



Quarks

do more than we think.

Also why we have

Fission, Fusion & the Periodic Table

I was 21; I had my pilot's license and my Second Class Radio-Telephone license, enabling me to repair powerful radio transmitters, and I especially heeded Albert Einstein in 1954 when he said, *"I consider it quite possible that physics cannot be based on the field concept, i.e., on continuous structures. In that case, nothing remains of my entire castle in the air, gravitation theory included, [and of] the rest of modern physics."*

I sensed that Einstein was absolutely correct in this assumption because too many things in radio and present science were not being explained properly by gravitational

fields, magnetic *fields* and plus and minus charges.

As the years passed, I saw our best science laws were woefully inadequate in their explanations as to what was really going on in this universe. Not only that but few scientists agreed with each other as to what the truth really was. For instance, Newton plus every astronomical school -- *even the big ones like Yale* -- said gravity acted instantly while Einstein claimed that no communication, such as that, was possible faster than the speed of light.

I hunted and hunted for a better explanation of everything, and at the ripe old age of 33, found that Ampere had discovered what was really going on even before Faraday had invented his *field* concept of forces in the electron world.

While the *field* concept accurately simplifies the resultant force of multiple quanta, it does not give the reason behind what is really going on.

I resolved to find a reason as to why we had all these invisible forces.

So in 1966, while working for Pan American Airlines, I discovered the reason behind all these forces. I published my first book: it showed how gravity could be unified with the other forces using, what Scientific American several years before in a lengthy article termed, **"Ampere's Long Wire Laws"** [Ampere's Laws](http://www.rbduncan.com/relMlaw) or a simpler view <http://www.rbduncan.com/relMlaw>.

In fact, Richard Feynman shows the missing ingredient, for the unification of gravity with the other forces, in his famous [QED](#). The missing ingredient is motion that Ampere saw in 1824 and that I saw in 1966 and that Richard Feynman showed effectively unified things in 1985, moreover I saw that relative motion, in this frequency universe, could also be viewed as *phase*.

There was a full page in the New York Times devoted exclusively about [Fitzpatrick's First Book](#) on June 18th 1967.

"Fitzpatrick's First Book" also in Adobe.pdf - [pge1.pdf](#)

Click above links to read that first book of mine free.

I've found out and published a lot more since then: Over 4 Decades of Fitzpatrick's Books, Papers & Thoughts <http://www.amperefitz.com/4.decades.htm> and here's this page duplicated in Adobe.pdf: <http://www.amperefitz.com/4.decades.pdf>

But here we are today -- Now!

At this time, I'm two months past my 80th birthday and I recently discovered a bit more about electrons, quarks, the periodic table, fission and fusion.

I saw this while trying to figure out an entirely different problem.

To keep this paper short, I am not going to try to paint the big picture of things; you can read my other papers and

books to see that. Here, I'm only going to show you the essentials of what I've most recently found.

First: because light goes slower than instantly it has **aberration**. Since gravity has **no aberration** then it must be acting much faster than light. So we should listen to [Van Flandern](#). Tom Van Flandern **proved** -- *as every astronomer knows* -- gravity must be going far, far faster than the speed of light for this universe to be stable. But this speed doesn't have to be quite instantly as required by Newton. Van Flandern and most astronomers have accepted a speed of 9×10^{16} meters per second: this is 3×10^8 meters **squared** per second *or* the distance **squared** that light travels in one second. Is this the c^2 we see appearing in our math? Can this (a speed of 9×10^{16} meters per second) then be considered the speed of gravity?

Second: the scientific community is failing to heed the big 23 hour, 56 minute, 4 second problem:

We've known since 1851 – when Foucault built his pendulum in Paris – that gyroscopes, pendulums and vibrating elements all hold their positions to the stars. We know this because all these things – from our point of view here on earth – completely rotate their planes every 23 hours, 56 minutes and 4 seconds which is **one sidereal day** or the

time it takes the earth to make one complete rotation in space (in regard to the stars).

Why can't present science give us an explanation as to why all these things **hold their positions to the surrounding stars?**

Why can't present science tell us the reason why centrifugal force **holds to the surrounding stars?** And what is the reason that force increases with the speed of rotation? I've shown why!

A big piece of science is **spin conservation**.

The electron can't be causing gravity and inertia because scientists agree that electron spin is conserved: this means that all forces caused by the electron's orbit and spin are known entities and none of these are gravitational or inertial in nature.

