper.”

“So overall it sounds like there is nothing wrong with Joss' paper, except that you disagree with the consensus view of black holes and the Milky Way, and the conclusions drawn from these views?”

are spurious on two grounds; (1) it is not a matter of mere disagreement on premise but of the demonstrable falsehood of the premise of Bland-Hawthorn et al; (2) since the premise of Bland-Hawthorn et al is false their statement is false. That is precisely why everything you wrote in your book about black holes and big bangs is also false. That “consensus view” believes in black holes and big bangs does not turn its demonstrable falsehoods into truth.

Since I complied with your strict prescription to provide a list of quotes from the paper by Bland-Hawthorn without discussion or exposition, I now request you to reciprocate. In chapter 9 of your book *Extreme Cosmos* you say,

“If two black holes of the same mass collide and merge, the new black hole will have twice the mass and twice the diameter of either of the original black holes.”

“But occasionally, when an especially large star explodes, the core is sufficiently massive that it can collapse to form a stellar black hole. If this happens to an isolated star, the resultant black hole will be visible and undetectable from our vantage point here on Earth. But if the star is one half of a binary system, then after the supernova we are left with a normal star orbiting a stellar black hole.”

You also talk a lot in your book about big bang and a black hole event horizon. Now, without discussion or exposition, bearing in mind that black holes and big bangs are the products of mathematical physics, please provide me with the following:

(a) The Einstein field equations you rely upon for describing your alleged two black holes of the same mass colliding and merging in a big bang universe, and if not General Relativity, the equation otherwise you rely upon.

(b) The Einstein field equations you rely upon for describing your alleged star and stellar black hole

binary system in a big bang universe, and if not General Relativity, the equation otherwise you rely upon.

(c) The equation you rely upon for determining the radius of your alleged black hole event horizon, in a big bang universe.

Finally, here is something for Professor Joss Bland-Hawthorn to explain to us mere plebeians, since professors are actually accountable for what their press office releases for them and for what they say themselves on television. In his interview on ABC television Joss Bland-Hawthorn said this,

“A black hole is, ah, a massive object, and it’s something which is so massive that light can’t even escape. ... some objects are so massive that the escape speed is basically the speed of light and therefore not even light escapes. ... so black holes themselves are, are basically inert, massive and nothing escapes ...”

(Bland-Hawthorn 2013b)

Bland-Hawthorn said that the escape speed is the speed of light. Now light travels at the speed of light. Therefore if the escape speed is the speed of light, then light must escape. Professor Bland-Hawthorn, please explain why “not even light escapes” even though light travels at the escape speed, the speed of light.

Yours faithfully,
Stephen J. Crothers

REFERENCES

- (1) Bland-Hawthorn, J. et al, ‘FOSSIL IMPRINT OF A POWERFUL FLARE AT THE GALACTIC CENTRE ALONG THE MAGELLANIC STREAM’, 21 Sep 2013 <http://arxiv.org/abs/1309.5455>
- (2) Bland-Hawthorn, J. et al, USYD – News: The dragon awakes - colossal explosion from supermassive black hole at centre of galaxy revealed, 24 September 2013 http://sydney.edu.au/news/84.html?newscategoryId=2&newsstoryid=12387&utm_source=console&utm_medium=news&utm_campaign=cws
- (3) Bland-Hawthorn, 2013b ABC interview with Jeremy Fernandez, <http://www.abc.net.au/news/2013-09-24/new-research-sheds-more-light-on-black-holes/4979088>
- (4) Gaensler, B., Extreme Cosmos, Penguin Group (USA) Inc., New York, 2012

Hi Steve

What is incorrect about Bland-Hawthorn's statement #3 in your list below? It seems a straightforward summary of previous work. If you don't agree with the background work, fine, but that's hardly an error in the present paper.

An error is a miscalculation or an incorrect application of the assumptions. If you're starting with different assumptions, you'll come to a different conclusion. That is not an error on my or Joss' part.

So overall it sounds like there is nothing wrong with Joss' paper, except that you disagree with the consensus view of black holes and the Milky Way, and the conclusions drawn from these views?

regards
Bryan

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