Re: From effectively no entropy to effectively infinite dissipation.

Source: http://sci.tech−archive.net/Archive/sci.physics/2006−02/msg04530.html

- *From*: "T Wake" <taswakeAt@xxxxxxxxxxx>
- *Date*: Fri, 24 Feb 2006 16:30:42 −0000

"Jeff_?elf" <Me@xxxxxxxxxxx> wrote in message
news:Jeff_Relf_2006_Feb_23_EwSX@xxxxxxxxxxxx

> Hi T_Wake, Speaking of WikiPedia.ORG/wiki/Heat_death, I said:
>
> Net, there's a virtual energy deficit,
> negative pressure, negative Mass_Energy.
>
> And you replied:
>
> You appear to be labouring under the assumption that all the matter in
> the
> universe can add up to a number less than zero. Interesting concept.
> Do you understand the ramifications of the energy conservation principle
> ?
>
> Ok, I finally got bored enough to do your homework for you.

No you didnt.

> WikiPedia.ORG is an excellent source, perhaps the best,
> ...but, as you're too retarded to understand that, here's another source.
> Take a look at this link from UCSD, University of California, San Diego,
> UCSD.EDU/Astronomy/evidence.htm [My comments are in brackets like this]

Your inability to provide HTTP links remains fully intact.

There is no page at UCSD.EDU/Astronomy/evidence.htm or even
ucsd.edu/Astronomy/evidence.htm or even ucsd.edu/astronomy/evidence.htm

(I am sure this wont bother you though)

I went to the UCSD home page and tried a search (you can see the results at:
http://search.ucsd.edu/search?q=Astronomy+Evidence+Supernovae&btnG=Search&ie=&site=collection_1&output=xm

There were 10 hits, none of them the page you purport exists.

I tried to change the search to "Astronomy Supernovae Hubble"

http://search.ucsd.edu/search?q=Astronomy+Supernovae+Hubble&btnG=Search&ie=&site=collection_1&output=xml

Again, none of the returned URLs match your page. Short of reading through every published article on the website I will try to respond to your post, without knowing what context the messages are in.

(Final point a search for "Astronomy Supernovae Hubble Cosmological" returned one hit − http://cosmos.ucsd.edu/~tjena/psfiles/thesis2b.ps so I downloaded that and looked it over to see if it was yours. It wasn't. You owe me 25 minutes of my life)

Before we go on, can you actually bring yourself to send me the proper URI to that page or shall I just assume it is strange that searching for significant keywords doesn't bring it up?

> The 1998 data sets [from Adam Riess and others] were detailed studies
> of
> distant explosions of massive stars, the Type 1a supernovae.

Yes. Supernovae are well known and well documented. So what?

> These bright explosions can be seen halfway out into the observable
> Universe
> and thus halfway back into its history
> [they go back 12 billion years of the 13.7, actually].
>
> And they seem to always have the same inherent brightness,
> so they can be used as the long−desired "standard candles"
> or uniform beacons in deducing distances,
> always a tricky business in astronomy.

Does the article explain how they were determined to have the same inherent brightness?

> When the data were examined, it was found that
> the supernovae in distant galaxies were about
> 20 percent dimmer then they should be in
> a Universe that has been expanding at a constant rate.
>
> This mean that they are further away than they should be
> − something has caused the Universe to expand faster,

> something has been added to the Hubble expansion.

This article needs to go back to the editors for poor grammar, or is this last paragraph yours?

Also, the "value" for H_0 was determined through the study of these supernovae so I don't know what "something has been added" means.

> This something is acting like a _Negative_Gravity_ [Negative Mass_Energy],

If you want to read the UCSD page on Negative Gravity it is here = http://calspace.ucsd.edu/Mars99/docs/library/myths_and_science_fiction/myths5−late_nineteenth_century.html

> counteracting the mutual gravity,
> which should [but doesn't] act to slow down the expansion of the Universe.

Now, I really would love to see this in its original context.

Not only that, but how on Earth does this support your assertion there is a negative amount of mass in the Universe?

I assume they are referring to "dark energy" here − which is not a negative anything. It is the force (often credited to pair−creation which you allude to below) which creates an outward pressure, also theorised as being the driving force for cosmological expansion.

> This is just what the Cosmological Constant represents
> [Einstein wins yet again, of course].

Does the page explain how the value for lambda was derived? Is it from first principles or was it shoe horned into the formula to make the equation match the evidence?

> In quantum mechanics,
> the vacuum of empty space contains a flood of
> virtual particles and anti−particles and thus a "vacuum energy".

Yes. See above.

> As more space is created in the Universe,
> there is more of this _Virtual_ or _Negative_Vacuum_Energy produced,

Nope. Where did "negative" come into the party?

Particle − anti−particle creation / annihilation is blamed for expansion because it creates an "over pressure." Nothing negative in that.

> with an associated −− $E = mc^2$ −− _Negative_Mass and _Negative_Gravity_.
> [Net Negative Mass_Energy, Net Negative pressure]

Again, I would love to see this in its original context. Who is the author of this article?

Also, there is little in what you have posted here which supports the overall mass of the unviverse being "negative."

Other than the cosmological expansion (which is neatly explained using positive energy and mass) what evidence has this provided to account for a negative energy balance in the universe?

> This is strange and exotic stuff, even for theoretical physics,

Strikes me more as nonsense. I would love to speak to the author of this.

> but remember that the Universe seems to have arisen from
> a quantum vacuum fluctuation; swallow hard and read on.

Again we hit signs it has not been written by a scientist.

> Can the data be wrong ? The supernovae do seem to be
> remarkably constant over the reaches of time,
> and there is no reason to suspect that the laws of physics have changed.

