

## Re: evidence for the existence of the ether

**Source:** <http://sci.tech-archive.net/Archive/sci.physics.relativity/2004-12/4613.html>

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**From:** greywolf42 ([mingstb\\_at\\_marssim-ss.com](mailto:mingstb_at_marssim-ss.com))

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Date: Mon, 13 Dec 2004 20:45:57 GMT

Thomas Clarke <[tclarke@ist.ucf.edu](mailto:tclarke@ist.ucf.edu)> wrote in message  
news:a5f66bc7b5dde0765c1c85703226f811.128340@mygate.mailgate.org...

> "greywolf42" <[mingstb@marssim-ss.com](mailto:mingstb@marssim-ss.com)> wrote in message

>> Thomas Clarke <[tclarke@ist.ucf.edu](mailto:tclarke@ist.ucf.edu)> wrote in message

>

>> I've *been* trying to summarize. Again, please be specific about what

>> you want to know, if you can't get ahold of the reference.

>

> What is the temperature of the ether at the surface of the sun

> (or another body of your choice) versus what is its temperature

> 1 lightyear away (or another very large distance of your choice).

The temperature-equivalent is just about the same. The differential momentum fraction is approximately  $1 \text{ E } -9$  for each "g" force. (The surface of the Earth.) Hence, the aether temperature should scale as  $(v^2)$ . So our fractional change will be about  $3 \text{ E } -4$  per "g". IIRC, the Sun has an estimated surface gravity of 30 g. So the fractional temperature change will be around 1 part in 1000.

> *Express temperature*

Here you will see a short description of values that predate the copyright of the referenced book.

<http://groups-beta.google.com/group/alt.sci.physics.new-theories/msg/a5d2f8d440c9474d>

You'll note that we don't have a direct measure of the mass of an individual aether corpuscle. There might not be a single size (i.e. motes). However, there is bound to be an average size. What we do have is:

density:  $8.85\text{E}-12 \text{ kg/m}^3$

pressure:  $1.26\text{E}-06 \text{ kg/m-sec}^2 \text{ (N/m}^2\text{)}$

Boltzmann's constant, k:  $1.38\text{E}-23 \text{ J/deg K}$

Unfortunately, we can't determine the absolute temperature of the aether from the physical quantities that we do know -- which are determined from measured bulk properties contained in EM and gravitation.

It's not listed in the above link, but the expected average speed of the corpuscles is  $\sqrt{3} c$ . Which is determined from EM transverse wave speed in Maxwell's aether. And seems to be confirmed by light-tunneling experiments ( $1.7c$ ).

For example we may try,  $T = 2/3k \langle 1/2 m v^2 \rangle$ . But we don't know the mass of individual particles (only the density).

Or,  $P = 2/3 \nu \langle 1/2 m v^2 \rangle$ . But we don't know  $\nu$  (number of particles in a given volume).

We could \*assume\* that  $T_0 = 2.73 \text{ deg K}$ , and back-calculate the average mass of the particles. But 1) That would be ad hoc, and we'd rather calculate it from some other effect. 2) The temperature of the aether may only be "equivalent to" the temperatures of matter. In the same manner the mass-equivalent of aether corpuscles relate to the mass of matter.

> .....

{snip duplication of conduction-and-speed discussion, dealt with in more detail, below}

> .....

> [Re Source of etherist's term "Feynman drag"]

>

>>> I believe you'll find it on pages 7-9 & 7-10, Volume 1 "The Feynman

>>> Lectures on Physics"

>

>>> I see it:

>>> "Suppose there were many particles moving in space at a very high

>>> speed in all directions .... It involves new consequences that are not

>>> true...."

>

>> I believe that's it. And the "spiralling into the Sun" myth is just

>> that. The problem with Feynman's conclusion ("It involves new

>> consequences that are not true") is that Feynman didn't consider

>> the counter effect of gravitational aberration -- that arises as a

>> result of finite speed of propagation of gravity. Nature is pretty

>> conservative.

>

> So you are saying that your theory does not account for the Pioneer

> effect? If you alleged mechanism cancels out Feynman's for planets

> does it not also cancel out for space probes?

Think for a bit. You have shown yourself quite intelligent and knowledgable. Why would you expect a space probe to exhibit gravitational aberration? The probes in question aren't in orbit -- they are leaving the solar system in highly hyperbolic trajectories. Only orbiting bodies exhibit gravitational aberration, due to their transverse (circular) motion.

> .....

{ snip duplication of conduction-and-speed discussion, dealt with in more detail, below }

> .....

