

Re: Big Bang Baloney....or scientific cult? [Apparent Red Shift]

Source: <http://sci.tech-archive.net/Archive/sci.physics.relativity/2004-07/5015.html>

From: Bill Hobba (*bhobba_at_rubbish.net.au*)

Date: 07/26/04

Date: Mon, 26 Jul 2004 01:54:49 GMT

"Ole D. Rughede" <ole.rughede@privat.dk> wrote in message
news:4103bd4d\$0\$305\$edfadb0f@dread11.news.tele.dk...

>

> "Bill Hobba" <bhobba@rubbish.net.au> skrev i en meddelelse
> news:qwKMc.15672\$K53.8089@news-server.bigpond.net.au...

>>

>> "Ralph Hertle" <ralph.hertle@verizon.net> wrote in message
>> news:4100B8C0.7060504@verizon.net...

>>> Info Plumber wrote:

>>>

>>>

>>> [snip]

>>>

>>>> Thanks for the tip, how is this?

>>>>

>>>

>>>

>>> Everything is OK.

>>>

>>>

>>>>

>>>>>.....

>>>>>

>>>>> "Ralph Hertle" <ralph.hertle@verizon.net> wrote in message

>>>>> news:40FCC49D.2050105@verizon.net...

>>>>>

>>>>><snip>

>>>>>

>>>>>>> The universe is eternal. Every scientific discovery,
> demonstration,

>>>>>>> and proof done in all of history validates the existence of the

>>>>>>> existents being examined in the observations and experiments, and
> taken

>>>>>>> together by the use of inductive logic, the fact of continuity can
be

> > > > *inferred and then validated.* <<
> > > >
> > > >
> > > *I believe that is an unsupportable claim.*
> > > >
> > >
> > >
> > > *Induction is not that popular in our society, however, that is the*
> > > *process that is used to arrive at the concept that, "The universe is*
> > > *eternal."*
> >
> > *Run that but me again – how does induction show that the universe is*
> > *eternal? Induction only gives us hypothesis – not facts.*
> >
> > > *With induction one reasons from many particulars to a single*
> > > *unifying concept. * You say that what I say is unsupportable. I say*
> > > *that what I said is a fact that is verifiable.*
> >
> > *That simply does not make sense. I claim the sun rises every day*
because
> *I*
> > *have deduced that from past experience – ie I have used induction – but*
> *that*
> > *does not guarantee it will rise tomorrow – it is simply a working*
> *hypothesis*
> > *I have confidence in. Indeed someone could decide to unleash nuclear*
> > *Armageddon and whether you like it or not there is a good chance after*
> *such*
> > *the earth will be blown to smithereens and the sun defiantly will not*
rise
> > *tomorrow (at least over the earth)*
> >
> > >
> > > *One fact is that you can verify with your own sense–perception*
> > > *information and powers of cognition is that from the time you first*
> > > *posted on this thread and the moment that you posted the message to*
> > > *which I am herewith replying the universe continued to exist.*
> >
> > *But that does not prove it will continue to do so – I certainly believe*
it
> > *will – but proof is another matter.*
> >
> > >
> > > *The many such time periods involving numerous identifications of*
> > > *physical entities that you have experienced in your life should give*
you
> > > *a sufficient quantity of particulars from which you can inductively*
draw
> > > *the conclusion that everything that you have seen or know does exist.*
> > > *Add to that the concepts similarly drawn by others and the base of*
data

