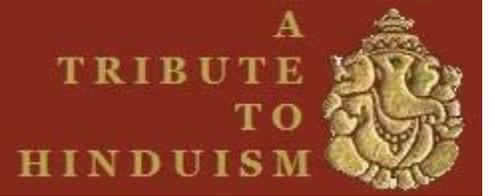


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The Vedas have guided Indian civilization for thousands of years. They are the pillars of Hinduism. "Veda is the source of all Dharma" declares Manusmirti (2.6.) There is no major religion on the planet, which has not been influenced by the Vedas. The creation stories of all major religions are based on Vedas. Though all other religions have forgotten their Vedic root or have been forgotten, there is one religion, Hinduism, that has kept the flame of the Vedic wisdom burning continuously. Vedas which means 'knowledge' contain a good deal of scientific knowledge that was lost over millennia, which needs to be recovered. The Vedic sages had discovered the subtle nature of reality, and had coded it in the form of the Vedas.

According to Raja Ram Mohan Roy, author of Vedic Physics, "The knowledge contained in the Vedas is very abstruse, and is well beyond the comprehension of ordinary human beings. Therefore Vedic sages coded the knowledge in a simple form in which it could be understood by everyone. The Rig Veda itself testifies that it has a hidden meaning in verse 4.3.16. Sage Bharata in his Natyasastra 2.23 refers to the sages who knew the hidden meaning of the Vedas. This coding of knowledge proved to be very successful in disseminating the knowledge to common folks. This would also explain why extraordinary steps were taken to preserve the Vedas, and the honor given to the Vedas by Hindus, even though its meaning is little understood today. "On the eve of the "Mahabharata War" our ancestors believed that their knowledge was in danger of being lost. They could have written it down, but writings could be destroyed. Therefore, it was memorized and passed on orally. Today, the Avesta, religious scripture of ancient Iranians, only a fraction of it is available. Alexander captured Iran in 326 B.C. and after a bloody war, destroyed each copy of the Avesta available."

As in modern physics, Hindu cosmology envisaged the universe as having a cyclical nature. The end of each kalpa brought about by Shiva's dance is also the beginning of the next. Rebirth follows destruction.

Author Dick Teresi says "Indian cosmologists, the first to estimate the age of the earth at more than 4 billion years. They came closest to modern ideas of atomism, quantum physics, and other current theories. India developed very early, enduring atomist theories of matter. Possibly Greek atomistic thought was influenced by India, via the Persian civilization."



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[Friedrich Maximilian Müller](#) (1823-1900) German philologist and Orientalist. He repeatedly drew attention to the uniqueness of the Vedas and awakened interest in his book [In History of Ancient Sanskrit Literature](#)' (p. 557) observed:

" In the Rig-Veda we shall have before us more real antiquity than in all the inscriptions of Egypt or Ninevah....the Veda is the oldest book in existence...."



[Louis Jacolliot](#) (1837-1890), who worked in French India as a government official and was at one time President of the Court in Chandranagar, translated numerous Vedic hymns, the [Manusmriti](#), and the Tamil work, [Kural](#) His masterpiece, [La Bible dans l'Inde](#), stirred a storm of controversy. He praised the Vedas in his Sons of God, and said,:

"The Hindu revelation, which proclaims the slow and gradual formation of worlds, is of all revelations the only one whose ideas are in complete harmony with modern science. "

Jaccoliot feels India has given to the West much more than she is credited with when he says:

" Besides the discoverers of geometry and algebra, the constructors of human speech, the parents of philosophy, the primal expounders of religion, the adepts in psychological and physical science, how even the greatest of our biological and theologians seem dwarfed! Name of us any modern discovery, and we venture to say that Indian history need not long be searched before the prototype will be found on record. Here we are with the transit of science half accomplished, and all our Vedic ideas in process of readjustment to the theories of force correlation, natural selection, atomic polarity and evolution. And here, to mock our conceit, our apprehension, and our despair, we may read what **Manu** said, perhaps 10,000 years before the birth of Christ:

' **The first germ of life was developed by water and heat.**' (**Manusmriti** - Book I, sloka 8,9)

' **Water ascends towards the sky in vapors; from the sun it descends in rain, from the rains are born the plants, and from the plants, animals.**' (**Manusmriti** - Book III, sloka 76)

(source: **Krishna and Christ - By Louis Jaccoliot** p. 15).



Sir John Woodroffe (1865-1936) the well known scholar, Advocate-General of Bengal and sometime Legal Member of the Government of India. He served with competence for eighteen years and in 1915 officiated as Chief Justice. He has said:

"Ages before Lamarck and Darwin it was held in India that man has passed through 84 lakhs (8,400,000) of birth as plants, animals, as an "inferior species of man" and then as the ancestor of the developed type existing to-day. **The theory was not, like modern doctrine of evolution, based wholly on observation and a scientific enquiry into fact but was a**

rather (as some other matters) an act of brilliant intuition in which observation may also have had some part."

(source: **Is India Civilized - Essays on Indian Culture - By Sir John Woodroffe** Ganesh & Co. Publishers Date of Publication: 1922 p. 22).

"To the philosophers of India, however, Relativity is no new discovery, just as the concept of light years is no matter for astonishment to people used to thinking of time in millions of kalpas, (A kalpa is about 4,320,000 years). The fact that the wise men of India have not been concerned with technological applications of this knowledge arises from the circumstance that technology is but one of innumerable ways of applying it."

It is, indeed, a remarkable circumstance that when Western civilization discovers Relativity it applies it to the manufacture of atom-bombs, whereas Oriental civilization applies it to the development of new states of consciousness."

(source: **Spiritual Practices of India - By Frederic Spiegelberg** Introduction by **Alan Watts** p. 8-9).



Count Maurice Maeterlinck (1862-1949) was a Belgian writer of poetry, a wide variety of essays. He won the 1911 Nobel Prize for literature. In his book **Mountain Paths**, says:

"he falls back upon the earliest and greatest of Revelations, those of the Sacred Books of India with a Cosmogony which no European conception has ever surpassed."

(source: **Mountain Paths - By Maurice Maeterlinck**).

Mr. Thorton, in his book **History of British India**, states: " **Hindus are**

 indisputably entitled to rank among the most ancient of existing nations, as well as among those most early and most rapidly civilized...ere yet the Pyramids looked down upon the Valley of the Nile... when Greece and Italy, these cradles of modern civilization, housed only the tenants of the wilderness, India was the seat of wealth and grandeur..."

(source: [Proof of Vedic Culture's Global Existence](#) - By Stepehn Knapp p. 7).



[Dr. Carl Sagan](#) in his book [Broca's Brain: Reflections on the Romance of Science](#), remarks:

"[Immanuel Velikovsky](#) (the author of [Earth in Upheaval](#)) in his book [Worlds in Collision](#), notes that the idea of four ancient ages terminated by catastrophe is common to Indian as well as to Western sacred writing.

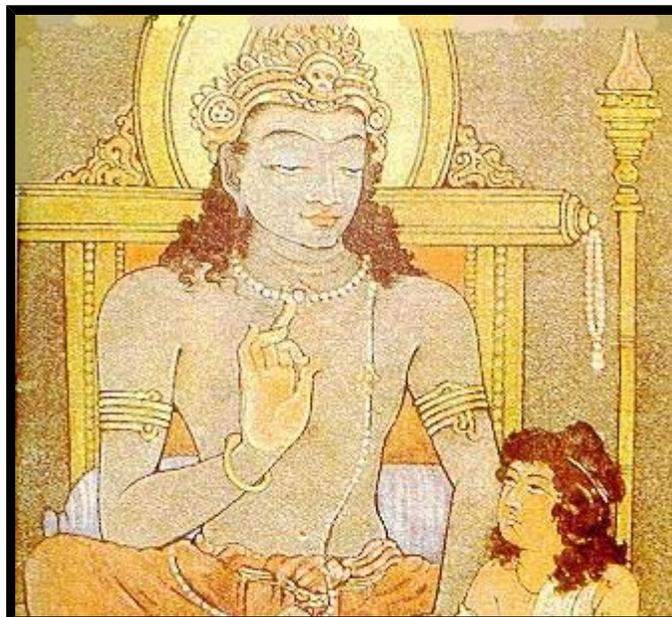
However, in the [Bhagavad Gita](#) and in the [Vedas](#), widely divergent numbers of such ages, including an infinity of them, are given; but, more interesting, the duration of the ages between major catastrophes is specified as billions of years. .. "

"The idea that scientists or theologians, with our present still puny understanding of this vast and awesome cosmos, can comprehend the origins of the universe is only a little less silly than the idea that Mesopotamian astronomers of 3,000 years ago – from whom the ancient Hebrews borrowed, during the Babylonian captivity, the cosmological accounts in the first chapter of Genesis – could have understood the origins of the universe. We simply do not know.

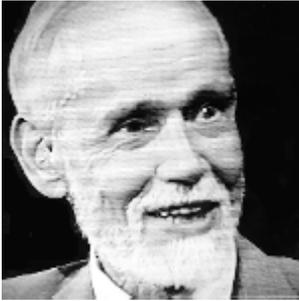
The Hindu holy book, the [Rig Veda](#) (X:129), has a much more realistic view of the matter:

"Who knows for certain? Who shall here declare it?
Whence was it born, whence came creation?
The gods are later than this world's formation;
Who then can know the origins of the world?
None knows whence creation arose;
And whether he has or has not made it;
He who surveys it from the lofty skies,
Only he knows- or perhaps he knows not."

(source: [Broca's Brain: Reflections on the Romance of Science](#) - By Carl Sagan p. 106 - 137).



The earliest and greatest of Revelations, those of the Sacred Books of India with a Cosmogony which no European conception has ever surpassed.



Huston Smith (?) born in China to Methodist missionaries, a philosopher, most eloquent writer, world-famous religion scholar who practices Hatha Yoga. He has said in Hinduism:

“The invisible excludes nothing, the invisible that excludes nothing is the infinite – the soul of India is the infinite.”

“Philosophers tell us that the Indians were the first ones to conceive of a true infinite from which nothing is excluded. **The West shied away from this notion.** The West likes form, boundaries that distinguish and demarcate. The trouble is that boundaries also imprison – they restrict and confine.”

“India saw this clearly and turned her face to that which has no boundary or whatever.” “India anchored her soul in the infinite seeing the things of the world as masks of the infinite assumes – there can be no end to these masks, of course. If they express a true infinity.” And It is here that India’s mind boggling variety links up to her infinite soul.”

“India includes so much because her soul being infinite excludes nothing.” It goes without saying that the universe that India saw emerging from the infinite was **stupendous.**”

While the West was still thinking, perhaps, of 6,000 years old universe – India was already envisioning ages and eons and galaxies as numerous as the sands of the Ganges. The Universe so vast that modern astronomy slips into its folds without a ripple.”

(source: [The Mystic's Journey - India and the Infinite: The Soul of a People – By Huston Smith](#)).



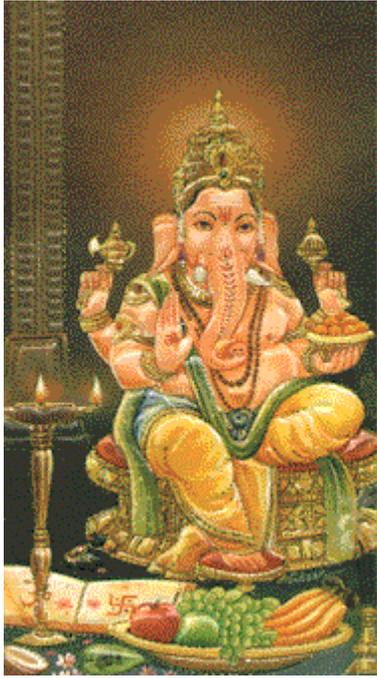
Dick Teresi (?) author and coauthor of several books about science and technology, including [The God Particle](#). He is cofounder of [Omni](#) magazine and has written for Discover, The New York Times Magazine, and The Atlantic Monthly.