> > > *Because speed is not infinite, neither can conductivity be.*

>

> > > *But for the issue at question, quantity matters, if sufficiently*

> > > *large conductivity can mess up your light deflection picture.*

>

> > *Indeed. But such a claim must include values. Not simply a claim of*

> > *infinity. My point in this thread is simply that there are no such*

> > *infinities in the real world. And for very commonly accepted physical*

> > *reasons.*

>

> *I thought Maxwell predicted such infinities for ether.*

Maxwell predicted the phenomenon of superconductivity. Which is "essentially" zero electrical resistance for flow within a "local molecule" of his fluid. There are no infinities in his model.

For example, Maxwell could have assumed infinity for the speed of light. But instead, he calculated the speed of transmission of transverse E and M waves in his aether. (And until he calculated it, no one knew that light was transverse electric and magnetic waves.)

{ snip higher levels }

> > *Let's assume that we have an otherwise perfect conductor of heat. If*

> > *you are correct, the maximum speed of transfer of a "packet" of*

> > *thermal energy between two points, is the speed of the*

> > *"molecular motion?"*

>

> *Speed of transfer of a packet of thermal energy is not meaningful.*

It is meaningful. You have a calorie of energy (a packet, or unit). It is transported (moved) from one physical location to another. This movement takes place over a certain unit distance in a given time. A quick review from an intro physics book: the standard heat conduction equation, (p. 316, "Introduction to Physics for Scientists and Engineers," Bueche):

$$(\Delta Q / \Delta t) = \lambda A (\Delta T / \Delta x)$$

"The quantity  $\Delta T / \Delta x$  is the change in temperature per unit length, and is often called the temperature gradient. ... (M)etals are very good heat conductors. This is a result of the fact that the valence electrons, which are rather free to move in the metal, are able to transport energy from place to place. As a result, heat is conducted through the material by both the valence electrons and the collisions of the vibrating atoms. In nonconductors there are no free electrons, and so the thermal conductivity is reduced."

Now, here we see that the higher the average rate of translation (speed) of the carrier particles, the better the conduction. Now the above is the steady-state equation, for use after all transient effects have died out.

- > *But if the conductor is opaque (so EM radiation does not play a role)*
- > *an impulsive introduction of heat energy (say it is struck by a laser*
- > *pulse) at one point will not have a thermal effect at a distance point*
- > *sooner than it is possible for the molecular motion to transfer the heat.*

Excellent! You also can see that the same occurs even when an "large bulk" hot plate is attached to one end. The energy to raise the temperature within the conductor must be transported along the conductor. And the speed of that temperature rise will depend upon the linear speed at which energy is conducted (by whatever particle does it) and the heat capacity. Both of which are material properties.

- > *There are issues of extreme tails of the Maxwellian distribution allowing*
- > *for some heat to be transferred much faster than mean speed, but*
- > *the time delay until heat first appears is related to molecular speed.*

We can ignore the tails for now, I think.

So, because there is a time delay, you will understand that there is a physical speed of that-which-conducts-energy (heat). If you have an active sink (or source) on both ends of the conductor, the conductor will reach a stable, nonzero, temperature gradient. Hence \*no\* real material containing a heat sink (the aether in this case) can be perfectly isothermal.

> .....

- > > *The issue is whether there is sufficient isothermy to account for*
- > > *deflection of light.*
- >
- > > *No. You are welcome to start such a thread, if you wish.*
- >
- > *Shall we? But it could easily be subsumed under the same title as*
- > *this thread which has already had many branches.*

Perhaps after the first of the year. Various holiday and other obligations will make it impossible for me to respond quickly. And this post is already unwieldy.

- > > *But the issue*
- > > *under discussion \*here\* was your (and David's) claim for perfect*
- > > *isothermy, on the basis that a superfluid aether must also be a*
- > > *superconductor.*
- >
- > > *The claim for perfect isothermy is false. Wouldn't you agree?*
- >
- > *Is the ether a superfluid?*

I would say so, based on both EM and gravitation.

> *Does it have a Maxwellian distribution?*

I assume so, since that's what results from elastic collisions.

> *What is its mean free path? [Not sure that is relevant if it  
> is really a Bose–condensate superfluid, but you are allowing  
> for a less than super, superfluid somehow]*

Both Maxwellian superfluids and Bose–condensate superfluids are limited by the speed of light. The relevant term is not MFP, but the action term, "h". Otherwise known as Planck's constant. (Relevant in that it appears in various calculations.)

> *It depends. There might be conditions where a superfluid  
> might not be isothermal but it depends on details.*

The conditions are the same as for any other material. If you embed energy sinks or sources in the material, it cannot be perfectly isothermal.

> > > .....

>

> >.... *If you want to see*

> > *quantitative predictions on "our" theory, see "Pushing Gravity"*

> > *(previously given.)*

>

> *Why don't you make them available on the web.*

For the same reason that physics publications are not usually available on the web for several years. As noted before, I don't own the copyright. Some earlier predictions (values have not changed), not covered by copyright are available in the link, above.