> > > *particulars is enormous. Enormous enough to formulate the concept that*
> > > *everything is.*
> >
> > *Sorry – it can never be enormous enough to prove a hypothesis deduced by*
> > *induction; because to verify it you must observe every occurrence of it*
> *now*
> > *and forever; which is clearly impossible.*
> >
> > > *That process is implicit in the simplest generalizations*
> > > *formed by a child to the sophisticated conclusions involving high*
level
> > > *abstract concepts of the universe, say that the functionings of many*
> > > *types of celestial objects (say planets, stars, moon, and comets) are*
> > > *different from one another.*
> >
> > *What is implicit is that general statements like Maxwell's equations*
> > *describe classical electrodynamics are purely provisional – a new*
> *experiment*
> > *could be performed tomorrow that invalidates it. That is very unlikely*
> > *given how interconnected it is with all sorts of other things we know –*
> *but*
> > *the point is it is not impossible. And we even have examples of it*
> > *happening in physics eg parity violation. That parity should be*
conserved
> > *is pretty intuitive, so much so that scientists fooled themselves into*
> > *believing the data said it was – in fact it was not.*
> >
> > >
> > > *The conclusion first drawn by any scientist or philosopher that the*
> > > *universe, that is all of existing things, is made of functioning*
> > > *existents, or beings, was made by Aristotle. He called that a Common*
> > > *Notion, or axiom, and today philosophers call that concept the*
Identity
> > > *Axiom. Ayn Rand redefined the principle in the context of a*
> > > *comprehensive fact-based and logical philosophy called Objectivism,*
and
> > > *her definition is, "Existence is existing," or for short, "Existence*
> > > *exists."*
> >
> > *I believe existence exists, but that is a belief on my part – it is not*
> > *something I can prove any more than I can prove the sun will rise*
> *tomorrow.*
> >
> > >
> > > *The fact that you existed during the minutes that you took to make*
your
> > > *recent post has implicit within it the fact of your continuing*
> > > *existence. All the matter and materials or energy that is or was you*
has
> > > *continued to exist. I hope you are still there, of course. To write a*
> > > *post, you looked at your computer, and you turned it on. The machine*

> > > *went into action. The actions that you took have the implicit basis that*
> > > *you, electricity, programs, and the computer actually exist, and that*
> > > *they continue to exist. Of course, if you were nuked by a terrorist,*
> > > *those things would not exist, however, changed, the atoms of same and*
> > > *other constituents would continue to exist.*
> >
> > *Would they? How do you know that? Conservation laws ie energy can not be*
> > *created or destroyed but only converted from one form to another – is that*
> > *what your invoking? But how do you know that is true? The answer*
> *physics*
> > *provides is symmetry – but we have broken symmetries and conservation laws*
> > *we thought were true are not. The fact is in science everything, it does*
> > *not matter how obvious it is to you, depends on correspondence with*
> > *experiment – that is all that counts – and that is the fundamental lesson*
> *of*
> > *science. All these philosophical considerations are gloss and dross*
> > *compared to the results of experiment.*
> >
> > >
> > > *Every human goes through a similar process of inductive generalization*
> > > *daily, and scientists go through a much more detailed process of*
> > > *induction wherein all the original particular facts are carefully*
> > > *identified, defined, and measured in advance. The methods of induction*
> > > *are carefully delineated for scientific advancements, discoveries, and*
> > > *identifications.*
> >
> > *True – but that in no way deprives them of their provisional character.*
> >
> > >
> > > ** Refer to Ayn Rand's book on concept formation, called, "The Theory of*
> > > *Objectivist Epistemology," that is available from,*
> > > *<http://www.aynrand.org/site/PageServer> .*
> > >
> > > *Scientific experiments, demonstrations, and proofs are deductive*
> > > *processes*
> >
> > *Experiments are not deductions – they are questions we ask of nature to*
> *see*
> > *how she works. They either disprove theories, confirm them or suggest new*
> > *ones.*
> >
> > > *and are not used to arrive at the universal concept of a*
> > > *continually existing universe. Deduction cannot be used for that*

> *purpose.*
>>>
>>>
>>>>
>>>>>[you say:]
>>>>>
>>>>> > *My intuition says that anything that is expanding at a
more-or-less*
>>>>> *constant rate (or accelerating rate) must have been a singularity at*
>>>>> *some time in the past. Your statement above seems more like*
> *existential*
>>>>> *philosophy than hard science. There are few things in cosmology that*
>>>>> *have as much hard, scientific validation as the "big bang".<*
>>>>>
>>>>> *Intuition is not science, it is projection and wishing, just to*
> *mention*
>>>>> *some of the possible notions.*
>>>>>
>>>>>
>>>>> *I was not the first person to mention "intuition" in this thread,*
but
> *I*
>> *made*
>>>> *it crystal clear (I thought) that my position was based on science,*
> *not*
>>>>> *intuition.*
>>>>>
>>>>
>>>>
>>>> *Sorry, I misread or missed something.*
>>>>
>>>> [snip]
>>>>
>>>>>> *Forget the Euclidean geometric origin point that the*
>>>>>> *religionist-creationists have foisted upon us.*
>>>>>>
>>>>>> *Instead, ask the real questions: what happens to photons in their*
>>>>>> *travels through space to cause the lowering of their energy levels.*
If
>>>>>> *collisions or the intercession of other causes are at work, it may*
be
>>>>>> *found that the universe is not at all expanding, that there was no*
BB,
>>>>>> *that the Apparent Red Shift will have been explained in terms of*
>>>>>> *physical cause and effect, that the cause of gravity may also be*
>>>>>> *explained as an integral cause, that the red shift varies due to the*
>>>>>> *differences of densities of hydrogen atoms or the different flux*
>>>>>> *densities of radiant gravitons in space, and that the universe is*
>>>>>> *considerably smaller than previously estimated.*
>>>>>
>>>>>