Therefore, we have to look to the quark to be causing gravity and inertial mass, especially as the scientific community sees quark spin as not being conserved. How on earth can they say that? Their own basic science laws say all spin must be conserved. Quark research leads to the conclusion that quarks moving toward the outside edge of nucleons should not be seen as having this so called asymptotic freedom; it should be seen that those quarks are being pulled there, against the strong force, via bindings with far, distant quarks

in the surrounding stars to give inertial mass. They are also binding with not so distant quarks to cause gravity. This, in fact, is CERN's *God particle*! **Seen this way quark spin becomes conserved!**

Also this is "**Mach's Principle**". You can't simply sweep this under the rug.

Third: Einstein's **cosmological constant**:

A quote from the **Britannica 2009 DVD**: "If one speaks in Newtonian terms, the **cosmological constant** could be interpreted as a repulsive force of **unknown origin** that could exactly balance the attraction of gravitation of all the matter in Einstein's closed universe and keep it from moving."

This repulsive force – *equal but opposite of gravity* – between all the stars and galaxies is *Einstein's cosmological constant*. This is consistent with what Milo Wolff [*Dr. Milo Wolff*](#) has found.

Both **Saul Perlmutter** and Milo Wolff have provided the necessary proof that this acceleration and expansion are only apparent just as the **acceleration** of 32 ft per second *squared*, associated with gravity, is only apparent.

Einstein's cosmological constant is a **force** keeping all the stars, galaxies and superclusters apart which gives us this

apparent **accelerating**, expanding universe.

But it's exactly like the earth's 32 ft per second *squared* **acceleration** **force** of gravity: We can detect it alright as an **acceleration** but there's no real **acceleration** or **expansion** connected to it.

No longer is it of **unknown origin** because now we know the involvement of c (*the electron spin frequency*) that we see as the speed of light and c^2 (*the quark spin frequency*) that we see as an acceleration in producing this – *out of phase* – repulsive force.

We would see c^2 as an acceleration: yes, 299,792,458 meters per second *squared* is indeed an acceleration!

Quoting from the **Britannica 2009 DVD** "The Supernova Cosmology Project, headed by **Saul Perlmutter** of the Lawrence Berkeley National Laboratory in California, reported on measurements of the apparent brightnesses and red shifts of 42 Type Ia supernovas. . . . not only is the rate of expansion of the universe not decelerating, but it also appears to be **accelerating** slightly."

Einstein died before **Saul Perlmutter's** group discovered this **acceleration**. If Einstein would have known about this **acceleration** then he would have known he did not blunder in 1917 and he would have told everyone that if one could not discern the apparent **acceleration** of 32 ft per second

squared from gravity (*principle of equivalence*) then one also could not discern his *cosmological constant* — *equal but opposite force of gravity* — from an apparent **accelerating**, expanding universe.

Fourth: -- *and this may be the most complicated section but please hang in there* -- All attractions are *in phase* bindings.

Let's read Einstein's 1954 statement once more: "*I consider it quite possible that physics cannot be based on the field concept, i.e., on continuous structures. In that case, nothing remains of my entire castle in the air, gravitation theory included, [and of] the rest of modern physics.*"

Listen to Einstein and forget about *field* concepts that can only be used with multiple quanta. With each separate quantum it's not a *field*, it's *phase* explained by Ampere's Laws: <http://www.amperefitz.com/Amp.htm> and <http://www.amperefitz.com/Amp.pdf>

A Cooper pair of electrons is a spin up - spin down pair of electrons, both spinning in the same equatorial spin plane, thus both are keeping an ultra thin portion of their closest sides *in phase*. These ultra thin portions of their closest sides *in phase* is what binds these two electrons together.

I've written many papers in the past decades -- *that anyone can read free* -- showing why scientists would think it was plus and minus charges and magnetic lines of force when it is nothing but *phase*.

These ultra thin portions of their closest sides *in phase* is what binds close or far distant spin up - spin down quarks together as well as electrons.

So forget plus and minus charges entirely; forget orbitals too: It's actually Niels Bohr's old orbits, not orbitals. And forget *fields*, it's *phase*. This *in phase* electron to electron attraction is what is happening in chemical bondings and magnetism as well.

Not only that but each electron in each molecule is binding to a separate *down quark* in the same manner as a Cooper pair of electrons because the spin frequency of each *down quark* is the square - *a resonance* - of the electron spin frequency.

Each electron orbits a separate *down quark*, spinning in opposite direction to the *down quark* it orbits around.

Consequently, it is the *down quark* configuration pattern in the various protons that gives the orbiting electrons their respective molecular pattern.

The various different *down quark* positions, therefore, give us the pattern of the different molecular electrons and the reason for the **periodic table**.

