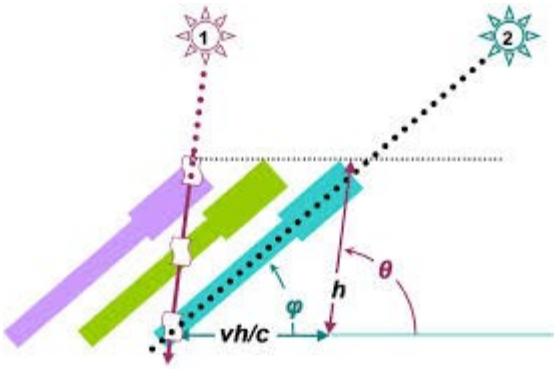
return to updates

The Aberration of Starlight

including analysis of Airy's water-filled telescope,
the Sagnac Effect, and the Hammar experiment



by Miles Mathis

First published July 10, 2014

After a long pause, I finally return to Relativity. By about 2004 I had solved the major problems of Relativity to my own satisfaction, and mainly lost interest. I have concentrated on other things since then, becoming a slave to my charge field (even here I will remain her faithful servant). But some nudge from the Muse got me to look at Airy's water-filled telescope, and that led me into the whole 19th century mess once again. It was this pre-Einstein cache of problems that whetted my appetite again for Relativity, and the problem of aberration.

In previous papers on Relativity I have analyzed the equations on bending of starlight by the Sun. Some people have called that aberration of starlight as well, but here we will be looking at starlight as it comes into a telescope. It has long been known that you have to tilt your telescope a bit to best capture light from specific stars, and that this was due to the motion of the Earth relative to the star. Equations were developed long ago [1728] that allowed astronomers to do that, and the classical equations were good enough for the job. However, Einstein reran the equations using his Relativity updates, finding a slight correction. But since the relativistic second-order effect was still far below the attainable accuracy of observation at the time of Einstein's death, aberration has never confirmed or disproved his equations. It is now claimed by some that we possess this accuracy to check the equations, but this has not been done.

I will show that although a Relativity update was necessary to the old equations, Einstein provided the wrong one. We can see that just from the form of his final equations:

$u'_x = (u_x - v)/ (1 - u_x v/c^2)$
$u'_y = u_y / \gamma(1 - u_x v/c^2)$

Since we see *gamma* (γ) there, we know those equations must be wrong. I have disproved *gamma* from the ground up, going line-by-line through all of Einstein's proofs. A second major problem is that Einstein used his addition-of-velocities equation to solve this, but that was unnecessary. There is only one relative motion here, that being the Earth relative to the star (or the star relative to the Earth, but not both). Again, you can tell that just from the form of the equation. In the pair of equations, we only have the speed of light and the speed of the Earth v. The variables u_x and u_y are both components of c here, so they aren't separable from c. Remember, in Einstein's addition-of-velocities equation, you have to have two velocities on the right side, *not counting c*.

$$W = (v + u)/(1 + vu/c^2)$$

That is the addition-of-velocities equation, straight from mainstream textbooks. In that equation, neither v nor u are components of c. They are components of W, in a way, but not of c. Therefore, in the pair of equations above, we simply don't have enough velocity assignments to use this addition-of-velocities equation. This makes the proposed solution a rather obvious hash. It means Einstein couldn't really figure out how to apply his own equations to the problem.

It also explains the labeling of the x and y components of c, which seemed odd to me at first glance. Why label them u_y and u_x? Why not c_y and c_x? This is obviously done to fool you into thinking they fit Einstein's addition-of-velocity equation somehow, which already contains a variable labeled u. But they don't.

We must suppose that Einstein used his addition of velocities equation because he was following the form of the classical equation, which uses a "Galilean" addition of velocities. This was unfortunate, since the classical equation is also a hash. In the classical equation, we also find x and y components of c. The 19th century physicists couldn't really have been expected to see that as a mistake, but Einstein should have recognized it for one immediately.

Which brings us to the third major problem of both the classical and relativistic equations: the breaking down of c into x and y components. That is disallowed by Einstein's own rules, as I have shown in many previous papers. Since c sets the field, you aren't allowed to give light x and y components. This is one of the mistakes of the light clock, the M/M interferometer, and so on. Instead, you must let everything else move relative to the light, giving all the other velocities x and y components, instead of the light. I will remind you what I mean just below.

In my long paper on Special Relativity, I show how to solve this problem in the most efficient manner (see Part VI). To start with, to add these Relativity corrections to the classical equations, we have to know where the Earth is in its orbit. That is, we have to include whether the Earth is moving toward or away from the star. In Einstein's equations, it doesn't matter, since in them all motion causes time dilation. But in my corrections, this is no longer true. The solution will be very slightly different when you are moving toward the star and away from the star. One will cause time dilation and the other time compression. For instance, if you are looking at a star that is near the ecliptic, the Earth will be moving toward it half the year and away half the year. Well, we won't be able to use the same Relativity correction to the classical equations both times. *Direction matters*.

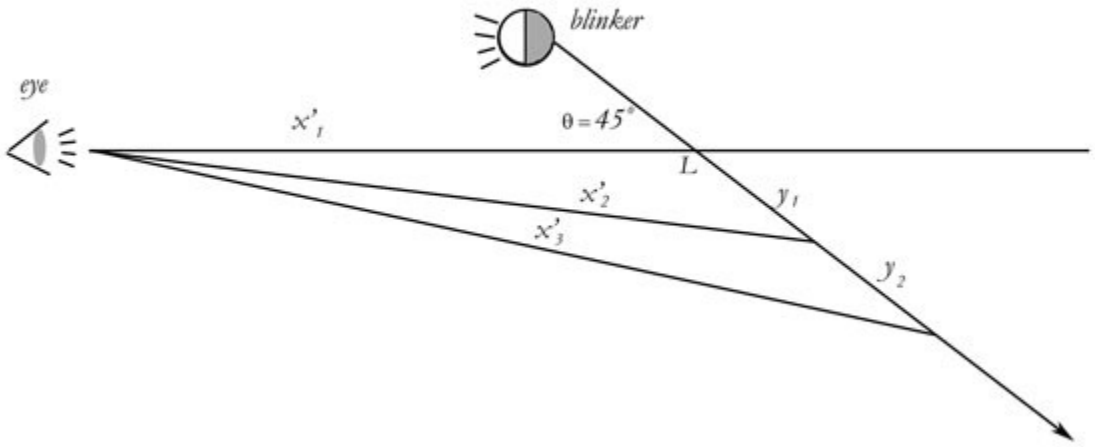
Of course this means the Relativity corrections apply mainly at the apsides of our created ellipse. This is a bit ironic, since it is the sideways motion to the star that causes the main effect in the classical equation. The classical equation doesn't even track the y motion of the Earth, as you see: the given velocity v is in the x-direction, which is mainly perpendicular to the light coming from the star. But the

less y motion the Earth has relative to the star, the less the Relativity correction. In fact, there is no Relativity correction when θ=90. The maximum Relativity correction is at θ=0 and θ=180, and this is because the Earth is then moving most quickly toward or away from the star.