>>>> wait just a minute, how can a "continually existant" universe be
>> anything
>>>> other than infinite in size while at the same time being "smaller
than
>>>> previously estimated"?

>>>>
>>>
>>>
>>>
>>> That's an excellent question. In the space of these writings it
>>> sometimes isn't possible to develop all the points needed for a
complete
>>> exposition.

>>>
>>> A "continually existant" universe made of a plurality of discrete
>>> existents is finite. Finite in that (Aristotelean and not Platonic)
>>> context would mean that existents are existing in physical actuality
and
>>> that they have properties. The plurality continues to exist, will
exist,
>>> and is known to have existed for some time prior to now. By induction
we
>>> can create the concept of a continuity of everything, and we can
>>> similarly form a concept that isolates the distinguishing
>>> characteristics and omits all the non-essential properties of the
>>> existents except for the existence of the plurality and its
continuity;
>>> and we call that concept, eternal.

>>>
>>> The universe is eternal.

>>
>> Philosophical doublespeak and balderdash. I say the question of if the
>> universe is eternal is a scientific question whose answer depends on how
>> well it fits with observation – the best current thinking is it had a
>> beginning and will have an end.

>>
>>>>
>>>> Being eternal is always an actuality, and it is continually actualized
>>>> in every moment of existence. The universe is always existing
>>>> instantaneously, and there is always only the now. In the now, there
is
>>>> no past, and, in the now, there is no future. The characteristics of
>>>> future existents are only determined by their currently existing
>> properties.

>>>>
>>>> Everything in the universe has substance, the stuff that is, and that
>>>> stuff has properties.

>>>>
>>>> Everything in the universe has substance? Do electric fields have
>> substance?

>>>>
>>>> Some of those properties are location, amount of

> > > *mass, distance relationships, and dimensional motion, for example. We*
> > > *can only know the natures of the existents that we can, and we can*
know
> > > *no more. We have no knowledge of whether future discoveries of more*
> > > *distant objects, i.e., by means of iron light red shifted down into*
the
> > > *long radio wave lengths, will enable us to see older and more distant*
> > > *objects. We can know know more by such empirical and verifiable*
> > > *observations.*
> >
> > *Yet you claim induction tells us truth.*
> >
> > >
> > > *Is the universe infinite of time? No,*
> > >
> >
> > *That is the usual definition of eternal – I suggest all your doing is*
> > *playing word games.*
> >
> > > *it is only continuous of*
> > > *existence. That fact we can verify, and by means of induction we can*
> > > *surmise that existence is eternal. To be eternal is that the universe*
> > > *will continue to continue in the here and now,*
> > >
> > > *Is the universe infinite of size, or mass? No, it is only continuous*
of
> > > *the existence of its parts and its possible functionings. Actually, We*
> > > *only know what we know. If we build more powerful instruments we can*
see
> > > *farther, and if all that we have seen has similar characteristics, we*
> > > *could make a conditional guess that if we saw further we would see*
more
> > > *of the same. If we saw older objects, we could conditionally guess*
that
> > > *older things were formed or were existing based upon the same causes.*
> > >
> > > *The universe is always finite. No part of it is infinite.*
> > >
> > > *Infinity is a potentiality only, and it can never be demonstrated to*
> > > *have any particular existence.*
> > >
> >
> > *The universe conceivably may be infinite in all directions – scientists*
> > *suspect it is not – but that is a matter of observation – not something*
> > *that must a-priori be.*
> >
> > > *Nor are there any particular infinite*
> > > *objects, for that would be a gross contradiction in terms.*
> >
> > *I suggest you acquaint yourself with the works of Cantor.*
> >

