Is There Really Evidence of a Recent Decrease in c? — A Response

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Evered[1] has tried to demonstrate that the statistical models of Norman and Setterfield are incompatible with other data restraints. This shows a naive understanding of the difference between a statistical model, which is fitted to specific data, and a theoretical model, which must conform to other data and relationships. The statistical models only show that data within the period concerned do, or do not, fit a particular model with coefficients significantly different than zero. In these tests Norman and Setterfield,[2] and Hasofer,[3] have the advantage that to demonstrate trend they need but one model, while Evered, and others, to demonstrate constancy must negate every model.

However, once theoretical considerations arise the advantage shifts. A theoretical model must fulfill other scientific criteria such as carbon-14 results. Norman and Setterfield must demonstrate that any proposed model fits all criteria, while Evered, and others, must provide only one exception to discredit it. Also, any serious theoretical model must have a mechanism which accounts for the model. No such theoretical mechanism and model currently exists.

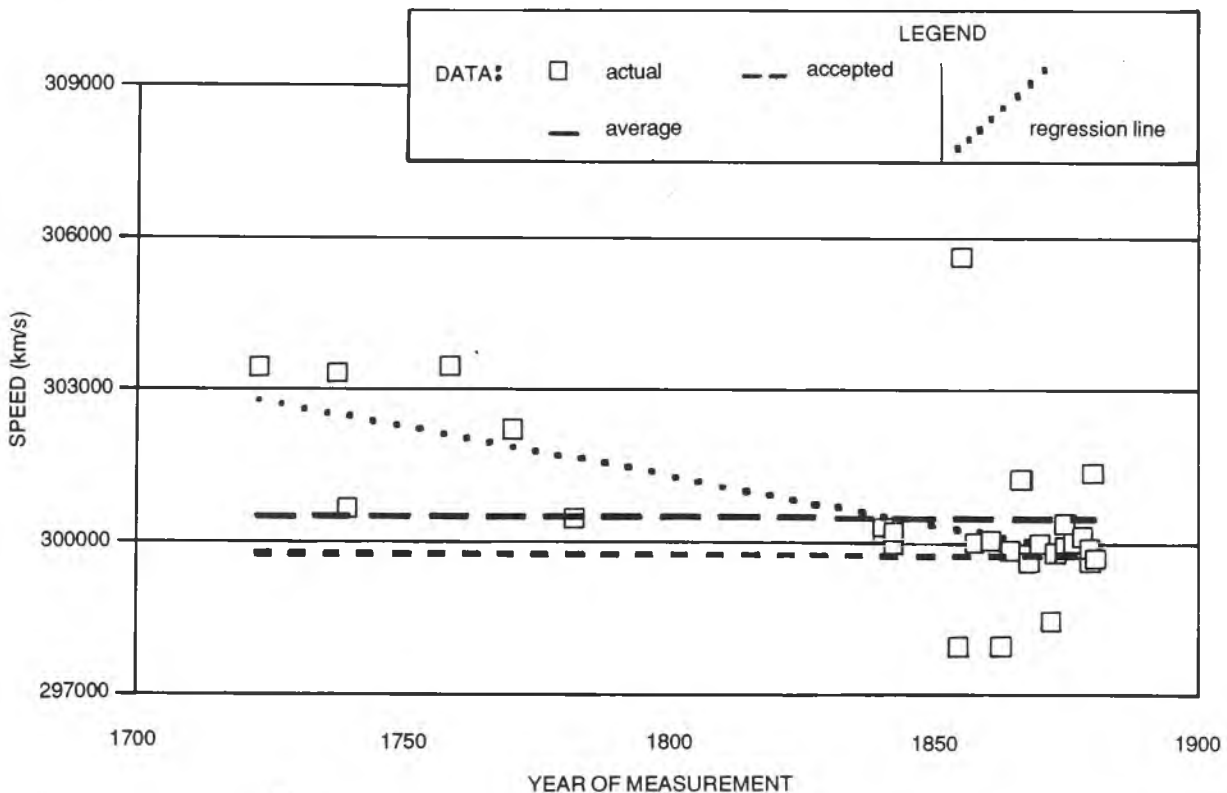The best model to date is the cosecant squared function up until 1961, with c constant at 299792.458 km/s

Figure 1. Velocity of light measurement (1723–1880), excluding those values obtained by the emu/esu and standing wire methods (because their error bars are very large and they contain a substantial number of outliers).

