

An Open Letter to the Participants
and Attendees
at the
"CHALLENGES TO PHYSICS AND ASTRONOMY"
Section
of
THE 75TH ANNUAL MEETING
of
THE PACIFIC DIVISION
of
THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

San Francisco, California
June 19-23, 1994.

My name is Shannon Fowler, I am the author of a book entitled "The Equations of Light" which refutes the special Theory of Relativity by showing that Einstein's second postulate for that theory is false. This I have done by a rigorous mathematical examination of the Michelson-Morley experiment, with which I assume you are familiar. Einstein cited this experiment as his authority for that postulate, which, as I again assume you know states that the velocity of light is a constant, unaffected by any translational velocity of the source. In doing this he made what would have appeared to be a logical assumption:

If the velocity of light was affected by the velocity of the source, as the experimenters expected, then the retardation of one of the beams with respect to the other should have taken place. Since it did not, the light velocity must be a constant.

That conclusion was never accepted by either Michelson or Morley, but since they could offer no other explanation for the null results of the experiment, that view prevailed among the high-moguls of the scientific establishment. Since the mathematics of STR are impeccable (Mrs. Einstein was an excellent mathematician); acceptance of the second postulate was tantamount to acceptance of STR. Thus was created, the world's classic example, probably for all time, of "garbage in - garbage out".

In retrospect it is clear that an intensive reexamination of M-M should have been undertaken before sainthood was conferred on Einstein. If this had been done I am sure that they would have discovered, as I have, that the second postulate is false, and STR would have died aborning, sparing the scientific establishment the devastating embarrassment it is going to suffer when it becomes evident that the theory that they espoused so readily, and protected so zealously and which they have glorified so proudly for almost a century as "mankind's greatest intellectual achievement" is, in reality, the most awesome distortion of the truth that has ever been foisted on the mind of man!

A few years after my retirement from the U.S. Bureau of Reclamation in 1978, I undertook just such an examination as I have suggested above. As a result I found, as they no doubt would have, that the reason for the null results of the M-M experiment is almost unbelievably simple. *Michelson and Morley neglected to take the Doppler Principle into consideration.* Had they done so, they would have found, as I have, that in the transmission of light between any two points in a moving coordinate system, such as that comprising the M-M experimental layout, *the apparent velocity, c' will always be equal to c , regardless of the velocity of the moving coordinate system or the angularity of the light beam with respect to the velocity vectors of the source and the observer.*

The truth of the above conclusion with respect to the M-M experiment can be shown by direct consideration of the data provided by the geometry of the experimental equipment, the Doppler Principle, and the M-M equations: $c' = v - c$, $c' = v + c$, and $c' = [c - v^2/c^2]^{1/2}$. These equations are reductions of the general equation, which has yet to be developed. Although each is applicable only in the specific direction imposed by its angular orientation with respect to the velocity vector of the source, used in conjunction

with the heretofore neglected Doppler Principle they are adequate for explaining the null results of M-M. They are not adequate however for the complete exposition of the factors involved. To achieve this we must develop the general equations for the true velocity, c' , with respect to the source, and c'' , the apparent velocity with respect to the observer.

The velocity of the transverse beam in M-M is given by the reduced equation, $c' = [c^2 - v^2/c^2]^{1/2}$. This happens to be the equation for the (y) coordinate of a point on a circle of radius c , which has a corresponding (x) coordinate equal to v , the magnitude of the velocity vector of the source. (This is the case because, by construction, as shown in attached Figure 3.6, the velocity vector of the source lies on the x axis of the moving coordinate system). It is obvious from an examination of Fig. 3.6 that at $v = 0$, $c' = c$; at $v = c$, $c' = 0$. These also designate points on the circle of radius c . It is also obvious that the magnitude of the velocity vector of the emitted light, which will extend from the source to the circumference of the circle, will be dependent upon the angle α between that vector and the projected vector of the source. This enables us to derive the general equation for the magnitude of the velocity vector of any light beam transmitted at any angle from any source moving in any direction at any velocity between 0 and c . As shown in Fig. 3.6 this turns out to be $c' = [c^2 - v^2 \sin^2 \alpha]^{1/2} - v \cos \alpha$, where c = the normal velocity of light, v = velocity of the source, and α is the angle between the light vector and the velocity vector of the source. An examination of the relation of the M-M equations with regard to this equation shows that they are all proper reductions of this general equation, each appropriate to its geometry.

