

abstract, introduction, and conclusion. If Conner saw none of them, then he did not read enough of my paper to intelligently criticize it. If he did see any of them, then he is trying to ignore a crucial issue.

### Conclusion

In my paper, I answered all the original Conner-Page arguments, subsection by subsection. Point 2 above directly answers the argument Conner makes in his letter. However, Mr Conner has not reciprocated. He has not tried to answer me point-by-point, particularly avoiding the first and third issues above. Issue 1, Conner's *faux pas* about centres, does serious damage to his first critique. Issue 3, the independent research supporting my paper, undermines both his first critique and his letter above. It would introduce some refreshing candour into Conner's side of the debate if he would acknowledge those two flaws in his argument.

I welcome well-thought-out critiques and discussions of my cosmology, and I acknowledge the private and public contributions of several well-qualified fellow creationists toward that end. Even more, I would encourage more young-earth creationists to pursue cosmological research of their own, to the greater glory of God.

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### References

1. Humphreys, D.R., 1998. New vistas of space-time rebut the critics. *CEN Tech. J.*, 12(2):195-212.
2. Conner, S.R. and Page, D.N., 1998. Starlight and time is the big bang. *CEN Tech. J.*, 12(2): 174-194.
3. 'Tremendous *faux pas*' is a phrase used in verbal critiques of my cosmology by one of Mr Conner's fellow-travellers, who after four years has yet to venture into print with his own criticisms.

4. Conner and Page, Ref. 2, section 2.2. I am giving Dr Page the benefit of the doubt concerning the generation of the error, since the section (in fact the whole paper) has the style and tenor of Mr Conner's private letters to me in 1995. Those letters appeared to be from Conner alone, and Conner made no mention that any co-authors might have contributed to his letters. I mention this specifically because Dr Hugh Ross has been implying to his audiences that Conner, Ross, Page, and two professors personally corresponded with me at that time. They were begging me, Ross alleges, to withdraw my book. See an article in the *Reasons to Believe* newsletter: Ross, H., 1998. Avoiding a dangerous trap, *Facts and Faith*, 12(4): 10-11. But for over five years (from May, 1993 through November, 1998) I never received any personal correspondence from anyone in that group except Conner. In a personal letter to me dated December 1, 1998, Ross finally acknowledged that he had not previously sent me any personal correspondence since 1993, long before I wrote my book.
5. Hellaby, C, Sumeruk, A. and Ellis, G. F. R., 1997. Classical signature change in the black hole topology. *International Journal of Modern Physics*, D6(2):211-238.

## Starlight and time

I write regarding Humphreys' cosmology as presented in his book *Starlight and Time: Solving the Puzzle of Distant Starlight in a Young Universe*,<sup>1</sup> and Conner and Page's discussion of this hypothesis in *CEN Tech. J.*, 12(2),<sup>2</sup> and in particular regarding the role of gravity as discussed in both works.

Conner and Page state that Humphreys agrees, '*explicitly or implicitly*' with the assumptions, stated by Conner and Page:

*'(3) the fundamental parameters of nature, such as the gravitational constant G ... are invariant over the observable history of the Universe.'*

While I do not understand what Conner and Page mean by '*the observable history of the Universe*', I suggest that they may have overlooked what I perceive to be a basic flaw in Humphreys' hypothesis, which I believe actually advocates variable *G*.

Humphreys describes his concept of the creation of the 'deep' on Day 1 as follows:

*'Fig. 6 shows the deep at the instant God creates it...'*

*'Because the enormous mass of the whole universe is contained in a ball of (relatively) small size, the gravitational force on the deep is very strong, more than a million trillion "g"s. This force compresses the deep very rapidly toward the centre...'*

*'As the compression continues, gravity becomes so strong that light can no longer reach the surface...'* (Emphasis added.)

And Humphreys says: on Day 2,

*'Gravity at the surface (of the earth) drops to normal or present values.'* (Emphasis added.)

Humphreys' wording seems to me to be very ambiguous, and, if I am interpreting it correctly, he is transposing cause and effect. Humphreys seems to be saying, perhaps unintentionally, that, at the instant of creation, the gravitational force is '*very strong*' **because** '*the enormous mass of the universe is contained in a ball of (relatively) small size,*' and that '*gravity becomes so strong*' **because** compression occurs.

What is causing what? Is '*strong gravity*' causing compression, or is compression causing '*strong gravity*'? Humphreys seems to be implying the latter.

And what does Humphreys mean by '*strong gravity*'? — high *g* (i.e. acceleration due to gravity, due to concentrated mass — how did it get so concentrated?) or high *G* ('universal gravitational constant' — created by God.)

