

Light in Space

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ABSTRACT

In addition to refraction and reflection in the nature of light along with its retardation by compression or expansion due to a change in density, and the resultant change in velocity, there is still another factor called "Dislocation" that does not impair its velocity, but it does impair its straight-line trajectory. This essay explains how and why, along with the updated mathematics in spectral shifts to the radial velocity of any object.

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Received: November 16, 2024; Accepted: November 21, 2024; Published: November 29, 2024

Keywords: Light, Density, Velocity

Essay

Atmospheric Prism

The sky appears blue, not because it is blue, but the shorter blue wavelengths are cast upwards to give the sky its blue deception. And by the same token, the red sky in the morning, or at evening are again phenomena of light in its refraction, which produces a dispersion of the waves each according to their wavelength.

This is not something I should have to teach; hand-held prisms and the rainbow in the sky are well-defined subjects unto us. Yet with all this common knowledge in our backyard - we fail to realize how over the fence in our neighbor's yard - the grass is also green.

In reference to Figure 1, the sun shining brightly that for good reason I placed within a prism in order to prove a point. By what phenomena of nature is that light of the distant star refracted to give us the illusion as if it is located at what is noted as - the apparent location from its real location?

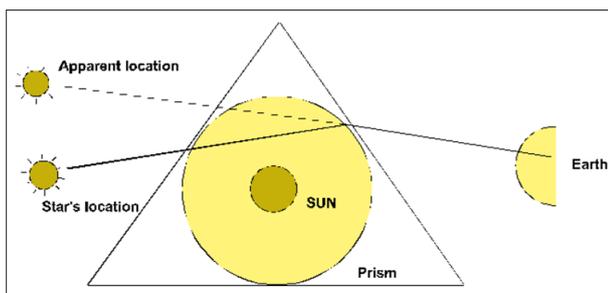


Figure 1: Light from a Star Curves (Deflects) to the Atmospheric Prism, Just as the Sun Appears to be above the Horizon when it is below the Horizon. This along with many others again Proves Einstein's Folly

Obviously, the light of the star is simply refracted by the atmosphere of the sun, and has nothing in common with any gravity as Einstein made it out to be.

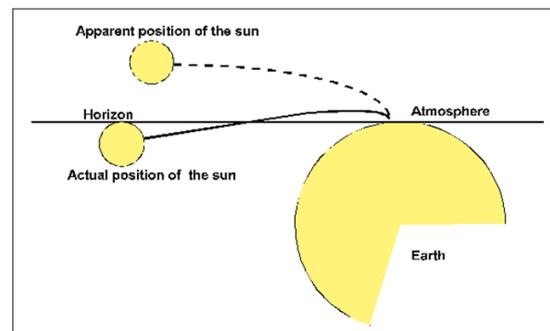


Figure 2: Sunlight Refracted by Earth's Atmosphere

As thus the light of the sun or any source is refracted by the atmosphere so it is refracted in passing through the atmosphere of the earth likewise illustrated figure 2. And the rainbow is clear evidence of light's refraction, as is every man-made prism. We therefore are to awaken to reality.

Light now is a magnetic coordinate on the move, while gravity finds its attraction by and upon the inertia of matter, **wherefore light and gravity are two very distinct entities, neither one having anything to do with the other [1].**

If light were to bend by the gravity of the sun, then it would do the same upon the earth, and no straight line of light would be found, and lasers would be useless. Nor would we have GPS since that is by wavelengths all the same. Just as an apple falling from a tree has nothing to do with a vehicle rolling down the road so gravity is totally oblivious to the nature and movement of light.

And yet light will travel by curvaceous tracks but for an altogether different reason, and that is what this essay is about to show that aspect of light, and its instantaneous acceleration over and above its well-known deflection, and refraction, as also its retardation.

