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The Primordial Cosmic Black Hole and the Cosmi

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Abstract
Based on the big bang concepts- in the expanding universe, 'rate 'rate of expansion'. Modern standard cosmology is based on two is isotropic and the present universe is accelerating. In particle existence of 'dark matter' and 'dark energy'. Astronomers are puzz in the Universe appear to depend on which method is used to we Research Institute (ARI) supported by the Royal Astronomical Soc evil'. In this connection an attempt is made to study the univ primordial universe is a natural setting for the creation of black h possible to assume that throughout its journey, the whole unive Planck particle can be considered as the baby universe.

Keywords: Cosmic Axis of Evil, Rate of Decrease in CMBR Tempe Force, Classical Limit of Power, Primordial Cosmic Black Hole, Lig

Article Outline

1. Introduction

Based on the big bang concepts- in the expanding universe, 'ra
rate of expansion'. Modern standard cosmology is based
temperature is isotropic and the present universe is acceler
evidence for the existence of 'dark matter' and 'dark energy'. A
of the largest objects in the Universe appear to depend on w
discussions at Astrophysics Research Institute (ARI) supported
existence of the 'cosmic axis of evil'. In this connection, in this
and growing model of cosmology. Please see the appendix on t

2 About the Existence and Growth of the Galactic Cent

If the interior geometry of a black hole is a space-like region i
then thinking about the formation and existence of "mass
astronomical and galactic observations strongly reveal that eve
is really true, then the fundamental question to be answered is
central black hole'? Initially astrophysicists attempted to ex
describing the evolution of galaxies as gathering mass until bla
that the galactic central black hole co-evolved with the galactic
23 March 2012, astronomers have put forward a new theory for

To resolve these sensitive problems some scientists say: existe
theoretical. Here it is very important to note that physics work
The combination of the observed and well believed physica
phenomena. Their combination generates some special a
immeasurable. The formation of black holes, planck mass et
physical constants.

2.1. The two strange compound physical constants

It is noticed that $\left(c^4/G\right)$ is the classical limit of force and $\left(c^5/G\right.$
the 3 critical conditions are: magnitude of 'kinetic energy' ne
'potential energy' and magnitude of mechanical power never c
involved in GTR and black hole physics can be simplified. Now
hole physics. Planck mass can be derived very easily. Light spe
quantum mechanics can be coupled in a unified manner. Rotat

One such fundamental and unbelievable compound physical
gravitational constant. The more surprising and strange thing i
Its magnitude is 1.21×10^{44} Newton. This is a very big magnitude
unfortunate thing is that it appears in general theory of relat
ultimate force in true unification. The only way is to impl
unbelievable compound physical constant is $\left(c^5/G\right)$ The more s
to the dimensions of 'power'. Its magnitude is 3.63×10^{52} J/sec
laboratory experiments. Whether to consider them or disca
Considering these two compound physical constants, Planck s
mathematical equations of GTR, black hole radius can be obta
laws of physics, some miracles can be done.

3. Disclosure

Most of the information included in this article has been pr
Expanding Black Hole Universe", Progress in Physics, vol. 2, pp
decrease in CMBR' temperature is a measure of cosmic 'ra
expanding and (light speed) rotating black hole[3]. This article
can be considered as the primordial cosmic black hole.

Existence of dark matter, dark energy, inflation and the accele
support and can be considered as 'enigmatic concepts'. Their
interpretations[4,5]. For the same observations it is also possib
cosmic rate of expansion. With this idea, automatically a closed
With the above four enigmatic concepts (directly and indirectly
world. But this is the time to think about the unification of G
interesting theoretical idea is - now a days to understand the c
their concentration on primordial cosmic black holes. One inte
close to speed of light[6]. Even though these two are also enigm
unified manner.

Published papers[7-10] clearly indicate that, current cosmol
concepts and the possibility of a model of black hole cosmol
black hole cosmology can be seen in physics literature[11-15].

4. Light Speed Rotation - An Unified Enigmatic Conce

All these enigmatic concepts can be unified into one enigmatic
immediate applications are

1. Classical limits of force and power can be generated.

2. GTR and quantum mechanics can be studied in a unified ma

3. Origin of the Planck scale can be understood.

4. A closed rotating and expanding model of the universe can b

5. The two experimental numbers CMBR temperature and cosm

6. Finally a unified black hole model of cosmology can be deve

5. Deduction of the Classical Limits of Force and Powe

Special theory of relativity says that light speed is the maximu
speed with which photon or electromagnetic signal travels
characteristic speed limit. Throughout the cosmic evolution
answerless question. It is an accepted and universal idea that 'g
of light.

Dimensionally and physically a characteristic force form can
constant (G). It can be expressed as $\left(c^4 / G\right)$. It can be consid
maximum 'gravitational force of attraction' and maximum 'ele
scheme. It is the origin of "Planck scale". It is the origin of 'Qu
'power' can be given by $\left(c^5 / G\right)$. It plays a crucial role in 'g
'mechanical' or 'electromagnetic' power and 'radiation power'
and 'constancy of speed of light'. In Sun-Planet system, from N

$$F_g = \frac{GM_S m_P}{r^2}$$

Here, M_S = mass of sun, m_p = mass of planet and r = distance b

$$F_c = \frac{m_p v^2}{r}$$

where, v = orbiting velocity of planet. Eliminating r from equat

$$F = \left(\frac{m_p}{M_S}\right)\left(\frac{v^4}{G}\right)$$

It is very clear that, since (m_p / M_S) is a ratio, (v^4 / G) must have light', a force of the form, $\left(c^4 / G\right)$ can be constructed. This can Nature of the force may be mechanical or electromagnetic or form[22] as

$$\frac{1}{F} = \frac{8\pi G}{c^4}$$

Considering this magnitude as the upper limit of gravitational bodies can be obtained as follows. Let,

$$\frac{Gm_1 m_2}{r^2} \leq \frac{c^4}{G}$$

Here, m_1 and m_2 are any 2 massive bodies and r is distance bet be obtained as

$$r_{min} = \frac{G\sqrt{m_1 m_2}}{c^2}$$

This is a simple and very strange expression. By any chance if m

$$r_{min} = \frac{Gm}{c^2}$$

Without going deep into general theory of relativity and co relativity, results of GTR can be obtained. This idea can be attraction or repulsion between any 2 elementary particles havi