> *The book is not in my*

> *library and I have no interest in paying money to get a peek at a theory*

> *that to me sounds extremely flaky.*

Try interlibrary loan.

> > *Now, if the numbers appear as reported, will you count this as*

> > *"support?"*

>

> *Were numbers reported to me? If they were, I wouldn't need to see*

> *the article, would I?*

I would, if I were you. To verify that the numbers are as I've represented. Since you think the theory is "flaky." But then I'm from Missouri. And if I see something that looks odd, I'll check up on it.

{snip higher levels}

sci.physics.relativity: Re: evidence for the existence of the ether

- > > > *In other words they use the Lorentz transform as well as other math?*
- >
- > > *No, the engineers don't use "Lorentz transforms." They use Lorentz'*
- > > *theory (1904) -- motion w.r.t. the accelerator / field. They never are*
- > > *in the position to invert the equation required for a "transform."*
- >
- > *That is a distinction that makes no difference. Inversion is only*
- > *a mathematical operation.*

In the real world, it takes a vehicle capable of accelerating to speeds in the neighborhood of light speed, relative to an initially-stationary observer. The universe is not merely a mathematical concept.

- > > > > *You didn't think that the GPS engineers were naive*
- > > > > *enough to trust any one theory before sending up the satellites?*
- >
- > > > *Actually yes.*
- >
- > > *Well, they weren't that naive. They had several different theories*
- > > *possible,*
- >
- > *Care to mention a couple?*

Newton's light corpuscles. GR. SR. LET. Dragged aether. Transparent aether. Absolute space. All theories ever invented. The purpose was to get something that worked for a specific purpose — not to perform a science experiment.

- > > *but just instituted a generic "historical" time adjustment. And*
- > > *they actively steer the satellites, to boot.*
- >
- > *And this is relevant how? Since when has any system put together*
- > *by humans been perfect so as to conform to theory without*
- > *deviations due to errors of various sorts?*

It is relevant because the GPS was designed by engineers to work. Regardless of which theory of light, space and time that the "long-haired, lab coats" favored at the time. The GPS doesn't \*use\* any of the above. It creates it's own historical offsets, based upon constant updates from known positions on the ground. It only uses those offsets for "coast" mode (between ground contacts).

- > .....
- > > > > *.... The equations in LET are not reciprocal transforms.*
- >
- > > > *Lorentz transforms are not a group?*
- >
- > > *The SR transforms may be a group. But LET doesn't use transforms ... or*
- > > *a group. The equations in LET are one-way, not reciprocal.*
- >
- > *A distinction that makes no difference.*

Re: evidence for the existence of the ether

???? Please think a moment. You have the intelligence and capacity.

In SR, if you have two rulers moving relative to one another, BOTH observers will see the "other" ruler as shortened. In LET, if you have two rulers moving relative to one another, ONE observer will see the "other" ruler as shorter; and ONE observer will see the "other" ruler as longer.

That is a difference of both kind and value.

> .....

> > > > *What is the mass density of your ether?*

>

> > > *The mass-equivalent density of the aether is  $8.85E-12$  kg/m<sup>3</sup>.*

>

> > *Wow a number. I'm impressed.*

>

> > *Why? Since we were arguing infinities, specific numbers weren't needed.*

>

> *I'm used to etherists who just wave their hands and make verbal arguments.*

That's because we are usually responding to mere unquantified or "infinity" verbal arguments. :)

> *That is way higher than the critical density, but that shouldn't matter*

> *I guess since I think in your theory the ether is gravity so it*

> *shouldn't cause gravity and make the universe collapse or something.*

True. You can't use GR or BB pure-math limits to argue against a different physical theory.

> .....

>

> > *Neutrons stars are superfluid liquids. Compressed by external forces.*

> > *The aether is not a compressed superfluid.*

>

> *If it a gas and it is not compressed why has it not expanded to*

> *vanishingly small density?*

I quite frankly don't know, because I have no idea what the limits of the cosmos are. Nor are we discussing cosmology (the origin of the universe), here. We are simply addressing the mechanics of gravitation and light that we see in operation today.

> *Or is that your explanation for the Hubble expansion?*

Redshift arises from loss of energy back to the medium. It's not an expansion.

> *[Re the amazing Maxwell]*

He was. Heaviside was almost as amazing.

> > > *Why didn't he explain the black body radiation problem then?*

>

> *[a cutoff effect caused by Maxwell's particulate ether]*

A decent summary of how Maxwell's model can explain the BB curve. All particulate fluids have a short-wavelength cutoff for waves.

However, you asked \*why\* Maxwell hadn't solved the "ultraviolet catastrophe" problem. And I answered. Maxwell was dead when the mathematicians misused his equations without understanding his model.

