International Journal of Science and Research (IJSR)
ISSN: 2319-7064
SJIF (2020): 7.803

The Idea of Big-Bang and Expanding Universe - Is it a Reality or an Illusion?

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Abstract: ***As a consequence of Hubble's law one has to assume that our universe has started its present life through a tremendous explosion known as 'Big-Bang', which occurred nearly fourteen to fifteen billion year (14 BY to 15 BY) ago. From the very moment of explosion the universe has started to expand and still it is going on. Before big-bang everything in the universe was confined within a point. This idea of 'Big-Bang' and 'Expanding Universe' is almost accepted by all throughout the world. But some of the consequences of this idea appear to be inconsistent. These are discussed below. Nearly ten such cases are cited, which directly contradict this idea. Thus it seems that this idea is not a reality, rather it is an illusion.***

Keywords: Hubble's Law, Big-Bang, Expanding Universe, Information Carrier, Perceptible sphere, Friedmann's model, Doppler Effect, Luminosity, Intensity, Detection limit, Relic Radiation

1. Introduction

Every human being is highly curious about his environment and environmental changes and also about the universe. We all are very eager to know the exact present status and condition of each and every object around us within a moment whatever be their distances from us. But this is not possible, because certain time is required to collect information from those objects. The knowledge about our surrounding depends on the method of collection of information. We can collect information from different objects or about various incidents using different types of information carriers such as human being, horse, birds, sound, light etc. A definite time will be taken by the information carrier and the time taken will obviously depend on its speed. Table-I will give us an idea about the size of our perceptiblesurrounding with time.

Table I: A comparative account of speed of different information carriers and size of perceptible sphere

Name of information Carrier	Speed of the Carrier	Time Allowed	Radius of the perceptiblesphere
A. Human being	5 Km./hr (approx.)	1 hr.	5 Km.
B. Horse	80 Km./hr (approx.)	1 hr.	80 Km.
C. Pigeon	150 Km./hr (approx.)	1 hr.	150 Km.
D. Sound	332 m/s	1 hr.	1200 Km (approx.)
E. Light	3×10^8 m/s	1 hr.	1.08×10^9Km.
F. Imaginary	Infinity	A moment	Infinity

As the time increases the size of our perceptiblesphere increases for each type of carrier from A to E; but for a given fixed time the size becomes larger and larger as the speed of the carrier increases. If there be an information carrier (imaginary) of infinite speed, only then we shall be able to know the exact present status and condition of the whole universe within a moment. But it is not possible at all, because there is no such carrier till now. Among all the information carriers light is the most speedy one and it gives us information from distant objects within a very short time. The extremely high speed of light has wrongly motivated us to think that what we see around us is nothing but the exact present condition of everything. However, it should be noted here that the condition and status of a distant object which is just now known to us by light signal is not actually the present condition of it, but it is of sometime past. A light signal just received now from a star, say at a distance of one billion light year (1 BLY) away from us, will give the information of what it was before one billion year (1 BY); the actual present condition of that star will come to our knowledge only after 1 BY from now. Unfortunately, there is no way to know the exact present condition of all objects in the universe within a moment. Thus, it becomes a very difficult task to unveil the mystery behind the formation or beginning, evolution and fate of our universe, because our knowledge has limitations too. There are a number of proposals about the model of the universe, but till now none has been established to be correct.

2. Widely Accepted Idea about Our Universe

The most widely accepted idea about our universe is the Friedmann's Model[1]. According to this model the universe is homogeneous and isotropic -- the universe looks the same from everywhere, i.e. the distribution of matter and energy is almost uniform in all directions throughout the space. He also proposed the idea of "Expanding Universe". This is supported by Hubble's findings. During cataloguing of stars and galaxies the renowned astronomer Edwin Hubble surprisingly noticed that all stars and galaxies are receding away from each other and the more the distance between them, the more is the rate of recession irrespective of their direction of position in the sky. This is known as Hubble's law[2]. Actually this was indicated by the red-shift of light emitted from them. Red-shift is nothing but the Doppler effect of light. As the universe is expanding, if we go more and more into the past, stars and galaxies as well as all objects in the universe were closer and closer; as a consequence one must have to assume that everything in the universe rather the whole universe was confined into a point. But how did the beginning of it take place? It has been estimated that some fourteen to fifteen billion year (14-15 BY) ago our present universe has started its present life through an extremely violent explosion known as 'BIG-

