

LET THERE BE LIGHT

“In the beginning God created the heavens and the earth. And the earth was without form, and void; and darkness was upon the face of the deep. And the Spirit of God moved upon the face of the waters. And God said, Let there be light: and there was light.” Genesis 1:1-3, KJV

Einstein’s theory of General Relativity (**GR**) is generally regarded as the most important theory in Physics developed in the last century, its key postulate being that the speed of light c is a sacred constant value, invariant even to an observer whose speed relative to it varies. It gave a new understanding of gravity, space, time, and energy, showing that even the smallest mass (m) of matter is invested with a phenomenal amount of energy (E) through its $E=mc^2$ formula, thereby laying the theoretical framework for the discovery of nuclear weapons of mass destruction.

Recently however, physicists have been closely re-examining **GR** via refined observations in astronomy. The “good” news: in January this year the first effort to measure the speed of gravity’s propagation was in rough agreement with **GR**’s indication that it is equal to c . (This means that if God was to snuff out the sun right now, we would still take about 8 minutes to miss not only its light but its gravitational pull.)

The “bad” news: in August last year a team of Australian scientists (led by Professor Paul Davies of Macquarie University, Sydney) revealed tantalizing evidence that c may have been slowing down over time. (The evidence is new but not the idea - to my knowledge it was first publicized by Paul Steidl in 1979 in his book *The Earth, the Stars, and the Bible*, and further popularized by Australian scientist Barry Setterfield in the 1980’s).

If we assume that the Aussies are as good at Physics as they currently are at cricket, then we may be on the verge of a revolution in our understanding of the universe. For a start, if c has been slowing, the universe may not be billions of years old as GR indicates (based on the long length of time it would light to reach us from distant stars if c is constant). Instead, the universe may be only a few thousand years old. This would explain the large body of scientific evidence that exists supporting the concept of a young earth and universe (see e.g. <http://evolution-facts.org/1evlch06a.htm>).

It's not just the Aussies who dare to question the status quo; since 1993 University of Toronto Physics Professor John W. Moffat has been pushing the view that c was much higher when the universe began, and changing at sudden brief intervals over time. He believes this would explain (through improved internal information exchange via higher speed gravitational waves) how the universe has maintained its remarkable cosmic uniformity in energy radiation and mass density distribution as it has expanded. (My comment: **GR** predicts the universe is expanding, apparently confirmed by the greater "red-shift" of longer light wavelengths reaching us from other observed galaxies, but these longer wavelengths could possibly be explained by light slowing down as it travels to us.) Moffat also thinks a past higher c would obviate the present theoretical need for "dark matter" (invisible stuff, its existence yet unproven, which scientists believe accounts for over 90% of the matter of the universe, and invoke to explain anomalies in the motion of the stars on the fringes of galaxies). Meanwhile, distinguished scientist and popular science author John D. Barrow, research Professor of Mathematical Sciences, Cambridge University, UK, has recently (1999) speculated that c has been steadily decreasing in proportion to the rate of expansion of the universe.

Maybe, as some Christians believe, God created the universe, like Adam, to appear old, so that Adam saw the stars that are, at today's earth-measured value of c , millions of light-years away. Or maybe light rays are not only bent in their path by gravitational fields (as **GR** predicted, with subsequent experimental verification), but slowed down by such fields, so that the c we observe in our Milky Way galaxy is much higher in the void of outer space. Or maybe (my own long-held view), in line with the laws of thermodynamics which show the universe is running down, c has been exponentially decreasing throughout the universe over the centuries from an initially infinite value in Genesis 1:3. Whatever the case, without a better understanding of light, we will always be in the dark. Let there be light!

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