Turning next to the consideration of the manner in which the true light velocity vector c' is transmuted by its interaction with the velocity vector of the observer into the apparent light velocity vector c'' , we find, as shown in the attached Fig. 4.2, that

$$c'' = [(c' - V \cos \beta)^2 + (V^2 \sin^2 \beta)]^{1/2} \text{ where}$$

V is the magnitude of the velocity vector of the observer and β is 180° plus the angle θ which is formed between the observer's vector and a projection of the vector of the intercepted light beam c' . Since $c' = [c^2 - v^2 \sin^2 \alpha]^{1/2} - v \cos \alpha$,

$$c'' = \left[\left([c^2 - v^2 \sin^2 \alpha]^{1/2} - v \cos \alpha - V \cos \beta \right)^2 + (V^2 \sin^2 \beta) \right]^{1/2}$$

When the observer and the light source are in the same moving coordinate system as was the case in M-M, $V = v$ and $\beta = 180^\circ + \alpha$, from which, since $\sin \beta = \sin(180^\circ + \alpha) = -\sin \alpha$, and $\cos \beta = \cos(180^\circ + \alpha) = -\cos \alpha$. Making these substitutions:

$$c'' = [c^2 - v^2 \sin^2 \alpha - v^2 \cos^2 \alpha + v^2 \cos^2 \alpha + v^2 \sin^2 \alpha]^{1/2} \text{ or,}$$

$$c'' = c.$$

I finished the manuscript of *The Equations of Light* in 1988. I submitted it to the press of the University of California, my alma mater, and to several other mainstream publishers. None was interested. I finally decided to pay for its publication myself. I sent it to a "vanity press" publishing firm in New York City whose name I shall not mention. It was finally published in 1989 after a long and bitter exchange of increasingly acrimonious correspondence with my editor.

I have said that it was "published", but "printed" would probably be a more appropriate word. "Published" implies some sort of effort at dissemination and that did not occur. At the end of the first six-month accounting period they had not sold a single copy. Shortly before the end of the second six-month period I placed a "blurb" in the Books by Members feature of NARFE, the monthly magazine of retired federal employees. This resulted in a brief but modest flurry of sales, probably to friends and associates from my work years. Since then I have had no communication from the publisher. They have never, on their own initiative, sold a single copy of my book. It's as if they have stacked the remaining copies in the darkest corner of their warehouse, covered them up and removed my name and address from their files.

My wife wanted me to sue them but I have always been as cynical about lawyers and the workings of the legal system as I have become about publishers. I concluded that I am too old and too unsophisticated in legal matters to cope with the hassle that such cross-country litigation would entail, and that I would probably just be throwing good money after bad. We finally decided to find an honorable publisher and arrange to have it re-published post-humously with the proceeds from our estate.

One of the things that I have learned in living out of my three-score and ten is that the scientific community is only slightly less zealous in defense of dogma than is the religious community. In its infancy, science was under the self-appointed guardianship of the religious community, fortunately, when it reached maturity, it abandoned the practice of its guardian which was to invite heretics in for a barbecue or a hemlock cocktail. It chose, instead, to adopt a much more subtle, though hardly more humane tactic: it ignores them. It found this to be much less sanguinary and almost equally effective. It is especially effective in dealing with obscure mavericks, such as myself, who can easily be denied a platform from which to express their views or defend and expand them.

If I needed any reminder of the above state of affairs, I received it while I was preparing the manuscript of my book. I read a review in the Los Angeles Times of a book by Clifford M. Wills entitled *Was Einstein Right?* The reviewers' opening paragraph was as follows:

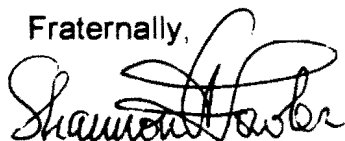
First things first. The answer to the question posed by the title to this is yes. Albert Einstein was right. If Clifford M. Wills, a physicist at Washington University in St. Louis, had come to a different conclusion, he and his book could be dismissed; there would be no need to say any more about them.