BANG'[3] and started to expand immediately – the expansion is still going on. Time has started to go on from the very moment of Big-Bang. The idea of Big-Bang and expanding universe is now accepted by almost all people in the world. It has been also proposed that three possibilities are there regarding the fate of the universe –

1) The universe will go on expanding for ever and nothing can stop its expansion - it is a case of open universe.
2) It will stop expansion after sometime and start contraction under gravity; finally it will be confined into a point as it was in the beginning (Big-Crunch). Again, a second Big-Bang will start the another phase of its life and thus a periodical life cycle of it will be seen.
3) It will stop expansion after some time and such a steady state will be attained that neither expansion nor contraction can take place. This is a case of static universe.

Although these three predictions are made by Friendmann's Model but nothing is there to prove any of them till now.

In this discussion, it is assumed that Big-Bang has taken place before 15 BY, although the recent accepted value is around 13.7 to 14.0 BY.

Now let us represent Hubble's law in the following way:-

Hubble's law can be stated as, "The rate of mutual recession of any two objects (stars or galaxies) is directly proportional to the distance between them" and mathematically it can be expressed as -

V α L

or, V = H L .....(1)

where, V = Velocity of mutual recession of the two objects,
L = Distance between them,
H = Hubble's constant.

The value of H was primarily estimated to lie in the range of 50 to 75 Kms^{-1}MPC^{-1}, and now the accepted value is nearly 70 Km s^{-1}MPC^{-1}, [Actual Value is 69.8 Km s^{-1}MPC^{-1}]

Here, 1 light year = 1 LY = 9.467 x 10^{17}cm ≃10^{18} cm (approx.)
1 parsec = 1 PC = 3.26 LY ≃ 3.3 LY
1 MPC = 1 Mega parsec = 10^6 parsec= 3.3 Million LY = 3.3 MLY
1 BLY = 1 Billion LY = 10^9 LY = 10^{27} cm

However, there are a number of discrepancies in the idea of Big-Bang and expanding universe. These are discussed below.

3. Discrepancies

3.1 Our present universe has originated through Big-Bang and before it the whole universe was confined within a point, i.e. at the point of Big-Bang. After Big-Bang the universe has started to expand and hence it must be assumed that our universe should have a centre and it is the point of Big-Bang. The maximum limiting speed in the universe is that of light and nothing can move faster than light according to the theory of relativity by Einstein. If Big-Bang has taken place before 15 BY, then maximum diameter of our present spherical universe will be 30 BLY, because it is most likely that everything would spread outward in a spherical shape with a maximum speed not exceeding that of light from the start of Big-Bang; although light itself would propagate at its own speed. If our earth be luckily present at the centre of the universe then the farthest object we can see will be at 15 BLY away from us in every direction of the sky. But this position of the earth is a very unique one and it may not necessarily be true, because such probability is extremely small. In that case, the distances of the farthest objects will be different atdifferent directions of the sky -- such objects in one hemisphere will be much farther or nearer than those in the other hemisphere. The position of our earth may be at one end or even at the edge of our universe, then we shall see very few stellar objects or even nothing in one hemisphere. Does our present observation prove this?

According to Friedmann's model the universe looks the same everywhere as we see from our earth. How will this be possible?

3.2 As a consequence of Hubble's law it is evident that the velocity (V) of mutual recession between two objects will be that of light (c) or even greater than 'c' when they are situated at a sufficient distance (L_1) from each other depending on the value of Hubble's constant. Using Hubble's equation (1) now let uscalculate such distances (L_1) for different possible values of 'H'.

Thus, when V = c, then L =L_1, so that the equation (1) becomes

$$L_1 = \frac{c}{H} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad (2)$$

Although, the present accepted value of 'H' is nearly 70 Kms^{-1}MPC^{-1}, calculations are made for L_1corresponding to different possible values of H using above equation (2) and these are shown in Table-II.

Table II: Different values of L_1 for different values of 'H'.