To solve in the most efficient manner, we must give the motion to the star. As Einstein taught from the beginning, any observer can define himself as stationary, measuring the universe from his own position. And to run the equations in the cleanest form, you *must* define yourself as stationary, so that your local system has no velocity. If you don't do that, you are guaranteed to get into a mess pretty fast. This is the way that Relativity equations often misfire, and Einstein's own equations in this problem are misfiring for this reason. As you see above, he is trying to give the Earth the motion, which forces him to give the light ray x and y components. Anytime you give a light beam x and y components, you are guaranteed to go astray, and that is because doing so breaks one of the cardinal rules of Relativity: Einstein's Postulate 2. **Einstein has broken his own Second Postulate here**. Light does not travel in a coordinate system of its own. The motion of light is what *sets* any and all coordinate systems, but light itself does not travel in any one of them. **Light is a special case**, and Einstein admits that from the very beginning. But if you give light x and y components, you have put it into some coordinate system. The variables x and y are coordinates. You have broken Postulate 2.

So you must give the motion to the star. In current theory, they call this relativistic beaming, but it is the same thing as aberration of starlight (supposing it is a star that is beaming). It just means we let the light source move rather than the observer of it. This creates an apparent reverse ellipse in the star's motion, which mirrors the Earth's ellipse around the Sun. That is what they originally meant by "aberration." They meant that the star didn't stay still if you took a long exposure.

So let us solve for one position of the Earth in its orbit. We can then use this illustration I created for my earlier Relativity paper:



We then let the blinker be the star. Instead of the Earth having a velocity at an angle to the star, we hold the eye still and let the star have an angle relative to the Earth. Light then travels on one of the lines labeled x'. If we need to give one of the motions x and y components, we give them to the star's motion, not to the motion of the light. If we solve for position 2, say, we find

$c = x_2'/t$
$x_2'^2 = x_1'^2 + y_1^2 - 2y_1 x_1 \cos 135$
$v' = y_1/t$

But since we are tracking these distant motions from our own system, we can't use v'. That is the local velocity of the star, not the velocity we will experience measure on Earth. So we must transform it:

$v = v'/[1 + (v'/c)]$

From this, we see that it is v that is being transformed by Relativity, and that it will be transformed in different ways for different angles. It will also be transformed differently for different directions. As I already said, direction matters. If the star is moving toward the Earth, we use a different velocity transform:

$v = v'/[1 - (v'/c)]$

You will say that should reverse the angle, but it doesn't. It only changes the amount we add. Here is the classical equation for aberration, for instance:

$$\tan\varphi = \frac{\sin\theta}{(v/c) + \cos\theta}$$

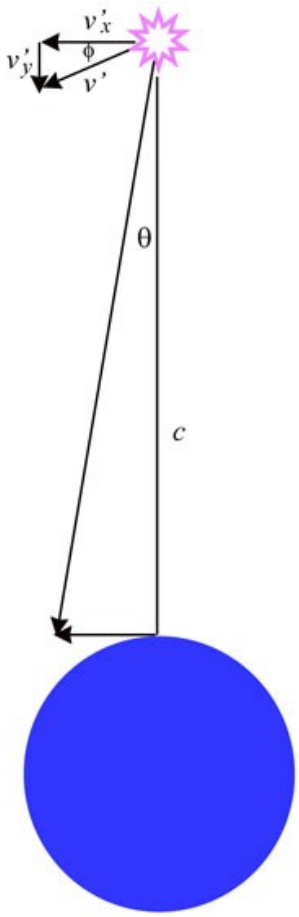
Changing the value of v up or down slightly will not reverse the value of the entire equation, it will only change the amount we add to $\cos\theta$.

So you see, all that was necessary was for Einstein to relativize that velocity variable v, by using a simple transform. He needed to do that to properly import it into the equation next to c. The problem with Bradley's classical equation was that his term hv/c was naïve. Once we have a finite speed of light, and information carried by that light, the classical transform x = x'v/c no longer works. Instead we must use (supposing motion away):

$x = x'/[1 - (v/c)]$

This is admitted even by those who still claim to be anti-Relativists, since that simple transform is used on frequency. In the frequency transform, almost no one admits the term is a Relativity transform, but that is exactly what it is. So Bradley and those who came after him could have perfected and extended their classical equation without any help from Einstein or Relativity. All they had to do is import the frequency transform in the right way, realizing it applied to lengths just as much as to frequencies.

I will now correct the equations from the ground up. To start with, we have to jettison the x and y components of c from the classical equation. To do that, we simply let the light arrive on a line we define as setting the perpendicular, and then give the star's motion x and y components relative to that. The easiest thing to do is put the star at the zenith and give it a reverse motion v at some given angle.



$\cos\varphi = v'_x/v'$
$\tan\theta = v'_x/c$
$\tan\theta = \cos\varphi(v'/c)$

Theta then gives us the tilt of our telescope. That simplifies the math considerably, and clarifies the mechanics as well. Only problem is, do we know v' and φ? Well, assuming the Sun is not in quick motion relative to the star, we should be able to use the velocity of Earth in orbit, as they do in current equations. Do we know φ? Well, it is calculable, since we know the position of the star relative to the ecliptic. Even if we didn't, we could calculate it straight from the aberration itself. In other words, we would have to track the star's aberration for some amount of time, at least enough to find an apside. We then match it to the apside of the Earth's orbit, and we then know how the Earth is moving relative to the star.