> > >

> > > *Refer to several posts that I have written on HPO,
> > > humanities.philosophy.objectivism , and AA, alt.astronomy, concerning
> > > discussions of the concepts of existence, continuity, and infinity.
> > > Fuller explanations may be found there, and also, on the archives for
> > > the above mentioned groups on Google.com. Search by "author:<author's
> > > email address>" and by subject keywords, existence, continuity, and
> > > infinity, for example.*

> > >

> > > *The concepts of the existence and the continuation of entities are
> > > demonstrably finite.*

> > >

> > > *The concept of infinity is a religious concept that is used widely by
> > > Platonists of all types, and is rarely and only used in comparative
> > > discussions by those in the Aristotelean tradition. Infinity cannot be
> > > actualized in terms of finite existents, extents, sizes, or physical
> > > substance of any kind.*

> >

> > *I have a book sitting here in front of me called 'Introduction to the
> Theory*

> > *of Infinitesimals' by Stroyan and Luxemburg. It is a book on a subject
> > called Non Standard Analysis. Its whole basis is that infinity and
> > infinitesimals (the inverse of infinity) are not only logically consistent
> > but*

> > *have powerful applications to mathematical analysis eg it can be used to
> > give rigor to hand wavy arguments used in numerical analysis and has
many*

> > *practical application see*

> > *<http://members.tripod.com/PhilipApps/nonstandard.html>. In non standard
> > analysis infinitesimals exist and the reciprocal of an infinitesimal is
> > infinity.*

> >

> > > *All that it can possibly mean is: immeasurably
> > > huge, and that is just about all that can be said about the concept.*

At

> > > *best infinity is not, and can never be, a scientific concept. Why?*

> > > *Because that which is supposed to be the infinite has no properties,*

no

> > > *identity. Infinity can never be known – and therein is its great
appeal*

> > > *to the Platonists as well as the modern Kantians in science.*

> >

> > *It can be known as well as any mathematical theory can be known –
logical*

> > *consistency is all that counts. BTW I think Kant is a crock of crap –
he*

> > *was destroyed not by philosophers but by mathematicians – Gauss, Riemann
> and*

> > *Hilbert savaged him. To be fair however I have had discussions with
Kant*

> > *scholars that disagree.*

>>
>>>
>>>
>>>
>>>
>>>> *with respect to "the flux densities of radiant gravitons in space",*
> *are*
>> *you*
>>>> *referring to the hypothesized effect of a "Mitchell star" or other*
>>>> *significant gravity well, namely the indirect result of*
> *uni-directional*
>>>> *gravitons causing localized Elysium density increases which result*
in
>> *the*
>>>> *refraction and ultimate red-shifting of photons? this idea seems to*
me
>> *to*
>>>> *have some fatal logical weaknesses, so perhaps he has something else*
> *in*
>>>> *mind?*
>>>
>>>
>>>
>>>
>>>> *A ""Mitchell star" or other significant gravity well"? I don't know.*
The
>>>> *idea, from what you say could be worth looking into. I don't know*
enough
>>>> *about that aspect of science.*
>>>
>>>
>>>
>>>> *Has he subjected this option to experimentation?*
>>>>
>>>
>>>
>>>> *Yes. Lord Rayleigh was a true experimenter-theoretician type of*
>>>> *scientist. His experiments are well documented. I for one wish I had a*
>>>> *book that documented all his works.*
>>>
>>>
>>>>
>>>>>> *Due to religion the theory that no physicist seems to be advancing*
is
>>>>>> *that the universe continually exists as plurality, and that it is*
made
>>>>>> *of a myriad of parts.*
>>>>>>
>>>>>> *Ralph Hertle*
>>>>>>
>>>>>>