And there is more:

Most who read this will understand that mass is not weight. Mass is the measure of the resistance to change of

movement. A hammer on the moon would pound nails and dent metal and break things exactly the same there as on earth even though it would weigh far less on the moon than here. The hammer has the same mass on the moon as it has here even though it weighs less on the moon.

But this is high school science and most should know this. What most don't know, however, is what Berkeley and Mach and many others have tried to preach: Inertial mass is being caused by something in the atoms and molecules binding with the atoms and molecules of the surrounding stars to give us this thing scientists call mass or inertial mass.

This paper will clarify exactly what is doing that binding.

And of utmost importance about the bindings themselves is this:

These spin up - spin down *in phase* paired bindings, whether electron or quark, are all **quantum** exchanges *the strength of which does not vary with distance*. Only the number of these *in phase* pairs *vary inversely as the square of the distance*.

Make certain you understand the significance of the above paragraph.

Now, take a look at the most important curve in science -- by clicking this link: [Energy Curve](#)

This is the curve of the binding energy of each individual

nucleon -- *not nucleus* -- to each other. This curve is the OPPOSITE of Inertial MASS.

Inertial MASS is the corresponding quark to distant quark binding to the surroundings (surrounding stars). Similar quarks such as the two *up quarks* in a proton can bind together using a spin up - spin down binding of the *in phase* portion of their closest sides exactly the way two Cooper pair electrons bind. Distant spin up - spin down quarks can bind exactly the same *in phase* way as well. Therefore, the strong force acts the same as other forces and is not fully contained inside the nucleus after all!

You can see that the energy curve (if you have clicked on the above link) goes straight up to He⁴ (Helium with 4 nucleons) then drops abruptly to Li⁶ (Lithium with 6 nucleons).

This is telling you something of vast importance: from the one nucleon contained in H¹ to the two nucleons contained in H² to the three nucleons contained in He³ & H³ to the four nucleons contained in He⁴: there is more and more close nucleon binding as each additional nucleon is added to that initial small central area.

But then watch what happens when we add additional nucleons that must of necessity start to build a larger orbit of nucleons around the initial compact 2 proton, 2 neutron nucleus of He⁴.

Whenever a **larger** nucleon orbit has to be made around a smaller nucleon orbit then

quark to quark binding with the surrounding stars goes **up**
(Inertial MASS increases) and close internal quark to quark binding goes **down**.

This is what is happening in that first big drop from He⁴ to Li⁶.

The same thing happens in each of those smaller and smaller abrupt drops all the way up to IRON Fe⁵⁶ even though the larger step advances are upward on the curve to Fe⁵⁶ and of course internal quark to quark binding increases as the curve goes upward.

At IRON Fe⁵⁶ there is a **perfect balance** between close internal quark to quark binding and quark to far distant quark bindings in the surrounding stars *(inertial MASS)*.

We know this because neither fission nor fusion energy is available from IRON Fe⁵⁶. We also know something like this is happening because iron, nickel and cobalt -- *near the peak of the energy curve* -- are the only elements that can be readily magnetized.

Then exactly the reverse, of the red sentence above, happens all the rest of the way from IRON Fe⁵⁶ to uranium U²³⁸.

The reason for this **reversal** is that after Fe⁵⁶ there are so many quarks shielding other quarks from the surrounding stars that any additional larger orbits of added quarks to the nucleus result only in more and more internal binding all the way to uranium U²³⁸.

So this tells you something, doesn't it?

It tells you there is **more** quark to distant star quark binding (*inertial mass*) than quark to close internal quark binding on **all** those elements on **both** sides of IRON Fe⁵⁶ on the energy curve **or less** binding energy per nucleon (*because each element on each side of IRON Fe⁵⁶, on the curve, is lower than IRON Fe⁵⁶*).

Mass and energy are equalized this way because a **scalar, standing wave universe** *necessitates* things remaining **nearly in balance!**

This is why $E=mc^2$ or why mass can be turned into energy. **It's simply a binding change:** Distant star binding (*mass*) simply changes to close internal binding thereby producing energy.

Nothing could be simpler and there it is, right in front of you, on the energy curve.

Look at that energy curve: Isn't it telling you exactly what I just told you?

You can never afford to quit learning things in life.

Now, after **80 years** on this earth I've come to the following conclusion:

A vast portion of present science, being handed to us by our illustrious peers, is most certainly a compelling story that gives us various subset rules and math that we use to produce what wondrous items the military industrial complex believes we require but today's science -- *that has swept Mach's principle under the rug* -- is really as close to the truth as Batman, Superman and the ancient Egyptian religion of Amun.