Now for the Relativity correction. Just as we ignored v_y in the classical solution, we ignore v_x in the Relativistic solution. The vertical component of v is the only thing that will give us a correction due to Relativity, since it is the only thing that will act to compress the data. Since the star is moving slightly *toward* the Earth, we use this velocity transform:

$v_y = v_y'/ [1 – (v_y'/c)]$

This changes the apparent length of v_y in our triangle, which also changes the apparent length of v. The

velocity v will have appeared to increase. But v_x will not be affected by this transform.

$\sin\varphi = v_y/v$
$v\sin\varphi = v_y'/ [1 - (v_y'/c)]$
$v'_x\tan\varphi = v_y'$
$v\sin\varphi = v'_x\tan\varphi/ [1 - (v'_x\tan\varphi /c)]$

$$v = \frac{v'_x\tan\varphi}{\sin\varphi\,[1 - (v'_x\tan\varphi /c)]}$$

Now we just replace v' with v, to make the Relativity correction:

$\tan\theta = \cos\varphi(v'/c)$

$$\tan\theta = \frac{\cos\varphi v'_x\tan\varphi}{\sin\varphi[c - (v'_x\tan\varphi)]}$$

$v'\cos\varphi = v'_x$

$$\tan\theta = \frac{v'\cos\varphi\cos\varphi\tan\varphi}{\sin\varphi[c - (v'\cos\varphi\tan\varphi)]}$$

$$\tan\theta = \frac{v'\cos\varphi}{[c - (v'\sin\varphi)]}$$

Now let us look at one of the complaints of anti-Relativists. They will say this whole demonstration is flawed, because if I draw those vectors as I have in my illustration, it implies that whatever is moving along that hypotenuse is going over c. Even Relativists will not draw it that way, for the same reason. They would rather break Postulate Two than draw a hypotenuse like that. We may assume that is why they give the x and y components to c rather than to v. At least in that case they don't have to draw or imply this hypotenuse.

But it is not against any rules of Relativity to draw that hypotenuse. That vector is a *compound* vector, and isn't applied to any one body. Relativity says that no body may be diagrammed as going over c; it does not say that no field result can be over c. That hypotenuse is a compound of the motion of the light and the motion of the Earth. It is the vector addition of c and v. So the light is not going over c. It is diagrammed and defined as going c, no more, no less. The hypotenuse does not belong to the light. The adjacent leg belongs to the light.

This should all be obvious, since if field results over c were not allowed, aberration of starlight would be an impossibility. Redshifts and blueshifts would be an impossibility. All these things are indication of motion relative to light, and any time you have motion relative to light, you will be diagramming a field result over c. Motion relative to light simply means you are adding or subtracting some number from c. That is allowed. Einstein did it all the time, as we see straight from his equations. His equations contain the term (c – v) all over the place. If you can have (c – v) you can also have (c + v), which is simply this field result over c. That is exactly how you get redshifts.

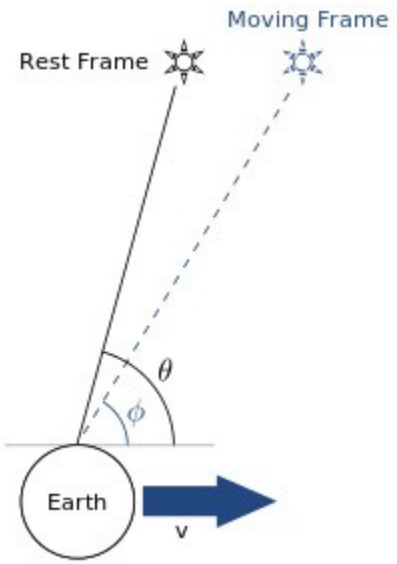
As a bonus, I will now unwind the whole historical fracas concerning the supposed falsification of the old classical equations. This happened even before Einstein came along. Remember, Einstein's

correction is too small to notice, or was until very recently, so the historical problem with the classical equation had nothing to do with Einstein. It had to do with more mundane "disproofs" of the math and kinematics. In short, several physicists in the 19th century proposed that Bradley's analysis should indicate large variations if c varied, and they saw that c could easily vary in a real experiment if the telescope were filled with a heavy gas, or better, water. So they did just that. Several experimenters—including most famously G. B. Airy—showed that filling the telescope with water did not change the aberration in the amount the equations predicted. In fact, it didn't change them in any detectable amount. That seemed fatal to the classical equations to some people, though I am not really sure why.

However, knowing what I know about Airy, I was not prepared to accept that conclusion without further analysis. As my readers know, I have caught Airy in several terrible physical meltdowns, including the famous meltdown at the Himalayas, where he proposed reverse mountains as a solution to the plumb-bob failures. See my papers on the unified field and on Isostasy for more on that. In short, Airy was a good experimenter but a terrible theorist. He couldn't visualize anything beyond his own nose.

Unfortunately, we have the same sort of meltdown here; and again, the meltdown included the whole history of physics since then. No one to this day has seen the missing piece of the puzzle, although it is staring them right in the face.

At first glance, the analysis of Airy may seem airtight: Substances like water are known to have a refractive index that slows the transmission of light measurably. Well, if you lower the value c in the equations above, you should change the angle enough to measure. No change was found, therefore the equations must be wrong. However, that analysis only works if you study the motion of the light from the top of the telescope to the bottom. In that case, filling the telescope with water would seem to change the angle. But study my illustration again. The angle isn't measured from the top of the telescope, it is measured from the star. The line labeled c doesn't end at the top of the telescope, does it? No, it runs all the way to the star. The same is found if you study the mainstream's illustrations:



They label their angles differently than I do, but the lines run all the way to the star. The light has a speed of c from the time it leaves the star, not just from the time it hits the top of the telescope. This

means that the angle, and the entire phenomenon of aberration, is being created mainly *outside* the telescope, not inside it. You tilt the telescope to match the angle required by the relationship, but the relationship pre-exists the tilting of the telescope, and extends far beyond it.

