Title –

A Reply In Vixra Forums That Became Too Long, And Turned Into A Hypothesis Of Physics And Astronomy In The Far Future

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Abstract –

This started out as my latest reply to HarryT in the forum on vixra.org called "Quantum gravitational lensing in proton-proton reaction?" (http://vixra.freeforums.org/post1139.html#p1139). But I found it necessary to try and answer every detail as best I could. Maybe it wasn't really necessary – but when you're a bit of a perfectionist, you end up writing too much. The reply seems too long now to post in the forum, so I'll submit it as a short article and put a link to it in the forum.

Wow, I'm exhausted. Writing all those ideas was a real brain-strain. But I think it finally put together many of the ideas I've been slowly developing at http://vixra.org/author/rodney_bartlett for over 3 years.

HarryT's 4 comments are underlined, and my replies follow.

Content –

1) A model with gravitions implies that a gravity field radiates energy or in other words is causing the gravitating bodies to lose energy/mass. This is not a sustainable model in the long term. If the model with gravitons was correct the whole universe should have "evaporated" a long time ago.

Radiation of energy certainly would make the universe unsustainable unless gravitons were an essential ingredient of everything, including space and all matter. I believe it originated from electromagnetism, and both fields fill the entire universe. They're ubiquitous and don't need to travel, but any disturbance sends out gravitational as well as electromagnetic waves.

2) I quote the scientist Erik Verlinde who explained a model in one of his talks as follows: "Compare it to drawing a picture of a house on a piece of paper. Everybody can see it is a house but obviously it is not an actual house."

Suppose the drawing is enlarged; made 3-dimensional; and filled with

things like people, pets, electrical wiring, plumbing, furniture, etc. What I'm saying is that any sufficiently complete and detailed model of reality is surely indistinguishable from reality, and could actually be what we call reality. We could add what is called time by, as http://vixra.org/abs/1407.0212 puts it, "generating virtually endless combinations of basic building blocks". Why should "bits be a bit too simple" to be these basic building blocks - especially since bits are pulses of energy, and also units of information? Bits developed in the far future could reasonably be predicted to display images of, and within, the house trilions of trillions of times every second - thus imparting motion where appropriate. We use the term "space-time" but this doesn't have to mean time has a separate existence of its own. It can mean that what we call time is permanently linked to the motions of everything in space. To use this idea in a relativistic sense - the basic standard of time in the universe is comparable to the 1960's adoption on Earth of the measurement of time as the vibration rate of cesium atoms. We could borrow the conclusions of Albert Einstein's Special Relativity and set the standard for time measurement as the measuring of the motions of photons i.e. of the speed of light. At lightspeed, time = 0 (it is stopped – see the 4th last paragraph, the one mentioning qubits). Below 300,000 km/sec, acceleration or gravitation causes time dilation (slowing of time as the speed of light is approached). So time is added to the house … sound could be added like with DVD's and movies … smells, touch and anything you can imagine will undoubtedly be able to be added oneday.

3) Fundamental electromagnetism, plus gravity, plus the nuclear forces.

Building the house and everything / everyone in it thus depends on bits, and the bits used in electronics are an ElectroMagnetic phenomenon (this makes EM the fundamental force). To see how it makes gravity, let's first look at one example of atomic processes and see how gravity can make electromagnetism.

When Einstein penned E=mc^2, he used c (c^2) to convert between energy units and mass units. The conversion number is 90,000,000,000 (light's velocity of 300,000 km/s x 300,000 km/s) which approx. equals 10^11. Gravity waves with a strength of 10^1 are focused to form matter then, via quantum gravitational lensing, concentrated 10^24 times (to 10^25, weak nuclear force's strength - giving the illusion that a weak nuclear force that is not the product of gravitation exists).

Waves are magnified by the matter's density to achieve electromagnetism's strength (10^36 times gravity's strength) i.e. 10^25 is multiplied by Einstein's conversion factor [10^11] and gives 10^36 (as well as the electric and magnetic fields of particles). After absorption by atoms, the depleted remnant of the gravity waves is re-radiated from stars, interstellar gas and

dust, etc. It's radiated as gravitational waves (a Gravity Wave Background, challenging the idea that Cosmic Inflation was necessary to generate gravitational waves) which have lost most of their energy or strength during formation of forces (returning to a strength of 10^1). Since gravity can produce electromagnetism, it's also radiated as low-energy electromagnetic waves – possibly an infrared background whose heat output exceeds that of the stars alone, in addition to a microwave background. The latter challenges the idea that existence of the cosmic microwave background proves the universe began with a Big Bang.

