

# Conversations from the Edge: The Megaverse

From: Zach  
Sent: Thursday, August 05, 2010 5:17 PM

<http://www.popsci.com/science/article/2010-08/first-time-scientists-watch-electrons-dance>

Now before a single person says a damn thing about this toppling the "uncertainty" principle. It will not topple the "uncertainty" principle, rather it will force a re-write and renaming. For which the "observer" effect will probably be re-written and incorporated. Considering the principle is a misinterpretation of what is actually going on, but apparently not many people understand that.

From David  
Sent: Thu, August 5, 2010 5:31:33 PM

The oscillations observed are a vital piece of the puzzle. I have always had issues with the UP, but find that the observer effect has some merit, but not as stated. This should be interesting

David M. Rountree, AES

From: Allen  
Date: Friday, August 6, 2010, 2:47 AM

There is an actual video of this I posted a couple weeks ago, a fully pinned 'wave-form' electron. In any case, actively and repeatedly or continuously measuring something is only part of the puzzle and does nothing to HUP except perform like a penning trap. Not that this isn't going to be incredibly useful...

Like... mapping a language for the programmatic design of new RNA and DNA bots, bug fixes, enhancements. ..

That's where this goes. DNA is electro-chemical in binding geometries.

This is the 'machine language' layer of life. This will unlock the 'reasons' of DNA assemblage, and opportunities. And on 1st generation languages, assemblers. On assemblers, 3GL's.

I can see it now, Microsoft L#

Watch out for the new Blue Screen of Death...

From: Alex  
Sent: Fri, August 6, 2010 1:41:28 AM

Allen, did you read the article about DNA twisted pairs being quantumly entangled? The video you're talking about-- is that the Open GL video you sent me?

Here's another article:

<http://www.popsci.com/science/article/2010-07/quantum-mechanics-experiments-supersolids-may-actually-be-super-plastics-new-paper-says>

Helium-4 Helium-4 is used to study supersolids, a strange phenomenon in quantum mechanics. A Cornell professor is challenging the accepted view of supersolid experiments, suggesting a new phenomenon called quantum plasticity. Wikimedia Commons/Homo logos. The world of quantum mechanics gives us some pretty weird things -- such as matter that exists in all possible places at once, and strange states of matter like supersolids, a phenomenon in which a solid essentially acts like a liquid. In the supersolid state, which scientists have been trying to glimpse for years, matter retains the lattice-like structure it possesses as a solid, but it stops being rigid, meaning there is less friction. Instead, it flows like a liquid.

To look for this odd behavioral change, scientists have been studying a type of helium and making it very cold, bringing it to within a fraction of absolute zero.

In 2004, scientists figured out a way to detect supersolid helium by filling a special rotating pendulum and watching how it spun as the helium cooled. They figured the rotation speed would change when the helium became a supersolid rather than a regular solid, because of that loss of friction. It did change, and later experiments replicated the results.

Related Articles Quantum Imaging Technique IDs Objects Using a Single Photon  
Birds May Use Quantum Mechanics To Migrate South  
Researchers Achieve Quantum Teleportation Over 10 Miles of Empty Space

Tags

Science, Rebecca Boyle, cold vacuum, helium, physics, quantum mechanics, quantum uncertainty

But now, Cornell professor John Reppy says that change in rotation isn't necessarily because the helium became a supersolid. Instead, he says, meet quantum plastic.

Reppy says it's possible the normal helium simply deformed as the pendulum twisted. Helium-4, which is used in the experiments, has some inherent defects that change its behavior at different temperatures, making it wobbly. Reppy says that as the temperature rises, these defects get even more wobbly, thus making helium's structure less rigid. Therefore, its changed, bendy structure at ultra-cold temperatures is not necessarily because of supersolidity. Rather, Reppy says, it's more like plastic.

More research is needed before scientists can be sure who's right, and whether supersolidity or quantum plasticity is the culprit.

-Alex-

From: Zach

Date: Friday, August 6, 2010, 5:55 AM

Posted a link about this one too during the Gravity thread recently lol  
Still no less interesting and I have been pondering it from time to time, though my primary thought has been on polycasuality lately lol

Regards  
Zach

From: Alex

Date: Friday, August 6, 2010, 6:02 AM

This is interesting too-- I wonder what came of this study:

<http://www.entangledstates.org/2009/01/new-scientist-our-world-may-be-a-giant-hologram.html>

Here's an article in New Scientist that poses a very challenging idea:

"For many months, the GEO600 team-members had been scratching their heads over inexplicable noise that is plaguing their giant detector. Then, out of the blue, a researcher approached them with an explanation. In fact, he had even predicted the noise before he knew they were detecting it. According to Craig Hogan, a physicist at the Fermilab particle physics lab in Batavia, Illinois, GEO600 has stumbled upon the fundamental limit of space-time - the point where space-time stops behaving like the smooth continuum Einstein described and instead dissolves into 'grains', just as a newspaper photograph dissolves into dots as you zoom in. 'It looks like GEO600 is being buffeted by the microscopic quantum convulsions of space-time,' says Hogan."

(Fair enough. Finding the cause of anomalous "noise" was got Penzias and Wilson the Nobel Prize for discovering the Cosmic Background radiation.)

It's not surprising that there's a fundamental graininess to the space-time continuum. That's pretty much the direct implication of the Plank Constant being non-zero.

What's interesting here is by detecting the granularity, and getting a "scale" for it.

Add to this the application of the holographic principle as a tool for describing the fundamental working of the Universe:

The idea that we live in a hologram probably sounds absurd, but it is a natural extension of our best understanding of black holes, and something with a pretty firm theoretical footing. It has also been surprisingly helpful for physicists wrestling with theories of how the universe works at its most fundamental level.

The holograms you find on credit cards and banknotes are etched on two-dimensional plastic films. When light bounces off them, it recreates the appearance of a 3D image.

In the 1990s physicists Leonard Susskind and Nobel prizewinner Gerard 't Hooft suggested that the same principle might apply to the universe as a whole. Our everyday experience might itself be a holographic projection of physical processes that take place on a distant, 2D surface.

This is actually useful when we talk about looking at quantum fluctuations on the "surface" of a black-hole event horizon.

Since, at least mathematically, we can treat the observable Universe as an expanding black-hole, it means that we can, in principle, apply the holographic idea to the "surface" of the expanding observable Universe...

So...

If space-time is a grainy hologram, then you can think of the universe as a sphere whose outer surface is papered in Planck length-sized squares, each containing one bit of information. The holographic principle says that the amount of information papering the outside must match the number of bits contained inside the volume of the universe. Since the volume of the spherical universe is much bigger than its outer surface, how could this be true? Hogan realised that in order to have the same number of bits inside the universe as on the boundary, the world inside must be made up of grains bigger than the Planck length. "Or, to put it another way, a holographic universe is blurry," says Hogan.

This is good news for anyone trying to probe the smallest unit of space-time. "Contrary to all expectations, it brings its microscopic quantum structure within reach of current experiments," says Hogan. So while the Planck length is too small for experiments to detect, the holographic "projection" of that graininess could be much, much larger, at around 10-16 metres. "If you lived inside a hologram, you could tell by measuring the blurring," he says.

So that's why this particular experiment underway is so interesting. It holds out the promise of being able to detect the graininess that we should be able to see if we live in a giant "hologram".

Which means that events that occur on the out-bounds of space-time have measurable consequences in the interior, though we don't really understand how or what the consequences would be yet. At this point there's just a recognition that a causal connection can be made.

[http://www.huffingtonpost.com/2010/02/12/our-world-may-be-a-giant-n\\_460386.html](http://www.huffingtonpost.com/2010/02/12/our-world-may-be-a-giant-n_460386.html)

New Scientist:

For many months, the GEO600 team-members had been scratching their heads over inexplicable noise that is plaguing their giant detector. Then, out of the blue, a researcher approached them with an explanation. In fact, he had even predicted the noise before he knew they were detecting it. According to Craig Hogan, a physicist at the Fermilab particle physics lab in Batavia, Illinois, GEO600 has stumbled upon the fundamental limit of space-time - the point where space-time stops behaving like the smooth continuum Einstein described and instead dissolves into "grains", just as a

newspaper photograph dissolves into dots as you zoom in. "It looks like GEO600 is being buffeted by the microscopic quantum convulsions of space-time," says Hogan. If this doesn't blow your socks off, then Hogan, who has just been appointed director of Fermilab's Center for Particle Astrophysics, has an even bigger shock in store: "If the GEO600 result is what I suspect it is, then we are all living in a giant cosmic hologram."