H (km. s^{-1}.MPC^{-1})	50	60	65	70	75	80	90	100
L_1 (in BLY)	18	15	13.85	12.86	12	11.25	10	9

Since a light signal from one object can never reach the other when the velocity of their mutual recession exceeds that of light, so two such objects will be completely unknown and unseen to each other for ever. There should be no confusion to accept this prediction. Thus, our observable or communicable universe will be merely a sphere of radius 18 BLY (for H = 50 Km s^{-1}.MPC^{-1}) at the maximum and 9 BLY (for H = 100 Km s^{-1}.MPC^{-1}) at the minimum as shown in Table-II. In each case the universe will have a boundary line rather a boundary surface beyond which everything will be unknown and unseen to us. As the universe is continuously expanding, stars and galaxies are gradually disappearing from our view and knowledge for ever from the boundary surface of our observable universe each and every moment. Even if the actual universe be much larger in size than the above predicted values, we shall be quite ignorant of that. We cannot firmly say what is the

actual size of our universe, may it be of diameter 30 BLY or 50 BLY or 100 BLY or 1000 BLY or even larger. Moreover, due to this expansion massive objects like stars and galaxies are continuously disappearing from our observable universe - does this mean that our universe is gradually becoming less and less massive with a steady decrease in average density? Obviously not. But, as a consequence of expanding universe it can be firmly said that our observable universe is heading towards an unexpectedly low mass and low density in the long run.

Again, if we go back more and more into the past, more and more disappeared and unseen objects would come within our vision keeping the size of the universe same. Even if we go back by 15 BY into the past, the universe would appear the same as we see now. As a consequence of Hubble's law, it becomes evident that size of our observable universe remains the same whether we go back into the remote past or go forward into the far future. We have no means to have an idea about the actual size and mass of the real universe. This phenomenon directly contradicts the time of Big-Bang and even the idea of Big-Bang and expanding universe.

3.3. Let us analyse Hubble's law in a different way. Let A and B are two stellar objects (star or galaxy) situated at a distance 'L' at time 't' and they are receding away from each other, then according to this law the velocity (V) of their mutual recession will be $\frac{dL}{dt}$ and this can be expressed as

$$\frac{dL}{dt} \propto L$$

or, $\frac{dL}{dt}$ = H.L, where H = Hubble's constant

or, $\int \frac{dL}{L} = \int H.dt$

or, $L = L_0.e^{Ht}$ …….. (3)

Where, L_0 = distance between them at t = 0.

Now, let us consider two different positions L_1 and L_2 of A and B at times t_1 and t_2 respectively, then from equation (3) we can get –

$$\frac{L_2}{L_1} = e^{H(t_2-t_1)}$$

or, $\ln\frac{L_2}{L_1} = H(t_2 - t_1)$

or, $2.303 \log\frac{L_2}{L_1} = H(t_2 - t_1)$

or, $\log\frac{L_2}{L_1} = \frac{H(t_2-t_1)}{2.303}$ = X (say)

or, $\frac{L_2}{L_1}$ = Antilog of X = Y(say)

or, $L_1 = \frac{L_2}{Y}$ ……(4)

Here, time is counted from Big-Bang, i.e. at the moment of Big-Bang t = 0. So, the maximum value of $(t_2\text{-}t_1)$ will be 15 BY, when t_2 is the time at present and t_1 = 0. Suppose L_2 is the present distance between A and B, and $L_1$is the past distance before time $(t_2\text{-}\ t_1)$. Taking the value of H as 70 Km s^{-1}.MPC^{-1}, different values of L_1 and L_2 are calculated using equation (4) and are shown in Table-III.

Table III: Relative positions of two stellar objects A and B at present (L_2) and at remote past (L_1)

S. No.	L_2 (in BLY)	t_2 - t_1 (in BY)	X	Y	L_1 (in BLY)
1	1	1	0.032	1.076	0.93
2	1	5	0.16	1.445	0.69
3	1	10	0.32	2.089	0.48
4	1	15	0.48	3.020	0.33
5	5	1	0.032	1.076	4.65
6	5	5	0.16	1.445	3.46
7	5	10	0.32	2.089	2.40
8	5	15	0.48	3.020	1.65
9	10	1	0.032	1.076	9.29
10	10	5	0.16	1.445	6.92
11	10	10	0.32	2.089	4.79
12	10	15	0.48	3.020	3.31
13	15	1	0.032	1.076	13.94
14	15	5	0.16	1.445	10.38
15	15	10	0.32	2.089	7.18
16	15	15	0.48	3.020	4.97
17	15	30	0.96	9.120	1.645
18	15	50	1.60	39.811	0.377
19	15	100	3.20	1584.89	9.46 MLY
20	15	1000	32.00	10^{32}	0.0015 mm

Here, 1 year = 3.156 x 10^7s, 1 BY = 3.156 x 10^{16}s, H = 70 Km s^{-1}.MPC^{-1}= 2.33 x $10^{-18}s^{-1}$.