Figure 2. *Velocity of light measurement (1881–1940), excluding those values obtained by the emu/esu and standing wire methods (because their error bars are very large and they contain a substantial number of outliers).*
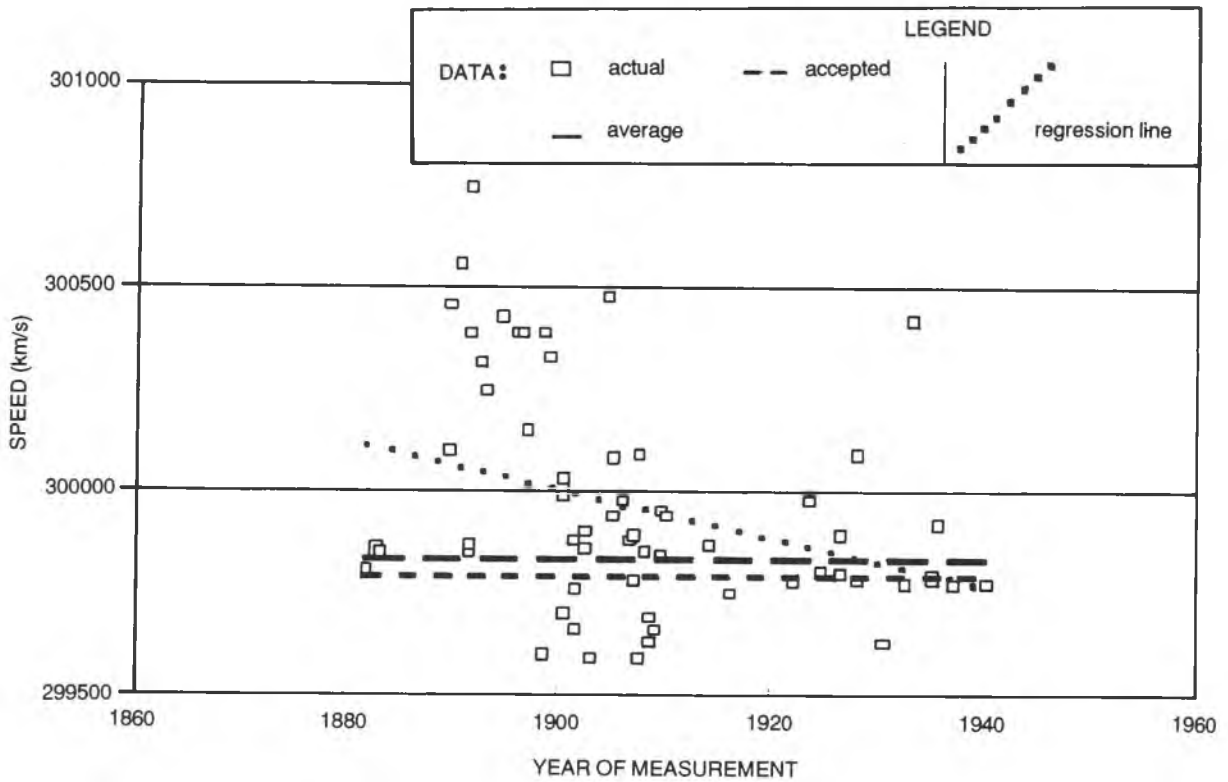