I have observed that this is not an isolated example of the lack of open-mindedness in the scientific community in regard to the theory of relativity. Unfortunately, as a result of four generations of brainwashing it appears to have become the general attitude. The theory is hotly defended, even by those who do not understand it. They base their defense on the fact that they have been told that it has provided solutions to many perplexing problems that appear otherwise insoluble. To this I can only say that if alternative solutions cannot be found within the context of the variable nature of electromagnetic radiation that I have presented, then the search for the truth should continue elsewhere. I assure you that it does not reside in the application of the Lorentz transformation factor to the alteration of space, time, and mass.

The fact that meetings and discussions such as these in which we are participating are being held under the auspices of such a venerable organization as AAAS is, to me, the most encouraging event to occur in science since the Catholic Church decided, a couple of years ago, that maybe Galileo wasn't such a bad fellow after all. I hope that this new found flexibility and spirit of charity and openness will grow and thrive throughout the scientific world, but especially within the AAAS, and that a similar program will be provided for in the agenda for the meeting in Vancouver next year. If so, I shall, if possible, make a formal presentation of this material at that time.

I am pleased at the prospect of meeting and exchanging views with such a distinguished group of fellow STR dissidents. Since all of my work has been done in a virtual intellectual vacuum, I have truly come to know what it feels like to be a voice crying in the wilderness.

Fraternally,



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P.S. My publisher "gave" me 100 copies of my book. I still have a few of these left. If you would like to have a copy, please send me your name and address and for as long as they last, I will send you one. Far better that they should be in your libraries than in my closet.