There is little reason to suspect the distances to supernovae are wrong (the theory has been verified via other methods anyway) and there is little reason to doubt the cosmological expansion as described by H_0. There is no concrete evidence to presume this is constant over time though.

> In looking at distant supernovae with the Hubble Space Telescope
> and giant ground−based telescoped such as the Keck instruments,

> it appears that the nearer −− younger −− ones are
> flying apart faster than the distant ones
> − it appears that the expansion of the Universe is accelerating;

Interesting concept. Again, this may be more "modern" than my last foray into academia so I would love to read the data on this.

IIRC the Hubble constant is expansion speed based on distance − implying that the further away something is, the faster it is moving even further away.

What do you have which refutes this?

> After a long while, we would end up with only our local group of galaxies.
> Not only is the end of the Universe cold, it is also very lonely.

Yes

This is one of the three main theories for the "end of the universe."

Nothing you have posted discounts the other two main theories completely. It also does nothing to discount the extra theories (such as M−theory).

> My point was simply that the expansion of space−time is most probably expanding at an accelerated rate.

Right we are talking science so when you say "most probably" you need to back that up. Numbers are better than words and generally it either "is" or it "isnt."

What did the data show for the rate of acceleration? How much faster is it expanding?

The current "best guess" for H_0 is between 100 and 50 km s^−1 Mpc^−1 so I would be interested how accurate they have determined the acceleration of "nearer" objects to be.

For info, H_0 implies that a star 1000 Mpc distant is receding at a speed between 1x10^5 and 5x10^4 km s^1. (a thousand times faster than a star 1Mpc distant.)

> A hyperbola is simply a two dimensional way to view the negative curvature.

A hyperbola is a shape unto itself. You dont need to denigrate it by calling it a cone − which is a weak 3d version.

> In 5 spatial dimensions, Space_Time_Entropy −− if you can take that leap −−

Nope, I cant. Time is not a spatial dimension. Entropy certainly isnt.

Again, we can use gravity to imply there are simply three spatial dimensions. Can you explain how Entropy fits into this as a spatial dimension?

> the universe is shaped like a horn with no edges,
> going from effectively no entropy to effectively infinite dissipation.

You made up the dimensions, it can be any shape you want it to be.

> You told me:
>
> When you say "Space−time is likely hyperbolic, cone
> shaped, negatively curved" you must define likely. Do you mean 1%, 5%, 50%,
> 95% or what ? How do you come up with that percentage ?
>
> Here's WikiPedia.ORG/wiki/Timeline_of_cosmology :
>
> _ 1998 − Adam Riess, Saul Perlmutter and others discover
> the cosmic acceleration in observations of Type Ia supernovae
> providing the first evidence for a non−zero cosmological constant.
>
> _ 2003 − NASA's WMAP takes more detailed pictures of the universe
> by means of the cosmic microwave background radiation.
> The image can be interpreted to indicate that the universe is
> 13.7 billion years old −− within one percent error −−
> and that the Lambda−CDM model and the inflationary theory is correct.

Sorry, I missed which parts of those posts gave me the percentage that space−time was curved.

Not to mention where they said space time was negatively curved.

Can you point it out to me?

> I've talked about the Lambda−CDM model before,
> Einstein's Lamda −− a.k.a. Net_Negative Mass_Energy −− is today's best theory,
> ...matching best observations.

You cant take lambda to mean "net negative mass−energy" (no matter how you want to add underscores and capital letters).

> Like many a moron here in Sci.Physics, you fail to understand

Oh, you had gone such a long time before the insults appeared. Never mind.

> that time is _Intrinsically_ spatial, local and static.

I fail to understand what supporting evidence you have for this (or pretty much any of your statements)

> And that it's only unknowns −− so called randmoness −−

Unknown is not the same as random.

> that ever makes it seem otherwise.

Well, as I said before − if it is your made up universe you get to make up the rules.

> In GR, time is a spatial dimension, I don't care what you imagine.

Prove it.

> I quoted Hawking saying:
>
> In relativity,
> there is no real distinction between the space and time coordinates,
> Just_As there is no difference between two space coordinates.

This does not mean the same thing as you are trying to make it mean. The fact you can give a reference to an object in space and time does not mean

space and time are the same.

You can rotate an object through spatial dimensions (a ball for example) and it may or may not retain symmetry. Can you rotate an object through time?

(if it helps − http://en.wikipedia.org/wiki/Rotational_symmetry − note how I have used the correct case on this)

> And you replied:
>
> This is not evidence in support of your claim.
> Hawking has his own opinions and often creates soundbites
> that help "laypeople" get interested.
>
> Right... and you are deeply and profoundly retarded, in my opinion.

Oh look, more insults. If there are four (or more) spatial dimensions can you explain to me why gravity and the strong force act as they do?

> Heat death is one of three main theories about the end of the universe.
> There is no evidence to say it is the most accurate.
>
> Heat death is the leading theory, by all accounts.
> You can read about it in the New York Times, I have.

That fine scientific journal. Why on Earth anyone would subscribe to Phys Rev B when they can get the NY Times?

> I never trashed the big bang theory,
> I merely said it was hubris to assume the we're at the perfect
> _Middle_Density_, between infinite density and a perfect vacuum,
> ...little different from thinking that the sun revolves around the earth.

Big bang doesnt imply we are at the middle density. Perfect or otherwise.

> Entropy is simply an intrinsic property of mass_energy, I posit,

You are wrong and confused, I posit.

> the universe has just always been expanding at an accelerated rate.

Nice words.

> There is no _Actual_ start to the big bang,

But you think there is an _Actual_end_to_the_universe_?

> just like there is no infinitely dense black hole.

Well. There is also no winning lottery number in my house, does that matter?

> The anthropic principle is pure hubris.

There is something we agree on then.

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