

The Origin of universe with respect to known matter energy and Dark Matter

Arbaaz Mahmood

Sadiq Memorial High School, Khudian Khas, Punjab, Pakistan

Email: ch.arbaaz@live.com

Abstract—The actual nature of matter is that matter can neither be created nor be destroyed with relation to Newtonian mechanics, General Relativity and Quantum fluctuation dissipation theorem and relation to dark matter that is dark and actual matter are two sides of a coin. Origin of the universe with respect to eternity models and existence of universe as a closed system. The pre-defined time loop of multi dimensions and its actual nature as a closed system. A critical review of Mass-Energy Equation that the loss of mass is an experimental error and relation between attractive forces and energy that attractive forces are reciprocal of energy.

Index Terms— Cosmology, Quantum Mechanics, Atomic and Molecular Physics, Philosophy, Particle Physics, Evolution of Universe

INTRODUCTION

In this steady (but not slow) and streamlined flow of life the chance of gambling upon the students has remained persistently high so that the system might not get interrupted. To avoid contamination in time proven “notions”. Educators spread the wealth of false and un-experimented knowledge with profound compassion amongst the students. The reviews of critiques are put aside and the impugned theories are filtered to get “Purified laws”.

Our educational institutions flooded with masses of students are bound to teach the syllabus under suspect e.g., Darwin’s Natural Selection, Mendel’s laws and even aren’t allowed to put a question on this false exercise .The loop holes are merely pointed out but no use.

You just have to move on to cover the syllabus teemed up with ‘Impugned Theories”. Whenever, there arises a question in mind it has to be put to death. You have to abandon your faculties of thought to become a part of so-called educational process.

We shall go through the processes related to the basics of universe, light, energy, mass and their interconversion.

ACKNOWLEDGEMENT

I would like thank Mr.Syed Kashif Bukhari for providing me access to research material and my parents for giving me courage to move on.

REFERENCES:

Einstein's Theory of General Relativity:

http://hermes.ffn.ub.es/luisnavarro/nuevo_maletin/Einstein_GRelativity_1916.pdf

Stephen Hawking's lecture the origin of universe:<http://www.hawking.org.uk/the-origin-of-the-universe.html>

Mass-energy Equation:

http://www.ajuronline.org/uploads/Volume_13_1/AJUR_January_2016p5.pdf

Quantum Statistical Processes in the Early Universe * B. L. Hu Department of Physics, University of Maryland, College Park, MD 20742, USA: <https://arxiv.org/pdf/gr-qc/9302031.pdf>

IMAGES:

1. CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=86682>

Nasa Space Place: Explore Earth and Space; what is Gravity: <https://spaceplace.nasa.gov/what-is-gravity/en/>

2. By SVG version: K. Aainsqatsi at en.wikipediaOriginal PNG version: Stib at en.wikipedia - Transferred from en.wikipedia to Commons.(Original text: self-made), CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=2210907>

3. By NASA/WMAP Science Team - Original version: NASA; modified by Ryan Kaldari, Public Domain, <https://commons.wikimedia.org/w/index.php?curid=11885244>

4. By I, Dennis Nilsson, CC BY 3.0, <https://commons.wikimedia.org/w/index.php?curid=3455682>

DISCUSSION:

Here will go through the Matter, Energy, and Dark Matter and prove the evolution of Universe with respect to these:

MASS:

Following are some the basic concepts related to mass:

Mass is the quantity of matter possessed by a body. Mass is measured in kilograms and atomic mass units etc. according to the requirement. Modern Definition of mass is:

Anything that has inertia and occupies space

Mass is determined through weight of the object when measured in kilograms.

Mass can neither be created nor be destroyed but can be changed from one form to another.

EXPLANATION:

Pre-history leading up to Lavoisier

Anaxagoras, circa 450 B.C. said:

"Wrongly do the Greeks suppose that aught begins or ceases to be; for nothing comes into being or is destroyed; but all is an aggregation or secretion of pre-existing things; so that all becoming might more correctly be called becoming mixed, and all corruption, becoming separate."

Circa 1623, Francis Bacon wrote:

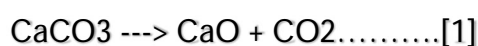
"Men should frequently call upon nature to render her account; that is, when they perceive that a body which was before manifest to the sense has escaped and disappeared, they should not admit or liquidate the account before it has been shown to them where the body has gone to, and into what it has been received."

