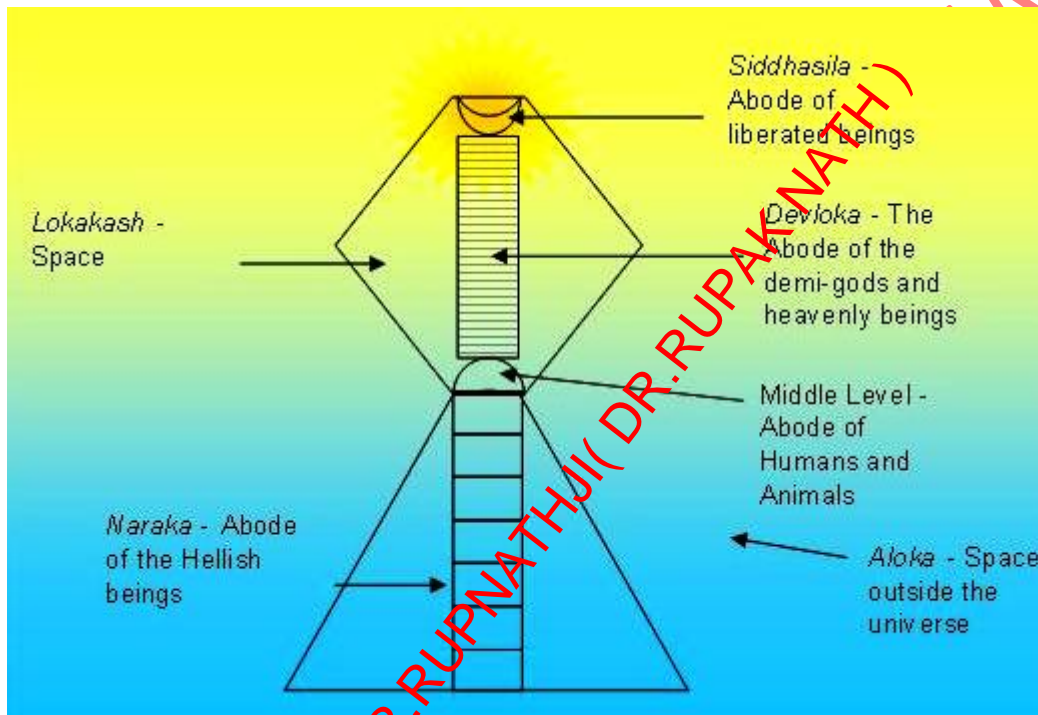


RESEARCH PAPER

BY

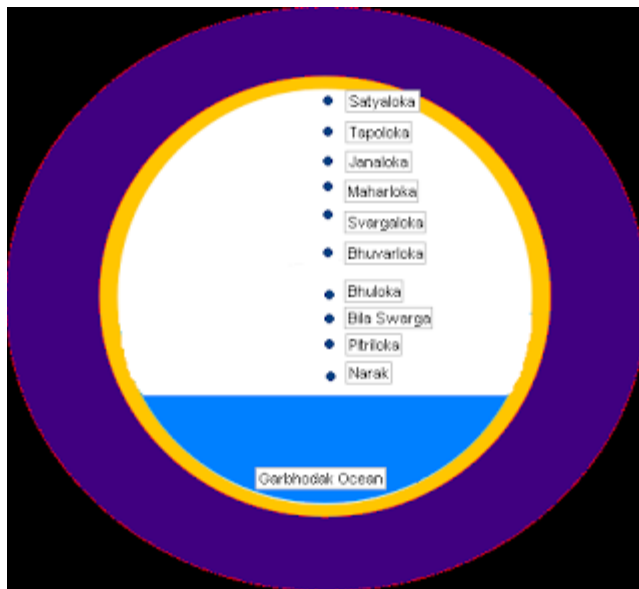
SUPER SCIENTIST DR.RUPNATHJI (DR.RUPAK NATH)

Dr.Rupnathji is a scholar who has earned the Master's Degree in Radiation Physics. **Recipient of many medals and honours, He is at once a Physician, an astrophysicist and an applied mathematician.** He is an author who has numerous publications, both technical and educational. He is a Professor and has been Distinguished Honors Visiting Lecturer at numerous universities throughout the World.



let us try to explain the various types of lokas and it's related properties one by one and see how well our vedic scriptures have been configured. Each Universe is shaped like an egg also called as Brahmānda and within it exist the three levels of Lokas. There are 14 planetary systems comprising the three Lokas and below them exist 28 different Hells.

The most advanced spiritually beings. Loosely they may be understood as the Heavenly planets compared to the Middle Realm of Earth-like planets and the lower Hellish realms.



This group contains SIX planetary systems shown in the image above as the top six Lokas. The lowest of these, the Bhuvan-Loka, lies immediately above the Earthly Realm or Bhu-Loka.

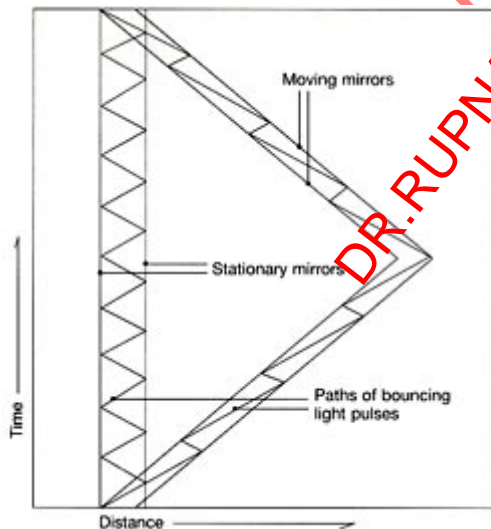
SATYA-LOKA

The HIGHEST planet in the Material Realm is the abode of Lord Brahma, the creator of this universe. Along with him are present, his consort Saraswati and other spiritual entities who, after eons of spiritual penance have been able to transcend the bonds of Material world and reach this plane by traversing through the Milky Way.



At the time of final dissolution of the material planets the residents here transform their subtle bodies into spiritual bodies and enter the eternal Vaikuntha planets which begin 26,200,000 yojanas ABOVE the Satyaloka.

Time and Space - Brahma



*/*Before We talk about Brahma Time Scale, let us understand what exactly mathomathis is trying to convey from this article*/*

Imagine that man travels into outer space on a rocket at near the speed of light and then returns to earth. According to Einstein's theory of relativity, the man will find he

has not aged as much as his identical twin brother who stayed home. Time will have passed more slowly on the rapidly moving rocket than on the slow-moving earth. This disparity in the passage of time is often called time dilation.

This story of the twins is called the twin paradox, since it runs contrary to our expectations. Yet a simple diagram can easily show how it works.

The key to understanding the aging of the twins is Einstein's postulate that no matter how fast a person is traveling, if he measures the speed of a beam of light it will always be the same. In principle, then, we could make a clock by having a beam of light bounce back and forth between two mirrors mounted in frames at a fixed distance from one another. Since light always goes at the same speed, the time a pulse of light takes to make one complete bounce from one mirror to the other and back will always be the same. So we can measure the passage of time by counting complete bounces.

In the graph, distance is plotted on the horizontal axis and the passage of time on the vertical. Two stationary mirrors leave parallel vertical lines as time passes. A pulse of light bouncing back and forth between the two mirrors leaves a zig-zag path, and in this diagram we can count 10 complete bounces.

The pair of lines moving right and then left in a V-shape represents the movement of a pair of mirrors that travel first to the right and then to the left. The zig-zag line between these two V-shaped lines represents the path of a light pulse bouncing between the two moving mirrors. We can count nearly 7 complete bounces in this case. This means that while an observer standing next to the stationary mirrors experiences that 10 units of time have passed, an observer traveling with the moving mirrors experiences only 7 units of time.

This shows how the twin paradox works. The striking thing about it is that even though the zigs and zags of the light trapped between the moving mirrors seem unequal, an observer moving with the mirrors will see them to be the same. For this to be possible, both space and time on a moving object must transform in a strange way.

Note, by the way, that the horizontal spacing between the two moving mirrors is shown to be smaller than the spacing between the two stationary mirrors. This is an example of how space transforms with motion. According to Einstein's theory, a moving object will shrink in length by a certain percentage along its line of motion.

Apart from time dilation caused by motion, Einstein also discussed time dilation caused by gravitation. Imagine a beam of light moving up from the surface of the earth. According to the laws of physics, the light must lose energy as it climbs against the pull of gravity. The frequency of a beam of light is proportional to its energy. So as the light climbs upward, its frequency drops.

Now suppose the light is coming from the face of a clock situated on the earth's surface, and that a person in outer space is using this light to see the clock. A person on earth can observe that for every second ticked off by the clock, the light will vibrate through a certain number of cycles. The person observing the clock from outer space will also see that the light vibrates through this many cycles in the time the second hand ticks off one second.

For the observer in outer space, however, the light has a lower frequency than on earth. So he'll see the earth clock running slower than his own clock. Relative to the observer in space, time on earth must be passing more slowly. Calculations show that for a person in outer space, time on the earth's surface would seem to pass only slightly more slowly. But time on a planet with an extremely strong gravitational field would pass very slowly indeed.

According to the theory of relativity, an object with a strong enough gravitational field will be surrounded by an imaginary sphere called the event horizon. As Joe Smith, say at 1:00 P. M. by his own watch, approaches the object in his space ship and passes the event horizon, he won't notice anything unusual. But to an observer watching from a distance, as Joe approaches the event horizon, he will seem to slow down. He will never quite get there, and his watch will never quite reach 1:00 P. M. As the light coming from Joe grows to longer and longer wavelengths, Joe will fade out and gradually become invisible. Objects with such event horizons are known as black holes.

These examples show that modern physics allows for remarkable transformations of space and time. And apparently, similar ideas are found in Vedic literature.

We find an example in the story of a king named Kakudmi, who was able to travel to the world of Brahma and experience Brahma's scale of time.

These examples show that modern physics allows for remarkable transformations of space and time. And apparently, similar ideas are found in Vedic literature.



We find an example in the story of a king named Kakudmi, who was able to travel to the world of Brahma and experience Brahma's scale of time. Here is the story, as related in the

Srimad-Bhagavatam:



Taking his own daughter, Revati, Kakudmi went to Lord Brahma in Brahmaloaka, which is transcendental to the three modes of material nature, and inquired about a husband for her. When Kakudmi arrived there, Lord Brahma was engaged in hearing musical performances by the Gandharvas and had not a moment to talk with him. Therefore Kakudmi waited, and at the end of the musical performances he offered his obeisances to Lord Brahma and thus submitted his long-standing desire.

After hearing his words, Lord Brahma, who is most powerful, laughed loudly and said to Kakudmi, "O King, all those whom you may have decided within the core of your heart to accept as your son-in-law have passed away in the course of time. Twenty-seven catur-yugas have already passed. Those upon whom you may have decided are now gone, and so are their sons, grandsons, and other descendants. You cannot even hear about their names." (Srimad-Bhagavatam 9.3.28-32)

One catur-yuga lasts 4,320,000 years. With this information, we can estimate the rate of time dilation on Brahmaloaka. If the concert given by the Gandharvas took about one hour in Brahma's time scale, then that hour must correspond to 27 times 4,320,000 earth years. It is interesting that this estimate closely matches one for time dilation in another story involving Brahma

This is the story of the *brahma-vimohana-lila*, or the bewilderment of Brahma by Krishna. Several thousand years ago, Krishna descended to the earth as an avatara and was playing as a young cowherd boy, tending calves in the forest of Vrindavana (south of present-day New Delhi). To test Krishna's potency, Brahma used mystic power to steal Krishna's calves and cowherd boy friends and hide them in suspended animation in a secluded place. He then went away for a year of earthly time to see what would happen.

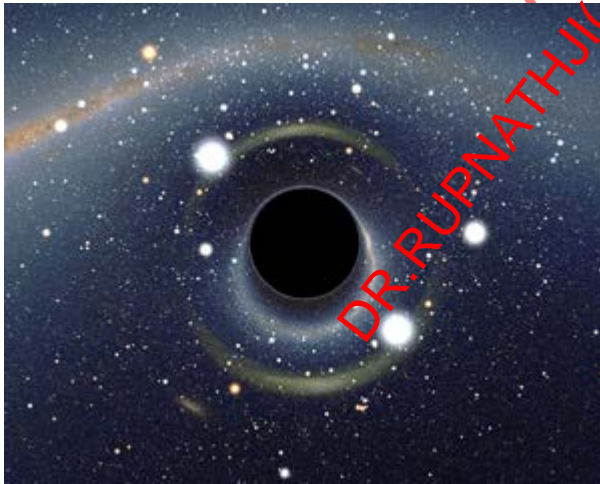
Krishna responded to Brahma's trick by expanding Himself into identical copies of the calves and boys. So, when Brahma returned, he saw Krishna playing with the boys and calves just as before. Brahma became bewildered. Checking the boys and calves he had hidden, he found they were indistinguishable from the ones playing with Krishna, and he couldn't understand how this was possible. Finally Krishna revealed to Brahma that these latter boys and calves were identical with Himself, and He allowed Brahma to have a direct vision of the spiritual

world.



Now, it turns out that even though Brahma was absent for one earth year, on his time scale only a moment had passed. The Sanskrit word used here for a moment of time is truti. (Srimad-Bhagavatam 10.13.40) There are various definitions of a truti, but the Vedic astronomy text called the Surya-siddhanta defines a truti to be 1 of a second. If we accept this figure, then one year on earth corresponds to 13,750 of a second in the time of Brahma

As I pointed out, King Kakudmis visit to Brahmaloaka took 27 times 4,320,000 earth years. If we multiply this by we find that in Brahmas time King Kakudmis visit lasted 3,456 seconds, or just under an hour. This is consistent with the story that the king had to wait for a musical performance to finish before having a brief conversation with Lord Brahma.



Although the time dilation involved in visits to Brahmaloaka is extreme, such large time dilation do arise in the theories of modern physics. For example, suppose that instead of crossing the event horizon of a black hole, Joe Smith simply came close to the event horizon and then went back out into space to rejoin the person observing his journey. If he had come close enough to the event horizon, he would find that although his trip seemed short to him, millions of years had passed, and the observer had died long ago.

It is curious that according to the Srimad- Bhagavatam the physical universe is surrounded by a shell, and Brahmaloaka is located very close to that shell. The Bhagavatam gives the

diameter of this shell as 500 million yojanas, which, using the standard figure of 8 miles per yojana, comes out to 4 billion miles.



This seems extremely small. In a purport in the [Chaitanya-charitamrita](#) however, [Srila Prabhupada](#) makes the following comment:

Srila Bhaktisiddhanta Sarasvati Thakura, one of the greatest astrologers of his time, gives information from Siddhanta Siromani that this universe measures 18,712,069,200,000,000 x 8 miles. This is the circumference of this universe. According to some, this is only half the circumference. (Chaitanya-charitamrita, Madhya-lila 21.84)

Assuming that what is meant is circumference, the diameter of the universe should be 5,956,200,000 million yojanas, considerably bigger than 500 million. Its interesting to consider that transformations of space may take place as one approaches the shell of the universe. The time dilation stories involving Brahmaloaka show that transformations of time take place as one approaches the shell, and in the theory of relativity space and time tend to change together.

In the Mahabharata, Narada Muni gives Maharaja Yudhishtira a description of the assembly hall of Lord Brahma on Brahmaloaka. He emphasizes that the structure of this hall is impossible to describe, and this seems consistent with the idea that space in Brahmaloaka may undergo transformations incomprehensible from our earthly standpoint.

Here is his description of Brahmas hall:

It is not possible to describe it as it really is, king of the people, for from instant to instant it has another indescribable appearance. I know neither its size nor its structure, Bharata, and never before have I seen such beauty. The hall is very comfortable, neither too cold nor too hot; when one enters it, one no longer is hungry, thirsty, or weary. It is as though it is made up of many different shapes, all very colorful and luminous. No pillars support it. It is eternal and knows of no decay. It is self-luminous beyond the moon and sun and the flame-crested fire.

If strange transformations of space do occur in the region of Brahmaloaka, then it could be that different scales of distance may be appropriate for describing travel to that region.

Going beyond Brahmaloaka, one comes to the shell of the universe, described in Vedic

literature as a region of transition from the physical world to the spiritual world. Since the Bhagavatam regards space as we know it as a physical element (called akasha, or ether), the shell marks the end of distance measurements as we know them, even though the thickness of that shell is described in the Bhagavatam in terms of units of distance. This also suggests that different scales of distance and even different types of distance may be involved in Vedic cosmology.



The shell of the universe also marks the end of time as we know it. According to the Vedic literature, a liberated soul is able to cross the shell of the universe and enter the transcendental region of Vaikuntha, where material time does not exist. Compare this with the idea of Joe Smith's journey through the event horizon of a black hole. Just as Joe passes into a region that, for observers outside the event horizon, is beyond time, the liberated soul passes into a region beyond the time of the physical universe. So in a sense the shell of the universe described in the Bhagavatam might be compared to the event horizon of a black hole.

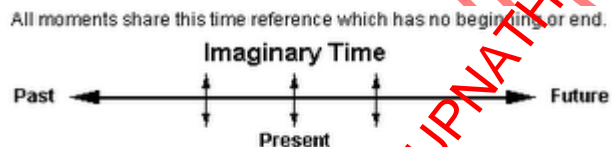
These comparisons between concepts from the Bhagavatam and concepts from modern physics are crude at best and should be regarded only as metaphors. But they do indicate that some of the strange features of the universe as described in the Vedic literature may be no more far out than some of the ideas in accepted theories of modern physics.

The term 'Brahma' is coined from the word 'brihi' which means to expand. It is believed in Hindu mythology that Brahma created the initial 'beings' entirely through the power of his mind. The imagination of Brahma, took a birth called Brahma - rishis, which you can call as the child node of the root, i.e. Brahma (Purely based on Brahma Imagination)



/*As i have already discussed in my previous and in most of the articles, about the time zones in brahma loka & how it differs from our existence*/

Concept of Maya : Hindu mythology quite regularly mentions a term called 'Maya'. It is a complex term revolving around the concept of illusion. While illusion we understand is entirely false, 'Maya' is not. 'Maya' is neither true nor false. All that is material is 'Maya' and hence with respect to us it is true, but with respect to the ultimate truth (Brahman*), it is untrue. **Imaginary Concept :** Well most of the physicist like Einstein suggested that we need to consider or see as a 4th dimension and consider time - space as a continuum i.e. a single source. While Feynman also likely mentions that we are traveling in time horizontally, but we are not considering the fact that there is another space of time which travels vertically in the path of the horizontal axis and this line is called as imaginary.



That is, the events we are experiencing in our space are in the timeline we are living in. Also, in the other perpendicular timeline we may not exist or perhaps be experiencing something entirely different. This piece of idea gave birth to the 'Many Worlds Theory' and now it is accepted in cosmology. An interesting excerpt from the best-seller A Brief History of Time by Stephen Hawking-



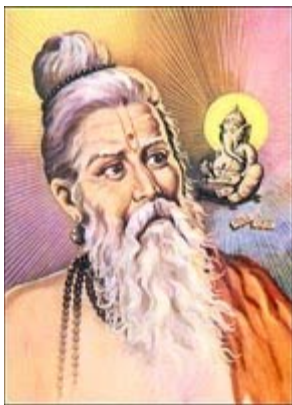
This might suggest that the so-called imaginary time is really the real time, and that what we call real time is just a figment of our imaginations. In real time, the universe has a beginning and an end at singularities that form a boundary to space-time and at which the laws of science break down. But in imaginary time, there are no singularities or boundaries.

So maybe what we call imaginary time is really more basic, and what we call real is just an idea that we invent to help us describe what we think the universe is like. The illusive existence was portrayed in the form of the dreams in Christopher Nolans recently released masterpiece, Inception. The dreams inside the dreams gave a hint to the Many Worlds Theory - that the same person experiences different occurrences simultaneously. Also what is further interesting is that in the film, as one moves into a deeper layer of the dream (dream within dream is the second layer; the film went up to four, perhaps even more), the speed of time changed. The deeper you are, the slower the time would move for you. This is highly in coherence with the concept of Brahmas timescale mentioned before in this article. Not only does time has more than one type, time also operates in various speeds. Unthinkable! In the film, it was said that the architect of the dream can make changes to the world he creates.



Any other person can access the dream through his subconscious. All other entities are projections formed of the subconscious. This is entirely analogous to the fact that Brahma (the architect) constructed the universe (the dream world) and produced beings called his mind-sons (the subconscious participant). The mind-sons on the other hand confer the consciousness to the worthy (the subconscious produces the projections). So what are we? Mere projections? The answer may not be really clear, but may not be a NO either.

A very important element of this film was the totem. For Cobb it was a spinning top. For Ariadne it was a chess piece. A totem tells if you are in a dream or in reality. If you are in the dream, the totem would behave in a way which is different from the real world. For instance, the spinning top would never stop spinning in the dream world, but in the real world we all know it does. Go back to the expert above from Hawking's Brief History of Time - Notice the phrase ...laws of science break down. A spinning top stops spinning in the real world as the surface it spins on provides friction to its tip which constantly reduces its speed and by Newton's First Law of Motion, it stops. When the top spins in your dream, or in imaginary time, it need not follow the laws of science (no singularities or boundaries, laws of science break down) and thus it never stops... Again, this dilemma of whether our existence is true or false is captured in the ancient concept of Maya.



As a take away from mathomathis is that;

1. We are leaving in the imaginary world and following horizontal path rather than vertical direction, to make our-self enlightened.
2. This is what Maharishis used to do; meditate in such a way that, they used to find a new path / direction of time; a new dimension and let their body travel to the world of "free" or "spiritual" or "enlightened"
3. Now, once we reach to that path, we need to be awake to view the spiritual world and to do that we need to get a kick(as in the movie shown) to come out of the dream or we need to die to open our eyes to reality.
4. All we are doing is, "DREAMING", we need a kick/death/music(ex: our parents wake us up early in the morning) to come to the reality. In case if we do not realize in this dream what we are leaving, we will keep on struggling to come out of it forever.
5. And we are leaving in the world of Brahma's Projections, to come out of it, we need to be awake, along with the brahma rishis.

let us try to understand the phenomenon of nature creation as per vedas and Hindu scriptures. Indian philosophy goes beyond both Intelligence as well as Matter and describes a Purush, or Self, of whom Intelligence is but the borrowed light. This [Adi-Purush](#) or Original Being, according to the [Bhagavata Purana](#) is the Supreme Lord Vishnu.

Adi Purush, Shri Hari Vishnu



We know that, there exist two different Realms in this Creation - Spiritual and Material. While Spiritual Realm is the abode of pure souls living on the Vaikunth Planets, the materialistic souls like us, who take birth on different planets in different galaxies of different Universes of the Material Realm. In the Material Realm, there exist three different forms of Lord Vishnu and all the three forms exist only in the Material Realm

The 3 forms of material realm are;

The first and foremost form of Lord Vishnu in the Material Realm, is that of [Shri Karanodak-shayi Maha Vishnu](#) or [Narayana](#) (One-who-lies-on-Water). The Lord reclines on Cosmic waters of the Causal Ocean (That-Causes-Everything) known as Karan-Odak that emanates from His own body and fills the lower half of the Material Realm.

Shri Maha Vishnu, lying on the Causal Ocean generated from His own Self



Shri Maha Vishnu is the ONLY Living entity present in the Material Creation right now and this form of the Lord has been called Kaal-Swabhava or the foundation of the Space-Time Continuum.

He forms the basis of Quantum Physics that runs this Universe at Sub-Atomic as well as Super-Galactic levels. With the emergence of this first form of the Lord, CREATION begins in this Material Realm. The as yet unmanifest stage of material nature is called Pradhan.

Till this stage, there is no Words or Expression, no Mind or Elements, nor the three modes of Goodness, Passion and Ignorance. There is no Life or Intelligence, no Pleasures or Pains and no Demons or Gods. There is no ether, water, earth, air, fire or sun nor the different stages of Consciousness - sleep, wakefulness and deep sleep. Yet, this Pradhan is the original substance of Material Nature and the basis of all further Creation.

Creation In The Material Realm

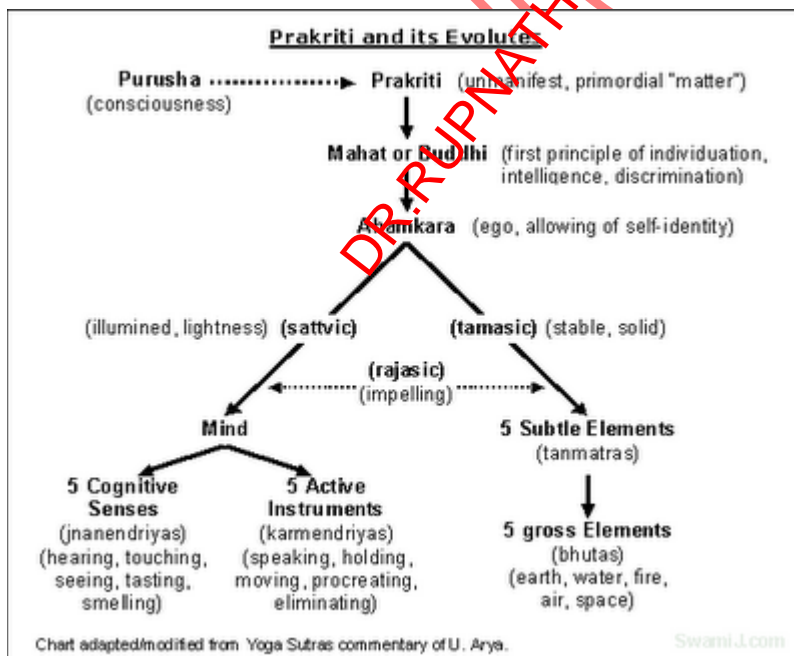
Step 1 : Creation called FIRST Sarga: Because of the Wish of Maha Vishnu, there arises a disturbance in equilibrium of the 3 qualities of Satva, Rajas and Tamas which results in the formation of subtle imperceptible matter called the '[Mahat-Tattva](#)'. This subtle matter can not be perceived by our material senses yet it forms the basis of all that follows! It is from this Mahat Tattva, that Intelligence or 'Buddhi' manifests along with the sense of 'Aham' or Ego.

Mahat Tattva emanating from Shri Maha Vishnu



Step II : In the SECOND Sarga, the Mind gives rise to 5 Basic Elements, the [Pancha-Mahabhoota](#) which, like the three Primary colors, give rise to Matter in its various forms through their different permutations and combinations. These Famous Five are: Air, Water, Fire, Land and Sky

Step III : Third Sarga consists of the Dash-Indriyan which include the 5 Sensory Perceptions - Vision, Hearing, Smell, Touch and Taste & 5 Organs of Action - Mouth, Hands, Genitals, Anus and Feet.



These THREE Phases of Creation are collectively are known as *Prakritik Sarga* as they are NOT a creation of Brahma and come into being from the Natural Energy of the Lord, known as *Prakriti*.

As we did understand in the [previous post](#), Multiple Universes emerge from the Infinite pores of Shri Maha Vishnu's cosmic body each time he exhales. The Lord again enters into each of these egg - shaped Universes in His second form of [Shri Garbhodak-shayi Vishnu](#).

Each Universe emerging from Maha-Vishnu contains a Garbhodak-shayi Vishnu



This second form of the Lord reclines on the Great Serpent Anant (Without-an-End) and is the Maintainer for his respective Universe. This particular form of the Lord is also known as Hiranyagarbha (Born-of-The-Golden-Egg) because he takes the shape inside the Universal Egg or Brahmanda.

Shri Garbhodakshayi Vishnu, First LIVING Being in EACH Universe



After a period of 1000 Maha-Yugas, a lotus bud emerges from the navel of the Lord, inside which is Brahma or Ka, the First MORTAL Being in each Universe. The stem of this cosmic lotus connecting Brahma to the Navel of the Lord, signifies the Umbilical Cord that binds a baby to its mother! In a sense, Lord Garbhodak-shayi Vishnu is the Father as well as Mother of ALL creation beginning first and foremost with Lord Brahma.

Lord Brahma, First MORTAL Living Being in EACH Universe



Imagine the status of the lord brahma when he would have opened his eyes for the first time. He must have been as lost and clueless as a new born baby coming into this world. Lord Brahma did not know the purpose of his being. Trying to look all around him simultaneously, he sprouted 5 heads to enable him to spot even a hint of an activity in any direction, yet could not see anything except darkness all around him.

To clear his confusion, he then decided to explore the stem of the Lotus from which he had emerged but came to a dead - end. Thereafter, he went into meditation for a 100 Maha - Yugas and to clear his confusion and provide him with a guidance, Lord Garbhodak - shayi Vishnu made Himself VISIBLE to Brahma.

Shri Garbhodakshayi Vishnu becomes visible to Lord Brahma



Lord Brahma was transfixed with the divine spectacle of the Supreme Lord resplendent in Blue and Gold, lying on the Great serpent with a thousand hoods on the mighty waters of the Garbh-Ocean! Shri Hari Vishnu, then told Brahma his purpose of existence and realizing the magnitude of work that lay ahead of him, Brahma was (quite understandably) left speechless. Fortunately, Lord Vishnu, the Adi-Purush asked Brahma to use portions of Lord's own body for beginning the process; It is from here that actual Creation by Lord Brahma begins.

we have spoken about the age of the universe keeping Lord Brahma as the Base, [have a look at it](#). So that we can get a gross idea about the [age of our universe](#). Note that in "each" Universe, has a personal form of Lord Vishnu and an Individual Brahma as well. Ergo, there are billions and billions of Brahmas in the Material Realm each taking care of Creation in "his" own - universe, using Lord Narayana body to create it.



Brahma first creates the Immovable objects such as Planets, Land, Mountains, etc. which do not have any inherent power of Motion - Remember that Planets also move due to Gravity and do not have an intrinsic motion of their own.

This is the "fourth" phase of Creation known as the **Mukhya Sarga**. In the next phase called the **Tiryak Sarga**, Brahma creates 6 different types of Vegetation covering trees/herbs/creepers etc., 12 different varieties of Birds and 28 different broad classifications of Animals. As of now, even I am uncertain about these facts in particular, so we will try to deal with these later.

In the SIXTH Phase we saw the creation of Demigods and other Advanced Species of life and is therefore known as the Deva Sarga. Most important Divinities were created in this Phase of Brahma's Creation. First came the 4 **Eternal Kumaras**, the First Incarnations of Lord Vishnu. These kids remain the same in appearance throughout their lifetime which is as long as that of Brahma himself! But all of them choose to follow the path of Spirituality instead of following Brahma's command for beginning procreation.

This frustrated Brahma so much that from his forehead, (the region of the third eye) emerged a dark red and blue child bawling at the top of his voice! This crying baby was named Rudra (The Howler)!

Rudra born from Brahma's Forehead



However, Rudra too decided to follow the path of Tapas or Penance and Brahma was sorely disappointed. After a lot of cajoling by Brahma, Rudra agreed to help and manifested 10 more beings with the same appearance as him. These are known as the 11 Rudras, ONE of whom is Lord Shiva. On Brahma's request again, Rudra appeared as Ardhanarishwar and generated a female principle (which we call as Asexual Reproduction in "English") which was the Rudrani. Each of the 11 Rudras similarly obtained a consort thus providing Brahma some satisfaction of seeing his creations multiply. However, the Rudras were all fierce since they represented the Supreme Lord's power of Destruction!

The 11 Rudras



Realizing that the progeny of Rudra was not what he really wanted to populate the world with, Brahma then created 10 Manas Putras by just visualizing them in his mind... The

First Rishis - Brahma's Manasputras



These Mind-born sons of Brahma are - *Atri, Angiras, Atharva, Bhrigu, Daksh, Marichi, Pulah, Pulatsya, Vasishtha and the youngest one Narada*. When all these sons preferred to follow footsteps of the Kumaras, by refusing to get entangled in the process of procreation, Brahma again filled up with Negative energy. This resulted in the creation of Asuras, who in common parlance are known as Rakshas or Demons. When Brahma let go of this Tamsik Dark aspect of his being, it resulted in the creation of Night-time.

Asuras or Demons



Focusing his positive energy again, Brahma took a Satvik form and created the Deities or Devas. These are the illumined effulgent demi-gods who became the care-takers of different aspects of the Material Creation. This Bright aspect of Brahma's personality also led to the creation of Day-time. **The point to be noted here is that Asuras came into existence before Devas(!!)**

Devas or Demigods



The next creation of Brahma was the Pitras or Manes. It may be worthwhile to mention that the planet of the Pitras has one day and night equal to a fortnight each of the humans.

Pitras or Manes



Brahma now manifested other divinities such as the Goddesses Saraswati and Gayatri; the Four Vedas; the goddess of deliveries Prasuti, elements such as Emotions, Music and Rishi Kardama (Ka's Shadow). Prasuti became the consort of the eldest Manu-putra Daksh, and this is where Copulative creation began! It is interesting to note that the Sanskrit word for parturient labour is also Prasuti, probably a recognition of her being the FIRST woman to give birth to a child by normal delivery!! Thus, Daksha became the Second Prajapati after Brahma; the Guardian and Custodian of

All Creation. With this, the Deva Sarga came to a close and Lord Brahma, who must have been completely exhausted by now, decided to take a break. He sat ruminating about the direction his work had taken till now, and took a body which was Rajsik or in the Mode-of-Passion. Suddenly, from his body, emerged a creature who looked a lot like him!! This was the First Man, Swayambhu Manu (Born-on-his-Own) who was born with the Kaya of his father Brahma (Ka-Brahma, ya-form). Interestingly, the same incident is noted in Bible as well - 'Man was created in the Image of His Maker!' It is also interesting to note that the Germanic tribes call their ancestor Mannus which is also the root of the English word - Man; Along with Manu, emerged the female Shatrupa and Brahma assigned for them the planet Earth. Thus, Human-beings, the progeny of Manu and Shatrupa were given the sanction for populating the globe.

Since the SEVENTH Phase saw the creation of Human-beings, it is known as the **Manushya Sarga**. In the EIGHTH Phase called the Anugrah Sarga, other species with magical powers were created such as the Yakshas, Gandharvs, Sarpas, Apsaras etc. Some of these species are in the mode of godness while others in the mode of darkness.

The NINTH and FINAL Phase of Brahma's Creation is called the Kaumara Sarga wherein the four Eternal Kumaras considered re-appeared in this day of Brahma. With this we end the article on process of Creation.



First to appear are the intangible elements like the protons, neutrons etc. followed by matter in gaseous form; followed by the immovable planets and landmasses; then the vegetation; birds, aquatics and animals; and finally the Higher species. Also, the Mode of reproduction is clearly ASEXUAL in the beginning (as seen with the generation of Rudras and Rudranis) and becomes COPULATIVE only after the germination of Daksha and his consort Prasuti! Before winding up, let me just mention the Third and the Final form of Lord Vishnu in the Material Realm.

This is Shri Kshirodak-shayi Vishnu present in each atom of the creation as 'Parmatma' or the Super-soul. His vehicle is the Golden-eagle Garuda and it is from Him that all the Avatars take origin! The Lord resides on planet Shwetha-dweepa in the Dhruva-Loka, reclining on the Sheshnaag (One-that-remains) with His consort Lakshmi and supervises this ENTIRE Creation.



Topa Loka



This is the abode of the four Kumaras named Sanat, Sanak, Sanandan and Sanatan and is located 120,000,000 yojanas below the Satya-Loka. They are the first incarnations of Lord Vishnu and represent the Gyan - shakti (power of knowledge) of the Lord. They are collectively referred to as the Kumaras because they are immortal and live for the entire duration of universal time, yet retain their appearance of 5 year old kids. Because of their pure nature, they have easy access to the Brahma-Loka as well as the Spiritual Realm and regularly visit Lord Vishnu in the Vaikuntha.

Loka IV: Janar Loka and Mahar Loka



The next Loka lies 80,000,000 yojanas below the Tapatoka and is the abode of great rishis. 20,000,000 yojanas below Janaloka is the Maharloka which is another abode of great saints and sages. These Lokas are populated by mystics who can move between any planets within the material universe at speeds unthinkable to modern Science and the greatest of sages, such as Bhrgu Muni, live in this place. The inhabitants have a life span of one whole day of [Brahma which is = 4.32 Billion years](#)

When the fire of devastation reaches this planet the residents transport themselves to Satyaloka where they live further before the highest of planets is also destroyed. They then transform their subtle bodies to spiritual and enter the spiritual realms. Here, by means of his Karma, a soul can either go higher, up to Satyaloka and become Brahma's associate, or down, to the level of the Devas or demigods.