From: Alex  
Sent: Fri, August 6, 2010 2:07:25 AM

Allen is just going to love this part lol:

So...

*If space-time is a grainy hologram, then you can think of the universe as a sphere whose outer surface is papered in Planck length-sized squares, each containing one bit of information. The holographic principle says that the amount of information papering the outside must match the number of bits contained inside the volume of the universe. Since the volume of the spherical universe is much bigger than its outer surface, how could this be true? Hogan realised that in order to have the same number of bits inside the universe as on the boundary, the world inside must be made up of grains bigger than the Planck length. "Or, to put it another way, a holographic universe is blurry," says Hogan.*

*This is good news for anyone trying to probe the smallest unit of space-time. "Contrary to all expectations, it brings its microscopic quantum structure within reach of current experiments," says Hogan. So while the Planck length is too small for experiments to detect, the holographic "projection" of that graininess could be much, much larger, at around 10-16 metres. "If you lived inside a hologram, you could tell by measuring the blurring," he says.*

*So that's why this particular experiment underway is so interesting. It holds out the promise of being able to detect the graininess that we should be able to see if we live in a giant "hologram".*

BTW, if the universe is an expanding black hole, then we can draw the analogy with galactic supermassive black holes, in that it must be ingesting matter and energy to be expanding and will only cease expanding once it is "filled up" and then will slowly evaporate... .

From: Zach  
Date: Friday, August 6, 2010, 6:28 AM

Definitely agree there (him liking it)

I don't know about that, if Poplawski is correct, technically mass would continue through each black hole to the next universe. So it's not so much dissipating, its more like slowly being whittled down from the initial universe (if there is one) energy level.

Regards  
Zach

From: Alex  
Sent: Fri, August 6, 2010 2:41:58 AM

Hmmm the initial universe could be the one where gravity originated and could be the center of the onion with all the layers on the outside being successively lower energy level universes that orbit around it.... or at least oscillate around it lol.

From: Zach  
Date: Friday, August 6, 2010, 7:09 AM

Mass is the origin of gravity, so ultimately that statement could very well be true in after a fashion.

Ehhh...I don't see them oscillating so much, though I won't out right deny it, since there are black holes that spin lol

They might not move around it terribly fast either, since their anchors are black holes.

Regards  
Zach

From: Alex  
Sent: Fri, August 6, 2010 3:14:43 AM

The energy levels could have separated from each other into discrete quanta by the spinning action of black holes as that would generate enormous electromagnetic fields (how enormous they were would depend on the mass of the black holes) and this could thusly also create that barrier that would separate the universes, as the fields would create that domain wall you spoke of-- likely, these fields would consist of photons-- so using the term "luxon wall" works also. Im starting to wonder if the different values of the physical constants themselves, rather than an abject exceeding of the speed of light might be enough to create the barrier.... after all, just a slight tweaking of the constants would be enough to keep our sensory apparatus from being able to detect them.

From: Zach  
Date: Friday, August 6, 2010, 8:13 AM

That is one possibility, the other could be a negative mass envelope as david suggests. The mass of the black holes is more or less like a marker for its gravitational field more or less

So in a way you'd have to measure both the black holes initial mass and the subsequent things falling in. Those two numbers should give you a round about estimate of how large and "old" the universe beyond is compared to ours. That suggests something interfering with the constants to do such a thing (its possible it happens on its own, but still) I lean more towards it being FTL, because what we see and experience is at much much slower speeds.

In away, the Luxon wall and the NM envelope are both existent at as the outer boundaries.

Regards  
Zach

From: "Alex"  
Sent: Friday, August 6, 2010 4:23:17 AM

So do you think that what occurs beyond is actually occurring at FTL speeds or that it's just our perception of it? Im thinking that since the physical laws would be different there, their Light Speed would be different from ours and this might form the natural boundary.

From: David  
Date: Friday, August 6, 2010, 6:30 PM

I am also thinking what if it is only FTL because of its direction of movement based on our perspective? From the other universe the perspective may be totally different since it could be seemingly motionless, or approaching at a different speed

David

From: David  
Date: Friday, August 6, 2010, 9:18 PM

What if the mega-verse is encapsulated by a holographic boundary, with exotic matter broth and universes as ingredients?

David

From: yanniru  
Sent: Friday, August 06, 2010 9:23 PM

You will be amazed at how close that is to the truth, IMO.

From: David  
Date: Saturday, August 7, 2010, 1:51 AM

[Attachment(s) from David M Rountree include the drawings of the Megaverse Theory]  
No I wouldn't. The more I read your ideas, the more it made sense to me. I had something of an epiphany. As you all know and are probably driven crazy by now from my ramblings, I am trying to make a "quantum leap" from a hypothesis to a theory on a special kind of wormhole. As such, I have to reconcile my differences to formulate an explanation that is at least displaying some resemblance of probability. In order to do this I had to come to grips with the holographic boundary effect, not at the universe

level, but as a containment boundary in which the mega-verse manifests. Hence the "stew pot" analogy; the exotic matter would be the medium in which the universes within the mega-verse "floats"; the savory flavors would represent the interaction that these individual universes exhibit on the medium, and this could very well explain what we have recently discovered and called "Dark Flow"; additionally, remnants of the genesis of the mega-verse has left numerous cosmic superstrings, each vibrating at its own special frequency. At times, these strings come into close proximity with one another; as they approach, they seek resonance with one another, and entangle; entanglement is complete when both strings hit mutual resonance or harmonize; at this point, a double helix wormhole forms and stabilizes with the assistance of the exotic matter from the medium being "sucked" into the dual throats; a "quantum conduit" completes the connection between two adjacent Universes, but almost immediately minor annihilations occur when the exotic matter mixes with our own matter; Once the exotic matter depletes to a certain point, instability occurs, and the wormhole structure collapses. Excuse my crude drawings that attempt to illustrate this. I have attached them as word 2003 files.

I just finally visualized how it could happen

David

### **See the Megaverse theory**

From: Alex

Date: August 6, 2010, 9:25 PM

Besides the multidimensional aspect of motion, or the fact that the properties of time could be quite different there, there's the very real possibility that according to their perspective it is we who are composed of exotic matter with negative mass-- what is considered "negative" and "positive" is just as arbitrary as what's considered matter and antimatter-- perhaps we should call them Matter A and Matter B... the two are mutually exclusive and according to each other's perspectives, the other would seem to be moving at FTL-- that's how the "barrier" was created.

This brings back the old theory of tachyons and the luxon wall lol.

From: Alex

Sent: Saturday, August 07, 2010 6:27 AM

Subject: Re: [Theoretical\_Physics] What do you think about what if....

The universes in the broth would be like little bubbles boiling up out of the steamy mix. Some would pop-- others would not.

I agree David and it makes sense in a "wholistic" sense also, as it is the most elegant way to explain the observed behavior. The most elegant explanation usually ends up being correct, as nature has a habit of always wanting to be in balance and the idea of

energy and momentum being balanced (expansion/contraction) makes a great deal of sense. If we are expanding..... something else must be contracting.

From: Alex Reynolds  
Sent: Saturday, August 07, 2010 6:36 AM

Excellent visualization David! I think the containment boundary is key, because if we think of the holographic megaverse as a projection on that boundary, we should be able to find evidence for its existence manifesting as "shadows" upon this boundary....

