

MAXIMAL VISUAL ACUITY AND THE INSTANTANEOUS ONE-WAY MEASURE OF LIGHT BODIES

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INTRODUCTION

In reference to the previously published paper "The Instantaneousness of Light and the Four Models of Light Measurement" by the General Science Journal on 9-17-08, if light is instantaneous, then what is the "mechanism" which makes this possible? Of course, this is the power of man to see. This is what enables us to see instantly. Anthropic theories connected to hard science have, historically, led to unsuccessful results. But there is no other way to approach an explanation to instantaneous light. Man has a pre-quantity of magnification in his eyesight, which has not been given proportional meaning. When we talk of our own magnification we are intimately aware of what is proposed. Anyone who "sees" knows of our proportion.

HUMAN MAGNIFICATION

We see ourselves on a size scale, in the middle, of a larger and smaller world. There are planets and stars well within the bounds of our unaided eye that can be seen. We are able to observe more stars with powerful telescopes. At the same time, there are objects that exist that are so far beyond our abilities to be able to see. The same thing is true within the microscopic realm. So we see ourselves as existing somewhere in between these two realities.

We even lie in the middle when it comes to the electromagnetic spectrum. We see ourselves as being part of that spectrum, not separate from it, but also in the middle, with gamma and radio electromagnetic radiation on either side.

We measure our power to "see" on a variety of magnitude scales. Stars are measured from a standard star and say that it is "one times magnitude". When we use telescopes or microscopes, we say that a particular telescope or microscope has 100x power. This means that this has 100 times the magnification of man's power, which is equated to be 1x.

This is where the confusion begins. We picked the random number 1x, because of its' simplicity, but, we could have just as easily chosen the number 2 and developed the very same system. In other words the "number one", pertaining to man's visual acuity carries no meaning, other than for being a simple number that is easily divisible. It is a random chosen number picked to represent the power of man's vision, and nothing more.

MAXIMAL VISUAL ACUITY

Here, is prescribed a possible solution which would give man's power, a meaningful number. We know the power of man's vision. There have been many acuity measurements performed. But, this data has not been included when it comes to physics theories of light and motion. I also believe that it is essential that we include this data because it will lead to a new understanding. If we claim that we are part of the electromagnetic spectrum and if we claim that we are "in the middle" size-wise, then why shouldn't we include a meaning that is fundamental to the process of science, namely human vision?

Suppose we were able to establish a magnitude system based on not the number 1x, but on a number which is meaningful. So, we do this by means of deriving some sort of proportion which better defines the power of man's vision. We do this by defining visual acuity. It at once gives us a size and a distance. According to Guyton, the maximum acuity of vision at 1mm is 10 meters (there are a multitude of ways to measure visual acuity, but this one will be used, here, as the model) (1). Here we have a proportion. If we divide 1mm into 10 meters, we have a whole number 10,000, equal to the number 1 of conventional acuity power. The only difference is that this number 10,000 has meaning. For every unit quantity of object size, there exists the ability of man, to see this object 10,000 times greater in distance, than the size of the object

itself. So if we could just as easily use the number 2x to build our conventional magnitude model, why not use the number 10,000x, or whatever the strict value of MVA is, to create a magnitude system of meaning and value?

What does this number 10,000x mean? Well, it means a number of relative size, that could be compared to the concept of zero magnitude, or having no magnitude powers whatsoever- a zero theoretical point of magnification.

But, how is this going to be an advantage to the system that already exists? The numbers will be different, they will be 10,000 times higher, but what use, even though we are accommodating for true human power, are they?

So, if we attach a 100x telescope, or microscope, we are really seeing objects that are 1,000,000 the size larger than this theoretical zero.

When we take a 100x telescope and look at the moon for example, we see the image of the moon larger, but how much larger? We as scientists do not pay too much attention to these facts. We look into the scope, we see that it is larger, but we do not pay too much attention to the degree of this enlargement.

COSMOLOGY

We can easily see the sun and moon. Given the size and distance dimensions of the sun and moon, and we can easily calculate these into whole number proportions. Actually, since the sun and moon are not always the same distance from earth, the sun's magnitude proportion is between 105x and 109x, and the moon varies between 103x and 117x. They are very nearly the same proportion. Since they are less than 10,000x, they can easily be seen by the observer with the unaided eye.

A system of this sort cannot find meaning until it is applied. So all objects that are greater than 10,000 x in value will require the use of a telescope or a microscope. All objects that have less than 10,000x magnitudes will be able to be observed by the unaided eye.

For instance, Mars can be seen with the naked eye sometimes during the year because it comes in close proximity, enough to fall below the 10,000x magnification.

This is where the definition of clocks comes in. This is where the limit comes in. This is where humans have found a limit. This is how a one-way, two-clock measurement has found its' limits. This is where problems with time dilation occur. Time dilation and length contraction are not supposed to occur unless we are talking about transporting a clock near or at the speed of light. It is often assumed that a moving clock "slows" with respect to a stationary clock. But this only applies to the speed of light or objects traveling at or near the speed of light. If clocks exhibit a "slowing" effect when in motion here on earth, then this must be a mechanical problem versus nature, and not the time dilation or length contraction that Einstein had described.

The clocks are the problem. If no one is willing to believe that man can transport a clock, synchronized with another clock that is stationary, then there is no hope for the construction of another system, other than the GPS system. The GPS system, operates perfectly well when tested. But this is a near field system, not dependent on the maximal visual acuity of the far field.