According to the Big-Bang model any two stellar objects A and B must have to be situated at the same point (L_1 = 0) before 15 BY, whatever be their present distance (L_2). It is clear from the above Table-III that two objects A and B, which are now situated at a distance of 15 BLY from each other, were at a distance of 4.97 BLY before 15 BY. It has been also shown that whatever be the present distance (L_2 = 1 BLY to 15 BLY) the objects A and B were not at the same point before 15 BY, i.e. at the time of Big-Bang. If we go back into the remote past of 1000 BY, then they would exist within 1.5 x 10^{-4} cm. (0.0015 mm), but the idea of such remote past (1000 BY) is meaningless as the age of our universe is only 15 BY. Similar tables can be prepared using different values of H, but they will produce the same result, i.e. no two objects were at the same place or same point (zero distance) before 15 BY whatever be their present distance. As aconsequence of the results of Table- III one must have to assume that either the value of Hubble's constant 'H' had different values at different stages of the universe or the law itself is meaningless. So, the idea of Big-Bang is questionable.

3.4. According to the accepted model of the expanding universe the degree of red-shift due to the Doppler Effect oflight should be the same for equidistant objects in all directions of space aroundus. Now, let us examine the feasibility of this idea. Let AB be thediameter of the sphericalexpandinguniverse attime t_1 (Fig.1) and CD at timet_2, such that CD = 2 AB, also AB = 2 EF, EF = 2 GP and so on. The point 'O' is the point of explosion of Big-Bang and hence 'O' is the centre of the universe.

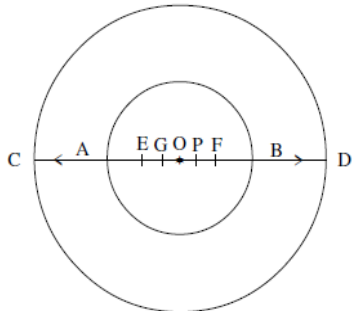

Figure 1: Cross-sectional view of the spherical expanding Universe.

The position CD of the universe is achieved from AB when diameter or the radius is doubled through expansion from time $t_1$to t_2, i.e. for doubling of radius time taken is t_2 - t_1. Hubble's law will be obeyed when the following points at time t_1 will be shifted at time t_2 as shown below due to expansion --

B to D, F to B, P to F on one side and A to C, E to A, G to E on other side (in opposite direction). As the radius or diameter of the spherical universe is doubled step by step, volume is increased by 8 times in each step.

Now let us consider three objects (stars or planets or galaxies) situated at points E, P and B at time t_1 and say, our earth is at P. Both E and B are equidistant from P and hence the rate of mutual recession of E and B with respect to P (earth) will be the same. Let two light signals of same frequency (and same wavelength) start their journey separately from E and B at the same time towards earth. If all the three points (E, P and B) would have been stationary (no expansion), then two light signals would have been received on earth at the same time showing no red-shift. Even if 'P' was stationary and E & B were receding away from 'P' at the same rate in opposite directions, then two signalswere also received by P at the same time showing the same degree of red-shift. But P is not stationary, it is moving towards B, so that PB distance is decreasing and EP distance is increasing. The light signal from E will have to travel more distance than that coming from B; thus two light signals will be received by P at different times -- earlier the signal from B and later from E. Since, the light signal from E will have to travel more distance than that from B, it will show a greater degree of red-shift than that from B. Thus, the idea that all equidistant objects around us will show the same degree of red-shift is not true - in one hemisphere it will be more while in the other hemisphere it will be less. The same observation will be noticed everywhere in the universe except at 'O' (centre ofthe universe). Do our observations support this?