“The big bang is the biggest-budget universe ever, with mind-boggling numbers to dazzle us – a technique pioneered by fifth-century A.D. **Indian cosmologists, the first to estimate the age of the earth at more than 4 billion years.**”

The cycle of creation and destruction continues forever, manifested in the **Hindu deity Shiva, Lord of the Dance**, who holds the drum that sounds the universe’s creation in his right hand and the flame that, billions of years later, will destroy the universe in his left. Meanwhile Brahma is but one of untold numbers of other gods dreaming their own universes.

The 8.64 billion years that mark a full day-and-night cycle in Brahma’s life is about half the modern estimate for the age of the universe. The ancient Hindus believed that each Brahma day and each Brahma night lasted a kalpa, 4.32 billion years, with 72,000 kalpas equaling a Brahma century, 311,040 billion years in all. That the Hindus could conceive of the universe in terms of billions.

The similarities between Indian and modern cosmology do not seem accidental. Perhaps ideas of creation from nothing, or alternating cycles of creation and destruction are hardwired in the human psyche. Certainly **Shiva’s percussive drumbeat** suggests the sudden energetic impulse that could have propelled the big bang. And if, as some theorists have proposed, the big bang is merely the prelude to the big crunch and the universe is caught in an infinite cycle of expansion and contraction, then ancient Indian cosmology is clearly cutting edge compared to the one-directional vision of the big bang. **The infinite number of Hindu universes is currently called the many world hypothesis**, which is no less undocumentable nor unthinkable.



The Indians came closest to modern ideas of atomism, quantum physics, and other current theories. India developed very early, enduring atomist theories of matter. Possibly Greek atomistic thought was influenced by India, via the Persian civilization. **The Rig-Veda, is the first Indian literature to set down ideas resembling universal natural laws. Cosmic law is connected with cosmic light, with gods, and, later, specifically with Brahman.** It was the Vedic Aryans... who gave the world some of the earliest philosophical texts on the makeup of matter and the theoretical underpinnings for the chemical makeup of minerals. Sanskrit Vedas from thousands of years before Christ implied that matter could not be created, and that the universe had created itself. Reflecting this, in his **Vaisesika** philosophy, **Kanada** (600 B. C) claimed that elements could not be destroyed. Kanada's life is somewhat a mysterious, but his name is said to mean "one who eats particle or grain" likely referring to his theory that basic particles mix together as the building blocks for all matter. Two, three, four, or more of these elements would combine, just as we conceive of atoms doing. The Greeks would not stumble on this concept for another century."

"In India, we see the beginning of theoretical speculation of the size and nature of the earth. Some one thousand years before Aristotle, the **Vedic Aryans** asserted that the earth was round and circled the sun.

A translation of the **Rig Veda** goes: " In the prescribed daily prayers to the Sun we find..the Sun is at the center of the solar system. ..The student ask, "What is the nature of the entity that holds the Earth? The teacher answers, "**Rishi Vatsa holds the view that the Earth is held in space by the Sun.**"

"Two thousand years before Pythagoras, **philosophers** in northern India had understood that gravitation held the solar system together, and that therefore the sun, the most massive object, had to be at its center." "Twenty-four centuries before Isaac Newton, the Hindu **Rig-Veda** asserted that gravitation held the universe together. The Sanskrit speaking Aryans subscribed to the idea of a spherical earth in an era when the Greeks believed in a flat one. The Indians of the fifth century A.D. calculated the age of the earth as 4.3 billion years; scientists in 19th century England were convinced it was 100 million years."

(source: **Lost Discoveries: The Ancient Roots of Modern Science - By Dick Teresi** p. 159 and 174 -212). For more refer to chapter **Hindu Cosmology**).

India had a thriving civilization capable of sophisticated astronomy long before Greece, Egypt, or any other world culture. For more than a century scholars have debated the antiquity of the Vedas and their related literature, the Brahmanas and Puranas. Incontrovertible evidence that such "advanced" astronomical concepts as precession, heliocentrism, and the eclipse cycle are encoded in these ancient texts, passages of which make perfect sense only if these astronomical keys are known. Based on internal evidence in the Mahabharata and Ramayana, it is likely to establish dates--and even places--for the events described in these famous epics and thus place India, or the roots of civilization.



A Rg Vedic hymn to the Asvins (Mercury and Venus), quoted in the **Mahabharata**, also refers to the twelve zodiacal signs. **Zodiacal signs are mentioned in the Rig Veda, thus, they precede Greco-Babylonian astronomy.** The earliest reference to the zodiacal signs is, therefore, in the **Rig Veda**, not in Babylonian literature. This completely upsets the rather smug history of astronomy as conceived by the western scholars of the past couple of centuries. It is obvious that the Rig Vedic seers were not mere observers in the sense the Babylonian were. They had theorized about their observations, beating the Greeks by over a thousand years in this process.

By deciphering the astronomical events and alignments contained in symbolic form in these ancient texts, question many if not all of the assumptions governing Indo-European prehistory. The astronomical significance of many Hindu deities, the system of lunar asterisms used to mark time, the identity of the Asvins, and the sophisticated calendar of the ancients that harmonized solar and lunar cycles.

With the rise of modern science it should have been feasible to crack the Vedic code at least three

decades earlier, but here lies the greatest tragedy of India. Under the Marxist grip Indian intellectuals have been made ashamed of their heritage, and most educated Hindus are ready to parade with the banner " We are ashamed of being Hindus" at the drop of a hat. Most educated Indians - including scientists have no clue as to what is in the Vedas. The Vedas are written in Sanskrit and most educated Indians can not understand it as there is a conspiracy to finish Sanskrit and everything else that Hindus should be proud of. There are very few Vedic scholars left in India.

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Advanced Scientific Concepts in Hindu Literature

The revolutionary contents of the Vedas

For a quick glimpse at what unsung surprises may lie in the Vedas, let us consider these renditions from the Yajur-veda and Atharva-veda, for instance.

" O disciple, a student in the science of government, **sail in oceans in steamers, fly in the air in airplanes**, know God the creator through the Vedas, control thy breath through yoga, through astronomy know the functions of day and night, know all the Vedas, Rig, Yajur, Sama and Atharva, by means of their constituent parts."

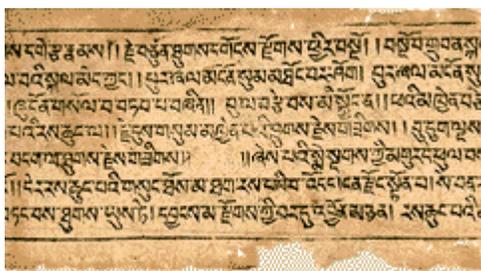
" **Through astronomy, geography, and geology, go thou to all the different countries of the world under the sun. Mayest thou attain through good preaching to statesmanship and artisanship, through medical science obtain knowledge of all medicinal plants, through hydrostatics learn the different uses of water, through electricity understand the working of ever lustrous lightening. Carry out my instructions willingly.**" ([Yajur-veda](#) 6.21).

" O royal skilled engineer, construct sea-boats, propelled on water by our experts, and airplanes, moving and flying upward, after the clouds that reside in the mid-region, that fly as the boats move on the sea, that fly high over and below the watery clouds. Be thou, thereby, prosperous in this world created by the Omnipresent God, and flier in both air and lightning." ([Yajur-veda](#) 10.19).

" **The atomic energy fissions the ninety-nine elements, covering its path by the bombardments of neutrons without let or hindrance. Desirous of stalking the head, ie. The chief part of the swift power, hidden in the mass of molecular adjustments of the elements, this atomic energy approaches it in the very act of fissioning it by the above-noted bombardment. Herein, verily the scientists know the similar hidden striking force of the rays of the sun working in the orbit of the moon.**" ([Atharva-veda](#) 20.41.1-3).

(source: [Searching for Vedic India - By Devamitra Swami](#) p. 155 - 157). For more refer to chapter on [Hindu Culture](#) and [Vimanas](#)).

The Rig Veda is the oldest Indian text and one of the oldest surviving in the world. This collection of hymns of sages like Vasistha, Visvamitra, Agastya, Dirghatmas, and others was compiled over a span of a few hundred years. The verses of the Rig Veda form a code that, properly interpreted, reveals an amazing amount of astronomical knowledge, which is unbelievable when we consider their antiquity - 1500 B. C. being a conservative estimate. In fact, the Rig Veda shorn of its allegory and metaphorical camouflage, is the oldest textbook of modern astronomy.



From this approach it follows that the Rig Veda seers were scientists in the modern sense. Pre-Rig Veda astronomers, had, in fact measured the sphericity of the Earth, established the heliocentric theory in its modern form, and explained the seasons astronomically. Advanced concepts like the causes of auroral displays were also understood. **The Rig Veda is according to astronomical grounds, more than five thousand years old.** The Rig Veda repeatedly refers to Earth and the heavens as "bowls" thus suggesting that the sphericity of Earth was recognized. This can be confirmed by

several hymns as well. Several hymns are attributed to the Aswins, which are the planets Mercury and Venus. A Rig Veda hymn to the Asvins, quoted in the Mahabharata, also refers to the twelve zodiacal signs. Undoubtedly, the twelve zodiacal signs were known. Thus, the earliest reference to the zodiacal signs is, therefore, in the Rig Veda, not in the Babylonian literature.

Sphericity of Earth:

The existence of rather advanced concepts like the sphericity of Earth and the cause of seasons is quite clear in Vedic literature. For example, the [Aitareya Brahmana](#) (3.44) declares:



"The Sun does never set nor rise. When people think the Sun is setting (it is not so). For after having arrived at the end of the day it makes itself produce two opposite effects, making night to what is below and day to what is on the other side...Having reached the end of the night, it makes itself produce two opposite effects, making day to what is below and night to what is on the other side. In fact, the Sun never sets...."

Earth as Flat at Poles:

"Twenty-four centuries before Isaac Newton, the Hindu Rig-Veda asserted that gravitation held the universe together. The Sanskrit speaking Aryans subscribed to the idea of a spherical earth in an era when the Greeks believed in a flat one. The Indians of the fifth century A.D. calculated the age of the earth as 4.3 billion years; scientists in 19th century England were convinced it was 100 million years."

(source: [Lost Discoveries: The Ancient Roots of Modern Science - By Dick Teresi](#) p. 7 - 8).

It is quite remarkable that the [Markandeya Purana](#) (54.12) speaks of Earth as being flattened at the poles and bulging at the equator, that is, not perfectly spherical.



The [Vishnu Purana](#), in an obvious elaboration of the above quotation from the Aitareya Brahmana, also speaks of antipodes of Earth and indeed implies the existence of Earth's rotation. In addition, even more elementary concepts like the phases of Moon and the cause of twilight were well understood, as was the fact that the blue sky is nothing but scattered sunlight. (cf. [Markandeya Purana](#), 78.8, or 103.9)

Sun the center of the Solar System:

Dick Teresi has observed that:

"The Vedas recognized the sun as the source of light and warmth, the source of life, and center of creation, and the center of the spheres. This perception may have planted a seed, leading Indian thinkers to entertain the idea of heliocentricity long before some Greeks thought of it. An **ancient Sanskrit** couplet also contemplates the idea of multiple suns:

"Sarva Dishanaam, Suryaham Suryaha, Surya."

Roughly translated this means, "There are suns in all directions, the night sky being full of them," suggesting that early sky watchers may have realized that the visible stars are similar in kind to the sun. A hymn of the [Rig Veda](#), the [Taittiriya Brahmana](#), extols, nakshatravidya (nakshatra means stars; vidya, knowledge)."

"Two thousand years before Pythagoras, philosophers in northern India had understood that gravitation held the solar system together, and that therefore the sun, the most massive object, had to be at its center. "

(source: [Lost Discoveries: The Ancient Roots of Modern Science - By Dick Teresi](#) p. 1 and 130).