When the light of a star comes to graze the sun by its atmosphere it affects that light in three ways. No 1: It slows down for distance in time. No 2: It refracts by striking upon that atmosphere out of the normal. No 3: It undergoes relocation in and by the media of that atmosphere as it moves in the circular with the rotation of that sun

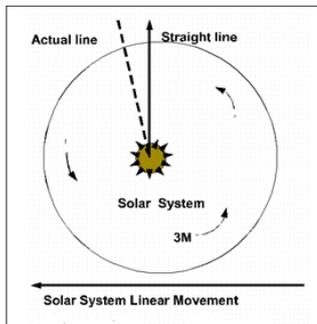


Figure 3: Dislocation of the Trajectory of Light

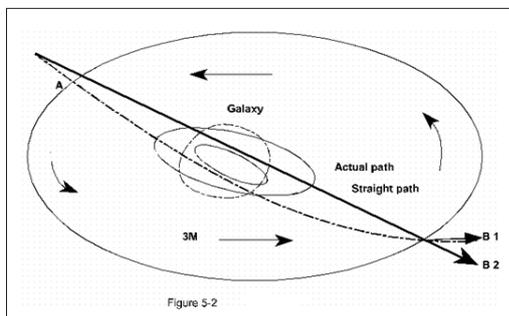


Figure 4: Dislocation of Light as it Moves through a Moving Media that of Our Solar System.

Something to that effect may be shown by Figure 3 and 4. As the light leaves the sun for mother earth it must pass through 93 million miles of so-called empty space, since then space is never empty or else light would not be able to travel through it. Light for its coordinate is at all times dependent upon the media for its mode of travel. And when that media moves into a direction that is not directly in line with the trajectory of the light itself; the straight-line trajectory of that light is affected by it. If per example the media is moving at a 90-degree angle to the line of light, it would so to say be carried sideways, the proper term being “dislocation”.

As therefore the directions of the two vary from zero to 90-degree difference so the degree of relocation varies accordingly. This cannot be seen nor measured on earth since light for its velocity can encircle the earth about six times within one second, but from the sun it requires eight minutes to reach us. And even within those eight minutes its curvature by relocation shall be small all because the speed of light is so much greater than the speed at which the media moves relevant to its direction of movement, like our earth at a mere 15-km/s compared to 300.000-km/s.

And so let us be realistic to gather logical evidence. Light when it moves has no preference as to what atom is ahead of it, as long as it is small enough so that it may pass around it, but it is imperative for the atoms to be at equal spacing in order for the light to stay in a

straight line. If all of a sudden, the atoms are packed closer together its format will be compressed, (blue shifted) or when striking out of the normal at a greater spacing of the atoms like above a hot roadbed; it will not only red shift but alter its trajectory as well.

As thus light encircles the atoms in its path all of them at equal spacing and these move at a variance to the line of light – the light being dependent upon them is moved with them. If thus in our solar system the media between the earth and the sun moves at the same clip as the earth, and we compare 15 km/s verses 300.000 km/s the degree of relocation will be minimal.

And though it may be small it nonetheless exists and comes to something more visible when light has to travel at a variance for a day or a month at the time. Or when we travel to a distant star following its light; that may not be the shortest path, but at least a sure way of getting there. The only velocity of light now that the current world of science knows about is the one that was measured. We have yet to discover how to calculate it, nor did it dawn on us that there are always **two velocities of light to reckon with**. And so, bear with me to enlighten us in the mode of light.

We do know that light is susceptible to changes in density, and how that density effects its relative velocity, “relative” meaning its distance in time, verses that speed of light called “its constant”. And to show how that comes about whereby we can always mathematically obtain the velocity of any wave; our reference will be to illustration figure 5.

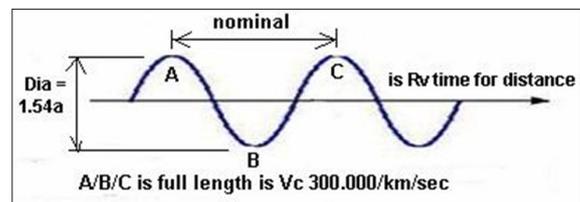


Figure 5: How to Calculate Wave Velocity for Distance in Time

From “A” to “C” (the crest-to-crest measure) is the nominal length of the wave as it rotates forward around the perimeter of the atoms in its path. The reason that it rotates is because all wavelets are at all times formed (introduced) in that manner, **and are at all times singular wavelets**, like a code or indent transported by the all-pervading movement that as such is called the fundamental movement of nature, and since; as far as we can determine; it has a constant at the rate of 300.000 km/sec.

The same then is often referred to as the magnetic motion that as such is throughout the whole universe forming and upholding all the mass within it, stars, galaxies, planets, and all else. That fundamental movement in velocity then is procured by what is yet more fundamental by which all atoms come to their nature of being. But that is deep seated which in my youth I kept for man to speculate upon.