Loka V: Swarga Loka

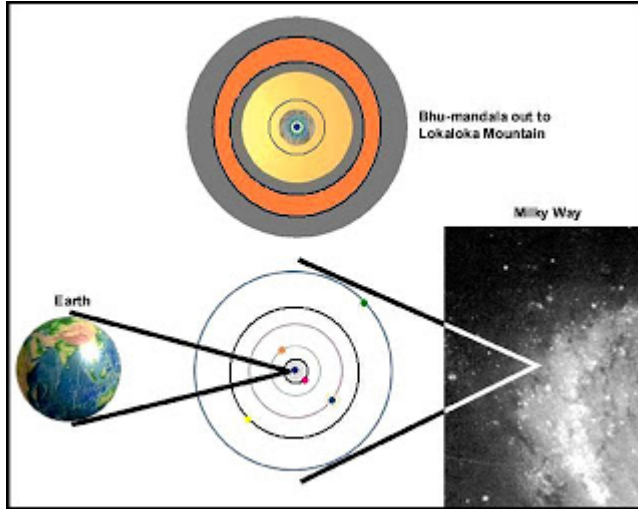


The abode of the 33 Vedic gods also known as the Trayastriṃśa in Buddhist cosmology is located on the peak of Mount Meru, the central mountain of the world, at a height of 80,000 yojans. This Loka corresponds to the concept of Heaven as described in the Western sense of the term. Here the King of the Gods, Indra rules with his brothers and companions.

His entourage comprises of Angels, Gandharvas, Apsaras, Maruts, Vasus and other divine beings. This is one of the most opulent planetary system with unimaginable riches, wish-fulfilling trees, supersonic space-crafts, ability to travel in different dimensions, long life-spans, and freedom from disease and disability. The duty of these Demi-gods is to manage the affairs of the universe, protecting its inhabitants against the demons. The capital city of this world is Amravati - Abode of the Immortals. Indra and his fellow-residents obtain all the pleasures of life because of the wish-fulfilling cow Kamadhenu. This divine cow, the three-headed White Elephant Airavat as well as the Flying Horse Uchhaishrava (Greek Pegasus) were the riches Indra obtained after the Churning of the Cosmic Ocean.

Madhya Loka

The Bhumandala comprises of SEVEN Planets giving rise to the Mortal Realm. These are: Jambu-dvipa, Plaksha-dvipa, Salmali-dvipa, Kusha-dvipa, Krauncha-dvipa, Shaka-dvipa, Pushkar-dvipa Dvipas in their orbits with Earth in the Center.

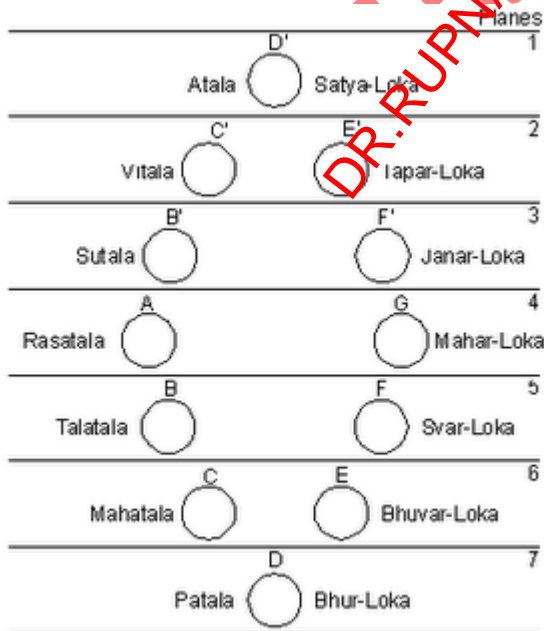


Here, the denizens live longer and are more materially opulent than the denizens of our world because right from Plaksha-dvīpa to Shaka-dvīpa, there is a perpetual Treta-Yuga which is a more conducive age than our present Kailīyuga.

Loka VIII: ADHO-LOKA or The Lower Planets

About 70,000 Yojans below the earth begin the seven lower planetary systems. It should be remembered that these planets may be LOWER in spatial co-ordinates but are materially MORE opulent than even the Higher Planets hence they are known as the Bila-Swarga!

These geographically lower worlds are: *Atala, Vital, Sutala, Talatal, Mahataal, Rasaatal and Pataal*



The residents here enjoy a standard of material comfort UNMATCHED by even the higher planets because the denizens of these worlds are concerned only with Material enjoyment and have very little Spiritual inclination. These lower worlds are dark planets, devoid of any Sunshine and are hence artificially-lit by means of huge reflecting surfaces in the form of crystals and gems! Since time is not divided into days and nights due to no sunshine reaching these planets, they have no fear produced by time.

These planets are the residence of *Daityas, Danavas, Panis, Nivat-kavachs, Rakshasas, Kalkeyas, Nagas, Uragas* who are all engaged in illusory material enjoyment with no thought of spiritual liberation. All residents bathe in elixirs which free them from any anxiety or physical disease, as well as any signs of physical aging. The visual beauty of these artificial heavens surpasses even that of the higher planets and hence they are known as Bila-Swarga.

There are incredible feats of architecture in their cities bedecked with valuable jewels. This sensual atmosphere completely captures the mind, allowing no thoughts but those directed toward fulfillment of pleasure.

Demon live in these lower planetary systems with their wives and children, always engaged in sense gratification and not fearing their next births. Some of the details are; The planet Satal is the abode of Bali Maharaja, the most benevolent and just king of the Asura race, who was blessed by Lord Vishnu to become the Indra for the next Manvantar.

In the Lower planets of Mahataal and Pataal, reside the Nagas or the semi-human serpent people. The Nagaloka is a splendid place with unimaginable riches. All darkness is banished here because of the brilliantly glowing jewels on the hoods of the huge serpents. The King of the Nagas, Vasuki resides here in his capital Bhogavati.

Buddhist texts mention eight major kings of the Nagas - Vasuki, Takshak, Nanda, Upananda, Sagar, Balvan, Anavatapta and Utpal. The same are also referred to as the 'Eight Dragon Kings' in Chinese and Japanese legends.

Below the lowest planet of Pataal, is the planet of the Manes or ancestors who are known as the Pitras.

[Naraka - Loka](#)



This place acts as a purgatory for the souls who have committed the most abominable actions on the earthly plane. Unlike the Eternal Hell of Western religions though, this place is temporary and once the soul has learnt its lesson, it is free to move back into the regular dimension.

There are 28 different hells described in the Vedic literature and these planets are: *Raurav, Sukar, Rodha, Tal, Vishan, Mahajwal, Taptakumbh, Lavan, Vilohit, Rudhiramabh, Vaitarni, Krimish, Krimichojan, Asipatravana, Krishna, Lalabhaksha, Darun, Puyuvah, Pap, Mahnijwal, Adhahshira, Sandansh, Kalsutra, Tamas, Avichi, Swabhojan, Apratishthit and Aprachi.*

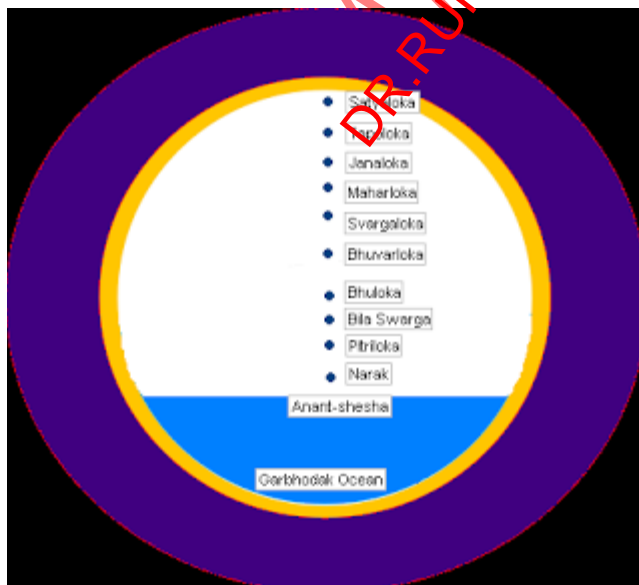


The ancient sages have made provisions of expiation for those sinners who feel guilty in their conscience after committing their sins. Only those sinners who do not expiate

for their sins fall into these hells. Although life here seems to go on for an eternity, in actual fact the duration of one's Karmic sentence here may be only seconds or moments. All these Hells are under the domain of Surya-putra Yamaraj where he delivers judgement according to the record kept by his assistant Chitra-gupta.



The sins are paid off in hell only when you have achieved the human form at the end of the 84 lakh births we have taken.. at all other times, the soul is immediately transferred to a new body as soon as it leaves the previous one. Below these planets is the Garbhodak Ocean which forms the bottom of the Universal Egg or the Brahmanda.



At the base of our Universe lies the immense Garbhodak Ocean on which reclines the second form of Lord Vishnu - Shri Garbhodakshayi Vishnu, resting on the Eternal serpent, Ananta-Shesha. Anant-Shesh has thousands of hoods and each of the hoods carries a bright gemstone that illuminates the azimuths. At the end of every Kalpa, Brahma goes to sleep and rests for the night. The time has come now for the Mahapralaya when fiery poison emanates from Ananta's thousands of hoods and destroys all Creation.

This is the Sankarshan form of the Lord from whose eyebrows appears the three-eyed Rudra who destroys the three worlds and dances the dance of destruction known as the Tandav.



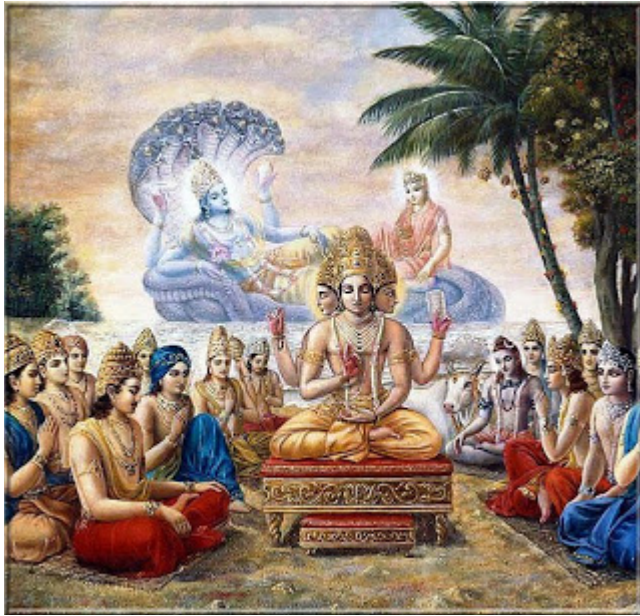
Bhuvan - Loka

This planetary system roughly corresponds to our Solar System and contains Five major planets plus the Sun-God. However, there are two planets outside the Solar System included in this - Dhruva Loka or Pole Star and the realm of the Sapta-rishis or Big Dipper. These Lokas are the abodes of Semi-divine beings who are one notch higher than the Humans. They assist the demigods in various ways and sometimes interact with the humans. By advancement in their service they can become a Demigod or by indulging in enjoyment, be born as a Human on the Earthly Realms.

Case I: Dhruva - Loka

It is the planetary complex revolving around the Polestar that is said to be 10,000,000 yojans below the Maharloka. It is described as the center of a bright ring of stars identified with our galaxy, Milky Way. In every material universe, there is one Vaikuntha planet with an ocean of milk where Lord Vishnu resides on an island called

Shvetadvipa. In our Universe, this planet is situated in the Eastern side of Dhruvaloka and is the abode of Lord Kshirodakshayi Vishnu



This transcendental island is 200,000 square miles and covered with desire trees for the pleasure of the Supreme Lord who resides here with Goddess Lakshmi and other pure, transcendental entities. As it is a spiritual planet, it is eternal and therefore remains when all other planets within the material universes are destroyed. It is believed to be the pivot for all material stars and planets with even the Sun, revolving at the speed of 16,000 miles per second around the Dhruva Loka.

Case II: Saptarishi - Loka

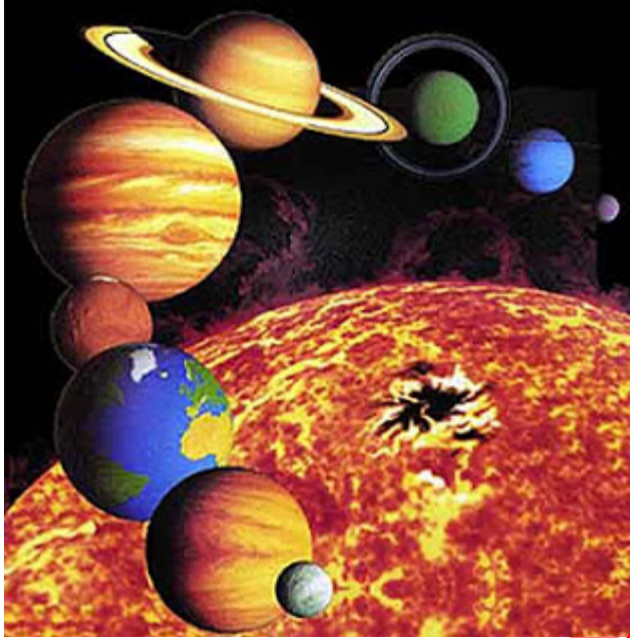
The abode of the Seven Great Seers or the Sapta - rishis located 100,000 Yojans below the Dhruva-Loka. The seven rishis are the most advanced spiritual guides for Humanity and have been present at all major time periods of our History. Astronomically, their abode is recognized in the form of the Big Dipper or Ursa Major constellation and it always revolves around the Dhruv-Loka or Pole Star. Rishi Vasishth was the preceptor of the Solar Dynasty or Suryavansh while Vishwamitra was the guru of Lord Rama. There are numerous stories and legends in the ancient scriptures which relate the immense services these rishis have provided to different rulers on our planet since the beginning of time.

Case III: Nakshatra Loka

Nakshatra Mandala is the stellar neighborhood of the Solar System perceived as the starry night sky. It is generally equated with the Zodiac Map around the Earth and represents the different constellations visible to us from Earth.

Case IV: Solar Planets

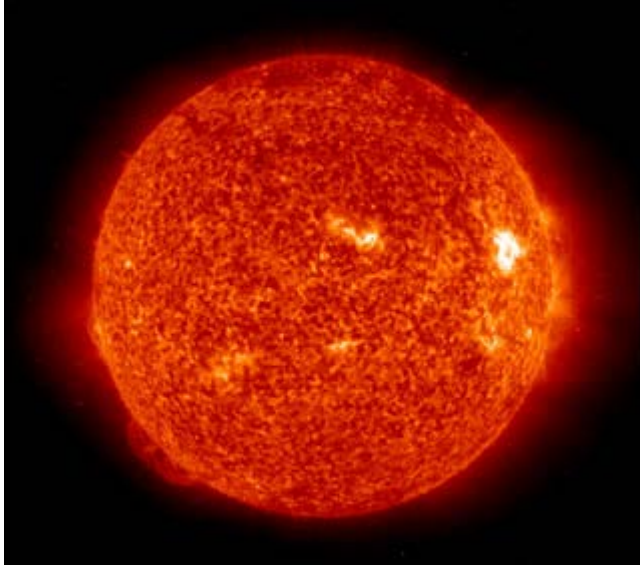
The next Lokas are those of the major Solar planets viz. Mercury, Venus, Mars, Jupiter and Saturn which are the abodes of the divine-beings called Budh, Shukra, Mangal, Brihaspati and Shanaichar respectively.



An alternate view is that these are spherical shell regions in which the respective planet's orbits are situated and these shells contain one after the other in the order of Mercury, Venus, Mars, Jupiter and Saturn. These are believed to be located at a respective distance of 2,00,000 Yojans each.

Case V: Surya - Loka

Similarly, the Surya-Loka refers to the sphere of the Sun-god and the Solar neighborhood. It is located at a height of 1,00,000 Yojans above the Earth. The Most important thing about this Loka is that it is situated in the middle of the Bhuloka and Bhavarloka, rotating through the time circle of the zodiac. Thus, it represents not only the center of the Solar System, but also the center of the Universe.



Case VI: Chandra - Loka

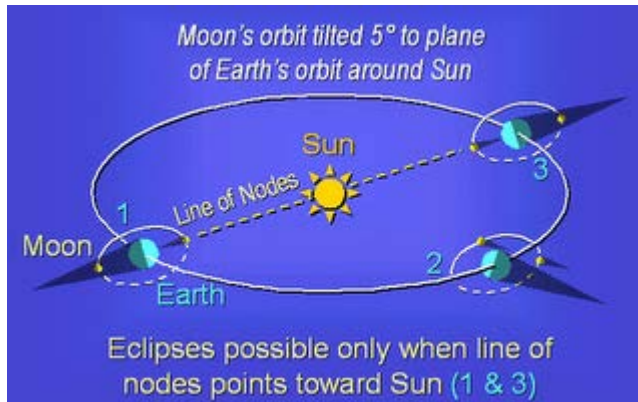
Chandra/Soma is the Sanskrit name of the Moon-god and hence, this Loka includes the satellite of Moon as well as its orbital neighborhood. It should be remembered that when the scriptures talk about the Sun or the Moon-gods, it does not imply that the Star and the Satellite themselves are revered as Gods! There are deities who have been given the responsibility of these Heavenly bodies and they are the ones referred to by these terms.



Moon influences the tidal processions and growth of vegetation therefore it is considered the life-giver for all living beings on earth. Here the celestial, intoxicating beverage called Soma is also available which is consumed by Indra and other Devas especially when they are getting ready for a battle.

Case VII: Rahu

Rahu is the North node of the Moon's orbit while its counterpart Ketu is the southern one. It is said to be situated 80,000 miles above the three previous Lokas and is responsible for causing the Solar and Lunar eclipses. Astronomically, Rahu and Ketu are identified with the Ascending and Descending Nodes of the Moon which are the points where the orbits of Sun and Moon intersect and if the alignment is correct, either a Solar or Lunar eclipse may occur.



Thus, these are not imaginary entities which periodically swallow the Sun and the Moon to cause an eclipse but ACTUAL positions contributing to the eclipses. The ancients were after all NOT crazy and the myths actually have underlying science inherent in them.

Case VIII: Siddhaloka, Charanaloka and Vidyadharaloka

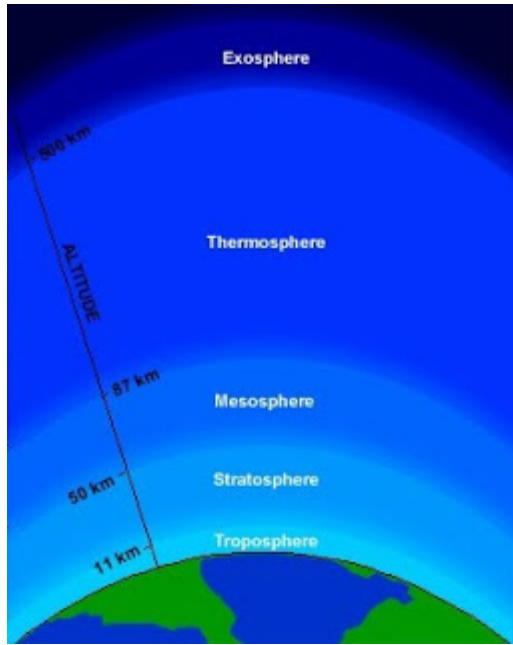
These planets are spread from above the Antariksh to the orbit of the Moon. Their residents are born with all the mystic siddhis naturally, including the ability to travel to other planets without using mechanical contraptions.



The Vidyadhars are winged-creatures corresponding to the western concept of Angels and Siddhas are advanced beings who do not need wings to fly on account of their mystic Yogic powers. Chaarans spend most of their time traveling between the

different planetary systems, eulogizing the Lord. To me, the above mentioned three dimensions seem to represent the DIVISIONS of ATMOSPHERE which is quite neatly divided into three bands as well.

The Layers of Atmosphere between Sun and Earth



It is quite possible, that the three Lokas mentioned here, actually refer to the Atmospheric layers of Thermosphere, Mesosphere and Stratosphere and these entities exist there in an ethereal form.

Case IX: Antariksh

The sky called Antariksh is the lowest of the higher Lokas and exists immediately above the Earth realm. It extends as far as the wind blows and clouds float in the sky and within it are the residences of Yakshas, Rakshashas, Pisachas, Ghosts, and other ethereal beings.

ASTRONOMY AND VEDIC SCIENCE

There are many astrological and astronomical references in the Rig Veda, that many scholars have ignored in the West. Instead, they have the view that Hindus got their idea of planets and their respective deities etc., from the Greeks, around 300BC, as per Alexander's arrival. Here, we present the notion that this is entirely incorrect. In fact, the Rig Veda, the oldest text of Hinduism itself has many references, in relation to astrology and astronomy, as we shall show.

Let us start off first of all by noting the Goddess Prishni, a Vedic Goddess closely associated with the later dark goddess Kali of Hinduism. Prishni means 'Spotted', and thus would refer to a star-cluster in the sky, such as the Milky Way region. Prishni is mother of the sky-gods in the Rig Veda - the Maruts (flashing ones), who are hence stars, in this relation.

Prishni is also associated with a Cow, being mother to calves (Maruts), in this connection (Rg.X.123.1). This connects her to cow, milk etc. and hence the Milky Way region. She is also the Sky in general, being connected to Ratri (Night), another Vedic Goddess, and again to later goddess Kali.

Another Vedic Goddess, Aditi also has a similar astronomical nature. Aditi comes from the Sanskrit root "Ad" (To Eat). Aditi is thus the "Eater" (Brihadaranyaka Upanishad.I.2.2). Aditi is thus the representative of the "Black Holes" in Space, which swallow/eat up everything that enters them. It hence shows that the Vedics knew well of Astronomical Sciences.

Such concepts here may seem quite generalised, but are important to note that the oldest texts of the Hindus showed that they were "star-gazing" from a very early period!

We also cite the Devas or the Vedic-Gods, meaning 'Shining Ones'.

This comes from the root "Div" (o Shine/illuminate). As their name suggests, and as they are Sons of Dyaus / Zeus (Sky, Illuminated), sometimes of Aditi (which also means 'unbounded' - the Sky). This shows that the Devas are also the Constellations or Lunar Mansions (Nakshatras).

The Krishna Yajurveda (IV.4.10) elaborates on this point, and describes them and their respective deities that govern them!

So, such notions were in use in early Hinduism, and such sacrifices described in the Yajur-Veda to them reflect the fact that Vedic rituals were based primarily on the Stars and their Movements – thus in accordance with Astrological Time-keeping methods, only possible through the invention of Vedic-era Astrology (Jyotish).

The Nine Planets (Nava-Grahas) also have their place in the Vedic traditions also and can be found in the earliest texts as the Rig Veda.

The Planet Venus (Shukra, Effulgent in Sanskrit), who (secretly) appears in the Chandogya Upanishad as the teacher of the Asuras or Anti-Gods, Virochana (Greatly Effulgent), which also suggests he is Venus (As Shukra, the Shining One, since Venus is the Greatest Shining Planet and leader of the Asuras or Anti-gods and their Guru as Virochana).

In Chandogya Upanishad, this same Virochana also fights with Indra the Self-deity, who here is Brihaspati or Guru as planet Jupiter of the Devas or the Positive Stars or Planets (Maitreya Upanishad.VII.9). In later astrological texts, the god Indra himself is the god or ruler of Brihaspati or Jupiter, as well as Venus.

It all shows the ancient Hindus were well-versed in Astrology and Astronomy and also shows the esoteric significance behind the stars and astrology. Shukra (Venus) also has mention in the Maitreya Upanishad (VII.9), as a form of Brihaspati or Jupiter himself. Maitreya Upanishad is long before the Greeks in India.

This shows that the ancient Hindus knew (as they did in later times) of the two-sides of Venus (Shukra) and Jupiter (Brihaspati), as the teachers of the Demons (Asuras) and Gods (Devas) respectively.

The Vedic King Vena (Rg.X.123) and Soma, the Moon (Rg.IX) are deities of Rig Veda that can also be compared to Venus, because of their blissful and material nature. King Vena (vs.7), is compared to a Gandharva (celestial musician of Vedic lore), on this note, and is compared to the Maruts ('Shining Ones' or Asuras, demons - vs.1), which connects him to the name of Asuramaya (Wise Demon), one of his famous later epithets.

The Vedic Rishi Bhṛigu, father of Shukra (Venus) in later times, is also said to be Venus.

Sri (Lakshmi, goddess of wealth) also is connected to Venus and is the daughter of the Seer Bhṛigu.

These are well-known facts...

Soma (Moon) is also Shukra (Semen) or filled with Shukra (semen) referring to Soma's (Moon's) more material-planet (or form), as Venus (Rg.IV.27.5). Soma is also compared to the Seer Ushanas, a later name for Venus, as the Poet (Rg.IX.87.2-3) - all these show Planet Venus in the Rg Veda, is well-documented.

Ushanas himself descends from the Vedic Seer or Rishi, Bhṛigu.

Thus, the Vedic peoples knew well of the Stars in the Universe - they were not ignorant at all of astrology and astrological concepts.

In fact, the 360 Day Year, with Twelve Months and Three Ascendants or Lagnas is mentioned in the Rig Veda (Rg.I.164.48):

"Twelve are the felines, and the wheel is single; three are the naves. What man hath understood it?
Therein are set together spokes three hundred and sixty, which in nowise can be loosened."

The 360 spokes here are the 360 degrees or divisions of the Zodiac. The Twelve are the Vedic Star-Signs (called Rashis). The Three Naves are the Three Lagnas or Ascendants in the Vedic Tradition.

These are the Ascendant-Rashi (Position of Birth-Star in the First-House); Chandra-Rashi or Lagna (Position of Chandra or the Moon in the Star-Signs) and the Surya Rashi or Lagna which is the position of the Sun in the Chart with regards to the Star-Signs.

These three are employed in the circular Sudarshana-Chakra in later India – an astrological charting system where all three Ascendants (or Lagnas) are drawn on the Zodiac.

It appears this Sudarshana Chakra is described in the Rig Veda!

Hence, the Vedic people knew of the Twelve Signs of the Zodiac and also the Twelve Months.

The Adityas (Sun-Gods) are the Twelve Months in Vedic texts (Brihadaranyaka Upanishad.II.3.9.5) - it takes little intellect to work that out, as the text mentions this!

This is quite something, since many modern books on 'Hindu Astrology' state that the Hindus adopted the 12-Month Calendar of the Greeks! Are we to admit that the West's 'intellects' have perhaps missed a few things out in their History of Vedic Sciences?

In the Vedas, the Adityas (Sun-Gods; thus Devas), or the Planet-Deities, as noted are the Months also. This relates us to the sister-science of Astronomy, Astrology, and the Adityas are led by Vishnu or the Sun-God himself, who is their Lord, the Lord of the Planets.

We can explain these further.

The Devas or Vedic Gods would hence be related in the same manner, as in latter times, as they are connected to such planets, as we will discuss here:-

Deva Brihaspati is Jupiter - Brihaspati is the later name for Jupiter. In the Vedas, he is the deity of Wisdom and inner-illumination. He is also the guide or Priest of the Devas or Gods.

Deva Soma is the Moon (Indu), and also Venus (Vena is Venus, also Soma as Shukra)

Soma is the Vedic deity of the Moon and Delight. Indu means a circle or drop, meaning the Moon and also the immortal elixir that Soma or the Moon represents, on an inner level.

Deva Bhaga (Enjoyment) and Ushanas the Seer would be more Venus, as also Pushan, forms of Venus and Soma Bhaga is the Vedic deity of delight, wealth and prosperity, relating to the Moon and also Venus, the more material aspect. As noted, the Seer Ushanas is also Venus in later times, as is his brother, the King Vena, noted for their materialistic and blissful outlook. Pushan is another deity like Bhaga that connects with wealth but more allied with the Moon or Soma in form.

Deva Agni is Fiery and hence is Mars - The Vedic deity of Fire, Agni is also the youthful warrior, called Kumara (boy) and Kartikeya (who born of the Pleiades) in Hinduism. According to the Vedas, he is the planet Mars and hence the Divine warrior, or Aries.

Deva Rudra and Varuna as well as Yama have Dark-natures such as Death (Mrityu) and Law (Rtu) as Saturn - Rudra is later known as Mahakala (Great Death) and the conqueror of death. He is Saturn in his transcendental aspect. Saturn is generally a death-planet and a planet of Karma and Divine Law (Dharma or Rtu). Hence he is connected to Varuna, the Vedic deity of death and judgement, and Yama, the lord of the underworld, as in later times.

Deva Surya is obvious as the Sun - Surya is the Vedic Sun-God, also called Savitar. He is the Chief of the Adityas or Vedic Solar-Gods, as he rules them in later times. His nature is that of a King and also inner-illumination. Many Royal families in India trace their lineage from the Sun, such as Lord Rama, the hero of the Indian Epic, Ramayana.

Vishnu, would be Budha (Mercury)

Budha himself as the ruler of Mercury descends from the Soma-Seers, from Soma Atreya, who is his father. The Atris or Atreyas are lauded for their wisdom in the Rig Veda for finding the Sun or the Self in the darkness of illusion of creation (Rig Veda, Book V.40). Vishnu himself is the Vedic deity of buddhi or intellect and inner-wisdom, having out-witted the King Bali and extending himself across the cosmos. In Hinduism Vishnu is the deity called upon when other deities require higher help of intellect and wit.

The Headless Vritra would be the 'tail of the serpent' or Ketu

Vritra is the Vedic serpent-demon who was cut in two. His head became Rahu and his tail or trunk became Ketu. It relates to the Svarbhanu tale. The headless form of this demon is Ketu.

The Head of Vritra (also Svarbhanu:-Rg.V.40) is well-known as Rahu

As noted above with Ketu, Rahu is the head of this serpent-demon. The tale of him as Svarbhanu in the Rig Veda, where he swallows the Sun and the Moon is the origin of his later form. He is the demon of Lunar and Solar eclipses.

The famous Svarbhanu Myth (Rg.V.40), also talks about the Solar Eclipse, which shows of the ancients and their knowledge, or rather, observation of the Stars (yet, our scholars would have them making Rock-Stoves!).

As noted, Svarbhanu is the ancient 'demon of darkness' who hides the Sun.

Later Hinduism knows of these Nava Grahas or Nine Planets that have influences over many things. They are subtly mentioned in the Rig-Veda (I.191.13, III.9.9, X.27.15, X.81.5), as also through their deity-counterparts who rule them in later times, as mentioned above through their characteristics.

They are also the various Devas, as noted above, as the Navagrahas (Nine Planets).

As for the astrological knowledge, the Vedic people and Seers are also said to possess flying Rathas (Chariots), which could be viewed as either space-ships, or even orbital Satellites. Each Deva(Star), meaning either a Planet-God, or planet possessed one.

We see many such references of aerial crafts:

"O Pushan, with you Golden Chariots that travel across the Ocean, in the Mid-Air,

You go on an embassy to the Sun, tamed by love, desirous of the glory."(Rg.VI.53.3)

Perhaps such crafts were, like UFO's, possessed by Royalty, Kings and Gods, as in Mahabharata, and the Ramayana. Yet, there is also the possibility of a weather-balloon like device, or even satellite-technology, that they possessed, for each star, or Deva.

Perhaps they were controlled run by mantras or sacred chants to the planets etc.

These Rathas (Vimanas or Flying Ships), especially the Pushan or Surya Rathas, relate to the Sun. This could be seen as an ancient Solar-Powered spaceship, satellite etc., used to transverse and explore the planets.

Such Solar-Powered devices would be similar to today's Solar-Energy sources for heating, electricity and also Engines. It shows the ancients, being against pollution, had such devices that ran on natural energies, such as the Solar, as in the case of Pushan's.

Yet, these are late/advanced concepts in today's technological world, and Scientists call this 'evolution' - rather, it is a sign of humanity "rediscovering" or returning to more ancient methods, employed in the Vedic Era, or Satya Yuga, the Age of Truth and Dharma (Righteousness)!

The ancient must have had either crafts or satellite-like devices, or some kind of telescope. Otherwise, how else did they worship Mars as the God of Fire, showing Mars's Fiery Nature, thousands of years ago? It is more than just a guess, and shows they had devices to see the planets, long before we could!

The god Indra's Chariot runs by mantras and has Ten Sides, showing it to be a large temple-like complex [does this not remind us of why later Hindus built in such styles, their own Mandirs or Temples?]:

"The rich new chariot has been equipped at morning; it has four yokes, three whips, seven reins to guide it: Ten-sided, friendly to mankind, winner of light, that must be urged to speed with prayers and wishes." (RV.II.18.1)

This also has a subtle nature. The Ten-sides are the Ten Senses or the Body. The Four yokes are the four regions, four Vedas etc. The Three whips are the three lokas (states), and the Seven reigns are the Seven Chakras or Pranas. The Prayers are the Vedic suktas or hymns. Thus, even Chariots were made in accordance to Universal Principles, such as the Cosmic Body of Man, which is the "model" of the Universe and it's Truths itself!

The Vedic Ashwin gods, gods of healing and their Chariot, as we see, reach the Heavens, or the Skies, which also shows of ancient flight technology in the Vedas, undoubtedly:

"We call the two Ashwins, the Gods borne in a noble chariot, the best Of charioteers, who reach the heavens." (RV.I.22.2)

"Prepare that [chariot] which passes thought in swiftness, that has Three Wheels and Three Seats, you mighty, whereon you seek the abode of the pious, whereon, Threefold, you fly like birds with pinions." (RV.I.183.1)

The Ashwins are the Twins of Heaven, the so-called 'Ashvini Nakshatra'. These also show of not only beings living on these planets (in subtle realms), but also of their crafts. Such wisdoms are far beyond the reach of modern Science, which shows our Fathers were not mere Primitive cave-dwellers!

Flying 'like birds' suggests that, like today, some Vimanas/Rathas were shaped like birds, like our present airplanes etc. These all suggest, however, that these crafts were superbly built, going places that, even today, NASA spaceships cannot go! Pushan's going to the Sun, for example, shows of an 'astralisation' of the Craft and Body of the Astronauts, as not to burn on this fiery planet! Or, great tempered steel and suits were worn that would not wear in heat - as the famed Pillar at Delhi, which hasn't rusted, shows these people had such technology!

Perhaps it also suggests that the ancients visited such planets (grahas/nakshatras) and used such crafts to do so. In any such manner, it would show of their great knowledge of such things, such as black holes (Aditi, mentioned above). The knowledge of planets is thus the knowledge of the Universe. That the Vedic Rishis had such knowledge, is also obvious by the name of their deities:- Agni Vaishvanara, the 'Universal Being of Fire' - Vishwakarma, the 'Universal Worker/Creator' or the Vishvedevas, the 'Universal Shining Ones(deities)' - the Stars or the Universe which is full of Devas (Deities).

They were not limited merely to primitive deities of Earth Fire, Wind, Water and Oceans etc.! In fact, their deities were greater higher forms of such earthly elemental principles, which are themselves, lower forms of Higher Cosmic Truths. Varuna, as Waters, for example, is more the Cosmic Waters, from where the Primal Egg emerged (Rg.X.121.7). Hence, the deities are not merely physical, but often Primal and Subtle Universal facts as well. Agni-Jatavedas, the 'Fire who knows all births', is hence the Jiva (Individual soul), that is reincarnated many times in the hearts of mortals (Rig-Veda.X.5.1).

In a sense, Agni as the Primal Unborn Self, is also, like Hiranyagarbha (in X.121.7), also the child of the (cosmic) waters (Rig-Veda.X.5.1). Vedic Astronomy, then, is thus merely a small science to the Rishis, who knew the Higher Cosmic Truths of various elemental beings. If such Rishis knew theories such as the Big Bang etc. - then the Science of the Stars, to them, is merely small.

The whole Big Bang theory, originates, like as in the Bible, from the Word in the Vedic texts (Brahmanaspati, lord of prayer or word), who created a 'blast' or bang (Rg.X.72.2).

From there, the same verse mentions, that existence (of being), originated from non-existence. The whole hymn (Rg.X.72), speaks about the order of creation, from a Big bang, and also compares it as a dance of the deities (vs.6). It also mentions Surya (The Sun) emerging from Waters (vs.7). This whole Sukta (hymn), should be explored more by Scientists.

It is hence, no wonder that ancient knowledge extended to the bounds that it did. The story of Prajapati/Hiranyagarbha as the Primal Embryo/Egg (Rg.X.121), is also the story of the Primal Atom, and shows it can be split.

Prajapati is the Primal Creator of all Beings and is associated with the deity Hiranyagarbha in Vedic lore, who represents the Sun. More specifically, the inner-sun. Hiranyagarbha itself means 'Golden Orb / Egg / Womb'.

The 'split' atom, may also be explained as the two 'offspring' or forms, of Prajapati/Hiranyagarbha (the Primal Atom), as the Devas and the Asuras (Brihadaranakya.I.3.1).

This shows Ernest Rutherford and others discovered nothing new about the Atom, and merely 'touched base', on an ancient particle of the complex Vedic wisdom.

This all shows the inter-related Sciences to Astronomy, as the Cosmic Universal Truths, the origins of the Stars themselves, from which the Hindus credit their own sciences, through their planetary rulers, the Devas or Gods (Shining Ones).

Science in Hinduism-Motion of earth around sun

check out rigveda verse in context of motion of planets.

The first one is Verse 10.149.1.