One frequently encounters the concepts of the Sun being at the center of the solar system (cf [Markandeya Purana](#), 106. 41). All this pales, however, before the concept, startlingly similar to the twentieth-century model, of an oscillating universe, or more



accurately, a universe being cyclically created and destroyed, with just about the right time period of about 10,000 million years.

(cf. [Mahabharata Santi Parva, or Markandeya Purana](#), 81, 57-58).

The [Rig Veda](#) repeatedly asks, "**How is it that though the Sun is not bound and is directed downwards, it does not fall?**" A question asked by Isaac Newton more than three thousand years later, and no one else, because the Greeks had furnished the crystal spheres to which these objects were attached!

When we talk of gravity, Newton comes to our mind, but in the text [Surya Sidhantha](#) dated around 400 AD, [Bhaskaracharya](#) described it stated. "objects fall on the earth due to one force. The Earth, planets, constellations, moon and sun are held in orbit because of that one force".

"Seven horses draw the chariot of Surya". Rg Veda 5. 45. 9



These seven horses are the seven colors comprising light. These seven colors become visible in a rainbow or when light passes through a prism.

Vedic literature used large numbers and employed modern decimal enumeration, compared with the primitive Greek and Roman arithmetic. The first recorded evidence of "Hindu" numerals is at least as old as the Ashoka's edicts, circa 250 B. C.

Not just astronomy, but other physical concepts appear in quite a developed form in ancient Indian literature. These include atomism, superposition of various sound notes, the division of time into very small units of the order of a 100,000th of a second, and so on.

The [Laya Yoga Samhita](#) stated that just as the beams of sunlight entering a room reveal the presence of innumerable motes, so infinite space is filled with countless brahmandas (solar systems). The atomic structure of matter was discussed in the ancient Vaisheshika treatises. And in the Yoga Vashista it was stated, in a passage very similar to the foregoing: "There are vast worlds all placed way within the hollows of each atom, multifarious as the motes in a sunbeam."

(source: [Crises in Modern Thought: The Crises of Reason - By Swami Kriyananda \(J. Donald Walters\)](#) vol. 1 p - 95).

Modern physics confirmed that the sun's rays travel in a curved way, but not in a straight line. Our ancestors told that the sun's chariot was drawn by seven horses tied by snakes. As the movements of the snakes are crooked and curved, so also the sun's ray. The phenomenon is described in a metaphysical poetic line bhujagana mita sapta turaga. The chapter on light says that there are seven colors in the white ray of the sun. Artharveda says that there are seven types of sun's rays, sapta surayasya rasmayah.

The law of gravitation discovered by Brahmagupta anticipated Newton by declaring "**all things fall to the earth by law of nature; for it is the nature of the earth to attract and keep things.**"

(source: [Hinduism and Scientific Quest - By T R. R. Iyengar](#) p. 153-154 South Asia Books ASIN 8124600775).



[Marquis Pierre Simon de Laplace](#) (1749-1827) French mathematician, philosopher, and astronomer, a contemporary of Napoleon. [Laplace](#) is best known for his nebular hypothesis of the origin of the solar system. wrote:

"Nevertheless the ancient reputation of the Indians does not permit us to doubt that they have always cultivated astronomy, and the remarkable exactness of the mean motions which they assign to the Sun and the Moon necessarily required very ancient observation."

Yaqubi, Shiite historian, wrote in the ninth century: "**Hindu are more**

exact in astronomy and astrology than any other people.

Atoms:

In the realm of physics, remarkable contributions have been made by Indian scientists. **Kanada**, the founder of the **Vaisesika system of philosophy**, expounded that the entire matter in this world consists of atoms as many in kind as the various elements. Kanada's atom would then correspond to the modern atom. Some Jain thinkers went a step further. They thought that all atoms are the same kind and variety emerged because they entered into different combinations. Kanada taught that light and heat are variations of the same reality. **Vacaspati** interpreted light as composed of minute particles emitted by substances and striking the eyes. This is a clear anticipation of the corpuscular theory of light, which was proposed by Newton but rejected till the discovery of the proton.

(source: [Hinduism and Scientific Quest - By T R. R. Iyengar](#) p. 153-154 South Asia Books ASIN 8124600775).

Other discoveries of modern technology is that of atomic energy and its by-products. Most people agree that no civilization before us had knowledge of such things. **But time and time again we find in the Vedic literature descriptions of weapons that had a similar amount of energy as the atomic bombs we use today. And to what else would these next few verses from the Artha-veda be referring if they are not a description of the basic principles of atomic energy?**

"The Atomic energy fissions the ninety-nine elements, covering its path by the bombardments of neutrons without let or hindrance. Desirous of stalking the head, i.e. the chief part of the swift power, hidden in the mass of molecular adjustments of the elements, this atomic energy approaches it in the very act of fissioning it by the above-noted bombardment. Herein verily the scientist know the similar hidden striking force of the rays of the sun working in the orbit of the moon. " (**Artha-Veda**, 20.41.1-3)

J. Robert Oppenheimer, (1904-1967) Scientist, philosopher, bohemian, and radical. A theoretical physicist and the Supervising Scientist Manhattan Project, the developer of the atomic bomb said: He is most remembered for his work with Albert Einstein on the first atomic bomb.



Only seven years after the first successful atom bomb blast in New Mexico, Dr. Oppenheimer, of **The Manhattan Project**, who was familiar with ancient Sanskrit literature, was giving a lecture at Rochester University. During the question and answer period a student asked a question to which Oppenheimer gave a strangely qualified answer:

Student: Was the bomb exploded at Alamogordo during the Manhattan Project the first one to be detonated?

Dr. Oppenheimer: **"Well -- yes. In modern times, of course.**

"Berlitz goes on to quote a number of passages from the **Mahabharata** that describe the impact of a weapon that I suspect must be the **brahmastra**, although he neither names the weapon nor cites those sections of the text from which his quotations are drawn (he lists Protap Chandra Roy's translation of 1889 in his

bibliography):...a single projectile Charged with all the power of the Universe.

An incandescent column of smoke and flame As bright as ten thousand Suns Rose in all its splendor.....it was an unknown weapon, An iron thunderbolt, A gigantic messenger of death, Which reduced to ashes. The Entire race of the Vrishnis and the Andhakas....the corpses were so burned As to be unrecognizable. Their hair and nails fell out; Pottery broke without apparent cause, And the birds turned white. After a few hours all foodstuffs were infected.....To escape from this fire. The soldiers threw themselves in streams to wash themselves and their equipment...

One is reminded of the yet unknown final effect of a super-bomb when we read in the Ramayana of a projectile:

...So powerful that it could destroy
The earth in an instant -
A great soaring sound in smoke and flames...
And on it sits Death...

(source: [Doomsday 1999 A.D.](#) - By Charles Berlitz Doubleday; March 1981 ASIN 038515982X p. 118-122).

(Refer to [Visions of the End of the World](#) - By Dr. Subhash Kak - sulekha.com).

Oppenheimer described the thoughts that passed through his mind when he witnessed the first atomic test explosion.

"Of a thousand suns in the sky if suddenly should burst forth the light, it would be like unto the light of that Exalted One. ([Bhagvad Gita](#) XI,12)

" Death am I, cause of destruction of the worlds, matured and set out to gather in the worlds there" ([Bhagvad Gita](#) XI 32)

For example, the [Vishnu Purana](#) in an insightful passage declares,

"How can reality be predicated of what is subject to change, and reassumes no more of its original character? Earth is fabricated into a jar; the jar is divided into two halves; the halves are broken to pieces, the pieces become dust; the dust becomes atoms...."

Universal Time Scale:



The late scientist, [Carl Sagan](#), in his book, [Cosmos](#) asserts that the [Dance of Nataraja \(Tandava\)](#) signifies the cycle of evolution and destruction of the cosmic universe (Big Bang Theory).

"It is the clearest image of the activity of God which any art or religion can boast of." **Modern physics has shown that the rhythm of creation and destruction is not only manifest in the turn of the seasons and in the birth and death of all living creatures, but also the very essence of inorganic matter.**

For modern physicists, then, Shiva's dance is the dance of subatomic matter. Hundreds of years ago, Indian artist created visual images of dancing Shiva's in a beautiful series of bronzes. Today, physicist have used the most advanced technology to portray the pattern of the cosmic dance. Thus, the metaphor of the cosmic dance unifies, ancient religious art and modern physics. The Hindus, according to Monier-Williams, were Spinozists more than 2,000 years before the advent of Spinoza, and Darwinians many centuries before Darwin and Evolutionists many centuries before the doctrine of Evolution was accepted by scientists of the present age.

"The Hindu religion is the only one of the world's great faiths dedicated to the idea that the Cosmos itself undergoes an immense, indeed an infinite, number of deaths and rebirths. **It is the only religion in which the time scales correspond, to those of modern scientific cosmology.** Its cycles run from our ordinary day and night to a day and night of Brahma, 8.64 billion years long. Longer than the age of the Earth or the Sun and about half the time since the Big Bang. And there are much longer time scales still."



The Cosmic dance of Lord Shiva in bronze.

" The most elegant and sublime of these is a representation of the creation of the universe at the beginning of each cosmic cycle, a motif known as the cosmic dance of Lord Shiva. The god, called in this manifestation Nataraja, the Dance King.

" The most elegant and sublime of these is a representation of the creation of the universe at the beginning of each cosmic cycle, a motif known as the cosmic dance of Lord Shiva. The god, called in this manifestation **Nataraja, the Dance King**. In the upper right hand is a drum whose sound is the sound of creation. In the upper left hand is a tongue of flame, a reminder that the universe, now newly created, with billions of years from now will be utterly destroyed."

(source: [Cosmos - By Carl Sagan](#) Random House ISBN 0375508325 p. 213 -214).



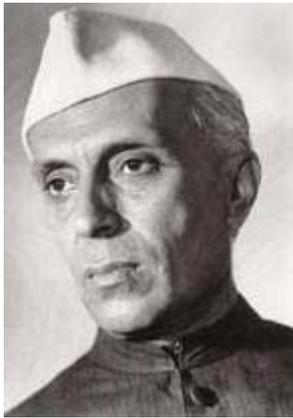
[Fritjof Capra](#) (1939 -) Austrian-born famous theoretical high-energy physicist and ecologist wrote:



"Modern physics has thus revealed that every subatomic particle not only performs an energy dance, but also **is** an energy dance; a pulsating process of creation and destruction. The **dance of Shiva is the dancing universe**, the ceaseless flow of energy going through an infinite variety of patterns that melt into one another". For the modern physicists, then Shiva's dance is the dance of subatomic matter. As in Hindu mythology, it is a continual dance of creation and destruction involving the whole cosmos; the basis of all existence and of all natural phenomenon. Hundreds of years ago, Indian artists created visual images of dancing Shivas in a beautiful series of bronzes. In our times, physicists have used the most advanced technology to portray the patterns of

the cosmic dance."

(source: [The Tao of Physics: An Exploration of the Parallels Between Modern Physics and Eastern Mysticism](#) - By Fritjof Capra p. 241-245).



[Jawaharlal Nehru](#) (1889-1964) first prime minister of free India, was more than a deeply moral human being. He yearned for spiritual light. He was particularly drawn to Swami Vivekananda and the Sri Ramakrishna Ashram. In his book - [A Discovery of India](#) he wrote:

"The statue of Nataraja (dance pose of Lord Shiva) is a well known example for the artistic, scientific and philosophical significance of Hinduism."

(source: [A Discovery of India](#) - By Jawaharlal Nehru p. 214).

Hinduism is the only religion that propounds the idea of life-cycles of the universe. It suggests that the universe undergoes an infinite number of deaths and rebirths.