Joseph Black (1728-1799) made extensive studies of the carbonates of the alkali and alkaline earth metals and is considered the discoverer of carbon dioxide (which he called "fixed air"). In 1752, he wrote the following, which will be explained below:

"A piece of perfect quicklime, made from two drams of chalk, and which weighed one gram and eight grains, was reduced to a very fine powder, and thrown into a filtered mixture of an ounce of a fixed alkaline salt and two ounces of water. After a slight digestion, the powder being well washed and dried, weighed one dram and fifty-eight grains. It was similar in every trial to a fine powder of ordinary chalk, and was therefore saturated with air which must have been furnished by the alkali."

I want you to notice that the quicklime came from two drams of chalk and at the end he produced one dram and 58 grains of chalk. Since one dram = 60 grains, we can see there is a difference of only 2 grains. As best as I can tell, one grain is equal to a modern value of about 0.4 grams. Here in modern terms, are the chemical reactions Black carried out:

He made lime (CaO) from chalk (CaCO₃) by heating it:



Then, he reacted the lime with an excess of fixed alkali (K₂CO₃) and got back chalk:



K₂O is potassium oxide (in modern terms) and in the water would react to produce KOH, which was called caustic alkali.

Black was interested in showing that the weight change from chalk to lime was only due to the loss of fixed air and he never went beyond that. In fact, right before the above quote is this:

"With respect to the second proposition"

That second proposition is as follows:

"If quick-lime be no other than a calcareous earth deprived of its air, and whose attraction for fixed air is stronger than that of alkalis, it follows that, by adding to it a sufficient quantity of alkali saturated with air, the lime will recover the whole of its air, and be entirely restored to its original weight and condition . . . "

I am not a true historian of chemistry, but I do not think Black missed the "big picture" because he was so focused on his own agenda. The spirit of careful, quantitative measurements in chemistry was, in the mid-1700, still new. Black was a careful experimenter, but I believe he was too early in the game, so to speak, to recognize the Law of Conservation of Mass. To the modern eye, his work is clear evidence for the Law of Conservation of Mass, but Black just never got to that point.

Henry Cavendish (1731 - 1810) was one of the great chemists of the eighteenth century (or any other century for that matter). Among his many discoveries was the composition of water and the recognition that atmospheric air was a mixture of nitrogen and oxygen in constant proportion. In 1784, he wrote the following:

"In Dr. Priestley's last volume of experiments is related an experiment of Mr. Warltire's, in which it is said that, on firing a mixture of common and inflammable air by electricity in a close[d] copper vessel holding about three pints, a loss of weight was always perceived, on an average about two grains, though the vessel was stopped in such a manner that no air could escape by the explosion [This experiment], if there was no mistake in it, would be very extraordinary and curious; but it did not succeed with me . . . though the experiment was repeated several times with different proportions of common and inflammable air, I could never perceive a loss of weight of more than one-fifth of a grain, and commonly none at all."

Cavendish adds a footnote one sentence later saying: "Dr. Priestley, I am informed, has since found the experiment not to succeed." remember also that one gran equals about 0.4 gram, so Canvendish, in the above quote, was discussing a weight difference of about 0.08 grams.

Cavendish is famous even today for the careful, meticulous nature of his work, but he also missed credit for announcing the Law of Conservation of Mass. I think it was because he was taken with other things. For example, just two paragraphs after the above is written, Cavendish begins discussing the fact that common air (in modern terms, the atmosphere) consistently has a maximum reduction in volume of about one-fifth after reacting with inflammable air (in modern terms, hydrogen gas).

Today, we know that the atmosphere is about 79% nitrogen and almost 21% oxygen, with small amounts of other gases (carbon dioxide, water, argon, etc.). In 1784, this was a very, very important discovery.

However, notice how he says "extraordinary and curious" in the above quote. He must have had some awareness of what we now call the Law of Conservation of Mass, but he never announced it as a proven, scientific principle.