As thus the format of the wave proceeds from point “A” to “C” it does so over “B” seeing it rotates around a perimeter being driven (or taken along) at the rate of 300.000 km/sec. Since thus within this single wavelet the format is to pass around a circumference (A/B/C) the net velocity of the whole is somewhat reduced compared to that velocity it would have traveled in a straight line from “A” to “C”.

Light therefore cannot be thought of nor calculated on any single line because **it is a wave**, and **a wave presents an angular moment to be incorporated in the calculation for its velocity**. The impossible notion where light would travel in a zigzag formation would also have to include its angular moments. But since that has been defeated by numerous others there is no sense going into that. The formula by which to find that velocity then for factual distance in time (Relative velocity) is simply to add the circumference to the nominal length (as the real full length) divided into the velocity of constant, and that then multiplied by the nominal length.

Example: length 7000/angstroms, amplitude 1.5414 angstroms X 3.14 = 4.84 + 7000 = 7004.84 into 300.000; resultant times 7000 is 299.792 km/sec

The diameter or amplitude of light as I noted at 1.5414 angstroms must be correct since it comes to the velocity at which it was factually measured. Any other wave like those of radio is then bound to travel around thousands of atoms within its amplitude, while for light it is around single atoms. If not so then light could pass through walls like those of radio, and we would never see the surface of anything.

Wherever the atoms are small enough for light to pass by it will appear transparent. That is why our air is transparent light finding no terminal at these atoms. In water, like in the ocean, the light may pass around that oxygen atom of the water molecule about 70% of the time, but sooner or later the forward end of that wavelet will strike upon the connecting points of those two hydrogen atoms and be terminated. That is why light passes in water for a limited distance, the shortest of all about 600-ft down. The clouds are seen in the sky because they are made up of water molecules.

As now the electrical wave is at all times a **“continues”** format, and that obviously so since at all times it is connected to a source, and likewise those of the linear magnetic flow always connected to a source or inhibiting one, yet the latter shows itself in circles rather than conventional waves.

The electrical as a rotating magnetic format shows itself in the same manner like any magnet, but because it rotates, it alternately at its sides brings its north and south polarity to our probes that then can be imprinted upon a screen at any rotational speed that we desire making its up and down polarity appear as waves.

All other magnetic waves are like momentary indents imbedded upon the fundamental movements and at that instantly taken away by the constant. And since we can't very well observe a single wavelet traveling at the speed of light these waves cannot be seen, nor displayed.

Wave Production

How do waves that are not really waves come to their length? These so-called waves of the spectrum in their production come to half-lengths that by multiplication comes to full lengths. The first half of the wave is its real coordinate; its second half is mere gingerbread, a continuation of the first half.

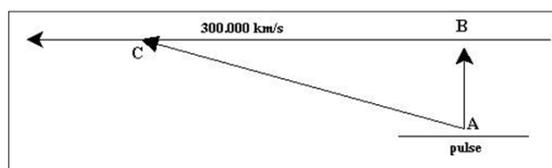


Figure 6: Wave Production

Figure 6 serves to illustrate this. The long line represents nature's fundamental movement at the clip of 300.000-km/s. As then electronically we instigate oscillation, or simple back and forth movement of the atoms with an electrical potential like our standard light bulb - these come to what is best known as impulses. As then an impulse is instigated at point A to point B as a velocity of 30.000-km/s it is simultaneously taken away by the constant at 300.000-km/s the ratio then is one to ten. The half-length of that wave would then be 10-km with its full length at 20-km.

The faster or shorter the impulse so much the shorter the wave becomes. These as such are like unto coordinates, a segment of rotational movement in contrast to any straight line. These then always being half-lengths, with the remainder as they proceed around the circular the mere continuation of it, - it should be obvious how these never at all present a continues wave form. When by example the above 10-km wave segment was deposited upon that fundamental movement at the rate of ten times each second there would be 30.000 of those segments within the length of 300.000-km, hardly anything of a continues nature. Nor can it be divided by the full-length of 20 since the second half of any wave is a mere continuation of the first. We may do so mathematically to obtain frequencies. But since frequencies in all essence is nothing more than what is termed a Mr. Dunsel, meaning "part of something that serves no useful purpose," it is here nor there what we come up.