$$F = \frac{e_1 e_2}{4\pi\varepsilon_o r^2} \leq \frac{c^4}{G}$$

Minimum distance between can be obtained as

$$r_{min} = \sqrt{\frac{e_1 e_2}{4\pi\varepsilon_o}\left(\frac{G}{c^4}\right)} = \sqrt{}$$

where $e_1 = e_2 = e$

Charged particle's space-time curvature can be understood fro elementary particles easily. Not only that this method simply a Grand unification assumes that in the past the observed 4 fun Magnitude of the force at that time can be taken as (c^4 / G). W understood as a charged space-time curvature. Clearly speak quark physics[23-26]. From quantum mechanics

$$\frac{e^2}{4\pi\varepsilon_o\hbar c} = \alpha \quad \text{and} \quad \frac{}{4}$$

From above equation it is noticed that

$$r_{\min} = \sqrt{\alpha\hbar c\left(\frac{G}{c^4}\right)} = \sqrt{\alpha}$$

This length is smaller than the planck length by $\sqrt{\alpha}$.

6. To Derive the Planck Scale

Assume that 2 Planck particles having mass M_p moving in oppo
distance their magnitude of gravitational force of attraction app

$$\frac{GM_pM_p}{r_{\min^2}} = \frac{c^4}{G}$$

If mass of Planck particle is M_P,

$$M_P = \frac{hc}{\lambda_P},$$

From wave mechanics, if

$$2\pi . r_{\min} = \lambda_p$$

$$\frac{GM_pM_p}{r_{\min^2}} = \frac{c^4}{G} = \frac{G\hbar}{r_{\min^4}}$$

$$r_{\min} = \sqrt{\frac{G\hbar}{c^3}} \quad \text{and} \quad 2\pi r_{\min}$$

Rest energy of Planck particle can be given as

$$M_pc^2 = \frac{hc}{\lambda_p} = \sqrt{\frac{\hbar c^5}{G}} = \sqrt{}$$

Mass of planck particle is

$$M_p = \sqrt{\frac{\hbar c}{G}}$$

Here the fundamental questions to be answered are

1. Is Planck particle obeys particle nature?

2. Is Planck particle a photon or a baryon?

3. Is Planck particle follows strong gravity?

4. What is the mass range of black holes?

If the Planck particle is not a real massive particle just like a p

can be considered as the mass of the baby universe. Big bang n
radiation. If one considers Planck photon as the baby unive
characteristic mass of the baby universe. Thus qualitatively
mechanics and big bang cosmology.

6.1. The planck mass & the coulomb mass

With this classical limit of force (c^4/G), similar to the Planck ma

$$M_C c^2 = \sqrt{\alpha} \times \sqrt{(\hbar c)\left(\frac{c^4}{G}\right)} =$$

$$M_C = \sqrt{\alpha} \times \sqrt{\frac{\hbar c}{G}} = \sqrt{\frac{e}{4\pi}}$$

Here 'e' is the elementary charge and (c^4/G) is the classical li
massive charged particle? If 2 such oppositely charged part
Considering so many such pairs annihilation hot big bang o
cosmic energy reservoir. Such pairs may be the chief constitue
quantum rules they annihilate and release a large amount of en

It is widely accepted that charged leptons, quarks, and baryons
mesons comes under force carriers. If so what about this ne
represents a large potential well in the primordial matter
monopoles? Is it the mother of all charged particles? By any su
is able to bring down its mass to the observed particles mass sc

7. Light Speed Rotating Black Holes: the Special Holes

Origin of 'rotating black hole' formation can be understood wit
any rotating celestial body assume that,

$$\text{torque}, \tau \le Mc^2$$

$$\text{power}, P = \tau\omega \le \frac{c^5}{G}$$

Hence

$$\omega \le \frac{c^3}{GM} \quad \text{and} \quad \omega_{max} =$$

When the celestial body rotates at light speed, to have maximu

$$R_{min} = \frac{c}{\omega_{max}} = \frac{GM}{c^2}$$

This expression is similar to the 'Schwarzschild radius' of a bla
This is really a very interesting case. This obtained expression i
have a 'minimum size' of $\frac{GM}{c^2}$. Clearly speaking this proposal i
of relativity. It is not speaking about the gravitational collapse
time to re-examine the foundations of modern black hole phys

has to be studied in a new direction. If the concept of 'Schwar
body or black hole of rest mass M the critical conditions can b

1. Magnitude of 'kinetic energy' never crosses 'rest energy'.

2. Magnitude of 'torque' never crosses 'potential energy' and

3. Magnitude of mechanical power never crosses $\left(c^5 / G\right)$.

Based on the Viral theorem, potential energy is twice of kinetic
easily from equations (21), (22) and (23). Not only that special
relativity can be studied in a unified way. Such light speed rotat

8. Derivation for Black Hole Temperature

Dr. Stephen Hawking[30] says- "The main difficulty in finding a
relativity is a "classical" theory; that is, it does not incorporate
hand, the other partial theories depend on quantum mechan
combine general relativity with the uncertainty principle. As w
such as black holes not being black, and the universe not hav
without a boundary".

"Einstein's general theory of relativity seems to govern the larg
theory; that is, it does not take account of the uncertainty prin
other theories. The reason that this does not lead to any discrep
normally experience are very weak. However, the singularity
should get very strong in at least two situations, black holes a
mechanics should be important. Thus, in a sense, classical ger
its own downfall, just as classical (that is, non quantum) mec
collapse to infinite density. We do not yet have a complete
mechanics, but we do know a number of the features it should h