This is part of the Strings in Quantum Relativity post

The Planck-Weyl Oscillator Brane Modulation  $2\pi c/h$  via the Hawking Modulus and the Inflation-Instanton Gravitational Inertia

It is well understood that the Planck-Oscillator for angular velocity  $\omega=2\pi f$  in a so termed Zero-Point-Energy of the Heisenberg Matrix of the 'vacuum' (in which point-particular fields are said to be absent) is expressed as

$$E_{\text{planck}} = E_{\text{zpe}} = \frac{1}{2} h f_{\text{planck}} = \frac{h\omega}{4\pi} = \frac{1}{2} m_{\text{planck}} c^2$$

Using this Zero-Point-Energy, the Hawking Modulus (HM=Constant) coupling the Mass M and the temperature T of any Black Hole can be obtained in the Planck parameters. The HM describes the inverse proportionality between large massive Black Holes being cold and the quantum Black Holes being corollarily low in mass and hot.

$$HM = \frac{1}{2} m_{\text{planck}} T_{\text{planck}} = \frac{1}{2} m_{\text{planck}}^2 c^2 / k = \frac{1}{2} (hc/2\pi G_0) c^2 / k = hc^3 / 4\pi k G_0 = 9.1317034 \dots \times 10^{23} \text{ (kgK)}^*$$

(string units in QR)

The Planck Oscillator manifesting at the quantum bosonic string energy of the Planck Mass  $m_{\text{planck}}$  of so  $1.69 \times 10^{-8}$  kg or of so  $9.48 \times 10^{18}$  GeV as the string class I (of both open and closed 10D superstrings) is the maximized string energy of the string/brane epoch from Planck-Time to Weyl-Time, the latter representing the heterotic string class (HE 8x8) of the fifth and final bosonic string transformation at a string mass  $m_{\text{ps}} = 2.222 \dots \times 10^{-20}$  kg for a Weyl-Energy of  $E_{\text{ps}} = h f_{\text{ps}} = k T_{\text{ps}} = hc/\lambda_{\text{ps}} = m_{\text{ps}} c^2$  at  $1.244976 \dots \times 10^7$  GeV.

Because of the string class transform from the Black Holed Planck brane however, the Weyl brane cannot become expressed as a Black Holed brane without modulation.

In particular the Planck curvature radius  $r_{\text{planck}} = 2G_0 m_{\text{planck}} / c^2 = \text{Planck Length (L}_{\text{planck}})$ ; but the Schwarzschild curvature for the Weyl brane would exceed the minimum spacetime configuration of the wormhole in the direct proportionality between mass M and curvature radius R in the Schwarzschild metrication.

The decrease of the Weyl mass from the Planck mass would imply a decrease in the Weyl-Curvature Radius from the Planck curvature and this cannot occur beyond the Planck radius oscillation given by the Stoney Unification of  $\sqrt{(\text{Alpha})L_{\text{planck}}=e/c^2=1.78495\dots\times 10^{-36}}$  meters.  
 (With a Black Holed Weyl curvature requiring  $2G_{\text{omps}}/c^2 = 5.48696\dots\times 10^{-47}$  meters and the REAL Weylian Curvature Radius being a macroquantized Black Hole Mass equivalence of  $m_{\text{weyl}}=r_{\text{ps}}.c^2/2G_0=6,445.775\dots$  kg).  
 We so define the modulation in the ratio  $m_{\text{weyl}}/m_{\text{ps}}$ .

The Weyl wormhole initialises the Quantum Big Bang in the ending of the string epoch however and so the then existing space allows a modulation between the first and last brane energies to be made and in using this then existing spacetime metric defined by the invariance of the seeded lightpath  $x=ct$ .

We so express the (dimensionless) Planck-Weyl Brane Energy Ratio as:

$$\Phi_{\text{pw}}=\{E_{\text{planck}}/E_{\text{weyl}}\}^2=HM/m_{\text{ps}}T_{\text{ps}}=m_{\text{planck}}T_{\text{planck}}/2m_{\text{ps}}T_{\text{ps}}=r_{\text{ps}}M_{\text{universe}}/RH_{\text{ubbl}}$$

$$e_{\text{mps}}=hc^5 e^{*2}/4\pi G_0=m_{\text{weyl}}/m_{\text{ps}}=2.900598835\dots\times 10^{23}$$

Frequency Eigenstates of the wormhole  $E_{\text{weyl}}$  by  $Mc^2=N.hf_{\text{weyl}}=N.hf_{\text{ps}}$

For any mass  $M=N.E_{\text{ps}}/c^2=N.m_{\text{ps}}$  and  $N=1$  for  $M=m_{\text{ps}}$ . and for the Weyl-mass  $N=m_{\text{weyl}}/m_{\text{ps}}=r_{\text{ps}}.c^2/2G_{\text{omps}}=r_{\text{ps}}/r_{\text{weyl-curvedure}}=\Phi_{\text{pw}}=\{E_{\text{planck}}/E_{\text{weyl}}\}^2$  hence modulating the Planck-String Boson with the Weyl-String Boson in the Planck-Mass transformation of a smaller curvature radius for a larger Planck-Mass:

$$r_{\text{ps}}/L_{\text{planck}}=\sqrt{\{2\pi r_{\text{ps}}^2 c^3/G_0 h\}}=\sqrt{\{hc/2\pi G_{\text{omps}}^2\}}=m_{\text{planck}}/m_{\text{weyl}}$$

for  $\sqrt{\{4\pi^2 r_{\text{ps}}^2 c^2/h^2\}}=\sqrt{\{1/m_{\text{ps}}^2\}}$  and where the magnetocharge  $e^*=1/E_{\text{weyl}}$  by modular string duality and the parametric definitions.

The Brane Modulation so is:

$$2\pi c/h=1/m_{\text{ps}}.r_{\text{ps}}=r_{\text{ss}}/m_{\text{ps}}=2\pi\lambda_{\text{ss}}/m_{\text{ps}}$$

$r_{\text{ss}}$  sets the maximum curvature radius on the scale of (dark matter) 'haloed galaxies' in the modular string coupling  $r_{\text{ps}}r_{\text{ss}}=1$ ; and this modular unification then couples the quantum scale of the classical electron radius  $R_e$  to the protoversal quanta counter  $E$  in the macro scale of a 'cellular' star system  $RE=3.44\times 10^{14}$  meters or so 2300 AU.

The restmass induction of the cosmology can now be described as the de Broglie Inflaton  $V_{\text{deBroglie}}=RH_{\text{ubble}}.f_{\text{ps}}=c_{\text{fps}}/H_0$  as the describing phase velocity in the Inflaton Phase space of the 'False Vacuum' and with a hyperacceleration  $A_{\text{deBroglie}}=c_{\text{fps}}^2/H_0$  the latter 'inflating' the Weyl wormhole in  $R^4$  space 'instantaneously', that is in the Now-Time interval  $t_{\text{ps}}=n_{\text{ps}}/H_0=\lambda_{\text{ps}}/c$  and defining  $dn/dt=H_0$  for a general cycletime coordinate  $n=H_0 t$  and  $n_{\text{ps}}=\lambda_{\text{ps}}/RH_{\text{ubble}}$ .

The mystery of the Quantum Big Bang so engages the inflaton in fixing a metric brane background, eliminating the requirement for a comoving coordinate system as is still utilized by terrestrial cosmologists.

Rather the de Broglie instanton/inflaton defines a quasi-steady state for the lightparametric cosmology to manifest in.

A textual or webbed metric background is established by the deceleration parameter as the ratio between the de Broglie hyperacceleration in phase space and an already INHERENT cosmological 'constant' or Einstein lambda.

This ratio then is identical to the ratio between the restmass seedling  $M_0$  and the Universal mass of closure  $M_{\text{Hubble}}$  as  
$$\Lambda_{\text{Eps}}/A_{\text{deBroglie}} = (G_0 M_0 / \lambda_{\text{ps}}^2) / (R_{\text{Hubble}} \cdot \text{fps}^2) = M_0 / 2 M_{\text{Hubble}} = 0.01405..$$

As is detailed elsewhere, the Einstein Lambda is simply the (quintessential) difference between the demetricated expansion parameter  $a(n) = n/(n+1) = R(n)/R_{\text{Hubble}}$  expressed in acceleration terms and  $-2cH_0/(n+1)^3$  (as say a Milgröm factor).

It so becomes self evident, that the 'missing mass' to close the open hyperbolically curved universe is found in the 'missing' lower dimensional space not yet gravitationally 'visited' by the expanding thermodynamic universe of the Black Hole equivalents and say described by the Hawking Modulus.

In particular, following the instanton, the textual web of the superclusters as the boundary for gravitationally interacting inertia conglomerations manifested at the 236.5 Million lightyear radius {the Schwarzschild curvature radius for the mass seedling  $M_0$  is  $R_{\text{sarkar}} = 2G_0 M_0 / c^2 = 4.48 \times 10^{24}$  meters as the 473 million lightyear diameter for a corresponding cosmological redshift  $z = 7.477$  specifying the mean scale for the homogenous and isotropic cosmology in the Cosmological Principle}.