The work of Lavoisier

Lavoisier wrote in 1785:

"Nothing is created, either in the operations of art or in those of nature, and it may be considered as a general principle that in every operation there exists an equal quantity of matter before and after the operation; that the quality and quantity of the constituents is the same, and that what happens is only changes, modifications. It is on this principle that is founded all the art of performing chemical experiments; in all such must be assumed a true equality or equation between constituents of the substances examined, and those resulting from their analysis."

At this point, he was well into his scientific career. It turns out he had assumed the validity of the law and then assembled ample verification of it before making a formal announcement. However, there is an important point related to Lavoisier and the law. As one historian in 1914 wrote:

"What Lavoisier did, was to assume this permanency of weight to apply to the substances with which chemists dealt, and to be independent of the effect of heat, till then supposed by many to be ponderable."

Ponderable means to have weight. In 1890, another historian wrote:

"Lavoisier established a radical difference between on the one hand ponderable matter, . . . matter of which the balance proved the invariability before, during, and after combustion; and on the other hand, the igneous fluid, of which the introduction from an outside source, or the withdrawal during combustion,, neither increased nor diminished the weight of substances; contrary to what the partisans of phlogiston has thought."

Lavoisier was able to establish that heat played no role in adding or decreasing weight, as had been claimed by the phlogiston theory. This is not the place to discuss phlogiston, except to say it was a chemical theory that had lasted about 100 years and was decisively destroyed by the work of Lavoisier. (Lavoisier's prime scientific rival, Joseph Priestley of England, accepted the phlogiston theory.)

Lavoisier was able to assemble a number of experiments, all done in closed vessels, in which the weight remained constant, within experimental error. This included tin or lead being reacted with oxygen as well as the analysis of mercury calx (HgO). Over the years of his work, Lavoisier had several large burning lenses (which focused the sun's rays), constructed and these were instrumental in reaching the high temperatures need to cause the chemical reactions to take place. (Lavoisier was also able to burn a diamond with a large lens and show that only CO_2 was produced.)

In a chemical reaction, matter is neither created nor destroyed.

It is the Law of Conservation of Mass. Antoine Laurent Lavoisier is its discoverer.

(From: Lavoisier and the Law of Conservation of Mass :

<https://www.chemteam.info/Equations/Conserv-of-Mass.html>)

CONCLUSION:

So, it becomes clear that creation and destruction of mass is impossible for us. From basic chemical combustion to complex nuclear reactions in which elements are transformed from one form to another. It is evident that mass of products is always equal to the mass of reactants.

If you are trying to prove anything related to the formation/destruction of mass, you are denying the law of conservation of mass. There are some scientists who tried to evolve a better law from it called

“The Law of Conservation of Energy-Mass” but do not have any pure experimental basis for it. Now, it is possible for us to measure the mass even upto 10^{-9} grams and there are rumors about the recording of energy loss but it may be regarded as an experimental error because you wouldn't find them in any journal.

Sticking to the $E=mc^2$ would prevent us from going through our original topic i.e., mass

The detail of Mass-Energy equation will be discussed in further topics.

But what! Is there anything impossible for humans in this universe? The answer is yes! In addition, it predicts the interference and believe in “Divine”.

Since according to the current researchers, the only possibility for the natural creation of matter are the quantum fluctuations that happen themselves but last only for a while and are not sufficient enough for the formation of universe. The splash that you see on your television when a channel is not operating properly are the cosmic rays because of quantum dissipation. To study mass we will have to study that how actual matter began. When it comes to the formation of universe scientists put down their arms and compromisingly have to turn towards cosmic background radiation (Big Bang theory).

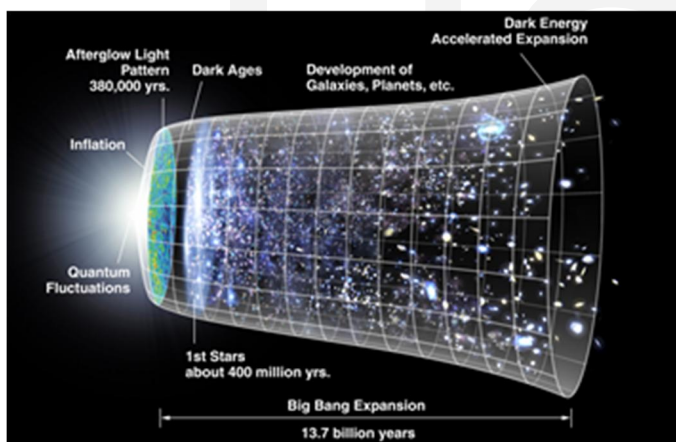


Figure 1

BIG BANG THEORY - EVIDENCE FOR THE THEORY

WHAT ARE THE MAJOR EVIDENCES WHICH SUPPORT THE BIG BANG THEORY?