Hinduism, according to [Carl Sagan](#), "... is the only religion in which the time scales correspond... to those of modern scientific cosmology. Its cycles run from our ordinary day and night to a day and night of the Brahma, 8.64 billion years long, longer than the age of the Earth or the Sun and about half the time since the Big Bang"

Long before [Aryabhata](#) (6th century) came up with this awesome achievement, apparently there was a mythological angle to this as well -- it becomes clear when one looks at the following translation of [Bhagavad Gita](#) (part VIII, lines 16 and 17),

"All the planets of the universe, from the most evolved to the most base, are places of suffering, where birth and death takes place. But for the soul that reaches my Kingdom, O son of Kunti, there is no more reincarnation. One day of Brahma is worth a thousand of the ages [yuga] known to humankind; as is each night."

Thus each *kalpa* is worth one day in the life of Brahma, the God of creation. In other words, the four ages of the *mahayuga* must be repeated a thousand times to make a "day of Brahma", a unit of time that is the equivalent of 4.32 billion human years, doubling which one gets 8.64 billion years for a Brahma day and night. This was later theorized (possibly independently) by Aryabhata in the 6th century. The cyclic nature of this analysis suggests a universe that is expanding to be followed by contraction... a cosmos without end. This, according to modern physicists is not an impossibility.

(source: [Astronomy and Mathematics in Ancient India](#)).



[Professor Arthur Holmes](#) (1895-1965) geologist, professor at the University of Durham. [He](#) writes regarding the age of the earth in his great book, [The Age of Earth](#) (1913) as follows:

"Long before it became a scientific aspiration to estimate the age of the earth, many elaborate systems of the world chronology had been devised by the sages of antiquity. **The most remarkable of these occult time-scales is that of the ancient Hindus, whose astonishing concept of the Earth's duration has been traced back to Manusmriti, a sacred book.**"



When the Hindu calculation of the present age of the earth and the expanding universe could make Professor Holmes so astonished, the precision with which the Hindu calculation regarding the age of the entire Universe was made would make any man spellbound.

(source: [Hinduism and Scientific Quest - By T. R. R. Iyengar](#) p. 20-21).



[Sir Jacob Epstein](#) has written about Shiva Nataraja:

"Shiva dances, creating the world and destroying it, his large rhythms conjure up vast aeons of time, and his movements have a relentless magical power of incantation. Our European allegories are banal and pointless by comparison with these profound works, devoid of the trappings of symbolism, concentrating on the essential, the essentially plastic."

(source: [Let There Be Sculpture - By Sir Jacob Epstein](#) 1942 p. 193).

Swami Kriyananda (J. Donald Walters) World renowned as a singer, composer, and lecturer, founder of the Ananda Village is perhaps the most successful intentional community in the world writes:

"Hindu cosmography, for example born in hoary antiquity, strikes one in certain ways as surprisingly modern. India has never limited its conception of time to a few crowded millennia. Thousands of years ago India's sages computed the earth's age at a little over two billion years, our present era being what is called the seventh Manvantara. This is a staggering claim. Consider how much scientific evidence has been needed in the West before men could even imagine so enormous a time scale."

(source: [Crises in Modern Thought: The Crises of Reason - By Swami Kriyananda \(J. Donald Walters\)](#) vol. 1 p - 94).



Princeton University's Paul Steinhardt and Cambridge University's **Neil Turok**, have recently developed [The Cyclical Model](#).

They have just fired their latest volley at that belief, saying there could be a timeless cycle of expansion and contraction. It's an idea as old as **Hinduism**, updated for the 21st century.

The theorists acknowledge that their cyclic concept draws upon religious and scientific ideas going back for millennia — echoing the "oscillating universe" model that was in vogue in the 1930s, as well as the Hindu belief that the universe has no beginning or end, but follows a cosmic cycle of creation and dissolution.

(source: [Questioning the Big Bang - msnbcnews.com](#)). (For more on yugas, refer to [One Cosmic Day of Creator Brahma](#)).

" Another point illustrating the advanced nature of the Vedic Aryan civilization is their conception of the universal time scale. The time factor is calculated as affecting various levels of the universe differently. For example, a day for the demigods is equal to six months for humans on planet earth. And a year is calculated as 360 human years, while 12,000 years of the gods is said to be but one blink of the eye of Maha Vishnu. For Lord Brahma, the highest of all the demigods, his day equals one thousand cycles of the combined four ages of Satya, Treta, Dvapara, and Kali-yugas. This amounts to *4.3 billion years*, at the end of which is his night when there is a partial annihilation of the universe, which includes the earth. After an equal number of years, Brahma's day begins again, and that which is destroyed is again created or revived.

For example in the [Bhagavad Gita](#), Lord Krishna tells Arjuna:

"All the worlds from Brahma's world (the universe) are periodic. Arjuna. They, those who know the day and night, know that the day of Brahma is a thousand yugas long and a night is a thousand yugas long. From the unmanifested, all the manifest things spring forth on the arrival of the day (of Brahma). On the onset of night all these sink into what is called the unmanifested. Partha, (Arjuna), this multitude of created things having existed over and over again and helplessly destroyed at the onset of night, spring forth on the onset of day."



All this sounds a little like the modern theory of an oscillating universe that begins with a big bang that all matter flying out until the outrushing matter comes to a halt and collapses back into a tiny speck, leading to another big bang, and so on. An entire cycle according to present-day cosmological ideas could take 10,000million to 20,000 million years. **It seems incredible that the ancient Hindus could hit upon this idea thousands of years ago.** Some biased scholars have tended to dismiss this agreement of the order of length of the cycle as a mere coincidence.

"Interestingly, modern science has estimated that the age of the earth is about 4 billion years. Scholars feel it is uncanny that the Vedic Aryans could have conceived of such a vast span of time over 3,500 years ago that would be similar to the same figure estimated by science today."

(source: [The Secret Teachings of the Vedas - By Stephen Knapp](#) p. 25). (Refer to [Visions of the End of the World - By Dr. Subhash Kak](#) - [sulekha.com](#)).

(Artwork courtesy of The Bhaktivedanta Book Trust International, Inc. [www.krishna.com](#)).

Speed of Light:

One such book is the celebrated commentary on the **Rig Veda** by **Sayana** (c. 1315-1387), a minister in the court of **King Bukka I of the Vijayanagar Empire in South India**. In his commentary on the 4th verse of the hymn 1.50 of the Rig Veda on the sun, he says:

Tatha cha smaryate yojananam sahasre dve dve shate dve cha yogane ekena nimishardhena kramamana namo 'stu ta iti

Thus it is remembered: O Sun, bow to you, you who travers 2,202 yojanas in half a minute.

The Puranas define 1 nimesha to be equal to 16/75 seconds. 1 yojana is about 9 miles. Substituting in Sayana's statement we get 186,000 per second.

Sayana's statement was printed in 1890 in the famous edition of Rig Veda edited by Max Muller, the German Sanskritist . He claimed to have used several three or four hundred year old manuscripts of Sayana's commentary, written much before the time of Romer. Further support for the genuineness of the figure in the ancient book comes from one of the earliest Puranas, the Vayu, conservatively dated to at least 1,500 years old. The **Puranas** speak of the creation and destruction of the universe in cycles of 8.64 billion years, that is quite close to currently accepted value regarding the time of the big bang.

(source: [The Wishing Tree - By Subhash Kak](#) p. 75 - 77).

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Zero to Infinity in Indian Mysticism

Ananta is Sanskrit for infinity.

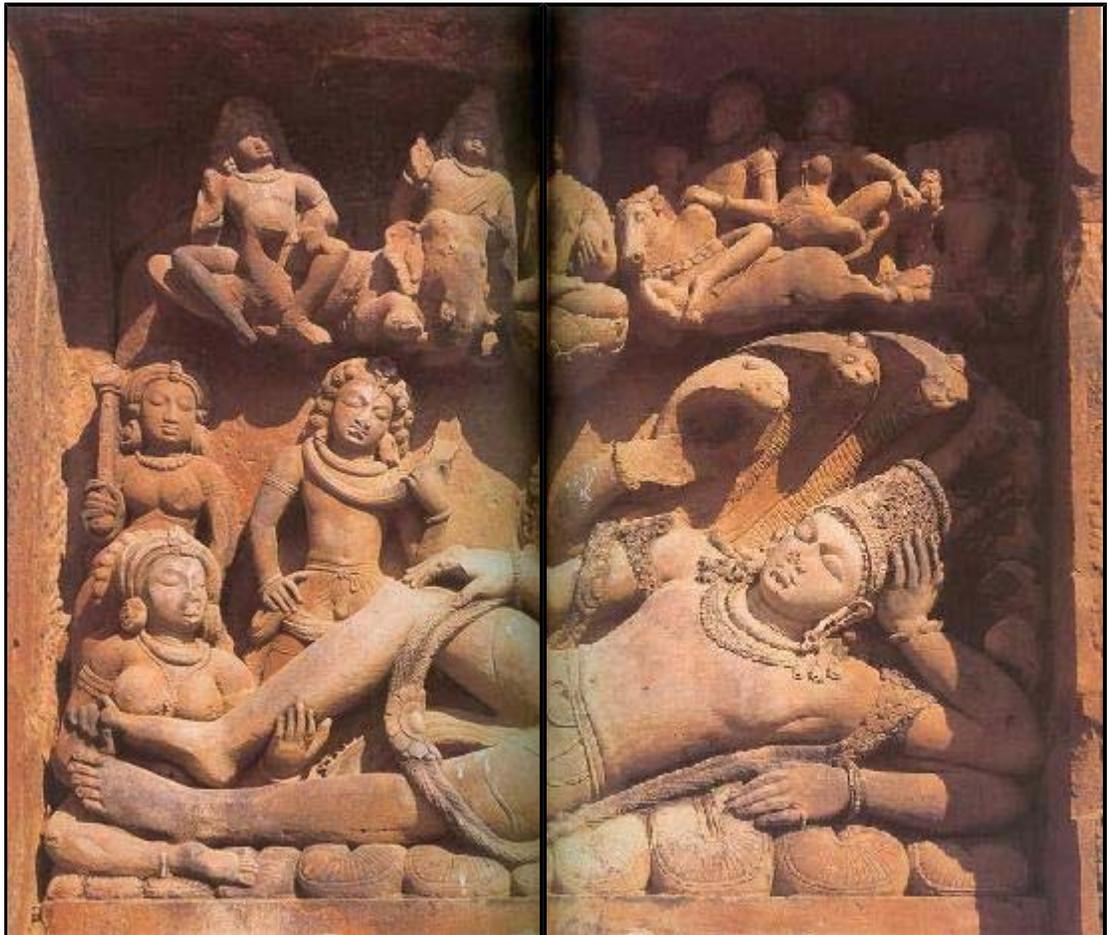
It is equated with the Supreme Brahman — infinitely powerful and so infinitely free. It is bigger than any quantity that can be imagined; it is bigger than any finite number. Infinity is one of the fundamental

axioms upon which contemporary mathematics is based.

Sanskrit grammar and interpretation in ancient India were closely linked to the handling of high value numbers. Studies relating to poetry and metrics initiated sastragnaas or scientists to both arithmetic and grammar. Grammarians were just as competent at calculations as professional mathematicians. Indian sastragnaas or scientists, philosophers, astronomers and cosmographers — in order to develop their arithmetical, metaphysical and cosmological speculations concerning ever higher numbers — became at once mathematicians, grammarians and poets. They gave their spoken counting system a truly mathematical structure which had the potential to lead directly to the discovery of the decimal place-value system.

Negative numbers had been rejected as solutions of problems in early times. They were eventually admitted in Hindu practical mathematics through problems involving money transactions, since the idea of receiving and owing money was a simple and obvious one — a negative number could be interpreted as a debt. Objection to negative numbers continued up to the early 19th century. Negative numbers are the mirror image of positive numbers. The invention of Cartesian geometry brought the X, Y co-ordinates and numbers came to be represented on a graph. Today, the series of negative natural numbers go up to infinity.