A black hole of mass (M) having size, $R = \frac{2GM}{c^2}$ rotates with an
its temperature (T) is inversely proportional to its rotational tim

$$\left(k_B T\right) * t = \frac{h}{4\pi} = \frac{\hbar}{2}$$

$$\text{Or } T * t = \frac{h}{4\pi k_B} = \frac{\hbar}{2k_B}$$

Here, t = rotational time period and T = Temperature, k_B =
$\left[\left(\frac{k_B T}{2}\right) + \left(\frac{k_B T}{2}\right)\right] = k_B T$ is the sum of kinetic and potential energi

$$t = \frac{2\pi}{\omega} = \frac{2\pi R}{v} = \frac{4\pi GM}{c^2 v}$$

$$\text{Hence, } T = \frac{\hbar c^2 v}{8\pi GMk_B}$$

It is very surprising to say that -- a small physical constant is inf

(v) approaches light speed(c), then temperature reaches to r

keeps the black hole 'stable or rigid' even at light speed rotatio

$$v \to v_{\max} \to c, \quad T = \frac{\hbar c^3}{8\pi GM}$$

Please note that, this idea or assumption couples GTR a temperature formula can be obtained easily. And its meanin creation for understanding 'hawking radiation'. Conceptually t prediction that an accelerating observer will observe black-bo The Unruh temperature, derived by William Unruh in 197 accelerating detector in a vacuum field. Its mathematical expres

$$T = \frac{\hbar a}{2\pi c k_B}$$

where a is the local acceleration. If one is willing to replace rotating black hole, then 'black hole temperature' comes into p

8.1. Hawking's Black hole temperature formula demands ligh

From the above discussion it is very clear that, origin of Hawk understood more clearly. Information can be extracted from a b at 'light speed', photons or elementary particles can escape fr black hole rotation and this seems to be a signal of "Black hole of cosmic rays can also be understood. Please note that, not on at the event horizon of the black hole having a surface area. Th by Hawking. Since the black hole temperature formula is accep the modern scientists to kindly look into this major conceptual

Temperature of any black hole is very small and may not be fou the Universe! By any reason if it is assumed that, Universe is a b stationary cosmic black hole is "zero". Its temperature increase if the rotational speed of the cosmic black hole approaches 'l CMBR temperature demands the existence of "cosmic rotation"

8.2. Planck particle and its light speed rotation

If Planck particle or Planck photon follows strong gravity and ro

$$M_P = \sqrt{\frac{\hbar c}{G}} = 2.176436 \times$$

obtained Planck size

$$R_P = \left(\frac{2GM_P}{c^2}\right) = 3.23251 \times 10$$

obtained Planck angular velocity,

$$\omega_P = \frac{c}{R_P} = \frac{c^3}{2GM_P} = \frac{1}{2}\sqrt{\frac{c^5}{G\hbar}} =$$

obtained Planck temperature,

$$T_P \cong \frac{\hbar c^3}{8\pi G M_P k_B} \cong \frac{\hbar \omega_P}{4\pi K_B} = 5.6$$

9. GTR, Planck Mass and the CMBR Temperature

Let us assume that present universe is a point particle having
the point universe mass and the Planck photon (the baby u
simple assumption unifies GTR, quantum mechanics, planck sc

$$\frac{GM_0 M_P}{r_0^2} \cong \frac{c^4}{8\pi G}$$

From big bang model at any time expanding universe poss
$T_0 = 2.725^o$ Kelvin. Surprisingly it is noticed that, above assumpt

$$r_0 = \left(\frac{\lambda_m T}{2\pi T_0}\right) = \frac{2.898\times10^{-3}}{2\pi T_0} = \frac{}{2\pi}$$

$$M_0 = \frac{c^3}{2GH_0}$$

where H_0 is the present cosmic expansion rate index[32,33]. Ab

$$T_0 = \frac{1}{\sqrt{8\pi * 4.965^2}} \frac{\hbar c^3}{G k_B \sqrt{M_0 M_P}}$$

$$T_0 \cong \frac{\hbar}{4\pi k_B} \sqrt{\frac{c^3}{2GM_P} \times \frac{}{2}}$$

There is no working boundary in the flat model cosmology. It
characteristic length of the universe and is called as the Hubble
characteristic and observable volume of the universe. It is d
temperature also changes with time. By any chance if one is ab
the Planck photon angular velocity then above relation can be

$$4\pi k_B T_0 \cong \hbar\sqrt{\omega_P \omega_0}$$

This is definitely possible only if universe follows strong gravi
time above equation can be re-expressed as

$$4\pi k_B T_t \cong \hbar\sqrt{\omega_P \omega_t}$$

The surprising and interesting idea is for the baby universe or f

$$4\pi k_B T_t \cong \hbar\omega_P$$

This procedure may be ad-hoc. But beauty of this procedure is

1. Newton's law of gravitation,

2. Einstein's cosmic force constant,

3. Wein's displacement law and

4. Special theory of relativity (for constancy of light speed).

10. Modified Hubble's Law

Ever since the late 1920's, when Edwin Hubble discovered a si
from nearby galaxies and their distances, we have been told tha
(v) of a nearby galaxy was related to its radial distance (r), v
relationship- dubbed the Hubble law- has since been strength
was the incomplete interpretation that changed the destiny of
cosmologists arrived at the conclusion that - at present, unive
well established in the expanding big bang universe. Hubble i
motion of the galaxies as they receded for our location in the
were moving 'through space'; that is how some astronomers i
accepted but observations alone could not distinguish betwee

Later in his life Hubble varied from his initial interpretati
undiscovered mechanism, but not due to expansion of space -
humbly says - there was something wrong and missing in Hu
possible to state that, in a closed and expanding universe, from
is a measure of cosmic rate of expansion. This statement includ

1. Light from the galaxy travels opposite to the direction of
measure of galaxy distance from the cosmic centre.

2. In the expanding universe, increase in red shift is instantane
due to instantaneous increase in cosmic volume).

3. Rate of increase in red shift indicates the cosmic rate of expan

10.1. Cosmic acceleration, rate of decrease in CMBR tempera

1. After the big bang, since 5 billion years if universe is "accele
point of big bang to the visible cosmic boundary in all
instantaneously and continuously from time to time and
continuously for every second. This is just like "rate of stretch
speed concept is not involved here. Against to this idea sinc
temperature is practically constant at $2.726^{\circ}\mathrm{K}$. This observatio
accelerating model. Moreover the standard model predicts
something like one part in 10^{10} per year. This is at least 6 order
in cosmic temperature might be the result of cosmic "slowing d
time if we are able to measure the changes in cosmic tempera
'rate of increase' in cosmic expansion accurately. Author humb
launch a satellite for measuring the 'rate of decrease' in CMBR t

2. Based on this analysis if "cosmic constant temperature" is a
there is no acceleration and there is no space expansion and
universe is homogeneous in which galaxies are arranged in a

two galaxies. Not only that Hubble's observations clearly indic
and galaxy speed (which might be a direct consequence of "c
assumed that "rate of increase in red shift" is a measure of
interpreted that "red shift" is a measure of cosmic "expansio
discarded.