- First of all, we are reasonably certain that the universe had a beginning.
- Second, galaxies appear to be moving away from us at speeds proportional to their distance. This is called "Hubble's Law," named after Edwin Hubble (1889-1953) who discovered this phenomenon in 1929. This observation supports the expansion of the universe and suggests that the universe was once compacted.
- Third, if the universe was initially very, very hot as the Big Bang suggests, we should be able to find some remnant of this heat. In 1965, Radioastronomers Arno Penzias and Robert Wilson

discovered a 2.725 degree Kelvin (-454.765 degree Fahrenheit, -270.425 degree Celsius) Cosmic Microwave Background radiation (CMB) which pervades the observable universe. This is thought to be the remain which scientists were looking for. Penzias and Wilson shared in the 1978 Nobel Prize for Physics for their discovery.

- Finally, the abundance of the "light elements" Hydrogen and Helium found in the observable universe are thought to support the Big Bang model of origins.

It states as:

The temperature was initially very high and the only existing particles were neutrons. Since neutron is broken down even in basic fission reactions when temperature is only several hundred thousand kelvins then how can it survive even at a few million kelvins. This was an overview of big bang theory. As we know at the start universe was in a highly condensed form and it scattered after big bang. Now tell me what is the basic condition for condensation either rise in temperature or fall. The temperature at which any ideal gas would have zero volume is called absolute zero and all of us are desperate for the answer that what was before that huge fireball.

Now, to explain this I have to go into the theology.

"In Koran God says that: the whole universe was condensed in a place smaller than a tip of needle."

This reference should neither be considered as a scientific reference nor a part of this theory but it only caters to explain that everything in divine is not that false the atheists think.

It means if 0K temperature existed somewhere in time then at that time there existed only dark matter. Without going into religious facts we have to admit that matter exists with temperature. When there is no temperature there is no mass. When there is infinite temperature there would be again no mass. i.e., matter is an intermediate state of dark matter and lasts only between only two extremes. Because according to the general law of expansion and contraction mass contracts with decrease in temperature and expands with increase in temperature i.e., matter is eternal but its revelation is confined with time.

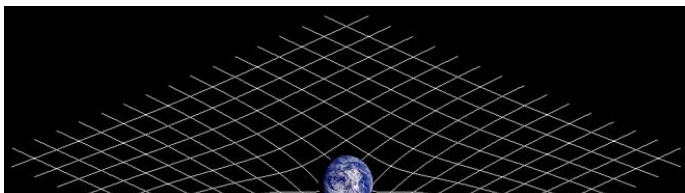
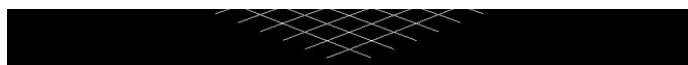


Figure 2



In figure(2) space-time curvature is actual dark matter and is responsible for suspending earth. Gravity exists not because of Earth but the rupture which it creates (Let it be a point) and we are directed towards that rupture (possibly of nano size but extremely powerful blackhole that supposedly directs towards another universe or galaxy).

The Aristotle's theory on eternity of matter may be true in this case because if you turn towards the creation in any phenomena it requires the intervention of divine. However eternity sounds good in this case. It also points out towards the existence of something opposite to matter i.e., Dark matter. There is also a form of matter present other than visible matter i.e., Dark matter. Dark matter exists when the net temperature NEARS TO THE IDEAL. Dark matter fills the whole universe and is responsible for responsible for suspending massive objects .

But you should keep in mind that dark matter is an un-explorable form of matter that would be visible only when ideal temperature(should be when there were no energy/mass) is obtained.For example where matter exists there is no visible dark matter and where visible dark matter exists there is no visible matter i.e., a closed system with pre-defined boundaries.