This Sarkar scale then sets the 'honey comb' web for a subsequent inertia induction from the gravita seed of the inflaton.

The principle of Equivalence so finds its origin the gravita of the gravitational mass being a prior frequency equivalence, not yet 'materialised' in the phasechange into the inertia carriers in the de Broglie phase space.

With the ending of the string epoch at Weyl-Time, the classical relativistic cosmology became initiated at a lightspeed expanding universe Revisiting and Inertializing the spacequanta crystallized previously by the inflaton as the Gravitational Mass equivalents.

Wherever the expanding spherical lightcone encountered the Gravita, those Gravita became Inertia and the hitherto 'False Higgs Vacuum' became 'Real QuantumSpacetime' in the asymptotic 10D brane universe.

The materialization of the Inertia so instigated the Gravitational interaction and caused the lightspeed expansion to slow down (presently it is 0.22c in Quantum Relativity).

This scenario then shows the reason as to why large scale structures in the universe are found no matter how far back in time the terrestrial astrophysicists probe with their telescopes.

The Black Hole hierarchy is top-down from the supercluster scale to the galactic scale to the stellar scale to the Weyl-Mass scale.

The lightspeed expansion of the universe only slows relative to the inertia and is superposed in the lightspeed invariance of a say Electromagnetic Cosmology which continues unabated at lightspeed past the Hubble Seedling of the Inflaton in a laserlike semitransparency of both a reflection into the Inner Space of the SPACELIKE metric and refraction into thus newly created Outer Space in the TIMELIKE metric.

About 2.2 billion years ago, the invariant lightspeed expansion then reached the Hubble Node and the entire universe of the Big Bang became then reconfigured in the semitransparency of the 11D Witten membrane.

The Universe became enabled to 'reflect' on its own evolvment and so became 'self-conscious' in brane-cosmological terminology and parameters.

ALL of the Hubble-Bubble as the 3D Riemann manifold became electromagnetically defined and could so begin to 'process its collected information' by the quantum entanglement of the de Broglie phase space with the electrodynamic 10D branespace. The inertial space of the asymptotic universe (1 dimension lower than the electrodynamic space) was precisely half as the Hubble node was reached by the electrodynamicity (not physically) Oscillation Cosmology of Quantum Relativity.

As the Gaussian curvature relates to the cosmology in the tripartition of the minmax initial/boundary conditions of the inflaton/instanton; and for the displacement parameter modulated (i.e. rendered dimensionless in the T-Duality with the magnetocharge of the inflaton/instanton manifesting as Inverse Weyl/wormhole energy), we can approximate the dimensionless Pi in the modulation parameters.

$$\begin{aligned} mpsTps &= HM.4\pi G_0/hc5e^*2=1/k(e^*c)^2=1/k(2Rec3)^2 =h^2/k\lambda ps^2=Eps^2/kc^2 = \\ &3.148244322...(\sim\pi \text{ to } 0.2\%) \text{ for a finestructure of Planck's Constant} \\ h &= \lambda ps/2Rec3 = \lambda ps/(e^*c). \end{aligned}$$

The expression  $\pi(1+1/e^*)=\pi(1+Eps)=\pi(501/500)=3.147875839...$ , then approximates  $\pi \sim Eps^2/kc^2(1+Eps)=3.14196040...$  to 4 decimal places in the factor 1.000117..

'Consciousness' as a primordial label for the prespacetime creation energy selfstate can be described to be either a higherD/ZPE wormhole energy quantum of 0.002 Joules (1,240 TeV) or to depict the concept of a 'primordial supercharge' (as a gluon-colour-magnetocharge say).

The 'superenergy' aka collective consciousness represents a purely metaphysical or mathematical abstraction, which however becomes 'materially physical' in the emergence of the metrics of space and time as a 11D membrane based dimension 'nesting'.

The spacetime (Inflationary String epoch in 26D followed by a Quantum Big Bang) creation occurred from the Void-Infinity selfstate of the holographically collective 'Consciousness' without any metrication or Unification was possible (because there was no space or time).

The Quantum Big Bang; so was not the 'collision' of higherD branes from 'infinity space'; but rather the emergence of a quantum spin bifurcation of what is commonly termed the Bosonic Superstring in 26 dimensions.

A Onesided manifold emerging from the Nulldimension (of the 'geometrical' Void=Eternity) as a selfmapped point will so 'create' the 1st Dimension in a separation of this selfmapped mathematical 'point' or singularity and then allow both a linear and a curved manifold (or complex plane) to define the nonlinear metric of three such then noncollinear separated 'singularities'.

Assigning quantum spin, independent on radial extent as a function of angular displacement then; will render the onesided manifold as twosided in the creation of the 3rd dimension, namely the 'thickness' of the previously onesided manifold as a twosidedness. The boundary of spacetime so is rendered as the 'connectedness' of two surfaces or manifolds in the 26D bosonic stringspace not as then physically manifest in a metric background describable by geometries.

So the 26D bosonic superstring of say counterclockwise quantum spin becomes bounded in a 13D bifurcation with three 'mirror dimensions' say 11-12-13-14-15-16 separating a clockwise 10D superstring basis from its anticlockwise shadowed string 'universe'.

The 11th dimension for the physicalized spacetime so will become an asymptotic boundary independent on this physicalisation but allowing electromagnetic oscillation as a noninertial reference frame for the inertia parameters of the lower 10D spacetime and as the invariance of the lightspeed in the scenarios of ther Einsteinian relativities.

The 10D string cosmology so becomes an information mapping onto the 11th Mother-Dimension of the 2+9=11 rootextended higherD manifold.

This is 'mirrored' in the collapse of the 16th dimensional shadow string universe onto the 'outside' of the 11D mother membrane spacetime.

The 11th dimension so manifests the prior onesidedness in the bifurcated twosidedness in the 'collapse/conifoldment' of the counterclockwise spinning quantum mirror of the original 26D bosonic superstring.

The above description has been rigorously mathematically defined in the string-membrane -brane theories of contemporary string cosmologists (Witten, Greene, Aspinwall, Steinhardt, Albrecht, Maldacena, Kaku, Susskind, Ashketar and many more).

This twosidedness of the physicalized 11D universe so allows the 12th Father-Vafa dimension as the 'outside' of the M-space to 'Fold onto itself' in a Möbian-Klein-Bottled (8-Torus) topological transformation to render the 'Shadow Universe' as colocal with its 'Physical Image' of the asymptotic 10D-string universe bounded in its 11D-asymptotical expansion. This scenario is extensively discussed in the omni-science forum of <<http://www.cosmosdawn.com/>> <http://www.cosmosdawn.com/>.

Tony

Thanks for the quick response Tony. I really like how you described the looping of space and time, as that fits in with the general idea of closed time like curves close to singularities.

The 26 D "flattening" out to 2 D is also part and parcel of something I stated in origin, whereby there are 2 D in the bulk out of with all the others originate ( multiple dimensions of both space and time.)

These are hyperspace and imaginary time. It is through these primordial dimensions that bubble universes are created in a quantum cosmic soup, if you will, and it is in these dimensions that wormholes bridge universes with "holes" at either end.

Light speed is the necessary outer wall of the universe which is what keeps the universe self contained, without which it would rupture and leak out into the bulk by osmosis and eventually evaporate (if the boundary didnt exist.)

Adjacency can be explained as different layers that interact with each other outside of normal space and time.

Alex

Very well encompassed indeed Alex; yes I would say you got the essence of the Brane Physics in QR and in harmony with your own model - except your insistence on the bubble universes.

See the holographic fractal IS the Protoiversal Seedling and IT can indeed multiply itself BUT remains restricted within its own brane parametric definition.

So then the New Matrix background, which was presumed by the Newtonians and also Einstein and the earlier string physicists (the later have realised that space and time itself must be the 'stuff' the branes are made from); is basically the VOID of the singularity in General Relativity - ergo the Wormhole singularity.

Then, as the matrix of the Void is simply an integral of wormholes, all adjacent to each other, as you have said as the lightspeed boundary; this matrix encompasses the multiverse, but not as separated 'Many Worlds', but as holofractal nestings of the protoverse.