I hope that a few of my readers can see this.

As for me, I'm just beginning to be able to translate this all frequency universe into things that I can finally understand.

If you copy this page with its [links](#) to your computer then you will have some other pages ([links](#) -- both [htm](#) and [Adobe pdf](#)) to read because I've only barely scratched the surface of things in this short paper.

Fitzpatrick's website is at <http://www.amperefitz.com>

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<http://www.amperefitz.com/question.htm> "Ampere's Long Wire Law is a fact!"

<http://www.amperefitz.com/why.general.relativity.htm> Why we have General Relativity or why mass increases with speed."

<http://amperefitz.com/answers.to.mendel.htm> "Dan Fitzpatrick comments on Theoretical Physicist Mendel Sachs' Beliefs."

<http://amperefitz.com/quarkspin.htm> "While the electron spin causes magnetism, GRAVITY & INERTIA are caused by the QUARK SPIN."

<http://amperefitz.com/abstract.htm> "ABSTRACT of scalar, standing wave concept."

<http://amperefitz.com/lawrm.htm> "It all begins with this all important science law."

<http://amperefitz.com/energy.htm> "All energy is a form of binding energy." (science) e-letter by Fitzpatrick.

<http://amperefitz.com/dark.m.e> Why NASA tells us we have 72% Dark Energy, 23% Dark Matter and 4.6% Atoms.

<http://amperefitz.com/gold1.html> More wave and scalar wave questions answered by Fitzpatrick.

<http://amperefitz.com/fermbos.htm> ELECTRONS are fermions but not when paired spin up - spin down."

<http://amperefitz.com/bond.strengths.htm> "Sigma Bond strengths in the microcosm."

<http://www.amperefitz.com/acceleratingexpandinguniverse.htm> "Accelerating, expanding universe."

<http://amperefitz.com/not.quite.everything.for.a.theory.of.everything.htm> "Not Quite Everything for a Theory of Everything."

[Schrödinger's Universe](#) **Schrodinger's Universe**

<http://rbduncan.com/why.we.have.gravity.htm> "Why we have GRAVITY and why we have Centrifugal Force.

<http://amperefitz.com/einsteins.blunder.htm> "Einstein's Biggest Blunder -- Wasn't?"

<http://amperefitz.com/plawrm.htm> "Electrons normally repel BUT . . ." says Dan Fitzpatrick Jr.

http://www.rbduncan.com/letter_june2004.htm "And Hubble warned us this was NOT an expanding universe."

<http://www.rbduncan.com/binary.htm> Binary Stars act exactly like Electrons.

<http://rbduncan.com/TOEbyFitzpatrick.htm> A "Theory of Everything" by Daniel P. Fitzpatrick Jr.

<http://rbduncan.com/boson+.htm> Bosons?

http://www.rbduncan.com/letter_june2004.htm Newton and Einstein only gave us HALF the story.

<http://www.rbduncan.com/mybook.htm> "A New Science Tool" (science) e-book by Fitzpatrick

<http://rbduncan.com/Gspeed.htm> "Speed of Gravity is 9×10^{16} meters per second."

<http://rbduncan.com/phase.coherence.htm> Phase Coherence and the Inverse Square law.

<http://amperefitz.com/lisiimp.htm> "Why Garrett Lisi's Model is so important."

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<http://amperefitz.com/26nov2006.pdf>

"And Hubble warned us this was NOT an expanding universe."

<http://amperefitz.com/lj2004.pdf>

"Ampere really gave us this Relative Motion Law in 1825 for things he knew were moving in the wire (electrons)."

<http://amperefitz.com/relMlaw.pdf>

"Fitz talks about some basic problems in physics." - by Fitzpatrick.

<http://amperefitz.com/3dec2006.pdf>

"Little Known Facts about Well known science Terms" (science) e-book by Fitzpatrick:

<http://amperefitz.com/ffacts.pdf>

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"Why Garrett Lisi's Model is so important."

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A radioman sees us all as radios tuned in to this universe.

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"Einstein's Principle of Equivalence or why gravity acts like acceleration."

<http://amperefitz.com/principle.of.equivalence.pdf>

Is Saul Perlmutter explaining the reason for us having the principle of equivalence?

<http://amperefitz.com/saultony.pdf>

"It's understanding the Binding Energy Curve" says Dan Fitzpatrick Jr.

<http://amperefitz.com/b.e.curve.pdf>

"All energy is a form of binding energy." (science) e-letter by Fitzpatrick.

<http://amperefitz.com/energy.pdf>

"Shedding light on Energy Quanta."

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Daniel P. Fitzpatrick Jr.