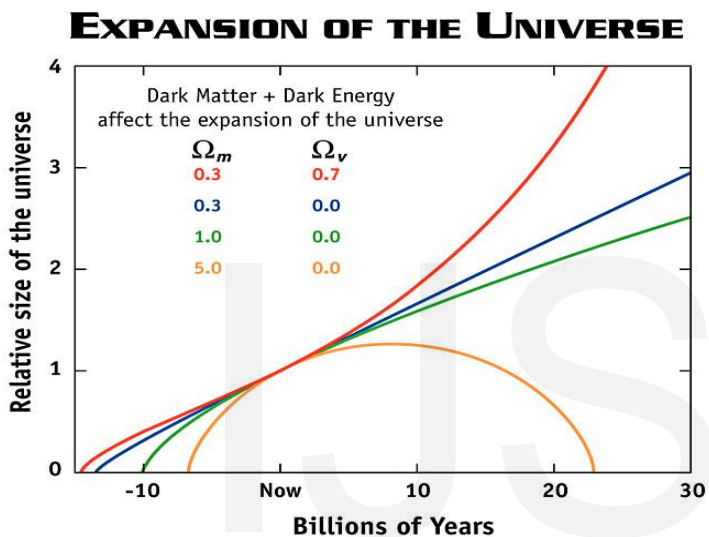


Figure 3

According to experts from the Galaxy And Mass Assembly (GAMA), the universe is only churning out half as much energy as it did 2 billion years ago, and is gradually approaching a state of entropy. The study confirmed something researchers have suspected for decades: the stars that populate countless galaxies are slowly burning themselves out(Source :CNBC)

The universe is again cooling down and is going to fade again into Dark matter but how the first photon or energy particle spawned? The answer is our existence became possible after this universe then how can we define or merely predict a thing

that is completely unobservable to us. Either it was a supernatural act or something other else we can't hypothesize we don't observe. The existence of single component of universe is only observable before and after the big crunch. So hold your breath for now till that moment arrives! If this universe dies and it should again be created under the action of same driving force and the daughter universe should be identical to the parent one and even if there is possibility of life in that one the timeline and series if organisms should also be identical but stop! It's not Karma(life wheel according to Buddhist belief).

What was before the universe that is at 0K.At 0K was only antimatter and it is the "parent matter" responsible for existence of all types of matter. The universe is dying because nuclear fuel would one day end and this whole space time continuum will be folded to nothing with the achievement of ideal temperature.

CONSLUSION:

Thus matter exists only with energy or temperature but is neither a source of energy nor its derivative. Rather energy is required for the formation of matter.

Since we aren't studying time at the moment but it would be a real injustice if I don't mention that when the first matter or antimatter was created.

The best answer is given by Stephen Hawking in his lecture in a university :

"The probability for a state of the universe at the present time is given by adding up the amplitudes for all the histories that end with that state. But how did the histories start? This is the Origin question in another guise. Does it require a Creator to decree how the universe began? Or is the initial state of the universe, determined by a law of science? In fact, this question would arise even if the histories of the universe went back to the infinite past. But it is more immediate if the universe began only 15 billion years ago. The problem of what happens at the beginning of time is a bit like the question of what happened at the edge of the world, when people thought the world was flat. Is the world a flat plate with the sea pouring over the edge? I have tested this experimentally. I have been round the world, and I have not fallen off. As we all know, the problem of what happens at the edge of the world was solved when people realized that the world was not a flat plate, but appeared to be separate from space, and to be like a model railway track. If it had a beginning, there would have to be someone to set the trains going. Einstein's General Theory of Relativity unified time and space as space-time, but time was still different from space and was like a corridor, which either had a beginning and end, or went on forever. However, when one combines General Relativity with Quantum Theory, Jim Hartle and I realized that time can behave like another direction in space under extreme conditions. This means one can get rid of the problem of time having a beginning, in a similar way in which we got rid of the edge of the world. Suppose the beginning of the universe was like the South Pole of the earth, with degrees of latitude playing the role of time. The universe would start as a point at the South Pole. As one moves north, the circles of constant latitude, representing the size of the universe, would expand. To ask what happened before the beginning of the universe would become a meaningless question, because there is nothing south of the South Pole."