With our light-bulbs the electricity rotating at (120 volt) reacts magnetically upon the atoms of that tungsten element at 120 rotations each second, consequently it can not produce any more impulses than 120 each second, like placing 120-boxes on a conveyor belt traveling at 300.000-km/s. 120 rotational impulses each second thus comes to 120 angular moments in the space of 300.000-km. Accordingly each impulse (or wavelet) is spaced by 2500-km. Hardly anything continues. Still 120 of these come in any single second. Any light bulb in our homes turns off and on 60 times each second, yet to us it appears continues. Any rpm counter rates it at 3600-rpm/

When speaking on a phone that transmits at a wavelength able to contain 80 million in any one second. How many letters can we pronounce in any one second? If it be 100, these will be spaced by 3000-km each.

Velocity "Relative"

I named that speed of light correctly since its outcome is **"Relative"** to the angle of the wavelet. A sharp angle will make a short wave, and since that means that in any distance it has to go more often around the circumference compared to the lesser angles forming the longer waves; its relative velocity - for that very reason is curtailed more than those with a greater angle. Changes in velocity as such therefore are a mere byproduct. It is the angle of the impulse that determines length as well as its velocity for distance in time, properly called its **"Relative Velocity"**.

All impulses, angular moments, or wavelets as they may be referred to, at all times travel at the full value of constant taken as 300.000-km/s. That speed at all times is not and cannot be impaired by any density. It will travel through diamond and steel as fast as through air. Since then, in steel that movement is forced to travel more often around the circumference in any given distance, so its relative velocity is curtailed. And easily calculated by what is shown by Figure 5.

Calculating Spectral Shifts

How for example do we find the speed at which a star or galaxy may be receding or traveling towards us? In reality we merely guess at it by observing spectral shifts from which to calculate speed with the wrong type of mathematics. And to prove this I will first quote how man came to his conclusion.

Absorption lines of hydrogen, normally measured to be at 4861Å and 6563Å, were measured in the spectrum of a particular galaxy to be at 4923Å and 6647Å. **And so:** The speed of light, c, has a constant value of 300,000 km/sec. Therefore, this galaxy has a **red shift** of $z = [(4923 - 4861) / 4861]$ and $z = [(6647 - 6563) / 6563]$ $z = [62 / 4861]$ and $z = [84 / 6563]$ $z = 0.01275$ It thus is moving away from us with a **velocity**, $v = c * z = 300,000 \text{ km/sec} * 0.01275 = 3826 \text{ km/sec}$ [2,3].

Now let us calculate this in **the proper way** rather than Hubble's way; and utilize the waves circumference at 4.84A as a standard for it. For this is absolute that for any wave both its length and amplitude enter into the calculation, only a straight line can have a two-dimensional calculation. At any time when there is an angular associated with the linear that angular is to be incorporated within the calculation.

The laboratory velocities as noted for hydrogen then are:
 $4861 + 4.84 = 4,865.84: 300.000 \times 4861 = 299.701\text{-km/sec.}$
 $6563 + 4.84 = 6,567.84: 300.000 \times 6563 = 299.779\text{-km/sec.}$

Then the spectral shifts are:
 $4923 + 4.84 = 4,927.84: 300.000 \times 4923 = 299.705\text{-km/sec}$
 $6647 + 4.84 = 6,651.84: 300.000 \times 6647 = 299.782\text{-km/sec}$

Comparison

$(299.705 \text{ minus } 299.701 = 4\text{-km/sec})$ $(299.782 \text{ minus } 299.778 = 4\text{-km/sec})$ The comparison of the laboratory from the factual shifts come to no more than 4- km/sec, and not anywhere near the 3,826 km/sec that the astronomers came up with. How therefore were they so much in error, since we - as we know - **in this case we can-not be in error?** The error of the astronomers was **in not understanding their measuring tool** leading them to the wrong calculations; to use a two-dimensional calculation in the place of a three-dimensional calculation.

A percentage in expansion is not for a wave in its movement, or else it should not be called a wave. Moreover, the light as it was traveling away from that galaxy was moving at a clip of 299.701-km/sec. If then the galaxy receded from it by 3,826-km/sec, that adds up to 300.027-km/sec, a velocity faster than the constant of all magnetic when it is a straight line, and that is in violation of our known laws.

In answer therefore to those many persons that obviously question the validity of any star or galaxy or anything moving faster than the speed of light; "don't be fooled by those unaware of the

mathematics by which velocities may be obtained. The sample herewith is evidence.

