

Vedic Cosmology in the Context of Modern Cosmic Science

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Abstract

Cosmology is the science of the origin, structure, functioning, and development of the Universe. According to the Hindu Cosmology, the Universe is cyclically created and destroyed. Vedic texts have a major contribution to understanding the Hindu Cosmology. We get a huge number of valuable information from those Vedas, Upanishads, and Puranas. Not only Hindu Cosmology but also Modern Cosmic Science is imbibed in Vedic texts, which were composed thousands of years ago.

As per Vedas and Upanishads, all the objects of this Universe existed in the subtle form inside the Brahman, and when Brahman desired it was manifested in the present form. According to the Hindu cosmology, there is no definitive beginning of time, as it is considered infinite and cyclic. Similarly, the Universe has neither beginning nor end. The present Universe is just the start of present cycle proceeded by an infinite number of the universe. The Brahman is that form whom this universe precedes, in whom it subsists, and to whom at the end it returns. The 'Rigveda', 'Aiteriya' and 'Taiteriyā' Upanishads and many other Vedic texts present many theories about cosmology. Now modern science is also suggesting and reaching to the same concept what is already suggested and approved long ago by Vedic Sages in Vedas and Upanishadas.

Keywords: *Veda, Cosmic science, Parambrahman, Ekatattwa, Five elements of nature*

Introduction

Veda is not only a part of literature; in itself, it is a heritage of precious knowledge. It is rich in various disciplines of knowledge like Linguistics, Mathematics, Astrology, Ayurveda and medical science, architecture and natural science. The formulation of the Vedic theory was long before the development of modern science and one can derive scientific explanation from these Vedic concepts. These Vedic scientific theories have been long forgotten in Human society as they turned their focus away from Veda. The existence of five great elements of nature 'Earth', 'Water', 'Fire', 'Air', and 'Sky' have been accepted in Hindu philosophy and is profound in its

importance. All of these five elements are created from one powerful principle. This whole universe is a manifestation of that one and the only powerful principle that hold the whole cosmos- this theory has been clearly established by the Vedic science. Modern scientific theory tells that elements like electron and proton are basic elements of matter and unification of these elements creates the base of molecular theory. The concept of 'One and only' or “Ekatattwa” in Veda to some extent is similar with the modern theory of creation, then also Vedic theory is different from modern theory.

In modern molecular theory, protons of positive charge are stationary at the nucleus and the electrons of negative charge are orbiting around the nucleus of the atom. This definition finds some similarity with the theory of Vedic literature. In 'Shatapath Brahmana', in the context of the creation of this cosmos, it has been described that "Yaju" is derived from the two words 'Yat' and 'Ju'. 'Yat' denotes what is constantly moving and 'Ju' denotes constant. 'Shatapath Brahmana' tells that the union of these is at the core of creation of everything. It is a clear interpretation of the fact that what is electron and proton in scientific definition of molecular theory has been denoted as 'yaju' and 'Ju' in Vedic scientific literature. 'Yaju' and 'ju' has also been named as 'Vayu' and 'Aakash' in Veda.

Cosmology is a branch of astronomy that involves the origin and evolution of the universe, from the Big Bang to today and in the future. According to NASA, the definition of cosmology is "The scientific study of the large-scale properties of the universe as a whole". In another definition of cosmology, it has been defined as "the branch of philosophy dealing with the general structure of the universe, with its parts, elements, and laws, and especially with such of its characteristics as space, time, causality and freedom".

Objectives

The first objective is to reveal the Vedic scientific description of cosmos to the mankind. Second is to discuss the present-day relevance of the incomparable knowledge of the Veda which is not just an old literature. Third, Sanskrit literature is the great carrier of the heritage of India and every Indian should know about this. The article tries to build a bridge the old tradition and modern science.

Vedic Concept of Cosmos and Its Creation

In Rigveda, there are verses or ‘Suktas’ which is about different ‘Devata’ as well as there are ‘Suktas’ which is vivid in the description of the theory of creation and philosophy. How the whole cosmos has been created and who has created the Earth, Sky or Fire? How the position of the Sun changes in the sky? Why doesn’t the Sun come down on earth? In Vedas, it is found that the Vedic seers have asked as well as tried to answer these queries through different ‘Mantras’ in different ‘Suktas’. From these thoughts, Vedic cosmology is conceptualized.