3.5 According to the theory of relativity by Einstein only the velocity of light is constant and nothing else is constant or absolute in the universe and also nothing can add to the velocity of light. Now, let us critically discuss this point. If an object (star or galaxy) be just now discovered to be situated at a distance of 15 BLY away from us, the light signal was sent off by that object before 15 BY when both of them (that object and our earth) were at the same point, i.e., at thepoint of Big-Bang, because it has taken place before 15 BY. This means that light signal took 15 BY to travel merely the zero distance. How is this possible? There may be three possibilities - i) At the very beginning of Big-Bang the velocity of mutual recession was much larger than that oflight and after sometime the rate has decreased and gone below that of light such that the light signal has reached our earth after 15 BY, otherwise the lightsignal would never come to us or, ii) originally that object was situated at a distance of 15 BLY before15 BY provided there was no expansion in the past and even at present, or, iii) thespeed of light had different valuesat differentstages of the universe – it had much lower value in early stage, then gradually increased and attained the present value recently. Thus, the idea of expanding universe is doubtful.

3.6 In this discussion it has been assumed that the maximum age of our universe is 15 BY, i.e. the Big-Bang took place before 15 BY. As we move to more and more distant parts of the sky, actually we go more and more back into the past and hence we observe the earlier and earlier condition of the universe. If an object be just now discovered to be situated at a distance of 15 BLY away from us, the object is nothing but the image of Big-Bang rather it is the point of Big-Bang. And we must see such infinite points everywhere in the sky at this distance around 360^0 solid angle of our earth. Then, how do we determine the actual point of Big-Bang rather the centre of our universe? Is it possible at all that we should see the glow of Big-Bang in every direction of the sky at this distance of 15 BLY? If it would have been correct, then every point of the sky around us would show such glow of Big- Bang, every point of the sky would have been luminous and shining and consequently, there would be no possibility for the sky to appear black to us. But actually we cannot see such glow and the sky appears black to us. Again, every point in the sky lying on the surface of spherical universe having radius of 15 BLY would appear as the point of Big-Bang and hence all these points should seem to be the centre of the universe. Is it possible? Where is the actual centre? Then, the idea of Big-Bang is a misleading concept.

3.7 The universe has started to expand from the very moment of Big-Bang and still it is going on. So, it should be expected that there must be a concentration gradient of both mass and energy from the point of Big-Bang to outward direction. On moving away from the centre of the universe (the point of Big-Bang) to any direction a decrease in concentration of both matter and energy should be noticed. If the position of our earth be not at the centre of the universe (probability of such a unique position is extremely small), then celestial objects in one hemisphere should be more or less concentrated than those of the other hemisphere. Do our observations comply with this concept?

3.8 According to our present day estimate the mass of our universe is approximately 10^{56} g, its radius and density are nearly 14 to 15 BLY and 10^{-29} to 10^{-30} g/cc respectively. In my previous paper[4] it has been shown by calculation that a material body with mass of 10^{56} g, radius of 14.8 BLY (SR) and density around 7.3 x 10^{-30}g/cc is nothing but a black-hole (U-1) and similarly U-2 (m = 10^{72} g), U-3 (m = 10^{100} g) etc. are also black-holes, rather they are all super black-holes. Then, even being a super black-hole our universe (U-1) has such a low density of matter that all

phenomena like formation and destruction of stars, galaxies, planets, giant molecules, molecules etc. and evolution of living systems up to human being or more, can go on smoothly within it without knowing anything about the world otherthan our system or giving any information outside this system.