To change the angle we found, you would have to shorten the entire vector c, not just the last meter of it.** Since the length of those vectors diagrammed stand for velocities, you would have to lower the speed of light all along that vector. That would then change the relationship of c to v, which would change the angle. But all Airy has done is change the speed of the light in the last three feet, which wouldn't change the average value of c along that vector at all. To change the value of c and therefore the length of the vector drawn, Airy would have to fill the galaxy with water between here and the star. That is precisely how ridiculous his experiment really was.

You can see once again how a bad illustration can lead to absurd hypotheses and conclusions, and how a good illustration can clear them up with almost no effort. This problem, like most others, was caused by a bad visualization.

I will be told that even if all I say is true, once the light reaches the water-filled telescope, it should begin moving back toward the rear of the tube. Since the light has slowed, the relationship between c and v has changed, and the angle should change. But that is to miss the entire point of aberration. We tilt the telescope not to keep the light toward the middle of the tube all the way down. The focusing lenses are what does that, anyway. Focusing lenses don't stop working just because you surround them with water. We tilted the telescope to allow the light from the given star to enter as flat as possible to the object glass. Since Airy didn't fill his telescope above the object glass, that was not affected. And once you are below the focusing lens, the direction of the light is no longer determined by the previous relationships of vectors c and v: the direction in the tube below the objective lens *is determined by the lens*.

You will say, “Maybe, but shouldn't all the focused rays below the lens be affected by v, even so? Shouldn't they continue to be pulled back?” No. Once they interact with the lens, the photons are no longer free entities. They are now part of the Earth and they all now contain its motion with their own. This is why *you* don't feel the motion of the Earth, although it is moving 30km/s through space. Neither you nor anything in you is washed back against that motion. But before it hit the lens, the light *was* a free entity relative to the Earth. It had not interacted with anything on the Earth, not even the atmosphere. This is the only reason we could do a vector addition of v with c.

This would be true even without a lens. Say we took the lens out and just let the light hit the water directly. Provided we made the surface of the water flat to the light somehow (with a sheet of clear plastic, maybe, to avoid refraction at the surface), the interaction with the water would integrate c with v, so that v was no longer a free vector. In other words, v could no longer seem to push the light back.

Exactly how this integration is achieved is a whole other question, but since I brought it up, I will gloss it. Since it gives me another chance to talk about my charge field, I don't want to let it slip by. We will start at the top of the telescope and work our way down. Supposing the telescope is tilted correctly, the light will enter on the correct angle to make it to the bottom. Only when it passed the surface of the water could anything to change the angle occur, correct? What we are led to believe is that light will slow, c becoming too small to offset the sideways motion v. It will “turn” and hit the back of the telescope, failing to make it to the bottom. That doesn't happen, therefore the classical equations are wrong, we are told.

But that assumption is just a strawman. It isn't borne out by what we now know about the motion of light through substances. In short, we *know* the water doesn't slow the velocity of any single photon below c. Yes, light takes longer to travel from top to bottom, but that isn't because c has changed. It is because the *path* has changed. All the idolators of Feynman should know that, since he spent half his time drumming it into their heads. The speed of light through materials is a *path average*, not a diminishment of c.

Given that, there is no reason to assume our "slowed" light should be pushed toward the back of the telescope, missing its original path down. That would work *only if* the velocity c slowed as a vector relative to v. Airy's experiment didn't disprove the classical aberration equations or theory, it only disproved the naïve assumption of a path diversion.

You will say, "You just admitted the path would be diverted, didn't you?" No, I admitted the path would be *lengthened*. I did not admit the path would be diverted as a whole. Those are two very different things, and one is in no way an indicator of the other. Physicists like Airy assumed that the first indicated the second, but that was just a bald assumption. I will now show it was a poor assumption, based on no real mechanics.

The idea of the ether only made this problem worse, so I am not apologizing for those guys, either. Given the naïve theory of the ether prominent at the time, it is no wonder it generated an opposition. As usual, both sides here were pretty spectacularly wrong. I imagine that a few physicists at the time realized that there was no way to explain this phenomenon without giving the water a thicker ether than the air or vacuum, and seeing no way to do that, they backed down. Given the data at the time, suggesting that would have been professional suicide.† If the opposition was so violently opposed to an unknown ether, it would be even more violently opposed to a varying ether, especially when people like Young and Fresnel were in no position to show what caused that variation.

That said, it is pretty amazing we have made no progress on this question, given what we now know about the charge field. Even before I came along, the mainstream knew enough to revisit this problem and clarify it with charge.

That's right, it isn't the ether that solves this, it is the charge field. And of course water is now *known* to have a denser charge field than air or vacuum. We can get that from any number of mainstream parameters for substances, including blackbody radiation, thermal conductivity, electronegativity, capacitance, and on and on. Or we can get it straight from mass. Denser substances like water have more protons and electrons, which are *charged* particles. More charged particles must have more charge, right? If charge is anything real, then water must have more of it than air or vacuum. Schrodinger defined the amplitude of the wavefunction as an indicator of charge density, which we have seen is correct. Since only a real field can have density, this density must by dealt with in any problem such as the one we are now analyzing.

This solves the aberration problem with the flick of a simple switch, because as the light is being "slowed" by the charge field of the water, it is also being pushed forward more efficiently by that same field. It is not just the telescope that is moving forward, it is the charge field inside the water inside the telescope, and the denser that field is the more it prevents the light from drifting back and hitting the rear wall of the telescope.

To say it another way, once we look at the *path* of the light instead of just its velocity, we realize that the path to the back wall of the telescope is not as open as Airy and his pals would have you think.

They want you to think that the water only slows the path *down* the tube, while ignoring the fact that it will resist the path back in the same amount and for the same reason. According to their assumption, the path back is completely free, and the slowed light will naturally take it. That is why the light shouldn't make it down, according to them: it gets deflected by collision with the back wall of the telescope. But as you now see, that is completely counterintuitive and counter-physical. The more resistance the material in the telescope has to motion down, the more resistance it will have to motion back. In fact, we would expect the latter resistance to be *exactly proportional* to the former, which means we should *not* expect any deflection of the light from its original angle, no matter what the telescope is filled with.