In Indian mysticism, the concept of infinity and zero are very closely linked. In the Isavasya Upanishad, there's a line: "Poornasya poornam aadaya poornameva visish-yate". To mathematically explain this, we have to assume that the first poornam represents infinity and the second, zero. In Sanskrit, poornam means both full and zero. Indian mathematicians knew perfectly well how to distinguish between these two notions which are mutually contradictory and which are the inverse of each other. They knew that division by zero gave them infinity.



The symbol is that of Ananta, the great Adishesha of infinity and eternity, which is always represented, coiled up in a horizontal figure of 8 just like the lemniscate.

Lord Vishnu is said to rest in the coils of Ananta, the great serpent of Infinity, while he waits for the universe to recreate itself.

The symbol for infinity is called the lemniscate. English mathematician John Wallis introduced this symbol for the first time in 1655. Hindu mythological iconography contains a similar symbol representing the same idea. **The symbol is that of Ananta, the great Adishesha of infinity and eternity, which is always represented, coiled up in a horizontal figure of 8 just like the lemniscate.**



Wallis was not aware that this symbol, in Indian mythology, referred to infinity and eternity. How did two diverse civilisations use the same symbol to denote infinity, without either of them realising its use by the other? In many cosmogenics the interlace symbolises the very nature of creation, energy and all existence. It evokes samsara or the eternal cycle of birth and rebirth. Eternal and infinite (ananta) are symbols of non-thought. Their value is entirely emotional. They act on our sensitivity. They invoke the peculiar sensation of the inability to imagine.

The concept of infinity has always remained an enigma. The Taittiriya Upanishad says: yatho vacho nivartante, apraapya manasa saha — where mind and speech return (being) unable to comprehend. In Indian cosmology, Ananta refers to the Adishesha or the great serpent on which Lord Vishnu reclines, taking His yoga nidra or anantasayanam. A Tamil azhwar paasuram (verse) says that Ananta acts as an umbrella when Vishnu walks, as a simhasana (throne) when He sits, as sandals when He stands, and as a bed when He reclines.

" I am the nucleus of every creature, Arjuna; for without me nothing can exist, neither animate nor inanimate."

- Bhagavad Gita 10.39

"Vishnu is the highest and most immediate of all the energies of Brahman, the embodied Brahman, formed of the whole of Brahman. On him this entire universe is woven and interwoven: from him is the world, and the world is in him; and he is the whole universe.

Vishnu, the Lord, consisting of what is perishable as well as what is imperishable, sustains everything, both spirit and matter, in the form of his ornaments and weapons. "

- Vishnu Purana 1.22

(source: [Zero to Infinity in Indian Mysticism](#) - by T R Rajagopalan - timesofindia.com).

For more refer to [The Infinitesimal Calculus: How and Why it Was Imported into Europe](#) - By C. K. Raju and [Computers, mathematics education, and the alternative epistemology of the calculus in the Yuktibhāṣā](#) - By C. K. Raju



The concept of time used by modern historical scientists, including archeologists, strikingly resembles the traditional Judeo-Christian concept. And it strikingly differs from that of the ancient Indians and Greeks. It can nevertheless be safely said that the cosmological concepts of several of the most prominent Greek thinkers involved a cyclic or episodic time similar to that found in the **Puranic literature of India.**

For example, we find in **Hesiod's** (lived 8th century BC - Greek poet), Works and Days a series of ages (gold, silver, bronze, heroic, and iron) similar to the Indian yugas. He traces the history of the world through five stages, from the Golden Age to his own age of iron, which according to Hesiod was characterized by suffering and lawlessness. In both systems the quality of human life gets progressively worse with each passing age.

In **On Nature Empedocles** speaks of cosmic time cycles. In Plato's dialogues there are descriptions of revolving time and recurring catastrophes that destroy or nearly destroy human civilization. **Aristotle** said in many places in his works that the arts and sciences had been discovered many times in the past. In the teachings of Plato, Pythagoras, and Empedocles on transmigration of souls, the cyclical pattern is extended to individual psychophysical existence. According to **Voltaire**, " The Greeks, before the time of Pythagoras, traveled into India for instruction." (**The Philosophy of History**, p. 527).

Ancient literature like the Puranas and Vedas do contain allegory. In some passages, it is transparent. For instance, in Mahabharata, refers to an old lady who spins a fabric with 360 black threads and 360 white threads while a white horse stands by. The old lady is of course time. The black and white threads are night and day, and the white horse is the Sun. Incidentally, the origin of this symbolism is in the Vedic hymns of the Rig Veda. (1.64).



Unless we recognize the fact that the Vedic hymns and the Puranic story of Vedic origin are deliberate camouflage and allegory - a code, in fact - we cannot interpret them or understand their true meaning. To do otherwise would lead us to the same kind of *ridiculous conclusion* reached by British astronomer, Patrick Moore, who wrote, "The Vedic priest in India believed that the world to be supported upon twelve massive pillars, during the hours of darkness, the Sun passed underneath, somehow managing to thread its way between the pillars without hitting them. According to the Hindus, Earth stood on the back of four elephants, the elephants in turn rested upon the back of a huge tortoise, while the tortoise itself was supported by a serpent floating in a limitless ocean. One cannot help feeling sorry for the serpent.!"

In fact, after the chaff is removed, the Puranas have a kernel and exhibits what may be termed a reverse symbolism. The twelve pillars that support the world are evidently the twelve months of the year, and they are specifically mentioned in the Vedic hymns. The four elephants on which Earth rests are the Dikarin, the sentinels of the four directions. These in turn rest, in turn, on a tortoise and a serpent. The tortoise is Vishnu's Kurma or tortoise avatar and symbolizes the fact that the Earth is supported in space in its annual orbit around the Sun. Finally, the coiled serpent represents Earth's rotation. Vishnu, or the Sun, himself rests upon a coiled snake - the Ananta, or Adisesha, which represents the rotation of the Sun on its own axis.

(Refer to **Visions of the End of the World - By Dr. Subhash Kak** - sulekha.com). (Artwork courtesy of The Bhaktivedanta Book Trust International, Inc. www.krishna.com).

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The Expanding Egg



Sanskrit is a beautiful language. Each word in Sanskrit tells its meaning itself. Each word has been thought carefully. Sanskrit is not a product of evolution from an earlier language. It has been designed to be what it is. When Vedic sages coded the knowledge of particle physics and cosmology, they were well aware of the possibility that one day the code may be lost due to the decline of their civilization. Therefore they chose the words carefully to provide vital clues about the code. (Note: To learn more about Sanskrit refer to the chapter on Sanskrit)

Take the example, the expanding universe. The word for universe in Sanskrit is "Brahmanda", which is made by joining of words "Brahma" and "Anda". Brahma is derived from root "Brha" meaning to expand and "Anda" means egg. Thus " Brahmanda" means expanding egg.

A 9th century Hindu scripture, The **Mahapurana by Jinasena** claims the something as modern as the following: (translation from [5])

"Some foolish men declare that a Creator made the world. The doctrine that the world was created is

ill-advised, and should be rejected. If God created the world, where was he before creation?... How could God have made the world without any raw material? If you say He made this first, and then the world, you are faced with an endless regression... Know that the world is uncreated, as time itself is, without beginning and end. And it is based on principles."

(source: [Astronomy and Mathematics in Ancient India](#)).

Concept of Trinity



In Hinduism, Brahma, Vishnu, and Mahesa form a trinity. Brahma is the creator of the universe, Vishnu the protector and Mahesa (Shiva) the destroyer. Brahma means expansion, and expansion of the universe takes place with the creation of matter and energy, thus Brahma is creator. Vishnu is the life-principle of the universe, who is not different from the universe, thus he is the protector. Mahesha or Mahadeva or Shiva is Vedic god Rudra representing radiation. As radiation is the result of annihilation of particles, he is related to destruction. But what is annihilated is born again as another set of particles, and this dance of creation

and annihilation continues. This is the cosmic dance of Shiva, and therefore he is called Nataraja, Lord of the dancers.

Hundred thousandths of a second:

So also, the [Brihadaranyaka Upanishad](#) (2.4.7ff.) dwells at length on the following theme,

"As when a drum is beaten, one cannot distinguish its various particular notes, but they are included in the general note of the drum or in the general sound produced by different kinds of strokes..." Similarly, the [Puranas](#) define the paramanu, which is on the order of a few hundred thousandths of a second.

Airplanes:



Among all the different sciences mentioned, it may be surprising to find a reference to airplanes. But actually, the mention of airplanes is found many times throughout Vedic literature, including the following verse from the [Yajur-Veda](#) describing the movement of such machines:

"O royal skilled engineer, construct sea-boats, propelled on water by our experts, and airplanes, moving and flying upward, after the clouds that reside in the mid-region, that fly as the boats move on the sea, that fly high over and below the watery clouds. Be thou, thereby, prosperous in this world created by the Omnipresent God, and flier in both air and lightening." [Yajur Veda](#), 10.19).

For more on airplanes refer to chapter on [Vimanas](#). (Artwork courtesy of The Bhaktivedanta Book Trust International, Inc. www.krishna.com).

Description of Tides:

The [Vishnu Purana](#) gives a quite an accurate description of tides:



"In all the oceans the water remains at all times the same in quantity and never increases or diminishes; but like the water in a cauldron, which in consequence of its combination with heat, expands, so the waters of the ocean swell with the increase of the Moon. The waters, although really neither more nor less, dilate or contract as the Moon increases or wanes in the light and dark fortnights...."

India has left a universal legacy determining for instance the dates of solstices, as noted by 18th century French astronomer **Jean-Sylvain Bailly**, (1736–93) 18th century French astronomer and politician. His works on astronomy and on the history of science (notably the *Essai sur la théorie des satellites de Jupiter*) were distinguished both for scientific interest and literary elegance and earned him membership in the French Academy, the Academy of Sciences, and the Academy of Inscriptions. **Bailly** said:

"The movement of stars which was calculated by Hindus 4,500 years ago, does not differ even by a minute from the tables which we are using today." And he concludes: "The Hindu systems of astronomy are much more ancient than those of the Egyptians - even the Jews derived from the Hindus their knowledge."

Botany and Biology:

In addition to the physical sciences, very interesting and modern concepts of botany and biology, including the concepts of micro-organisms, are also encountered in these ancient texts, for example, in the **Mahabharata**:



"They (trees) drink water by their roots. They catch diseases of diverse kinds. Those diseases again are cured by different operations... as one can suck up water through a bent lotus stalk, trees also, with the aid of the wind, drink thorough their roots. They are susceptible to pleasure and pain, and grow when cut or chopped... they are not inanimate..."

Vrihi and other so-called seeds of rice are all living organisms...again (men) ...while walking about hither and thither kill innumerable creatures hidden in the ground by trampling on them; and even men of wisdom and enlightenment destroy animal life, even while sleeping or in repose themselves... the Earth and the air all swarm with living organisms."

Electricity

The ancient text of **Agastya Samhita** describes the method of making electric battery, and that water can be split into oxygen and hydrogen.



(Source: **The Celestial Key to the Vedas**: Discovering the Origins of the World's Oldest Civilization - By Dr. B. G. Sidharth is director of India's B. M. Birla Science Center. He has over 30 years of experience in astronomy and science education and is a frequent consultant to astronomy journals and science centers around the globe. He lives in Hyderabad, India.

Vedic Physics: Scientific Origin of Hinduism - By Raja Ram Mohan Roy p- 198-199).

The Secret Teachings of the Vedas - By Stephen Knapp).

Hinduism and Scientific Quest - By T R. R. Iyengar).

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Shri 108 & Other Mysteries

The number 108 is very auspicious for Hindus. It is the number of beads of a rosary and of many other things in Indian cosmology. But why is this number considered to be holy?