Now the protoverse is both minimized as the wormhole fractal AND maximized as the Hubble Sphere, which is a Riemann manifold of precise topological definition, again as a 3D-surface Boundary to both the higher R4 hypersphere and the topologically volume reduced conventional spherical space used by the cosmologists (say as evidenced in the critical density parameter written as  $\rho_{\text{critical}}=3H_0^2/8\pi G$  - in toroidal R3 space  $\rho_{\text{critical}}=H_0^2/4\pi^2G$  divided by the limiting Chaos Delta of Feigenbaum  $\delta F=3\pi/2$  ).

This means, that the inside universal observer will measure the cosmology from within a perceived (single connected - see Poincare Conjecture) spherical space of positive curvature, which is however multiconnected (as a Torus volume  $2\pi R \cdot \pi R^2=2\pi^2 R^3$ ).

This then results in the negative curvature of the 'open universe' with its less than critical density and leads to the dark matter and dark energy scenarios in a 'missing energy'; due to the volume differential between the encompassing 'closed universe' in R4 space with its ENFOLDED ( $ds<0$ ) Joycian 7-sphere (or the Calabi-Yau 6-sphere).

There are so NO parallel universes and even the exponential inflation scenarios of Smolin, Linde and Susskind become superfluous.

Rather the protoverse itself is allowed to generate a potentially unlimited number of copies of itself by angular phaseshifts - i.e. rotation about its preexisting wormhole diameter.

As you know, angular displacement is INDEPENDENT on radial extent and so all multiverses as phaseshifted protoverses and integrated in a topologically expanding, but finite omniverse; 'grow' in size as holofractal copies of the protoverse itself.

Tony

Is that a hopeful wish... 11D or 26D, whatever.. These dimensions are going to be more than just something strings vibrate in or brains are formed around... We only see the shadows from these dimension because we exist and are made of stuff from only a 3D+1T universe... But if the very little world is made from many more D's then ours, aren't we just a reflection or product of all those other D's...? We are in the hologram of 3D+1... What would a 4D+1 hologram be or more...? We are stuck in our hologram and the other Dimensions appear as strings or brains from our view point... Does that sound right or am I way off...?

Lan

Dear Lan, Allen and Alex!

The situation is simpler than this. The 26 dimensions are a theoretical metaphysical abstraction which becomes physicalised in a simple 2 dimensional manifold or surface BEFORE the so called Big Bang 'infested' the hitherto 'empty' but energy containing universe.

This post of yanniru's, apparently taken as background from a number of credible string-brane sources so describes a 'nonphysicalised' mathematical scenario , which can be

used to manifest a PHYSICAL SYMMETRY, namely a cosmology in which a hitherto massless universe is made SPACIALLIKE and TIMELIKE.

Here then this idea of SPACE and the idea of TIME are necessarily connected in some manner which does NOT require spacetime as a priori as say presumed by the infinite universe proponents from Newton to Einstein to Hoyle.

Allen then emphasises an adjacency, which is however already INHERENT in the quantization of space and time and mass (all physicalised parameters) becoming encompassed by the Holographic Principle, say the Fractalizations favoured by Alex. The adjacency so is the connectivity or boundary between what is termed spacelikeness ( $ds < 0$ ) of the ordinary 3D matrix of Minkowski spacetime in 4D and the timelikeness ( $ds > 0$ ).

The lightspeed invariance then becomes the BOUNDARY as the lightlikeness between the two realms and it is this which is 'dimensionally' separated as Lan envisages.

I tried to make this clear in the original post; and it can be envisaged as a 3D cube (or sphere) say which is 'growing' or expanding in timelikeness of the (forwards entropy arrow of time) AS WELL as INVERTING this selfsame expansion as spacelikeness in a 'higherD' contraction inwards into the already existing 3D space defined by the lightspeed invariance.

This extremely simple scenario then is at the backbone of what the 'higher dimensions' are. The 'Inner Space' of the 3D cube so is rendered 4dimensional within the 3D+1T expansion of the observable metric as the timedependent 'Outer Space'.

Allen's adjacency so is selfevident as the boundary between the 'Inner Space' of the 4D hyperspace (of imaginary space taking the place of say Hawking's imaginary time) and the 'Outer Space' of the 'expanding universe'.

This adjacency then eliminates the linearity of BOTH spacelikeness and timelikeness in the concept of the circularisation or Looping of both Time in Now-Time of the instanton and the selfclosure of the superstrings in 10D in the 'Contraction of 3D Space' as Black Hole 'Singularities' however defined in the Planck-Brane parameters say.

The String Physics in QR isd an ongoing endeavour at the moment and not yet finalized.

I shall comment on your comments however when time allows.

And yes Lan I have noticed your presence at cosmosdawn.com; thanks for appearing there and my best to Sylvia.

Tony

--- In theoretical\_physics@yahoogroups.com, "yanniru" <yanniru@...> wrote:

Tony,

Your post reminds me that I have not emphasized the holographic properties of Vafa's 12d F-theory sufficiently in my knowledge. Clearly the prior compactification of 2d of the

12d into a torus (twisted according to you) sets up a holographic surface in which 6d compactify into a Calabi-Yau manifold as 4D spacetime expands in its volume. The nice thing about a knol is that it can evolve as understanding evolves. I'll reference you at [cosmosdown.com](http://cosmosdown.com) in my edit. Hopefully your influence on my thinking will not be so great that I lose credit for my own knol.  
Richard

Yes, right on the ball Richard; the 2D Torus of the Nulltime to Planck-Time twisted the prePlanckian Quantum geometry (unphysical and metaphysical as label say) to allow the Planck-Time  $t_p = l_p/c$  to generate the Planck-Length as the 'thickness' of the Planck-Area-Plane say.

This then triggered the Inflaton from the Planck-Nugget (3D) and hyperaccelerated in a then linearized timearrow from Planck-Time to Weyl-Time, the latter becoming the 'Quantum Big Bang' at the  $3.33 \times 10^{-31}$  timemarker (Guth has the end of inflation at  $10^{-32}$  seconds, but following, not preceding the Big Bang).

This inflation so is very intrinsically related to the enfoldment of the higher dimensions, including that from the 26D Bosonic String of 10 clockwise and 16 anticlockwise vibration patterns, all at the Planck-Scale as an energetic maximum and the Weyl-scale as its minimum.

I am rather ignorant about the details of this enfolding; except that it will relate the topology of Witten's (11D=3D+T+7d) Membrane space with the Riemann manifolds of the Joycian 7-sphere in the 8-Torus (of Vafa's F-space) and the 10D=3D+T+6d Branespace of the 6D-Calabi-Yau toroidal manifold.

It suffices for my purposes to describe the overall enfolding as the concept of Hawking's Imaginary Time of the 4-vector to become the hitherto envisaged as unphysical concept of the Imaginary Space of the spacelikeness of the orthogonality of the 4th hyperspace dimension.

This 'Inner Space' as a holographic encapsulation in a theoretical 'Doubling' of the externally experienced space yet diminished in volume reduction.

Here you can compare the Ricci Curvature Tensor in General Relativity, which defines a volume reduction for a sphere encompassing say the gravitating object (earth).

The net inward gravitational acceleration so reduces the volume of the 'enveloping spacetime'; whilst a partial externalisation of spacetime results in the well understood tidal effect, say of a particle distribution closer to the surface of a gravitating object accelerating slightly faster than a particle distribution further away.

This is found in the tides caused by the moon for example or other multibody scenarios of the Weyl Curvature as part of the overall Riemann curvature in Einstein's field equations.

The volume is here preserved by the integration of the differential acceleration elements. In the Ricci tensor, the Volume is reduced in a uniform contraction of the

perimeter, then revisited in say the rotating disks, exhibiting Lorentz-Contraction of their line segmental tangent elements say, with the radial vectors invariant however.

{Ehrenfest paradox resolved in the linear measurement of 0 curvature compared to the curved summation - [http://en.wikipedia.org/wiki/Ehrenfest\\_paradox](http://en.wikipedia.org/wiki/Ehrenfest_paradox)}.

The warping of space along the moving (tangential) perimeter contracts the line segment (say ruler) and so lengthens the metric size of the perimeter relative to the 'fixed' and invariant radius.

This then says that diameter/radius  $> \pi$  for a hyperbolic curvature of a rotating disk undergoing (centripetal  $a=v^2/r$ ) ACCELERATED MOTION = Gravitational Field as the fundamental postulate of GR.