But how can we be sure that indeed that galaxy is even receding at a clip of 4-km/sec? It may very well be at an idle with us, or even approaching on us all because that light as it traveled through space for let's say one light-year, how many red and/or blue shifts did it go through in that year? How many stars did it graze, and what other galaxies did it pass through? And who knows how much refraction it went through by which to determine its true position in the sky; that as such may be way off. In other words; our findings are at best speculation. The one thing that we can be reasonably sure of are those measures and velocities in our own backyard, our solar system.

Another Example

If for the example we apply our three-dimensional calculations upon one of the most distant objects found, measured by the Lyman-alpha emission line at 1216A shifted by 8300A, their calculations came to a radial velocity of 287.000-km/sec. The 1216A wave has a velocity of 298.910-km/s. Its expansion to 9516A brings it to a velocity of 299.847-km/s [4].

The increase in velocity of that wave thus comes to 1037- km/sec. That mind you is not anywhere near to 287.000. If thus we add the 287.000 velocity to the existing 298.910 (km/sec) velocity we arrive at a radial difference of 585.910-km/sec. That mind you is nearly twice over what could possibly exist for any magnetic movement.

Speculation so I said; and yes, speculation it is, as well as our error in calculation.

Radial Velocity with Evidence

Now that we seem to have a good understanding in how light travels and how radial velocities are to be calculated, we have as yet to hear the full of it.

Radial Velocity Chart

Radial Velocity	Calcium K Diff	V/Normal/l	V of Shift	Radial V
0-km/s	3933-3968/35	299.631-km/s	299.634-km/s	= 3-km/s
100-km/s	3934-3969/35	299.631=km/s	299.634-km/s	= 3-km/s
1000-km/s	3943-3981/35	299.629-km/s	299.635-km/s	= 6-km/s
10.000-km/s	4064-4100/36	299.643-km/s	299.646-km/s	= 3-km/s
274.000-km/s	3560-6620/40	299.703-km/s	299.780=km/s	= 77-km/s

Chart A

In chart "A" for each of the 35A in wave expansion there was an increase of 3-km, while the one with the greater expansion of 40A came to only a 0.9-km increase. And why may that be so? The answer is - **because it is a longer length, and as the lengths are greater and greater so the increase must be greater to account for the same value in velocity.** So, it becomes obvious how **a shift in wavelength is not directly proportional to the change in radial velocity.** Yet we are quite able to determine the correct relative velocity of any wave as long as it computed by its three-dimensional format. And for this we need the correct diameter of the wave into its circumference that varies for each octave of the spectrum.

Nor is it in lengths by which the color of any wave is found, but by its angular moment. When the sun rises or sets the waves with the least angle (the red) are turned (refracted) the least. That is why there is a red sky at the sun rising and red sky in the sun setting, its light upon our atmosphere being refracted, all because we live upon a ball, a rounded surface that acts just like any prism will - with light being passed upon it. In my estimation now the first segment of the wave's ranges from 100-nm to 1000-nm, all of which are formed on the atomic level, by a circumference to fit around the atoms.

When thus the lengths come to exceed 1000-nm, these can no longer be formed on the atomic scale, since then they would come to be more of a straight line, too close to the 90-degree mark. The next segment of waves for their circumference must be produced on the molecular level, for as the circumference increases so longer lengths may be produced. What we need is to perform some research, like for the example, taking a 1-mm, or 1-cm wavelength, and somehow discover at what speed that wave will travel. With that information we can then find the correct amplitude, or circumference by which it traveled.

We know that waves on the atomic level, such as light - do not pass through a stucco wall, yet a radio wave does. And that as we conjecture is because it travels on something greater than the atomic scale, wherefore I pronounced to say molecular. But how exactly is it for a radio wave to pass so easily through a stucco wall? That is something we ought to apply our minds to. Or again, what is it that will stop or divert a radio wave, or a microwave? If we correlate all that information along with it, we may come up with some answers.

By my calculation a 1-meter wave might travel by a diameter of nearly 5-mm, but if this be correct or not is as yet to be established. The principle may be correct, but the figures used are but to convey that principle, and will require a factual reading of some waves in different segments to come to more accurate figures.

Everything in nature is three-dimensional, when we draw a sine wave formation on a piece of paper it may look two dimensional, but it is not, even a dot is three-dimensional. And so it is with atoms, always turning, and the force upon them even it is at all times turning by a figure of eight that in itself is a circular loop, and loops within a loop. When therefore we drive an impulse upon any such circulars, how shall the outcome not be circular?