In short, this is what normalizes bodies that come in contact with a field or substance. This is the mechanism by which a formerly free body becomes one with a new body or field it has interacted with. Once it enters the new field or body, it feels charge forces from that new body at all times. You feel charge forces from the Earth and from everything around you, which means you aren't a free body. You were never a free body relative to the Earth, but light once was. You were born with a velocity of 30km/s, but since velocity creates no internal forces (as accelerations do), you feel no washing in the reverse direction. When the photon in the light hits the lens of the telescope, it enters the charge field of the lens. It isn't just one hit that turns it to the focus angle, it is many. In those hits, the light isn't just being focused by the lens, it is being normalized to the new field. The charge field as a whole is moving 30 km/s, like everything else, so it immediately acclimatizes the new light to itself.

You will say, "How does that work? Are you saying the photons are going c plus 30km/s?" No, of course not. That is why I said "the charge field as a whole." Just as with the vector addition above, c + v is a *field result*. It does not apply to any one photon. It may *seem* to you, measuring from outside the field, that something should be going over c. But your measurement is just your measurement. It is not reality. Reality is not determined by how things seem or look to you, and you know that from other phenomena (think optical illusions). Reality is determined by the local field, where measurements and data have not been skewed. If light can be said to travel in a field, it is this local field. Light always travels in the local field, not in the distant field. Even more rigorously, light does not travel in the local field; it *is* the local field. Light is the field against which which everything else is measured. Since you can only interact with local light (light that is impinging on your eyes or instruments), we can see why the local field is privileged. You cannot see or measure distant light, by definition, which means any distant field is always an inference. All distant fields must be back-calculated from local light, and that back-calculation *is* Relativity.

I will make a short diversion into politics of science before I move on. Some will say I unfairly pick on Airy here, and that may be true. Airy was just providing experimental results, which could then be interpreted in several ways. It is the interpreters who I should be picking on. It is all those—including the current Wikipedia page editors—who use Airy's water-filled telescope to promote Relativity I should pick on, since they have been aggressively dishonest. For more than a century, promoters of Relativity (promoters who did not understand it) have been using the failures of previous theory to indicate the superiority of Einstein. But in almost all cases, the failures of previous theory *do not* indicate the success of Einstein's equations. The failures of previous theory indicate a hole to be filled, but they do not thereby indicate that Einstein has filled it. And yet the promoters of current theory always use that sort of slippery argument. They point out the failures of Fresnel, for instance, and hide the failures of Einstein, then tell you Einstein has been confirmed. But as you have seen, the failures of Einstein are pretty obvious to anyone whose eyes are open. The misuse of the addition-of-velocity equation (above) by Einstein himself should be clear to anyone who has taken first-year algebra, since it is just a problem of variable assignment. They post Einstein's solution prominently all over the web,

hoping you don't spot the problem, and pretending (I suppose) that they don't. That by itself is indication that we have all been swallowed by some whale or another.

As we continue, I beg you to notice that I have solved this problem by taking a third path, as usual. I have shown you that both sides have been wrong all along, and still are. However, I have also shown that many of the old physicists were partially correct. The proponents of the ether were generally on the right path, but since they couldn't attach their ether to the real charge field, they ended up seeming to be defeated. They were eventually defeated by Einstein, or that is what we are taught. He is said to have destroyed the ether. But that isn't really true, either, as you now see, since Einstein only destroyed the poorly defined ether of the 19th century. He never claimed to have destroyed the charge field, since that would have entailed destroying the entire quantum field. Although he disagreed with Bohr on quantum field theory, Einstein never had any idea of destroying charge or the charge field. How could he when he based his field theory on that of Maxwell, which itself was based on the displacement field D (which I have proved is my charge field).

And to round out this third path, I have shown Einstein himself was only partially correct. He was correct in his assumption that Relativity could provide a small correction to the classical equations, but not even close in the equations he offered. The current equations are a gigantic fudge, one that has to be pushed dozens of times just to get it back in the ballpark of the classical equations.* Without those pushes, Einstein's correction would be even worse than the original equations of Bradley.

One of the only people I have seen stating this clearly is Thomas Phipps,* but even he hasn't nailed down the central and most fundamental mathematical errors. Einstein's primary error here is using complex and faulty addition-of-velocity equations when a simple transform would suffice. We see him doing the same thing in his mass and energy equations: there he again uses *gamma* when the old frequency transform is all that is needed (in the first instance). Therefore, if VLBI (very long baseline interferometry) does eventually give us a number here, I predict it won't be that of Bradley, Einstein, or even Phipps. The correction will have to vary as my correction, depending on direction of motion. That is, it won't be at any higher order that Einstein's equations will fail. They will fail at first order, since the equation must vary from moment to moment throughout the year, not only in angle but in absolute magnitude. It is v that will change from moment to moment, and no one's equations but mine can include that variation.

This is because the correct answer is actually a combination of the historical answers. I think most of my readers will have understood that I have resurrected Fresnel's and Stokes' ether drag theory, *in part*. Since I have shown that Relativity, even if true, can only transform the y component of the motion, the x component—which is the main velocity here—cannot be corrected by Einstein's equations. So while Fresnel's conception and assignment of his ether was faulty, his intuition was mainly correct. It is the charge field that is dragged along by matter. Now that I have shown the mechanism of charge recycling by the nucleus, we have an easy explanation of charge drag. Since photons must pass through the nucleus to create the charge field, they must acquire any relative motion the nucleus has as they move through. The charge field then interacts with all particles in the field, including larger photons of visible light, and the entire field is given the motion of the nuclei.

You would think resurrecting the ether drag theory would totally doom Einstein and Relativity, but it doesn't. As I have shown, we *do* have a correction here due to Relativity, it is just not the one we have

have been taught it is. Relative motion does require transforms, and this problem contains relative motion. However, my solution does doom the interpretation of Relativity offered by Lorentz and still pushed by many in the mainstream. Lorentz proposed that all bodies contract in the line of motion, and that is still accepted by many. One might say it is the standard interpretation to this day (although Einstein himself waffled on it).

The truth is, bodies will *seem to* contract in *some lines* of motion, but the more general interpretation is simply false. Data taken in from a distance may contract, but bodies never do. Relativity was never an existential theory, it was a theory of measurement, and most times Einstein understood that.