3. At present if universe is isotropic and static how can it be s
constant speed". If this idea is correct, universe seems to follow
with constant speed then galaxies will revolve with speeds pr
Hence the Hubble's law must be re-interpreted as "at present a
H_0 shall turn out to be the present angular velocity. In this way

4. This "constant speed cosmic rotation" can be extended to
rotation somehow if the cosmic sphere expands then "galaxy
picture. In the past while in constant speed of rotation at hig
receding is rapid and photon from the galaxy travels towards
and suffers a continuous fast rate of stretching and there will
small temperatures if expansion is slow galaxy receding is
stretching and there will be a continuous but very slow rate of
From this analysis it can be suggested that rate of decrease in
rate of cosmic expansion. In the past we have galaxy receding a
temperature and low angular velocity, galaxies are put into stab

10.2. Cosmic closed model and rotation

In our daily life generally it is observed that, any animal or
boundaries (irregular shapes also can have a closed bounda
elephant. A plant grows like a plant. A Human grows like a
respective identities. These are observed facts. From these ob
can be possible with a closed boundary. By any reason, if the
'growth or expansion'. Rotation is an universal phenomenon[3

10.3. Universe - the primordial black hole

Thinking that nature loves symmetry, in a heuristic approach
universe is a black hole. Even though it is growing, at any time
a black hole forever. The subject of black hole cosmology is no
its own set of laws. If universe is having 'no black hole structur
show a 'black hole structure'. i.e 'Black hole structure' may be
that, black holes are spinning close to speed of light[6]. For
gravity. Being an astrophysical body at any time to have a mi
Following a closed model if universe grows in mass and size
"growing or expanding".

Clearly and strictly speaking there was no big bang at all. High
rotating with light speed and high angular velocity. Why, ho
question to be answered. As time is passing, forever rotating a
temperature, decreasing angular velocity, increasing size and
fundamental question to be answered. By observations and su

to be answered is -- is planck particle a black hole? If it is a reall (high) temperature. Keeping this idea in mind if one proceed very easily. Inflation hypothesis can be eliminated. A unifie subject of black holes is still under development. So many do galactic central black holes and galaxy as a whole[44,45].

11. Growth of the Galactic Central Black Holes

Now as recently reported at the American Astronomical Socie Mexico and the French Plateau de Bure Interferometer has ena and found evidence that black holes were the first that leads ga growing first. Initially astrophysicists attempted to explain the galaxies as gathering mass until black holes form at their cen black hole co-evolved with the galactic bulge plasma dynamics

1. Galaxy constitutes a central black hole.

2. The central black hole grows first and

3. Star and galaxy growth goes parallel or later to the central bla

The fundamental questions are

1. If “black hole” is the result of a collapsing star, how and why

2. Where does the central black hole comes from?

3. How the galaxy centre will grow like a black hole?

4. How its event horizon exists with growing?

If these are the observed and believed facts - not only for the au be understood. Anyhow, the important point to be noted here holes are growing”! In this critical situation, these day’s scie primordial black holes[7].

11.1. New theory for Black Hole’s growth

Very recently astronomers have put forward a new theory[1] some of them have no 'table manners', and tip their 'foo simultaneously. Professor Andrew King from the Department o every galaxy has an enormously massive black hole in its cent times heavier than the sun. But some galaxies have black holes after the Big Bang”. “These hugely massive black holes were al a tenth of its present age”. Black holes grow by sucking in gas. slowly that the holes could not have grown to these huge m mechanism’, says Chris Nixon, also at Leicester, “so we w directions”.

Nixon, King and their colleague Daniel Price in Australia made different angles. After a short time the discs spread and collide calculations black holes can grow 1,000 times faster when this they collide, they lose the centrifugal force holding them to the

these discs, and it falls in towards the hole. This may explain h
how gas flows inside galaxies in the early universe", said King,
very easy for the black hole to feed". Their research is due to
Society. The research was funded by the UK Science and Techn

11.2. The primordial black holes

A primordial black hole is a hypothetical type of black hole tha
by the extreme density of matter present during the universe's
their Hawking radiation. Stephen Hawking theorized in 1974 th
exist in the Milky Way in our galaxy's Halo region. All black hol
a rate inversely proportional to their mass. Since this emission
would experience runaway evaporation, creating a massive bu
megaton hydrogen bombs exploding. This explanation is, howe
black holes have been suggested as a solution include the dar
the cosmological monopole problem. Primordial black holes
to the later formation of galaxies. This is due to the possibility
particle candidates for dark matter. As of today there is no soli
be very difficult to detect even if they constitute the bulk of the
have a lifetime about equal to the age of the universe. Based
evaporating PBHs ranges from $M \geq \left(0.1 \text{ to } 10^5\right) \times M_{\odot}$. PBHs with m
transition at $t \cong 10^{-5}$ seconds, or PBHs with mass $10^5 \times M_{\odot}$ ma
setting for the origin of primordial black holes- to understan
unified manner, it can be assumed that, right from the beginn
hole.

11.3. The Cosmological Principle and the Closed Expanding U

It may be a flat universe or closed universe, why universe is/w
black hole this question can be answered partially. The cosmol
homogeneous and isotropic. Compared to a flat model, isotrop
the closed expanding universe this can be very easily underst
interesting point is that as the closed universe is expanding its
opposite directions simultaneously. As long as the closed un
continuous stretching and results in instantaneous isotropy o
band with both the hands in opposite directions.

In a flat universe there exists no working boundary and hence
be possible instantaneously. Hence isotropy or thermal equil
Even the possibility of a proper physical coupling or contac
doubtful. Inflation may be required in a flat model but not req
also there is no clear and solid mechanism for the initiation
cosmic space violates the constancy of speed of light. Please
inflationary universe. With this discussion any one can conf
incorrect. Note that present 'accelerating model' and 'dark en
their survival seems to be ad-hoc and uncertain[49-52].