As spherical curvature shortens the perimeter and hyperbolic curvature lengthens the same; the universes topology being FLAT and COMPACT with 0 curvature overall is best described by the Torus-Klein Bottle topology, so doing eliminating the Infiniteness of the Euclidean flatness in the FRW-Standard Cosmology for a flat universe.

The volume reduction in the Riemann curvature then describes hyperbolic length contraction of the 'rigid disk' (Ehrenfest paradox) as the higher-D (say toroidal Calabi-Yau) conifolded space superposed onto the encompassing 10D brane as the R4 space of the quasi-Riemann hypersphere.

Much more eloquent string exponents, familiar with the details of the metrics of the Riemann manifolds and their complexifications; will one day, using the basic (rather Newtonian) premises, boundary- and initial conditions of Quantum Relativity work out the formal mathematics and descriptions of what we here discussing in relative layman terms of the 'Poor Man's Cosmology'.

So I fully support your and say Alex' proposition of the pooling of the knols and blogs and the data on open public forums such as this one and the ones we post messages on.

The feedback is of secondary importance; as relative to the 'greater cosmic collective sentience say; it is the idea and the sharing of the ideas, which allows the collective intelligence to draw and collect the common and collective information for further assemblage and processing.

Your knol so will remain 'safe' and I for one have not yet finished commenting upon it; will do so in the course of this action and also publish this on [cosmosdawn.com](http://cosmosdawn.com), where this particular thread is also republished.

Linking your knol to [cosmosdawn.com](http://cosmosdawn.com) is of course deeply appreciated and returned in references (I have republished your knol on [cosmosdawn.com](http://cosmosdawn.com)) - thank you.

Tony

Hi Richard!

This following post (as redress to Mike) relates to the Big Bang Curvature as supported by Oxford Cosmologist Roger Penrose.

I accept the prevailing cosmological standard models of the Big Bang Cosmology and the various attempts (barring the (parallel not phaseshifted) multiverses, the anthropic principle and related topics perhaps).

For about 20 years now, I have supported Alan Sandage's measurements of the Hubble Constant. He for long set it at the 55 km/Mpc.s mark and only recently, with the pressure of the WMAP data, has he 'relented' to somewhere around 65 km/Mpc.s.

In my decade long analysis and study of the cosmology, I found the following.

1. The standard model describes the thermodynamic evolution of the cosmos very accurately. So you can reanalyse the WMAP data in their description of the Cosmic Microwave Background BlackBody Radiation (CMBBR) and use this CMBBR as a basis for the emerging parameters of the cosmoevolution.

2. The standard model has 'misinterpreted' the Guth-inflation in the context of the now prevalent membrane physics of the spacetime metrics.

The standard model postulates the Big Bang singularity to become a 'smeared out' minimum spacetime configuration (also expressible as quantum foam or in vertex adjacency of Smolin's quantum loops). This 'smearing out' of the singularity then triggers the (extended) Guth-Inflation, supposedly ending at a time coordinate of so 10<sup>-32</sup> seconds after the Big Bang.

Without delving into technical details; the Guth-Inflation ended at a time coordinate of 3.33x10<sup>-31</sup> seconds and AT THAT coordinate, the Big Bang became manifest in the emergence of spacetime metrics in the continuity of classical general relativity and the quantum gravitational manifesto.

This means, that whilst the Temperature background remains classically valid, the distance scales for the Big Bang will become distorted in the standard model in postulating a universe the scale of a 'grapefruit' at the end of the inflation.

The true size (in Quantum Relativity) of the universe at the end of the inflation was the size of a wormhole, namely at a Compton-Wavelength ( $\lambda$ ) of 10<sup>-22</sup> meters and so significantly smaller, than a grapefruit.

Needless to say, and in view of the CMBR background of the temperatures, the displacement scales of the standard model will become 'magnified' in the Big Bang Cosmology of the very early universe in the scale ratio of say 10cm/10<sup>-20</sup>cm=10<sup>21</sup> i.e. the galactic scales in meter units.

If you study the inflation cosmology more closely, you will find that many cosmologists already know, that the universe had to be 'blown up' to the Hubble Horizon instantaneously (so this is not popularised, as it contradicts the 'grapefruit' scale of Alan Guth).

2. A result of this is that the 'wormhole' of the Big Bang MUST be quantum entangled (or coupled) to the Hubble Horizon. And from this emerges the modular duality of the fifth class of the superstrings in the Weyl-String of the 64-group heterosis.

Again, without technical detail, the Big Bang wormhole becomes a hologram of the Hubble Horizon and they are dimensionally separated by the Scale-parameter between

a 3-dimensional space and a 4-dimensional space. This is becoming more and more mainstream in the 5-dimensional spacetime of Kaluza-Klein-Maldacena in de Sitter space becoming the BOUNDARY for the 4D-Minkowski-Riemann-Einstein metrics of the classical cosmology. Of course the Holographic Universe of Susskind, Hawking, Bekenstein and Maldacena plays a crucial part in this, especially as M-Theory has proven, (YES PROVEN in scientific terms), the entropic equivalence of the thermodynamics of Black Holes in the quantum eigenstates of the classical Boltzmann-Shannon entropy.

So the 'speculative' status of string theory, regarding a googolplex of possible string solutions is a little 'out of date'. The trouble with the Susskind googolplex solutions is that they fail to take into account the superstring selftransformations of the duality-coupled five classes. They think that all five classes manifest at the Planck-scale (therefore the zillions of solutions), they do not and transform into each other to manifest the Big Bang in a minimum spacetime configuration at the Weylian wormhole of class HE(8x8).

Roger Penrose has elegantly described the link of this to classical General Relativity in his "Weyl Curvature Hypothesis".

Quote from:'The large, the Small and the Human Mind"-Cambridge University Press-1997 from Tanner Lectures 1995"; page 45-46:

"I want to introduce a hypothesis which I call the 'Weyl Curvature Hypothesis'. This is not an implication of any known theory. As I have said, we do not know what the theory is, because we do not know how to combine the physics of the very large and the very small. When we do discover that theory, it should have as one of its consequences this feature which I have called the Weyl Curvature Hypothesis. Remember that the Weyl curvature is that bit of the Riemann tensor which causes distortions and tidal effects. For some reason we do not yet understand, in the neighbourhood of the Big Bang, the appropriate combination of theories must result in the Weyl tensor being essentially zero, or rather being constrained to be very small indeed.

The Weyl Curvature Hypothesis is time-asymmetrical and it applies only to the past type singularities and not to the future singularities. If the same flexibility of allowing the Weyl tensor to be 'general' that I have applied in the future also applied to the past of the universe, in the closed model, you would end up with a dreadful looking universe with as much mess in the past as in the future. This looks nothing like the universe we live in. What is the probability that, purely by chance, the universe had an initial singularity looking even remotely as it does?

The probability is less than one part in  $(10^{10})^{123}$ . Where does this estimate come from? It is derived from a formula by Jacob Bekenstein and Stephen Hawking concerning Black Hole entropy and, if you apply it in this particular context, you obtain this enormous answer. It depends how big the universe is and, if you adopt my own favourite universe, the number is, in fact, infinite.

What does this say about the precision that must be involved in setting up the Big Bang? It is really very, very extraordinary, I have illustrated the probability in a cartoon of the Creator, finding a very tiny point in that phase space which represents the initial

conditions from which our universe must have evolved if it is to resemble remotely the one we live in. To find it, the Creator has to locate that point in phase space to an accuracy of one part in  $(10^{10})^{123}$ . If I were to put one zero on each elementary particle in the universe, I still could not write the number down in full. It is a stupendous number". End of Quote

3. Then of course I claim, that the Theory of Quantum Relativity represents a kind of 'Newtonian Approximation' to the 'Theory we have yet to find', mentioned by Roger Penrose in the above.

Then the 'phase spaced' de Broglie inflation is in modular quantum entanglement with the Weyl-Wormhole of the Zero-Curvature of Roger Penrose's hypothesis and this solves the 'Riddle of Space' in somewhat the manner Allen Francom has postulated. The Hubble-Universe consists of 'adjacent' Weyl-wormholes, discretizing all physical parameters in holofractal selfsimilarity.