I will be told that my analysis doesn't take into account the Michelson-Morley data, but it does. I have already written several long papers addressing that historical confusion. In short, we had another misreading of bad diagrams by physicists who were very poor at visualization. In all the early Michelson experiments they should have *expected* a null outcome, no matter what the theory. The experiment was not properly devised to show any fringe effects. For a quicker proof of that assertion, see my analyses of the similar Sagnac and Hammar experiments below.

It is also worth repeating that many of these early theoretical problems were caused by a faulty "Galilean transform." I have exhaustively proven that what has posed as a Galilean transform for more than a century never was one. Since that faulty math and diagram lay under this confusion from the beginning, it has caused untold problems from the start. That same equation [$x' = x - vt$] was also Einstein's first equation in his proofs, and it doomed them as well. Although transforms are necessary, I have had to jettison that equation and start over from the beginning.

Beyond the Michelson experiments, we are told by the mainstream now that partial ether dragging was overturned because:

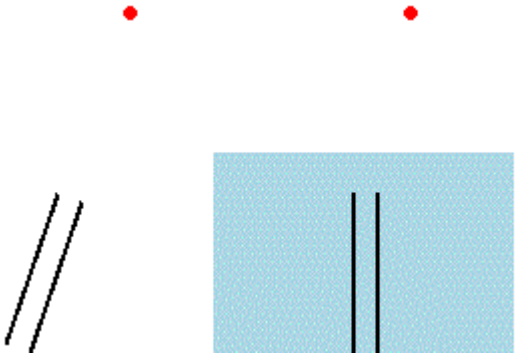
It was already known in the 19th century, that partial aether dragging requires the relative velocity of aether and matter to be different for light of different colours – which is evidently not the case.

But I have also shown why that is not true. The wave nature of light has been misunderstood from the beginning, and that has caused this problem and many others. In short, it was thought that the wavelength of light was caused by some sort of sinewave configuration of the wavefront or wave packet (as with a water wave). If that were true, then different wavelengths should be affected differently by an ether. But since the wavelength is actually the real photon radius scaled up by c^2, that analysis no longer applies. The wavelength is not a pattern on an ether field, it is the spin of the individual photon. This is why one photon can carry the wavelength through a detector, and it is why light of different colors is not affected in the way they thought.

We also have to remember that although my charge field becomes a sort of ether in the equations, it isn't strictly equivalent to the historical ether, in concept or math. Historically, the ether was a background through which light and matter moved. But in my theory, that is no longer true. Light does not travel through or via an ether. Light *is* the ether. Light travels through vacuum, and its spin is its wavelength. Everything else is then measured relative to light (as Einstein said). So again, by this interpretation, we would not expect different colors to act differently in a charge field. Only in very specific circumstances would photon radius begin to matter, and the experiments of the 19th century did not include these circumstances.

We see misdirection regarding the ether dragging theories to this day at all mainstream sources. For

instance, Wikipedia gives us this gif:

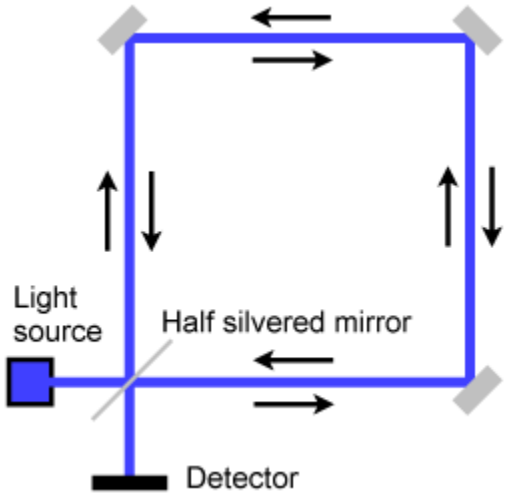


and tells us that ether dragging is inconsistent with the theory of stellar aberration. But the gif doesn't show that. The gif only shows that with ether dragging, the photon will make it down the telescope with or without an angle. They imply that since the angle is required, ether dragging can't be true. But as we have seen, that is a strawman. Their analysis doesn't work, because it requires we only look at the field *inside* the telescope, past the objective lens. If we include the objective lens on the telescope, the entire analysis must change. It is then clear why we need the angle, even with ether dragging: we need the lens flat to the incoming light. If the incoming light isn't flat to the lens, it will cause uneven collection, which will cause uneven dragging and focusing.

From my diagram of the problem way above, you can see that we need the angle even if we have a charge-field ether. We need the angle because the light is coming from a system of sparse charge to a system of dense charge. Before the light hits the lens, it has been traveling in a sparse ether. It has been able to dodge this ether, which is why it got here in the first place. But when the light hits the lens, the dodging is over. It has been captured and re-directed by the field in the lens. But if all these photons from the star aren't captured at the same angle to the lens-field, we get a staggered ether dragging. So, ironically, we find more confirmation of ether dragging from the mainstream's own diagrams.

This gif confirms ether dragging a second time, and they admit that with the Airy experiment. Water isn't an ether, it is a real substance. *Without* an ether, the water should have slowed the light, forcing it back to the far wall of the tube. That didn't happen, and I have shown it didn't happen precisely because the charge-field ether prevents it from happening. But somehow they spin this proof of the ether as disproof. They don't tell you that Airy's experiment can be explained with ether drag; instead they imply that Airy's experiment points to Einstein, which points *away* from the ether. That's what I mean by extravagantly dishonest. These guys have no shame. They have no problem handing you the proof of ether dragging—putting it right in front of you as gif, drawing, and theory—and then spinning it as disproof.