My understanding of physics relating to gravity tells me that the scenario advocated by Humphreys, of initial containment of the '*enormous mass of the whole universe ... in a ball of (relatively) small size*' and that the continued compression which Humphreys advocates occurred subsequent to creation (to the point where *light can*

no longer reach the surface'), could only be possible if the magnitude of the 'universal gravitational constant' ( $G$ ) was larger at creation than it is now, (more than a million trillion times larger!!) and subsequently increased in magnitude after creation, and then decreased to its present value, and if the gravitational attraction between objects in the created 'deep' was operating according to Newton's Inverse Square Law. ( $F = Gm_1m_2/r^2$ ).<sup>3</sup>

If this is the case, then Humphreys is, in my opinion, perhaps unwittingly, advocating a varying  $G$  hypothesis.

Also, regarding the 'canopy', Humphreys states:

*'... my suggestion doesn't do away with a canopy of water; it simply raises it a bit higher — a cosmic canopy!'*

How would Humphreys explain Gen. 7:11-12:

*7:11 In the six hundredth year of Noah's life, ...on that day ... the floodgates of the heavens were opened.*

*7:12 'And rain fell on the earth forty days and forty nights.'* (Emphasis added.)

These verses seem to clearly indicate that the water which fell as rain for forty days and nights at the beginning of the Flood, had been previously held above the earth, and was allowed to fall through 'the floodgates of heaven'.

In the Humphreys scenario, with the 'canopy' relegated to the outer edge of the universe, the water which fell as rain during the first forty days and nights of the Flood would have been an infinitesimal proportion of the total water there, and would have had to have come all the way from the edge of the universe for the Flood. Humphreys fails to describe a mechanism for this to occur.

The alternatives would appear to include:

1. The 'floodgates of heaven' is allegorical language and does not really refer to rain which had been

stored as water above the earth, and subsequently fell as 'rain'.

2. The 'rain' resulted, as proposed by several creationists, from the projection of the 'fountains of the great deep' into the atmosphere, to fall back to earth as 'rain'.

Both of these explanations seem to contradict the clear teaching of the Scriptures, which seem to indicate that the water had been previously held above the atmosphere and was allowed to fall as rain for forty days and nights, at the beginning of the Flood.

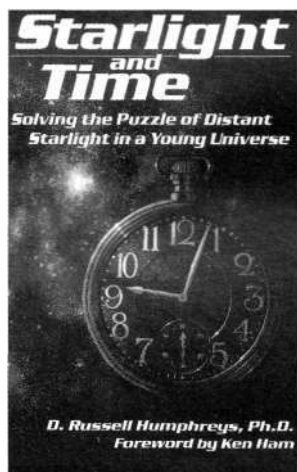
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### References

1. Humphreys, D.R., 1995. *Starlight and Time: Solving the Puzzle of Distant Starlight in a Young Universe*. Master Books. Colorado Springs, Colorado.
2. Connor, S.R. and Page, D.N., 1998. Starlight and time is the big bang. *CEN Tech. J.*, 12(2): 174-194.
3. Newton, I., 1687. *Philosophiæ Naturalis Principia Mathematica*. Roy. Soc. London.



### Russell Humphreys replies:

Mr Hunter bases the technical part of his comments on his interpretations of a few words in the

non-technical part of my book.<sup>1</sup> The answers to his questions are in other parts of the book. In answer to his belief that '[Humphreys] actually advocates variable  $G$ \ please note the only comment in my book about  $G$  is in the technical appendix:<sup>2</sup>

*'G is the Newtonian gravitational constant.'*

I've emphasized the last word to make this point: **a constant is not a variable**. What I meant by 'gravity' in the section Mr. Hunter refers to was not  $G$ , but just the ordinary meaning — the gravitational force on a unit mass, i.e., the acceleration of gravity, which I will call  $a$  here. If you plug into Newton's equation (the one cited by Hunter) my estimated mass  $m$  for the cosmos,<sup>3</sup> the corresponding one light-year initial radius  $r$  of the 'deep', and the **usual** value of  $G$ , you will find that the initial value of  $a$  at the surface of the deep would be more than a million trillion times the value of  $a$  at the earth's surface today, which is about  $9.8 \text{ m/s}^2$  and often called 'one gee'.

Next we come to Hunter's questions, *'...is "strong gravity" causing the compression, or is compression causing "strong gravity"?' —* The answer is 'yes' to **both** questions. That is, gravity causes the compression, and the compression causes the gravity to get stronger. As the monstrous, irresistible force of a million trillion 'gees' compresses the water, the radius  $r$  of the surface gets smaller. Using (in the same Newton's equation) the same mass  $m$ , the **same** value of  $G$ , and a **smaller** value of  $r$ , we see that  $a$  at the surface **increases**. Thus the ball of water is collapsing under its own weight, and the collapse accelerates as the ball gets smaller. This description of the collapse is straightforward freshman physics. No change of  $G$  is required, and I implied none.

After the collapse 'bounces' into an expansion,<sup>4</sup> the reverse process happens. As the section of matter destined to become the earth

expands, the radius of its surface increases. Newton's equation then says that the value of  $a$  at the surface would decrease, as my book said. Again, no change of  $G$  is required.

