

Formation of the Universe from the Perspective of Modern Science Combined with Hinduism

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Abstract: This paper is a merging of concepts modern scientists' form of the creation of the universe with that written by Hindu sages. The paper starts with the Big Bang in general and then in more detail. The next topic is the formation of the universe and the four main forces keeping the universe in its form which are strong nuclear, weak nuclear, electromagnetic and gravity. The paper then dwells on the universe having only electromagnetic waves for the next 100,00 years and 200 million years for the galaxies to form. Eventually there will be a Big Crunch. The paper ends with the formation of the solar system

Keywords: Big Bang, Big Crunch, electromagnetic waves, Hinduism

INTRODUCTION

The Big Bang

The Force, the Great God of all, named Brahman by Hindus, was the beginning. He split himself into three, Brahma, Vishnu, and Shiva who are the guardian deities of creation, perseverance, and destruction respectively. It all began with the Big Bang which made the sound A.....U.....M..... (the sound God); the scriptures state that Aum not just represents Brahman, it is Brahman. The Big Bang is an ongoing process, and its Aum sound can still be detected with modern scientific instruments. Some may question the fact that sound cannot travel in vacuum, but sound in Indian culture means vibrations, as in electromagnetic vibrations. The purpose of creation was so that God could love the universe, and the beings of the universe were given free will to love Him/Her back (there is no gender) (Prashobh, K. 2014).

Because humans are naturally outward looking, they must be conscious of the humongous size and age of the universe so that they will realize that no matter how much physical wealth they (or their countries) accumulate, it is totally insignificant compared to the universe. With that realization, they will be forced to focus within and thereby eventually realize that they are themselves God.

Initially Brahman thought, "Nobody was there before me and nobody knows who I am," so he thought of creation. He first became Iswara (or Shiva). Iswara created Maya Shakti (the female aspect of God) who created the material world; initially as Hiranyagarbha which was an egg-shaped gaseous cloud. Within this gaseous cloud, reactions began to happen, and manifested forms came about named Virata. Eventually these

manifested forms were given intelligence and individualism and named Jiva.

Brahma is the law giver as well as the law administrator. Out of their fear, we can see that the sun sets on time, wind blows, fire burns, and Indra and all his Gods do their jobs properly. Indra is the king of the Gods and is often equated to the Greek, Zeus, the Roman, Jupiter, and the Norse, Thor. All the planets do not bump into each other because of Indra and the other Gods. Rewards and punishments are used in serious militaries just as is used by God to ensure all runs well in the universe and large destructions to creations do not happen (Baba, S. S. 2012).

This apparently solid world is actually empty. God is like the string in a garland of pearls; the "string" that holds the universe together. The universe we live in is just space with forces making things look real. If things are broken down, the current smallest particle is the God Particle or the Higgs Boson which is the smallest possible ripple in an electromagnetic field. Space is filled with forces currently classified as the Unified Field Theory consisting of electromagnetic force, gravitational force, weak nuclear force, and strong nuclear force. If the nucleus is the size of a football, the closest electron will be 15 km away. The fact that electrons do not crash into each other or into the nucleus is due to the forces that hold them in place. Since the atoms are mostly empty, if the earth is squeezed it will fit in a 1" X 1" X 1" cube as scientists describe. But since even within an electron or proton there is vast empty space, the universe is not physical at all. It is just an interaction of forces. It is these forces that prevent a human hand from going into a solid material

(Sen, A. & Zwiebach, B. 2024; Valamontes, A. 2024; Westphal, A. 2022).

The Sages of old determined all these truths by being God themselves, just as the sun is visible via the ray of the sun itself. If one focuses on something, over time the answer will be apparent. The Sages of old focussed on the primal questions of why and how this universe happened and became Gods themselves to understand the whole sequence of events leading to us being here. Similarly, most scientists of today made discoveries by focussing on something for long periods of time (Bruce, R. V. 2022).