Take our electrical generator by which the electrical wave is born forth. First there is the fixed linear force, by and in which circulars are formed, the circulars that is electricity. And how do we do so? We do so by turning a guide within the fixed magnetic lines driving a circular format [5].

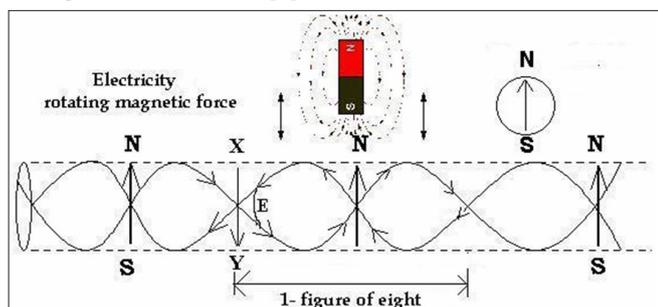


Figure 8: Illustrates that "Rotating Magnetic Field of Force"

known as Electricity that will Vibrate Back and Forth to Any Pole of a Standard Magnet. **This All in itself Serves as Evidence that Electricity is a Rotating Field of Magnetic.** No Such Thing as Electrons that in the First Place do not Exist.

And how do we know that the electrical wave is a circular rotating wave? By holding it next to a magnet, next to a fixed linear format, to which it will then move back and forth to anyone of its two poles. This tells us that the electrical wave is not only a magnetic wave of both polarities, but that it rotates.

And how do we know that its speed of rotation is by our doings? If we turn our generator by 60 cycles it will be 3600 rpm. If we take 12 volts, it shows a rotation of 12 times per second, while a 120-volt shows 120 turns per second. And how do we know that the magnetic field of that rotating field of force expands by higher and higher speed of rotation? By looking at our high voltage power poles and its power lines how far these are held away from the poles, all because the electricity at its high revolution comes to a much greater span of itself.

Magnetic fields in rotation expand just as anything in rotation will attempt to move outward by centrifugal action. And all atoms being like tiny magnets; when a high velocity spark is introduced in a mixture of gasoline and oxygen, it by conductance accelerates the format of those atoms by which these expand appearing to us as pressure in the cylinder. In a way similar to heating water into steam, and by compressing these atom/molecules in against their repulsive force, when released move the train, it in all reality is by magnetic power that the train has its movement, just as our automobiles also move by magnetic power.

By a three-dimensional concept the waves of light as they pass by the atoms are susceptible to each and every atom in their path, a fact that proves itself each and every day. A sine formation on a two-dimensional plane however has no way to go, nor therefore can it exist [6-8].

Conclusion

In conclusion once we understand the nature of light, and adapt the right mathematics we can at last hint at the radial velocities of an object in the sky. Refraction then plays a devastating role in finding any object at a straight line of sight. And when we combine changes in velocity with the change in direction there is literally no way to determine a real velocity of any object in the heavens, or its distance from us, or its real position for that matter. All our calculations therefore are mere speculation. Yet we ought to conform ourselves to the reality in nature not only with waves but with atoms in its whole and how magnetic force displays a derivative of itself called electricity.

References

1. Available at: <https://cirworld.com/index.php/jap/article/view/8164>.
2. Available at: http://astro.wku.edu/astr106/Hubble_intro.html and Recessional velocity, Available at: https://en.wikipedia.org/wiki/Recessional_velocity.
3. Available at: <http://gsjournal.net/Science-Journals/Essays/View/5847>.
4. Michael Richmond (2001) A connection between radial velocity and distance. Available at: <http://spiff.rit.edu/classes/phys240/lectures/expand/expand.html>.
5. Available at: [http://gsjournal.net/Science-Journals/%7B\\$cat_](http://gsjournal.net/Science-Journals/%7B$cat_)

- name%7D/View/6071.
6. Marmet P, Cuture C (1999) Relativistic Deflection of Light Near the Sun Using Radio Signals and Visible Light. Physics Essays 12: 162-173.
7. Available at: <http://gsjournal.net/Science-Journals/Essays/View/6071>.
8. Dorothy Michelson Livingston (1987) Michelson-Morley: The Great Failure. The Scientist. Available at: <https://www.the-scientist.com/books-etc-/michelson-morley-the-great-failure-63642>.

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