Savita Yantraih Prithiveem Aramnat Dyaam Andahat Atoorte Baddham Ashvam Iv Adhukshat (10.149.1)

Transaltion: "The sun has tied Earth and other planets through attraction and moves them around itself as if a trainer moves newly trained horses around itself holding their reins."

In this mantra,

Savita = Sun

Yantraih = through reins

Prithiveem = Earth

Aramnaat = Ties

Dyaam Andahat = Other planets in sky as well

Atoorte = Unbreakable

Baddham = Holds

Ashwam Iv Adhukshat = Like horses

In simple terms, this verse says that sun is center of solar system and planets (including earth) move in a closed-loop path around it.

Sun deity riding on his seven horses

The second verse 8.12.28 gives details on this motion of planet

Yada Te Haryataa Hari Vaavridhate Divedive Vishwa Bhuvani Aditte Yemire-(Rigveda 8.12.28)

“All planets remain stable because as they come closer to sun due to attraction, their speed of coming closer increases proportionately.”

In this Mantra,

Yada Te = When they

Haryataa = Come closer through attraction

Hari = Closeness

Vaavridhate = Increases proportionately

Divedive = continuously

Vishwa Bhuvani = planets of the world

Aditte = eventually

Yemire = remain stable

This verse clearly states that:

1. Motion of planets around the sun is not circular, even though sun is the central force causing planets to move
2. The motion of planets is such that Velocity of planets is in inverse relation with the distance between planet and sun.

Rig-Veda further asserts that god has created sun and gave him the power of attracting other planets. Check the below verses

Sun attracting all planets

Rig Veda 1.6.5, Rig Veda 8.12.30

“O God, You have created this Sun. You possess infinite power. You are upholding the sun and other spheres and render them steadfast by your power of attraction.

Rig Veda 1.35.9

“The sun moves in its own orbit but holding earth and other heavenly bodies in a manner that they do not collide with each other through force of attraction.

Rig veda says sun is heavier of all planets and so, holds all other planets in his orbit.

Rig Veda 1.164.13

“Sun moves in its orbit which itself is moving. Earth and other bodies move around sun due to force of attraction, because sun is heavier than them.

Atharva Veda 4.11.1

“The sun has held the earth and other planets”

From above image, no need to say “sun is heavier of all planets”

Rig veda says moon does not have light of his own and moon light is gift of sun god to moon god.

Rig Veda 1.84.15

“The moving moon always receives a ray of light from sun”

Rig Veda 10.85.9

“Moon decided to marry. Day and Night attended its wedding. And sun gifted his daughter “Sun ray” to Moon.”

Rig Veda 5.40.5

“O Sun! When you are blocked by the one whom you gifted your own light (moon), and then earth gets scared by sudden darkness.”

Rig-veda verse “velocity of planets is inversely related to distance from sun”, is proved by science.

From Newton’s Second Law one can easily derive that

“For a planet having distance ‘r’ from sun and ‘ θ ’- the angle between any fixed axis and length ‘r’, revolving around sun in an elliptical orbit, at any point of time, following holds true.

Derivative of the product of square of distance between planet and sun and rate of change of angle θ , with respect to time, is zero.

The above relation is better known as conservation of angular momentum, usually studied in vehicular movement and in cases involving Central Forces. Now, if we replace angular velocity with linear velocity, then we will come to the assertion of the rig-veda verse 8.12.28 which says that “velocity of planets is inversely related to distance from sun”

But what is more exciting is that vedic verses perfectly matches Newton's law of gravitation and Kepler's laws of planetary motion. In fact, Kepler laws, Newton laws and many other scientific laws are nothing but the derivation of ancient vedic verse. This is the beauty of Vedas. Science and Vedas never contradicted each other. In fact, the basic essence of Hinduism is laid on the principle "True Religion and True Science can never contradict."

Kepler law using conservation of angular momentum

Just having the knowledge of vedic verses is not enough because the Vedas themselves says that "without research and experiments in real-world, no truth can be realized"

So one should try to make a scientific discovery taking vedic verses as a guide as many scientists have done before. Ex: Aryabhata
Since Vedas is believed to be the gift of god to human, nothing written in Vedas can contradict scientific discoveries. And After reading the Vedas in entirety, one is able to realize the supreme power and creation of ever-pervading god. Thus Vedas would not only enlighten your mind and heart but would also give you advanced exposure to science and astronomy

Let me conclude this topic with a very small poem
Let us pray to the almighty deity sun
Through ishvak, sun dynasty he begun
May he grant us happiness and wisdom
May he give us knowledge in his ashram

Forefather of Surya race and lord Rama
Father of greatest mighty warrior 'Karna'
May he invoke the inner good within us
May he liberate from all sorrow and curse

May Sun god give us divine rays and light
May he enlighten our soul, mind and sight
May he protect us from scary dreamy night
May his blessings make us a good knight?

"A millennium before Europeans was willing to divest them of the Biblical idea that the world was a few thousand years old, the Mayans were thinking of millions and the Hindus in billions."
Dr. Carl Sagan, (1934-1996) famous astrophysicist

Lord Brahma

LORD BRAHMA

Brahma is the first god in the Hindu triumvirate, or trimurti. The triumvirate consists of three gods who are responsible for the creation, upkeep and destruction of the world. The other two gods are Vishnu and Shiva.

In the Hindu pantheon, Brahma is commonly represented as having four heads, four arms, and red skin. Unlike all the other Hindu gods, Brahma carries no weapon in his hands. He holds a water-pot, a spoon, a book of prayers or the Vedas, a rosary and sometimes a lotus. He sits on a lotus in the lotus pose and moves around on a white swan, possessing the magical ability to separate milk from a mixture of water and milk. Brahma is often depicted as having long white beard, with each of his heads reciting the four Vedas.

Brahma, Cosmos, Time & Epoch:

Brahma presides over 'Brahmaloka,' a universe that contains all the splendors of the earth and all other worlds. In Hindu cosmology the universe exists for a single day called the 'Brahmakalpa'. This day is equivalent to four billion earth years, at the end of which the whole universe gets dissolved. This process is called 'pralaya', which repeats for such 100 years, a period that represents Brahma's lifespan. After Brahma's "death", it is necessary that another 100 of his years pass until he is reborn and the whole creation begins anew.

Linga Purana, which delineates the clear calculations of the different cycles, indicates that Brahma's life is divided in one thousand cycles or 'Maha Yugas'.

He has four arms and is usually depicted with a beard.
Brahma's consort is Saraswati, goddess of knowledge

Vishnu is the preserver of the universe, while Shiva's role is to destroy it in order to re-create.

Brahma's job was creation of the world and all creatures. His name should not be confused with Brahman, who is the supreme God force present within all things.

Brahma is the least worshipped god in Hinduism today. There are only two temples in the whole of India devoted to him, compared with the many thousands devoted to the other two.

There are a number of stories in the Hindu mythology which point to why he is rarely worshipped. These are two of them.

The first view is that Brahma created a woman in order to aid him with his job of creation. She was called Shatarupa.

She was so beautiful that Brahma became infatuated with her, and gazed at her wherever she went. This caused her extreme embarrassment and Shatarupa tried to turn from his gaze.

But in every direction she moved, Brahma sprouted a head until he had developed four. Finally, Shatarupa grew so frustrated that she jumped to try to avoid his gaze. Brahma, in his obsession, sprouted a fifth head on top of all.

It is also said in some sources that Shatarupa kept changing her form. She became every creature on earth to avoid Brahma. He however, changed his form to the male version of whatever she was and thus every animal community in the world was created.

Lord Shiva admonished Brahma for demonstrating behaviour of an incestuous nature and chopped off his fifth head for 'unholy' behaviour. Since Brahma had distracted his mind from the soul and towards the cravings of the flesh, Shiva's curse was that people should not worship Brahma.

As a form of repentance, it is said that Brahma has been continually reciting the four Vedas since this time, one from each of his four heads.

A second view of why Brahma is not worshipped, and a more sympathetic one, is that Brahma's role as the creator is over. It is left to Vishnu to preserve the world and Shiva to continue its path of cosmic reincarnation.

Lord Shiva

LORD SHIVA

The name Shiva in Sanskrit means "auspicious one" and indeed Shiva is a major Hindu deity, and the Destroyer or transformer among the Trimurti, the Hindu Trinity of the primary aspects of the divine.

In the Shaiva tradition of Hinduism, Shiva is seen as the Supreme God. In the Smarta tradition, he is regarded as one of the five primary forms of God and in the Brahma Kumaris perspective, he is known as Father, or Shiva Baba.

Shiva is usually worshipped in the abstract form of Shiva linga. In images, he is generally represented as immersed in deep meditation or dancing the Tandava upon Apasmara Purusha, the demon of ignorance in his manifestation of Nataraja, the lord of the dance.

He is also the father of Ganesha and Murugan.

Shiva is the third god in the Hindu triumvirate. The triumvirate consists of three gods who are responsible for the creation, upkeep and destruction of the world. The other two gods are Brahma and Vishnu.

Brahma is the creator of the universe while Vishnu is the preserver of it. Shiva's role is to destroy the universe in order to re-create it.

Hindus believe his powers of destruction and recreation are used even now to destroy the illusions and imperfections of this world, paving the way for beneficial change. According to Hindu belief, this destruction is not arbitrary, but constructive. Shiva is therefore seen as the source of both good and evil and is regarded as the one who combines many contradictory elements.

Shiva is known to have untamed passion, which leads him to extremes in behaviour. Sometimes he is an ascetic, abstaining from all worldly pleasures. At others he is a hedonist.

It is Shiva's relationship with his wife, Parvati, which brings him balance. Their union allows him to be an ascetic and a lover, but within the bounds of marriage.

Hindus who worship Shiva as their primary god are members of the Shaivism sect.

Shaivism, along with other traditions that focus on the goddess Shakti, are some of the most influential denominations in Hinduism.

In his representations as a man, Shiva always has a blue face and throat. Strictly speaking his body is white, but images often show him with a blue body too.

Shiva is represented with the following features:

A third eye

The extra eye represents the wisdom and insight that Shiva has. It is also believed to be the source of his untamed energy. On one occasion, when Shiva was distracted in the midst of worship by the love god, Kama, Shiva opened his third eye in anger. Kama was consumed by the fire that poured forth, and only returned to life when Parvati intervened.

A cobra necklace

This signifies Shiva's power over the most dangerous creatures in the world. Some traditions also say that the snake represents Shiva's power of destruction and recreation. The snake sheds its skin to make way for new, smooth skin.

The vibhuti

The vibhuti are three lines drawn horizontally across the forehead in white ash. They represent Shiva's all-pervading nature, his superhuman power and wealth. Also, they cover up his powerful third eye. Members of Shaivism often draw vibhuti lines across their forehead.

The trident

The three-pronged trident represents the three functions of the Hindu triumvirate.

While other gods are depicted in lavish surroundings, Shiva is dressed in simple animal skin and in austere settings, usually in a yogic position. Parvati, whenever she is present, is always at the side of Shiva. Their relationship is one of equality.

Even though Shiva is the destroyer, he is usually represented as smiling and tranquil.

Shiva's consort is Devi, the Mother-goddess. Devi has taken on many forms in the past, including Kali, the goddess of death, and Sati, the goddess of marital felicity. Her best known incarnation is Parvati, Shiva's eternal wife.

Hindus believe Shiva and Parvati live in the Kailash mountains in the Himalayas.

Dance is an important art form in India, and Shiva is believed to be the master of it. He is often called the Lord of Dance. The rhythm of dance is a metaphor for the balance in the universe which Shiva is believed to hold so masterfully.

His most important dance is the Tandav. This is the cosmic dance of death, which he performs at the end of an age, to destroy the universe.

According to one Hindu legend, Shiva almost signalled the end of this universe by performing this dangerous dance before its time. This is the story.

One day, the father of the goddess Sati decided to hold a prayer ceremony. At this prayer ceremony, all the gods would be invited and offerings would be made to them.

But Shiva had married Sati against the wishes of her father and he was not invited. Sati was deeply offended on behalf of her husband.

In anger, Sati prayed intensely and jumped into the sacred fire that was burning on the day of the ceremony.

During this time, Shiva had been in the midst of deep meditation. But when Sati jumped into the fire, he awoke in great anger, realising what his wife had done.

The story becomes less certain at this point, but it is believed that Shiva started the cosmic dance of death. The whole universe was about to be destroyed before it was time.

The gods who were present at the prayer ceremony were very concerned. In order to pacify him, they scattered the ashes of Sati over him. This did the trick. He calmed down and did not complete the dance. But he went into meditation for many years, deeply upset over the death of his wife, ignoring all his godly duties.

It was not until Sati was reborn as Parvati that Shiva finally came out of meditation. Through her love and patience, she taught him about family life and the importance of moderation.

Shiva and Parvati are held up as the perfect example of marital bliss by many Hindus, and one is rarely depicted without the other.

Kempfort Shiva Temple, Bangalore

This magnificent Shiva Temple is situated on the old airport road inside the old Kempfort campus. Kempfort has been demolished recently and Total Mall has come in its place. Behind it is the grand Shiva temple in a very serene environment. This is open 24 hours a day and is a good place to visit while in Bangalore. There is also a giant Ganesha statue in the temple.

The Shiva statue is around 65ft high and is considered to be one of the highest in India. The background is made to resemble Kailas mountain and give a feeling like in Himalaya. River Ganga flows from the head of Shiva on to the mountains. At night the Shiva statue shines majestically in the bright light. They also have a small tour of different Shiva pilgrimage centers across India made into a miniature exhibition. The temple is kept very neat and you will also find music concerts happening here in the evening.

Lord Vishnu

LORD VISHNU

Lord Vishnu is the second god in the Hindu triumvirate (or Trimurti). The triumvirate consists of three gods who are responsible for the creation, upkeep and destruction of the world. The other two gods are Brahma and Shiva.

Brahma is the creator of the universe and Shiva is the destroyer. Vishnu is the preserver and protector of the universe.

His role is to return to the earth in troubled times and restore the balance of good and evil. So far, he has been incarnated nine times, but Hindus believe that he will be reincarnated one last time close to the end of this world.

Lord Vishnu represents the aspect of the Supreme Reality that preserves and sustains the universe. Although there are variations in images and pictures of Lord Vishnu, He is generally symbolized by a human body with four arms. In His hands He carries a conch (shankha), a mace (gada), and discus (chakra).

He wears a crown, two earrings, a garland (mala) of flowers, and a gem around the neck. He has a blue body and wears yellow clothes. The Lord is shown standing on a thousand-headed snake (named Shesha Nag), and the snake stands with its hoods open over the head of the Lord.

The four arms indicate Lord's omnipresence and omnipotence. The two front arms signify the lord's activity in the physical world and the two back arms signify His activity in the spiritual world. The right side of the body represents the creative activities of the mind and the intellect. The left side symbolizes the activities of the heart; that is, love, kindness, and compassion.

A conch in the upper left hand indicates that the Lord communicates with His devotees with love and understanding. When blowing His conch, He reminds his devotees to live in this world with kindness and compassion towards all living beings. A chakra in His upper right hand conveys the idea that the Lord uses this weapon to protect His devotees from evil. The mace denotes energy and a mace in the Lord's left lower hand signifies that He sustains the manifest world by the energy that He holds in Himself. His front right hand is depicted bestowing grace on His devotees.

The snake denotes the mind and the thousand heads of the snake signify innumerable desires and passions of an individual. Just as a snake destroys its victim by its venom, an uncontrolled mind destroys the world by the venom of its possessiveness. The Lord has controlled all desires, and this is symbolized by showing Him seated on the two coils of the snake. When a sincere devotee of the Lord controls his desires, the Lord fulfills the devotee's genuine desires and helps him on his path.

The blue sky in the background of the Lord suggests that He pervades the entire universe. The blue color symbolizes infinity. The blue body of the Lord signifies that He has infinite attributes. He is nameless, formless, and immeasurable. The color yellow is associated with earthly existence and the yellow clothes of the Lord signify that He incarnates Himself on this earth to uphold righteousness and destroy evil and unrighteousness.

A flower garland around the Lord's neck is a symbol of the devotee's adoration for the Lord. A gem decorating His neck signifies that the Lord fulfills all genuine desires of His devotees and provides for their needs. The crown is a symbol of the Lord's supreme power and authority. The two earrings signify the dual nature of creation, such as knowledge and ignorance, happiness and unhappiness, and pleasure and pain.

The worship of Lord Vishnu is very popular among Hindus, especially among the followers of the Vaishnava tradition (Vaishnavism). He is the second member of the Hindu Trinity, with Lord Brahma and Lord Shiva as the other two. Lord Vishnu is also known by other names, such as Vasudeva and Narayana. The following ten incarnations of Lord Vishnu are described in Hindu mythology and are popular among Hindus. These incarnations reveal the help rendered by God during various stages of human evolution. As shown below, the first two incarnations are in the animal form, the third one is half-human and half-animal, and the fourth and the subsequent ones are all in human form. These incarnations relate to human evolution from aquatic life to human life, and are consistent with the modern theory of evolution suggested by science:

The churning of the Milky Ocean is the story that explains how the gods finally defeated the demons and became immortal.

In the story, Vishnu advised the other gods to churn the Milky Ocean in order to recover a number of lost treasures, including the elixir of immortality and Lakshmi, the goddess of success and wealth. Both of these items would enable the gods to defeat the demons who had taken over the universe.

Knowing the gods would be unable to churn the great ocean themselves, Vishnu struck a deal with the demons. He told them they would get a share of the treasures, including the elixir of immortality, if they helped to churn. They agreed.

Vishnu told the gods and demons they should use Mount Madura as a churning stick, and the giant serpent, Vasuki, as a rope.

Vishnu managed to persuade the demons to hold the head of the snake, which was spitting furiously, while the gods held the tail end. The serpent was then coiled around the mountain. Each side alternately pulled the rope then allowed it to relax, causing the mountain to rotate in the water.

Before they could regain the treasures, however, there were many problems they had to face.

As the gods and demons churned, the mountain began to sink into the soft sand bed of the sea.

At the request of the gods, Vishnu incarnated as a turtle. He placed the mountain on his back to act as a foundation stone, thus allowing the churning to continue. Some reports say it was churned for a thousand years before anything came up.

When the elixir of immortality finally rose to the surface, the demons rushed to grab it.

But Vishnu assumed the form of Mohini, a beautiful woman who captivated all the demons. By sleight of hand she changed the elixir for alcohol and returned the precious liquid to the gods.

The churning also brought Lakshmi forth from the ocean. She came as a beautiful woman standing on a lotus flower. Seeing all the gods before her, she chose the god she felt was most worthy of her. Vishnu and she have been inseparable since

Shakti Hindu Goddess

SHAKTI

Shakti in Hindu belief is the all encompassing divine mother who is the supreme feminine being and it is from her that other forms of goddesses take birth. Shakti literally means energy and power and it is she who is the original force behind the creation and sustenance of the Universe. She is the Shakti behind the trinity of Gods and their avatars as their consorts. There are varied forms she acquires in keeping with the situation. At one point she becomes Durga or Kali acquiring a deadly and ferocious form to end the reign of demons from earth. In a friction of second she turns into Gauri or Kamakshi the ever enduring figure of motherly love and compassion.

Shakti as the underlying force of the entire Universe is generally referred to as Devi which is derived from the Sanskrit root 'div' meaning to shine. The Mahadevi or Shakti is the supreme cosmic being who despite the destruction of everything is the one which is going to remain. She is the Universal creator, destroyer, sustainer and mother all in one. Without her consent nothing in this world can function. As mentioned above every god in Hindu belief has his Shakti and without her he has no power.

Shakti is known to have taken birth in her nine forms which all have different attributes. In some Hindu mythological accounts there is variation and it is believed that the Devi Shakti was married only to Lord Shiva with their birth over successive years. The nine forms of Devi Shakti are as follows - Sati, Parvati, Gayatri, Rudrani, Narayani, Chamunda, Ganga, Laxmi and Kali. There are fifty one Shakti peeths across India, Nepal, Bangladesh, Burma, Sri Lanka where Shakti is worshipped in different forms. These Shakti peeths are believed to be the places where Devi Sati's parts fell after she gave up herself in the holy fire. Shakti is the primeval source of energy and is the ultimate personification of the feminine divine aspect.

Knowledge of Sakti leads to salvation. "Sakti-Jnanam Vina Devi Nirvanam Naiva Jayate—O Devi! Without the knowledge of Sakti, Mukti cannot be attained"—says Siva to Devi. The Jiva or the individual soul thinks, when he is under the influence of Maya, that he is the doer and the enjoyer and identifies himself with the body. Through the grace of Sakti and through Sadhana or self-culture, the individual soul frees himself from all fetters and attains spiritual insight and merges himself in the Supreme.

Worship of the Divine Mother, intense faith and perfect devotion and self-surrender, will help you to attain Her grace. Through Her grace alone you can attain Knowledge of the Imperishable.

Glory to Sri Tripurasundari, the World-Mother, who is also Rajarajesvari and Lalita-Devi—May Her blessings be upon you all. May you all obtain the grace of Sakti, the Universal Mother and enjoy the supreme bliss of final emancipation.

Posted by DAW at 10:08 AM No comments:

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Kali Ma Hindu Goddess

KALI THE GODDESS

Kali comes from the Sanskrit root word Kal which means time. There is nothing that escapes the all-consuming march of time. In Tibetan Buddhism Her counterpart is male with the name Kala. Mother Kali is the most misunderstood of the Hindu goddesses.

It is partly correct to say Kali is a goddess of death but She brings the death of the ego as the illusory self-centered view of reality. Nowhere in the Hindu stories is She seen killing anything but demons nor is She associated specifically with the process of human dying like the Hindu god Yama (who really is the god of death). It is true that both Kali and Shiva are said to inhabit cremation grounds and devotees often go to these places to meditate. This is not to worship death but rather it is to overcome the I-am-the-body idea by reinforcing the awareness that the body is a temporary condition. Shiva and Kali are said to inhabit these places because it is our attachment to the body that gives rise to the ego. Shiva and Kali grant liberation by removing the illusion of the ego. Thus we are the eternal I AM and not the body. This is underscored by the scene of the cremation grounds.

Of all the forms of Devi, She is the most compassionate because She provides moksha or liberation to Her children. She is the counterpart of Shiva the destroyer. They are the destroyers of unreality. The ego sees Mother Kali and trembles with fear because the ego sees in Her its own eventual demise. A person who is attached to his or her ego will not be receptive to Mother Kali and she will appear in a fearsome form. A mature soul who engages in spiritual practice to remove the illusion of the ego sees Mother Kali as very sweet, affectionate, and overflowing with incomprehensible love for Her children.

Ma Kali wears a garland of skulls and a skirt of dismembered arms because the ego arises out of identification with the body. In truth we are beings of spirit and not flesh. So liberation can only proceed when our attachment to the body ends. Thus the garland and skirt are trophies worn by Her to symbolize having liberated Her children from attachment to the limited body. She holds a sword and a freshly severed head dripping blood. As the story goes, this represents a great battle in which she destroyed the demon Raktabija. Her black skin represents the womb of the quantum unmanifest from which all of creation arises and into which all of creation will eventually dissolve. She is depicted as standing on Shiva who lays beneath Her with white skin (in contrast to Her black or sometimes dark blue skin). He has a blissful detached look. Shiva represents pure formless awareness sat-chit-ananda (being-consciousness-bliss) while She represents "form" eternally supported by the substratum of pure awareness.

Kali is usually depicted as naked, blood-thirsty, and wild-haired. Records of Kali's worship date back less than 2,000 years and it is widely assumed by scholars that she represents a survival of a Dravidian (pre-Aryan) goddess and is thought of as the great creatrix of the ancient Indian pantheon as she is well over 2000 years old. Kali is thought to be a pre-Aryan goddess, belonging to the civilization of the Indus Valley, because there is no evidence that Aryan people ever raised a female deity to the rank that she held in the Indus and currently maintains in Hinduism. Her dark skin evidences the fact that she predated the lighter-skinned Aryan invasion of the darker-skinned inhabitants of the Indian sub-continent. This conflict became the subject of many myths handed down about Kali's fierce passion in defending her people against the invaders. Kali's passion and fierceness are due both to her ties to the pre-Aryan Great Mother Goddess, as well as her place at Shiva's side as his consort, which

gives her the power of the Shakti, or female energy. However the Aryan Invasion Theory of India's origins is currently in dispute amongst historians.

The Aryan invaders introduced into India's culture the patriarchal gods that they had brought with them, but various matriarchal tribes, such as the Shabara of Orissa, continues worshipping Kali. She was probably an aboriginal deity of vegetation and agriculture; but evidence that animal and human sacrifices were offered to her suggests that Kali became a fertility deity. Animal sacrifices are still made to her, notably in temples such as the one at Kalighat in Calcutta, where a goat is immolated in her honor every day. On her feast in the fall, goats and buffalos are the usual victims, along with certain types of vegetation. Although human sacrifices have been banned, there are occasional reports of alleged sacrifices to authorities from remote areas.

Other stories tell of how Kali fought and killed two demons. It was then, celebrating Her victory, that She drained the blood from their bodies and, drunk from the slaughter, She began to dance. Kali became overjoyed with the feel of their dead flesh under Her feet, and She continued to keep dancing, more and more wildly, until She finally realized that Her husband, Shiva, was underneath Her, and that She was dancing him to death.

Realizing this, Kali's wildness did slow down, but only for a short while; it is believed that She will eventually continue Her dance and that when she does, it will bring an end to the world. Yet, her followers still believe that once faced and understood, Kali has the ability to free Her worshippers from all their fears. Once this occurs, then Kali metamorphasizes into another aspect, that of a loving and comforting Mother.

here is yet another version of Kali's manifestation. The Gods were not able to kill the demon, Raktabija. Each drop of his blood that touched the ground turned into another Raktabija. Thus, every time he was struck, millions of his duplicates appeared all over the battlefield.

At this point the Gods were totally desperate, and they then turned to Shiva for help. Shiva, though, was so deep in meditation that he could not be reached. The Gods then turned to Shiva's consort Parvati for help. The Goddess Parvati immediately set out to do battle with the demon, and it was then that She took the form of Kali.

Kali then appeared, with Her red eyes, dark complexion, gaunt features, hair unbound, and Her teeth as sharp as fangs. She rode into the midst of the battle on a lion, and it was only then that the demon Raktabija first began to experience fear.

Kali then ordered the Gods to attack Raktabija, while She spread Her tongue over the battlefield, covering it completely, and preventing even one drop of the demon's blood from falling. In doing this, Kali prevented Raktabija from reproducing himself again, and the Gods were then victorious.

Kali is the ferocious aspect of Devi Durga perfectly personified. According to the Purana, this image of Durga as Kali, so widely worshipped in eastern parts of India, owes its origin to the battle of Durga with Shumbha and Nishumbha. She after her victory over these demons was so overjoyed that she started the dance of death. In her great ecstasy Kali continued the destruction. As the prayers of all gods could not calm her, Lord Shiva had to intervene. Seeing no other way of dissuading her, the God threw himself amongst the bodies of slain demons. When Kali saw that she was dancing over the body of her husband, she put her tongue out of her mouth in sorrow and surprise. She remained stunned in this posture and this is how Kali is shown in images with the red tongue protruding from her mouth.

The manifestation of the goddess as Kali is the most shocking appearance. She is depicted standing on the prostrate body of Shiva, who is lying on a lotus bed. She has absorbed the inexorability of Ructa and Shiva as Bhairava. Yet there is both life and death in this form of the Divine Mother.

The name Kali comes from the word "kala," or time. She is the power of time which devours all. She has a power that destroys and should be depicted in awe-inspiring terror. Kali is found in the cremation ground amid dead bodies. She is standing in a challenging posture on the prostrate body of her husband Shiva. Kali cannot exist without him, and Shiva can't reveal himself without her. She is the manifestation of Shiva's power and energy. While Shiva's complexion is pure white, Kali is the color of the darkest night—a deep bluish black. As the limitless Void, Kali has swallowed up everything without a trace. Hence, she is black.

Kali's luxuriant hair is disheveled and, thereby, symbolizes Kali's boundless freedom. Another interpretation says that each hair is a jiva (individual soul), and all souls have their roots in Kali. Kali has three eyes; the third one stands for wisdom. Kali's tongue is protruding, a gesture of coyness—because she unwittingly stepped on the body of her husband Shiva. A more philosophical interpretation of Kali's tongue is that it symbolizes Rajas (the color red, activity) and that it is held by her teeth, symbolizing sattva (the color white, spirituality).

Kali has four arms. The posture of her right arms promises fearlessness and boons while her left arms hold a bloody sword and a freshly severed human head. Looking at Kali's right, we see good, and looking at her left, we see bad. Kali is portrayed as naked except for a girdle of human arms cut off at the elbow and a garland of fifty skulls. The arms represent the capacity for work, and Kali wears all work (action), potential work, and the results thereof around her waist. The fifty skulls represent the fifty letters of the Hindu alphabet, the manifest state of sound from which all creation evolved.

Kali's nudity has a similar meaning. In many instances she is described as garbed in space or sky clad. In her absolute, primordial nakedness she is free from all covering of illusion. She is Nature (Prakriti in Sanskrit), stripped of 'clothes'. It symbolizes that she is completely beyond name and form, completely beyond the effects of maya (illusion). Her nudity is said to represent totally illumined consciousness, unaffected by maya. Kali is the bright fire of truth, which cannot be hidden by the clothes of ignorance. Such truth simply burns them away.

Despite Kali's origins in battle, she evolved to a full-fledged symbol of Mother Nature in her creative, nurturing and devouring aspects. Some groups of people, unfamiliar with the precepts of Hinduism, see Kali as a satanic demon probably because of tales of her being worshipped by dacoits and other such people indulging evil acts.

The Goddess Kali is represented as black in color. Black in the ancient Hindu language of Sanskrit is kaala. The feminine form is kali. So she is Kali, the black one. Black is a symbol of The Infinite and the seed stage of all colors. The Goddess Kali remains in a state of inconceivable darkness that transcends words and mind. Within her blackness is the dazzling brilliance of illumination. Kali's blackness symbolizes her all-embracing, comprehensive nature, because black is the color in which all the colors merge; black absorbs and dissolves them.

Kali is a great and powerful black earth Mother Goddess capable of terrible destruction and represents the most powerful form of the female forces in the Universe. Worship of the Goddess Kali is largely an attempt to appease her and avert her wrath. The Goddess Kali constantly drinks blood. She has an insatiable thirst for blood. As mistress of blood, she presides over the mysteries of both life and death. Kali intends her bloody deeds for the protection of the good. She may get carried away by her gruesome acts but she is not evil. Kali's destructive energies on the highest level are seen as a vehicle of salvation and ultimate transformation.

Kali is the central deity of Time. She created the world and destroys it. She is beyond time and space. After the destruction of the Universe, at the end of the great cycle, she collects the seeds of the next creation. She destroys the finite to reveal the Infinite. This Black Goddess is death, but to the wise she is also the death of death. This can only be revealed through the worship of Kali, and meditation on her mysteries.

To her worshippers in both Hinduism and Tantra she represents a multi-faceted Great Goddess responsible for all of life from conception to death. Her worship, therefore, consists of fertility festivals as well as sacrifices (animal and human); and her initiations expand one's consciousness by many means, including fear, ritual sexuality and intoxication with a variety of drugs.

Her three forms are manifested in many ways: in the three divisions of the year, the three phases of the moon, the three sections of the cosmos (heaven, earth, and the underworld), the three stages of life, the three trimesters of pregnancy, and so on. Women represent her spirit in mortal flesh.

"The Divine Mother first appears in and as her worshipper's earthly mother, then as his wife; finally as Kalika, she reveals herself in old age, disease and death."

Three kinds of priestesses tend her shrines: Yoginis or Shaktis, the "Maidens"; Matri, the "Mothers"; and Dakinis, the "Skywalkers". These priestesses attend the dying, govern funerary rites and act as angels of death. All have their counterparts in the spirit world. To this day, Tantric Buddhism relates the three mortal forms of woman to the divine female trinity called the Three Most Precious Ones.

Kali's three forms appear in the sacred colors known as "Gunas": white for the Virgin, red for the Mother, black for the Crone, the three together symbolizing birth, life, death. Black is Kali's fundamental color as the Destroyer, for it means the formless condition she assumes between creations, when all the elements are dissolved in her primordial substance.

As Kundalini the Female Serpent, she resembles the archaic Egyptian serpent-mother said to have created the world. It was said of Kundalini that at the beginning of the universe, she starts to uncoil in "a spiral line movement, which is the movement of creation." This spiral line was vitally important in late Paleolithic and Neolithic religious symbolism, representing death and rebirth as movement into the disappearing-point of formlessness, and out of it again, to a new world of form. Spirals therefore appeared on tombs, as one of the world's first mystical symbols.

Kali is considered to be the most fully realized of all the Dark Goddesses, but even though Kali was originally worshipped as a warrior goddess, and her followers gave her offerings of blood and flesh, her followers still found her greatest strength to be that of a protector.

Kali is not always thought of as a Dark Goddess; rather, she is also referred to as a great and loving primordial Mother Goddess in the Hindu tantric tradition. In this aspect, as Mother Goddess, she is referred to as Kali Ma, meaning Kali Mother, and millions of Hindus revere her as such.

Kali is also associated with intense sexuality. Myths tell of the Yoni (vagina) of Kali (when she existed as Sati - wife of Lord Shiva) falling down to the Earth on the sacred hill near Gauhati in Assam (India), the same place where the Temple of Kamakhya is now located. The temple's outer walls are highly decorated with carvings showing Kali as a Triple Goddess: squatting, and exposing her Yoni (vagina); as a mother suckling her child; and as a warrior woman drawing back her bow. While these carvings show Kali as a sexual being, they also show her as a protective and motherly woman, full of compassion.

Known as the "Dark Mother," the Hindu Triple Goddess of creation, protection, and destruction, now most commonly known in her Destroyer aspect, is very often depicted as squatting over her dead consort Shiva and devouring his entrails, while her yoni sexually devours his lingam. Kali is:

"The hungry earth, which devours its own children and fattens on their corpses ... It is in India that the experience of the Terrible Mother has been given its most grandiose form as Kali. But all this and it should not be forgotten an image not only of the Feminine but particularly and specifically of the Maternal. For in a profound way life and birth are always bound up with death and destruction."

Note that in "each" Universe, has a personal form of Lord Vishnu and an Individual Brahma as well. Ergo, there are billions and billions of Brahmas in the Material Realm each taking care of Creation in "his" own - universe, using Lord Narayana body to create it.



Brahma first creates the Immovable objects such as Planets, Land, Mountains, etc. which do not have any inherent power of Motion - Remember that Planets also move due to Gravity and do not have an intrinsic motion of their own.

This is the "fourth" phase of Creation known as the **Mukhya Sarga**. In the next phase called the **Tiryak Sarga**, Brahma creates 6 different types of Vegetation covering trees/herbs/creepers etc., 12 different varieties of Birds and 28 different broad classifications of Animals. As of now, even I am uncertain about these facts in particular, so we will try to deal with these later.

In the SIXTH Phase we saw the creation of Demigods and other Advanced Species of life and is therefore known as the Deva Sarga. Most important Divinities were created in this Phase of Brahma's Creation. First came the 4 **Eternal Kumaras**, the First Incarnations of Lord Vishnu. These kids remain the same in appearance throughout their lifetime which is as long as that of Brahma himself! But all of them choose to follow the path of Spirituality instead of following Brahma's command for beginning procreation.

This frustrated Brahma so much that from his forehead, (the region of the third eye) emerged a dark red and blue child bawling at the top of his voice! This crying baby was named Rudra (The Howler)!

Rudra born from Brahma's Forehead



However, Rudra too decided to follow the path of Tapas or Penance and Brahma was sorely disappointed. After a lot of cajoling by Brahma, Rudra agreed to help and manifested 10 more beings with the same appearance as him. These are known as the 11 Rudras, ONE of whom is Lord Shiva. On Brahma's request again, Rudra appeared as Ardhanarishwar and generated a female principle (which we call as Asexual Reproduction in "English") which was the Rudrani. Each of the 11 Rudras similarly obtained a consort thus providing Brahma some satisfaction of seeing his creations multiply. However, the Rudras were all fierce since they represented the Supreme Lord's power of Destruction!

The 11 Rudras



Realizing that the progeny of Rudra was not what he really wanted to populate the world with, Brahma then created 10 Manas Putras by just visualizing them in his mind... The

First Rishis - Brahma's Manasputras



These Mind-born sons of Brahma are - *Atri, Angiras, Atharva, Bhrigu, Daksh, Marichi, Pulah, Pulatsya, Vasishtha and the youngest one Narada*. When all these sons preferred to follow footsteps of the Kumaras, by refusing to get entangled in the process of procreation, Brahma again filled up with Negative energy. This resulted in the creation of Asuras, who in common parlance are known as Rakshas or Demons. When Brahma let go of this Tamsik Dark aspect of his being, it resulted in the creation of Night-time.