E=mc^2 describes how this energy (these bits) can be converted into the matter, and mass, of stars and any subatomic particle. Matter is energy that could be differentiated from space-time's energy by the interaction of two types of disturbances in fields (two types of energy pulses) viz. the electromagnetic field's photons and the gravity field's gravitons.

The nuclear strong and weak forces, along with the Higgs boson, could be produced by quantum-scale gravitational lensing in the particles of matter that already exist. Lensing could alter the path of bits/pulses called photons and gravitons - producing the sequences of bits called gluons, weak bosons (W+, W-, Z), and Higgs bosons. Lensing could magnify the strength of the stream of gravitons, forming the electromagnetism within atoms and accounting for particles' electric charges and magnetic polarities. Gravity is created by space-time so the magnification of gravity by quantum lensing alters the curvature of space-time within particles. This might explain their different quantum spins (spin cannot be explained by classical rotation).

A method of producing a gravitational beam (or a gravity field) is GRaviton Amplification by Stimulated Emission of Radiation (a graser which uses the graviton, the quantum of gravitational force). Grasers could be nothing more than modified lasers. Above, we saw how gravity is translated into electricity – so the process could be reversed to make gravity from electricity (electrical discharge can power the graser which then emits gravitons and a gravity beam).

<u>4) GR says gravity can be modelled as curvature of space-time. That in no way proves there actually is such a thing as curved space-time.</u>

The curving of what we call space-time sounds very strange, but I think it can actually be explained by modelling space-time's construction on the Mobius strip that can be represented by giving a strip of paper a half-twist of 180 degrees before joining its ends. (While reading this section, remember that bits are not only units of information but also pulses of energy.)

String theory says everything's composed of tiny, one-dimensional strings that vibrate as clockwise, standing, and counterclockwise currents. [Time-Life Books - "Workings of the Universe" – 1991, p.84] We can visualize tiny, one dimensional binary digits of 1 and 0 (base 2 mathematics) forming currents in a two-dimensional program called a Mobius loop – or in 2 Mobius loops, clockwise currents in one loop combining with counterclockwise currents in the other to form a standing current.

Joining two Mobius strips (or Mobius bands) forms a four-dimensional Klein bottle [K. Polthier - "Imaging maths - Inside the Klein bottle" (http://plus.maths.org/content/os/issue26/features/mathart/index]. And each Klein bottle can become an observable (or "sub") universe (figure-8 Klein bottles appear to have the most suitable shape to form subuniverses). This connection of the 2 Mobius strips can be made with the infinitely-long irrational and transcendental numbers. Such an infinite connection translates^ into an infinite number of figure-8 Klein bottles which are, in fact, "subuniverses". The infinite numbers make the cosmos as a whole* physically infinite, the union of space and time makes it eternal, and it's in a static or steady state because it's already infinite.

*** (i.e. the cosmos beyond our 13.8-billion-year-old subuniverse, which is expanding and displacing parts of the universe beyond)**

^ The translation could be via photons and gravitons being ultimately composed of the binary digits of 1 and 0 encoding pi, e, $\sqrt{2}$ etc.; and matter particles [and even bosons like the Higgs, W and Z particles] being given mass by photons/gravitons interacting in matter particles' "wave packets".

The Mobius strips are intangible software. They're converted into the tangible Klein bottles which make up the universe via matter being given mass by photons of electromagnetic waves and the gravitons of gravitational waves interacting in matter particles' "wave packets", giving the matter wave-particle duality. The bottles are thus 3-dimensional and affect all our senses. When future electronics allows their displays to change from one still (as in photographic print) to another trillions of trillions of trillions of times per second, they are undergoing what we call motion or time and are what we call 4-dimensional.^ The beginnings of the infinite number of observable universes would, of course, be literally infinite. There was no beginning to the universe as a whole but it had - and will continue to have - an infinite number of creations of its "sub"universes. Creation of the universe as a whole is therefore forever lost in infinity and it's accurate to say it had no beginning. German mathematician Georg Cantor developed concepts of various infinities in the 1870's, and would be interested in the last few paragraphs.)