The answer to this mystery may lie in the fact that the ancient Indians took this to be the distance between the earth and the sun in sun-diameter units and the distance between the earth and the moon in moon-diameter units.

Two facts that any book on astronomy will verify :

Distance between earth and sun = 108 times sun-diameter

Distance between earth and moon = 108 times moon-diameter

Indian thought takes the outer cosmology to be mirrored in the inner cosmology of the human. Therefore, the number 108 is also taken to represent the 'distance' from the body of the devotee to the God within. The chain of 108 'links' is held together by 107 joints, which is the number of marmas, or weak spots, of the body in [Ayurveda](#).

We can understand that the 108 beads of the rosary must map the steps between the body and the inner sun. The devotee, while saying beads, is making a symbolic journey from the physical body to the heavens.

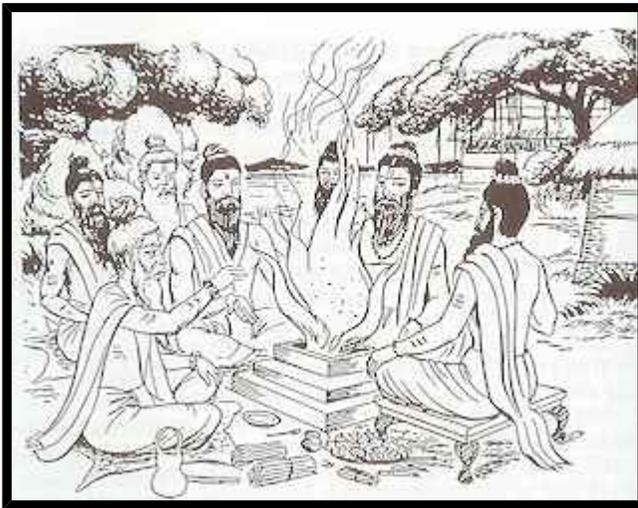
108 is a number which resonates throughout the universe, as this shows. There are also several other numbers which are repeated throughout creation.

The reason why we do our mantra jap 108 times is because its a symbol of our journey towards our higher/spiritual self (sun) from our material self (earth).

(source: [Shri 108 & Other Mysteries - By Subhash Kak - sulekha.com](#) and http://www.cycleoftime.com/articles_view.php?codArtigo=58).

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Rediscovering Vedic Science:



According to **Romain Rolland**, (1866-1944) French Nobel laureate, professor of the history of music at the Sorbonne and thinker. He authored a book on the "[Life of Ramakrishna](#)".

" Religious faith in the case of the Hindus has never been allowed to run counter to scientific laws, moreover the former is never made a condition for the knowledge they teach, but there are always scrupulously careful to take into consideration the possibility that by reason both the agnostic and atheist may attain truth in their own way. Such tolerance may be surprising to religious believers in the West, but it is an integral part of Vedantic belief."

Not only do the Vedas contain a high level of philosophical and spiritual knowledge, but they also hold information on material science. The Vedic literature includes such works as the Ayur-Veda, the original science of wholistic medicine as taught by Lord Dhanvantari; Dhanur-veda, the military science as taught by Bhrigu; Gandharva-veda, which is on the arts of music, dance, drama, etc.. by Bharata Muni, Artha-sastram, the science of government, and the Manu-samhita, the Vedic lawbook.

There is also the [Sulbha sutras](#), which contains the Vedic system of mathematics. These sutras are a supplement of the Kalpasutras, which shows the earliest forms of algebra. The Vedic form of mathematics is much more advanced than that found in early Greek, Babylonian, Egyptian, or Chinese civilizations. In fact, the geometrical formula known as the Pythagorean theorem can be traced to the Baudhayana, the earliest form of the Shulba Sutrast prior to the 8th century B. C. It was this Indian system that originated the decimal system of tens, hundreds, etc., and the procedure of carrying the remainder of one column over to the next. It also provided a means of dividing fractions and the use of equations and letters to signify unknown factors. These Indian numbers were used in Arabia after 700 AD. and then spread to Europe where they were called the Arabic numerals. It is only because Europe

changed from Roman numerals to these Arabic numerals that originated in India that many of the developments in Europe in the fields of science and math were able to take place. (source: [The Secret Teachings of the Vedas - By Stephen Knapp](#) p. 25) Stephen Knapp a Vedic scholar, has also been to India several times and traveled extensively throughout the country.

Ancient Inscriptions:



A German linguist **Kurt Schildmann**, a native of Heiderhof, says his study of ancient inscriptions discovered in the caves of Peru and the United States shows that they are similar to ancient Indus Valley Sanskrit, suggesting that seafarers from India may have reached the Americas thousands of years ago. He describes the Indus civilization as a forerunner of other world civilizations. While doing "epigraphic research" on the Crespi collection of Cuenca, Peru, Schildmann discovered Sanskrit in inscriptions found in Peru and in the Burrows cave in southern Illinois. Russel Burrows accidentally discovered the cave, a retired colonel of the U.S. armed forces, on April 2, 1982.

Schildmann had noticed the similarity between the language of the inscriptions in Peru and the Burrows' cave after having deciphered the inscriptions in the Indus Valley. He also deciphered an icon found in the Burrows' cave, on which he said many details depicted the "wisdom of the Indus culture". Schildmann was struck by the drawing of an elephant on top of a "Pyramid", with three lines of a legend. He deciphered the legend as "PIL", that was 6000 years old ancient Sanskrit word for an elephant. He concluded, the ancient Indian engraved texts on gold plates and hid them to honor the gods and address the succeeding generations. (source: <http://members.aol.com/coorg777/india9.html>)

Conclusion:

Ella Wheeler Wilcox, (1850-1919), famous American poet and journalist. [Wilcox](#) poems have been collected in volumes such as [Poems of Pleasure](#) (1897) and [Maurine and Other Poems](#) (1888) states:

" India - the land of Vedas, the remarkable works contains not only religious ideas for a perfect life, but also facts which science has proved true. Electricity, radium, electronics, airship, all are known to the seers who founded the Vedas."

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Legend of Vikramaditya:

Ujjain is a city in the state of Madhya Pradesh. City of Ujjain (one who conquers with pride) was once ruled by the legendary king Vikramaditya.

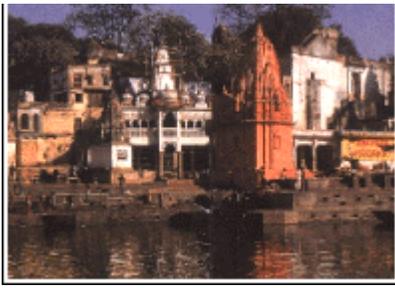


King Vikramaditya was known for his valor and impeccable justice. His court was adorned by nine famous courtiers called Navaratna (nine gems), who were great scholars in different fields of knowledge. (Kalidasa became the most brilliant of the `nine gems' at the court of Vikramaditya of Ujjain.) Despite extensive effort, Vikramaditya can not be identified with any known historical king. Ujjain is famous for the temple of *Mahakala*. There is no temple in India, where Mahakala is worshipped.

Is there a meaning behind the legend of Vikramaditya and the worship of Mahakala? The real meaning is revealed by considering the meaning of these words. Vikramaditya is made by joining prefix "Vi" to words "Krama" and "Aditya". "Krama" means order, "Aditya" means sun and prefix "Vi" means deviation. Therefore, etymologically Vikramaditya means the change in the course of the sun. What is significant is Ujjain is located on the tropic of cancer. Thus, sun comes to Ujjain during its northward journey, changes its course, and starts its southward journey. Vikramaditya is sun itself changing its journey at Ujjain. Nine gems in the court of Vikramaditya are nine planets of Solar system.

Mahakala is made by joining words, Maha, great, and Kala, time.
Thus, *Mahakala* means *Time the great*. Ujjain was known as Ujjayini





in ancient times and was the capital of ancient empire Avanti. Ujjayini was the center of Indian civilization for several centuries and famous for its astronomical observatory. Ujjayini was equivalent of Greenwich, from where time was synchronized all over India and even abroad. New day commenced when it was six a.m. in Ujjayini. When it is six in the morning in Ujjain, it is midnight in Britain. It is from this ancient system of changing date in the morning in Ujjain that changing date at midnight has been arrived at.

As time was synchronized in a large part of the world according to Ujjayini standard time, it was only natural to designate the god of Ujjain as god time himself, and therefore the name **Mahakala, Time the great.**

The rise and fall of Hinduism is connected to the rise and fall of science. The spirit of Hinduism is logic and skepticism. Hinduism was raised on the foundation of science and freedom of inquiry. There is not a single incident of a scientist being persecuted by religious authorities in India as was the case in the West. Hinduism has never indulged in suffocation of scientific thoughts, instead it has incorporated science in religion.

(source: [Vedic Physics](#) - By Raja Ram Mohan Roy p- 198-199)

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Articles

Indian Idealist Metaphysics - By Paul Brunton

The ancient Hindus took their philosophic statements in the nature of a revelation from on high, as issuing forth from their seers as a result of a personal self-experience in the spiritual domain. Our Western scientists have no such experience, and if they are approaching similar conclusions, it is because they are working their way from the profoundest depths of this material world up to its farthest frontier where the ions elude them and vanish into mystery.....the wisest men of the ancient East and the modern West...are beginning to arrive at precisely the same conclusions.

This **Indian doctrine declares human cognition of the entire manifold universe to be illusionary in character.** The vast multitude of tangible objects and tangible creatures which we so plainly witness around us were said to be the product of the constructive imagination of the One Hidden Self. Man and his material environments were but finite dreams passing through the mind of the Infinite Dreamer. Consequently all that we know of the world is nothing more or less than a series of idea held in our consciousness. Thus we arrive at a completely idealistic metaphysics which, because of its very nature, must apparently remain for ever purely speculative and beyond the scope of the finest instruments which can be devised to prove or disprove. **Nevertheless the strangeness and unfamiliarity of the doctrine fascinated the Indian mind to an amazing extent.** That this early foreshadowing of modern idealistic philosophy was not merely a worthless superstition is evidenced by the fact that some brilliant minds of the West have been equally fascinated and perplexed.

This doctrine, curiously enough, hardly rears its head in The Vedas but appears with strong bold outlines in the post-Vedic books such as The **Yoga Vasishtha**, in the Buddhist philosophical scriptures, and in the numerous writings of **Shankara, the father of the grandest Hindu philosophical revival of ancient times.**

The earliest Vedic mention is in the **Svetasvarara Upanishad**, where the following lines occur:

“Now one should know that Nature is illusion,
And that the Mighty Lord is the illusion-maker.”

The **Aitareya Upanishad** says:

“Creatures, plants, horses, cows, men, elephants, whatsoever breathes, whether moving or flying and, in

addition, whatsoever is immovable – all this is led by mind and is supported on mind. Mind is the final reality.”

The basis of this doctrine is that things cannot exist independently of the perceiver's mind, that the entire phenomenal world of experience is a creation within the perceiving mind, as is a dream, and hence, from the highest metaphysical standpoint, an idea or mental appearance. The author of *The Yoga Vasishtha* presents the teaching in another way, asserting that the world is relative to the mind and must therefore be mental in character if the possibility of its being known is to be achieved.

"The subject cannot be aware of the object unless they are related. And there cannot exist any relation between two heterogeneous things. Relation implies identity, for it cannot be possible between two utterly different objects. The cognition of the object by the subject therefore establishes their substantial identity. If they were utterly different from each other, knowledge would not have been possible; the subject would ever remain unaware of the object as a stone of the taste of sugar." "The whole world is merely ideal. It does not exist except in thought. It arises and exists in the mind. The whole universe is the expansion of the mind. It is a huge dream arisen within the mind. It is imagination alone that has assumed the forms of time, space and movement."