> > > *this is a very interesting theory and one that I have not seen before.*

> > >

> > >

> > >

> > > *The theory "that the universe continually exists as a plurality" is not*

> > > *mine. That is straight from Aristotle, that is, after I did a lot of*

> > > *mulling to get the ancient concepts working in my gray cells. I've been*

> > > *developing upon and explaining the concepts for our modern purposes.*

> > >

> > > *Or are you referring to Lord Rayleigh's work with light?*

> > >

> > > *The guy we are talking about is:*

> > >

> > > *John William Strutt Lord Rayleigh*

> > > *Born: 12 Nov 1842 in Langford Grove (near Maldon), Essex, England*

> > > *Won: Nobel Prize, 1904*

> > > *Died: 30 June 1919 in Terling Place, Witham, Essex, England*

> > >

> > >

> > >

> > >

> > > *I will enjoy very much giving this idea some serious consideration,*

> *but*

> > *for*

> > > *now just a few questions and comments:*

> > > >

> > > > *1. Where can I obtain more information on Lord Raleigh and his work?*

> > > >

> > > >

> > > >

> > > *Again, I wish that I had a full documentation of abstracts of his work.*

> > > *Use the Internet search engines. Possibly also write to the Librarians*

> > > *at the universities and organizations in GB where he did his work. I*

> > > *wouldn't doubt that they can give you a little free help, however, a*

> > > *researcher could possibly be hired.*

> > >

> > >

> > >

> > > > *2. Does he extrapolate his findings with estimates of ?*

> > > > *a) stellar and intergalactic distances.*

> > > > *b) the size of the currently visible portion of the universe.*

> > > >

> > >

> > >

> > > *He made a few comments about the light coming from distance places in*

> > > *the universe, and I don't have the details*

> > >

>>>

>>>

>>>> 3. Where does he stand on General Relativity?

>>>>

>>>

>>>

>>> I don't know.

>>>

>>> Note the years in which he did his work. He published his work, and I

>>> would suspect that his experiments may have been mentioned in the works

>>> of Einstein and others in the prior art or reference sections of the

>>> papers they wrote. I would be interesting to see how they dispensed with

>>> his ideas,

>>>

>>>

>>>

>>>> 4. What are his positions on dark matter and dark energy?

>>>

>>>

>>>

>>> I don't know.

>>>

>>>

>>>>

>>>> 5. What is his position on multiple universes and string theory?

>>>

>>>

>>>

>>> I don't know.

>>>

>>>

>>>>

>>>> The majority of today's physicists who are atheists are also "Big

>> Bang"ists,

>>>> so your final comment does not hold water.

>>>

>>>

>>>

>>> You caught one of my problems in logic. Thank you.

>>>

>>> I should have said that some advocates of the BB are religionists and

>>> that some are not.

>>

>> Scientists that advocate the BB do so for a very fundamental reason – you

>> should acquaint yourself with the The Hawking–Penrose singularity theorem

>> which shows that provided some very reasonable assumptions that most

>> physicists would not choose to doubt are made (see Wald – Generals

> > *Relativity for the details) then the universe must have been a singularity*
> > *some time in the past. If you wish to doubt it then it would be*
> *reasonable*
> > *for you to detail which assumption of the theorem you wish to dispute.*
> >
> > >
> > > *I may have tried to promote the idea that creationists are religionists,*
> > > *and as you point out, they all are not. I should have added, as a*
> > > *parenthetical remark, that many of the religionist creationists latched*
> > > *on to the Doppler–Hubble BB theory because it shored up the Biblical*
> > > *creationist viewpoint. Nor are all religionists creationists Biblical*
> > > *creationists.*
> > >
> > > *A poll of the different types of scientists regarding their religious,*
> > > *scientific, and philosophical views would be of interest.*
> >
> > *Irrelevant – science is concerned with correspondence with experiment –*
> *that*
> > *is all. Other issues are simply gloss and dross ie a beat up by those*
who
> > *wish to make the issue into something it is not.*
> >
> > >
> > > *Steven Speicher, a scientist who posts on HPO, remarked that most*
> > > *scientists leave their religious views at the door when they go to*
work.
> > >
> >
> > *Steven Speicher is a person who at one time posted a lot on*
> > *sci.physics.realtivity and is a person I have great respect for. On the*
> > *above he is 100% correct.*
> >
> > >
> > >
> > > > *From the general tone of your*
> > > > *post, I get the distinct impression that you harbor an irrational*
> > *hostility*
> > > > *towards any theory that would lend credence to the Creationist point*
> *of*
> > > > *view.*
> > > >
> > > > *IP*
> > > >
> > > >
> > >
> > >
> > > *I am vehemently opposed to any theory that is widely promoted and that*
> > > *has so many logical contradictions in it. For example, one*

contradiction

- > > *that is really disreputable is that at the instant of the BB the*
- > > *universe is supposed to have come into existence out of nothing.*
- > >
- > > *That is not what the BB theory says – it says that it started as a*
- quantum*
- > > *fluctuation is a primordial 'quantum soup' that inflated into the*
- universe*
- > > *we see around us – it did not start from nothing. If you believe*
- > *otherwise*
- > > *please point me to the scientist that claims otherwise.*
- > >
- > *And from where or what should that 'quantum soup' have been*
- > *invented, created, cooked and served by whom for inflation?*

Its technical name is the false vacuum.