Penrose's Weyl-tensor is zero as the quasi-reciprocal of the infinite curvature of the Hubble Event Horizon - quasi because the two scales (of the wormhole and Hubble Universe) are dimensionally separated in the modular coupling of the 11D supermembrane boundary to the 10D superstring classical cosmology of the underpinning Einstein-Riemann-Weyl tensor of the Minkowski (flat) metric.

4. Finally then, the Hubble Law as applied in the standard model becomes a restricted case, applicable ONLY at the Node of the 11D asymptotic limit/boundary also BEING the Initial condition, Penrose writes of.

Then and there the Hubble Constant is truly Constant at 58.03 km/MPc.s; vindicating both Alan Sandage and Halton Arp, the latter in his questioning of the Hubble Law to characterise the cosmic distance scales.

5. Because of the duality coupling between the wormhole and the Hubble horizon, the Hubble-Horizon in 10D is always smaller than the Hubble Horizon in 11D (the first is defined in a 4D Minkowski spacetime and the second in a 5D Kaluza-Klein hypersphere). So the standard cosmology will measure an 'accelerating universe' where there is actually an 'electromagnetic intersection' of the 11D- Big Bang Light having reflected from the 11D boundary and recoupling with the 10D expansion.

Halton Arp's redshifts are also dual in that the special relativistic doppler formulation is absolutely sufficient to relate the cosmological redshift to cosmic displacement scales (and without the Hubble Law  $H_0 = v_{rec}/D$ ). So the redshift measurement is the true parameter and must then be correlated with the expansion factor of General Relativity to ascertain the lowerD coordinates of the observed phenomena encompassed by the higherD coordinates (through the values of the expansion parameter).

Briefly, the expanding universe presently moves at 0.22c with a deceleration of about 0.01 nanometers per second squared. But because the Hubble Horizon ITSELF recedes presently at 0.22c particular 'redshift corrections' must be applied to the VALID measurements of the latter to ascertain the cosmological distance scales of the lightemitters.

John Shadow

It is you who do not recognize the vast difference between Arp and the "Big Bang" model.

[MIKE] I see Arp has been busy since he retired. This is what I gather. Arp disagrees as he has his whole career that quasars' redshifts are due to distance. He now apparently feels that they are being ejected from certain very active galaxies and that because of this the universe the Hubble constant should be about 55 not the 70 something it now is calculated to be. I should point out that there is nothing very unusual in this. Allan Sandage who took over Hubble's task when Hubble died thinks the number is closer to 55 than 70. And Thomas Matthews who discovered these ubiquitous quasars with Sandage has also found some quasars that are nearby. Please note I said some. Arp is now of the opinion that Hoyle was right and is fooling with a cyclic steady state universe if that is not an oxymoron. From what i can discern one is going to get the same observations with either model for the foreseeable future.

Tony,

(in which point-particular fields are said to be absent)

[http://tech.groups.yahoo.com/group/physical\\_sciences/message/4377](http://tech.groups.yahoo.com/group/physical_sciences/message/4377)

Alex posted that the other day.

How much damage might that do to the part above in parenthesis ?

Allen

Hi Allen!

None at all.

'Free Space' by definition excludes all media, including nucleon distributions found in the atomic structure.

The above descattering (order out of chaos) of the nucleon emissions has more to do what a 'virtual particle' is; as the nuclear physics applied relates the properties of the nuclear interactions to the 'fermi confinement' scale of the quark-gluon asymptotic confinement and so the gauge interaction and unification symmetries of the strong nuclear interaction (mediated by gluons) and the radioactive decay of the weak nuclear interaction (mediated by Higgs Boson derivatives in the weakons).

In Quantum Relativity, the udu quark configuration is stable as the proton, whilst the uud configuration is distinct as a delta resonance (parallel spin 3/2 compared to the alternating -1/2+1/2-1/2 quantum spin in the proton).

This then defines a gluonic magnetoaxis for the proton (and all hyperons) for the wavefunctions of the quark eigenstates, which becomes quantum geometric defined in the nuclear confinement zone of the classical electron radius of so 3 fermi (weakon ring).

It also defines the Ikeda shapes of stable nucleon configurations, such as helium-4 and multiples thereof in Beryllium-8, Oxygen-16 etc. in so called 'Magic Numbers' and as then toroidal (or sausage shaped) superrings of quark spins in say a .udu.dud.udu.dud. .proton-neutron-proton-neutron. 'quark-ring' for helium-4 (Alpha-Nucleus).

For a simple overriding exposition study the decay of the uds-hyperon in its 3 modes of decay pattern of the weak-electromagnetic-strong timerates in the spin 1/2 Lambda hyperon (most stable as dus=sud quark magneto alignment and decaying weakly in 10-10 seconds); the spin 1/2 Sigma hyperon (less stable as usd=dsu configuration with the s-quark center-adjacent as the weakon ring and decaying electromagnetically in so 10-18 seconds) and the spin 3/2 (least stable uds=sdu Sigma resonance decaying strongly in so 10-23 seconds).

The 'virtual particles' in the unified state represent 'monopolic colour charge currents' as a form of 'natural superconductivity' using the vortices of (wormhole adjacent) spacetime as the conduit and so are DIRECTED and not scattered as expected in the quantum statistical models.

The observed phenomenon so relates to the shape of the nuclei and the wavefunctions of the constituents in the collective sense and the unified sense (say as a BEC at higher temperatures) in the form of the inherent quantum geometry of the monopolic colour charge currents aligned magnetically.

Of course I dont know the details of Alex' post and have not yet thought deeply on this, so this is a heuristic explanation.

Tony

Published online 24 August 2010 | Nature 466, 1034 (2010) | doi:10.1038/4661034a  
Nuclear theory nudged  
Results from mothballed facility challenge established theory.  
Eugenie Samuel Reich  
Fund-starved ORELA could still spring a surprise.DOE, ORNL

For 40 years, physicists at the Oak Ridge Electron Linear Accelerator (ORELA) at Oak Ridge National Laboratory in Tennessee fired bursts of neutrons at various targets to probe the structure of atomic nuclei. Now, with the facility effectively mothballed by a shortage of funds, a newly published result based on data gathered at ORELA has challenged a well-established theory of the nucleus. Independent experts say that further measurements should be made to follow up the tantalizing claim, which would involve putting the facility back on line.

In 2002, Oak Ridge physicist Paul Koehler and his colleagues used the neutron beam to measure 'neutron resonances' in each of four different isotopes of platinum. The resonances are particular energies at which the neutrons are especially likely to be absorbed by the platinum nuclei. The motion of protons and neutrons inside the platinum nuclei affects the pattern of resonances. And according to random matrix theory, a mathematical theory that for decades has been crucial for calculating the behaviour of large nuclei, those motions should be chaotic.

Yet, as Koehler and his colleagues report this month in Physical Review Letters (P. E. Koehler et al. Phys. Rev. Lett. 105, 072502; 2010), their analysis of the ORELA data found no sign that the nucleons in platinum were moving chaotically. By looking at the strength of the resonances, rather than just their spacing, the group rejects the

applicability of random matrix theory with a 99.997% probability. Instead, the nucleons seem to move in a coordinated fashion. "There's no viable model of nuclear structure that could explain this," says Koehler.

The resolution of the puzzle could have practical implications, as random matrix theory is currently used to estimate the probability that escaping neutrons will collide with nuclei, and from this to calculate the amount of shielding needed in nuclear reactors and stockpiles. "Engineers build in some extra shielding to cover the uncertainty, but if you were building 100 nuclear reactors you'd want the precision," says Gary Mitchell of North Carolina State University in Raleigh, co-author of a recent review article on random matrix theory (H. A. Weidenmüller and G. E. Mitchell Rev. Mod. Phys. 81, 539; 2009).

Mitchell adds that further experiments on nuclei other than platinum are urgently needed to determine whether the theory has truly broken down in this experiment, as Koehler and colleagues suggest, or whether — as Mitchell suspects — the shape of the platinum nucleus is unusual in some way that would account for the result.

Oriol Bohigas of the University of Paris-South, a leader in the field of random matrix theory, also recommends additional measurements. He says Koehler and his colleagues need to repeat measurements made at Columbia University in New York in the 1970s, which first contributed to the theory's acceptance, in order to see whether modern instruments and data-analysis methods give the same results.