"The reality of things consists in their being thought. The objective world is potentially inherent in the subject, as seeds of a lotus exist in the flower, as oil in sesamum seeds. All objects are related to the subject from which they proceed. They appear to be different from it, but are not so in reality. The world experience is nothing in reality but a dream."

The author of *Yoga Vasishtha* realizes that such a solipsism is difficult to maintain and so lends his support to the Upanishadic assertion that "the Mighty Lord", God, is the true illusion-maker, and that the idea of the created world is put into our minds by the Divine One.

Ralph Waldo Emerson, who wrote the following verse:

"Illusion works impenetrable,
Weaving webs innumerable,
Her gay pictures never fail,
Crowds each other, veil on veil,
Charmer who will be believed
By man who thirsts to be deceived."

Bishop George Berkeley (1685-1753) Famous Irishman and bishop of the Church of England and a prominent empiricist philosopher, in [The Principle of Human Knowledge](#), proceeds to claim that the universal creation being mental, must have been brought into being within the mind of a Cosmic Thinker, thus strangely **echoing a passage already quoted from the Indian Yoga Vasishtha**.

Arthur Schopenhauer, who in his turn developed the same theme in the vigorous volumes of [The World as Will and Idea](#). He says:

"He to whom men and all things have not at times appeared as mere phantoms of illusions has no capacity for philosophy..."

"The world is my idea – this is a truth which holds good for everything that lives and knows, though man alone can bring it into reflective and abstract consciousness..."

Coming to more recent times, we find echoes of the familiar **Hindu comparisons of the dream and waking worlds** in the writings of **F. H. Bradley**, **E. Douglas Fawcett**, **Dr. F.C. Schiller**, and **Lord Bertrand Russell**.

One of the greatest 19th century scientists was **Thomas Henry Huxley** (1825-1895) physiologist, anatomist, anthropologist, agnostic, educator, distinguished zoologist and advocate of Darwinism, the following quotations from his work, [Collected Essays](#) vol. VI, serve to show **how much ancient Indian philosophy anticipated modern Western thought**.

"To sum up. If the materialist affirms that the universe and all its phenomena are resolvable into matter and motion, Berkeley replied, 'True; but what you call matter and motion are known to us only as forms of

consciousness; their being is to be conceived or known; and the existence of a state of consciousness, apart from a thinking mind, is a contradiction in terms. I conceive that this reasoning is irrefragable.

"...the simple ideas we receive from sensation and reflection are the boundaries of our thoughts, beyond which the mind, whatever efforts it would make, is not able to advance one jot."

Sir Arthur Eddington (1882-1944) important astrophysicists of his time, wrote in [Time, Space and Gravitation](#):

"All through the physical world runs that unknown content, which must surely be the stuff our consciousness. Here is a hint of aspects deep within the world of physics, and yet unattainable by the methods of physics. And, moreover, we have found that where science has progressed the furthest, the mind has but regained from Nature, that which the mind has put into Nature.

Sir James Berkeley writes:

"The Universe can be best pictured as consisting of pure thought, the thought of what, for want of a wider world, we must describe as a mathematical thinker."

Hyman Levy (1889-1975) Mathematician, philosopher and humanist, in [The Universe of Science](#), declares that "the underlying reality of the universe is never perceived. A mere appearance is experienced so that what the mind pictures is not reality but its superficial structure."

While Western psychologists carry out most of their experiments upon other persons, the **proponents and exponents of Indian system are expected, and do, carry out their experiments upon themselves first and foremost**. And because man is a key to the universe, because the mind of man is somehow linked with the Mind behind creation, the way to understanding of the universe must finally embrace the thorough understanding of the mystery behind man.

(source: [Indian Philosophy and Modern Culture - By Paul Brunton](#) London Rider & Co. Paternoster House, E. C p 1-92).

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Back to the Vedas: Gateway to Peace

By Narayani Ganesh

<http://www.timesofindia.com/today/15edit5.htm>

' WHY do birds prefer to stay on treetops during the night? Why aren't they seen on the ground after nightfall? According to ancient Hindu scriptures, birds possess special and sensitive powers of perception. At night, they `see' the surface of the earth in flames. These flames reflect the intense energy trapped by the planet as a result of absorbing heat from the sun's rays all day long.

The Vedas are replete with such tidbits, encapsulating a heady mix of science, logic, deduction and belief, claim Vedic scholars. Here's another piece of information that is expressed in beautiful verse: What can one do when faced with a dry season, when rains are eagerly awaited; when farmers look skywards, pleading with an unseen Power, praying for a good harvest? Get to the bottom of a dried up water body. Plough your fields with the rich natural fertiliser that can be easily accessed from these water beds. The soil from here is saturated with the dung and dirt from animals which frequented the place; with compost from leaves, twigs and natural wastes that have sunk and have been assimilated into this soil.

Therefore, Vedic tips on how to deal with real-life situations may not all be outdated. Modern environmentalists and ecologists sometimes advocate what has already been talked about in Vedic scriptures. though couched in sophisticated technical and scientific terms. The Vedas are peppered with numerous tips on how to achieve welfare for all by working in conjunction with nature. `Vedathil illadhadhu logathil illai' -- You can discover nothing on this earth that is not already present in the Vedas -- so goes a popular *Tamil* saying which is seconded by Vedic scholars who have studied these scriptures in great depth and detail.

Vedic pundits aver that slokas or verses are composed and structured in a manner that their correct rendition can evoke rains in times of drought. Conversely, there are special slokas which when chanted with precision and in the right spirit can actually make the rains cease when there is too much of it. There's more. Slokas like the aprathiratha sooktam mantra chanted repeatedly right at the battle front, can actually will the enemy to retreat, never to return, claim Vedic pundits.

Waxing eloquent on the power of Vedic chanting for universal welfare, a group of 12 eminent Vedic pundits have congregated at the Sri Krishna temple in the Capital from different parts of the country. They are participating in a Sampoorana Yajurveda Ghana Parayanam, an event that has been organised for the first time in Delhi. The Parayanam is a 29-day, eight-hours-a-day rendition of the verses of the Yajur Veda in the Ghana style, which is the most difficult of the five traditional methods of recitation.

Handed down from generation to generation since the Vedic age through the guru-shishya parampara, committing to memory and reciting these verses comes from years of arduous practice. The five methods of recitation are Mula or Samhita, Pada, Krama, Jata and Ghana. Ghana, the last one, requires rendition in a complicated combination set to a rhythmic tone and is believed to possess high potency when chanted by Ghanapatins. The tempo goes like this: For Ghana, it is 1-2, 2-1, 1-2-3, 3-2-1. The five methods are progressive in scale of difficulty. For example, the tempo for Jata is: 1-2, 2-1, 1-2 following the pattern of a braid, as the name suggests. Also important is the timbre and tone. The number of students opting for the study of the Vedas up to the Ghana stage is dwindling. Hence this form of Vedic recitation is rare.

Sri S Krishnamurthy Ghanapatigal from Sathanur, Tamilnadu, says: ``The Vedas inform humankind about what is needed and what is not. They convey what is not observable with the eyes or the mind. They address not just brahmins and kings; they are equally applicable to the army, to students, to agriculturists -- in short, entire humankind. It is structured for the well-being of entire humanity, of all life. If they spell out ideas to improve agriculture, they also talk about behavioural psychology".

``At the UN Millennium Summit, we are happy that religious leaders from different faiths and regions converged to talk about peaceful conflict resolution. In fact, the Vedas have a formula for conflict resolution, too. The aikamathya sooktam is a mantra in verse which when recited wherever there is conflict, can actually create an atmosphere conducive for peaceful and lasting resolution".

(The scholars can be contacted at the Alakananda Dharmik Samaj, Sri Balavenugopalakrishna Temple till 17 September, R-2, Institutional Area, Alaknanda, New Delhi 110 019, Phone 6282730).

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The Different Routes of Modern Science and Indian Ancient Science (excerpts)

Indian Ancient Science – BARC Newsletter

http://www.barc.ernet.in/webpages/letter/newsletter_year_2000/

Mathematics

The science of mathematics starts from counting of numbers. The present versatile system of decimal numbers needed two fundamental discoveries: the *concept of zero* and the *principle of place value in powers of the radix*. And both of these were discovered in India. The place value system made the sexagesimal numbers of Babylonians obsolete (its only remains are 1 hour=60 minutes, and 1 minute=60 seconds). And now the Roman numbers are also getting gradually replaced by Arabic numerals on the place value pattern. The present numerals are called Arabic not because they were invented in Arab but because Indian things had to go via Arabian countries to Europe.

Similar to these two concepts, there is a very fundamental concept of infinity. In modern mathematics, infinity has been taken as an infinite extension of large numbers. In India, the concept of infinity was given deep attention in ancient times. It was found that infinity is not just a number but it is as tangible as any reality of general experience, and many of its properties were enumerated. In mathematical language, it can be defined as a universal set which is a proper subset of its every proper subset. Modern mathematics may enrich itself by working out the implications of such a definition of infinity.

Phonetics

Very extensive work was done in the science of phonetics in ancient India, and finer shades of sounds produced in the pronunciation were standardized. The entire Panini's *Shiksha* and most of his grammar is phonetics only. However, in the West, the science of phonetics came up only recently. The application of sound recording systems and techniques of observing vocal organs in action through X-rays, have given a good deal of clarity to its concepts. The Indian ancient phonetics can benefit significantly if it employs some modern concepts and terminology. For example, many ancient Acharyas struggle with words to define what is *Udatta* vowel, and *Un-Udatta* vowel. Their round-about definitions do not accurately communicate what they intend. Following modern terminology, we can define simply that *Udatta* is high frequency vowel sound and *Un-Udatta* is low frequency vowel sound.

Similarly in *Shastriya Sangeet*, the relations of *Saptak* and the change of sound from *sa* to *ni* can be more clearly explained as ascending frequency in geometric progression; and the various *Tals* can be described as chrono-patterns of sound pulses with partial symmetry. Such applications of modern scientific terminology, instead of the vague and round-about old descriptions, can simplify the comprehension of this valuable Indian ancient art which also has scientific foundations.

The unification of Indian ancient science of Phonetics with modern information theory and the binary computer logic has led this author to evolve the *Phonetic Number System* of radix 128 with mono-sound numerals and word-like numbers. Based on this system, a merely six digit self-checking Phonetic Code, pronounced though six soft sound characters, can identify about 6000 crore population, uniquely and perpetually.

Metaphysics and Philosophy

In modern times, the subject of philosophy is considered to be speculation into the unseen and mostly unknown or unknowable. It has very little concern with tangible things of relevance. But in ancient India, philosophy (*Darshan*) was treated at par with science. Its study was supposed to give clear vision of life and nature as a whole, leading to a more coherent theoretical knowledge and harmonious practical living. The culmination of Indian philosophy is said to be Vedanta. Its sources are *Brahma Sutras*, *Bhagavad Gita*, *Upanishads*, and the voluminous book *Yoga Vasishtha*. Vedanta claims to have reached such a high state of unification of nature beyond which no further unification is possible.

In physics, unified theories, with tremendous efforts, have got only partial success in unifying some forces of nature. In this background, it may be asked if the ideal of Vedanta, the highest state of unification, is ever achievable. Such an objection can be circumvented by redefining Vedanta, that it is *Asymptote to Knowledge*. It describes that most fundamental concept towards which all the basic concepts of various branches of knowledge approach and meet at infinity. But that state of unification can be intuitively grasped in a finite life-span. It is like the asymptote to an open curve which is tangent to the curve at infinity but remains at a finite distance from the origin.

Much of the confusion in Vedanta, employing mostly contradictory statements, can be removed by developing it as an axiomatic theory starting from a single postulate. In respect of its relation with the empirical world, Vedanta is supported by *Sankhya*. It represents the practical limit of unification in terms of two basic elements: *Consciousness (Chetan)* and *Inertness (Jada)*. These two concepts make it possible to design binary computerizable models of basic physical or metaphysical entities.