We see the same thing with the Sagnac Effect, which has been used as a disproof of the ether. However, if we exchange the ether for my real charge field, the disproof becomes proof. The Sagnac Effect is created by the Sagnac interferometer:



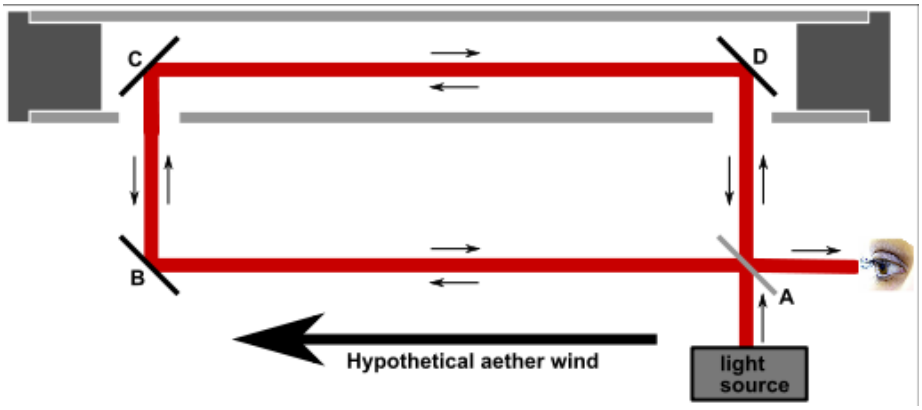
You have light from the same source going in both directions. If you now place that entire apparatus on a rotating table, spinning it in a circle, it is found that light going one direction reaches the detector late compared to the other light. Using my theory, we explain it this way: Since the rotating platform rotates the source, mirrors, and detector, it will also rotate the charge field in and around those bodies. Since the charge field is rotating one direction and not the other, one path of light will be going with that field and one will be going against it. Since the charge field is real, it will cause real photon collisions. The light going against the charge field will have to take a longer path. And so we have the Sagnac effect.

You may ask yourself how they managed to spin that into a disproof of the dragged ether. At Wikipedia it says,

The Sagnac effect shows that two rays of light, emanated from the same light source in different directions on a rotating platform, require different times to come back to the light source. However, if the aether is completely dragged by the platform this effect should not occur at all.

How did they get there? I guess by assuming that a dragged ether has zero bias in direction at all points, causing no local resistance. But that would only be true if the ether had no reality, and were only a co-ordinate system of lines. As you see, once we give the ether a real presence, as with my charge field made up of real photons, the disproof of the Sagnac Effect becomes proof.

We see the same misdirection with the Hammar Experiment, in which lead blocks were added to the Sagnac interferometer.



This apparatus was not spun or even moved, it was only aligned parallel (and then perpendicular) to the motion of the Earth. We are told that, given an ether, this experiment should have shown some difference between parallel and perpendicular, but it didn't. The result was negative.

Obviously, this is proof of ether drag, so why are they selling it as disproof? Given my charge field as the ether, we would not expect a positive result here. The local charge field is stationary to this experiment no matter how it is aligned to the Earth's motion, so the null result is no mystery.

An ether wind is not the same as a dragged ether: *they are opposites*. You would only have an ether wind if the ether were *not* dragged. A dragged ether creates no local wind. Hammar's experiment is disproof of a local ether wind, but it is not disproof of a dragged ether. If this apparatus is dragging the charge field along with it, then any forces from that charge field will be zero. And yet Wikipedia says:

Hammar's negative result refuted some specific aether drag models, and confirmed special relativity.

What? It doesn't refute any possible ether drag model, except maybe an ether drag model that proposes no drag. And it does not confirm Special Relativity, either. In fact, it tends to *disprove* it, because it gives SR nothing to explain. What Hammar's result *does* tend to confirm is the complete ether drag model of Stokes. Although it doesn't confirm all of Stokes' conclusions, the negative result obviously confirms that—if the ether exists in this experiment—it is being dragged along. If it weren't being dragged along, it would cause asymmetry here. The lack of asymmetry indicates complete ether drag, leaving SR with no problem to solve.

How is it that these guys are always upside down to the facts? If it is light they are always telling you it is dark, and if it is dark they are always telling you it is light. Have all these thousands of physicists really been that awful at doing physics, or has history been reversed by a cabal of fabulous liars? After all my work over the past decade, I suspect the answer is "both." We know we are being lied to about absolutely everything now, but even when I go back to the original 19th century texts, I find mass confusion.

We see that once more in the section at Wikipedia entitled "Stokes' response to these problems." Although Stokes' response regarding incompressibility of the ether is false and not really to the point (the charge field is not incompressible), Lorentz' reply to Stokes is even worse:

[even] if the aether has the same normal component of velocity as the earth, it would not have the same tangential

component of velocity, so all conditions posed by Stokes cannot be fulfilled at the same time.

That is also false, since there is no reason the ether would not have the same tangential component of velocity as the Earth. Lorentz' argument held little water then, but it holds none now that we know the ether is really the charge field. Since charge is recycled through matter, the charge field will acquire and maintain all the greater motions of the body it composes. This matches the Stokes/Planck theory of 1899 in many ways, since Planck argued that the ether could be compressed by gravitation. This is close to correct, as you see, since denser matter will then cause a denser ether. But it isn't gravitation that causes it, it is charge recycling through the nucleus. The charge is compressed more as it goes through more nuclei.

The only argument given at Wikipedia against the Stokes/Planck theory is the Michelson-Gale-Pearson experiment, but like the Michelson-Morley experiment, the Sagnac experiment, and the Hammar experiment, it is badly misinterpreted regarding ether dragging. The MGP experiment was basically the Sagnac experiment repeated, but using the Earth as the rotating platform rather than a much smaller platform. Given ether dragging, we would expect a positive outcome, and that is what MGP saw. And yet we are told to this day that MGP disproves ether dragging. As I showed above with the Sagnac interferometer, it *proves* ether dragging, so we are just being lied to.

Remember, this is from someone who believes in Relativity, and has corrected it. So in defending the 19th century guys like Stokes, Fresnel, and Planck, I am not trying to overthrow Einstein. I am just trying to sort through all this schist to get to the truth. The truth is, all these theories have been distorted by politics and careerism. Most of these professional physicists were pushing experiments and theories to suit themselves, and the fact that they all had the visualization skills of a star-nosed mole didn't help. In the 20th century, this state of affairs only devolved further, and the mistakes and fudges of the 19th century were spun out into a full-fledged scientific meltdown.