Who can say or what can prove that our universe (U-1) is not a super black-hole? Are we actually enclosed in a super black-hole? The system U-1, which is wrongly taken as the universe by us, is such a super black-hole that it contains nearly 10^{10} to 10^{11} galaxies each like our own milky-way galaxy and even larger ones. Since, there is an event horizon[5] for this system, no information can be sent outside this system. The actual universe may contain somemillion or even billion and billions of such super black-holes (like U-1) situated sufficiently apart from each other separated by their own event horizons. All these super black-holes will be completely unknown to one another for ever. If the actual universe has a mass of 10^{72} g (U-2), it will contain10^{16} U-1 and if it be 10^{100} g (U-3), it will contain 10^{44} U-1 or 10^{28} U-2 and so on. What is then the real Universe? Who will define it? What will be its actual mass, volume, density etc.? Weare completely helpless to say anything about these and all are beyond our imagination. If it be such thatcontraction beyond SR (where, SR is the Schwarzschild's Radius) is not possible in case of such super black-holes like our U-1, then its volume, density etc. will remain the same for ever as we see now. Our U-1 has already passed 15 BY and it may continue to exist for another billion and billions of years. None can notice any change of it, although formation and destruction of stars, planets, galaxies etc. will go on smoothly as it is going on now. Similar will be the case for all such super black-holes. It is a matter of great surprise that inhabitants of all such super black-holes will wrongly consider their own black-holes as the real Universe like us. None is there to find out this mistake. Then, what is the meaning of the idea of Big-Bang and expanding universe? Can this idea explain the behaviour, existence or non-existence of so many super black-holes? Why do we then unnecessarily adopt the idea of Big-Bang and expanding universe?

3.9 It has been estimated that early universe was too much hot and its temperature was in the order of 10^{30} to 10^{32} K or even higher at the very moment of its birth, i.e., at the time of Big-Bang. The early universe was full of radiation only and there was no matter. As the expansion continued the universe gradually cooled down and the production of matter from energy began. In later stages formation of galaxies, stars, planets etc. has taken place. According to the theory of Black-Body radiation the more the temperature of a material body, the more is the energy out-put in the form of electromagnetic radiation (light). Here, light is taken as the whole electromagnetic spectra from radio-wave to γ-ray. The necessary condition for a material body to be visible to an observer is that it should emit radiation (light) and sufficient light from that object must reach the observer. Again, for a good detection sufficient intensity of light at the point of observer is essential.

Now, let us calculate the detection limit of a light source with respect to its luminosity and distance. In ideal case, an electric bulb of 100 W power emits total energy at the rate of 100 J.s^{-1}in all directions around it and for simplicity, let it emits only yellow light having wavelength of 6000 Å ($\lambda = 6 \times 10^{-5}$cm). Then total number of yellow photons (N) emitted per second will be around 3×10^{20}. The intensity (I) of light will decrease with distance and it is inversely proportional to the square of distance (r) from the source. In Table-IV, intensity (I) in terms of number of yellow photons passing through one square centimetre area perpendicular to the direction of propagation of photons per second at a given distance is shown. The relation used for calculation is

$$I = \frac{N}{4\pi r^2} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (5)$$

where, I = Intensity, N = Total number of photons emitted per second from the bulb,r = distance from the bulb.

Table-IV: Decrease in intensity of a light source with distance in terms of number of yellow photons

Distance (in cm)	10^2	10^4	10^5 (1 Km)	10^6 (10 Km)	10^7 (100 Km)	10^8 (1000 Km)
I (No. of photons)	2.4×10^{15}	2.4×10^{11}	2.4×10^{9}	2.4×10^{7}	2.4×10^{5}	2.4×10^{3}

Is it possible to detect a 100 W bulb from a distance of 100 Km? It seems almost impossible. Even if it be made possible with the help of a very powerful detecting device, then the critical intensity will be around $10^5$to 10^6 yellow photons. It can be firmly said that the above bulb cannot be detected by any means from 1000 Km distancewhere the intensity is 2.4×10^3yellow photons.

Now, let us calculate the detection limit of stars, galaxies and other stellar objects in the same way as above and the same assumptions are also taken for them. Luminosities of different celestialobjects are estimated to have the following values:

Our sun (Sun-1) = 4×10^{26} W
Milky Way Galaxy (GX-1) = 4×10^{37} W

For comparison let us also consider other sun-like stars having brightness 10^3 times (Sun-2), 10^6 times (Sun-3) that of our sun and other galaxies having brightness 10^3 times (GX-2), 10^6 times (GX-3) that of our own galaxy (GX-1). Assuming the same rate of brightness, the super black-hole U-1, which is wrongly taken as the universe by us, should have a luminosity of 4×10^{47} W. In all these cases approximate values are taken. In Table-V intensities of different celestial objects are shown as a function of distance.