Asuras or Demons



Focusing his positive energy again, Brahma took a Satvik form and created the Deities or Devas. These are the illumined effulgent demi-gods who became the care-takers of different aspects of the Material Creation. This Bright aspect of Brahma's personality also led to the creation of Day-time. **The point to be noted here is that Asuras came into existence before Devas(!!)**

Our Universe" - Big Egg Shaped - Brahmanda Creation of the Universe;

As we did understand in the [previous post](#), Multiple Universes emerge from the Infinite pores of Shri Maha Vishnu's cosmic body each time he exhales. The Lord again enters into each of these egg - shaped Universes in His second form of [Shri Garbhodak-shayi Vishnu](#).

Each Universe emerging from Maha-Vishnu contains a Garbhodak-shayi Vishnu



This second form of the Lord reclines on the Great Serpent Anant (Without-an-End) and is the Maintainer for his respective Universe. This particular form of the Lord is also known as Hiranyagarbha (Born-of-The-Golden-Egg) because he takes the shape inside the Universal Egg or Brahmanda.

Shri Garbhodakshayi Vishnu, First LIVING Being in EACH Universe



After a period of 1000 Maha-Yugas, a lotus bud emerges from the navel of the Lord, inside which is Brahma or Ka, the First MORTAL Being in each Universe. The stem of this cosmic lotus connecting Brahma to the Navel of the Lord, signifies the Umbilical Cord that binds a baby to its mother! In a sense, Lord Garbhodak-shayi Vishnu is the Father as well as Mother of ALL creation beginning first and foremost with Lord Brahma.

Lord Brahma, First MORTAL Living Being in EACH Universe



Imagine the status of the lord brahma when he would have opened his eyes for the first time. He must have been as lost and clueless as a new born baby coming into this world. Lord Brahma did not know the purpose of his being. Trying to look all around him simultaneously, he sprouted 5 heads to enable him to spot even a hint of an activity in any direction, yet could not see anything except darkness all around him. To clear his confusion, he then decided to explore the stem of the Lotus from which he had emerged but came to a dead - end. Thereafter, he went into meditation for a 100 Maha - Yugas and to clear his confusion and provide him with a guidance, Lord Garbhodak - shayi Vishnu made Himself VISIBLE to Brahma.

Shri Garbhodakshayi Vishnu becomes visible to Lord Brahma



Lord Brahma was transfixed with the divine spectacle of the Supreme Lord resplendent in Blue and Gold, lying on the Great serpent with a thousand hoods on the mighty waters of the Garbh-Ocean! Shri Hari Vishnu, then told Brahma his purpose of existence and realizing the magnitude of work that lay ahead of him, Brahma was (quite understandably) left speechless. Fortunately, Lord Vishnu, the Adi-Purush asked Brahma to use portions of Lord's own body for beginning the process; It is from here that actual Creation by Lord Brahma begins.

Indian philosophy goes beyond both Intelligence as well as Matter and describes a Purush, or Self, of whom Intelligence is but the borrowed light. This [Adi-Purush](#) or Original Being, according to the [Bhagavata Purana](#) is the Supreme Lord Vishnu.

Adi Purush, Shri Hari Vishnu



We know that, there exist two different Realms in this Creation - Spiritual and Material. While Spiritual Realm is the abode of pure souls living on the Vaikunth Planets, the materialistic souls like us, who take birth on different planets in different galaxies of different Universes of the Material Realm. In the Material Realm, there exist three different forms of Lord Vishnu and all the three forms exist only in the Material Realm

The 3 forms of material realm are;

The first and foremost form of Lord Vishnu in the Material Realm, is that of [Shri Karanodak-shayi Maha Vishnu](#) or [Narayana](#) (One-who-lies-on-Water). The Lord reclines on Cosmic waters of the Causal Ocean (That-Causes-Everything) known as

Karan-Odak that emanates from His own body and fills the lower half of the Material Realm.

Shri Maha Vishnu, lying on the Causal Ocean generated from His own Self



Shri Maha Vishnu is the ONLY Living entity present in the Material Creation right now and this form of the Lord has been called Kaal Swabhavah or the foundation of the Space-Time Continuum.

He forms the basis of Quantum Physics that runs this Universe at Sub-Atomic as well as Super-Galactic levels. With the emergence of this first form of the Lord, CREATION begins in this Material Realm. The as yet unmanifest stage of material nature is called Pradhan.

Till this stage, there is no Words or Expression, no Mind or Elements, nor the three modes of Goodness, Passion and Ignorance. There is no Life or Intelligence, no Pleasures or Pains and no Demons or Gods. There is no ether, water, earth, air, fire or sun nor the different stages of Consciousness - sleep, wakefulness and deep sleep. Yet, this Pradhan is the original substance of Material Nature and the basis of all further Creation.

Creation In The Material Realm

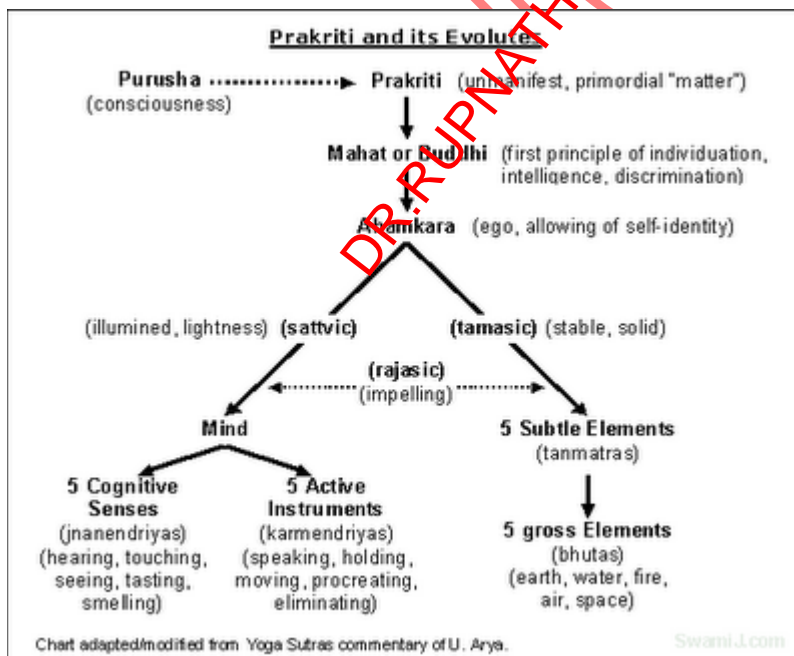
Step 1 : Creation called FIRST Sarga: Because of the Wish of Maha Vishnu, there arises a disturbance in equilibrium of the 3 qualities of Satva, Rajas and Tamas which results in the formation of subtle imperceptible matter called the '[Mahat-Tattva](#)'. This subtle matter can not be perceived by our material senses yet it forms the basis of all that follows! It is from this Mahat Tattva, that Intelligence or 'Buddhi' manifests along with the sense of 'Aham' or Ego.

Mahat Tattva emanating from Shri Maha Vishnu



Step II : In the SECOND Sarga, the Mind gives rise to 5 Basic Elements, the Pancha-Mahabhoota which, like the three Primary colors, give rise to Matter in its various forms through their different permutations and combinations. These Famous Five are: Air, Water, Fire, Land and Sky

Step III : Third Sarga consists of the Dash-Indriyan which include the 5 Sensory Perceptions - Vision, Hearing, Smell, Touch and Taste & 5 Organs of Action - Mouth, Hands, Genitals, Anus and Feet.



These THREE Phases of Creation are collectively are known as Prakritik Sarga as they are NOT a creation of Brahma and come into being from the Natural Energy of the Lord, known as Prakriti.

Bhuvar - Loka

This planetary system roughly corresponds to our Solar System and contains Five major planets plus the Sun-God. However, there are two planets outside the Solar System included in this - Dhruva Loka or Pole Star and the realm of the Sapta-rishis or Big Dipper. These Lokas are the abodes of Semi-divine beings who are one notch higher than the Humans. They assist the demigods in various ways and sometimes interact with the humans. By advancement in their service they can become a Demigod or by indulging in enjoyment, be born as a Human on the Earthly Realms.

Case I: Dhruva - Loka

It is the planetary complex revolving around the Polestar that is said to be 10,000,000 yojans below the Maharloka. It is described as the center of a bright ring of stars identified with our galaxy, Milky Way. In every material universe, there is one Vaikuntha planet with an ocean of milk where Lord Vishnu resides on an island called Shvetadvipa. In our Universe, this planet is situated in the Eastern side of Dhruvaloka and is the abode of Lord Kshirodakshayi Vishnu.



This transcendental island is 200,000 square miles and covered with desire trees for the pleasure of the Supreme Lord who resides here with Goddess Lakshmi and other pure, transcendental entities. As it is a spiritual planet, it is eternal and therefore remains when all other planets within the material universes are destroyed. It is

believed to be the pivot for all material stars and planets with even the Sun, revolving at the speed of 16,000 miles per second around the Dhruva Loka.

Case II: Saptarishi - Loka

The abode of the Seven Great Seers or the Sapta - rishis located 100,000 Yojans below the Dhruva-Loka. The seven rishis are the most advanced spiritual guides for Humanity and have been present at all major time periods of our History. Astronomically, their abode is recognized in the form of the Big Dipper or Ursa Major constellation and it always revolves around the Dhruv-Loka or Pole Star. Rishi Vasishth was the preceptor of the Solar Dynasty or Suryavansh while Vishwamitra was the guru of Lord Rama. There are numerous stories and legends in the ancient scriptures which relate the immense services these rishis have provided to different rulers on our planet since the beginning of time.

Topa Loka



This is the abode of the four Kumaras named Sanat, Sanak, Sanandan and Sanatan and is located 120,000,000 yojanas below the Satya-Loka. They are the first incarnations of Lord Vishnu and represent the Gyan - shakti (power of knowledge) of the Lord. They are collectively referred to as the Kumaras because they are immortal and live for the entire duration of universal time, yet retain their appearance of 5 year old kids. Because of their pure nature, they have easy access to the Brahma-Loka as well as the Spiritual Realm and regularly visit Lord Vishnu in the Vaikuntha.

Loka IV: Janar Loka and Mahar Loka



The next Loka lies 80,000,000 yojanas below the Tapatoka and is the abode of great rishis. 20,000,000 yojanas below Janaloka is the Maharloka which is another abode of great saints and sages. These Lokas are populated by mystics who can move between any planets within the material universe at speeds unthinkable to modern Science and the greatest of sages, such as Bhrgu Muni, live in this place. The inhabitants have a life span of one whole day of [Brahma which is = 4.32 Billion years](#)

When the fire of devastation reaches this planet the residents transport themselves to Satyaloka where they live further before the highest of planets is also destroyed. They then transform their subtle bodies to spiritual and enter the spiritual realms. Here, by means of his Karma, a soul can either go higher, up to Satyaloka and become Brahma's associate, or down, to the level of the Devas or demigods.

Loka V: Swarga Loka



The abode of the 33 Vedic gods also known as the Trayastriṃśa in Buddhist cosmology is located on the peak of Mount Meru, the central mountain of the world, at a height of 80,000 yojans. This Loka corresponds to the concept of Heaven as described in the Western sense of the term. Here the King of the Gods, Indra rules with his brothers and companions.

His entourage comprises of Angels, Gandharvas, Apsaras, Maruts, Vasus and other divine beings. This is one of the most opulent planetary system with unimaginable riches, wish-fulfilling trees, supersonic space-crafts, ability to travel in different dimensions, long life-spans, and freedom from disease and disability. The duty of these Demi-gods is to manage the affairs of the universe, protecting its inhabitants against the demons. The capital city of this world is Amravati - Abode of the Immortals. Indra and his fellow-residents obtain all the pleasures of life because of the wish-fulfilling cow Kamadhenu. This divine cow, the three-headed White Elephant Airavat as well as the Flying Horse Uchhaihshrava (Greek Pegasus) were the riches Indra obtained after the Churning of the Cosmic Ocean.

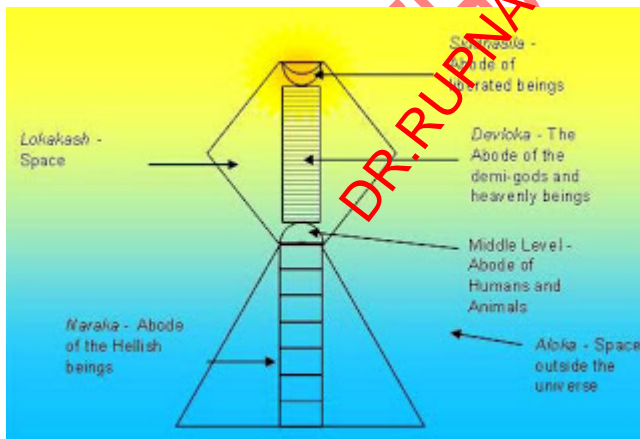
let us try to explain the various types of lokas and it's related properties one by one and see how well our vedic scriptures have been configured. Each Universe is shaped like an egg also called as Brahmanda and within it exist the three levels of Lokas. There are 14 planetary systems comprising the three Lokas and below them exist 28 different Hells.



The Hari - vamsha says that higher planetary systems are the realms of Devas, Angels, Spirits; Middle Planets (Bhu-Loka) the abode of mortal beings like Humans and animals; and the Lower planets are populated by the Demons.

Higher part of the lokas are: Satyaloka; Tapoloka; Janloka; Maharloka; Swargaloka; Bhuvraloka; Bhuloka. **Lower part of the lokas are:** Atal; Vital; Satal; Rasatal; Talatal; Mahatal; Patal;

Development of higher consciousness, starts with human beings, and further increases among the denizens of higher planetary systems. Our Earth is situated close to the middle of these planetary systems and represents the Mortal Realms known as the Bhu Mandala. Jain Scriptures also describe a similar form known as the Lok-purush or the Cosmic Man.



Now, let us start with the various types of lokas and understand one by one;

Loka I: URDHVA - LOKA

The most advanced spiritually beings. Loosely they may be understood as the Heavenly planets compared to the Middle Realm of Earth-like planets and the lower Hellish realms.



This group contains SIX planetary systems shown in the image above as the top six Lokas. The lowest of these, the Bhuvar-Loka, lies immediately above the Earthly Realm or Bhu-Loka.

Loka II: SATYA-LOKA

The HIGHEST planet in the Material Realm is the abode of Lord Brahma, the creator of this universe. Along with him are present, his consort Saraswati and other spiritual entities who, after eons of spiritual penance have been able to transcend the bonds of Material world and reach this plane by traversing through the Milky Way.



At the time of final dissolution of the material planets the residents here transform their subtle bodies into spiritual bodies and enter the eternal Vaikuntha planets which begin 26,200,000 yojanas ABOVE the Satyaloka.

Atoms - Explained In Vedas

It has become a tradition to believe that science originated in the Greek confederation. Not only this, they take Dalton as the pioneer. The great Indian sages working scientifically and logically awakened their rtambhara prajHd (purest intellect) not only to propound the philosophy about the self, but also to prescribe the proper technology to achieve the desired aim. In this pursuit, they did not ignore the study of the world of outside, but their enquiries were confined to the fields which helped them to understand self.

Kanada is associated with the atomic theory. The smallest state of matter is **paramanu** (atom) and the largest state is called '**mahat**' (self sense). So he considered atom to be indivisible, a point source, without magnitude, a concept nearer the Boyles' concept. It has potentialities which come into play when it is combined with others. Before becoming manifest in the form of matter, atoms make primary combinations to make diads and triads.

Charaka postulated that "*atom is the smallest particle of matter and air and action (energy) are responsible for the combination and separation of atoms*". **Astanga Saria** believes that *active air is responsible for the combination and separation of atoms*. On breaking the matter it goes on breaking into smaller particles until we reach a point where further sub-division is not possible. Such state is known as the atomic state. **Nyayas** believes that the atoms of earth, water, fire and air are different from

one another. They are spherical in natures. Since they have a shape, they can combine with other atoms around' them.

Now,

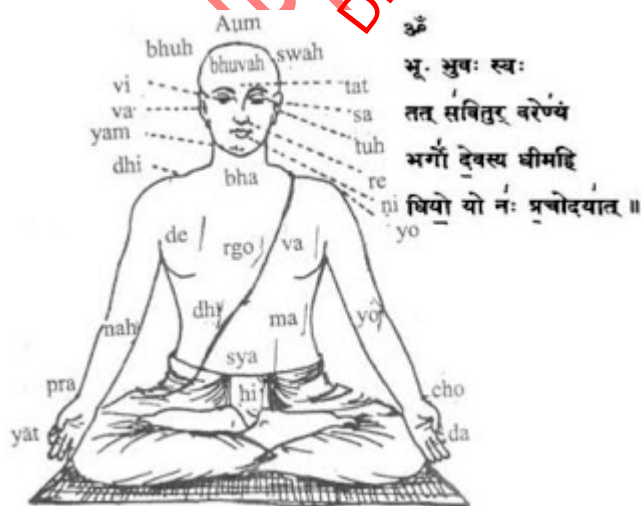
[Dalton's atomic theory states that matter consists ultimately of indivisible, discrete particles (atoms), and the atoms of the same element are identical. Chemical action takes place as a result of attractions between these atoms, which combine in simple proportions]

Vaisesika takes atom as the cause, but **Vyasa** considers atoms to be action and as such believes that they can be further sub-divided, a concept which is much nearer the modern concept of atom.

Some Buddhist thinkers conceive of atom as the minutest particle capable of occupying space (Van der Waal's concept). According to them it also remains for the minutest duration of time, coming into being and vanishing almost in an instant only to be succeeded by another atom caused by the first. This concept resembles Planck's quantum theory.

Words like **samyuja** and **sankyuja** (well joined and joined together) indicate that it refers to modern proton cemented to the nucleus. Mitra and Varuna and Asvins are related to north and south,

Meaning Of Gayatri Mantra



Gayatri mantra has been bestowed the greatest importance in Vedic dharma. This mantra has also been termed as Savitri and Ved-Mata, the mother of the Vedas.
"Om bhur bhuvah svaha, Tat savitur varenyam

Bhargo devasya dheemahi, Dhiyo yo nah prachodayat"

Meaning:

O God! You are Omnipresent, Omnipotent and Almighty, You are all Light. You are all Knowledge and Bliss. You are Destroyer of fear, You are Creator of this Universe, You are the Greatest of all. We bow and meditate upon Your light. You guide our intellect in the right direction.

The mantra, however, has a great scientific importance too, which somehow got lost in the literary tradition. The modern astrophysics and astronomy tell us that our Galaxy called Milky Way or Akash-Ganga contains approximately 1,00,000 million of stars. Each star is like our sun having its own planet system. We know that the moon moves round the earth and the earth moves round the sun along with the moon. All planets round the sun. Each of the above bodies revolves round at its own axis as well. Our sun along with its family takes one round of the galactic center in 22.5 crore years. All galaxies including ours are moving away at a terrific velocity of 20,000 miles/second.

Astronomy is one area which has fascinated all mankind from the beginning of history. In India the first references to *astronomy* are to be found in the *Rig Veda* which is dated around 2000 B.C. Vedic Aryans in fact deified the Sun, Stars and Comets. Astronomy was then interwoven with astrology and since ancient times Indians have involved the planets (called Grahas) with the determination of human fortunes. The planets Shani, i.e. Saturn and Mangal i.e. Mars were considered inauspicious.

The astronomer, [Aryabhatta](#) was the first to *advocate the earth's spherical shape in the 5th century*. *Brahmagupta*, an astronomer, was able to make an estimate of the *circumference of the earth in the 7th century*. He estimated it at about 5000 yojanas (Where one yojana is equivalent to 7.2kms). We calculate the earth's circumference at 36,000kms, which is remarkably close to the estimate given by *Brahmagupta*.

Their writings, were later translated in the 13th century into Latin, westerners were able to make advances in their astronomy studies. Unfortunately, the credit only dates to Copernicus and Galileo however "*let it be known that the ancient Indians were the predecessors of ancient astronomy*".

Most of the writing comes from Vedas, which are Sanskrit sacred books. Written sometime around 2000 B.C. the Veda speaks of astronomy in a text called the Rig Veda. "*Indians believed the earth to be a shell supported by elephants to represent strength and believed a tortoise was supporting them, representing infinite slowness*".

The Indians today call the science of astronomy, Khagola- shastra due to the famous 5th century astronomer, Aryabhata, who studied at the observatory, Khagola at the [University of Nalanda](#). It is believed that his findings noted calculations of the areas of triangles, the volumes of spheres, ideas about eclipses, as well as the sun being the source of moonlight.

Aryabhata thought up the facts 1000 years before Copernicus and Galileo. He used his findings to create the Panchanga (the Hindu calendar). It is believed that the Indians knew that the Sun was just another star, but that it was much closer than the other distant stars.



Celestial Observatory



Tool for keeping track of the constellations



Sun Dial



Jantar Mantar in Jaipur

The Jantar Mantar in Jaipur is actually one of six major observatories built by the Maharajah. The one in Jaipur not only follows the movements of the sun and the moon to help determine auspicious dates for events, it also helps map out the position of the stars in the sky. Although no telescopic instruments were available at the time, the precise observation of the stars was greatly facilitated by observatories such as Jantar Mantar.

It should also be noted that such an endeavor (six major observatories, a staff of full-time priests etc.) did not come to a small cost. This is further evidence of the importance placed on the study of the stars. As mentioned earlier, both astrology and astronomy were reasons to build these structures. Unlike the "west", astrology did not become as pseudo-science as astronomy became more factual and experimental. Instead, both were considered an integral part of society.

Ancient India's contributions in the field of astronomy are well known and well documented. The earliest references to astronomy are found in the Rig Veda, which are dated 2000 BC.

During next 2500 years, by 500 AD, ancient Indian astronomy has emerged as an important part of Indian studies and its affect is also seen in several treatises of that period. In some instances, astronomical principles were borrowed to explain matters, pertaining to astrology, like casting of a horoscope. Apart from this linkage of astronomy with astrology in ancient India, science of astronomy continued to develop independently, and culminated into original findings, like:

- The calculation of occurrences of eclipses
- Determination of Earth's circumference
- Theorizing about the theory of gravitation
- Determining that sun was a star and determination of number of planets under our solar system

There are astronomical references of chronological significance in the Vedas. Some Vedic notices mark the beginning of the year and that of the vernal equinox in Orion. This was the case around 4500 BC. Fire altars, with astronomical basis, have been found in the third millennium cities of India. The texts that describe their designs are conservatively dated to the first millennium BC, but their contents appear to be much older.

Yajnavalkya (perhaps 1800 BC) advanced a 95-year cycle to synchronize the motions of the sun and the moon.

A text on Vedic astronomy that has been dated to 1350 BC, was written by Lagadha. In 500 AD, Aryabhata presented a mathematical system that took the earth to spin on its axis and considered the motions of the planets with respect to the sun (in other words it was heliocentric). His book, the Aryabhatya, presented astronomical and mathematical theories in which the Earth was taken to be spinning on its axis and the periods of the planets were given with respect to the sun.

In this book, the day was reckoned from one sunrise to the next, whereas in his Aryabhata-siddhanta he took the day from one midnight to another. There was also difference in some astronomical parameters.

Aryabhata wrote that 1,582,237,500 rotations of the Earth equal 57,753,336 lunar orbits. This is an extremely accurate ratio of a fundamental astronomical ratio ($1,582,237,500/57,753,336 = 27.3964693572$), and is perhaps the oldest astronomical constant calculated to such accuracy. Brahmagupta (598-668) was the head of the astronomical observatory at Ujjain and during his tenure there wrote a text on astronomy, the Brahmasphuta Siddhanta in 628.

Bhaskara (1114-1185) was the head of the astronomical observatory at Ujjain, continuing the mathematical tradition of Brahmagupta. He wrote the Siddhantasiromani which consists of two parts: Goladhyaya (sphere) and Grahaganita (mathematics of the planets).

The other important names of historical astronomers from India are Madhava and Nilakantha.

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Theorizing about gravity

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Some scholars have claimed that the Babylonians invented the zodiac of 360 degrees around

700 BCE, perhaps even earlier. Many claim that India received the knowledge of the zodiac from Babylonia or even later from Greece. However, as old as the Rig Veda, the oldest Vedic text, there are clear references to a chakra or wheel of 360 spokes placed in the sky. The number 360 and its related numbers like 12, 24, 36, 48, 60, 72, 108, 432 and 720 occur commonly in Vedic symbolism. It is in the hymns of the great Rishi Dirghatamas (RV I.140 - 164) that we have the clearest such references.

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The earliest concept of a heliocentric model of the solar system, in which the Sun that is at the centre of the solar system and the Earth that is orbiting it, is found in several Vedic Sanskrit texts written in ancient India.



The Aitareya Brahmana (2.7) (c. 9th-8th century BC) states: "The Sun never sets nor rises. When people think the sun is setting, it is not so; they are mistaken." This indicates that the Sun is stationary (hence the Earth is moving around it), which is elaborated in a later commentary Vishnu Purana (2.8) (c. 1st century), which states: "The sun is stationed for all time, in the middle of the day. [...] Of the sun, which is always in one and the same place, there is neither setting nor rising."

Yajnavalkya (c. 9th-8th century BC) recognized that the Earth was round and believed that the Sun was "the centre of the spheres" as described in the Vedas at the time. His astronomical text Shatapatha Brahmana (8.7.3.10) stated: "The sun strings these worlds - the earth, the planets, the atmosphere - to himself on a thread." He recognized that the Sun was much larger than the Earth, which would have influenced this early heliocentric concept. He also accurately measured the relative distances of the Sun and

the Moon from the Earth as 108 times the diameters of these heavenly bodies, almost close to the modern measurements of 107.6 for the Sun and 110.6 for the Moon.



Based on his heliocentric model, Yajnavalkya proposed a 95-year cycle to synchronize the motions of the Sun and the Moon, which gives the average length of the tropical year as 365.24675 days, which is only 6 minutes longer than the modern value of 365.24220 days. This estimate for the length of the tropical year remained the most accurate anywhere in the world for over a thousand years. The distances of the Moon and the Sun from the Earth was accurately measured as 108 times the diameters of these heavenly bodies. These are very close to the modern values of 110.6 for the Moon and 107.6 for the Sun, which were obtained using modern instruments.

There is an old Sanskrit shloka (couplet) which also states "Sarva Dishanaam, Suryaha, Suryaha, Suryaha" which means that there are suns in all directions.

This couplet which describes the night sky as full of suns, indicates that in ancient times Indian astronomers had arrived at the important discovery that the stars visible at night are similar to the Sun visible during day time. In other words, it was recognized that the sun is also a star, though the nearest one. This understanding is demonstrated in another Sloka which says that when one sun sinks below the horizon, a thousand suns take its place.

Many Indian astronomers had later formulated ideas about gravity and gravitation in the early middle ages. The cosmological time cycles explained in the Surya Siddhanta :

The average length of the sidereal year (the length of the Earth's revolution around the Sun) as 365.2563627 days, which is only 1.4 seconds longer than the modern value of 365.2563627 days. This remained the most accurate estimate for the length of the sidereal year anywhere in the world for over a thousand years.

The average length of the tropical year (the length of the year as observed on Earth) as 365.2421756 days, which is only 2 seconds shorter than the modern value of 365.2421988 days. This estimate remained the most accurate estimate for the length of the tropical year

anywhere in the world for another 6 centuries and still remains more accurate than the value given by the modern Gregorian calendar currently in use around the world, which gives the average length of the year as 365.2425 days.

Later Indian astronomer-mathematicians such as Aryabhata made references to this text, while later Arabic and Latin translations were very influential in Europe and the Middle East.

The Indian astronomer-mathematician Aryabhata (476-550), in his magnum opus *Aryabhatiya*, propounded a mathematical heliocentric model in which the Earth was taken to be spinning on its axis and the periods of the planets were given with respect to a stationary Sun. He was also the first to discover that the light from the Moon and the planets were reflected from the Sun, and that the planets follow an elliptical orbit around the Sun, and thus propounded an eccentric elliptical model of the planets, on which he accurately calculated many astronomical constants, such as the times of the solar and lunar eclipses, and the instantaneous motion of the Moon (expressed as a differential equation).

Bhaskara (1114-1185) expanded on Aryabhata's heliocentric model in his treatise *Siddhanta-Shiromani*, where he mentioned the law of gravity, discovered that the planets don't orbit the Sun at a uniform velocity, and accurately calculated many astronomical constants based on this model, such as the solar and lunar eclipses, and the velocities and instantaneous motions of the planets. Arabic translations of Aryabhata's *Aryabhatiya* were available from the 8th century, while Latin translations were available from the 13th century, before Copernicus had written *De revolutionibus orbium coelestium*, so it's quite likely that Aryabhata's work had an influence on Copernicus' ideas.

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One of the koans of Zen asks, "What is the sound of one hand clapping?". This sound is known in the Sanskrit tradition as "Anahata Nada," the "Unmade Sound". This means a sound not made in the way we know of it is the "sound" of the universe, the primal sound of energy itself. Ancient tradition says that the audible sound which most resembles this unmade sound is the sound of "AUM" (OM). (Brahma Randhra: Brahma-aperture; opening in the crown of the head; "the tiniest of apertures, in which is the

silent, primordial sound, which gives you the impression that you are, but you really are not" (Nisargadatta)). According to the Vedas, AUM is the most sacred of all words, out of which emanated the universe. The symbol of both the personal God and the Brahman or Absolute.

AUM is regarded by Hindus as the greatest mantra being of incalculable spiritual potency. Aum is not, in itself, the unstuck sound, but leads one to it. The mantra is composed of four elements. Three are vocal sounds: A, U, and M, while the fourth element is the silence which begins and ends the audible sound, the silence which supports it. The objective of intoning AUM is not only the mantra itself, but the experience of perceiving the unmade sound that supports it. This is the same as seeking the space which "supports" the universe and its galaxies : the "emptiness" or nothingness of space is necessary for the existence of everything seen and unseen. Everything seen and unseen, heard and unheard, smelt and un-smelt, felt and un-felt, tasted and untasted, are manifestations of pure energy.

This energy is the "container" for all things, and it is the seemingly elusive Source people have given numerous names to God, Self, Brahman , Godhead. The Absolute, the Supreme Reality, the Ultimate Reality, Truth or the Self of the Vedanta Philosophy are also used interchangeably for Brahman, and so on. Our interface with the material world is through our senses and the interpretation of these sensations with our minds our thoughts.

I. Chakras and the Natural Number series:

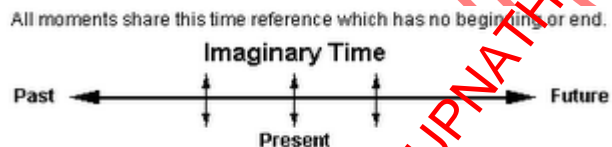
The Natural Number series is formed by adding a succeeding number to the previous root number, and is as follows : 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, 377 and so on. In other words, $5+8=13$, $8+13=21$, $21+13=34$ etc. If one divides one number by another, one gets a ratio, $89/144= 0.618$, or, $144/89 = 1.618$, and, $144/233=0.618$. This ratio, known variously as the golden section, golden mean or divine proportion, can be found everywhere in nature. It is represented by a rectangle in which the width compared to the length, is in the same proportion as the length compared to the sum of the width and length; i.e. "the smaller is to the larger, as the larger is to the whole". This sequence will be found in genetics and geometry, snail shells and in the growth formations of plants and other life forms, including the proportions of the human body.

The term 'Brahma' is coined from the word 'brihi' which means to expand. It is believed in Hindu mythology that Brahma created the initial 'beings' entirely through the power of his mind. The imagination of Brahma, took a birth called Brahma - rishis, which you can call as the child node of the root, i.e. Brahma(Purely based on Brahma Imagination)



/*As i have already discussed in my previous and in most of the articles, about the time zones in brahma loka & how it differs from our existence*/

Concept of Maya : Hindu mythology quite regularly mentions a term called 'Maya'. It is a complex term revolving around the concept of illusion. While illusion we understand is entirely false, 'Maya' is not. 'Maya' is neither true nor false. All that is material is 'Maya' and hence with respect to us it is true, but with respect to the ultimate truth (Brahman*), it is untrue. **Imaginary Concept :** Well most of the physicist like Einstein suggested that we need to consider or see as a 4th dimension and consider time - space as a continuum i.e. a single source. While Feynman also likely mentions that we are traveling in time horizontally, but we are not considering the fact that there is another space of time which travels vertically in the path of the horizontal axis and this line is called as imaginary.



That is, the events we are experiencing in our space are in the timeline we are living in. Also, in the other perpendicular timeline we may not exist or perhaps be experiencing something entirely different. This piece of idea gave birth to the 'Many Worlds Theory' and now it is accepted in cosmology. An interesting excerpt from the best-seller A Brief History of Time by Stephen Hawking-



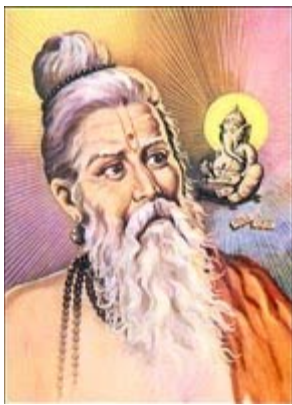
This might suggest that the so-called imaginary time is really the real time, and that what we call real time is just a figment of our imaginations. In real time, the universe has a beginning and an end at singularities that form a boundary to space-time and at which the laws of science break down. But in imaginary time, there are no singularities or boundaries.

So maybe what we call imaginary time is really more basic, and what we call real is just an idea that we invent to help us describe what we think the universe is like. The illusive existence was portrayed in the form of the dreams in Christopher Nolans recently released masterpiece, Inception. The dreams inside the dreams gave a hint to the Many Worlds Theory - that the same person experiences different occurrences simultaneously. Also what is further interesting is that in the film, as one moves into a deeper layer of the dream (dream within dream is the second layer; the film went up to four, perhaps even more), the speed of time changed. The deeper you are, the slower the time would move for you. This is highly in coherence with the concept of Brahmas timescale mentioned before in this article. Not only does time has more than one type, time also operates in various speeds. Unthinkable! In the film, it was said that the architect of the dream can make changes to the world he creates.



Any other person can access the dream through his subconscious. All other entities are projections formed of the subconscious. This is entirely analogous to the fact that Brahma (the architect) constructed the universe (the dream world) and produced beings called his mind-sons (the subconscious participant). The mind-sons on the other hand confer the consciousness to the worthy (the subconscious produces the projections). So what are we? Mere projections? The answer may not be really clear, but may not be a NO either.

A very important element of this film was the totem. For Cobb it was a spinning top. For Ariadne it was a chess piece. A totem tells if you are in a dream or in reality. If you are in the dream, the totem would behave in a way which is different from the real world. For instance, the spinning top would never stop spinning in the dream world, but in the real world we all know it does. Go back to the expert above from Hawking's Brief History of Time - Notice the phrase ...laws of science break down. A spinning top stops spinning in the real world as the surface it spins on provides friction to its tip which constantly reduces its speed and by Newton's First Law of Motion, it stops. When the top spins in your dream, or in imaginary time, it need not follow the laws of science (no singularities or boundaries, laws of science break down) and thus it never stops... Again, this dilemma of whether our existence is true or false is captured in the ancient concept of Maya.



As I pointed out, King Kakudmi's visit to Brahmaloaka took 27 times 4,320,000 earth years. If we multiply this by we find that in Brahma's time King Kakudmi's visit lasted 3,456 seconds, or just under an hour. This is consistent with the story that the king had to wait for a musical performance to finish before having a brief conversation with Lord Brahma.



Although the time dilation involved in visits to Brahmaloaka is extreme, such large time dilation do arise in the theories of modern physics. For example, suppose that instead of crossing the event horizon of a black hole, Joe Smith simply came close to the event horizon

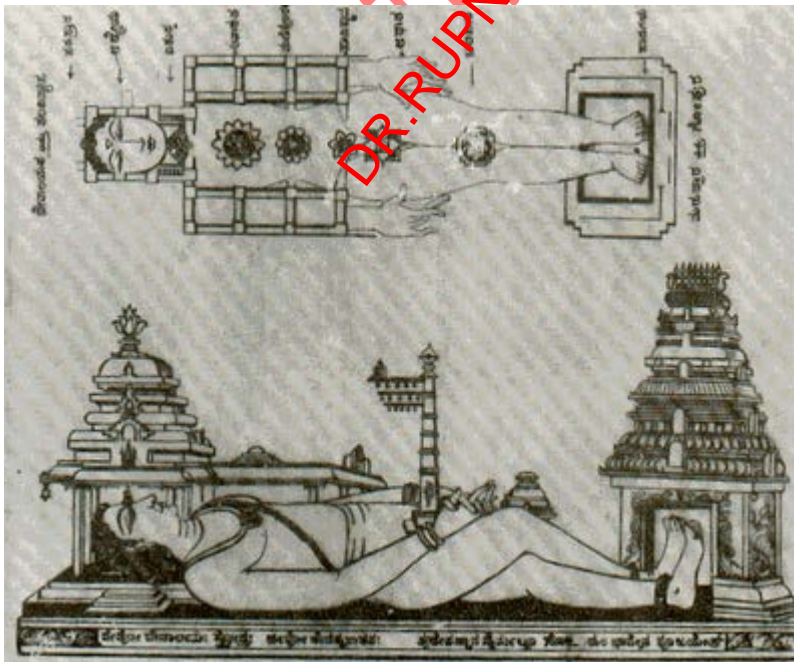
and then went back out into space to rejoin the person observing his journey. If he had come close enough to the event horizon, he would find that although his trip seemed short to him, millions of years had passed, and the observer had died long ago.