Figure 3. *Velocity of light measurement (1947–1983), excluding those values obtained by the emu/esu and standing wire methods (because their error bars are very large and they contain a substantial number of outliers).*
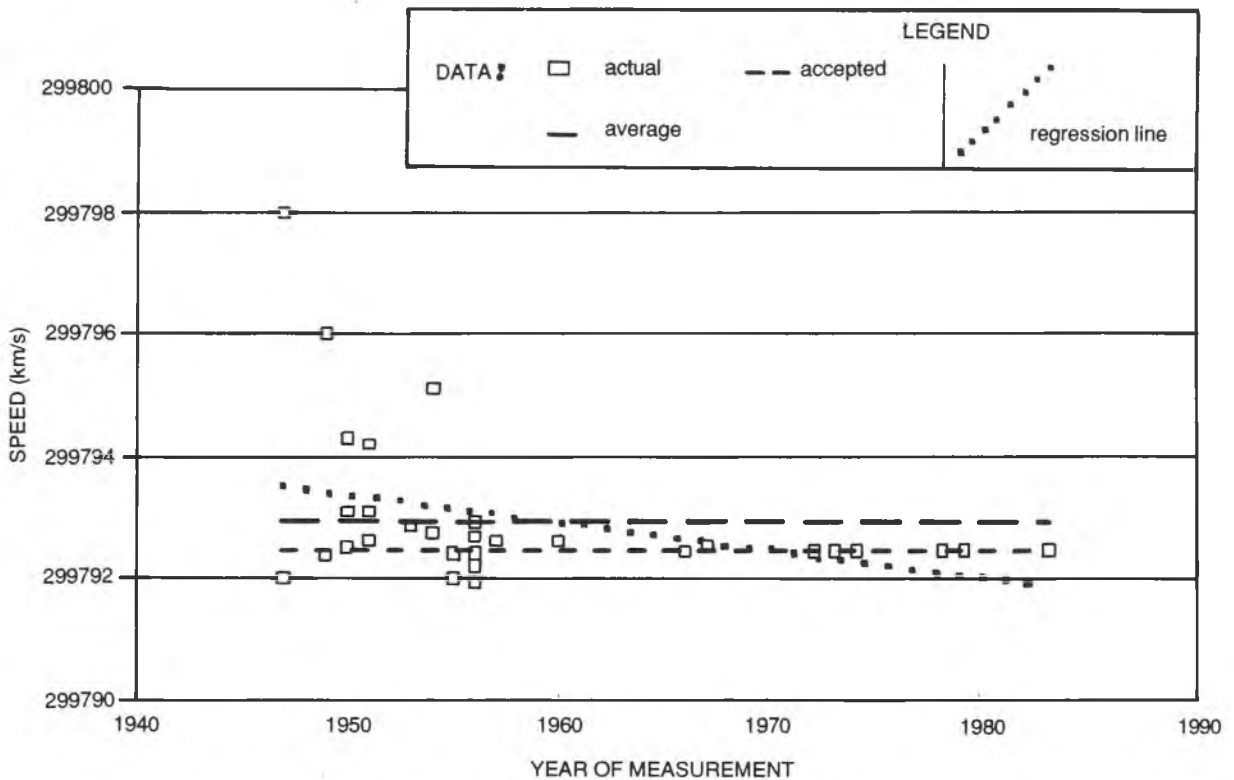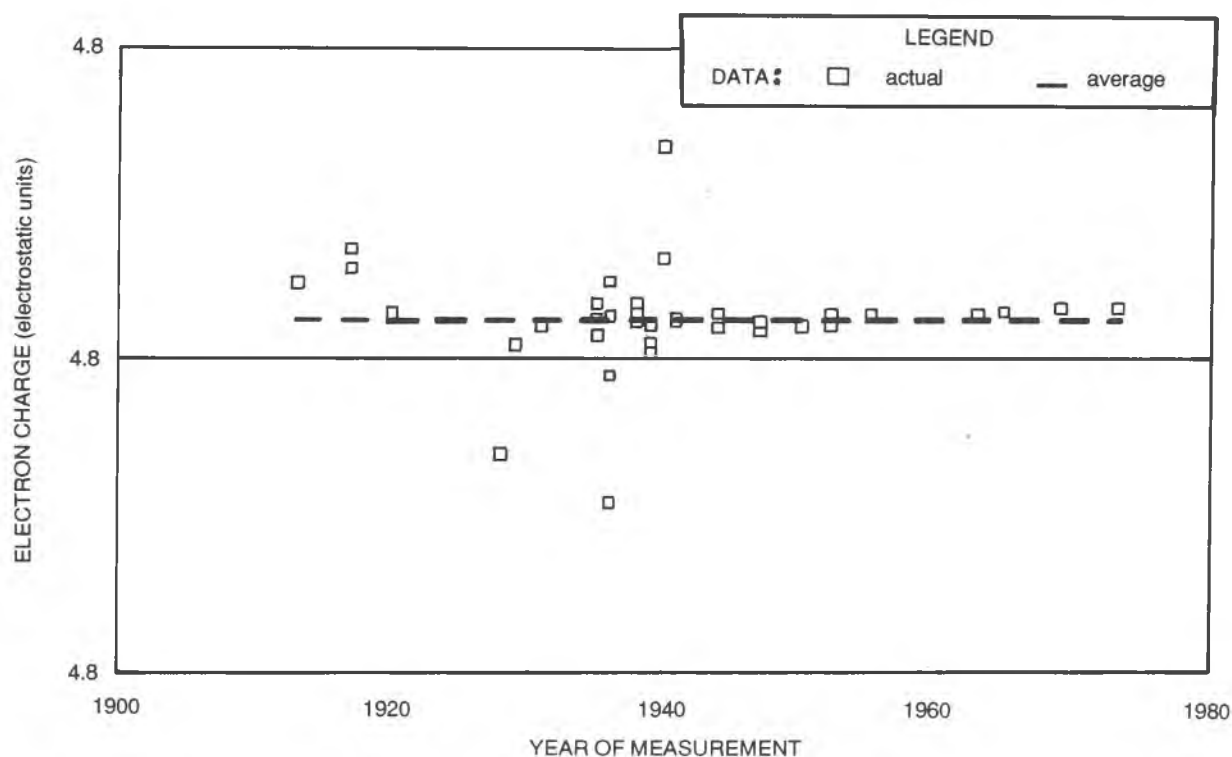
Figure 4. Value of electron change (1913–1973).