Table V: Intensities of various stellar objects as a function of distance in terms of number of yellow photons

Objects	Power (in W)	N	Intensity (I) at a distance of			
			1 AU	1 BLY	15 BLY	30 BLY
Sun-1	4×10^{26}	1.2×10^{45}	4.244×10^{17}	9.55×10^{-11}	4.244×10^{-13}	1.06×10^{-13}
Sun-2	4×10^{29}	1.2×10^{48}	4.244×10^{20}	9.55×10^{-8}	4.244×10^{-10}	1.06×10^{-10}
Sun-3	4×10^{32}	1.2×10^{51}	4.244×10^{23}	9.55×10^{-5}	4.244×10^{-7}	1.06×10^{-7}
GX-1	4×10^{37}	$1.2 \times$	$4.244 \times$	9.55	$4.244 \times$	$1.06 \times$

		10^{56}	10^{28}		10^{-2}	10^{-2}
GX-2	4×10^{40}	1.2×10^{59}	4.244×10^{31}	9.55×10^{3}	4.244×10^{1}	1.06×10^{1}
GX-3	4×10^{43}	1.2×10^{62}	4.244×10^{34}	9.55×10^{6}	4.244×10^{4}	1.06×10^{4}
U-1	4×10^{47}	1.2×10^{66}	4.244×10^{38}	9.55×10^{10}	4.244×10^{8}	1.06×10^{8}

Here, 1 AU = Distance between Earth and Sun (=1.5×10^{13} cm.)

N = Total number of yellow photons (λ = 6000 Å) emitted per second.

It is clear from Table-V that our sun like objects and even other brighter objects like Sun-2, Sun-3, GX-1 and GX-2 will remain undetectable at a distance of 1 BLY and hence they all will remain invisible and unknown to us for ever. However, GX-3 like object will be just detectable at 1 BLY distance. All objects like Sun-1 to GX-3 will remain invisible and undetectable at 15 BLY distance, but only U-1 like objects can be detected at a distance of 100 BLY provided they, even being super black-holes, can throw light into outer space. Even if there are a quite good number of objects like Sun -1 to GX-2 at a distance of 1 BLY (or more) evenly distributed in the very same way as we see around us within a few thousand light year distance, yet they cannot be detected at all and will remain unknown to us for ever. A sun-like star should be 10^{20} times luminous than our own sun and a galaxy should be 10^{9} times luminous than our own galaxy (GX-1) for detection from a distance of 15 BLY. Is it possible for a sun-like star to be such tremendously luminous (= 4×10^{46} W)? If it be so, then what will be the nature of that object and how much will be its temperature? Perhaps there will be no sufficiently luminous object that can be detected at distances of 15 BLY or more (except U-1 like objects). So, there must be a boundary surface of our detectable universe with respect to luminosity and detection limit because farther a detectable object is, the more should be its luminosity. Then, who will tell and what will prove that how big our universe is?

Now, it is clear that the radius of our detectable universe is nearly 15 BLY and this observation compels us to wrongly assume that the age of our universe is 15 BY. Then, why do we unnecessarily assume that there was a Big-Bang?

3.10 "Cosmic Microwave Background (CMB)", also known as 'Relic Radiation', was discovered by Arno Penzius and Robert Wilson in 1965, for which they were awarded Nobel Prize in physics in 1978 and CMB is regarded as a proof of Big-Bang. The first or the oldest electromagnetic radiation which was produced during recombination epoch by the new born universe just after 380000 years (approx.) of its birth, is nothing but the today's CMB. At that time atoms were first formed and photons started to travel freely through space. Those photons that existed during photon decoupling era have been propagating ever since though getting less energetic due to the expansion of space causing their wavelength to increase over time. At present, wavelength of the Relic Radiation (CMB) is nearly 1.063 mm or 10630000Å (282 GHZ, 1.168×10^{-3}ev). It is isotropic, i.e. it is not associatedwith any star or galaxy or any other object.

