Letters

VELOCITY OF LIGHT DEBATE

Dear Editor,

The question concerning the decrease or constancy of the velocity of light has been controversial and in many cases emotional. Many authors have made mistakes (statistics, misquoting, etc.), some of which are quite similar to what anti-creationists use in their own journals when criticising creationists.

In the last issue of the journal[1] the debate reached one low mark. Professor S. Prokhovnik and Dr T. Morris published a list of *c*-measurements, similar to which have been published on many occasions. However, in this article there is no critical evaluation of the data, corrections are left out, there is no comparison of measurements made with only one method at a time (to account for systematic errors in the methods), and not all measurements are reported. It is just a table of raw data! No one is impressed by that — those that believe *c* is constant will still believe so, and those that believe *c* is decreasing will still do so.

If this subject had been so elementary as Prokhovnik and Morris suggest, it is difficult to understand why it has been debated at all, in both secular (for example, **Nature** during 1934) and Christian journals (for example, this journal).

Mats Molén,
Umeå,
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REFERENCE

1. Prokhovnik, S. and Morris, T, 1993. A review of the speed of light measurements since 1676. **CEN Tech. J., 7**(2):181-183.

VELOCITY OF LIGHT PAPER

Dear Editor,

I am always happy to see researchers wrestling with the available measurements of the speed of light to prove or disprove constancy of c. The article by Professor Prokhovnik and Dr Morris[1] is, unfortunately, deficient in several critical areas.

(1) The Froome and Essen list presented by Prokhovnik and Morris is not a complete list of available data by any means. A comparison with Setterfield's list shows that the Froome and Essen list contains more than 100 fewer points.
(2) The radar values are not *in vacuo* data and the corrections are substantial. The inclusion of these three points seriously biases their only test.
(3) Perrotin's important measurement in 1901 is included in the Froome and Essen table but is not on the Prokhovnik and Morris list.
(4) The Hansen and Bol (1950) value is uncorrected for skin effect. The uncorrected value is 299,789.3 km/sec, but after correction it is 299,794.3 km/sec.
(5) Values such as Fizeau (1849), Foucault (1862), Cornu (1872) and Michelson (1878) are not today regarded as trustworthy data points.
(6) Froome and Essen state that radar and quartz modulator values are no longer regarded as accurate.

Comments (1) through (6) would adjust the authors' count to 16 values above and 10 below the current value. This is a data set highly biased in favour of the authors' hypothesis.

It is very important to assemble as complete a data set as possible, to edit out outliers, duplicates, secondary, inaccurate measurement-methods, and multiple (reworked) data points! Then and only then can statistical methods be applied.

Alan Montgomery and I have recently published our own independent analysis of 193 data points, edited to 120 values which we believe constitute a trustworthy set of measurements.[2] Alan and I are highly confident (~95% level), by several statistical methods, that c has decreased — regardless of the measurement method, size of the error bars, or 20 year interval in which the measurements were made. We also find confirmation that e, R and G are truly fixed constants, whereas h, e/mc, h/e, 2e/h are non-constant as one would expect from theory, if c is non-constant.

Researchers who would like to check our findings, compose their own table of edited data, and apply additional tests to the selected data may obtain a Macintosh Microsoft Excel diskette of our tabulations, or a reprint of our paper by dropping me a note.

Montgomery and I strongly agree with the authors when they urge further study of the working hypothesis that *c* is not a fixed constant. We are especially eager to uncover any additional data points or to infer from nature any 'fossil' (earlier) values of *c* prior to Roemer's data.

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REFERENCES

1. Prokhovnik, S. and Morris, T., 1993. A review of the speed of light measurements since 1676. **CEN Tech. J., 7**(2):181-183.
2. Montgomery, A. and Dolphin, L. T., 1993. Is the velocity of light constant in time? **Galilean Electrodynamics, 4**(5):93-97 (plus 7 pages obtainable from Lambert T. Dolphin).

STARLIGHT TRAVEL TIME AND THE UNIVERSE'S SIZE

Dear Editor,

Clem Butel's interesting ideas on the time starlight takes to reach the earth vis a vis the date of creation[1] begs the question, 'How far away are the stars *really* from us?' The nearest star is claimed to be four light-years away, the

farthest tens of billions. Yet evolutionary astronomical textbooks admit that these distances are only 'estimated', 'apparent', 'approximate', 'inferred', 'indicated', 'assumed', or 'guessed'!