- > *What came first, the hen or the egg,*

Blowed if I know – speak to an evolutionary biologist.

- > *and which went into the soup?*

It is assumed to contain something whose technical name is the 'false vacuum' See <http://nedwww.ipac.caltech.edu/level5/Guth/Guth3.html>. I called it a 'quantum soup' to indicate its properties were strongly governed by the laws of QM.

- > *Which 'fluctuations' caused by what should make the soup inflate?*

> *From the link written by the originator of the theory:*

'There are many versions of inflationary theories but generically they assume that some small patch of the early Universe somehow came to be in a false vacuum state. Various possibilities have been discussed, including supercooling during a phase transition in the early Universe, or a purely random fluctuation of the fields. A chance fluctuation seems reasonable even if the probability is low, since the inflating region will enlarge by many orders of magnitude, while the non-inflating regions will remain microscopic. Inflation is a wildfire that will inevitably take over the forest, as long as there is some chance that it will start. '

So the answer is it is an assumption of the theory. You know – the hypothesize part of the scientific enterprise; that part that says as long as the hypothesis is in accord with observation is it a valid hypothesis regardless of what you may think of it. I know such an attitude towards science is foreign to you but it still is what science is all about.

- >
- > *Isn't this some sort of 'induced' speculative fairytales strung*
- > *together on one single perhaps misinterpreted 'observation'*

> *of red-shifted light as a Doppler-evidence of expansion?*

Much more evidence than that exists see

http://map.gsfc.nasa.gov/m_uni/uni_101bbtest.html

>

> *How can you possibly cling to such phantastic nonsense,*

> *given all the truely scientific arguments here from Ralph Hertle?*

You mean evidence like:

'The concept of infinity is a religious concept that is used widely by Platonists of all types, and is rarely and only used in comparative discussions by those in the Aristotelean tradition. Infinity cannot be actualized in terms of finite existents, extents, sizes, or physical substance of any kind. All that it can possibly mean is: immeasurably huge, and that is just about all that can be said about the concept. At best infinity is not, and can never be, a scientific concept. Why?

Because that which is supposed to be the infinite has no properties, no identity. Infinity can never be known – and therein is its great appeal to the Platonists as well as the modern Kantians in science.'

Anyone aware of advanced mathematics knows of Cantors transfinite arithmetic and the more recent and very striking Non Standard Analysis that trivially disproves such philosophical mumbo jumbo.

Bill

>

>

>>> *They*

>>> *imply, and some state outright, that there were no physical causes*

>>> *existing prior to all of existence.*

>>

>> *Bunkum – The quantum 'soup' the universe was supposed to have inflated from*

>> *obeyed laws that are specified in the inflationary big bang model.*

>>

>>> *The implication is that the*

>>> *principles of cause and effect, of the plurality of existents in the*

>>> *universe, of the existence of the universe, of the eternal nature of the*

>>> *universe, and of the concepts of specific properties of existents, of*

>>> *the knowability of the facts of the universe and of the pre-BB*

universe,

>>> *don't exist and cannot be known.*

>>

>> *In any theory some things are assumed from which others follow – the*

>> *inflationary BB theory is no different.*

>>

> *Induction?*

> > >

> > > *Only existence is existing.*

>

> *Hmm. Existence or that of existence is existing?*

> > >

> > > *I am not a Creationist, although the original hypotheses of Hubble using*

> > > *the Doppler Effect and the balloon had considerable merit worth*

> > > *checking. It is still true for many local observations.*

> > >

> *Did Hubble ever advocate an interpretation as expansion?*

>

> > > *I am an advocate of the continuity of existence of a plural and eternal*

> > > *universe of only physical existents.*

> >

> > *Then Ralph why not acquaint yourself with the facts before jumping to*

> > *conclusions see*

> > http://nedwww.ipac.caltech.edu/level5/Guth/Guth_contents.html.

> >

> > *Thanks*

> > *Bill*

> >

> >

> *I'm impressed by the quality of your discussion.*

> *It cannot but lead to scientific caution in honestly dealing*

> *with the existential problems of physics and philosophy.*

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> *Ole D. Rughede*

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