But additional measurements at ORELA seem unlikely. "It hasn't been adequately funded and it's on standby," says Jim Beene, director of the Physics Division at Oak Ridge National Laboratory. According to the US Department of Energy, Koehler and Beene received US\$105,998 from the department's Office of Science for ORELA operations in fiscal year 2009, only about a tenth of what the researchers have said would be needed to run it. Beene explains that with the demise of the US fast-reactor programme in the 1980s, direct funding for ORELA dried up; the energy department says that other research efforts are a higher priority for the nuclear-science community. According to Koehler, the only other place in the world where similar measurements could be made is at the Geel Electron Linear Accelerator (GELINA) at Geel in Belgium, which has a flux, energy resolution and source brightness to rival ORELA. But, Koehler says, he'd love to take additional measurements himself. "There's a lot of good physics we could do if we could run," he says.

Source: Nature

<http://www.nature.com/news/2010/100824/full/4661034a.html>

I see Tony-- so basically, the universe IS the megaverse/omniverse....can these copies have different physical laws or are physicals laws merely a matter of perception that our consciousness places artificial limits on? I see how this can also cause nonlocality in quantum mechanical interactions as micro wormholes can tunnel between the different copies and move "virtual particles" between them....maintaining an overall balance of matter and energy.

-Alex

Tony and Allen, I'm curious as to what your ideas are regarding supersymmetry. Are sparticles really higher dimensional versions of "conventional" particles or could it be

that "conventional" particles are actually the part of sparticles that we can actually see, because we can't detect the whole particle with our limited perspective. I envision conventional particles as the part we can see through our "peephole" while the sparticle itself represents the full extent of the same particle. In this case, a conventional particle would merely be a shadow of a sparticle.

-Alex

1) Yes, the omniverse is any collection of multiverses, where a multiverse represents a minimum coupling of two or more phaseshifted protoverses.

It is the protoverse as the observed and measured spacetime universe, which became defined metaphysically/mathematically in fundamental integer based constants, such as  $c, h, e, k, \pi$ , natural logarithm etc. etc.

This renders the protoverse unique as an emergence from say particular algorithms, based on symmetry principles mathematically applied and to then allow the manifesto of 'approximation parameters' from previous say idealised Platonic forms.

The resolution of the wave-particle duality can be simply stated as the 'doubling' of the state vector in say the inversion of the entropy arrow. This does away with 'many worlds' and parallel universes as emerging from some prior 'primordial background' however defined.

The Schrödinger Cat is Möbius-Connected to itself in this 'doubling' of the state vector of the entropy arrow.

This then says in linguistics, that the Cat is simultaneously 'dead and alive' just as the quantum mechanical formalisms show.

It says, that the Collapse of the Cat's wave function infers the particle nature (of the live cat) to manifest in the Real Spacetime of the observer say; which simultaneously manifests the cat's wavefunction in the Mirror Spacetime of say the 'Inner Space' of the spacelikeness of the phase space.

Corollarily, the collapse of the Cat's particle function infers the wave nature (of the dead cat) to manifest in the Imaginary Spacetime of the observer (ergo the concepts of invisible dimensions and the cat's soul as some unseen reality etc.).

So at ALL TIMES of the state vectors in the phase space, the cat is indeed in a superposition of its wave particular and body particular selfstates.

If an alive Alex Reynolds walks about; he manifests his particle function externally and has 'imprisoned' his wavenature due to his 'being alive' in a bodyform.

A 'dead' Alex Reynolds, alternatively has 'released' his wave function and manifests a 'collapsed' particle function as an encorpsed bodyform.

This in a nutshell solves the Schrödinger quantum paradox as a 'doubling' or mirroring of the Real manifested spacetime with its shadow Imaginary conifolded spacetime.

Consciousness then becomes defined in the 'real volume' occupied by consciousness carriers; yet also selffolded (in this same real spacetime) as holographic imaginary spacetime.

2) No the SUSY sparticles are unnecessary altogether in Quantum Relativity. In its place an inherent, already unified gauge supersymmetry exists not between matter and antimatter; but between radiation gauges and their antigauges (called virtual particles of the heisenberg matrix).

Back in the inflationary epoch it was a Higgs precursor as a bosonic dineutron, which bifurcated into the observed quark-lepton fermionic families of the Standard model. The precursor of this Higgs precursor was superstring class HO32, namely the labeled X-Boson of the GUT unifications at about  $10^{15}$  GeV.

However anti X-Bosons did NOT exist - the X-Boson as a spin-1 particle became a fermionic coupling of two 1/2-spin fermionic states.

Tony

From: David

Date: Thursday, December 2, 2010, 5:37 PM

Here is the thing, Alex. I started looking at this differently right after they discovered Dark Flow. It made me think that yes, there were universes beyond our own, some with subtle influence, some with universe changing influence. As well I had been entertaining this for years based on the whole gravity paradox. Gravity simply has to be a stronger force outside our perceivable dimensions. This may also apply to the goo between universes. Then when I realized the math falls apart milliseconds before the Big Bang it began occurring to me there was really no evidence at all for a big bang, rather there was a big bubble pop, and a big gush of matter and energy. But that had issues as well, and I started looking for a non-singularity solution. Because observed movements of celestial bodies are suggesting that we are heading off in different directions, this seemed to me to indicate multiple expansion portals, or multiple bubble pops. The final clue to me was the discovery of that galaxy that was from 13.1 billion years ago. With a calculated date based on CMB of 13.7 billion years ago for the genesis date of the universe, it didn't add up at all. And I know this is going to kill Allen, but it also wasn't in the right place for its age. At first I started to think that there had to be multiple supermassive white holes, but that becomes problematic. Then it occurred to me that there were probably multiple big flows, from either a brane blowout, or from adjacent universe collisions with us, causing a rupturing of the bubble. Or, it could be that universes eventually expand to the point of busting into an adjacent universe, which would cause contraction as the matter flew out of one and into another, which would cause the offending universe to cease expansion, and begin to contract, and energy conservation is intact in the megaverse. This was also what led me to the concept of the megaverse being probable. If we are still expanding, after 13.7 billion years, we are still being fed. This would imply that there were multiple sources for fueling expansion. Now based on this, those sources are most likely in widely different spatial locations.....which will also aggravate Allen...LOL...point being, the clues have been there all along.

From: Alex  
Thursday, Dec 2, 8:00PM

David, looks like this focuses on your idea of matter/energy flow:

<http://www.newscientist.com/article/dn19701-strange-matter-flow-suggests-inflation-was-incomplete.html>

Strange matter flow suggests inflation was incomplete  
16:40 09 November 2010 by Anil Ananthaswamy

Is there a bulk flow of matter coursing through our universe? A new study bolsters the idea – and paints a new view of the process of inflation, the exponential expansion that occurred moments after the big bang.

The universe can be divided into two components: matter and radiation, which is seen as the cosmic microwave background (CMB). Much of the matter is in motion in a local sense – for example, our solar system is moving through the Milky Way. But according to the standard model of cosmology, the overall matter component should not be moving in any particular direction relative to the CMB.

Studies of the CMB show that Earth is moving in a particular direction with respect to the CMB. If this is all due to local movement, Earth should move with respect to distant cosmic objects at the same speed.

But when Yin-Zhe Ma of the University of Cambridge and colleagues analysed data from supernovae and about 4500 galaxies, they found that Earth's motion with respect to these objects was different. This suggests that they too are moving relative to the CMB, and hints at a bulk flow of matter, says the team.

Unfinished expansion

One controversial explanation given for earlier evidence of this flow was the tug of a second, distant universe. Ma's team says a more likely scenario is that the process of inflation, credited with smoothing out the distribution of matter and light in the early universe and causing the two components to move at the same rate, did not quite finish the job.

Team member Christopher Gordon of the University of Oxford cautions that this has yet to be confirmed by more precise data, such as from forthcoming instruments like the Square Kilometre Array and the Large Synoptic Survey Telescope, which will map more galaxies and supernovae, with far greater precision. "Actually seeing a signal from the pre-inflationary era would be a huge discovery," he says.

Cosmologist Douglas Scott of the University of British Columbia in Vancouver, Canada, who was not involved in the study, calls it an "eminently sensible analysis", but agrees with Gordon that more precise data is needed to claim discovery.

Journal Reference: <http://www.arxiv.org/abs/1010.4276v1>

Again, I agree.

David M. Rountree, AES