The imaginary field lines (e.g., longitude and latitude) are drawn to express those phenomenon which human brain can't process at its own without external aid. So there is no chance of beyond. In order to understand it I shall go through general relativity. A famous thought experiment by Albert Einstein was the train experiment that a person standing on the platform of a train is an external observer if train with speed of light passes by and a street light is switched on. To an observer inside the train the light will be stationary as both of them will be at same velocities. This predicts that the beginning of universe is accurately accountable to the person outside this frame of reference.

The divine influence is irrefutable can't be stopped even though we don't believe. The Real God is this universe's unexposed portion i.e., DARK MATTER. The one who is everywhere as people say and you there is space around us everywhere and infinite i.e., Dark Matter. We are just a design etched on this canvas.

Higgs fields are the sites for actual transfer of mass in terms of present knowledge. But in light of above stated facts the conversion of antimatter to matter and its eternity sound better ideas. From this discussion we conclude that the minor losses of mass recorded are just a typographical or experimental error and this proves actual nature of matter that is it can neither be created nor be destroyed but can be changed from one form to

another. The magnitude of things is also relative because we can't consider the whole universe at a single point. The precision of instruments never makes our measurement completely precise because even with the finest instruments the next particles ahead again have a basic particle and that again has its own component particles.

It is eternal and if we follow this law we have nothing to do with its creation.

Since matter is eternal, therefore universe should also be considered as eternal. The thing that counts is the appearance of matter

E_{NERGY}:

Generally mass and energy are often inter-mingled and there are too much chances where we label particles as energy.

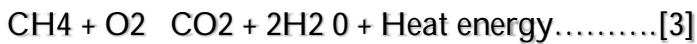
For Example, temperature is a kind a imaginary quantity and if we get into it deeply we would drown ourselves into an unlimited dungeon of knowledge. For Example, if we say that an object is hot. It is the kinetic energy possessed by its particles and if a substance possesses locomotive motion it is not energy possessed by it. But a constant state gained to through repeated reflections by different gravitational fields.

The best example of this is the heavenly bodies the motion of whose is due to successive reflections by each other's gravitational fields. Let a star "A" moving through a closed system and after completing a distance "d" the closed system admits three other stars(EACH WITH A MASS DOUBLE OF "A") rotating about a blackhole such that they come in a series. When the star "A" reaches one of those it is attracted towards it and so on. Again in second round it again reaches the three star system and the above phenomena repeats. The stars accelerate "A" each towards its gravitational field that serves to provide the necessary centripetal force and become a cause of its motion. Hence, locomotive motion never requires a body to possess energy and is a result of the movement of space as a whole not the body possessing motion.

There are also a lot of conditions where energy is not required even at particle level and our curiosity increases with the discovery and further studies of neutrinos. Light is often inter-mingled with energy but this is photons. You have to keep in mind that photons are not packets of energy but it is an un- realistic sort of proposition that for the sake of solving problems regarding motion etc. We even don't know that is actually the real energy. For escaping this, we say everything as energy that we can't touch but the real energy is the space around as.i.e,the dark matter/god. The driving force for all the things around us and where energy is not required are rupture in space-time. But they

aren't flaws. They are the places for exchange of energy between different systems. If energy is required for all processes then what about neutrinos.

Neutrinos are very interesting particles which lose energy by time and as a result their velocity increases and at last reaches an infinite level. Now, we should talk about release of energy in various chemical processes. The question arises here that if energy is released by interconversion of mass into energy then from where the energy is released in chemical processes. For example if we talk about general combustion process



In equation [3], the energy was released due to breakage of attractive forces between different particles in various molecules. These forces also exist due to distortions in space-time caused by particles. It is interesting to note that it is actually the force of gravity which bends these particles and the pulling force between the particles is directly under the control of temperature. When temperature increases it breaks the attractive forces such that an infinite increase in temperature fragments the particles and their existence diminished. It is a possibility that at the beginning of universe the temperature was infinitely high and vice versa.

However, the condition of increasingly high temperature at origin does not seem fit and is just a vague explanation of phenomenon.

According to Big Bang at the origin of Universe the temperature was infinite such that:

$$T = \infty \dots \dots \dots [4]$$

The only existing particles were neutrons as the temperature dropped others particles were formed and it finally gave rise to deuterium.