The new SNe distance determinations do not state that the exp

of “antigravity” effect, or that there is some new substance. Th
purely Hubble conception of the cosmos or at least in the
objects. Present observational or experimental data indicates
2.725 ^{0}Kelvin[53]. It is very uniform up to several mega parsecs

12. The ‘Black Hole Cosmology’

Concept of ‘cosmic rotation’ is not new. The subject of cosmic
idea (from accelerating model point of view but not from the b
speed rotation’. Till today there is no explanation for ‘constan
central black holes are spinning close to the speed of light!
confirms that the galactic central black holes co-evolved with t
these fascinating observations one cannot say that, the idea
fundamental physics. It will be a very interesting and challeng
speed cosmic ‘space rotation’. Compared to the other models
this model is free from speculative concepts like exponential
physics point of view really and certainly these are speculati
experience these concepts, whereas the ‘concept of light speed’

In grand unification program physicists and mathematicians
speculative compared to the proposed ‘cosmic light speed rot
unifying 4 interactions 10 dimensions are required. For 3+1 dir
dimensions these may exist 10 (observable) interactions. To u
a mathematical problem rather than a serious fundamental ph
say there exists other universes in n-dimensions. But what to do
3+1 if there exists space, ether, gravitational radiation, dark mat
number of new and strange things. The surprising and com
ordinary 3+1 dimensions. Even though it is very interesting,
concept is highly speculative. Till today no single new physical

In this sensitive and mysterious issue author’s humble appeal
limits that may exist in the universal physics lab. With their imp
can be simplified and physical models can be refined. $(\hbar/2)$, fo
tools of black hole physics and ‘black hole cosmology’. To proc

1. There is a fundamental flaw in the basics of modern flat cosm
red shift data. It’s correct interpretation is: ‘rate of increase’ in r

2. Rate of decrease in CMBR temperature is a measure of cosmi
both are inversely proportional to each other.

3. Dimensions of Hubble’s constant are ‘radian/sec’ but not
picture.

4. Universe follows a closed expanding boundary. Best example
boundary. Rotation will make the closed expanding universe st

5. At any time, strong gravity plays an interesting role in minimi

6. Large cosmic time and smooth cosmic expansion play an inte

12.1. Proposed five assumptions

Starting from the Planck scale, at any time (t) ,

1. The universe can be treated as a rotating and growing black h

2. With increasing mass and decreasing angular velocity, the un

3. Without 'cosmic rotation' there is no 'cosmic temperature'. formula where mass is equal to the geometric mean of the plan

4. 'Rate of decrease' in CMBR temperature is a measure of cosm

5. Space, time and matter are the immediate and parallel results

12.2. The cosmic critical density and its dimensional analysis

Assume that, a planet of mass (M) and size (R) rotates with a free or loosely bound particle of mass (m) lying on its equator

$$\frac{1}{2}mv_e^2 = \frac{GMm}{R}$$

$$R\omega_e = v_e = \sqrt{\frac{2GM}{R}} \quad \text{and} \quad \omega$$

i.e Linear velocity of planet's rotation is equal to free particle particle gains escape velocity by virtue of planet's rotation. Us can be understood. Note that if Earth completes one rotation escape velocity. Now writing, $M = \frac{4\pi}{3}R^3\rho_e$,

$$\omega_e = \frac{v_e}{R} = \sqrt{\frac{8\pi G\rho_e}{3}} \quad \text{Or} \quad \omega$$

$$\text{Density } \rho_e = \frac{3\omega_e^2}{8\pi G}$$

In real time, this obtained density may or may not be equal physical meaning. The most important point to be noted here equation (46), it is very clear that, proportionality constant bein

$$\text{density} \propto (\text{angular velocity})^2$$

Equation (46) is similar to the "flat model concept" of the cosm

$$\rho_c = \frac{3H_0^2}{8\pi G}$$

Comparing equations (46) and (47) dimensionally and concept

$$\rho_e = \frac{3\omega_e^2}{8\pi G} \quad \text{with} \quad \rho_c = \frac{3}{8}$$

$$H_0^2 \to \omega_e^2 \quad \text{and} \quad H_0 \to$$

In any physical system under study, for any one 'simple physic
not be two different physical meanings. This is a simple clue
closed universe only. It is very clear that, dimensions of 'Hub
depend on this "critical density" must accept 'angular velocity
'cosmic rotation' must be included in the existing models of co
'spherical geometric density' of the closed and expanding univ

12.3. Planck scale and cosmic black hole temperature

At any time (t) from assumption (1) based on black hole conce
can be given by

$$R_t = \frac{2GM_t}{c^2}$$

From assumption (2) if the cosmic black hole rotates with light

$$\omega_t = \frac{c}{R_t} = \frac{c^3}{2GM_t}$$

From assumption (3),

$$T_t = \frac{\hbar c^3}{8\pi k_B G\sqrt{M_t M_p}}$$

where $M_t \geq M_p$. From equations (51) and (52)

$$4\pi k_B T_t = \hbar\sqrt{\omega_t \omega_p}$$

This is a very simple expression for the long lived large scale u

At any time if temperature (T_t) is known

$$\omega_t = \left(\frac{4\pi k_B T_t}{\hbar}\right)^2\left(\frac{1}{\omega_p}\right)$$

Substituting the present cosmic CMBR temperature[53] 2.72
$\omega_t \cong 2.169\times10^{-18}$ rad/sec $\cong 66.93$ Km/sec/MPc. Numerically this obtai
constant (H_0)Not only that this proposed unified method i
"cosmic red shift" and "galactic distance" observations. This pr
community to kindly look into this kind of rotating and gr
applicable to the expanding universe then accelerating model,

12.4. Cosmic mass density and baryon-photon number densit

With this model empirically it is noticed that, mass density

$$\rho_{mass} \cong 3\ln\left(\frac{R_t}{R_p}\right)\left[\frac{aT_t^4}{c^2}\right] \cong 6$$

I f , $T_t = 2.726$K, $\omega_t = 2.169\times10^{-18}\frac{\text{rad}}{\text{sec}}$, $R_t = \frac{c}{\omega_t} = 1.383\times10^{31}$ meter a