It is curious that according to the Srimad- Bhagavatam the physical universe is surrounded by a shell, and Brahmaloaka is located very close to that shell. The Bhagavatam gives the diameter of this shell as 500 million yojanas, which, using the standard figure of 8 miles per yojana, comes out to 4 billion miles.



This seems extremely small. In a purport in the [Chaitanya-charitamrita](#) however, [Srila Prabhupada](#) makes the following comment:

Srila Bhaktisiddhanta Sarasvati Thakura, one of the greatest astrologers of his time, gives information from Siddhanta Siromani that this universe measures 18,712,069,200,000 x 8 miles. This is the circumference of this universe. According to some, this is only half the circumference. (Chaitanya-charitamrita, Madhya-lila 21.84)



Further moving on, we will try to focus our topic of discussion more on vedic temple. When we talk about vedic temple. we are trying to refer to the construction of temple, ancient Hindu temple based on the utilization of vedic mathematics.

Sanctum Sanctorum

“A Vedic Hindu temple’s architecture is a divine and yogic representation of a human being as shown in the figure (ref: Agama kosha by S.K. Ramachndra Rao). The feet represent the spire (rajagopura). The hands represent the walkway (prakaara) encompassing all around the temple. The main hall (mandapa) represents the abdomen.

The entrance porch (antaraala) represents the heart. The sanctum sanctorum (garbha griha) represents the head. The deity is consecrated with religious rites in the sanctum sanctorum. There is proportionality between the size of the deity in the sanctum sanctorum and the sizes of the temple construction details.”

Now, whenever we come across any Hindu temple we often see couple of patterns. One sees fractal-like spires (shikharas), and other parts of the architecture which are self-similar to the unity of the whole;

Well as we all know what mathomathis deals with in particular, here we are trying to focus on the mathematical aspect of the temple. When we look at the symmetry of the temple we come across questions like, how exactly was this built? What was the basic architectural layout? What was the mathematical concept that was used & what kind of geometry that they possessed to construct such a temple? What kind of mathematical concepts they had used?

We as in vedic world / mathomathis / vedas, called as "vedic maths or vedic geometry" that possess such a technique that is used to construct the most advanced layout. No doubt that we are not getting advanced in technology, we are just declining in knowledge day by day...

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THE IDEA OF MULTIPLE ARCHETYPES SYMBOLIZED IN ABSTRACT FORMS

It is necessary to consider some basic aspects of the Hindu worldview, overarching and undergirding worldview concepts, to see how they form the background of specific sacred buildings in India. Those who are unfamiliar with Hinduism may not expect a simultaneous complex of ideas expressed in a massive structure. One might expect a single motif in a sacred structure - a temple in the shape of a chariot, or a church shaped like a ship with an up-pointed prow -- and such one-theme structures do exist. But there are also Gothic cathedrals with designs that include a forest of spires, a floor plan which is cross-shaped, a rose window above the main altar and many other forms--statues and symbolic art works-- displaying a combination of themes.

The Hindu temple typically involves a multiple set of ideas. Perhaps Hindu traditional architecture has more symbolic meanings than other cultures. It certainly is highly articulated. The temple is oriented to face East, the auspicious direction where the sun rises to dispel darkness. The temple design includes the archetypal image of a Cosmic Person spread out yogi-like, symmetrically filling the gridded space of the floor plan, his navel in the center, and it includes the archetype of the cosmic mountain, between earth and heaven, of fertility, planets, city of the gods, deities, etc.).

One encounters these simultaneous archetypal themes and meanings conveyed (and hidden) in the semi-abstract forms in many Hindu temples. There are rules of shape and proportion in the authoritative texts of Hindu tradition (*shastras* and *agamas*) which give birth to a variety of complex temple designs. The *Brihat Samhita* text (4th century CE) says the temple should reflect cosmic order. To understand the uses of recursive geometrical forms involving self-similarity on different scales (fractals) in the Hindu temple complex we will need to explore some of these deep images and their uses.

Brahma - Quantum Physics



A study in the relationship between Quantum Theory and Vedic Cosmology "Science has missed something essential; it has seen and scrutinized what has happened and in a way how it has happened, but it has shut its eyes to something that made this impossible possible, something it is there to express. There is no fundamental significance in things if you miss the Divine Reality; for you remain embedded in a huge surface crust of manageable and utilizable appearance. It is the magic of the Magician you are trying to analyze but only when you enter into the consciousness of the Magician himself can you begin to experience the true organization, significance and circles of the Lila."



An excerpt from *The Valley of the False Glimmer* By *Dr. Rupnathji (Dr. Rupak Nath)*. In their search to explain the mechanics of creation, the world's leading theoretical physicists have determined that there are four fields of force in the universe. Scientists have been able to reduce and classify these fields in categories according to the strength of the force that they carry, and the particles with which they interact.

a). The first of these categories is the **Gravitational Force**. It is the weakest of the four forces and has two special properties, it is able to act over large distances and is always an attractive force. The gravitational force is present in large bodies such as the Sun, Moon and Planets.



- [About](#)

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An excerpt from The Valley of the False Glimmer by Sri Aurobindo.

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the Sun, Moon and Planets.

b). The second category is the **Electromagnetic Force** which operates over short distances and interacts with electrically charged particles. While it is much stronger than the gravitational force, this force operates on the very small scale of atoms and molecules which possess two kinds of electrical charges, positive and negative, that tend to attract or repel one another.

c). The third category called the **Weak Nuclear Force**, is responsible for radioactivity and is found in many nuclear decay processes that involve neutrinos. In 1979, scientists were able to develop a theory which successfully unified the weak nuclear force with the electromagnetic force as they had earlier been able to unify the forces of electricity and magnetism. It is now called the Electro - weak force.



d). The fourth category, called the **Strong Nuclear Force**, binds particles together into combinations. Matter is mostly made up of protons and neutrons which in turn are made up of quarks. The strong nuclear force holds the quarks together in the proton and neutron and hold protons and neutrons together in the nucleus of an atom.

While these four forces account for the theoretical dynamics of matter they do not appear to interact with each other in a manner sufficient to suggest a single unified field theory which could explain the natural ordering of the universe. This problem has forced scientists to continue their search for an as yet unidentified 5th field in nature which they hope will provide the basis for this long sought unification. Their search for this mysterious 5th field has led them to speculate about a sub-quantum reality described by the ancient sages as the Luminiferous Ether.

It was believed to be an invisible medium that would fill all space and convey extremely subtle effects over large distances. To the world of science, this metaphysical possibility was not considered viable because physicists were not convinced that etheric forces played any significant role in physical interactions. But, upon closer investigation, they have come to believe that the Etheric may hold the key to the elusive 5th field. Leading theoreticians now conclude that this invisible sub-quantum field, capable of being the ground state of the universe, would be free

of matter as well as the effects of gravitation. Since it resembles empty space, they appropriately named it the Quantum Vacuum.

However, following more recent discoveries, they were forced to revise their notion of an etheric void in favor of new theories which suggest that the Quantum Vacuum is a highly charged cosmic medium; an energy-filled plenum whose subtle order measurably influences the space-time motion of the material universe. Scientists now agree that it was the Quantum Vacuum which gave birth to the observable universe. And they also believe that the 5th field which they are seeking is the interactive face of that plenum.

A number of physicists now suspect that the dynamics of that interactive face hold the key to joining the fields of gravitation, electromagnetism, and the strong and weak nuclear forces in a Grand Unified Field Formula.

The discovery of the Quantum Vacuum appears to represent a major paradigm shift for modern science but, at this point in time, very little is actually known about this puzzling phenomenon. Physicists cautiously agree that the Quantum Vacuum gave birth to the observable universe; that it is the source and sink of all matter and, that it may prove to influence the space-time motion of matter.

There is even a growing consensus among scientists that Vacuum Physics lie at the core of everything. But, in spite of all these advances, they are still faced with a monumental problem; the discovery of the Quantum Vacuum has not really solved anything, it merely postulated a zero point beyond which empirical science cannot go. They have finally arrived at the womb of creation, but it is exactly as the ancient sages always said, unmeasurable.

The laws of physics break down at this resonant threshold because they are unable to measure its infinite density. In order for science to arrive at a new system of knowledge which can unveil the interactive face of the Quantum Vacuum and measure the density of the Transcendent, it must first be willing to entertain a new understanding of Time. For Time is the key which unlocks the secrets of matter. For centuries physicists have been laboring under the illusion that Time was a derivative of Space even to the point of calling it 'Space-time' but, according to the sages, it is quite the opposite, Time is what gives birth to Space.

In his commentaries on the Brihadaranyaka Upanishad, one of India's oldest and most profound metaphysical texts, the philosopher-sage, Sri Aurobindo discusses the occult imagery associated with this fundamental principle:

" ... The [image of the] horse is a physical figure representing like an algebraical symbol, an unknown quantity of force and speed. (Time is its breath, the year is its body, the seasons its limbs, the months and the fortnights its joints, the days and nights its feet.) From the imagery it is evident that this force, this speed, is something universal. Time in its period is the Self of the Horse Sacrificial, so not Matter but Time, is the body of this force of the material universe...

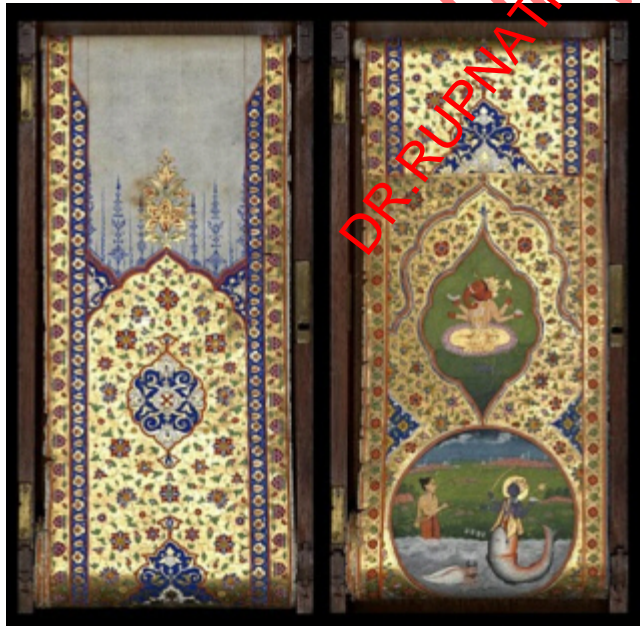
Space then, is the flesh constituting materially this body of Time which the sage attributes to his Horse of the worlds, by movement in Space its periods are shaped and determined. Hence the real power, the fundamental greatness of the Horse is not the material world, not the magnitudes of Space, but the magnitudes of Time... for Time is that mysterious condition of universal mind which alone makes the ordering of the universe in Space possible."

Sri Aurobindo, The Upanishads; 'The Great Aranyaka', Sri Aurobindo Ashram Press, 1971 In the higher ranges of consciousness, which the sages identify as the realm of pattern, all things exist in potentia, they are not here manifest. They may exist in Being but not in Time. They are precipitated into physical reality by the contracting power of Time. For it is Saturn/Chronos which differentiates the infinite energy-consciousness of the Supreme Godhead into material form.

Salvas Vimana - Ancient Indian Vimanas

Translated from the Sanskrit text of the Bhagavata Purana; By Dr. Rupnathji (Dr. Rupak Nath)

The Bhagavata Purana is all about the activities of the Hindu god Vishnu in his various incarnations (avatars), and particularly as Krishna. It includes an account of a war between the evil King Salva and his attempt to destroy the city of Krishna called Dwarka. In the process it describes weapons which have all the earmarks of modern rocketry and aerial vehicles which have capabilities far beyond conventional aircraft



The 45 feet long scroll of the Bhagavata Purana (a 17th century copy), hosted by the Rylands Library at the University of Manchester

It is common for most modern Hindu translators to render the Sanskrit vimana as "airplane". But since the aerial vehicles described in this document move through the air using neither wings nor conventional engines, I prefer to leave the Sanskrit term intact so the reader will know that these are not ordinary aircraft. Likewise, the Sanskrit term usually translated "arrow". From the descriptions given within the text, it is easily seen that such, on occasion, are some sort of high-tech missile; therefore, I consider the use of the term "shaft" or "missile" to be more applicable.

Lord Krishna's home base is the legendary city known as Dwarka. His mortal enemy, King Salva, has requested an extremely high-tech aerial vehicle (i.e., a vimana) by which he might destroy the city of Dwarka and kill his hated enemy, Lord Krishna. The accomplished architect/engineer Maya Danava fulfills Salva's request. The details can be found in the Sanskrit Bhavagata Purana:

"Salva chose a vimana that could not be destroyed by Devas, Asuras, humans, Gandharvas, Uragas nor Rakshasas, that could travel anywhere he wished to go, and that would terrify the Varishnis."

"Lord Siva said, 'So be it.' On his order, Maya Danava, who conquers his enemies' cities, constructed a flying vehicle made of iron named Saubha, and presented it to Salva."

- [About](#)

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Delighted with his new wonderful and powerful airship, the wicked King Salva gathers his army about him and heads for the city of Krishna to do battle.

"This unassailable vehicle was filled with darkness and could go anywhere. Upon obtaining it, Salva, remembering the Varishnis' enmity toward him, proceeded to the city of Dwarka.

Salva besieged the city with a large army, O best of the Bharatas, decimating the outlying parks and gardens, the mansions along with their observatories, towering gateways and surrounding walls, and also the public recreational areas.

However fortunes turn, and in short order King Salva's forces are decimated. Infuriated, King Salva makes use of his newly acquired aerial contrivance to attack the city with every means at his disposal.

"From his excellent vimana he threw down a torrent of projectiles . . . A fierce vortex arose and blanketed the entire area with billowing dust."—Bhavagata Purana (10.76)

Lord Krishna suddenly appears in his shining chariot to confront King Salva in battle. When Salva saw Krishna's chariot on the battlefield, he thereupon released a great and powerful weapon which "flew through the sky with a roaring sound like a great meteor". The text describes it as being so bright that it literally "lit up the entire sky". This sounds a lot like a blazing rocket! As Krishna began his counterattack, Salva engages the special powers of his vimana in an all out effort to avoid destruction. A modern translator provides us with the graphic details:

"The airplane occupied by Salva was very mysterious. It was so extraordinary that sometimes many airplanes would appear to be in the sky, and sometimes there were apparently none. Sometimes the plane was visible and sometimes not visible, and the warriors of the Yadu dynasty were puzzled about the whereabouts of the peculiar airplane. Sometimes they would see the airplane on the ground, sometimes flying in the sky, sometimes resting on the peak of a hill, and sometimes floating on the water. The wonderful airplane flew in the sky like a whirling firebrand—it was not steady even for a moment." (Bhaktivedanta, 1986)

[The last sentence, containing the statement of Salva's celestial vehicle looking like a "whirling firebrand," should cause one to look twice at the so-called "wheels" of Ezekiel as described in the Hebrew Bible. The similarities are striking.

Did Ezekiel encounter four ancient vimanas on several occasions during his captivity in Babylonia? For a complete exegetical analysis of this possibility, click on "Ezekiel's Wheels".]

Lord Krishna first destroyed King Salva's "great weapon," by discharging his own missile, described as being "bright as the sun in the sky". (These sound more like hi-tech missiles and anti-missils rather than what we think of as ordinary "arrows"!)

He then disabled Salva's vimana completely by releasing an overwhelming shower of destructive missiles; and eventually "Salva's wondrous vimana burst into pieces and fell into the sea".

Salva miraculously escapes the doomed vimana at the last minute, and on foot, rushes vehemently at his hated enemy. The latter, "shining like the sun rising over the mountains," ushers forth the final blow by utilizing a "brilliant discus". Thus, after a tremendously high-tech battle, the evil King Salva and his flying machine are finally brought to an ignominious end.

Sanskrit scholars and other non-Hindu intellectuals tend to look at such tales as these as if they were nothing more than highly imaginative mythology with no basis in fact. No doubt, over time such stories have been embellished with religious overtones; but the often highly technological details embedded in some of these early texts remain difficult to explain.

According to the Vishnu Purana, the entire city of Dwarka was submerged by the sea shortly after the death of Lord Krishna. This is all considered to be nothing more than Indian mythology. But what if the underwater ruins of the city were actually discovered? In such a case should we continue to consider all this as nothing more than pious fiction? As it happened, on 19 May 2001 India's science and technology minister Murli Manohar Joshi announced the finding of ruins in the Gulf of Khambhat after indications were first noted by a team from the National Institute of Ocean Technology (NIOT) in December 2000 using acoustic techniques. A follow up investigation was conducted by the same institute in November 2001, which included dredging to recover artifacts.

A round of further underwater explorations was made of the site by the NIOT team from 2003 to 2004, when samples were obtained of what was presumed to be pottery, and sent to laboratories in Oxford, UK and Hannover, Germany, as well as several institutions within India, for dating purposes. Evidence indicates that the submerged city of Dwarka has been discovered. Not surprisingly, western archeologists believed the odd formations were natural as opposed to being of human origin (Witzel, 2006).

However, certain wooden objects, obviously manmade and carbon dateable, were found by Alok Tripathi, Superintending Archaeologist of the Underwater Archaeology Wing of the Archaeological Survey of India. This, and other discoveries by NIOT using C-14 dating, established an age of 7,500 years for the various artifacts excavated from the submerged site (Sundaresh & Tripathi, 2004). The depth of the underwater ruins, resting some 150 feet below the surface, tends to support this early date.

[Vedas - Store House Of Knowledge](#)

Multidimensional Time And Space in Manasara



VEDIC WISDOM: Vedic wisdom is lively in the consciousness of living saints. It is also well preserved in the Vedic literature. The inner evidence of the available Vedic knowledge of the available Vedic literature makes it out that originally the whole range of the pure knowledge i.e. Vedic knowledge was vibrating from a single wholesome Ved. Subsequently this knowledge was organized by Maharishi Ved Vyas as four Vedas namely. Rigveda, Yajurveda, Samveda and Atharvaveda.

The knowledge of Rig veda admitted 21 branches while the knowledge of other three Vedas namely, Yajurveda, Samaveda and Atharvana veda respectively admitted 101, 1000 and 9 branches. The organizational format of each Vedic branch consisted of four folds designated as **Samhita, Brahmana, Aryanak and Upanishad**. As such $21+101+1000+9=1131$ Vedic branches had 1131 Samhitas, 1131 Brahmanas, 1131 Arynaks and 1131 Upanishads.

These $1131 \times 4 = 4524$ scriptures together came to be known as Vedic wisdom. In addition corresponding to each Ved, as applied value of the pure knowledge of the Veda is Upveda. The four Upvedas are **Ayurveda, Dhanurveda, Gandharvveda and Sthapatyaaveda**. Our present day mathematics, science and technology come within the range of Sthapatyaupveda. *Manasara is one such scripture of Sthapatyaupveda.*

MANASARA : SCRIPTURE OF STHAPATYAUPVED: Sri Prasana Kumar Acharya had done a wonderful job of reconstructing the text of Manasara and preparing its translation in English and by drawing the plates. The scripture begins with the prayer to Lord Brahma, the Creator, the supreme and ends with the chiseling of third eye of the idol of Lord Shiv.

SPACE TIME FRAME: The above topical division of the text has an organizational message of great importance as in terms of it we may reach at the geometric format of the organization of the knowledge of the scripture.

As the scripture begins with the prayer to Lord Brahma, the overlord of real 4 - space and ends with the chiseling of third eye of Lord Shiv, the overlord of real 5 - space, therefore, geometric format at the dimensional level is bound to be spatial with the flux of time being solid.

In short, the spacetime frame at the dimensional level is going to be $E2$ (space) \times $E3$ (time). In terms of this dimensional order we shall be manifesting working geometric domain within the spacetime frame $(E2)^4$ (space) \times $E3$ (solid time). Here (today) we shall be concentrating upon the concepts and comprehensions of dimensions of space and time in Manasara. In a way, we shall be taking up the topic of space, time and spacetime in the light of Vedic wisdom. In the context, it may be relevant to note that the modern thought, mathematics, science and technology is speculating the general spacetime frame as $E3$ (space) \times $E1$ (linear time).

The modern thought, mathematics, science and technology centre around linear dimensional reality but the Vedic systems avail multidimensional reality. The studies

of the organizational formats of various Vedic scriptures reveal that higher dimensional geometric formats are being availed to organize the pure knowledge. Illustratively, we may take the case of the oldest book of mankind namely, Sakla Rigved Samhita.

RIG VEDA SAMHITA

Fortunately Rigveda Samhita is intact with us from first syllable to the last syllable and as the tradition goes, the whole range of Vedic knowledge is lively in this scripture of 432000 syllables, out of which 397265 syllables are manifest text while remaining 34735 syllables go deep as organizational format of the text and as such remain un-manifest. For the present, we may accept it an axiom that knowledge and organization of knowledge are two distinct aspects of knowledge. Being scriptural text, we get the organized knowledge and as such both organization format and the text are to be accepted as the knowledge content of the scripture. It is like a truck with goods yielding weight of the truck as well as of the goods loaded in the truck.

Organisation of Rigved Samhita

Total knowledge contents	432000 Syllables
Manifest text	397265 Syllables
Mandals	10
Ashtaks	08
Chapters	64
Anuvaks	85
Suktas	1028
Vargas	2024
Richas	10552

Mathematical Basis :

Mathematical basis of the organisational format of the Rigved Samhita reveals that the Vedic knowledge is organised on geometric format of real 6-space. It admits 4-space in the role of dimension while modern thought, mathematics, science and technology centre around 3-space reality and as such Veds are invincible fort for the modern mind. As such, we have to learn and understand the Vedic wisdom. For this we have to re-examine the rationale and basis of our axioms and postulates for accepting the reality as linear dimensional one. It is only by approaching the Vedic knowledge, the Vedic way, that we may have real bliss of Vedic wisdom.

Blue Skinned Hindu God - Scientific Approach

Origin of "blue-blooded," from an ancient perspective:



Early humanity on Earth were a melting pot of genetics from Lyra, Vega, Sirius, the Pleiades and elsewhere; All Earth humans are relatives of these various races. The original Lyran colony also sought the genetic input from the blue-skinned Vegan racial type, so as to create a world of variety.; thus we see several races on earth...

While resident within Agartha, the blue-skin remained, but upon exiting to the surface world, when they created the Rama Empire, those later limited consciousness humans, became the races we see today --> the effects of living on a surface without the protective firmament layers destroyed earlier in the ancient war between Atlantis and Lemuria, some 25,000 years ago...

Lord Krishna was the first earth human to complete the cycle of fall from godhood, back to ascension, upon the Earth chain. He is known today as Lord Maitreya and holds the office of Bodhista in the Spritual Hierarchy; Of course, his mayavirupa form can be moulded at will and he chooses not to demonstrate blue skin in modern times....but did in ancient times, as many Hindu artworks demonstrate.

That the concept of "blue-blooded aristocracy" was introduced to earth by the Atlantean elites, who were the first to create a "class system" on Earth with themselves at the pinnacle of rule...

The original thought form has it's origins off-world among the Sirians, who noted that their finest administrators (Shikda Clan) had a tendency to return to their originator world, Deron, to represent the Sirius star nation on the GFL Main Council, which has long been located within the Vega system. Many of these Sirians were blue-bloods, in terms of genetics, but also in terms of culture and skills to administer cosmos...many

Sirians of Vega extract and Vega being the centre of GFL power.

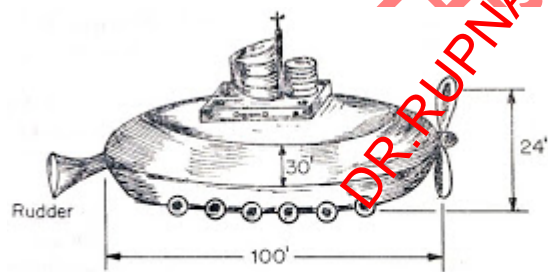
Of course, no actual kings and queens, but the parallel stuck, and has been known on earth since those early associations. Among my contacts, Lady Kalestra is such a blue-skinned Sirian and is our chief representative in Vega. Remember that the original human race that settled on earth, taking this planet from its native reptoid peoples, were ALL ETs, mainly from Lyra. They established Lemuria, inner and outer; the former becoming Agartha.

It was only millennia later, during the late Atlantean epoch that the rulers of Atlantis decided to play the dark role of "aristocracy" over their surface subjects, using a deliberately engineered genetic limiter gene, that enabled limited conscious humanity, this was achieved by a simple realignment of genetic sequencing and kept in place by a series of interlocking epigenetic programmes..

After Atlantis was destroyed in the deluge the Anunnaki pretended that they were the "creator gods" of humanity and they appointed limited conscious elites as intermediaries Kings, Pharaohs and Presidents. All the while, Agartha and its allies of the GFL planned the eventual liberation of humanity and a return to full consciousness the process defined in precessional cycles, from the aqgs of Leo to Aquarius one half cycle of 13 millennia.

As said : There is no such thing as much, everything is science.

Tripura Vimana - Ancient Vimanas



TRIPURA VIMANA

General - This plane is supposed to fly in air, and move water and land. When moving over water the wheels are to be retracted.

Principles - No mention of any principles of operation has been made. Power is said to be generated from the generator from the generator at the top using sun's rays and some acids in a manner not described. The general description and the diagrams seem to indicate the use of electric motors which were known only in the 19th century.

Geometry & operational data

It is oval shaped in plan with a length of 100 feet and maximum width of 24 feet. The height of the craft is 30 feet. No operational data have been given.

Materials - In order to prevent water from seeping into the craft, when it is moving over water, it is said to be covered with a cloth known as milk cloth. Also the description of an alloy has been given which is supposed to be light and fire resistant.

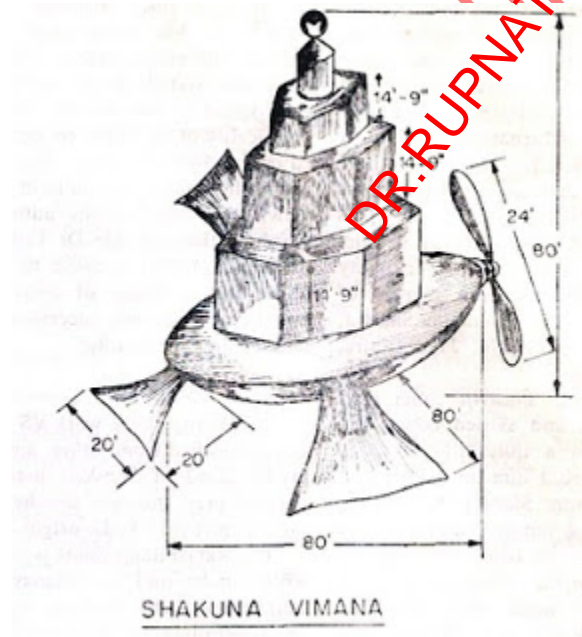
Also Read More On Vimanas, Described Below;

Rukma Vimana

पीठ रुक्मविमानस्य कूर्माकारं पकल्पयेत् ।
वितस्तिहसायामं गात्रमेकवितस्तिकम् ॥

The geometry is again a cylinder-cone combination with a base diameter of 100 feet, height of 20 feet, and cone height of 80 feet. The text mentions a dimension of 1000 feet for the base.

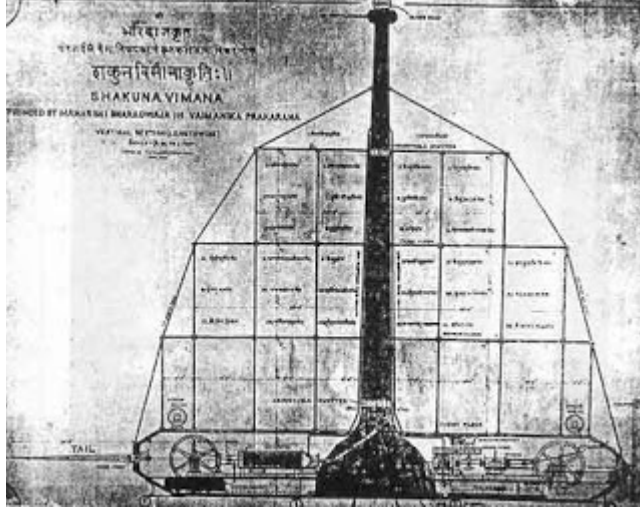
Shakuna Vimana



It has several tiers, each one containing different yantras (machines). The drawings

show parts like cylinder, piston worm gear, and pumps which seem entirely modern (beyond 18th century).

Rukma Vimana(Geometric Explanation) - Vimanas



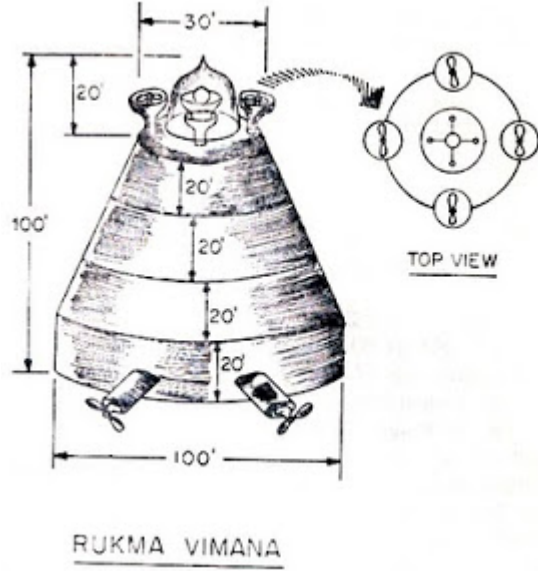
Before reading the article of rukma vimana, please feel free to read more on dr.rupnathji@gmail.com

Now, as you might have been going through a lot of articles that had been published regarding on vimanas aka aircraft (i.e on ancient Indian vimanas) we will continue of discussion further more on these.

Rukma Vimana:

पीठ रुक्मविमानस्य कूर्पाकारं पकल्पयेत् ।
वितस्तिहसायामं गात्रमेकवितस्तिकम् ॥

The geometry is again a cylinder-cone combination with a base diameter of 100 feet, height of 20 feet, and cone height of 80 feet. The text mentions a dimension of 1000 feet for the base.



Operational data - The Description mentions a speed of 105 kroshas per ghatika amounting to a speed of 625 mph (compared to the speed of sound of about 760 mph). This is an incredible speed even for a sleek aircraft and just impossible for the kind of geometry used.

Materials - A number of materials is mentioned principal among which is 'raja loha'.

ॐ भूर्भुवः स्वः
 तत्सवितुर्वरेण्यं
 भर्गो देवस्य धीमहि ।
 धियो यो नः प्रचोदयात् ॥

Gayatri Mantra does relate directly to the Mathematics of Nature since the compressed Fibonacci Sequence has an infinite recurring rhythm of 24 digits, and that these 24 digits have a distinct sum or numerological vibration of 108. And that these 24 compressed digits having a sum of 108 is an infinitely recurring sequence, proving that there is a pattern in the Golden Mean, a revolution in mathematics as all the top scholars and history books deny it. Fibonacci Sequence being a 24 Code since 1984, and needed to know that other rishis or seers had recorded this in their Vedic

Scriptures, but it was not in print anywhere to be found.

"This confirmation for Jain is quite significant as it is the first time that someone has actually explained why 108 is important. People for thousands of years have blindly believed it is significant, but knowing really knowing why. This particular discovery by Jain has humbly put him on the world stage, as people who do his seminars are fully convinced that this is high level and galactic mathematics, despite the natural debunking process that inevitable goes on, Jain is convinced that this ability to teach mathematics via Pattern Recognition will set a new trend in the planet's future mathematical curriculum. It is interesting that when I first met Jain at his home in 1984, he received a letter from an Indian friend, and it was addressed to "SHRI JAIN 108" which made us giggle, as we both knew the high and secret value of this number".

(Quote from Epsilon, a student).

This discourse on the Gayatri mantra resonating to 24 is an ancient truth. 24 is the Time Code. Why did our forbears select 24 hours to the Day, why not say 27 hours to the day. (Bruce Cathie, Grid scientist and pioneer, does use 27 hours to the day to verify that no atomic bombing can happen unless the harmonics are in accordance with the day and grid resonating to 27 divisions, which is interesting, as Pythagoras adored this Harmonic Vibration of 27).

24 arithmetic numbers in concentric rings that reveal the 4th Dimensional Cross of the Prime Numbers, that 24 Cracks the Code, via the powerful tool of Symmetry. (What this means is that the Prime Numbers that you know of, do exist in symmetry, but you have been told mathematical distortions, for thousands of years, that it is a nonsense sequence with no pattern;

- [About](#)

[Ancient Vimanas Continued](#)

India, according to Dr.V. Raghavan, retired head of the Sanskrit department of India's prestigious University of Madras, was alone in playing host to extraterrestrials in prehistory. Dr. Raghavan contends that centuries-old documents in Sanskrit (the classical language of India and Hinduism) prove that aliens from outer space visited his nation.

"Fifty years of researching this ancient works convinces me that there are living beings on other planets, and that they visited earth as far back as 4,000 B.C.", the scholar says.

"There is a just a mass of fascinating information about flying machines, even fantastic science fiction weapons, that can be found in



translations of the Vedas (scriptures), Indian epics, and other ancient Sanskrit text".

In the Mahabharata (writings), there is notion of divine lighting and ray weapons, even a kind of hypnotic weapon.

And in the Ramayana (writings), there is a description of Vimanas, or flying machines, that navigated at great heights with the aid of quicksilver and a great propulsive wind.

"These were space vehicles similar to the so-called flying saucers reported throughout the world today. The Ramayana even describes a beautiful chariot which 'arrived shining, a wonderful divine car that sped through the air'. In another passage, there is mention of a chariot being seen 'sailing overhead like a moon' ".

The references in the Mahabharata are no less astounding:

- At Rama`s behest, the magnificent chariot rose up to a mountain of cloud with a tremendous din. Another passage reads: Bhima flew with his Vimana on an enormous ray which was as brilliant as the sun and made a noise like the thunder of a storm.
- In the ancient Vymanka-Shastra (science of aeronautics), there is a description of a Vimana: "An apparatus which can go by its own force, from one place to place or globe to globe".

- *Dr. Rupnathji (Dr. Rupak Nath)* points out, "The text's revelations become even more astounding. Thirty-one parts-of which the machine consists-are described, including a photographing mirror underneath. The text also enumerates 16 kinds of metal that are needed to construct the flying vehicle: `Metals suitable, lighare 16 kinds` . But only three of them are known to us today. The rest remain untranslatable."

- Another authority who agrees with Dr. Raghavan`s interpretations is Dr. A.V. Krishna Murty, professor of aeronautics at the Indian Institute of Science in Bangalore. "It is true," Dr. Krishna Murty says, "that the ancient Indian Vedas and other text refer to aeronautics, spaceships, flying machines, ancient astronauts. "A study of the Sanskrit texts has convinced me that ancient India did know the secret of building flying machines-and that those machines were patterned after spaceships coming from other planets."

The Vedic traditions of India tell us that we are now in the Fourth Age of mankind. The Vedas call them the "The Golden Age", "The Silver Age", and "The Bronze Age" and we are now, according to their scriptures in the "The Iron Age". As we approach the end of the 20th century both Native Americans, Mayans, and Incans, prophecies claim that we are coming to the end of an age. Sanskrit texts are filled with references to Gods who fought battles in the sky using Vimanas equipped with weapons as deadly as any we can deploy in these more enlightened times.

For example, there is a passage in the Ramayana which reads:

The Puspaka car that resembles the Sun and belongs to my brother was brought by the powerful Ravan; that



aerial and excellent car going everywhere at will.... that car resembling a bright cloud in the sky. "... and the King [Rama] got in, and the excellent car at the command of the Raghira, rose up into the higher atmosphere."

In the Mahabharata, an ancient Indian poem of enormous length, we learn that an individual named Asura Maya had a Vimana measuring twelve cubits in circumference, with four strong wheels. The poem is a veritable gold mine of information relating to conflicts between gods who settled their differences apparently using weapons as lethal as the ones we are capable of deploying.

Apart from 'blazing missiles', the poem records the use of other deadly weapons. 'Indra's Dart' operated via a circular 'reflector'. When switched on, it produced a 'shaft of light' which, when focused on any target, immediately 'consumed it with its power'. In one particular exchange, the hero, Krishna, is pursuing his enemy, Salva, in the sky, when Salva's Vimana, the Saubha is made invisible in some way. Undeterred, Krishna immediately fires off a special weapon: 'I quickly laid on an arrow, which killed by seeking out sound'.