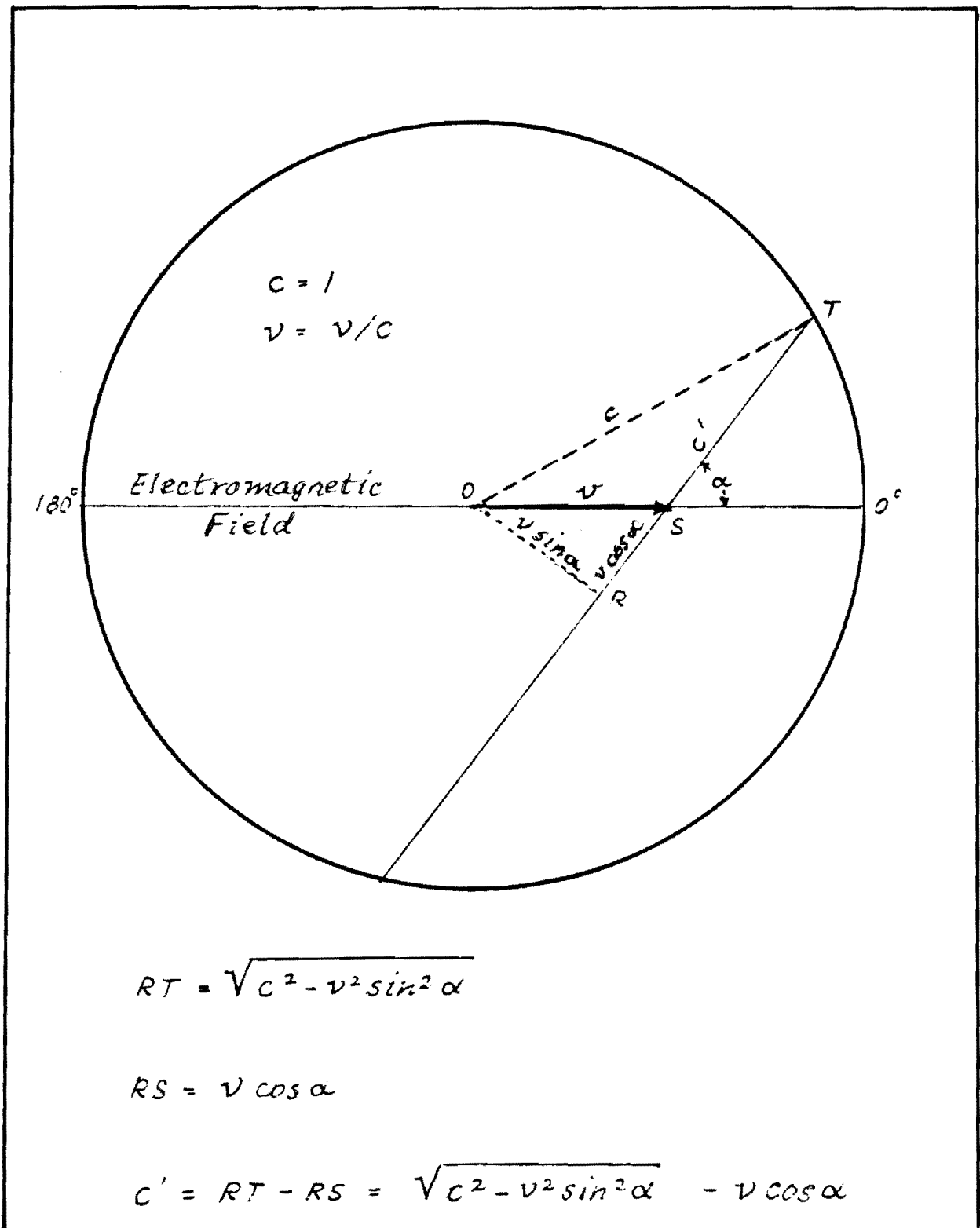
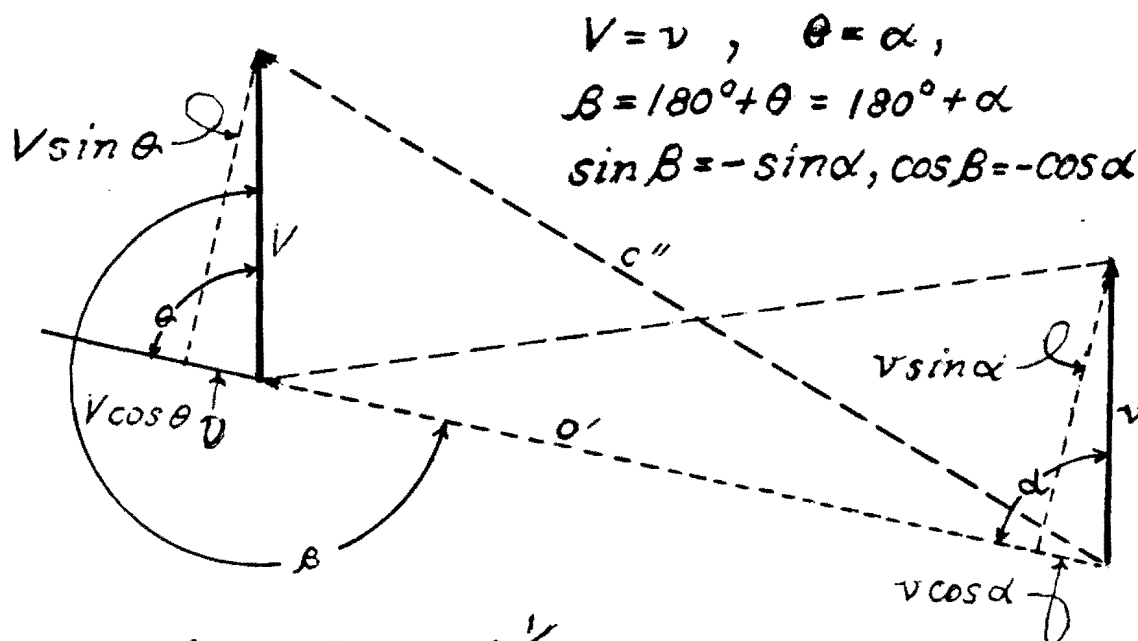


Figure 3.6 Development of general equation for true velocity of light from a moving source. (From The Equations of Light)



$$c' = (c^2 - v^2 \sin^2 \alpha)^{\frac{1}{2}} - v \cos \alpha$$

$$c'' = [(c' + V \cos \beta)^2 + (V^2 \sin^2 \beta)]^{\frac{1}{2}}$$

$$= \left[\left[(c^2 - v^2 \sin^2 \alpha)^{\frac{1}{2}} - v \cos \alpha - V \cos \beta \right]^2 + (V^2 \sin^2 \beta) \right]^{\frac{1}{2}}$$

Since $\cos \beta = \cos (180^\circ + \theta) = -\cos \theta = -\cos \alpha$,
 and $\sin \beta = \sin (180^\circ + \theta) = -\sin \theta = -\sin \alpha$,

$$c'' = [c^2 - v^2 \sin^2 \alpha - v^2 \cos^2 \alpha + v^2 \cos^2 \alpha + v^2 \sin^2 \alpha]^{\frac{1}{2}}$$

or

$$c'' = c .$$

Figure 4.2 Reciprocal transmission of light between two points in a moving coordinate system. (From The Equations of Light)