In closing we will look at one final experiment mentioned at Wikipedia: that of Oliver Lodge. Before we analyze the experiment itself, it is worth noting that Lodge never came around to Relativity, even though he lived until 1940. He was a promoter of the ether until the end, despite the negative result of the experiment we are about to look at. This is worth mentioning for two reasons. One, like Tesla, Lodge was an important experimentalist. He actually got things done. It is now known that Marconi plagiarized (or bought the patents and took credit for) large parts of wireless and radio technology from both Tesla and Lodge. Only in recent decades have the large roles of Tesla and Lodge been admitted. Two, also like Tesla, Lodge has been slandered by the mainstream all along. His current page at Wikipedia contains its longest section on spiritualism, in which Lodge is implied to be a kook for thinking that some paranormal phenomena might be linked to the ether. In this regard, you should note that Einstein's spiritualism was sold as a plus at the same time Lodge's was being sold as crackpottery. Had Lodge given up the ether and tied his spiritualism to Einstein's coat-tails, he would have been forgiven all.

Of course this once again indicates a very unsavory politicization of physics, in which anyone who does not fall into lock-step with current theory is slandered and memory-holed. It also indicates a dishonest reportage of history, since we are led to assume that all these experiments that supposedly disproved the ether and proved Relativity were done by people who didn't believe in the ether. As we see with Lodge (and many others), that isn't true. Many of the guys running the experiments at the time continued to believe in the ether, and didn't accept the pushed interpretations of the mainstream promoters. In fact, very few physicists brought up in the 19th century were ever convinced by the Fitzgerald/Lorentz contraction, with or without the extensions of Einstein. Even after their own

experiments to prove the ether failed, they refused to look seriously at the illogical proposals of the new science. We see now that they were right not to. Although I have shown that Relativity is true in a limited sense—one that remains logical, physical, and mechanical all along—the way it has been sold in the 20th century could not appeal to any rational person.

Now for Lodge's experiment. Lodge thought that the ether might be proved by showing its viscosity. In order to make that viscosity show, he thought to put a Sagnac interferometer between two quickly spinning disks. The disks were steel circular saw disks, three feet in diameter, spun at 800rpm in the same direction. According to Wikipedia:

Oliver Lodge conducted experiments in the 1890s, seeking evidence that the propagation of light is influenced by being in the proximity of large rotating masses, and found no such influence.

But if we study the experiment itself, that is not what we find. The wind from the rotating disks was so great it blew his mirrors out of position. That just tells us the experiment wasn't done in vacuum, so there was no way to separate the molecular wind result from the charge wind result (the charge wind is what he was looking for as ether viscosity). Lodge was able to negate most of his wind by later placing clear dividers in the gap, but that caused other problems, including diminution and distortion of the light beam. Besides, since the dividers could not go all the way up and down to the rotating disks, they did not block all the wind.

Even so, Lodge found that the motion of the disks *did* affect the light. I am not too impressed by his apparatus, but if we are going to quote it and link to it, let us see what it actually had to say. As his data, Lodge reported the width of a band of yellow light and its displacement to the side. He found both a change in width and a displacement in all runs. For example, in one run the width of the yellow band was 146 divisions with no motion of the disks, and 158 with. It was shifted to the right 8 divisions.

So why did Lodge report a negative result? His negative result was based on running his disks clockwise versus counterclockwise. He found roughly the same change in width and displacement both ways, and thus reported a negative result. But that isn't a negative result. That is only indication he wasn't able to get rid of his molecular wind. It is indication his apparatus was a failure, which is a negative result of a sort. But it isn't a negative result regarding the ether. The mainstream shouldn't be able to use Lodge's failure here as support for their theories, or even as negation of the ether. The experiment was inconclusive regarding the ether, not negative.

You could even read Lodge's experiment as confirmation of the ether, since he *did* find a change in width and a displacement. That may have all been due to a molecular wind, *or not*.

We can also see by Lodge's report that he was trying to prove an ether wind, not a dragged ether. A dragged ether would be dragged in the same amount clockwise or counter-clockwise. If the ether is charge, as I say, then the charge field of the disks would be the same strength either way. So equal numbers would tend to prove charge dragging, not disprove it. But Lodge was trying to prove an ether wind, since he says his reversed spin is "helping the transmitted beam." This is why he was disappointed by equal numbers forward and back. For him, a positive result would have been *unequal* numbers forward and back. But since I would expect equal numbers forward and back, a positive result for me would be any real effect on the light not assignable to molecular wind or to a movement of the mirrors: that is, any effect on the light we had to assign to the charge field. Lodge's apparatus was not capable of that, but I am certain we have machines now that could make that distinction. Why

has his experiment not been rerun? We must assume it is not rerun for the same reason the Schiehallion experiment has not been rerun, or any of the other important experiments of the past 200 years: the mainstream wouldn't like the answer.

In fact, we now have experiments that *have* confirmed this, although they aren't read that way by the mainstream. We have thousands of experiments, old and new, showing the charge field interacting with both light and matter. Just about any experiment indicating the reality of the charge field could be used as proof of the ether, since it was the charge field acting as the ether all along. This would include beta decay asymmetry, the Stark effect, the Zeeman effect, blackbody radiation, the galactic rotation data, the P-N junction, evanescent waves, and so on. Just about any paper I have published in the past five years could stand as proof of the charge field as ether, including all my papers on nuclear structure. If we did repeat the Lodge experiment in vacuum, with a tight machine, we would find the charge field affecting the light in the gap in defined ways, all of them confirming a dragged charged field. Since charge is real photons moving through the nuclei in the spinning disks, how could the charge field not be spun as well? Since even in the vacuum between spinning disks, we would find charge, how could that charge not be dragged? Since charge is being emitted from the disks (and mirrors, etc.) at all times, how could it not leak into the gap?

Ironically, the experiment would find less charge interaction with the light in the gap at higher speeds than lower speeds. Why? Because in that case the charge emitted by the disks would be more effectively forced out on the plane of spin. Incoming charge would then be forced more effectively to the poles of spin, leaving less charge in the vicinity of the mirrors. To find a greater effect on the light in this case, we would then use a much smaller Sagnac ring, so that it was closer to this pole. We would then expect a vertical effect rather than a horizontal one.

*_Old Physics for New_, second edition 2012. See p. 77, for example.
**Airy's telescope was filled to a depth of only 35 inches.
†Planck did propose that at the end of the 19th century, and it certainly didn't help him politically. In fact, that may be why he was open to Einstein only five years later. He was one of the first to switch sides on this question.