CONVENTION

In a way, since radar, mankind has not needed a visual system for communicating. What is so advantageous about low level radiation systems, is that they are able to be coded so that information can be transmitted. There has never been a need, for instance, for the astronauts to send a message home, not by radio signal, but by light signal. Man finds meaning where it suits him; he does not look for something other than what is useful. Since light signal experiments have not really been much use in physics proper, the meaning, although it may be truthful, is at the same time useless. Until we travel to the outskirts of the solar system, or perform some meaningful one-way experiment, are we going to need the use of light signaling.

TWO-WAY, TWO CLOCK

Remember Galeleo's old experiment of the lanterns on the two hills? This paper is at the crux of Galeleo's problem. To date, we still have not solved the two-way, two-clock measure. Einstein uses the two-way, two-clock model as if we already reproduced it in a lab. He takes this concept at attributes this to his

theory. He takes a particle theory (photoelectric effect) and blends this into a wave theory by saying that these particles come from discrete quanta is a most ingenious postulate. The theory of special relativity smacks of the imagination. It invites time travels. It invites unknown dimensions. It invites everything but experimental truth. But, at the same time, the special theory of relativity, because it is the study of light, has kept the concept on instant light alive. Relativity has a ball and chain. It drags it with wherever it goes. It's called "action at a distance". So, are human beings slightly shortsighted in not realizing that science can eventually study subjects that are necessarily out of bounds? That if we do have the wisdom that we proclaim to be a model which recognizes truth, then we would feel the urge to fulfill Galeleo's dream of performing a two-way, two-clock experiment like he would have wanted it. But, in truth, Galeleo's model is nothing more than two, one-way, two-clock experiments, since Galeleo himself would have been satisfied to know the speed of a single lantern.

CAUSE AND EFFECT

This brings us to cause and effect. We are human receptors of light. We are an analyzer. When the analyzer is removed from the apparatus, there is no light. Once it is inserted, light is created. According to Sears, Zemansky, and Young:

When a polarizer and an analyzer are mounted in the "crossed" position, that is, with their transmission directions at right angles to each other, no light is transmitted through the combination. But if a doubly refracting crystal is inserted between the polarizer and analyzer, the light transmitted through the crystal is, in general, elliptically polarized, and some light will be transmitted by the analyzer. Thus the field of view, dark in the absence of the crystal, becomes light when the crystal is inserted (2).

The act of seeing cannot be separated from the source of light- they operate as a single apparatus. The delay within this apparatus is inherent, such as the time a photographic plate takes to expose, and not the speed of light c . It is this same delay which exists within Fizeau's apparatus. Light sources and the observer, operate as one, instantly. More importantly, what are the limits of maximal visual acuity, and what we can do with them?

ONE-WAY, TWO-CLOCK EXPERIMENT

The experiment is of the most practical kind. It takes timed light source and transports the apparatus to a great distance, and compares the times with smaller distances to reveal that either light is instant, or has a delay, which the conventional theory states. But, in this manner, and in practice, it is not as easy as it seems. If we want to transport a clock to a great distance, with a light attached to it, to go off at a specific and certain time, then what would be the difficulty in that? The answer to this question is the limit of maximal visual acuity. There is a profound limit to which mankind operates. It cannot see things too small or too far. It operates in the middle and within a limit. So, not only do we have the possible problem of slowing clocks in transport, we have a limit of seeing.

For instance, assume that we transport a clock 300,000 km, the equivalency of one second of speed of c . The distance of 300,000 km is used, because this is a measurable baseline, or time gap, to find out if light is instantaneous or whether light travels at c . What does the size of the light need to be in order to be seen by the observer? Well, we can plug in the distance 300,000 and divide it by MVA which is 10,000, and realize that, to be able to reproduce a light source which is visible to the unaided eye, 300,000 km away, is a light source 30 km, in diameter is required. There is a weakness of man's maximal visual acuity here. At a distance of 300,000 km an object must be at least 30 km in diameter in order to be seen. A 30 km lighted object is not very easily manipulatable. The truth is, that, anything short of a nuclear explosion in space, and this will be accompanied by a delay, of course, would have to occur before the event can be realized.

This is the problem; we can attach a 100x telescope to this 300,000 km distance and magnify the object. Now we only need an object which is .3 km in diameter. Even more powerful telescopes can whittle this size number down. A 100,000x telescope would require, (if our magnifications are correct), a size of .0003 km, which is 3 meters in diameter. We can transport a light with a clock 300,000 km away with a specific time to go off, and measure the delay, if the light source size is at least 3 meters in diameter and we use a

telescope with 100,000x power to prove whether light is instant or not . Three meters is still 10 feet. This is still a fairly large object to illuminate. What is also enormous is the distance required just to get a baseline, a one second of time delay of the theoretical value of the velocity of light c . The moon would be the perfect place to perform a light experiment in this way.

So this is the proposition. We try to perform a one-way experiment, in a most practical manner, only to learn that this is not as easy as it may seem. To transport a lighted object 300,000 km. in distance, with a clock attached to it, is very difficult. The size requirement of the object used in order to fall within the realm of man's visual acuity is also very difficult. In fact, it is very difficult to derive a measure of this sort, because we have not yet progressed far enough in science to reproduce this experiment, possibly, until now.

SUMMARY

In summary, the fastest mode of communication is the light signal. Once this is realized, a light signal may be encoded to transport information instantaneously by some sort of Morse code of light body signals.

REFERENCES:

1. A.C. Guyton, "Function of the Human Body", 3rd ed. (Saunders, Philadelphia, 1969), p. 296.
2. Sears, Zemansky, Young, "University Physics", 7th ed. (Addison-Wesley Pub. Co., 1987), p. 856.