Moving on to Mr Hunter's 'canopy' comments, I certainly did not mean to imply that the 'waters above the heavens' fell 20 billion light-years to earth to provide water for the Genesis Flood! The exegesis in my book<sup>5</sup> suggests that the 'waters above the heavens' are not necessarily the same as the 'windows [or floodgates] of the heavens'. As for the latter, note that the order in Genesis 7:11 hints 'the windows of the heavens' may have been **secondary** to the 'fountains of the great deep'. That would leave room for Hunter's alternative 2, that water bursting forth from the 'fountains of the great deep' went into the atmosphere and enshrouded the earth with clouds, thus providing a continuous source of water for the rain falling from the clouds.

If other creationist theorists wish to find other models for the 'windows of the heavens', that is fine with me. But in all our theorizing, let us keep clear in our minds the possible distinctions between different biblical phrases, not allowing them to be inextricably bonded to human theories, such as the 'canopy' model or my cosmology.

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### References

1. Humphreys, D.R., 1994. *Starlight and Time*, Master Books, Green Forest, Arkansas, U.S.A. See pp. 33-36. That section is in simplified layman's language; for scientific details one should consult the scientific part, Appendix C.
2. Humphreys, Ref. 1, p. 91 (Appendix C).
3. Humphreys, Ref. 1, p. 105, eq. (12).
4. Humphreys, D.R., 1998. New vistas of space-time rebut the critics. *CEN Tech. J.* 12(2): 195-211. See p. 210, section 12.2 and Fig.12.

5. Humphreys, Ref. 1, p. 62 (Appendix B).

## Gospel in the stars

I hope that Danny Faulkner's recent article, 'Is There a Gospel in the Stars?' (*CEN Tech. J.*, 12(2):169-172) will stimulate further research in this area. His article was mainly a critique of books by Joseph Seiss<sup>1</sup> and E.W. Bullinger<sup>2</sup> on this topic. Among other things, Faulkner cites discrepancies between the star names and meanings given by Seiss and Bullinger and those given by standard secular sources.

A major thesis of Seiss's book is that the original constellations depicted an outline of the work of Christ, the nature of His Church, and the consummation of all things when He returns; and that this outline was known to Noah. Seiss cites as evidence the similarity of the zodiacal constellations across all the major ancient civilizations. He claims, very plausibly, that with time the original meanings became somewhat obscured. In this way, the mythologies of later civilizations, notably the Greeks, would contain both glimpses and also distortions of the constellations' original meanings.

To check Seiss's claims, it would be important to research the most ancient names and given meanings of the stars. It would also be essential to publish the detailed references for the results, which unfortunately were omitted by Seiss. He did cite general references such as writings by the Arab Albumazer over 1000 years ago, a commentary on Albumazer written by the Jewish Aben Ezra, and later writings by French and other sceptics who claimed that the gospel was simply adapted from myths and astronomical lore known to ancient cultures. I would hope that some individuals qualified in Arabic, Hebrew, and ancient Middle Eastern languages could start from these and

then follow the leads back in time as thoroughly as possible.

Meanwhile, as one way to stimulate discussion, consider the major two stars in the constellation Libra: 'Zuben al Shemali' and 'Zuben al Genubi'. In Modern Arabic, as Faulkner points out, these names are understood as the 'northern claw' and the 'southern claw', respectively. They are considered as the claws of Scorpio, the neighboring constellation, and Libra does not even exist as a separate constellation in modern Arab cultures.<sup>3</sup> On the other hand, Seiss claims that these names mean, respectively, 'the price which covers', and 'the price deficient', representing the work of Christ as opposed to the efforts of men in redemption. Libra means a scale, or balance, and these two stars appear on the two opposing sides of the scale.

To see if there might be other meanings for these stars in classical Arabic, I consulted the voluminous *Arabic-English Lexicon* by Lane.<sup>3</sup> I am not an Arabic scholar, but it appears that in classical Arabic the consonants are most important, since (as in classical Hebrew) most vowels were not usually explicitly written. Evidently *zabuun* is a major word, meaning 'push'. The derivative word *zubaanaa* is applied to the claws of the scorpion, because the scorpion 'pushes' with them.<sup>3</sup>

However, *zabuun* has other meanings related to purchasing, such as a 'simpleton' or 'fool' who is 'pushed around' and is duped in a sale.<sup>3</sup> The most ancient meaning of *zabuun* is apparently related to a Chaldean verb meaning 'to sell'.<sup>3</sup> This meaning survives in Hebrew as *zeeben*, and is written similarly to *zaven*, meaning 'to buy'. So, 'price' is not a far-fetched meaning for this root.

Further, *shamaaliy* does mean 'northern' or 'left'. However, some words with the same consonants, such as *shamila*, refer to clothing with which one 'wraps' or 'covers'