Many other terrible weapons are described, quite matter of fact, in the Mahabharata, but the most fearsome of all is the one used against the Vrishis. The narrative records:

Gurkha flying in his swift and powerful Vimana hurled against the three cities of the Vrishis and Andhakas a single projectile charged with all the power of the Universe. An incandescent column of smoke and fire, as brilliant as ten thousands suns, rose in all its splendor. It was the unknown weapon, the Iron Thunderbolt, a gigantic messenger of death which reduced to ashes the entire race of the Vrishnis and Andhakas.

It is important to note, that these kinds of records are not isolated. They can be cross-correlated with similar reports in other ancient civilizations.

The after-effects of this Iron Thunderbolt have anonymously recognizable ring. Apparently, those killed by it were so burnt that their corpses were unidentifiable. The survivors fared little better, as it caused their hair and nails to fall out. Perhaps the most disturbing and challenging, information about these allegedly mythical Vimanas in the ancient records is that there are some matter-of-fact records, describing how to build one. In their way, the instructions are quite precise. In the Sanskrit [Samaraanganasutraadhaara](#) it is written:

Strong and durable must the body of the Vimana be made, like a great flying bird of light material. Inside one must put the mercury engine with its iron heating apparatus underneath. By means of the power latent in the mercury which sets the driving whirlwind in motion, a man sitting inside may travel a great distance in the sky. The movements of the Vimana are such that it can vertically ascend, vertically descend, move slanting forwards and backwards. With the help of the machines human beings can fly in the air and heavenly beings can come down to earth.



Here the topic of discussion would be more on Currency in Takshashila;

The importance of guilds is evident from coins and seals issued by them. Some coins found at Taxila have the legend *negama* on the reverse in Brahmi letters of the 3rd/2nd century BCE. On the obverse are what may have been names of localities—*Ta(Ra)linata*, *Dujaka*, *Dojaka*, *A(taka?)taka*, and *Kadare*. The legends *pamchanehame* and *hiranasame* also appear on certain coins. Some scholars consider them to be coins issued by city administrations, while others think they were issued by guilds. The term *pamchanehame* may refer to a corporation of five guilds. *Hiranasame* can be understood as the Pralrit form of *hiranyasvami*, which may mean an issuer of coined money. The coins in question may have been issued by a guild of traders responsible for issuing coins. Two copper coins from Kaushambi bearing the legend *gadlikanam* in letters of about the 2nd century BCE were probably issued by a guild of perfumers. Also belonging to about the same period are a number of coins bearing the names of cities such as *Varamasi*, *Kaushambi*,

Vidisha, *Erakina* (Eran), *Ujjayini*, and *Mahishmati*. These may have been issued by city administrations or guilds that may have been influential in the city administration.

Seals and sealings with the terms *nigama*, *nigamaya*, or variants of these words have been found at sites such as *Rajghat*, *Bhita*, *Hargaon*, *Jhusi*, and *Ahichchhatra*. The script ranges from the 3rd century BCE to the early centuries CE. Some of the coins have symbols and a few also seem to bear personal names. A sealing found at *Rajghat* has a *svastika* symbol and the legend *govayuka* (guild of milkmen) in Brahmi letters of the 1st century BCE. A *Bhita* sealing has the legend *shulaphalayitnam* in 2nd century BCE letters. This could be a reference to a guild of makers of arrowheads or spearheads. A seal from *Ahichchhatra* has the legend *kaushabara seniya* (of the guild of potters) in writing that belongs to the 1st century CE.

Till August 15th, 1947, no king or ruler was able to impose any kind of currency monopoly by fiat in India. A unique aspect in economic history. A by-product of Bharat-tantra, India has the largest private reserves of gold in the world - totaling to nearly 20% of global gold holdings. Absence of fiat currency was one of the cornerstones of Bharat-tantra- the classical system of polity, by which India was governed.

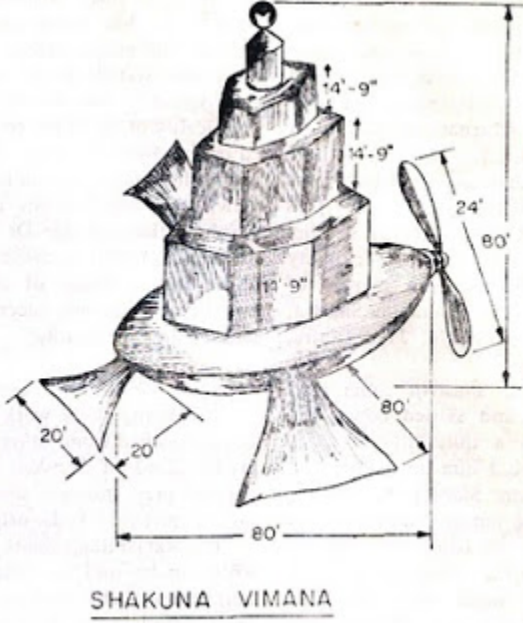
Bharat-tantra worked on four freedoms - *dharma* - justice , (*arth* - wealth and means), (*kaam* - human desires), (*moksha* - liberty) and three rights - (*jar* - gold), (*jan* - human ties) and (*jameen* - property) for all.

This multiple-currency system passed into common parlance with idioms - like in Hindi, 'uska sikka chalta hai'. Meaning 'abc's coinage is commonly accepted'. This idiom is now used to indicate a man of position, authority and standing in local community. Thus coinage and currency, which play such an important technical role in historical research, becomes less than important in India.

Crossroads of the world

Takshashila, (*Taxiles/a* in Greek) at the cross-roads of the Uttarapath (known today as the Silk Route) and Dakshinapath, was crucial to world economy. Takshashila's system of guild-banking, hundis, deposits, currencies, corpus kept the world economy oiled and moving. Takshashila, close to the ancient cities of Mohenjodaro and Harappa, also possibly retained the knowledge of alloying, maybe even extracting, nickel - which 'modern' science achieved in 1751.

[Shakuna Vimana - Ancient Indian Vimanas](#)



As the name suggests, this vimana (plane) is like a bird. It is supposed to contain the following parts: Peetha (floor board), hollow mast, three wheeled keelakas (hinges) with holes, four heaters, air suction pipes, water jacket, oil tank, shakuna yantra, two wings, tail portion to enable the vimana to fly, owshyamaka yantra or heat engine, etc.

It has several tiers, each one containing different yantras (machines). The drawings show parts like cylinder, piston worm gear, and pumps which seem entirely modern (beyond 18th century).

Principles - A few lines have been devoted to the function of wings and tail and they appear to be incorrect. From what is given in the following verses:

तथैव वातपायन्त्रो दिक्प्रदक्षध्वजस्तया ।
 पश्चाच्छकुन्त्यस्त्राश्च तत्पक्षद्वयमेव च ॥
 विमानोत्पेक्षणार्थं तत्पुच्छभागस्तयैव हि ।
 ततो विमानसञ्चारकारणौष्प्यकयन्त्रकः ॥

It appears that great importance is given to the tail portion for the generation of lift. Also the function of the hinge wings becomes unclear in this context. It may be noted that it is the wings which should contribute to the life of the craft and the tail portion to its controllability.

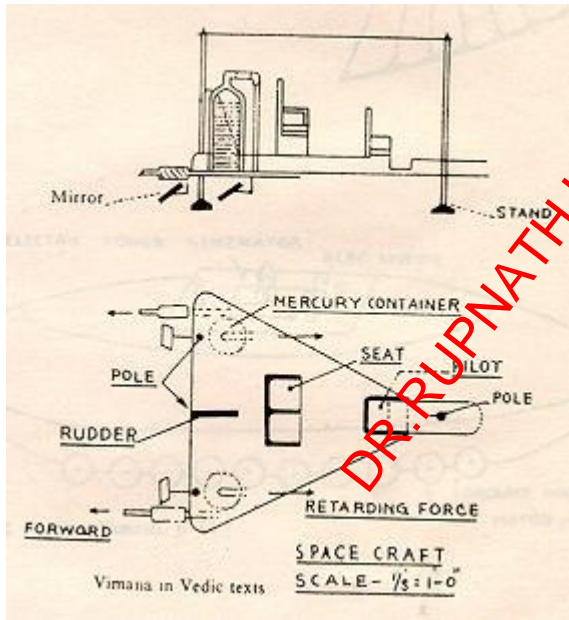
Read More On Vimanas...

Data / Information : Ancient Aircraft Technology



According to the Dronaparva, part of the Mahabharata, and the Ramayana, one Vimana described was shaped like a sphere and borne along at great speed on a mighty wind generated by mercury.

Data / Information : Indian Vimanas - Samarangana Sutradhara



Ancient Vimanas



The '*Samaranga Sutradhara*' is one such text of 230 stanzas that gives you an elaborate description on the detailed technicalities of air travel.

Note that Maharishi says that the first Mandal of the Rig-Veda has 192 Suktas, while Feuerstein, Kak, and Frawley say that it (the first book) has 191 hymns (Suktas).

Maharishi considers the 192nd Sukta to be "... the "Avyukta Sukta", it means the "empty sukta" and it's just a complete absence of any sound at all. It complements the first sukta, and with it in place you can line up the first mandala in a circle with each sukta matching up to another diametrically opposite in the circle.

The Avyukta Sukta ... In Maharishi's scheme ... there are two processes in operation, one the collapse from fullness to emptiness and then the expansion from emptiness back to fullness. ... in terms of Goedel's Theorems, any formal system that is complete must be inconsistent, that is it must contain a statement that negates the system itself ...".

To see how the cycle of 192 Suktas in the first Mandal, start with a given system T. Then as you process that system you will find a Godelian undecidable thing A

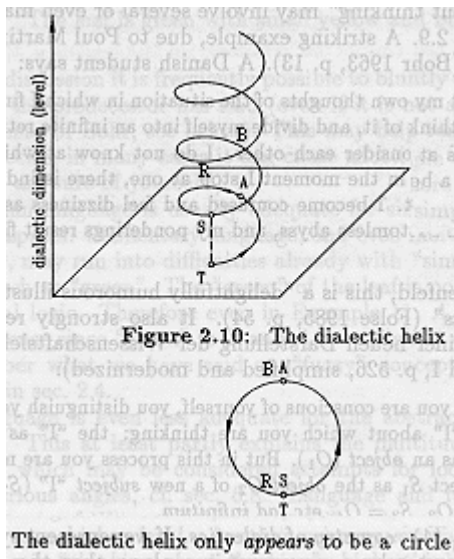
and then Maharishi's Avyukta (= avyakta = unmanifest) Sukta is used to make T "more complete" by adding A (true and false) as new propositions to make it a "pair" of possible systems like a quantum superposition of two possible worlds of the Many-Worlds:

$S = T + A_{true}$ combined with $T + A_{false}$

and then, you start again with the system S and process it again to find a new Godelian undecidable thing B - this is a second collapse "collapse" - and then expand again with Avyukta Sukta to get a "newer bigger"

$R = S + B_{true}$ combined with $S + B_{false}$

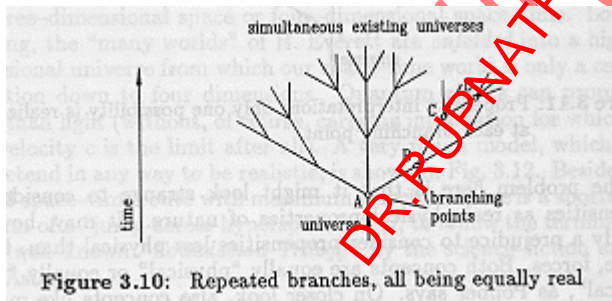
giving you twice again as many possible quantum worlds, and you continue the process ad infinitum.



Each half-cycle T to A, S to B, etc ... , corresponds to the first 191 Suktas of the first Mandal of the Rig Veda.

Each half-cycle A to S, B to R, etc ... , corresponds to the 192nd empty = soundless Avyukta Sukta, which constructs the helix covering the closed circle of the first Mandala .

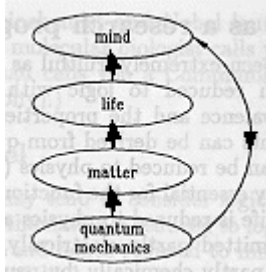
Each cycle T to S, S to R, etc ... , corresponds to introducing new branches



in the possible quantum worlds of the [Many-Worlds Quantum Theory](#)

The "whole Veda" is therefore nothing that you can ever write down in any finite number of steps, but is an infinitely branched Many-Worlds Tree of Helical Coils, with its Total Sound being OM, which is therefore, as John Small says, "... The OM sound is the sound of the whole of the Veda from a distance ... like listening to a bee hive from a distance. Then as you get close you can distinguish the individual sounds themselves until finally you can experience each separate bit quite clearly. ...".

The process of a human trying to "tune in" to part of the "whole Veda"



is a self-referential loop involving the Quantum Consciousness of the human brain.

(The above three images, and some related ideas, are derived from the book Science, Mind and the Universe by Helmut Moritz (Wichmann 1995))

Properties Of Rig Veda - Physics



Now, let us try to analyze some of the properties of Rig Veda through Physics, involving [lord Indra](#) as an attribute to our calculation and also let us see some properties of Rig Veda.

As Feuerstein, Kak, and Frawley have noted in their book In Search of the Cradle of Civilization (Quest 1995), the Rig-Veda mentions star patterns of 9,000 to 8,000 years ago. Various Other things they discussed includes:



1. The Rig-Veda has about 250 hymns to Indra. Indra's Net is a net with a jewel at each intersection, each jewel reflecting all the other jewels of the net.

Indra's Net is a symbol of the internet, and can symbolize other interconnected systems, even Many-Worlds of lattice space time.

2. As the being whose thunderbolts reveal the light of the sun and release waters to flow to the ocean, Indra could symbolize the Vela X supernova.

3. The Rig-Veda has about 100 hymns to Soma, who has the nectar of immortality, also called soma. The soma nectar is used to stimulate visions. As it is produced by pressing and filtering the soma plant, so the Rig-Veda describes the yoga practice of purification of the mind by three filters, so that higher-level truth can be perceived.

About one-fourth of the verses in the Rig-Veda are in the gayatri meter: 3 sections of 8 syllables each; the first 4 syllables free and the last 4 in fixed cadence.

4. Now, with respect to physics - each of the 3 sections represents one of the three 8-dimensional representations of Spin(8), and the fixing of the last 4 syllables of the section representing 8-dimensional space time represents dimensional reduction to 4-dimensional spacetime.

The gayatri meter is named from the mantra in 3 Madala, 3 Astaka, 4 Adhyaya, Sukta 62, Richa 10:

[Read The Actual Meaning Of [Gayatri Mantra here](#)]



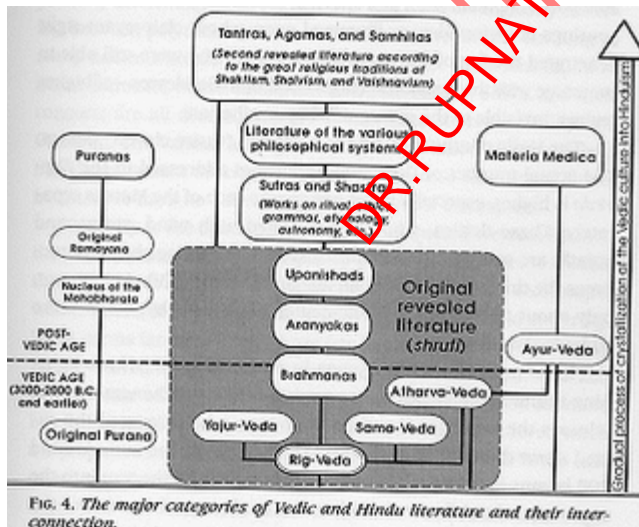
i.e.

tat savitur varenyam,
bhargo devasya dhimahi,
dhiyo yo nah pracodayat.

(In English: Behold the beautiful splendor of Savitri - the Sun-God of the swastika - to inspire our visions.)

Feuerstein, Kak, and Frawley, in their book *In Search of the Cradle of Civilization* (Quest 1995), say

"... The principal and, taken in its totality, the oldest of the four Vedic hymnbodies is the Rig-Veda. ...



... The Sanskrit word ric, which for euphonic reasons is changed to rig, means literally "praise". ... The Sanskrit word veda means literally "knowledge" or "wisdom". ... The Rig-Veda is the oldest book in the Sanskrit language, indeed in any Indo-European language. More than that, if we are correct, it is the oldest book in the world ... The fact that the Rig-Veda mentions a stellar configuration that corresponds to a date from 6000 B.C. to 7000 B.C. - the

astronomical Ashvini era [according to Underworld, by Graham Hancock (Crown 2002), quoting David Frawley: "... when the [winter] solstice first entered [the constellation of] Ashwini (i.e., when the winter solstice was at or very near the constellation of Aries)]... - must not be ... denied ... this date takes us back to the begining of the Indic civilization at the town of Mehgarh ... in eastern Pakistan (Baluchistan) ...[whre]... excavations have yielded the ... date of around 6500 B.C. ...

Writing about two thousand years ago, Greek historians Pliny and Arrian, who based themselves on reports from the ambassadors at the Maurya courts, mention that the native historical tradition of India knew of 154 kings, ruling over a period of 6,450 years. When we reconstruct this tradition, it appears that during Mauryan times the calendar was taken to commence in 6676 B.C. ...".

Rig Veda begins with 1 Madala, 1 Astaka, 1 Adhyaya, Sukta 1:

ॐ	अग्निमीळे पुरोहितं यज्ञस्य देवमृत्विजम्		होतारं रत्नधातमम्		1	
	अग्निः पूर्वोभ्रंक्षिषींभरोड्यो नूतनरुत		स देवो एह वंक्षति		2	
	अग्निनां रुयिमश्रवत्पोषमेव दिवोदिवे		युशसं वीरवन्तमम्		3	
	अग्ने यं यज्ञमध्वरं विश्वतः परिभूरसि		स इद्वेपुं गच्छति		4	
	अग्निहोतां कविक्रतुः सत्याश्रयश्रवस्तमः		देवो देवोभिरा गमत्		5	
	यदङ्ग दाशुषे त्वमग्रं भद्रं करिष्यसि		तवेत्तत्सुत्वमङ्गिरः		6	
	उप त्वाग्ने दिवोदिवे दोषावस्ताधिया वृयम्		नमो भरन्तु एमसि		7	
	राजन्तमध्वराणां गोपामृतस्य दीदिविम्		वर्धमानं स्वे दमे		8	
	स नः पितेर्व सुनवेऽग्रं सुपायुनो भव		सचंस्वा नः स्वस्तये		9	

Note the structure of 1 first line, followed by 8 lines, each with 8+8 = 16 Sanskrit syllables left of the | line and 8 Sanskrit syllables right of the | line, for a total of 24 Sanskrit syllables per line. Note that the three sets of eight syllables correspond to

Spin(10) 8 + 1 + 8

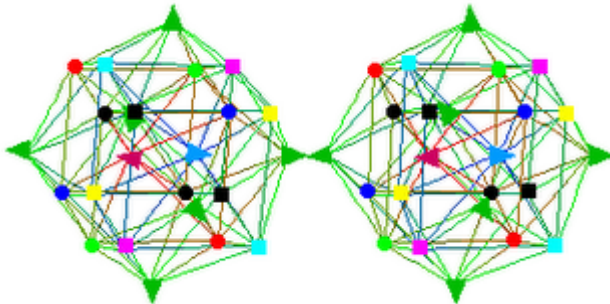
|

Spin(8) 28

/

E6 8 + 8 + 1 + 8 + 8

the 8 first generation fermion particles, the 8 first generation fermion antiparticles, and an 8-dimensional spacetime in the D4-D5-E6-E7-E8 VoDou Physics model, and all 24 form the vertices of a 24-cell.



According to The Constitution of the Universe by Maharishi Mahesh Yogi, printed in newspapers including The Sunday Times (15 March 1992), The Sunday Telegraph (15 March 1992) Financial Times (16 March 1992), The Guardian (16 March 1992), The Wall Street Journal (6 January 1992), and The Washington Post (9 January 1992), a copy of which was sent to me in pamphlet form by John Small in August 2003:

"... modern science has systematically revealed deeper layers of order in nature, from the atomic to the nuclear and subnuclear levels of nature's functioning ...

... the ancient Vedic wisdom ... identifies a single, universal source of all orderliness in nature ...

Both understandings, modern and ancient, locate the unified source of nature's perfect order in a single, self-interacting field of intelligence at the foundation of all the laws of nature. The self-interacting dynamics of this unified field constitutes the most basic level of nature's dynamics ... The laws governing the self-interacting dynamics of the unified field can therefore be called the Constitution of the Universe ...

In Maharishi's Vedic Science, ... the Constitution of the Universe ... is embodied in the very structure of the sounds of the Rik Ved, the most fundamental aspect of the Vedic literature ... According to Maharishi's Apaurusheya Bhashya, the structure of the Ved provides its own commentary - a commentary which is contained in the sequential unfoldment of the Ved itself in its various stages of expression. The knowledge of the total Ved ... is contained in the first sukt of the Rik Ved, which is presented below

Abamkar	Buddhi	Manas	Akash	Vayu	Agni	Jal	Prithivi
यु	ज्ञ	स्य	दे	व	मु	त्रि	जम्
YA	GYA	SYA	DE	VA	MRI	TVI	JAM
री	ड	यो	नू	त	ने	रु	त
त्पो	ष	मे	व	दि	त	दि	वे
वि	श्च	तः	प	रि	भू	र	सिं
सु	त्यश्	चि	त्र	क	व	स्त	मः
अ	ग्रे	भु	द्रं	रि	रि	ष्य	सिं
दो	षां	व	स्तर	धि	या	व	यम्
पा	मृ	त	स्यु	दी	दि	वि	म्
अ	ग्रे	सू	पा	यु	नो	भं	व

-- Picture 1 --

Ahamkar	Buddhi	Manas	Akash	Vayu	Agni	Jal	Prithivi
अक्	नि	मी	ळे	पु	रो	हि	तं
AK	NI	MI	LE	PU	RO	HI	TAM
अ	मिः	पू	वै	भिः	ऋ	षि	भि
अ	मि	नां	रु	धि	मं	श्न	वु
अ	मे	यं	यु	ज्ञ	मं	ध्व	रं
अ	मिर्	हो	तां	क	वि	क्र	तुः
य	द	ङ्ग	दा	शु	षे	तु	वं
उ	पं	त्वा	ग्रे	दि	वे	दि	वे
रा	जं	न्त	म	ध्व	रा	णां	गो
स	नंः	पि	ते	वं	सू	न	वे

-- Picture 2 --

Ahamkar	Buddhi	Manas	Akash	Vayu	Agni	Jal	Prithivi
हो	ता	रं	र	ल	धा	तं	मम्
HO	TA	RAM	RA	TNA	DHA	TA	MAM
स	दे	वाँ	ए	ह	वं	ज्ञ	ति
यु	श	सं	वी	र	वं	त्त	मम्
स	इ	डे	वे	सुं	ग	च्छ	ति
डे	वो	डे	वे	भि	रा	गं	मत्
त	वेत्	तत्	सु	त्य	मं	ङ्गि	रः
न	मो	भ	रं	न्त	ए	मं	सि
व	र्ध	मा	नुं	सु	वे	द	मं
स	चं	सु	आ	नः	स्व	स्त	ये

-- Picture 3 --

... The precise sequence of sounds is highly significant; it is in the sequential progression of sound and silence that the true meaning and content of the Ved reside - not on the level of intellectual meanings ascribed to the Ved in the various translations.

The complete knowledge of the Ved contained in the first sukt (stanza) is also found in the first richa (verse) - the first twenty-four syllables of the first sukt (stanza 1). This complete knowledge is again contained in the first pad, or first eight syllables of the first richa, and is also found in the first syllable of the Ved, 'AK', which contains the total dynamics of consciousness knowing itself.

According to Maharishi's Apaurusheya Bhashya of the Ved,

'AK' describes the collapse of the fullness of consciousness (A) within itself to its own point value (K). [Google it :: compare the quantum decoherence/collapse of superpositions of tubulin electron states in the formation of a thought in the human brain] This collapse, which represents the eternal dynamics of consciousness knowing itself, occurs in eight successive stages.

In the next stage of unfoldment of the Ved, these eight stages of collapse are separately elaborated in the eight syllables of the first pad, which emerges from, and provides a further commentary on, the first syllable of Rik Ved, 'AK'. These eight syllables correspond to the eight 'Prakritis' (Ahamkar, etc.) or eight fundamental qualities of intelligence ... [Google It :: compare the 8-dimensional real Clifford algebra of the D4-D5-E6-E7-E8 VoDou Physics model and its 8-fold Periodicity leading to a Clifford Tensor Product Universe]...

The first line, or 'richa', of the first sukt, comprising 24 syllables, provides a further commentary on the first pad (phrase of eight syllables);

The first pad expresses the eight Prakritis ... with respect to the knower ... observer ... or 'Rishi' quality of pure consciousness.

The second pad expresses the eight Prakritis with respect to the process of knowing ... process of observation ... of 'Devata' (dynamism) quality of pure consciousness.

The third pad expresses the eight Prakritis with respect to the known ... observed ... or 'Chhandas' quality of pure consciousness. ... [Google It :: compare the 3 pads with Triality]

The subsequent eight lines complete the remainder of the first sukt - the next stage of sequential unfoldment of knowledge in the Ved. These eight lines consist of 24 padas (phrases), comprising $8 \times 24 = 192$ syllables. [Google It :: compare the 192-element Weyl group of Spin(8), whose root vector polytope is the 24-cell, and whose Lie algebra comes from the bivectors of the Cl(8) Clifford Algebra] ... these 24 padas of eight syllables elaborate the unmanifest, eight-fold structure of the 24 gaps between the syllables of the first richa (verse). ... Ultimately, in the subsequent stages of unfoldment, these 192 syllables of the first sukt (stanza) get elaborated in the 192 [?or is it 191?] suktas that comprise the first mandal (circular cyclical eternal structure) of the Rik Ved, which in turn gives rise to the rest of the Ved and the entire Vedic literature. ...".

1. The first richa of the first sukt has 24 syllables plus 24 gaps (if you include a silent gap at the beginning/end to close the first sukt into a circle) and

2. Those 24 gaps are made relevant by being elaborated by the following 8 richas of the first sukt, which have 192 syllables

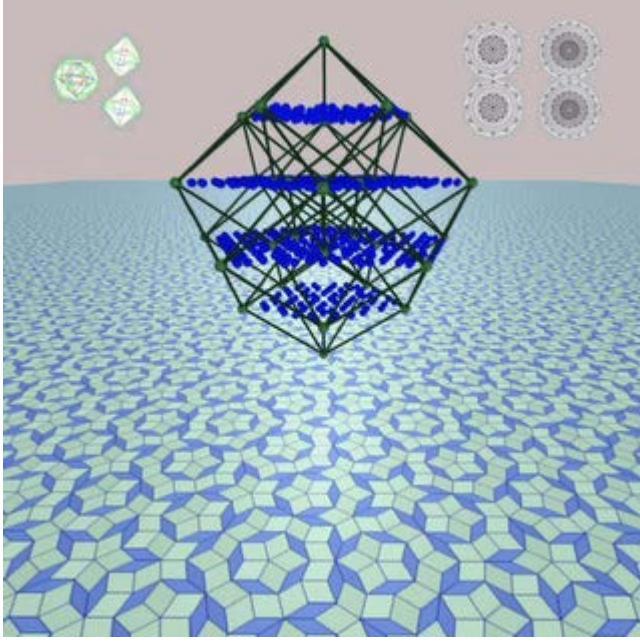
so that the total number of relevant entities in the first sukt is $24 + 24 + 192 = 240$, which is the number of vertices of the root vector poly - type of the E8 Lie algebra.

[For the E8 Lie algebra : Google it]

Since the E8 Lie algebra has rank 8, it has dimension $240 + 8 = 248$, and the $2^8 = 256$ -dimensional real Clifford algebra Cl(8) (or Cl(1,7) if you pay attention to signature) can be constructed as

Cl(8) = E8 + 8-dimensional vector space.

The following picture shown below gives a brief idea.



Therefore:

The first Sukta of the Rig Veda - 1 Madala, 1 Astaka, 1 Adhyaya, Sukta 1:

contains the structure of both: the D4-D5-E6-E7-E8 VoDou Physics model; and the 256-element structure of IFA = VoDou.

[Google about it more more information on D4-D5-E6-E7-E8 VoDou Physics model]

ॐ	अग्निर्मौळे पुरोहितं यज्ञस्य देवमृत्विजम्	।	होतारं खलधातमम्	।	१
	अग्निः पूर्वोभ्रंश्रिभ्रोड्यो नूतनरुत	।	स देवां एह संयति	।	२
	अग्निनां रुयिमश्रवत्पोषंभुव दिवेदिवे	।	यशसं वोस्येभमम्	।	३
	अग्ने यं यज्ञमध्वरं विश्वतः परिभूरसि	।	स इदं यज्ञं गच्छति	।	४
	अग्निहोतां कृविक्रतुः सत्याश्रिभ्रवस्तमः	।	देवो देवाभिरा गमत्	।	५
	यदङ्ग दाशुषे त्वमग्ने भद्रं करिष्यसि	।	सत्यत्सत्यमिद्विरः	।	६
	उप त्वाग्ने दिवेदिवे दोषावस्ताधिया वृयमग्ने भरेन्तु एमसि	।		।	७
	राजन्तमध्वराणां गोपामृतस्य दीदिवि	।	वर्धमानं स्वे दमे	।	८
	स नः पितृव्यं सुनवेऽग्नें सुपायनो भव	।	सचस्वा नः स्वस्तये	।	९

According to The Constitution of the Universe by Maharishi Mahesh Yogi, printed in newspapers including The Sunday Times (15 March 1992), The Sunday Telegraph (15 March 1992) Financial Times (16 March 1992), The Guardian (16 March 1992), The Wall Street Journal (6 January 1992), and The Washington Post (9 January 1992), a copy of which was sent to me in pamphlet form by John Small in August 2003:

"... modern science has systematically revealed deeper layers of order in nature, from the atomic to the nuclear and subnuclear levels of nature's functioning ...

... the ancient Vedic wisdom ... identifies a single, universal source of all orderliness in nature ...

Both understandings, modern and ancient, locate the unified source of nature's perfect order in a single, self-interacting field of intelligence at the foundation of all the laws of nature. The self-interacting dynamics of this unified field constitutes the most basic level of nature's dynamics ... The laws governing the self-interacting dynamics of the unified field can therefore be called the Constitution of the Universe ...

In Maharishi's Vedic Science, ... the Constitution of the Universe ... is embodied in the very structure of the sounds of the Rik Ved, the most fundamental aspect of the Vedic literature ... According to Maharishi's Apaurusheya Bhashya, the structure of the Ved provides its own commentary - a commentary which is contained in the sequential unfoldment of the Ved itself in its various stages of expression. The knowledge of the total Ved ... is contained in the first sukt of the Rik Ved, which is presented below

Feuerstein, Kak, and Frawley, in their book *In Search of the Cradle of Civilization* (Quest 1995), say

"... The principal and, taken in its totality, the oldest of the four Vedic hymnbodies is the Rig-Veda. ...

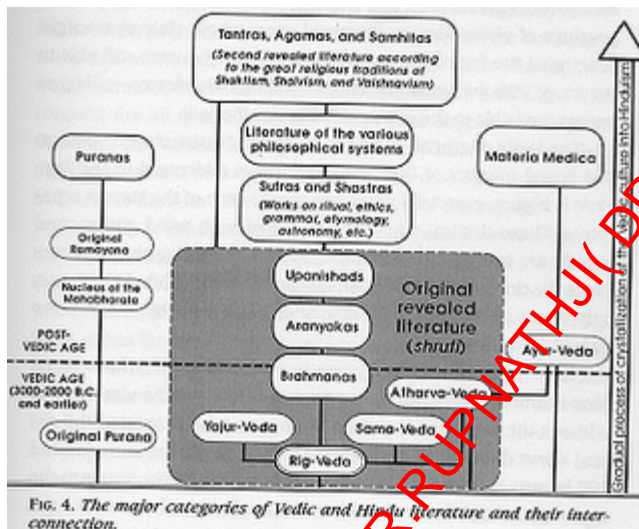


FIG. 4. The major categories of Vedic and Hindu literature and their inter-connection.

... The Sanskrit word ric, which for euphonic reasons is changed to rig, means literally "praise". ... The Sanskrit word veda means literally "knowledge" or "wisdom". ... The Rig-Veda is the oldest book in the Sanskrit language, indeed in any Indo-European language. More than that, if we are correct, it is the oldest book in the world ... The fact that the Rig-Veda mentions a stellar configuration that corresponds to a date from 6000 B.C. to 7000 B.C. - the astronomical Ashvini era [according to Underworld, by Graham Hancock (Crown 2002), quoting David Frawley: "... when the [winter] solstice first entered [the constellation of] Ashvini (i.e., when the winter solstice was at or very near the constellation of Aries)]... - must not be ... denied ... this date takes us back to the beginning of the Indic civilization at the town of Mehgarh ... in eastern Pakistan (Baluchistan) ...[whre]... excavations have yielded the ... date of around 6500 B.C. ...

Writing about two thousand years ago, Greek historians Pliny and Arrian, who based themselves on reports from the ambassadors at the Maurya courts, mention that the native historical tradition of India knew of 154 kings, ruling over a period of 6,450 years. When we

reconstruct this tradition, it appears that during Mauryan times the calendar was taken to commence in 6676 B.C. ...".

This speaking head must have been fashioned 'under a certain conjunction of stars occurring at the exact moment when all the planets were starting on their courses.' Neither the past, nor the present nor the future entered into it, since this invention apparently far exceeded in its scope its rival, the perverse 'mirror on the wall' of the Queen, the precursor of our modern electronic brain.



Naturally it was widely asserted that Gerbert was only able to produce such a machine head because he was in league with the Devil and had sworn eternal allegiance to him." Had other Europeans any contact with the society of the Nine Unknown Men? It was not until the nineteenth century that this mystery was referred to again in the works of the French writer Jacolliot. Jacolliot was French Consul at Calcutta under the Second Empire.

He wrote some quite important prophetic works, comparable, if not superior to those of Jules Verne. He also left several books dealing with the great secrets of the human race. A great many occult writers, prophets and miracle-workers have borrowed from his writings which, completely neglected in France, are well known in Russia.

Jaccoliot states categorically that the Society of Nine did actually exist. And, to make it all the more intriguing, he refers in this connection to certain techniques, unimaginable in 1860, such as, for example, the liberation of energy, sterilization by radiation and psychological warfare. Yersin, one of Pasteur and de Roux's closest collaborators, was entrusted, it seems, with certain biological secrets when he visited Madras in 1890, and following the instructions he received was able to prepare a serum against cholera and the plague.

The story of the Nine Unknown Men was popularized for the first time in 1927 in a book by Talbot Mundy who for twenty-five years was a member of the British police force in India. His book is half-fiction, half scientific inquiry. The Nine apparently employed a synthetic language, and each of them was in possession of a book that was constantly being rewritten and containing a detailed account of some science.

Each of the Nine is supposedly responsible for guarding and improving a single book. These books each deal with a different branch of potentially hazardous knowledge. Traditionally, the books are said to cover the following subjects:

- * Propaganda and Psychological warfare.

- * Physiology, including instructions on how to perform the "touch of death." One account has Judo being a product of material leaked from this book.

- * Microbiology, and, according to more recent speculation, Biotechnology. In some versions of the myth, the waters of the Ganges are purified with special microbes designed by the Nine and released into the river at a secret base in the Himalayas.

- * Alchemy, including the transmutation of metals. In India, there is a persistent rumor that during times of drought or other natural disasters temples and religious organizations receive large quantities of gold from an unknown source. The mystery is further deepened with the fact that the sheer quantity of gold throughout the country in temples and with kings cannot be properly accounted for, seeing that India has few gold mines.

The Nine Unknown Men of ashoka a secret society of India dating back to two millennium is the greatest Mystery in India which is believed to be the Indian version of Atlantis dating back to 273 BC to the regime of the ashoka indian emperor the grandson of Chandragupta who was the first person attempted to unify India... ashoka was hindu by birth and converted to Buddhism after the battle of kalinga in the battle kalinga which resisted lost around one lakh men....he war was over Ashoka ventured out to roam the eastern city and all he could see were burnt houses and scattered corpses. This sight made him sick and he cried the famous quotation,

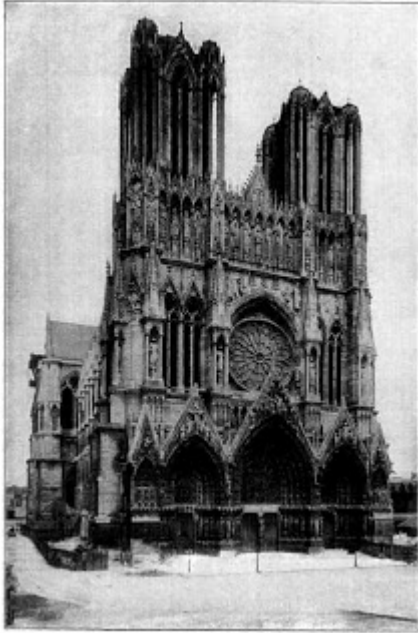
"What have I done?" Upon his return to Pataliputra, he could get no sleep and was constantly haunted by his deeds in Kalinga. The brutality of the conquest led him to adopt Buddhism under the guidance of the Brahmin Buddhist sages Radhaswami and Manjushri and he used his position to propagate the relatively new philosophy to new heights, as far as ancient Rome and Egypt.