Genesis calls the Sun the *Me'* or *Hagadol,* the Great Luminary, *'like a mighty man running a race'* (Psalm 19), with the stars referred to almost *in passim* (Genesis 1:16). Evolutionists revel in labelling the Sun as an insignificant Type G' star set at the corner of a minor galaxy somewhere at the edge of the universe. But evidence is accumulating that the Sun may be unique in the universe, and should not be classified as a star. The stars may be much smaller and closer than heretofore believed. Not even the Hubble Telescope shows them to be anything more than point-sources of light, which is all they may turnout to be!

A reading of 'Quasars, Redshifts and Controversies', Halton Arp, 1987, gives compelling evidence that quasars are not at the cosmological distances claimed for them, and that the use of the redshift as a measure of cosmic distance is invalid. Moon and Spencer ('Binary Stars and the Velocity of Light', 1953) argued for a universe between two and 15 light-years in size. Cogent geocentrists like Walter van der Kamp, Harald Heinze and James Hanson believe that the parallax and aberration circlet described by the stars are **real,** not apparent. Through simple trigonometry they have the diameter of the universe down to 120 light-days and all the stars being arranged in a huge equidistant *stellatum.*[2]

As for Barry Setterfield, the main proponent of a decrease in the speed of light, he has good personal reasons for not as yet replying to criticisms of *c* decay. In past issues of the **Technical Journal** and elsewhere he has amply demonstrated his ability to answer all criticisms of the theory, and it is understood that more discoveries on this subject and others are soon to emerge from his stable.

Amnon Goldberg,
London,
UNITED KINGDOM.

REFERENCES

1. Butel, C, 1993. Speed oflight. **CEN Tech. J, 7(2):** 199-200.
2. van der Kamp, W, 1988. **De Lahore Solis — Airy's Failure Reconsidered.**

It should be noted that the Moon and Spencer 'model' has since been widely discredited, most astronomers cannot conceive how simple trigonometry could measure the diameter of the universe, and Setterfield has, unfortunately, so far not been able to answer all criticisms of his theory in this or any other creationist journal.

— Editor.

HOW MUCH DID THE ANCIENTS KNOW OF THE HEAVENS?

Dear Editor,

I just finished reading Dr Bergman's article Teaching evolution through science fiction'[1] and found it most informative. However, one point piqued my interest. Dr Bergman states,

> *'The enormous size of the universe was not fully understood until this century and, even in the last few decades, our views of its vastness and complexity has been revolutionized. '*[2]

I recall C. S. Lewis, in one of his essays on apologetics,[3] made reference to the fact that Ptolemy (Claudius Ptolemaeus) was well aware of the size of the earth in relation to the visible stars. Lewis's point was that science had not undermined the 'naive' view of the universe held by the medieval theologians. In his **Almagest**[4] Ptolemy wrote:

> *'Now, that the earth has sensibly the ratio of a point to its distance from the sphere of the so-called fixed stars gets great support from the fact that in all parts of the earth the sizes and angular distances of the stars at the same times appear everywhere equal and alike, for the observations of the same stars in the different latitudes are not found to differ in the least.*
>
> *Moreover, this must be added: that sundials placed in any part of the earth and the centres of armillary spheres can play the role of the earth's true centre for the sightings and rotations of the shadows, as much in conformity with the hypotheses of the appearances as if they were at the true midpoint of the earth.*
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> *And the earth is clearly a point also from this fact: that everywhere the planes drawn through the eye, which we call horizons, always exactly cut in half the whole sphere of the heavens. And this would not happen if the magnitude of the earth with respect to its distance from the heavens were perceptible; but only the plane drawn through the point at the earth's centre would exactly cut the sphere in half, and those drawn through any other part of the earth's surface would make the sections below the earth greater than those above.'*

I would like to know if Dr Bergman is aware of this and have him elaborate on his understanding of the state of cosmological knowledge during the Middle Ages.

Larry Scroggins,
Pacific Grove, California,
UNITED STATES OF AMERICA.

REFERENCES

1. Bergman, J., 1993. Teaching evolution through science fiction. **CEN Tech. J., 7**(2):172-179.
2. Bergman, Ref. 1, p. 177.
3. Lewis, C. S., 1970. **God in the Dock: Essays on Theology and Ethics,** William B. Eerdmans Publishing Company, Grand Rapids, Michigan, p. 74.
4. **Great Books of the Western World,** Number 16: Ptolemy/Copernicus/Kepler, R. M. Hutchins (Editor in Chief), Encyclopedia Britannica, Inc., Chicago, London, Toronto, 1952.

The Author Replies ...

Historically, although some individuals have taught that the universe extends to infinity, before the advent of