The interrelationship of these concepts has a good deal of analogy with the modern field theory. There is one basic abstract field of the ultimate entity which has two states, consciousness and inertness. These different states behave as two distinguishable entities. Their interplay has dispersed as well as localized aspect. Its dispersed aspect is mind, and the localized aspect is body-consciousness. The system is incessantly dynamic and is represented by repetitions of many processes. Analogous to this is the electromagnetic field which has two kinds of forces: electrical and magnetic. Its dispersed aspect is undulations of wave and localized aspect is photon which is always dynamic. Now arises a question, whether photons have consciousness? However, experiments done in the University of Denver, Colorado, to test this have remained inconclusive.

Life Sciences

According to the Indian ancient science, in the field of consciousness, there are many levels. Every material system, whether apparently living or non-living, is at some level of consciousness. The so-called inanimate matter occupies the lowest level at which there is a very small zero-point consciousness. The direction of evolution is towards higher and higher freedom. Its manifestation starts from freedom of movement, and culminates in the freedom of selection of one's own destiny.

Medical Sciences

Modern traditional medical science studies the physical and chemical patterns in a large number of people and makes a broad standard for healthy people. For example, after the measurement of the blood pressure of large number of people, a broad standard can be made. Ailments are associated with departure from these standards, and they can be corrected by appropriate physical and/or chemical means.

According to Indian medical science, called Ayurveda, life is a dynamical system in which in the healthy state, there is a harmony of many chemical and physical processes. The number of these processes have been broadly classified into three called *Dosh: Kaph, Pitta, and Vata*. Every food and eatable can be classified into many categories depending upon which Dosh or combination of Doshas, it decreases or increases or maintains in balance. The symptoms of disease indicate which of the Doshas have increased or decreased. The administration of the compensating remedy gives the cure. Ayurveda claims to have discovered the basic principles of many other systems of treatment like allopathy, homeopathy, acupuncture, etc. But these systems were not developed to higher levels in ancient India.

The surgery described by Dhanvantari and Sushrut has become obsolete with the advent of sophisticated tools and equipment in modern surgery. But the basic principles of Ayurveda hold. They are like phenomenological theory of matter. For example, the mechanical and thermal properties like elasticity, density, specific heat, etc of gold are determined by the atomic structure of gold atoms. But a goldsmith need not go into all these details. For him the bulk properties are sufficient to make a beautiful ornament. In the same way, simplifying all the chemical process of the body in terms of increase, decrease, or balance of three Doshas suffices to restore health in a large number of cases. That is why the medical formulations of *Charak Samhita* still have relevance. But, in the light of changed environment, many of the ancient formulations need verification and standardization. However, Ayurvedic thumb rules for longevity and good health have withstood the test of time.

Cosmology

Modern theoretical cosmology begins with the application of general relativity to the universe as a whole by Einstein in 1917. The experimental cosmology begins with observation of red shift, proportional to distance, in the light of galaxies by Hubble in 1929. The red shift has been explained in terms of Doppler's shift of receding galaxies. This explanation means that the universe is expanding isotropically. It implies that if we go backwards in time, then the universe was smaller, and at a certain time, the entire mass energy was concentrated at a point. G. Gamow in 1946 postulated that the universe was not only smaller but also hotter in the past. In the point like state, the temperature was infinite. With a sudden big bang, the energy was thrown out which subsequently led to the formation of stars and galaxies. What was prior to big bang, cannot be answered by physics.

To eliminate the big bang singularity, a steady state cosmology was put forward by Bondi and Gold in 1948, in which it was postulated that the universe has been like this all the time. But to maintain a constant density of matter in spite of the expansion, creation of matter as hydrogen atom into free space was postulated. A comprehensive C-field cosmology and a new theory of gravitation was developed by Fred Hoyle and J. V. Narlikar.

However, the steady state cosmology, though intellectually satisfying, did not satisfactorily explain the cosmic background radiation, predicted earlier by G. Gamow, and experimentally detected by Penzias and Wilson in 1965. Since then the steady state cosmology has gone into oblivion. The present standard cosmology is that of the hot big bang. It explains three main cosmological observations: receding galaxies, thermal background radiation, and nucleosynthesis of light elements. But suffers from the problem of singularity and many other inconsistencies.

Turning to the Indian ancient view on this subject, *Mahabharat* says (Adi-Parva, 1st Chapter, 40-41):

"This beginningless and endless time cycle (*Kal-Chakra*) moves externally like a perpetual flow in which beings take birth and die but there is never birth or death for this. The creation of gods is briefly indicated as thirty-three thousand, thirty-three hundred, and thirty-three."

Again in *Mahabharat* itself, Bhagwad Gita describes a cyclic universe as (VIII-18): "All embodied beings emanate from the Unmanifest at the commencement of Brahma's day; at the commencement of his night, they merge in the same subtle body of Brahma, known as the Unmanifest."

These and many other statements imply that the Indian ancient view is that the universe is eternal as well as of finite age. The inference depends upon the point of view of the observer. If one observes the universe as a contemporary observer, then on the whole the universe is found to be like this only. But, if it is explored archaeologically, then it will be found to have a beginning at a point of time. Hence a unified cosmology, integrating the essential elements of steady state and big bang cosmologies, conforms better with the Indian view.

In ancient India, this integration was achieved by the concept two extra time-like dimensions. Thus the universe is a six dimensional continuum of three space, one time, and two time-like dimensions. This concept gives a logical symbol for the universe: that is two interpenetrating triangles. This figure has been verbally indicated in the above statement of *Mahabharat* that the creation is briefly indicated as thirty-three thousand, thirty-three hundred, thirty-three. Six times repetitions of three is the indirect technique of communication of Ved Vyas. The 5th and 6th dimensions have been called *Chittakash* and *Chidakash* in *Yogavasishtha*. The six dimensional universe represents higher symmetry in the two basic extensions of nature, space and time.

Physics

The Indian ancient view classifies the visible world into five elements: space, light or fire, and three states of matter (solid, liquid, and gas) represented by earth, water, and air. They are related to five senses and their five subtle forms called *Tanmatra* through a process called *Panchikaran*. Everything, irrespective of size and shape, has besides its physical body, a subtle body which is a bundle of abstract qualities and exists conceptually in the non-physical space called *Chittakash*. The subtle body in the *Chittakash* behaves like mind, and is free from many limitations of the physical space.

It is obvious to see many conceptual analogies in the two views of matter at the fundamental level. In quantum mechanics, the dynamics of a system is conceived in the abstract Hilbert space; in ancient India, it was conceived in the abstract *Chittakash*. Near the limit of fineness, inferences of the horizontal route (space-light-matter) and the vertical route (time-sound-mind) come very close to each other. Some experimental investigation into the interrelation of consciousness, mind, matter and light have been reported from Princeton University, Stanford University (California), and University of Denver (Colorado).

Chemistry

The science of chemistry in India has been a great sufferer due to the destruction of the Indian ancient literature. The long heavy iron pillar near the Kutub Minar at Delhi, standing in the sunshine and rain for more than about 2000 years without getting rusted, is ample proof that chemistry and metallurgy were sufficiently advanced in ancient India. Similarly, the long and heavy statue of Buddha in the lying pose at Kushinagar near Gorakhpur, which still shines like gold in spite of remaining buried for many centuries, is a challenge to metallurgy. Similarly, many other monuments also hide great chemical secrets.

Much of the chemical knowledge is empirical rather than deductive. This is true of modern chemistry as well. Hence simply knowing a few basic principles is not enough to arrive at the process of producing the desired material. The actual method has to be either rediscovered, or may possibly be found in some hidden literature after extensive and minute survey.

Military Science

The biggest loss of ancient skills have been in the field of military science. The main reason for this loss was perhaps the *Mahabharat* war. There was so much loss of life in that war that people became allergic to things related to war. A large number of warriors were killed. Those who survived were demoralized. Almost the entire war skills, which needed regular practice and refinement, died out. Now we can get only

very superficial descriptions of those weapons from *Ramayan* and *Mahabharat* which are basically literary works, and not scientific.

The weapons of ancient India can be put up into three broad categories. First is that of conventional weapons like swords, spears, bows and arrows, etc. Being simple, they survive to this age. The second were explosive based, delivered either through some projective system, or other means. They were called *Agniban*. The third were super weapons called *Brahmastra*, etc. *Brahmastra* was a sure hit weapon from which there was no escape. It had to be used in the rarest of the rare circumstances.

Brahma means creator of the universe. In the context of the war, it indicates a weapon designed through the knowledge of the creation of matter. According to *Yogashashtra* and some other writings, every particle of a block of matter is being incessantly created and dissolved. In between two occasions of creation, it remains momentarily in Chittakash in its subtle form. There its properties are more mind-like. Hence it can be acted upon by the mind of an aspirant provided it can go to that subtle state at which the matter particle has reached.

In any lump of inorganic matter, the creation and annihilation of particles is random. By mental command, they can be brought into coherence. The coherent lump can behave as a single quantum particle. With the coherence, all the constituent particles of the lump are created or annihilated simultaneously. They go to the Chittakash, and appear in the physical space, collectively. When they are in the mental form in Chittakash, they can be induced to have their next appearance in the physical space at the desired location, may be the body of an enemy. This travelling of the lump of matter is through non-physical space, so physical obstructions of walls and bunkers or long distances are no protection against this weapon.

Quantum teleportation recently reported by some physicists, is the nearest analogue to the working of *Brahmastra*. It is speculated by physicists that perhaps quantum teleportation may be the ultimate process in the control of dynamics of matter. However, so far the technique of quantum teleportation has reached the level of transmitting only states of photon. But even that has generated much excitement among physicists and has become a hot topic of research. It is anticipated to have applications in developing extremely fast computers, and communication of secured information making eaves dropping almost impossible.

In ancient India, some similar process seems to have been realised to the level of transmitting bigger masses through the phenomena of matter coherence. Just as coherence of electromagnetic waves produces very powerful laser light with unusual properties, in the same way coherence of matter can produce objects with unusual properties.

(please refer to the full text at the site given above)

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Did you Know?

How the Grand Canyon became Indian?



Clarence Edward Dutton, a captain of ordinance in the U.S. army, geologist-poet and a Yale man, Dutton was deeply influenced by the philosophies of India. It was Dutton who likened the snow-covered peaks of the canyon walls to the Hindu gods, Brahma, Vishnu and Shiva. There is even a Hindu amphitheatre which Dutton likened to the "profusion and richness which suggests an Oriental character." Dutton found the Shiva Temple the grandest of all, and most majestic in aspect....All round it are side gorges sunk to a depth nearly as profound as that of the main channel...In such a stupendous scene of wreck, it seemed as if the fabled 'destroyer' might find an abode not wholly uncongenial."



For Geologist Clarence Dutton, the harsh landscape of the Grand Canyon would come to be regarded as "the coliseums, temples, and statuary of an inspired



nature," a place of divine presence. It's thanks largely to Dutton that so many of the Canyon's features are named after figures in world religion)

According to Professor Stephen J. Payne, professor of history at the Arizona State University and author of the book - [How the Canyon Became Grand](#) - there is "no explicit explanation for naming the peaks after Hindu gods, only implicit." He likens the naming the peaks to the historical fact of the time. "When there was a growing awareness and respect in the West, particularly Europe, towards Indian philosophies, not economies of the past."



India's Big Old Dam?

THE GRAND ANICUT, KALLANAI, is the Oldest Dam in the World that is still in use today. It is located on the Cauvery River, 24 km from Tiruchirapalli, Tamil Nadu.



This masonry dam was built in the 2nd Century by Chola King Karikalan and is 1,082 feet long with a maximum height of 18 feet and is 40-60 feet wide. It was remodeled and fitted with sluice gates in 1899-1902. For nearly two millennia it has irrigated a million acres of land. India had more land under irrigation in ancient times than it does today.

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