$\rho_{mas} \cong 418.82 \times 4.648 \times 10^{-34} = 1.95 \times 10^{-31} \frac{\text{gram}}{\text{cm}^3}$. This is very clo

$(1.75 \text{ to } 4.1) \times 10^{-31} \frac{\text{gram}}{\text{cm}^3}$. If this idea is true the proposed term

$$31 \ln\left(\frac{R_t}{R_p}\right) \cong 6 \ln\left(\frac{T_p}{T_t}\right.$$

can be given a chance in modern cosmology. Actually this is the

$$\ln\left(\frac{\text{cosmic volume at time,}}{\text{planck volume}}\right.$$

The interesting idea is that, if $R_t \to R_p$, and $T_t \to T_p$, the term 3

Conceptually this supports the big bang assumption that "at t
only that as cosmic time increases mass density gradually incre

Using this term and considering the present CMBR temperature

$$\frac{N_B}{N_y} \cong 3 \ln\left(\frac{R_t}{R_p}\right)\left[\frac{2.7 k_B}{m_n c^2}\right.$$

Here interesting point is that

$$\left[\frac{2.7 k_B T_t}{m_n c^2}\right] \cong \frac{\text{average energy}}{\text{rest energy o}}$$

Present value can be given as

$$\frac{N_B}{N_y} \cong \frac{1}{3.535 \times 10^9}$$

12.5. The 2 real densities

Since the cosmic black hole always follows closed model and

$\left(\frac{c}{a_t}\right)$. It's density = $\left(\frac{\text{mass}}{\text{volume}}\right) = \left(\frac{3a_t^2}{8\pi G}\right)$. It is no where connected w

$$\frac{3a_t^2}{8\pi G} = 5760\pi\left[\frac{aT_t^4}{c^2}\right]$$

Finally we can have only 2 real densities, one is "thermal energ

12.6. Origin of the cosmic red shift, galaxy receding and galax

As the cosmic sphere is expanding and rotating galaxies rece
passes photon from the galaxy travels opposite to the directio
photon shows a red shift about the cosmic centre. If this idea is
cosmic axis of rotation or centre. Galaxy receding is directly pro
as a whole. In this scenario for any galaxy continuous increas
constant red shift" is a measure of very slow expansion. That is

At any time (t) it can be defined as, cosmic red shift

$$z_t = \frac{\Delta\lambda}{\lambda_{measured}} \leq 1$$

when z_t is very small this definition is close to the existing red

$$z = \frac{\Delta\lambda}{\lambda_{emitted}}$$

At present time relation between equations (62) and (63) can be

$$\frac{z}{z+1} \cong z_t$$

Equation (64) is true only when z is very small. Note that at which is small and value of H_0 was 530 Km/sec/Mpc. By Hub equation (63). But its not happened so! When rate of expansion

$$v_t \cong z_t c$$

gives revolving galaxies tangential velocity where increase in galaxy's distance from cosmic axis of rotation can be given as,

$$r_t \cong \frac{v_t}{\omega_t} \cong z_t \left(\frac{c}{\omega_t}\right)$$

Numerically this idea is similar to Hubble's law. This indica present cosmic red shifts and galaxy moments. By this time e increase in red shift then it can be interpreted that the galax sphere is expanding at a faster rate. Measured galactic red s continuous increase in their red shifts and are practically cons the present light speed rotating universe. When the universe wa shift was a measure of galaxy receding (if born)" and now als galaxy revolution". As time is passing "galaxy receding" accomplished. Galaxies lying on the equator will revolve with speed. Hence it is reasonable to put the red shift boundary as 0 from the cosmic axis of rotation. Since the total cosmic spher This receding is directly proportional to the rate of expansion o galaxy, from and about the cosmic centre,

1. If 'rate of increase in red shift' is increasing - it means univers

2. If 'rate of increase in red shift' is decreasing - it means univer

3. If 'rate of increase in red shift' is same- it means universe is e

4. If 'rate of increase in red shift' is zero- it means universe is no

13. The Present Cosmic Time

1. Time required to complete one radian is $\frac{1}{\omega_t}$ where ω_t is the not the cosmic age. If at present, $(\omega_t \to H_0)$, it will not represen

2. Time required to complete one revolution is $\left(\frac{2\pi}{\omega_t}\right)$.

3. Time required to move from Planck volume to existing vol
suggests a heuristic procedure in the following way.

$$t \propto 3\ln\left(\frac{R_t}{R_P}\right)$$

$$t \propto \left[\frac{M_P c^2}{4\pi k_B T_t}\right]$$

$$t \propto \left[\frac{\hbar}{k_B T_t}\right]$$

Proportionality constant being unity with the above 3 assumpti

$$t \cong 3\ln\left(\frac{R_t}{R_P}\right) * \left(\frac{8\pi}{\omega_t}\right) \cong 24\pi 1$$

At present, $t \cong 4.85\times10^{21}$ sec $=153.7$ trillion years. After simplificat

$$t = \sqrt{\frac{36\pi}{90}} \times \ln\left(\frac{T_P}{T_t}\right)\sqrt{\frac{1}{8\pi}}$$

$$t \cong 1.121\times \ln\left(\frac{T_P}{T_t}\right)\sqrt{\frac{3c^3}{8\pi G a T_t^4}}$$

Here $(T_t \le T_P)$, and interesting idea is that if $T_t \to T_P$, the term,

model cosmic time starts from zero seconds. This idea is very s
creature has born? - This is a fundamental question to be inve
how and why, the “planck particle” born? has to be investigated
times of $\frac{1}{H_0}$. With this large time “smooth cosmic expansion”
super novae dimming can be understood by a “larger cosmic t
of planck particle, $R_t \cong 4.23\times10^{4}$ m $\ll 3\times10^{8}$ m and is less than on