The ancient Indian scriptures have different dialogues on the origin of the cosmos, especially in Vedas, Upanishads, and Puranas. In Vedas, the origin of the cosmos has been realized through different imaginary theorems. Vedas hymns 'Prajapati' as the creator of everything. To understand the mystery of the cosmos, 'Nasadiya Sukta' of Rigveda 10/129, in its beginning, has described the pre-state of creation. The 'sukta' says that in the beginning there was only darkness. The cosmos at that time witnessed neither 'Sat' nor 'Asat'. As it says, there was no space or sky. It also asks who or what was there to surround it and to protect it and whether there was the endless depth of water surrounding everything? There was neither death nor immortality; there was no rhythm of diurnal cycles. The self-expressive form existed on its willpower. This 'Sukta' doesn't say more than this. The Vedic Seers have made efforts to understand what existed at the beginning of everything. They have said that everything was under complete darkness. The whole universe was like an inseparable body of water. Then by the power of 'Tapasya', one 'Tatwa' was created. It is, after the creation of 'Tatwa', 'Kaam' which is the first distorted state of mind was created. The 'Rishis' (Vedic seers) searched the fundamental seed of the cosmos within the formless 'Tatwa'. The manifestation of creation was instantaneous just like the flash of lightning and so it was difficult to say which was formed first among 'Dulok' or Heaven, 'Antariksha Lok' or space and 'Prithvi the Lok' or the earth. The seers were also uncertain about the fact. Why and how the cosmos came into existence cannot be easily interpreted. That is why the Vedas explained the creation with the concept of 'Parameshwar' or the Supreme Being. It says that the cosmos was Parameshwar's creation. This vast expanse can only be created and sustained by 'Parameshwar'. The contemplation of the cosmos is only in 'Parameshwar'.

There is another 'Sukta' in Rigveda which is 'Srishti Sukta' (Rigveda 10/190). This brief 'sukta' is compiled of three different verses and it says that the expression of the cosmos emerged from bright 'Tapas' or spirit. From that 'Tapas', the truth emerged and the cycles of day and night found its rhythm and then the oceans of water was created.⁶ After the oceans, life was created. A brief description of 'Dulok', 'Prithvi Lok', and 'Antarikshalok' that is light can be found in another 'Sukta'. The 'Parambrahman' has been conceived as the main reason behind the creation. 'Parambrahman' has been addressed as 'Viraat Purusha' in 'Viswakarman Sukta'(Rigveda 10/81,82).

In 'Viswakarman Sukta', the 'Paramtattwa' at the beginning of the journey of the universe has been called as 'Viswakarman' and in 'PurushaSukta'(Rigveda 10/90) the same has been addressed as 'Viraat Purusha'. The first three 'mantras' describes the vastness of the 'Paramtattwa'. To describe its vast form, these say that if the 'Paramtattwa' holds the cosmos all around it the space of ten fingers is still left. One fourth of the 'Purusha' is the whole 'Brahmanda' or cosmos and the rest three fourth is inexhaustible and immortal from which 'Parambrahman' creates the mortal universe. Apart from this, in 'PurushaSukta', the chronological sequence of spiritual creation has been described by philosophical theory. First,

‘Viraat Purusha’ was created, from that ‘Jivatma’ was created, and from the Jivatma ‘Devas’, human and animals etc. were created. They live on earth after getting separated from ‘Paramatma’. The six to fourteen mantras of this ‘Sukta’ describes the creation of different ‘Tattwas’ by ‘Purusha’.

In ‘Hiranyagarva Sukta’(Rigveda10/121) ‘Paramabrahman’ is called as ‘Hiranyagarva’. The seer has seen the visible form of ‘Hiranyagarva’ who has expressed through smaller elements. Like ‘Purusha Sukta’, the chronological manifestation of the cosmos has been described. At first, ‘Hiranyagarva’ was created who hold the sky and earth and all. He is the donor of life and energy, death and immortality are His shadow. By His own grace, He is the only God of whole universe. For His strength, the heaven is strong, the earth is constant by His poise, and the Sun illuminated the space for His light. The seer asks in his mind by comprehending the greatness of the creator that whom shall he worship other than the ‘paramabrahman’. The ‘sukta’ ends with the praise of the ‘Paramabrahman’ and the fulfillment of desire from Him.

In ‘Bak Sukta’(Rigveda 10/125), it has been said that from ‘Sabdabrahman’ the cosmos was created. It is eternal and omnipresent. ‘Bak’ has been said as magnificent and powerful. ‘Paramabrahman Paramatma’ is the source of all form and energy. After the creation of elements of nature, ‘Bak’ manifests itself within all elements. The ‘Sukta’ ends with the praise of the ‘Bak’. ‘Om’ or ‘Nad’- is the symbolic form of ‘Sabda Brahma’ or ‘Param Brahma’. ‘Om’ is the sound generated from the movement of cosmic objects. In Yajurveda (40/17), it has been said “OM KHAM BRAHM”. In certain scriptures ‘Om’ has been called as a ‘Shabd Brahm’. ‘Om’ is also called ‘Pranab’, the first sound generated in the universe. At the time of the beginning of universe there was a Mahanad or a big explosion which is called the Big bang according to the modern science and ‘Om’ is the consequence of that Mahanad.