Here on earth, nuclear arms, pollution, the hole in the ozone layer, and the host of problems we have today, are things we need to work on, but they will not destroy the earth (Sinha, V.,2021). It is just not scheduled to happen; God has canceled the sure destruction in 2012 (Hundley, R.,2010). The 2012 destruction was predicted by numerous cultures and seers. The earth has entered a new yuga (Sathya yuga) starting much earlier than the scheduled time by direct divine intervention on 10/23/2015, 12:15, hence we are now living in the Sathya yuga. Prior to that date we were in the Kali yuga where selfishness and hate were the norm and after that date, beings will start becoming increasingly spiritually powerful. The transition from Kali to Sathya yuga has not been felt by humanity at large yet because it is analogous to switching off power to a fan, the blades will keep turning for a while (Prashobh, K. 2014).

Right after creation, Brahma, Vishnu, and Shiva had a discussion. They decided to hide divinity, since attaining it is the goal of all humans. Humans can attain anything else, but they need to make it hard for them to attain the ultimate goal of life here on earth which is the realization that we have always been God ourselves. Brahma suggested that it should be hidden on the moon, where they will never reach. But Vishnu said they will reach not only the moon or Mars; they will even reach the sun so that is not a good plan. Shiva then suggested hiding it at the bottom of the ocean. But Vishnu said, like fishes they will reach the bottom of the ocean, also making it too easy for them. Finally, Vishnu came up with an idea that since the human mind was designed to be outward looking, divinity should be hidden within them; this was agreeable to all three and was implemented (Prashobh, K. 2014).

The detailed sequence of the initial events of the universe was as follows (Prashobh, K. 2014).

- Initially there was Brahman who is the ultimate consciousness, the Purusha who is neither manifested nor unmanifested.
- Next came Iswara who is the thinking Brahman.
- Iswara created Prakriti (nature) or Maya Shakti (the creative energy which can create anything). This is the Avyakta-Purusha who is the unmanifested Brahman.
- Next came the Hiranyagarba or the material Brahman or the Cosmic Golden Egg consisting of energy and matter.
- Next came the Virat Purusha or the Cosmic Being. The Cosmic Being pervades the entire universe in which the divine natural forces have emerged as faculties. The Hiranyagarbha or Virat Purusha is known as the manifested Brahman.
- Next came the Indriyarthas or the sense faculties which brought about hunger and thirst.
- Next came the Indriya or the senses. The senses were housed in a physical being through which the divine forces can be expressed. This is also known as the Jiva or the individual manifestation or the body.

A human must acknowledge God as a person with respect so as to eventually realize he/she is part of that God just as a boy and girl fell in love and eventually merged to become one. God does not like atheists who do not acknowledge the existence of God (Coakley, J. W. 2006).

In the opinion of this author, the existence of the two sexes is to practice their relationship with God. In worldly language, God does not like the girl who does not acknowledge the existence of a boy or vice versa. A girl who prefers to just be with another girl indefinitely (lesbian, gay) is a person not following the process God created to eventually have a relationship with God. It can be physically or visually observed that those who go in the lesbian or gay tract do not become physically proper girls or boys. Most humans have a vision of a perfect girl or boy. This is talking purely physically, just as cattle farmers will judge cattle and bid higher or lower prices for them. For this author, being an electrical engineer, the analogy would be the authority specifying the current carrying capacity of various cross-sectional areas of wires which is equivalent to the perception built up in our minds of how a female or male should behave. But various factories

around the world cannot achieve those exact current carrying capacities. Therefore, each factory will publish their own slightly different current carrying capacities. Analogically all girls or boys have a built-in perception of how the ultimate girl or boy should behave but cannot achieve those ultimate characteristics. A girl or boy must follow typical characteristics of females and males as much as possible just as the earth diligently rotates around the sun every 356.25 days and rotates on its axis every 24 hours to enable life on earth to flourish. All living and supposedly non-living things (by Western standard) must follow their duties; the Hindu view is that all things are alive in some form (Brenner, A. 2023; Francis, L. J. & Penny. 2013; Karunakaran, P. 2018).