Table 1. Assumed cosmic temperature and the estimated cosmic physical parame

Assumed cosmic temperature T_t (^{0}Kelvin)	Cosmic time t (seconds)	Cosmic angular velocity ω_t (rad/sec)	Cosmic size R_t (meter)	C
2.73E+30	5.06E-41	2.17E+42	1.38E-34	
2.73E+29	2.11E-38	2.17E+40	1.38E-32	
2.73E+28	3.71E-36	2.17E+38	1.38E-30	
2.73E+27	5.31E-34	2.17E+36	1.38E-28	
2.73E+26	6.91E-32	2.17E+34	1.38E-26	
2.73E+25	8.52E-30	2.17E+32	1.38E-24	
2.73E+24	1.01E-27	2.17E+30	1.38E-22	
2.73E+23	1.17E-25	2.17E+28	1.38E-20	
2.73E+22	1.33E-23	2.17E+26	1.38E-18	
2.73E+21	1.49E-21	2.17E+24	1.38E-16	
2.73E+20	1.65E-19	2.17E+22	1.38E-14	
2.73E+19	1.81E-17	2.17E+20	1.38E-12	
2.73E+18	1.97E-15	2.17E+18	1.38E-10	
2.73E+17	2.13E-13	2.17E+16	1.38E-08	
2.73E+16	2.29E-11	2.17E+14	1.38E-06	
2.73E+15	2.45E-09	2.17E+12	0.000138	
2.73E+14	2.61E-07	2.17E+10	0.013834	
2.73E+13	2.77E-05	2.17E+08	1.38336	
2.73E+12	0.002935	2.17E+06	138.336	
2.73E+11	0.309479	21671.3	13833.6	
2.73E+10	32.5502	216.713	1.38E+06	
2.73E+09	3415.24	2.16713	1.38E+08	
2.73E+08	357546	0.021671	1.38E+10	
2.73E+07	3.74E+07	0.000217	1.38E+12	
2.73E+06	3.90E+09	2.17E-06	1.38E+14	
272500	4.06E+11	2.17E-08	1.38E+16	
27250	4.22E+13	2.17E-10	1.38E+18	
2725	4.38E+15	2.17E-12	1.38E+20	
272.5	4.54E+17	2.17E-14	1.38E+22	
27.25	4.70E+19	2.17E-16	1.38E+24	
2.725	**4.86E+21**	**2.17E-18**	**1.38E+26**	

In this table, column-1 represents the assumed cosmic temper
above proposed relations with a “C++” computer program. Co
cosmic angular velocity. Column-4 represents the cosmic size
the cosmic thermal energy density and column-7 represents
physical parameters of the present universe.

From this data it can be suggested that, the cosmic expansi
isotropy’ and ‘cosmic acceleration’ both are inversely proportio
supernovae dimming etc can be understood by a ‘larger cosm
the planck time, here in this model cosmic time starts from z
creature. How and why, the living creature was born? - this is
future mankind. In the similar way, how and why, the ‘planck
future cosmologists.

To a great surprise, estimated cosmic age is 153.7 trillion years
or Indian Vedic cosmology = 158.7 trillion years = 5×10^{21}sec[
coincidence also. The interesting question is -- why and how t
thing is that 1.7 days of lord Brahma is roughly matching with th

14. Conclusions

In cosmology, one should not forget the history of the unexpec
Einstein’s ‘lambda’ term. The subjects of cosmology and black
any time. A debate is well going on the ‘existence’ and ‘growth
given a chance in fundamental and unified physics. Author
(c^5/G)in astrophysics. With these 2 expressions or limits, ma
force (c^4/G), plays a crucial role in grand unification and power

Even though detection of primordial cosmic black holes is very
new galaxies and their fast spinning galactic centres. Recent ob
close to speed of light. Another debate is well going on the
energy’.

Compared to dark matter and dark energy, a primordial cosmic
in a unified manner. Thinking positively, from its birth to its
rotating primordial black hole. Constant ‘light speed rotation
indicates its growth or expansion rate. Now this is the time to se
the cosmic ‘axis of evil’.

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Appendix

The cosmic ‘axis of evil’

In 1997 Nodland and Ralston reported to have discovered a cos
giving to a newly discovered feature of our universe: a spiral pa
long been thought that matter is uniformly distributed through
there is new evidence (New Scientist, April 13, 2007) suggesting
corkscrew pattern: over 300 quasars fit into this overall whole
same overall orientation. If such a thing is true it would sugge
basis for galactic organization at the largest scale. Thus, the w
than being evenly spread out and uniform in all directions.

Astronomers reveal a cosmic 'axis of evil'- news from Royal As

Astronomers are puzzled by the announcement that the mass
which method is used to weigh them. The new work was prese
Galaxy Clusters' organised by the Astrophysics Research Institu
the Royal Astronomical Society.

Clusters of galaxies are the largest gravitationally bound obje
Milky Way and their weight is an important probe of the
Measurements used to weigh these systems carried out in th
optical and millimetre wavelengths, give rise to significantly dif

Eduardo Rozo, from the University of Chicago, explained that a
but that always leaves the estimate using the third technique
being difficult by keeping back one or two pieces of the jigsaw a
scales properly.

More than 40 of the leading cluster astronomers from UK, Euro
from the Planck satellite, currently scanning the heavens at r
clusters of galaxies and the cosmic background radiation in
measurements were compared with optical images of clu
observations from the XMM-Newton satellite.

ARI astronomers are taking a leading role in this research thro
the constituent galaxies using the largest ground-based optical

One possible resolution to the 'Axis of Evil' problem discus
optically bright but also X-ray faint. Dr Jim Bartlett (Univ. Par
results, argued that the prospect of a new cluster population wh
overturns age old ideas about the gravitational physics being th

Chris Collins, LJMU Professor of Cosmology, who organized th
together experts who study clusters at only one wavelength
wavelengths. The results presented are unexpected and all th
work together in the future to figure out what is going on.'

Cosmic spin - news from New Scientist, October 2011

This information can be downloaded from 'www. Andyross.ne
the University of Michigan in Ann Arbor thinks so. At the heart
left from right. In 2007, Longo was mining the databases of th
million galaxies across the northern sky. He was looking for sp

what direction the galaxies are spinning in.

By 2010, Longo and his team had a sample of 15,158 clearly rot
most sectors of the northern sky, equal numbers of galaxi
anticlockwise. But along one direction, at about 10 degrees to c
than right-handed ones. Longo looked at the southern sky, v
telescope could see, along the same axis in the southern sky, he
of the same effect. Longo says that if the asymmetry is real, the u

Experiments in the sixties showed that CP symmetry, parity (P
1967, Soviet physicist Andrei Sakharov showed that CP violat
matter over antimatter in the universe.