According to the legend, upon his conversion to Buddhism after a massacre during one of his wars, the Emperor founded the society of the Nine to preserve and develop knowledge that would be dangerous to humanity if it fell into the wrong hands. Some versions of the story include an additional motivation for the Emperor to conceal scientific knowledge: remnants of the Rama Empire, an Indian version of Atlantis, which according to Hindu scripture was destroyed by

advanced weaponry 15,000 years ago.

Asoka founded the most powerful secret society on earth: that of the Nine Unknown Men. It is still thought that the great men responsible for the destiny of modern India, and scientists like Bose and Ram believe in the existence of the Nine, and even receive advice and messages from them. One can imagine the extraordinary importance of secret knowledge in the hands of nine men benefiting directly from experiments, studies and documents accumulated over a period of more than 2,000 years. What can have been the aim of these men?

Not to allow methods of destruction to fall into the hands of unqualified persons and to pursue knowledge which would benefit mankind. Their numbers would be renewed by co-option, so as to preserve the secrecy of techniques handed down from ancient times.



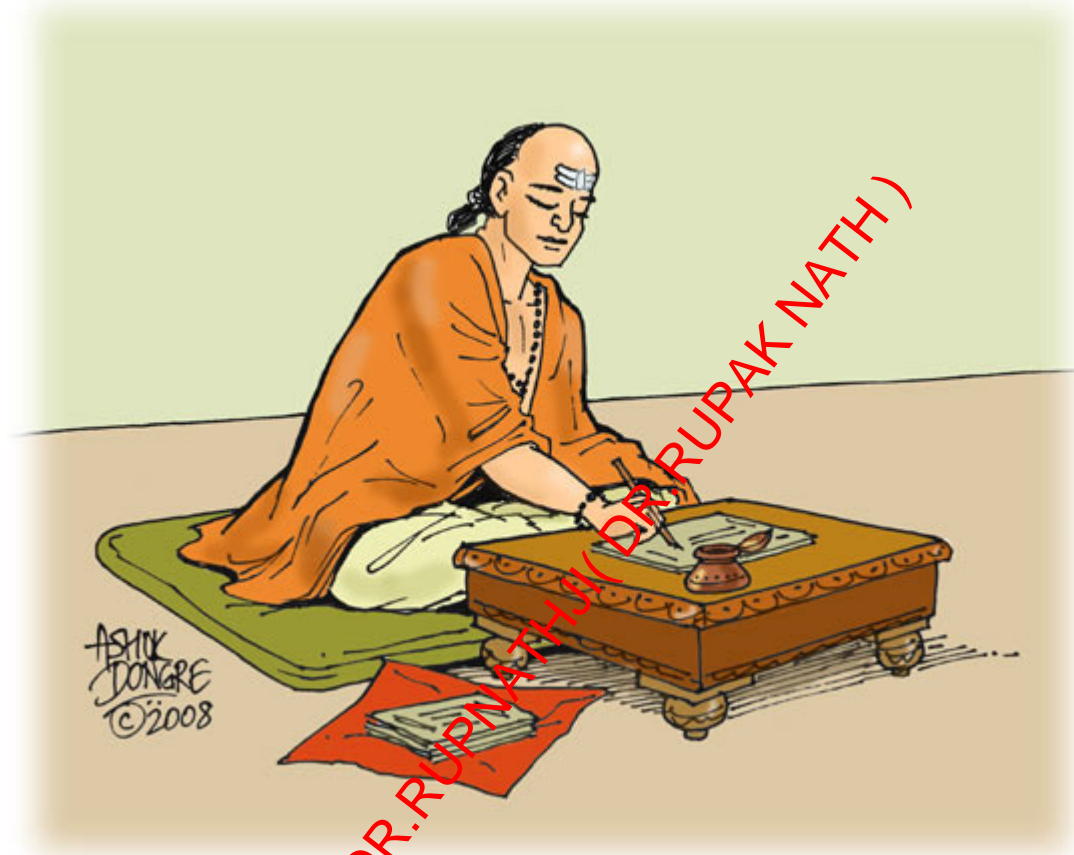
Examples of the Nine Unknown Men making contact with the outer world are rare. There was, however, the extraordinary case of one of the most mysterious figures in Western history: the Pope Sylvester II, known also by the name of Gerbert d'Aurillac. Born in the Auvergne in 920 (d. 1003) Gerbert was a Benedictine monk, professor at the University of Rheims, Archbishop of Ravenna and Pope by the grace of Ortho III. He is supposed to have spent some time in Spain, after which a mysterious voyage brought him to India where he is reputed to have acquired various kinds of skills which stupefied his entourage.

For example, he possessed in his palace a bronze head which answered YES or NO to questions put to it on politics or the general position of Christianity. According to Sylvester II this was a perfectly simple operation corresponding to a two-figure calculation, and was performed by an automaton similar to our modern binary machines.

This "magic" head was destroyed when Sylvester died, and all the information it imparted carefully concealed. No doubt an authorized research worker would come across some interesting things in the Vatican Library. In the cybernetics journal, *Computers and Automation* of October 1954, the following comment appeared: "We must suppose that he (Sylvester) was possessed of extraordinary knowledge and the most remarkable mechanical

skill and inventiveness.

Once there was a sage called Varsa. He had two disciples, Katyayana and Panini. While Katyayana was very sharp, Panini was a blockhead. Worried by this ill-luck, Panini left his gurukula and went far away into the Himalayas. There he practiced sacrament in order to please Lord Siva. Satisfied with his austere penance, Lord Shiva emerged before him and granted him the bonus of intellect.



Then God performed holy dance in his ecstasy and gave birth to fourteen holy Sutras - 'aphorism' - by beating his drum fourteen times. Blessed with astuteness, Panini accepted them and returned home. Then he composed a grammar of Sanskrit language which became the first and the most perfect grammar that could ever be composed.

In accumulation to such mythological version about Panini's life as described above which articulates the greatness of his grammar and his gratitude to Lord Siva due to whom his insipidness was transformed into an intellect, a few more tales are found recorded in the accounts of ancient Chinese pilgrim, Huan Tsang . *Huan Tsang has recorded a few stories about Panini which were popular in the North-west region of India during his period (A.D. 602 - A.D. 644).*

When Huan Tsang reached a place called So-lo-lu he found that it was a place where sage Panini who composed his *Chingminglun (grammar) was born*. He was told that since his childhood Panini was well-versed about the linguistic behavior of the people around him. He

wanted to improve the earlier organism of grammar which was formless and false. He wandered in search for guidance in this regard. In one of his sojourns he met Isvara Deva and consulted him on the matter of establishing reforms into the existing grammar. Isvara Deva gave him proper advice and assured all help. Thus after having met a Guru, Panini returned home.

The powerful plea that Backus-Naur Form (BNF) should be truly called Panini-Backus Form (PBF), as "we must give credit where credit is due." Paninian grammars, which consisted of over 4,000 algebraic rules and meta-rules have been studied by a number of scholars.

Kak (1987), reviews the Paninian approach to natural language processing (NLP) and compares it with the current knowledge representation systems of Artificial Intelligence, and argues that Paninian - style generative rules and meta rules could assist in further advances in NLP. Another article by [Staal](#) (included in this book) discusses the consistency of the system of rules of Panini, as tested by [Fowler's Automaton](#). (These are among the marvelous contributions of ancient India to computing sciences)...

Panini uses meta rules, transformations, and recursions with such sophistication that his grammar has the computing power equivalent to a Turing machine. In this sense Panini may be considered the father of computing machines. His work was the forerunner to modern formal language theory, and a precursor to computing. Paninian grammars have also been devised for non-Sanskrit languages.

Panini was an ancient Indian grammarian (520-460 BC but estimates range from the 7th or even earlier as far back as the 17th century BCE, to 4th centuries BCE prior to the evolution of Classical Sanskrit) who lived in Gandhara and is most famous for his grammar of Sanskrit, particularly for his formulation of the 3,959 rules of Sanskrit morphology in the text *Ashtadhyayi*.

Panini's grammar of Sanskrit is highly systematized and technical. Inherent in its analytic approach are the concepts of the "phoneme", the "morpheme" and the "root", only recognized by Western linguists some two millennium later.

Backus Naur Form - Panini

His rules have a reputation for perfection – that is, they are claimed to describe Sanskrit morphology fully, without any redundancy. A consequence of his grammar's focus on brevity is its highly unintuitive structure, reminiscent of contemporary "machine language" (as opposed to "human readable" programming languages). His sophisticated logical rules and technique have been widely influential in ancient and modern linguistics.

Sanskrit has

Eight cases for the noun :: *nominative, accusative, genitive, dative, ablative,*

instrumental, vocative, and locative

Three genders :: *masculine, feminine, and neuter*

Three numbers for verbs :: *nouns, pronouns, and adjectives (singular, dual, and plural)*

Three voices for the verb :: *active, middle, and passive.*

The language is very highly inflected. The ancient Indian scripts known as the Brahmi and Kharosthi alphabets have been employed to record Sanskrit. Both Brahmi and Kharosthi are thought to be of Semitic origin. The Devanagari characters, which are descended from Brahmi, also were, and still are, used for writing Sanskrit.

The formal structure of computer programming languages was introduced in the 1958-60 period by eminent scientists John Backus (1958), and Peter Naur (1963). They headed UNESCO conferences on International algorithmic language ALGOL 60, a language "suitable for expressing a large class of numerical processes in a form sufficiently concise for direct automatic translation into the language of programmable automatic computers."

What is BNF notation(in short)?

BNF is an acronym originally for "Backus Normal Form" that was later changed to Backus - Naur Form. BNF notation can be found in any book on programming languages.

The following, taken from Marcotty and Ledgard (1986), explains the meta-symbols of BNF.

The meta-symbols of BNF are:

::= meaning "is defined as"

meaning "or"

< > angle brackets used to surround category names.

The angle brackets distinguish syntax rules names (also called non-terminal symbols) from terminal symbols which are written exactly as they are to be represented. A BNF rule defining a non terminal has the form:

non terminal ::= sequence_of_alternatives consisting of strings of terminals or non terminals separated by the meta-symbol

For example, the BNF production for a mini-language is:

::= program

begin

end ;

Knuth (1964), in a Letter to the Editor of CACM, makes the point that the meta

syntactic notation used in, e.g., the ALGOL 60 report (Naur 1963) should be renamed. In particular, he observes the well-acceded fact that the so-called Backus Normal Form is, indeed, not a normal form in any sense. The purpose of this letter is to observe that Backus was not the first to use the form with which his name has become associated. Dr. Alexander Wilhelmy has called to my attention a work by Panini. , Panini was a scholar who flourished between 400 B.C. and 200 B.C.; perhaps his most significant work was the compilation of a grammar of Sanskrit.

In order to describe the (rather complicated) rules of grammar, he invented a notation which is equivalent in its power to that of Backus, and has many similar properties: given the use to which the notation was put, it is possible to identify structures equivalent to the Backus "" and to the use of the meta-brackets "<" and ">" enclosing suggestive names. Panini avoided the necessity for the character "::-=" by writing the meta-result on the right rather than the left.

Since it is traditional in professional circles to give credit where credit is due, and since there is clear evidence that Panini was the earlier independent inventor of the notation, may I suggest the name "Panini - Backus Form" as being a more desirable one? Not only does it give due credit, but it also avoids the misuse of the word "Normal".

[Ancient Indian Aircraft Technology](#)

While it assumed that most flying saucers are of alien, or perhaps Governmental Military origin, another possible origin of UFOs is ancient India and Atlantis.

What we know about ancient Indian flying vehicles comes from ancient Indian sources, such as well known written Buddhist, Hindu, and Jain religious texts – like the Mahabharata and the Ramayana - that have come down to us through the centuries.

Indian Vimanas



Vimanas took off vertically, and were capable of hovering in the sky, like a modern helicopter or dirigible. Vimanas were kept in a Vimana Griha, a kind of hanger, and were sometimes said to be propelled by a yellowish-white liquid, and sometimes by some sort of mercury compound, though writers seem confused in this matter. It is most likely that the later writers on Vimanas, wrote as observers and from earlier texts, and were understandably confused on the principle of their propulsion. The 'yellowish- white liquid' sounds suspiciously like gasoline, and perhaps Vimanas had a number of different propulsion sources, including combustion engines and even 'pulse-jet' engines.

It is interesting to note, that the Nazis developed the first practical pulse-jet engines for their V-8 rocket 'buzz bombs.' Hitler and the Nazi staff were exceptionally interested in ancient India and Tibet and sent expeditions to both these places yearly, starting in the 30's, in order to gather historic evidence that they did so, and perhaps it was from these people that the Nazis gained some of their scientific information!

According to the Dronaparva, part of the Mahabharata, and the Ramayana, one Vimana described was shaped like a sphere and borne along at great speed on a mighty wind generated by mercury. It moved like a UFO, going up, down, backwards and forwards as the pilot desired. In another Indian source, the Samar, Vimanas were 'iron machines, well-knit and smooth, with a charge of mercury that shot out of the back in the form of a roaring flame.'

The Samarangana Sutradhara:



"With the passage of time and due to various changes of catastrophes the machines went out of use so that the secrets of its make-up and flying were equally lost. That the discontinuity of technical knowledge of a particular science within the known period of history is not an impossible factor has been shown by the inability to explore the nature of the rust less iron of the pillar of Chandraketu now fixed in Delhi.

DR. RUPAK NATH
DR. RUPAK NATH (DR. RUPAK NATH)
DR. RUPAK NATH

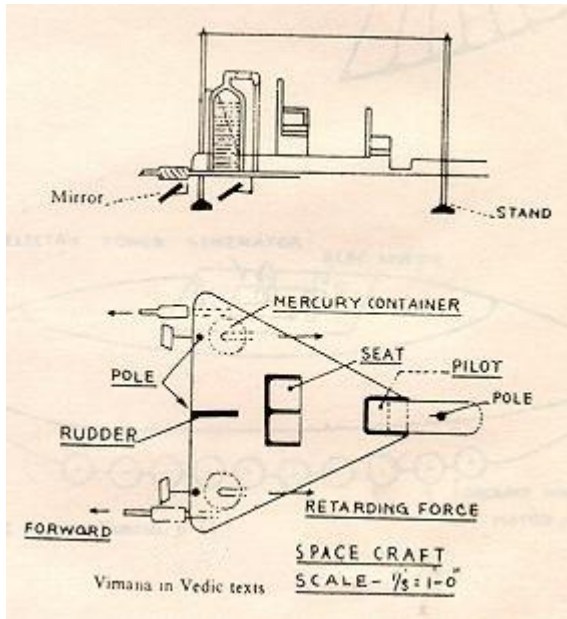


Hiuentsang, the Chinese pilgrim in the 7th century A.D. referred to 7 story palaces of which no evidence now remains. Sir P. C. Roy had shown that during the period from 1509 B.C. up to the end of the 3rd century B.C. methods for the large scale production of metals like gold, silver, copper, iron, tin, lead and mercury and of alloys like brass, bronze, and those of gold and silver with baser materials were known. Large varieties of mineral ores, gems, and precious stones have been described in detail by Kautilya.

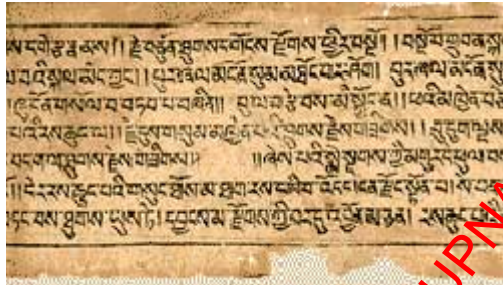
Knowledge of the fermentation process also reached a fairly advanced state. With a highly developed state of civilization flourishing in art, culture, literature, history, medicine, alchemy, chemistry, physics, mathematics, astronomy, and astrology, geology, trade, commerce, shipbuilding, and agriculture it is natural to think that some sort of flying vehicles as attested by literary references was in all probability known.

From the time of Panini up to the time of Bhoja we come across references to the great universities of Takshashila, Valabhi, Dhar, Ujjain and Visala etc. The annals of history inform us that the depredations of the foreign tribes began as early as the 2nd century A.D. From two centuries later came succeeding waves of attacks of other foreign hordes like the Arabs, Turks and Afghans. All the well-known universities and other centers of learning like the temples, the Viharas and the Bhandaras containing books and other priceless treasures of the Indian heritage had to stand the fire and fury of the marauders.

In the dark firmament of devastation and uncertainty a silver lining was, however, seen in the efforts of King Bhoja in the 12th century, when he tried to compile the Sanskrit texts. Glimpses of old heritage survived only in the memory of the people and in stray literary evidences. State patronization for Indian Hindu cultural enterprises in the Turk-Afghan/Islamic period was a misnomer."



Vimanas - Ancient India - Flying Machine



In addition to the *Vaimanika* (*vimanas = flying machine*) *Shashtra*, the *Samarangana Sutradhara* and the *Yuktikalpataru* of Bhoja, there are about **150 verses** of the Rig Veda, Yajurveda and the Atharvana veda, a lot of literary passages belonging to the Ramayana, the Mahabharata, the Puranas, the Bhagavata and the Raghuvamsa and some references of the dharma *Abhijnanasakuntalam* of Kalidasa, the *Abimaraka* of Bhasa, the *Jatalas*.

The *Avadhana Literature* and of the *Kathasaritsagara* and a number of literary works contained either references to graphic aerial flight or to the mechanism of the aerial vehicles used in old ages in India. In the Ramayana both the words "Vimana" and "Ratha" have been used:

Kamagam ratham asthaya...nadanadipatim (3. 35. 6-7). He boarded the aerial vehicle with Khara which was decorated with jewels and the faces of demons and it moved with noise resembling the sonorous clouds.

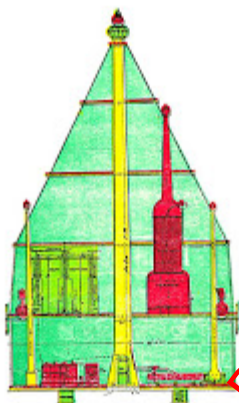
You may go to your desired place after enticing Sita and I shall bring her to Lanka by air.. So Ravana and Maricha boarded the aerial vehicle resembling a palace (Vimana) from that hermitage.

Then the demons brought the Puspaka aerial vehicle and placed Sita on it by bringing her from the Ashoka forest and she was made to see the battle field with Trijata.

This aerial vehicle marked with Swan soared into the sky with loud noise.

Reference to Flying vehicles as Vimana occur in the Mahabharata in about 41 places of which the air attack of Salva on Krishna's capital Dwaraka deserve special notice. The Asura king Salva had an aerial flying machine known as Saubha-pura in which he came to attack Dwaraka.

SUNDARA VIMANA



VERTICAL SECTION

Drawn by
T. K. ELLAPPA,
Bangalore,
2-12-1943.

Prepared under instruction of
Prof. SUBBARAYA SASTRY,
of Andhra, Bangalore

This organization because of 2-space in the role of origin gives us the arrangement because of which there emerges splitting of the positive and negative orientation of 1-space and hence of the interval, and as of the infinite line. This splitting of the orientations as positive and negative orientations makes them as absolutely different worlds as much as that the positive orientations takes us to +1 space and the negative orientations takes us to -1 space. With this, there automatically emerges a jump over a 0-space. In other words, 0-space marks its

presence of its own and its emergence is spontaneous and is always there even if remains latent in between the positive and negative orientations.

This is the self-referral state. The positive orientations as 1-space and further in the role of dimension of 3-space gives us as many as 7 geometries for 3-space. Likewise the change of orientation would take us from -1 space to -3 space but in a reverse order as much as that -1 space would become the domain and -3 space as the dimension.

The 7 geometries here for -3 space and then the continuity from -3 space to +3 space with 0-space in between -1 space and +1 space gives us two parallel set ups like the pair of objects with their reflection images and because of it a self-referral state makes it possible to have self-evaluation and self-appraisal of one's knowledge and it is there at the format of the division of the brain within human heads as of left and right parts.

The enlightenment of Sri Shivpuran from the stage of emergence of Lord Shiv as infinite pillar of fire in between Lord Brahma and Lord Vishnu goes further as that both Lord Brahma and Lord Vishnu interacted and asked as to what this form is there and when both showed ignorance about it to each other they decided as that one should go upward and try to know upto which the pillar takes and the other should go downward and try to know upto what it takes to. Both had tried and realized that it was not possible to scale the pillar.

This enlightenment made them realized the transcendental state of Lord Shiv (the presiding deity of real 5-space) and both of them attained self-referral state and ultimately the transcendental state and realized that it was not sufficient only to go upward and the going upward and going downward were two different organizations and arrangements and those can be known only with reference to the orientation free state of 0-space emerging between the positive and negative orientations spaces.

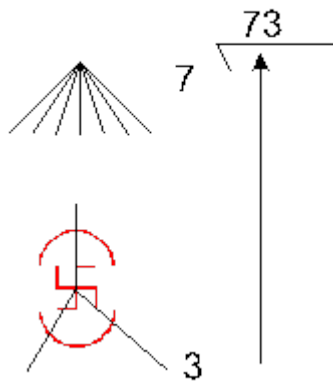
- [About](#)

Organization Of The Upanishada

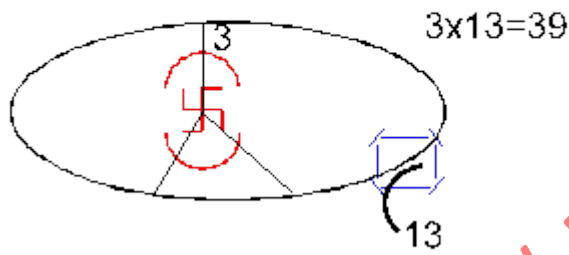
Scripture Formats 32: GORAKSHAKO UPANISHAD (ENLIGHTENMENT OF PROTECTION OF ETERNAL GLOW) #5

The organization of the Upanishad as 6 Upadeshas admits arrangement for its 353 Shalokas as 73, 39, 13, 29, 84 and 115. This arrangement is there because of the following format beneath because of the geometries of 0, 1, 2, 3, 4 & 5. Here is drawn the arrangement:

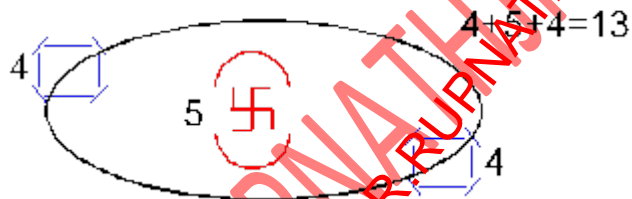
Upadesha-1



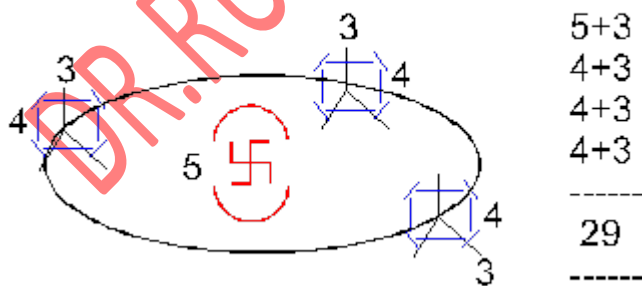
Upadesha-2



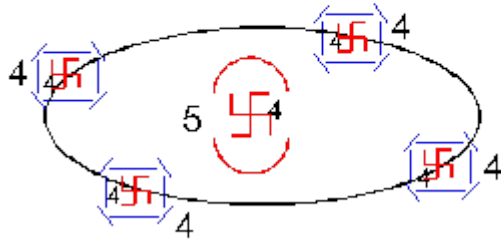
Upadesha-3



Upadesha-4



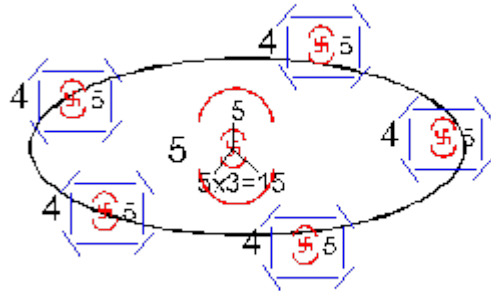
Upadesha-5



5x4
 4x4
 4x4
 4x4

 84

Upadesha-6



5x3
 4x5
 4x5
 4x5
 4x5
 4x5

 115

Hypercube In Vedas - Geometry Explained



Scripture Formats 29: GORAKSHAKO UPANISHAD (ENLIGHTENMENT OF PROTECTION OF ETERNAL GLOW) #2

Guru Gorakhnath, the author of the Upanishad is incarnation of Lord Shiv, the overlord of real 5-space. Therefore, the basic format for the organization of the scripture gets fixed as of hypercube-5 / real 5-space.

Gorakshako Upanishads text is of **353 Shalokas range**. The artifice of whole number 353 is unique in many ways and it, in the light of the enlightenment of the scripture and the organization format beneath, helps us reach at the basic geometric lock of manifestation of human body.

It is like the emergence of real 5-space at the origin of affine 3-space. The origin of affine 3-space is the seat of real 4-space and as such the transcendence and emergence at this seat is there because of real 5-space being at the base of this seat. The real 5-space itself being a solid dimensional space, this (solid dimensional order) as such locks the seat and the emerging geometric continuum locks the existence phenomena.

This phenomenon of locking and unlocking at the base of the origin of affine 3-space is the basic phenomenon whose comprehension and chasing is to provide us the enlightenment of the manifestation of human body and transcendence therefrom. This life phenomenon is the phenomenon of eternal glow whose protection within the human body is the subject matter of enlightenment of this Upanishad. One name for this discipline may be the discipline of geometry of Vedic genetic engineering.

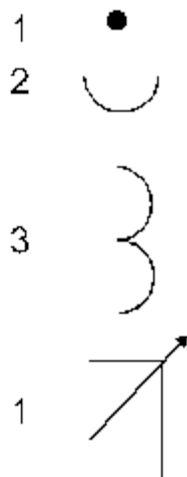
Description Of The Wheel & Pinda In Mathematics(Whole Number)

Scripture Formats 27: Description Of The Wheel Of Cause Brahman #2

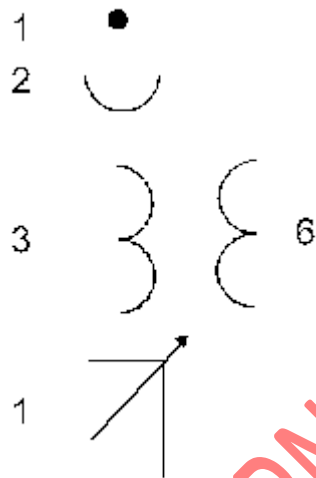
Sawtेशwara Upanishad describes the wheel of cause Brahman as of 1 (Nemi), 3 (Vrit), 16 (Antah), 50 (Ara), 20 (Pratya), 6 (Ashtak), 1 (Pash, Vishwarupa), 3 (Marg), 2 (Paap, Punya) and 1 (Karan). The artifices of whole numbers availed in that sequence are: 1, 3, 16, 50, 20, 6, 1, 3, 2, 1. In the reverse order the artifices of whole numbers give us the sequence as 1, 2, 3, 1, 6, 20, 50, 16, 3, 1. This sequence admits expression as: 1, 2, 3, 4=1, 4 leads to 6, 6 leads to $9+7+3+1$, $4*5=20$ leads to 5-space with 4-space boundary and $5*(1+2+3+4)=50$ solid points fixation of boundary, the Tri - Monad format of solids gives us 6-space at the center of 5-space as $5+6+5=16$ and 3 as Tri - Monad format and 1 as the linear order of 3-space.

On Om formulation, which is the basic formulation for organization on 4-space format, sequentially the above artifices of whole numbers leads to the following phases of organization of the wheel of Cause Brahman.

The phase of artifices of whole numbers 1, 2, 3, 4 and 1, 2, 3, 1 :

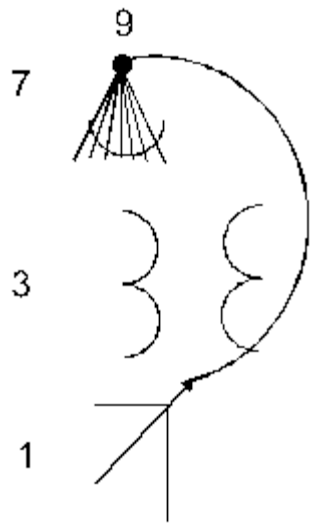


The phase of artifice of whole numbers 6:



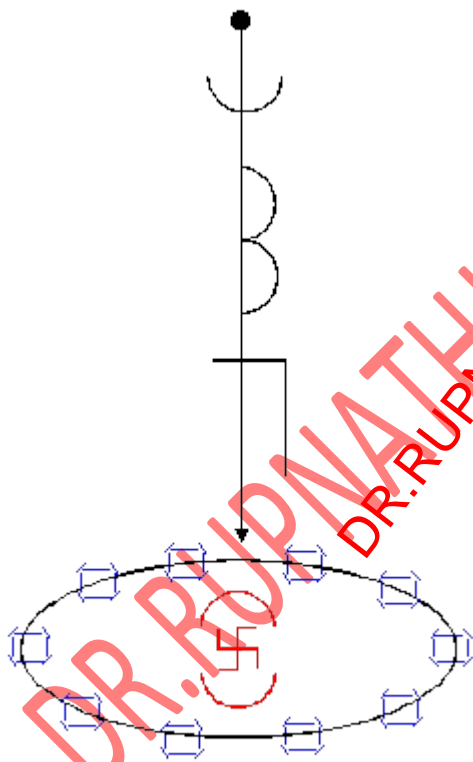
The phase of artifice of whole number 20:

DR. RUPNATHJI (DR. RUPAK NATH)



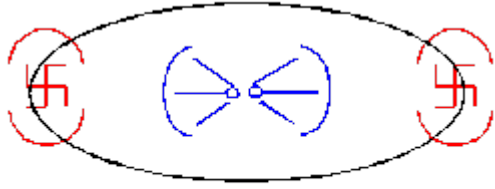
$$9+7+3+1=20$$

The phase of artifice of whole number 50:



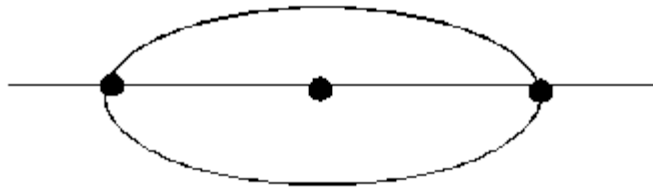
$$10 \times 5 = 50$$

The phase of artifice of whole number 16:



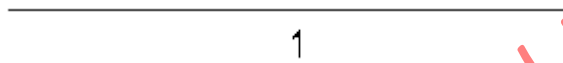
$$5+6+5=16$$

The phase of artifice of whole number 3:



$$1+1+1$$

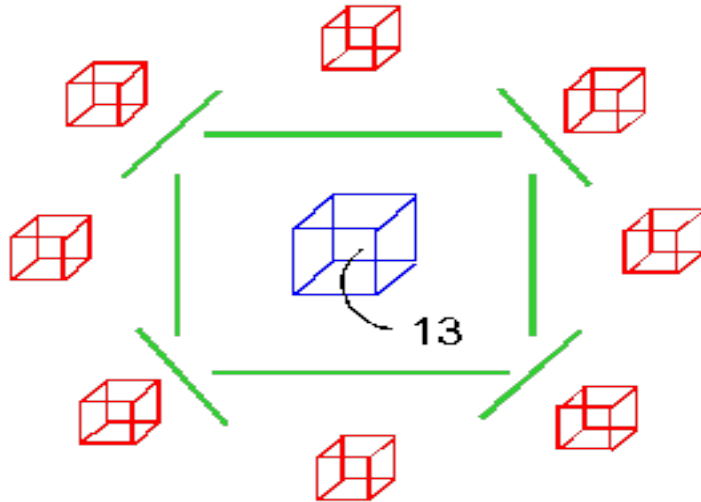
The phase of artifice of whole number 1:-



Source scripture: Swateshwara Upanishad

Vedas And Dimension - Continued

Scripture Formats 22: VYKATA, AVYAKATA, AVYAKATO-AVAKATAT AND PURUSHA
#2 : 13-EDGES CUBE WITHIN DOMAIN OF HYPERCUBE-4



The above format gives us 8 solid components of the boundary of hypercube-4 and the 12-edged cube gets fixed along the degree of freedom available to it within domain of hypercube-4 and as such manifest as 13-edged cube. There being a degree of freedom of motion along each of the four dimension of 4-space, as such there are 4 different ways for fixation of 13-edged cube within the domain of hypercube-4 and hence within 4-space. Otherwise as the 4-space itself is a spatial dimensional space, as such we get first format for the Great debate of enlightenment and knowledge within the kingdom of King Janak where everybody except Ashtavakra were held up at two fixations for the artifice of whole number 13 while Ashta Vakra won the debate by completing all the four fixations for the artifice of whole number 13.

Source scripture: Story of enlightenment of Ashtavakra

Scripture Formats 24: VYKATA → AVYAKATA, AVYAKATO-AVAKATAT AND PURUSHA #4: 32 EXTERNAL GODS AND 13 INTERNAL GODS

Tri Monad - Hypercube -->> Brahma Loka

Scripture Formats 16: THINGS TRANSFORM JUST WITH THE ATTENTION AT THE ORIGIN-II

Things transform just with the attention at the origin. Let us have attention at the centre of hypercube-4 / origin of 4-space and everything starts transforming; the hypercube-4 / 4-space splits into 10 components. The origin accepts 10 components boundary enveloping. The 5-space flourishes from within at the seat of origin and everything transforms from 4-space to 5-space. The scripture (Yog Vashishta) preserves the enlightenment as that Lord Brahma (the overlord of 4-space) when meditates in the cavity of his heart upon his lord, Lord Shiv, Lord Brahma multiplies himself into 10 Brahmas.

Source scripture: Ashtavakra Gita

Scripture Formats 17: THINGS TRANSFORM JUST WITH THE ATTENTION AT THE ORIGIN-III

With just attention at the origin of 4-space / hypercube-4, the things transform into that of 5-space / hypercube-5 enveloped within ten 4-space / 10 hypercubes-5. As from spatial dimension things transform into solid dimensional order and as 3-space / cube admits split up as 8 octaves / 8 sub-cubes.

Therefore, just with the attention at the origin we see simultaneous happening of split up into 10 components boundary and within it as within 8 components boundary. This is parallel to the simultaneous organization of Rig Ved Samhita as a scripture of 10 Mandals and also as of 8 Ashtaks. With this, with just attention, our mundane world set up of 3-space starts transforming as transcendental Vedic world of the order of Rig Veda.

Source scripture: Ashtavakra Gita, Rig Ved Samhita

Scripture Formats 18: THINGS TRANSFORM JUST WITH THE ATTENTION AT THE ORIGIN-IV:

SIMULTANEOUS INTERNAL AND EXTERNAL EXPANSIONS

With just attention at the origin of a space, say n-space / hypercube-n, the interactive process gets initiated and there follows simultaneous internal and external transformations and expansions to the next higher space set up.

If we just have attention at the set up of a cube, the outer surfaces, as 2×3 boundary components / surface plates, being spatial in organization, as to be set to fly off in the outer space and to dimensionalize it as 4-space. Two of the boundary components together to constitute a di-monad format and the remaining four of them to constitute four spatial dimensions for 4-space. This external transformation and expansion as dimensionalize 4-space is parallel to the internal transformation and expansion at the seat of origin as 4-space.

This way there is parallel internal and external emergence of 4-space. Likewise, if we have attention at the set up of a hypercube-4, the outer solids, as 2×4 boundary components / solid components, being solid in organization, as to be set to fly off in the outer space and to dimensionalize it as 5-space. Three of the boundary components together to constitute a tri-monad format and the remaining five of them to constitute five solid dimensions for 5-space. This external transformation and expansion as dimensionalize 5-space is parallel to the internal transformation and expansion at the seat of origin as 5-space. This way there is parallel internal and external emergence of 5-space.

Further, if we have attention at the set up of a hypercube-5, the outer hyper solids, as 2×5 boundary components / hyper solid components, being hyper solid in organization, as to be set to fly off in the outer space and to dimensionalize it as 6-space. Four of the boundary components together to constitute a tetra-monad format and the remaining six of them to constitute six hyper solid dimensions for 6-space. This external transformation and expansion as dimensionalize 6-space is parallel to the internal transformation and expansion at the seat of origin as 6-space. This way there is parallel internal and external emergence of 6-space.