^ Were ancient Greek philosophers Zeno of Elea and Parmenides at least

partly correct to speak of the absurdity of reality being made up of many changing things? Zeno also said motion is absurd. Motion and change would, in the end, merely be the switching of 1's to 0's and vice versa. There wouldn't even be any switching motion on the digital level if distance is eliminated and only a quantum-superposed qubit exists. Deleting distance^^ combines the 1's and 0's, eliminating switching motion and motion as commonly understood; allows time to equal zero, and puts the universe in a steady state.

^^ A 2009 electrical-engineering experiment at America's Yale University, together with the ideas of Albert Einstein, tells us how we could travel to other stars and galaxies in literally no time. Electrical engineer Hong Tang and his team at Yale demonstrated that, on silicon-chip and transistor scales, light can attract and repel itself like electric charges or magnets ["Tunable bipolar optical interactions between guided lightwaves" by Mo Li, W. H. P. Pernice & H. X. Tang - Nature Photonics 3, 464 - 468 (2009)]. This is the "optical force". For 30 years until his death in 1955, Einstein worked on his Unified Field Theory with the aim of uniting electromagnetism (light is one form of this) and gravitation. Achievement of this means the microscopic components (gravitons) of warps of space (gravity, according to General Relativity) between spaceships and stars could mimic the Optical Effect and be attracted together, thereby totally eliminating distance for trillionths of a trillionth of a second (this is similar to traversing a wormhole, or shortcut, between two folds in space-time). Intervening matter is also deleted for trillionths of a trillionth of a second, since its composition depends on gravitons. Distance is not only deleted in space. There would no longer be any "distance" in time. Just as we can journey to particular stars, we could take trips to particular years in the past (using a "distortion" of 3-dimensional space, labelled 5-dimensional hyperspace for convenience) or future (using space-time, where time is called the 4^{th} dimension for convenience). Instantly traversing 700 light years in space enables a spaceship to arrive at a spot which a light beam could only reach by travelling for 7 centuries, putting the ship 7 centuries in the future. Entering hyperspace with its negatives (energy, matter, distance, time) permits travel to the past since it would be impossible to travel 700 lightyears there, and only possible to travel minus 700 lightyears. Doing so instantly would enable a spaceship to arrive at a spot in the past which a light beam could only reach by traversing negative distance for 7 centuries. Though negative distance or time is totally alien to us, it must exist as surely as positive distance or time if the universe is made physical from a fundamental mathematical nature. The inverse-square law states that the force between two particles becomes infinite if the distance of separation between them goes to zero. The distance of separation only goes to zero when those particles' centres occupy the same space-time coordinates (not merely when the particles' or objects' sides are touching) i.e. infinity equals the total elimination of distance, both in space and time.

The infinite cosmos could possess this absence of distance in space and time via the electronic mechanism of binary digits (making it as malleable as any image on a computer screen).

For the note below on the figure-8 Klein bottle, I refer to –

a) Bourbaki, Nicolas (2005). Lie Groups and Lie Algebras. Springer
b) Conway, John (1986). Functions of One Complex Variable I. Springer
c) Gamelin, Theodore (January 2001). Complex Analysis. Springer
d) Joshi, Kapli (August 1983). Introduction to General Topology. New Age Publishers
e) Spanier, Edwin (December 1994). Algebraic Topology. Springer

Informally - if an object in space consists of one piece and does not have any "holes" that pass all the way through it, it is called simply-connected. A doughnut (and the figure-8 Klein bottle it resembles) is “holey” and not simply connected (it’s multiply connected). The universe appears to be infinite, being flat on the largest scales and curved on local scales (from far away, a scene on Earth can appear flat, yet the curves of hills become apparent up close). A flat universe that is also simply connected implies an infinite universe (Luminet, Jean-Pierre; Lachi`eze-Rey, Marc - "Cosmic Topology" - Physics Reports 254 (3): 135–214 (1995) arXiv:gr-qc/9605010). So it seems the infinite universe cannot be composed of subunits called figure-8 Klein bottles (flat universes that are finite in extent include the torus and Klein bottle). But gaps in, or irregularities between, subuniverses shaped like figure-8 Klein bottles are "filled in" by binary digits in the same way that computer drawings can extrapolate a small patch of blue sky to make a sky that's blue from horizon to horizon. This makes space-time relatively smooth and continuous - and gets rid of holes, making Klein subunits feasible. The Klein bottle is a closed surface with no distinction between inside and outside (there cannot be other universes, a multiverse, outside ours – there’s only one universe).