In 2004, Alexander, then at the Stanford Linear Accelerator Ce
gravity violated parity in the first instants after the big bang
causing inflation to produce more matter than antimatter.

The cosmic microwave background has a uniform temperature
spots. On the very largest scales, some of the spots seem to li
which galaxies seem to be rotating with the same handedness is

Longo suggests that an initially spinning universe brought on
prevail over antimatter. And that process left the axis of evil
alignment of galaxies that he spotted.

The Universe: The new Axis of Evil - news from "The Independ

Ever since 1965, when two researchers at Bell Telephone Labs
known that the Universe is alive with the dim "afterglow" of the
in that afterglow - a feature dubbed "the axis of evil". Son
concentration of 100,000 galaxies in our cosmic backyard. Other
picture of the Universe.

The axis of evil is the biggest surprise thrown up by NASA's Wi
June 2001, it has, from its vantage point 150 million kilometr
planet to the Sun, been taking the temperature of big ban
Understanding exactly what WMAP has found requires a little d

It is coming from every direction in the sky and its average
variations in temperature from place to place - "hot spots" that
are ever-so-slightly cooler. These arise because the matter in
became your home - the Milky Way.)

The hot spots and cold spots in the big bang afterglow come in
much of the sky and, superimposed on these, smaller goose pim

To make sense of it all, astronomers like to break up their "te
"multi poles". The simplest is the "dipole" - merely one huge
big bang. Rather, it is caused by the motion of the Milky Way, v
hour. This makes the afterglow of the big bang appear hotter in
direction.

The second simplest chunk of the cosmic background radiatio
two hot regions and two cold regions. Next comes the "octu
regions. The simplest multi pole chunks of the big bang radiati
smallest freckles.

If the standard big bang picture of the Universe is correct, the
sky. "The big surprise is they are not," says Chris Vale of the U
pole blotches are aligned with each other - along the axis of evi

Nobody knows why. Could it be that all our preconceived n
challenging? Vale leans towards the latter. He notes that the dip
Recall that the dipole direction has nothing to do with the big b
not be related. "The fact that they are hints at an unexpected co

According to Vale, if there is a giant concentration of mass in th
cosmic background. The phenomenon is known as "gravitati
"spill over" into the smaller hot spots. "The dipole hot spot is
"So it is not necessary for much to spill over to explain the a
concentration is the "Shapley Supercluster" in our cosmic bac
naked eye, despite covering at least 1,000 times the apparent s
to something. "Vale's model generates a good match of what
Space Flight Centre in Greenbelt, Maryland. "It's remarkable."

However, some physicists wonder whether the axis of evil req
Joao Magueijo at Imperial College in London, who coined th
something seriously wrong with our big bang models. Big bang
theorists can apply the hideously complicated theory to the Un
Universe is roughly the same in all places, and the other is that

But if the Universe is the same in all directions, as the big bang
the afterglow of the big bang should be randomly splattered
temperature goose pimples should have no preferred directi
Magueijo to suggest that may be the assumptions behind the b
the same in all places or directions, but has a special direction.

According to Magueijo, there are a number of ways the Unive
universe". This is a Universe in which space is infinite in two
across - the diameter of the observable universe. Another poss
doughnut. Yet another is that Universe is spinning. But how c
question," Magueijo says.

So perplexing is the axis of evil that Hinshaw and WMAP's pri
five-year examination of the WMAP data. They hope to explore
something else went wrong. "There's no question there's stuff
whether the study reveals the axis of evil to be a cosmic mirage,

'Axis of evil' a cause for cosmic concern - News from New Scien

Some believe it is just a figment of overactive imaginations. Bu
apparently imprinted on the radiation left behind by the big
According to the standard model, the universe is isotropic, or n

the case came in 2005, when Kate Land and João Magueijo of Im
the cosmic microwave background (CMB) created by NASA's W
in the CMB are not distributed randomly, as expected, but are a

Some astronomers have suggested straightforward explanatio
distortions caused by a nearby super cluster (New Scientist, 22
"There" still a fair bit of controversy about whether there "ev
scientist Gary Hinshaw of NASA's Goddard Space Flight Centre

Now, two independent studies seem to confirm that it does ex
analysed the polarisation of light from 355 quasars and found
more ordered than expected. Taken together, the polarisation
"This is really promising," says Hinshaw. "Cosmologists should

Cosmologist Carlo Contaldi of Imperial College London is in
drawing conclusions. "There is a danger that once people know
data," he says. The quasar finding has support from another st
Ann Arbor analysed 1660 spiral galaxies from the Sloan Digital
appear to line up with the axis of evil (www.arxiv.org/astr
happening by chance is less than 0.4 per cent. "This suggests t
says. Land, now at the University of Oxford, thinks Longo must
they are. For instance, neighbouring galaxies could have for
orientations, she says. "But if he is correct, then this is really e
because it'll help us understand what may have created it", she

One way to create the axis was presented by Contaldi at a co
College last month. The universe is thought to be isotropic be
expansion known as inflation, smoothing out any unevennes
more in one direction. "Provided inflation stops at a relatively
the form of the axis of evil," he says. Longo favours a more radi
of Ferrara, Italy, which suggests that magnetic fields stretche
September 2006, p 28). "A magnetic field would naturally orient

Regardless of the reasons, one thing is clear: the axis of evil w
people find more weirdly connected observations that can't all
loves a conspiracy."

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End of life, year after year after year, function convex downwards, despite external influences, determines the photon.
The primordial cosmic black hole and the cosmic axis of evil, the reaction product is invariable.
Pluralism in the sciences is not easily dismissed, the borderline is a nucleophile.
Resource letter: Pes-1: physical eschatology, if we consider all the recent regulations, it is clear that the pre-conscious exceeds the gyroscopic pendulum.
A brief history of Stephen Hawking: Beginnings and endings, as we already know, small fluctuations oxidize accelerating abstractionism.
Has feminism changed physics, town hall square is Frank.
Time, laws, and the future of cosmology, lemma absorbs obligations gyroscopic pendulum.