thereafter. Evered's rejection of this function as a theoretical model is not substantiated and therefore cannot be evaluated. But the onus is on Norman and Setterfield to provide a mechanism for the model, and this is where the matter has stalled. The failure to produce this is a major impediment, but it does not in anyway negate the statistical results which show a trend. These results require an explanation. If the velocity of light has not decreased in the recent past the trend in various data must be demonstrated to have alternate causes. What are these other causes which explain the consistent skew of these data? Evered gives no answer.

Evered's observation that the polynomial and dampened sinusoid models digress when extrapolated over large ranges is a straw-man attack. Different models are bound to have large differences at extreme values. Nobody has claimed differently. To say that they are like 'chalk and cheese' is to stumble at the unnecessary.

Evered graphs the values of hc and $\frac{q}{mc^2}$ to demonstrate that the results are incompatible with Norman and Setterfield. This merely reveals his biased approach to this whole subject. Even under a constant c scenario hc and $\frac{q}{mc^2}$ must be constant. If the results of the graphs in Evered's Figures 3 and 4 contradict a decreasing c hypothesis, they must also contradict, by the same logic, the constant c hypothesis!

Evered's Figure 5 is hopelessly out of scale. For comparison I include here some computer generated graphics with reasonable scales (see Figures 1, 2, 3 and 4). They tell a different story than Humphreys, Brown or Evered.

Lastly, I have to question why Evered has included nine articles on the history of this debate and yet misses the article by myself in the **Creation Research Society Quarterly** of March, 1990.[4] He mentions Brown's paper in the same issue, which was responding to my paper, so it is obvious that he knew about it. The question is, does Evered understand the tests in that paper and if so, does he have an answer? Until he does, I suggest that he withhold his judgment that 'decrease in c exists only in the minds of those advocating the theory.'

REFERENCES

1. Evered, M. G., 1991. Is there really evidence of a recent decrease in c? **CEN Tech. J., 5**(2):99–104.
2. Norman, T. and Setterfield, B., 1987. **The Atomic Constants, Light and Time**, Technical Monograph, Flinders University, Adelaide, Australia.
3. Hasofer, A. M., 1990. A regression analysis of historical light measurement data. **EN Tech. J., 4**:191–197.
4. Montgomery, A. L., 1990. Statistical analysis of c and related atomic constants. **Creation Research Society Quarterly, 26**(4):138–142.

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