But why temperature cooled down as there was no external force acting on the universe and the only matter that existed was that giant fireball. In Physics temperature never drops or rises by itself and demands reasons for its demise as at infinite temperature particles do not exist. So, there is no chance of nuclear reaction and expenditure of fuel.

However, there is another condition for it as quantum fluctuations can give rise to increase in temperature that rose infinitely high to a giant ball that blasted afterwards. The illusion of infinite temperature at origin is spread because of void explanation of this sophisticated "Theorem".

The ruptures created in space-time are actually responsible for the release of energy.

SPACE-TIME TERMINOLOGY:

SPACE:

Space should be defined as anything which has capability to possess some sort of matter. The term space is relative and would be different for different systems. e.g., in human circulatory system the term space refers the area surrounded by layers of tissues i.e., blood vessels.

When a farmer in Punjab thinks about space his vision is confined to an agricultural plot. Thus, Space is relative.

One of the most sophisticated and complex things that science has yet to explain.

Time is defined as all the reactions that will take place till the end of universe from the beginning of first particle to the end of last particle. All the events should be measured relative to the phenomena that have taken place and those which are yet to take place. (and we are already doing it.)

For example: Human heart beats 80 times per minute but what is a minute to the reference of which it (minute) is calculated. The answer is the revolution of earth around the sun is a standard for time measurement i.e., a universal phenomena (a reaction) but it's not possible to bring through all the reactions of universe.

The beginning of time is still another controversy at which all the cosmologists put down their arms.

- i) Is the universe's time an undefinable phenomena only under the knowledge of God.
- ii) Is it a result of quantum fluctuations that produce mini-universes that last only for whiles and do not fit for the formation of galaxies.
- iii) What was before Big Bang.
- iv) Or the "eternity theory" sounds good that it never had a beginning (beginning of time)

ANSWERS:

The question arises here that either matter was created first or time. To tackle with this problem the interwoven space-time continuum has to be interfered. To understand the whole game let me tell you that space-time refers to Dark Matter i.e., space around us. Time itself can't be measured without streamlining the events i.e., rotation of heavenly bodies etc. So, time itself is not a quantity that should be sought for. It is matter and Dark Matter that exist and to explain phenomena related to both these things we have to use time as a supporting material for occurrence of events (reactions).

Let me explain this with a simple example, in a video player, we watch videos by continuous flicker of pictures. The pictures of each event collectively count for the duration of movie i.e., the video as a whole has not any particular duration but the no. of events determine the duration of video and time period for each caption is fixed. The playback speed is also responsible for your observation of movie and how far you

proceed in the movie. But, it does not change the total no. of events to occur i.e., time is not a rigid quantity and isn't merely a quantity.

Rather the predefined thing is the no. of captions and duration must not be held responsible for that. The same is the case for us. The theory of general relativity predicts the possibility of time travel for observers moving with speed of light. The explanation for it can easily be viewed at appropriate forum.

Now, we can only move back and forth in things that are predefined. The universe is similar to a video in which every caption is an event and its occurrence is relative to the playback speed i.e., the actual velocity of observer. It points out many other things like our fate has already been decreed and everything that has to take place has already occurred and we are its characters and can swim from one scenario to another that is a multi-dimensional time loop.

So, if we take Stephen Hawking's conclusions in his lecture as true then there is no beginning of time with respect to all the observers located in this universe.

Because, we are stationery pictures that are continuously streamed. However for observers not a part of this "video" the time beginning for this universe can be calculated. But they can't calculate the time in their respective universe because they are also stationery pictures streamed in the form of video with respect to their universe. Thus, time is an illusion. It is just a level for calculating the universal events that have occurred and that are to occur.

MASS-ENERGY EQUATION: A CRITICAL REVIEW

Although considered as one of the most fabled theories of science that changed man's perspective of looking this world.

But there also certain worms here so before getting into this topic we should discuss some basic things related to this topic.