It has been estimated that during the recombination epoch the universe had a temperature of nearly 3000 K and the early universe would behave as an ideal black-body. So, according to Wien'slaw the first radiation emitted at that time would have wavelength (λ_{max}) of 9640Å (IR-Zone) and its wavelengthhaselongated to about 10630000Å atpresent i.e. nearly 1100 times elongation has taken place. What is the mechanism of elongation of the early radiation? It has been proposed that expansion of space has caused the elongation. Then, it must be assumed that expansion of space is possible and conversely, contraction of space is also possible. According to wave theory of light it is acceptable that expansion of space can cause an elongation of wavelength. Energy of EM-radiation is inversely related to wavelength, i.e. as wavelength increases the energy decreases. Again one must have to assume that the space is one which on expansion takes up energy and conversely during contraction it must release energy. But according to quantum theory of light, EM-radiation (or light) is nothing but stream of photons, which actually behave as energy particles. Energy of the oldest photons was very high and at present their energies are very low. Then how can their energies be conserved? Obviously, the energy decrease of the early photons cannot be attributed to the expansion of space, rather the cause lies elsewhere. The oldest radiations were produced before 14 BY and they are now transformed into today's CMB or relic radiation. Then, where they were wandering about for a long period of 14 BY and where was so large space in the early universe. At the beginning, the universe has a very small size of spherical shape and its size was continuously increasing with time due to its expansion. Then, one must have to assume that either the so-called oldest radiation got rebounded (or reflected) many times from the boundary wall of the universe for a long time of 14 BY to be converted into today's CMB, or the speed of the oldest radiation was much smaller than the rate of expansion of the universe. During such long journey their energy has automatically decreased and wavelength has increased to attain the present value. Is it correct? Perhaps, there is no proper explanation of the energy loss of the so-called 'Relic Radiation'. An alternative explanation is given below.

At present, the inter stellar and inter galactic space are filled with fine material particles such as atoms, molecules and also many bigger particles which are thrown into space during explosion of stars (supernova), although their density is very small. Thus inter galactic and inter stellar regions have attained a temperature of nearly 3K. An empty space must have no temperature at all and to have some temperature (T > 0 K) presence of material particles is necessary. According to Stefan's law and Wien's law any material body having temperature greater than zero kelvin must radiate energy in the form of EM-radiation (wave theory) or in the form of photons (Quantum theory). The distribution of matter is almost uniformin all directions of space around our earth. These inter stellar and inter galactic dust particles of temperature 3 K emit radiation which is wrongly taken as CMB or Relic Radiation. These are not actually produced before 14 BY, rather they are produced in the near past. If a span of few thousand to few million light

year is taken around us, this radiation will appear almost uniform to us from all directions of the sky; these radiations were produced only before 10^4 to 10^6 year. Since, nothing can prove the origin and time of production of CMB, this proposal may be accepted easily. In this case there is no problem regarding the energy conservation of relic radiation. Therefore, it is meaningless to accept CMB as a proof of 'Big-Bang'.

4. Summary of the Discrepancies

The ten cases as discussed above in the sections 3.1 to 3.10, which seem to directly contradict the idea of Big-Bang and expanding universe, are summarized below in the same order (i) to (x) :-

1) Actual size of our universe and the position of earth within it cannot be predicted properly.
2) Stars and galaxies are continuously disappearing from our observable universe and hence its mass and density are gradually decreasing. So, our observable universe is approaching towards zero mass and zero density -- is it correct?
3) Hubble's law is questionable and similar is the case for Hubble's constant 'H'.
4) All equidistant objects around our earth should show same degree of 'Red-shift' -- this is also not a correct idea.
5) Light had different speeds at different stages of the universe -- Is it possible?
6) We do not see the glow of Big-Bang, even we cannot find out the centre of the universe i.e. the point of Big-Bang.
7) There should have been a concentration gradient of both matter and energy from the point of Big-Bang towards outward direction, but this established idea does not support this.
8) The system, which is wrongly taken by us as the universe, is nothing but a super black-hole. Are we actually enclosed in a super black-hole?
9) On the basis of luminosity and detection limit, objects even extremely luminous stars and galaxies cannot be detected up to a distance of 15 BLY and this compels us to assume that the age of our universe is fifteen billion year (15 BY); but actual case may not be so.
10) The origin of CMB or 'Relic Radiation' is doubtful and hence it cannot be a proof of Big-Bang.

5. Conclusion

From the above discussion it becomes clear that the idea of Big-Bang and Expanding Universe is questionable and at the same time doubtful -- it is not a reality rather it is an illusion. Unless and until strong and concrete evidences are established in favour of it, the idea cannot be accepted. It is better to wait for a right model of the universe, which, we hope, will come out in the near future.

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