Upanishadic Concept of Cosmos and Its Creation

The main essence of Upanishadic Concept of Cosmos is the Brahman. He is the creator, preserver and destroyer of the universe or Cosmos. He is the supreme soul, the ultimate reality. The Upanishada describes the origin of all beings. Every creature starts, live through and returns to Brahman at death. Prajapati, the lord of all creatures created matter and life. The matter - earth, water, fire, air and space with the combinations of their unique functions creates the nature and the variety of world. According to Upanishada nothing is eternal. Anything which is created in the time will have an end. Same goes for the Universe also. It’s being created in some cosmic era, so it will also have an end to it. This is a cyclic order of natural events. All beings are taken back by Brahman at the end of cycle to be started all over again.

Aitareya Upanishada is a part of Aitareya Aranyaka of Rig Veda. This is one of the oldest Upanishadas and it is divided in three chapters. The first chapter of this Upanishad describes the

creation of Universe. Before the creation of the world, Atman was the only soul. Then as per the creator or the Brahman's thoughts, without any desire the creation happened. The individual Atmans were created in stages. First the body then organ and then the controller of various organs were created. After the creation the creator enters into the bodies to give them life. Taittiriya Upanishada describes the universe as the combination of five elements – space, air, fire, water and earth.

Modern Concept of Cosmic Science

The cosmos of universe itself is a big question. Cosmology is one of the fascinating branch of science where we can predict History and future of universe by possible observation of the present universe. In 1920 first Einstein proposed the cyclic model for the universe, in opposite to the model for expanding universe. This present idea of cyclic universe can be found in over ancient Greek and Indian cosmologies. According to the cyclic universe each universe is the outcome of previous one and responsible for the next successive universe. It means there is no starting point of creation of the universe. As we all know, everything goes in cyclic manner to balance the nature from birth of a child to its death again according to Veda the soul comes from Brahman and at the end it is dissolved in Brahman. Brahman is the ultimate truth.

As a whole, we can say the world has neither a beginning nor an end. Many models are built by our eminent scientists. As per the present understanding, two models seem to be prominent. One is Steinhardt-Turok model. It was proposed in 2001. This model suggests the repetition of the universe goes in a cyclic manner, by forming bang starts expansion and comes to a singularity and it repeats. Big Bang is a collision between two parallel branes in higher dimensional space in regular intervals. The branes are physical objects that propagate through spacetime in higher dimensional space. When two parallel branes come near, it starts to expand and when it goes far, it is ready to form a new universe. According to Vedic cosmology nothing existed before Brahman. He was the only existence. He is the creator and everything was being created from him and everything will end at him to start all over again. This is a cyclic process, and this is mentioned in Purana. There are four Yugas – Satya, Treta, Dvapara and Kali (Bhagavata Purana -3/11/18), they come in cyclic order. Kali Yuga is the last of this cycle. At the end of this, everything will be destroyed and merge into Brahman (Bhagavata Purana -3/11/27, 28). Then, the creation will start again.

Another model is Baum Frampton model (2007). It states that the dark energy is responsible for the expansion of the universe. As a result the galaxy, star and planets drift away from each other and finally atom and sub-atomic particle will start to disintegrate. Then time will stop as told by Frampton. Contraction starts and it generates a lots of little separate universe with sufficient energy with no matter, this energy create Big Bang and form the universe according to the time. The same concept we can find in Vedic cosmology. Every creation is part of

Parambrahman, who is the supreme power and the creator of the whole-world. He is the main source of all energy.

From the above discussion about the concept of Vedic cosmic science, it is concluded that before the creation of the universe only 'Parambrahman' existed. The whole cosmos was inside the 'Parambrahman' in a small subtle form that is the 'Sukhsma Rupa' of 'Parambrahman'. From that there was a sudden explosion which is called Big Bang according to the Modern Science, which comes from a singular point. From this singular point it started being expanding. At the beginning everything was extremely hot and was separated from each other. As the time passed slowly it started to cool. Then the sub-atomic particle came closer to each other, form atoms and molecules. From that our existing universe was created, which is 13.6 billion years old and that is what we see today in the form of star, planets, human, animal, plants etc.

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