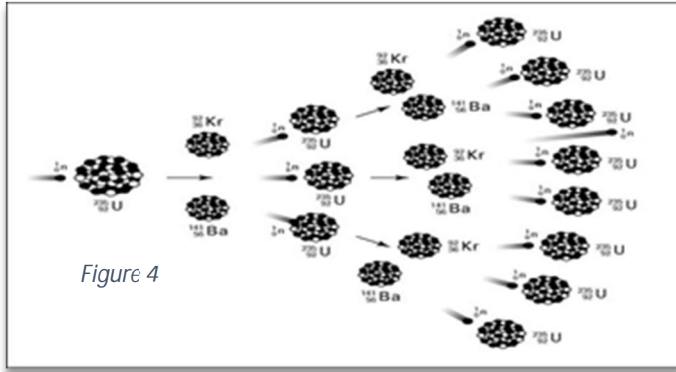
Law of conservation of mass states that mass can neither be created nor be destroyed but can be changed from one form to another such that mass of reactants and products before and after reactions remain constant.

$$E=mc^2$$

Where E refers to the energy and m is the mass of object and 'c' refers to the speed of light.

The supporting detail for mass-energy equation are regarded as nuclear reactions. In Newtonian mechanics the energy possessed by a static object is not regarded as the energy possessed a body.

However, in the theory of relativity the change in mass refers to the increase in magnitude of energy. But the total mass+energy remains constant. Let's take an example fission reaction



In the above figure when a neutron is bombarded on a uranium atom it splits into two nearly equal fractions with the release of tremendous amount of energy (4.8MeV per each fission event) and on an average 2.5 neutrons(should be considered as 3 neutrons because there is a possibility of experimental error as our instruments are not that much precise to allocate every neutron). Many neutrons are absorbed or dissipated as our experiments wholly rely on controlled fission reactions. The Einstein's mass energy equation states that the release of energy is a result of loss of mass. But the situation is vice versa.

The total no. of particles in reactants: one neutron and 235 particles in uranium = 236 particles

The total no. of particles in reactants = 141(of Barium) and 92 (of Krypton) and 3 neutrons which are lost as gamma rays in further reactions = 236

It is reportedly an experimented fact but the loss of three neutrons makes it impossible. The precision of instruments also puts a question mark on the validity of experiments. The loss of small mass is obviously an experimental error. Since Equation applies to all the bodies therefore the mass should also be lost in combustion processes why it is so evident for the mass to be lost in fission reactions.

The mass if calculated after and before the reactions in combustion processes remains almost same(with the possibility of experimental error). The actual energy released in every reaction depends upon the force broken down in the reaction in chemical reactions the electrostatic forces are broken down. Since the mass of electron is small the distortion in space-time created by it is small. The attractive forces between the particles are also a result of gravity that acts through a small distance. Since the particle electron has small mass compared to proton and neutron therefore when electrostatic forces are broken down small amount of energy is released as compared to nuclear reactions. The gravitational force is identical to the electrostatic force since by coloumb's law

The force acting on a unit positive charge is directly proportional to the product of magnitude of charges and inversely proportional to the square of distance between their centres.

$$F = \frac{q_1 q_2}{r^2} \text{ Coloumb's Law} \dots\dots\dots [5] \quad F = G \frac{m_1 m_2}{d^2} \text{ Newton's Law of Universal Gravitation} \quad [6]$$

The resemblance between the two laws suggests for the similarity between gravitational and electrostatic forces. The only difference is that their frames of reference are different. The electrostatic forces are actually the ruptures in space-time created by unit particles and on large scale they change to gravity.

The nuclear reactions release large amount of energy because the mass of neutrons and protons is large so attractive force between are stronger and breakage of these force releases large amount of energy. It is important to note that energy is an intermediate form between matter and dark matter and attractive force are reciprocal of energy such that increase of energy weakens them and they themselves convert themselves to energy and decrease of energy strengthens them.

RESULT:

From all these observations we should conclude that universe is a closed system and is eternal but the formation or appearance of mass from dark matter should not be regarded as the point for the creation of universe and the time is not a quantity but an illusion created by man for measuring the total no. of phenomena in this closed system like a video and is measured relative to those phenomena for example standard time is measured relative to the revolution of earth around the sun but it's not the actual time the actual time is that which is measured relative to the rotation of all the bodies in the universe and thus time has no. beginning nor the universe the thing that counts is the no. of events that is predefined such that everything from the first quantum fluctuation to the last reaction has already occurred and those phenomena are relative to your velocity in time.