> > *So, one can explain the so-called "ultraviolet catastrophe" quite*

> > *easily, using Maxwell's model. One could have predicted the*

> > *shape of the BB curve directly from Maxwell's model. Although*

> > *the value of the constant "h" would have had to be determined by*

> > *experiment.*

>

> *Have you written the detailed calculation up anywhere?*

Personally, no. I believe Planck did it first. But we have derived the action term ( $h$ ) from other observables. Hence, we've had no need to duplicate Planck's work.

> .....

> > > > *What is the heat source? What is the heat sink/radiator?*

>

> > > > *The heat source is the loss of energy and momentum by the*

> > > > *corpuscles. The heat sink / radiator is gravitating matter.*

>

> > > *I don't find that a good answer.*

>

> > *In what way?*

>

> *A. It is not quantitative.*

You asked for identification, not quantification.

> *B. Without support of A it sounds circular since the gravitating matter*

> *is supposed to radiate the energy via BB back into the corpuscular ether.*

In a changed form. Gravity removes disordered motion (thermal energy). Planetary heating adds ordered wave motion (light energy). Light energy (ordered wave motions) is slowly converted back to the medium as thermal energy (disordered motion).

This is nothing more than energy conservation. Why would you need numbers? It is a closed cycle. It is not circular logic.

> .....

> > > *But I thought you said your ether was not a perfect superfluid?*

>

> > *Perfection does not exist in nature.*

>

> *So the ether is not a superfluid?*

The aether is a superfluid. Superfluids exist, even if they are not perfect.

> > > *If not perfect, then there would be losses.*

>

> > *There \*are\* losses when matter interacts with corpuscles (gravity). And*

> > *when light waves interact with corpuscles (tired light). Where else*

> > *would you expect energy to go?*

>

> *Light waves are not different from motion of the corpuscles in your*

> *theory, so you have a hidden circularity in that.*

But they are quite different. Just as heat and sound are different in a normal gas. Both are the result of motions of the particles. But one is organized wave motion. The other is random corpuscular motion. They can be superposed, but they remain separate properties.

> *In standard theories there are many forms of energy that convert and*

> *interconvert, in yours there seems to be only motion of corpuscles.*

Both light and gravity carry energy, but they are different processes.

> > > .....

{snip higher levels}

> > > *So quantify.*

>

> > > *???? I'm not the one claiming that it "can't work."*

>

> *You are claiming that it can work. I am doubting that.*

Doubt away. You are free to claim that I haven't proved that it *\*does\** work, to your satisfaction. But you are not free to claim that it *\*cannot\** work -- without supporting your position.

Your "infinity" argument (that it *\*cannot\** work) has now fallen. You will have to come up with something quantitative to continue to claim that it *\*cannot\** work.

> > *The theory provides*

> > *quite a few numbers, and accurate descriptions of EM and gravitation.*

>

> *Web site?*

Book. Reference previously provided. Placing on web site would violate copyright.

> > *The*

> > *"objection" that we are dealing with here is the explicit claim that the*

> > *superfluid aether \*must\* be perfectly conductive,*

>

> *If it is superfluid then it must be perfectly conductive.*

No. If it is a superfluid, then it has essentially zero viscosity (which is the definition of a superfluid). Superfluids don't need to be perfectly conductive. They can be superconductors. But they don't need to be.

> *If there are*

> *finite speeds involved then that puts limits on some transient effects.*

Also on conductivity effects. Conductivity results from the motion of particles that "carry" the heat from one place to another. The faster the motion, the better the conductor. And since we both agree that we don't have particles that are infinitely fast, conductivity can never be absolutely perfect, or absolutely fast.

> > *and perfectly isothermal.*

> > *That argument has now been safely refuted.*

>

> *Not at all. You have merely presently some plausible verbal arguments.*

That's all one needs to counter unphysical claims about pure perfection and infinities.

> *But your gravitational heat can flow through a superfluid without*

> *temperature gradient.*

I don't think I understand what you mean here. Are you discussing \*net\* heat flows without temperature gradient?

> *There are start up transient issues but they require*

> *quantitative argument to settle.*

We have no need to address issues of transients. So I won't ask you to provide your quantitative arguments. Let's stick to the continuous heat sink of gravitating planets.

> > > *It is completely incorrect to claim a*

> > > *theoretical perfection that can never exist in the real universe.*

>

> > > *That is just the trouble I have with your ether theory.*

{snip tangent}

sci.physics.relativity: Re: evidence for the existence of the ether

- > > *No aether theory claims perfection.*
- >
- > *Then let's see how it works without perfect recycling of energy etc*
- > *via a quantitative calculation.*

I'm not planning on throwing out conservation of energy. If you want to postulate non-conservation of energy, be my guest. But don't place such arguments at the door of aether theorists.

> .....

{snip duplication of conduction-and-speed discussion, dealt with in more detail, above}

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greywolf42  
ubi dubium ibi libertas  
{remove planet for return e-mail}