Formation of the Universe

At first, the universe was an infinitely dense and incomprehensibly small fireball. Then the Big Bang occurred to form the fabric of the universe in a process called 'inflation', which lasted for only one millionth of a second. The universe quickly formed the basic forces in the sequence below 1 - 4 where 1 and 2 are within the nucleus where 1 overcomes the repulsive forces of protons within the nucleus and 2 allows some protons to undergo a decay into a neutron, releasing a positron and an electron neutrino. And 3 is the force keeping the electrons in its place and 4 keeps the planets and stars in their place. Going from 1 to 4 the force is strongest in 1 and weakest in 4. But the distance over which the force can exert increases and is greatest at 4.

- 1) Strong nuclear force
- 2) Weak nuclear force
- 3) Electromagnetic forces
- 4) Gravity

Today's scientists know that there is a conscious force that is keeping the universe together and not allowing it to collapse and call it the "Hard Problems of Consciousness." The physical body and its surroundings form the conscious aspect of a person, and the conscience is the ability to differentiate right from wrong. The conscious and conscience together form the consciousness. The Sages of old reached the same conclusion as modern scientists, but through intuition rather than experimentation (Mohapatra, R. N. & Mohapatra, R. N. 2021).

Later the universe started to expand but at a much slower pace. This can be imagined as an explosion happening in free space, there is nothing stopping

the movement of particles or electromagnetic waves except the small interaction between these particles. When the energy of the first explosion was spent, the rest of the movement of the particles was not dependent on the initial force of the explosion which gave acceleration, thenceforth the particles moved increasingly without acceleration at a constant speed (Bhattacharjee, D. 2022).

After the first second, the universe was made up of electromagnetic waves, and particles like quarks, electrons, photons, and neutrinos. After three seconds, nucleosynthesis began to occur forming protons and neutrons which combined to form the nuclei of simple elements, predominantly hydrogen and helium. Even after 100,000 years, there was no matter, as we know it today. Light, X-rays and radio waves dominated the universe.

Atoms were then formed by nuclei linking with free electrons. After 200 million years, galaxies and stars started to form out of pockets of gas, which condensed due to the force of gravity.

Scientists today, like Stephen Hawking have calculated that the universe is continually expanding and contracting, which is the Big Bang, Big Crunch, Big Bang, Big Crunch....., which happens over billions of years.

According to calculations, contraction will happen when the critical density is reached. This figure is 1.1×10^{-26} kg per cubic meter or six hydrogen atoms per cubic meter. Thus, the density of the universe decreases to a certain critical value after which it will contract. The ratio of actual density / critical density is equal to Omega. The universe expands when Omega is less than one. When Omega is greater than one, the universe collapses, in a Big Crunch (Ladhani, A. 2022).

Hydrogen and helium are the main composition of the luminous component (the stars), which is continuously decreasing in density value. But there is also a dark component, which can be detected only by its gravitational influence on luminous matter.

Ripples caused by the shock waves of the Big Bang have been observed and measured. Observations using today's instruments show that the universe is flat. The reason for this can be understood from the following analogy: if three tiny ants are placed on a balloon, and the balloon is suddenly (before they can move) blown up, each ant will observe the other ant moving away from

it. As the balloon gets to be very huge, each of the three ants will think they are on a flat surface and cannot see the other ants. Current observatory instruments cannot detect the curvature of the spherical universe.

Later stars made of atoms formed the universe as modern scientists and instruments can observe. But the initial light traveled even further. This light formed the universe of light, which is very much bigger than this universe of matter. Even beyond this universe of light is the universe of truth, because the first particles out of the Big Bang are truths. The universe of truth is very much larger than the universe of light. Some modern scientists also believe that the universe is more of a thought than a physical existence.

Formation of the Solar System

Among the zillions of particles that are moving away from the epicenter of the explosion, is the sun. The sun was a huge mass of heated gas, larger than the orbit of the current solar system. As the sun contracted, nine concentrations of swirling heated gas and dust became the nine planets of today. It is the gravitational force of the sun that keeps the planets in their orbits (Chambers, J., 2023).

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