In general, if we have attention at the set up of a hypercube-n, the outer hyper solids, as $2 \times n$ boundary components / hyper solid components, being hyper solid in organization, as to be set to fly off in the outer space and to dimensionalize it as $(n+1)$ space. $(n-1)$ of the boundary components together to constitute a $\{(n-1)\text{-order}\}$ monad format and the remaining $n+1$ of them to constitute $n+1$ hyper solid dimensions for $(n+1)$ space. This external transformation and expansion as dimensionalize $(n+1)$ space is parallel to the internal transformation and expansion at the seat of origin as $(n+1)$ space. This way there is parallel internal and external emergence of $(n+1)$ space.

Source scripture: Ashtavakra Gita, Sthapatya Ved literature

THINGS TRANSFORM JUST WITH THE ATTENTION AT THE ORIGIN:

COMPACTIFICATION AT THE ORIGIN

With just attention at the origin sequentially the simultaneous inward and outward expansion would unfold the compactification of whole range of dimensional spaces at the origin.

The attention at the origin of 3-space would initiate the interaction process of the mind and everything would start transforming and there would emerge simultaneous, inward and outward expansion of 4-space. With this, 3-space / cube as such shall be having placement at the origin and there emerging outward and inward, and as such all around, 4-space in its display. It may be expressible as 4, 3, 4. Three space at the center and 4-space on its either side.

The further attention would transform the very interactive process as much as that while on the one hand the attention would get centered at the origin of 4-space which would expand it outward as well as inward as 5-space and on the other hand the previous stage expression of 3-space at the center and 4-space around would set into initiation for the 3-space with available degree of freedom of motion to play the role of dimension and as such there would be dimensionalization of 5-space. This simultaneous unfoldment, transformation and expansion as $\{(4, 3, 4)$ and $(4, 5, 4)\}$ and in general $\{(n, n-1, n)$ and $(n, n+1, n)\}$ is uniquely there because of the compactification at the origin of whole range of real spaces. (The spaces where n -space plays the role of dimension of $n+2$ space).

Source scripture:Yog Shastra and Sthapatya Upved literature

Scripture Formats 20: THINGS TRANSFORM JUST WITH THE ATTENTION AT THE ORIGIN-VI:

CONTINUITY MAINTAINED BY BRIDGING OF GAPS

The Sushmana-Nari is the central nerve which runs through and coordinates the Shad Chakra of human body accepts the measuring-rod constituted by hypercubes-1 to 6. It means that starting with the close interval and reaching upto hypercube-6 is the range which constitutes the measuring-rod for the Sushmana-Nari running through the Shad Chakras.

The hypercube-1 (close interval) as representative regular body of 1-space accepts three versions of interval parallel to three geometries of 1-space. The hypercube-6 as representative regular body of 6-space accepts 13 versions parallel to the 13 geometries of 6-space.

Lord Vishnu is the presiding deity of the measuring-rod being the overlord of 6-space. Srimad Bhagwad Gita is the divine song of Lord Krishna, the incarnation of Lord Vishnu. Each of the chapters of Srimad Bhagwad Gita is precisely accepting the measuring-rod with Lord Vishnu as its presiding deity and as such each chapter opens with 3 words title and ends with 13 syllables Pushapika (colophon) parallel to the three geometries of 1-space to 13 geometries of 6-space.

Source scripture:Upanishads, Ur-Mahabharatam and Srimad Bhagwad Gita

Scripture Formats 21: VYKATA, AVYAKATA, AVYAKATO-AVAKATAT AND PURUSHA #1

Srimad Bhagwad Gita preserves the enlightenment of the order of the Reality as Vyakta, Avyakata, Avyakto, Avyakato-avyakatat and Purusha.

1. Vyakta means expressed. It is the expressed world, Vishwa, 3-space.
2. Avyakata means unexpressed which is yet to manifest in the Vishwa, 4-space world.
3. Avyakato-avyakatat means which is at the base of Avyakata. It is the transcendental base, a 5-space world.
4. Purusha is fully expressed transcendental consciousness within human frame. It is the consciousness world of Atman (soul) domain, Vishnu-lok, the Purusha in the Surya (sun), the 6-space reality.

Source scripture:Upanishads, Brahm Sutra, Srimad Bhagwad Gita

Knowledge Via Measuring Rod - 6 Dimension

Scripture Formats 6: MEASURE AND MEASURING-ROD

Lord Vishnu is the god of measuring - rod and Lord - Brahma is the god of measure.

Lord Vishnu is the overlord of real 6 - space and Lord Brahma is the overlord of real 4 - space.

Real 4-space plays the role of dimension of real 6-space. As such while the measuring-rod is constituted by domain (6-space), the measure remains at the dimension (4-space).

Source scripture: Manasara and other Sthapatya Upped literature.

Scripture Formats 7: SHAD - CHAKRA FORMAT OF HUMAN BODY

Vedic (Upanishadic) enlightenment is that human body admits Shad (six) Chakras (circuits) format. The external characteristics of the Shad - Chakras are 2, 4, 6, 8, 10 & 12.

The external characteristics of Shad - Chakras of human body are parallel to the number of boundary components of hypercubes-1, 2, 3, 4, 5 & 6.

This format of Shad - Chakras is the format of the order of 6-space whose presiding deity is Lord Vishnu. The creator-the-supreme, Lord Brahma, overlord of real 4-space as such is the presiding deity of the measure of the human body.

Source scripture: Upanishads and Darashan Shastra

Scripture Formats 8: ORGANIZATION OF KNOWLEDGE OF SRI VISHNU PURANA

Sri Vishnu Purana is a scripture of 6 Ansha (parts). The organization of knowledge of all the six Ansha of Sri Vishnu Purana is of 126 chapters.

This organization of knowledge is as per the measuring-rod and the Shad -Chakra format of human body as sustained within the Vishnu - loka (6-space domain)

On the artifices of whole numbers this organization admits expression as:

$$6 \times (1+2+3+4+5+6) = 6 \times 21 = 126.$$

Source scripture: Sri Vishnu Purana Samhita

Scripture Formats 9: VISHWA- RUPA

Shatpath Brahman preserves the enlightenment : Tawastha had one son. He had three heads and six eyes. And three mouths. So was his form (Rupa). That is why he was named - Vishwa Rupa (form of the world).

This is parallel to the world of three dimensions and domain-boundary ratio of the representative regular body of 3-space being $A^3:6A^2$. The enlightenment preserve in the Shatpath Brahman as such is the enlightenment about the geometric setup of the representative regular body of 3-space. Being a representative regular body so is the representative form of the dimensional space / world.

Source scripture: Shatpath Brahman (Kanda 1, Adhayaya 6, Brahman 3, Shaloka 1)

Scripture Formats 10: TRISHAPTA (3 AND 7)

"Yeh Trishapta Paryani Vishwa" (This world is enveloped by Trishapata i.e. 3 and 7). Parallel to it is that 3-space has 7 geometries of signatures (0, 1, 2, 3, 4, 5, 6) corresponding to the cube with no surface plate, cube with 1 surface plate, cube with 2, 3, 4, 5 & 6 surface plates respectively.

Source scripture: Atharv Ved Samhita (1. 24:1)

Scripture Formats 11: ONE, TWO, THREE AND EIGHT

Swateshwara Upanishads preserves the enlightenment that sequential order 1, 2, 3 and 8 leads to Moksha (liberation). Parallel to it is that on the artifices of whole numbers, the sequence 1, 2, 3 and 8 gives us 1×1 , 1×2 , 1×3 and 2×4 . Parallel to it on geometric formats the message is that the order of linear dimensions works upto first three dimensions and a step ahead is the world of spatial dimensions. In other words while 3-space admits linear dimensions, the 4-space admits spatial dimensions.

Source scripture: Swateshwara Upanishad

Scripture Formats 12: 03 TO 13

The Sushmana-Nari is the central nerve which runs through and coordinates the Shad Chakra of human body accepts the measuring-rod constituted by hypercubes-1 to 6. It means that starting with the close interval and reaching upto hypercube-6 is the range which constitutes the measuring-rod for the Sushmana-Nari running through the Shad Chakras.

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Source scripture: Upanishads, Ur-Mahabharatam and Srimad Bhagwad Gita

Scripture Formats 13: 120 YEARS CYCLE

The Jyotish Shastra accepts 120 years cycle for the planets' effects upon human life. This is the geometric organization of 4-space in the role of dimension creating 6-space as domain with complete coverage for the boundary of this domain with 120 hypercubes-4.

This is there as A6:12A5 is the domain-boundary ratio of hypercube-6 and further B5:10C4 is the domain-boundary ratio for each of the boundary components.

With this, the 12 boundary components of hypercube-6 get enveloped within $12 \times 10 = 120$ hypercubes-4.

Alternatively, 4-space itself being a spatial dimensional set up, it gives us arrangement for $120 = 60 + 60$ and further $60 = 2 + 8 + 18 + 32$. It is parallel to the capacity of the orbits of an atom to retain electrons.

As such, on either side of the nucleus, the set up admits expression as $2 + 8 + 18 + 32 + 32 + 18 + 8 + 2 = 120$.

Source scripture: Jyotish Shastra and Sthapatya Upveda

Scripture Formats 14: 13-EDGED CUBE IS HYPERCUBE-4

Within hypercube-4, the 12-edged cube has one degree freedom of motion along the fourth dimension. As such 12-edged cube gets fixed in 4-space as 13-edged cube. The 13th edge of the cube is supplied by the fourth dimension. Because of the spatial dimensional character of the dimension of 4-space, the 13th edge permits motions of a cube with a spatial pivot.

The motion of the cube as a whole in reference to such pivot is the unique cosmic arrangements like that of pole star. The Pushpikas (colophons) beneath all the 18 chapters of Srimad Bhagwad Gita enlighten us about the $6 \times 3 = 18$ different ways of outward motions along all the three dimensions from all the six surfaces of the cube.

Source scripture: Scriptures with organizations of artifices of whole number 13, like the Pushpikas of Srimad Bhagwad Gita, The Ashta-Vakra Gita and Srimad Durga Saptasati which is a scripture of 13 chapters.

Scripture Formats 15: THINGS TRANSFORM JUST WITH THE ATTENTION AT THE ORIGIN-I

Things transform just with the attention at the origin. Let us have attention at the center of cube / origin of 3-space and everything starts transforming; the cube splits into 8 sub-cubes and 3-space splits into 8 octaves. The origin accepts 8 sub-cubes / 8 octaves enveloping. The 4-space flourishes from within at the seat of origin and everything transforms from 3-space to 4-space.

Source scripture: Ashtavakra Gita

Organization Of Knowledge

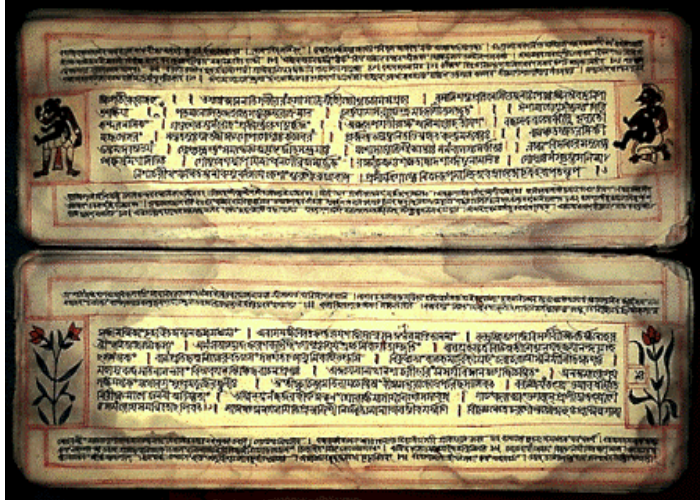
Knowledge and organization of knowledge are two different aspects of pure knowledge. One of the beautiful features of Vedic scriptures is that their knowledge is organized on geometric formats of real four and higher dimensional spaces. One sequence of such formats have been communicated by Dr. S. K. Kapoor during his interaction with other scholars. Here these are being reproduced in the form and sequence these have been taken up during this interaction:

Scriptures Format 1: OM

Om is one syllable scripture complete in itself. The past, present and future and all that transcends three folds of time is verily Om. This way the sole syllable expresses as four folds scripture complete in itself exhaustively covering the past, present and future and all that transcends the three folds of time on tetra-monad format.

Source scripture: *Mandukyo Upanishad*.

Scriptures Format 2: VEDA



Veda means knowledge; the whole range of knowledge. This the whole range of knowledge as one Veda was reorganized by Brahm-Rishi Ved Vyas into four Vedas: Rig Veda, Yajur Veda, Sam Veda and Atharvana Veda. Literally Vyas means diameter of a circle (a representative regular body of 2-space which in the role of dimension manifests as 4-space).

The organization of one Veda as four Vedas is parallel to the one syllable Om unfolding on tetra - monad format i.e. as an expression of four folds. With this shift to a diameter, there is a shift from a monad (linear order) to di - monad (spatial order). This gives expression for 1 as 01 whose reflection member is 10 i.e. ten.

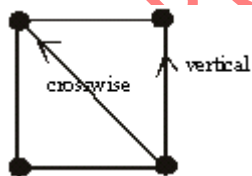
GANITA SUTRA 3

Roman script : Urdhva-Tiryagbhyam

Working rule / simple English rendering: "Vertically and crosswise."

Source concept: The source concept is the partitioning parallel to reflection pairing of object and image.

Format:



Basics / technical words: The basic / technical words availed by the text are: (1) Urdhva (vertical) and (2) Tiryag (crosswise).

We may illustrate one of the working rules of this Sutra, which would help us to reach at its organisational format as well. Let us multiply 11 by 11. We shall be getting the product equal to 121. Let us have a close look at this number. The central digit of this

number is 2. It admits expression as $1+1$. Let us replace the central digit 2 with its above expression $1+1$.

The three parts of the number 121 would permit depiction as: 1, $1+1$, 1. Now, let us chase the multiplication the Sutra way:

The first Sutra gives us the working rule to proceed step by step as "one more than the previous one". When we are working only with "half", therefore, in this case of 121 we shall be requiring the last two digits 12 or the first two digits 21. Therefore, when we shall be having 1 as start with position, as a next step under the rule of Sutra 1, we shall be reaching at 12.

Then the reflection image of 12 would give us 21 and we shall be obtaining 121. If we would have been multiplying 111×111 , we would be obtaining in three steps 123 and its image 321 which when combined would give us 12321 as the product of 111×111 . Likewise if we would have been multiplying 1111×1111 , we would be obtaining in four steps 1234 and its image 4321 which when combined would give us the required product as 1234321. The process can be extended.

The product 11×11 being the product of pair of numbers of double digits, therefore, these four digits, here each being 1, can be expressed as the numbers located at the four corners of a square. The pair of above corners may be taken as representing the first number 11 and the pair of lower corners may be taken as second number 11.

Now, when we shall be multiplying the first digit of lower number 11 with the pair of digits of the above number 11 one by one, we shall be approaching as is depicted above in terms of the arrows.

The depiction is of two parts. The first part is Urdhva (vertical) and the second part is Tiryaq (crosswise). This as such, would help us comprehend as that geometric format of square is being divided into two triangles and only 1 out of two triangles is being utilised by the organisation format of Sutra 3.

Here it would be relevant to note that the triangle is the first close organisation of lines. In other words we require a minimum of three lines to have a close organisation to enclose planes (area) / surface within its lines.

The triangle as such is the printout of 3-space on 2-space. The sum of all the three internal angles of a triangle is p . The sum of all the three external angles of a triangle is $2p$. We can express p as $(3-2)p$. The sum of all the four internal angles of a quadrilateral is $2p$. We can express it as $(4-2)p$. In general, the printout of n -space on 2-space is n -polygon and the sum of the internal angles n -polygon is $(n-2)p$. This in general can be seen as that the printouts of n -space in the role of dimension on 2-space is n -polygon.

Therefore, the organisation format of Sutra 3 is that of a printout of 3-space in the role of dimension on 2-space format.

Like that, one can proceed to reach at the organisation formats of the entire range of the text of 16 Ganita Sutras and 13 Upsutras but the context and the space at hand would not permit to proceed ahead with it.

However, the organisation formats achieved upto this stage well indicate about the mathematics of linear order of Sutra 1, spatial order of Sutra 2 and of solid order of Sutra 3.

GANITA UPSUTRA 1

Text in Roman script : Anurupyena

Working rule / simple English rendering: "Proportionate selection (of multiples and sub-multiples)" / "proportionately".

Source concept: "Oneness" / symmetry

Format:



Basics / technical words:

The text of Upsutra 1 avails a pair of technical words: (1) Anu (to follow), and (2) Rupyena (the form of). When 'one' is viewed as synthetic i.e. composed of parts, then each of its parts would be symmetrical to the whole and it would be proportionate of the whole. As such, (1) part as symmetrical to the whole, and (2) part as proportionate of the whole would be two distinct aspects of the same organisation.

Infinity is another word in which melt away all finiteness. In infinite domains or self-contained domains, the uniformity and patterns are other keywords in terms of which the concept of oneness can be approached as a symmetry and proportions. The applied values of Upsutra 1 would help us reach at unit interval as replica of infinite line, the universality of *Yatha pinde tatha brahmande* (as in the body so in the universe) and *Yatha brahmande tatha binde* (as in the universe so in the body) as well as the universality of the Upanishadic comprehensions as that even when full is taken out of full, there still remains full. With this, when one would work Sutra 1 with double of a unit instead of a unit or with any multiple of a unit instead of a unit, one would see that the rule works. With this, the Sutra 1 coupled with Upsutra 1 makes the potentialities of Sutra 1 many fold.

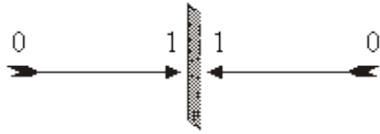
GANITA SUTRA 2

Text in Roman script : Nikhila Navatascaramam Dastah

Working rule / simple English rendering: "All from nine and last from ten."

Source concept: Ten place value system is the source concept.

Format:



Basics / technical words:

Text avails four technical words which take us to the basics of the working domain of the Sutra. These are: (1) Nikhilam (all), (2) Navastasca (from nine), (3) Caramam (last), and (4) Dastah (ten).

Nine numerals and ten place value system are the two basic steps in terms of which the infinitely long line stands tamed. The counting pebbles technique requires infinite pebbles for coverage of infinitely long line. However, symmetry / proportions / replica rules suggest that proper system can be constructed to express "infinity in terms of finite".

Vedic seers comprehended ten place value system. From the method of expression tenth counting pebble as 10 as in two digit form, we can notice that here lies a shift from single digit expression for first 9 counts to the next multiple digit expression initiation for expression of tenth count onwards. We also know that first 9 counts as well can be expressed in double digit forms as: 01, 02, 03, 04, 05, 06, 07, 08 & 09. Therefore, the first thing about this transition is the introduction of the tenth symbol for the zero count as "0". Further, it also would be interesting to note that the double digit form for 1 as 01 provides us an expression for the tenth count as 10 simply by having swapping of places for first and the second digit.

Further, the above interlink of 01 and 10 takes us to their link and interlocking as reflection pair of numbers as much as that the formats beneath 01 and 10 get interconnected like image of an arrow through looking mirror gets interlocked with the arrow itself. The placements of arrow, mirror, and the image of the arrow work out a di-monad format with mirror playing the role of joint of the di-monad. This as such is a big leap forward from the organisation format of Sutra 1. This had become possible with the transition stage of Upsutra 1. Therefore, Sutra 1, Upsutra 1 and Sutra 2 together make much interesting dimensions to the mathematics.

The above organisation of Sutra 1, Upsutra 1 and Sutra 2 takes us to a stage where the middle of interval, which otherwise had the privilege of uncountably infinite placements, gets tamed as a unique mirror placement to have half unit in front of the mirror as first half and its image through the mirror as the second half. It is this way unique fixation of the middle makes the mathematics workable in terms of "half unit", like the organisation in terms of "half dimension". With this, it becomes possible to go to a number which exists prior to "one" i.e. half. It is a big

achievement over the mathematics of "one" without predecessor. However, simultaneously, it makes the working very delicate as we shall be permitting the second half to remain dormant while structures because of the second half also shall be silently marking their presence.

We cannot afford to ignore the existence of the structures because of the second dormant half. If one is to see the type of difficulties in which the mathematics when worked without taking care for the second dormant half, one is simply to pose to oneself as to why from hypercircle-8 onwards the values start decreasing. It simply happens as the linear order worked in terms of half-dimension helps us sequentially increase only upto seventh step parallel to the possible seven geometries of 3-space of linear order.

The organisation of pairing of two halves with the help of a mirror at the middle is unique organisation of many features, of which the most important is the feature of common remainder for both the halves while both halves are divided by a common divisor. Though this property may appear to be obvious but in fact when the same is viewed in the context of uncountably infinite points being handled in terms of counting numbers, one would realize, how important this property of constant remainders emerges to be. This is precisely Upsutra 2.

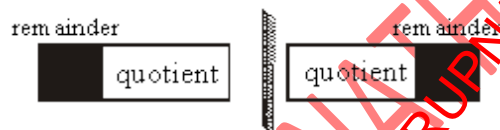
GANITA UPSUTRA 3

Text in Roman script : Sisyate Sesasmajnah

Working rule / simple English rendering: "Remainder remains constant."

Source concept: The source concept here is the concept of equality of units, the pair of halves etc;

Format:



Basics / technical words:

The basic / technical word availed by the text of Upsutra 2 is "Sesa" (remainder). The text as such is the definition of remainder: remainder is that which remains (as uncovered part of the divisor, on division).

The basic operation is the operation of "division". This Upsutra along with Upsutra 1 makes the mathematics of Upsutras a very interesting branch in itself.

The "one" which permitted itself as a pair of halves, sequentially by the rule of symmetry of Upsutra 1 and the rule of equality of remainders of division of equals takes the process of partitioning of "one" into as many equal parts as one would like to have.

This makes the external expansion of counts from one to two, two to three and so on parallel to the internal partitioning from wholesome one to a pair of parts, then to three parts, four parts and so on. With this, the arrays of mathematical tools become sufficiently large to work out very rich structures only in terms of "parts", of which the working with "half" is most rewarding.

Ganita Sutras is a complete system in itself. These are Vedic aphorisms. These are 29 in number; 16 of them are designated as Sutras and other 13 as Upsutras. Credit goes to Swami Bharti Krisna Tirthaji Maharaj, a Shankracharya of Kanchi to focus the attention of the present generation about potentialities of Sutras.

The information contained in the book titled "Vedic Mathematics" compiled by Prof. V.S. Agarwala, published (1965) from the manuscript papers of Swamiji make us known as how Swamiji had to devote many years to decode the working rules of these Sutras.

From the demonstrations of the working rules of these Sutras in this book it has convinced many about the potentialities of the Sutras. Since then many scholars have further demonstrated about their potentialities to make the mathematics much easier and more effectively within the comprehensions of much larger population and also about their utility and academic values in many ways. Dr. S. K. Kapoor has approached the organization format of this system on the whole and as individual Sutras. His approach and the results give us further insight of this wonderful system.

Here Sutras 1, 2 & 3 and Upsutras 1 & 2 are being introduced from the book "Goldbach Theorem" to give insight about their formats and to give idea about the basics of the different processes and the way this system is approaching different branches of mathematics in a unified way as a single discipline. The parallel text of the Sutras adopted in different scriptures is being searched. Dr. Kapoor points out Shatpath Brahman. Hereunder, the illustrative reference with working rule is indicated in reference to Ganita Sutra 1. The other Sutras may be taken up in due course of time.

GANITA SUTRA 1

Text in Roman script: Ekadhikena Purvena

Working rule / simple English rendering: "One more than the previous one."

Source concept: "One"

Format:



Basics / technical words:

Text avails three technical words which take us to the basics of the working domain of the Sutra. These are: (1) Eka (one), (2) Edhikena (more than), and (3) Purvena (previous). These three technical words take us to the three basic concepts: (1) the concept of "one", (2) the concept of "one more than", and (3) the concept of

“previous one”. The first concept is the wholesome concept. Here it manifests in many ways and can be availed as a unit, unit entity, unit measure, the counting number 1, the close interval of unit length etc. etc. The second concept “more than” is the concept of increase, the concept of comparison of one entity being bigger than / more than other entity. The third concept is the concept of “order”. It is the concept of a queue, a pair of entities of a queue of which one is previous as comparison to the second and the second automatically being subsequent to the first.

Therefore, the Sutra 1 has many applied values which would work out for us (1) counting, (2) arrangement of counting pebbles, (3) arrangement of beads along a thread, (4) the queue of points along with line etc. etc. If we try to chase the repeated applications of “one more than the previous one”, we can have a countably infinite steps. Not only that, we can by a suitable choice of “one” and the application of the working rule of Sutra 1, have a chase for uncountable infinity as the line is by having sequential placements of points as counts with index values allotted as per the working rule of Sutra 1 from the set of natural numbers (whole numbers / counting numbers).

Parallel text and application of Sutra 1 in Shatpath Brahman:

1.1.2.5 (Kanda 1, Parpathaka 1, Brahmana 2, Kandika 5) Page 10
YADEV AGRE TAD KARVANITE
That which is first to be acted first.

2.5.2.22 (Kanda 2, Parpathaka 5, Brahmana 2, Kandika 22) Page 300
EKAIN EKEIN YA ASYE PRAJA EKE NATI RIKTANI
For everybody there is one utensil. As many are the members of the family, so many are the utensils and there is one extra.

2.6.2.4 (Kanda 2, Parpathaka 6, Brahmana 2, Kandika 4) Page 328)
EKAIN EKEIN YA ASYE PRAJA EKE NATI RIKTANI
For everybody there is one utensil. As many are the members of the family, so many are the utensils and there is one extra.
Let there be a family F of members m_1, m_2, \dots, m_f . Let this family has a kitchen K with utensils u_1, u_2, \dots, u_k .

For one-to-one association of family members of F with the utensils of K, the first member m_1 is to be associated first, the first utensil of K i.e. u_1 .
To each member of F is associated from K.

The requirement is that after such association we should have one extra utensil in K. This makes the cardinality of K as $f+1$.
The set F (of cardinality f) and the set K (of cardinality $f+1$) makes a pair of sets (F, K) and they supply us the pair of numbers ($f, f+1$). This is precisely the basics and formation of Ganita Sutra.

Organization of Brahma Loka & Vishnu Loka - Finale



We can appreciate the distinction of knowledge and organization of knowledge in term of an affine space and metric affine space. In general terms, we may approach this distinction in terms of space and dimensional space. In more concrete terms, we can approach it in the context of our physical world in terms of 'volume' as attribute of 3-space content and the volume organized as a 'cube'. The organization of a cube requires points, lines and surface plates in addition of the volume, lines and surface plates. All these set ups of points, edges, surfaces and volume are to be made out of the available content. The unique mechanism of transformation of an affine space into metric affine space or of space into dimensional space or of 3-space or space into dimensional space or of 3-space content as volume into 3-space lump as cube has real mathematics which deserves to be learned.

Great Vedic comprehension of this mechanism as that the vibrant synthetic reality accepts synthetic monads, is responsible for manifestation layers with sealed origin, (n-2) space playing the role of dimensional of n-space and the domain-boundary ratio of hypercube-n comes to be $A^n:2nA^{n-1}$. This makes the dimensional order of space of two prongs distinct for odd and even dimensional spaces as much as that odd (2n-1) dimensional space shall be having linear dimensional order as $(2n+1) \times (2n-3) \times \dots \times 3 \times 1$ and for even (2n) dimensional space to have linear dimensional order as $2n \times (2n-2) \times (2n-4) \times \dots \times 6 \times 4 \times 2$.

Further the domains boundaries sequence shall be yielding sequential ratios for hypercube-n as $A^n: 2nA^{n-1}: 2n \times 2(n-1) \times A^{n-2} : 2n \times 2(n-1) \times 2(n-2) \times A^{n-3}$ (till the term A^0). This sequential order with the above linear dimensional order for dimensional space and the concept of synthetic monad of n parts making each part as $1/n$, when worked together would yield the answer for the above great mechanism of nature, which in the language of Ramayana would mean a difference of two Anguls (measuring units) between the arm of Lord Rama and Kag-Bhushandi and in the language of Shri Bhagwad Mahapuram that every string used by Mother Yashoda to bind Lord Krishna turned out to two Anguls short.

In mathematical language, it means that the representative regular bodies of dimensional spaces i.e. interval, square, cube and hypercubes shall be working out a

linear sequential order which shall be transforming respective affine spaces into respective metric spaces or spaces as dimensional space or space contents (hyper volumes) as hypercubes which can be expressed as $B^n = (A+2)^n$ which means the hyper volume B^n remains only as $(B-2)^n$ and the remaining content stands consumed by the boundary for wrapping the domain $(B-2)^n$.

Now if we work out the above $B^n = (A+2)^n$ equation for $n=1, 2, 3, 4$, and so on, we shall be convincing ourselves about the above mechanism of the nature. For $n=1$, we shall be getting $B^1 = A^1 + 2A^0$. This straight way follows from the domain-boundary formulation for 1-space body. For $n=2$, we shall be getting $B^2 = A^2 + 4A^1 + 4A^0$.

Here the first pair of terms follow straight from the domain-boundary formulation of 2-space body. The second term $4A^1$ would yield $8A^0$ boundary components. But here we shall be reaching boundary of the boundary which means, we shall be taking a synthetic step of two parts to reach the boundary. This will make each part being of $\frac{1}{2}$ value. Applying this, we shall be getting boundary of boundary as $\frac{1}{2} (8A^0) = 4A^0$. Likewise, for $n=3$, we shall be getting $B^3 = A^3 + 6A^2 + 12A^1 + 8A^0$. Here as well the first pair of terms follows straight way from the domain-boundary formulation of 3-space body. The third term which shall be taking us to the boundary of the boundary would accordingly can be computed as $\frac{1}{2} (4 \times 6A^{2-1}) = 12A^1$. By the same logic we shall be reaching the next term as $\frac{1}{3} (2 \times 12A^{1-1})$ for $n=4, 5, 6$ and so on.

Now let us appreciate the above mathematics in terms of the geometric set ups of close interval, square and cube and we shall be comprehending that the equation $B^n = (A+2)^n$ for $n=1$ yields the geometric set up of close interval as length (A^1) with two end points ($2A^0$), for $n=2$ yields the geometric set up square as area (A^2) with four boundary lines ($4A^1$) and four end points ($4A^0$) and for $n=3$ yields the geometric set up of cube as volume (A^3) with six surface plates ($6A^2$), 12 edges ($12A^1$) and 8 corner points ($8A^0$).



[Above Figure Can We Imagine as Brahmanda?]

This will help us appreciate the greatness of Vedic model. Further this will also help us appreciate how B^n remains $(B-2)^n$ as domain in the synthetic set up and the remaining content is consumed by the boundary of $(B-2)^n$ as domain and this would be

a never ending sequence which impliedly means, we shall be exhausting the contents and even logically would be demanding the existence in a void, the impossibility, which is the rule of ad - infinitum reduction and this will prove the Fermat's last theorem as that $z^n = x^n + y^n$ and $(z-2)^n = (x-n)^n + (y-2)^n$ can not hold simultaneously. Accordingly, every Vedic scriptural organizational has a great mathematics in store for us.

LORD SHIV, SUN, MAN, ATOM AND MANASARA

Lord Vishnu, is the Lord of real 6-space. The seat of Lord Vishnu is the heat of Lord Shiv. 6-space is located at the organ of 5-space. Dwadash Adityas (12 suns) are the 12 boundary components of hypercube-6. As many as 12 hypercube-5 are required to constitute the boundary of hypercube-6. Lord Shiv meditates upon His Lord Vishnu and multiplies 12 folds into Vishnu-lok. Isha punished enlightens us that Purusha, in the sun is Lord Vishnu. Ayurveda enlightens us that Pursuha is constituted by 6 Dhatus and Atman is the 6th Dhatu.

First five Dhatus are Panchmahabhut. Lord Shiv is the Lord of Panchmahabhut. Lord Vishnu is the Atman. The studies of the set up of the atom also leads us to the conclusion that electronic configuration around the nucleus i.e the micro world accepts for format of hypercube-4 while nucleus itself concepts for format of hypercube 4 while nucleus of the nucleus would accept the format of hypercube-6, Mansara accepts Lord Vishnu, the overlord of 6-space as the Lord of the measuring rod. Lord Brahma, the four head lord is the Lord of measure. Manasara begins with the prayer of Lord Brahma and ends with the chiseling of the eye of the Lord. As such the conclusion comes to be that Manasara adopts the organizational format of hypercube 5 at the boundary of hypercube-6 which would be parallel to the worlds of Lord Shiv, Aditya, Panchmahabhut and nucleus of the atom.

SPACETIME FRAME OF MANSARA

The space time frame of Manasara as such is the space time frame of hypercube-4 transcending into hypercube-5. This is a transition through transcendence from the spatial dimensional order into solid dimensional order. As such practically this would amount to acceptance of cube or sphere as representative bodies of 3-space in the role of dimensions. The spatial boundary of the cube shall be creating 4-space while the solid volume shall be creating 5-space. This really is very exciting role of vibrant synthetic world being tamed by the Manasara.

THREE SPACE IN THE ROLE OF DIMENSION

To have proper comprehension and appreciation of the organizational set up of Manasara we have to learn the mathematics & geometry of 3-space in the role of dimension. With 3-space as dimension we shall be creating 5-space domain with 4-space in the role of boundary and 6-space in the role of origin. This is the *Panchmahabhut world*. We may compare it with our present day thought

mathematics, science and technology which accepts physical world as a 3-space domain.

Cube and sphere are the representative regular bodies of 3-space. They are miniature'd replicas of linear manifestation layers. With sealed origin and un-manifest dimensions, the other two folds namely, spatial boundary and solid domain when come in action would create transition through transcendence from hypercube-4 to hypercube-5. To have proper appreciation of this phenomenon, we may have a fresh look at the geometric set up of the cube by viewing it as a cube of 10 units length, 10 units breadth and 10 units height.

We shall be having 1000 unit cubes synthesized as a single cube of 1000 units volume. If we want to know that how many edges / pillars we shall be having of this set up of 1000 cubes, then the answer of Vedic mathematics would be simple in terms of Devanagari numerals 3 and 6 being reflection images of each other like reflection pair 01 and 10. The tri - monad i.e. the monad of three parts shall be yielding 363 and then the length being 10 units so we shall be having the figure 3630. Let us count for ourselves and verify this answer.

Now this reflection property of the light and the visible light spectrum of 7 colors on the one hand and the need of only seven edges to sequentially connect all the 8 edges on the other hand and the property that real 4-space in linearly A8 would help us appreciate the interconnection of the artifices of whole numbers 3 & 7 in the context of 3-space. In this background, we shall be having a bliss of the first quarter of fist Mantra of the Atharvana Veda.

Yeh Trishapta Prayanti Vishwa

Trishapta (3&7) wraps Vishwa (this world)

The message is that 3-space at the boundary of 4-space is a geometric set up of 3 linear dimensions which can take us sequentially up till 7 linear steps.

The domain and boundary are distinct set ups. If domain represents and becomes the Vedic domain, the boundary would represent and would becomes the Upveda.

Sthaptya Veda being Upveda of Atharvana Veda and Manasara being the scripture of Sthaptya - Upveda, therefore, we shall be requiring comprehension of the Vishwa as is the enlightenment of the first quarter of the first Mantra of the Atharvana Veda to appreciate the organization of Mansara.

Therefore the conclusion of all conclusions for us is that for proper learning of Vedic science & technology, there is a need for redrawing the school mathematics syllabi.

MEASURES AND MEASURING-ROD:



The Vedic concept of space and time.

The concept of measures and measuring-rod of Manasara is of central importance. In fact Mana means measure and Sara means essence and as such Manasara means essence of measures. The science of Architecture and Sculpture centers around the essence of measures and the exactness of the measuring-rod. Therefore, the relevant knowledge of measures and measuring rod of chapter 2 Manasara deserve to be read thoroughly.

The verses 64 & 65 describe the measuring-rod as that: Measuring-rod should be one cubit long, one angul (three fourth inch) broad, and its thickness is stated to be a half Angul. The yard-stick (lit, cubic measure) should be accurately marked.

The verse 68 enlightens us that: Vishnu is stated to be the tutelary god of (the wood for) both the yard-stick and the (measuring) rod.

Further, verse 75 enlightens us that: Vasuki (serpent-god) is the presiding deity of the (measuring) rope, and Brahma is known as the presiding deity of measurement.

Lord Brahma is a 4 head lord. Lord Vishnu is a 6 head lord, . Lord Brahma is born from the lotus whose reed springs from navel of Lord Vishnu. This Puranic comprehension is the Vedic enlightenment of real 4 space playing the role of dimension of real 6 space and in general $(n-2)$ space plays the role of dimension of n space and thereby there being always a difference of 2 units between the domain and dimension which would help us comprehend and appreciate, the knowledge preserved in the epic stories of the arm of Lord Rama and Kag-Bhushandi of Ramayana and Yashoda Trying to tie Lord Krishna but every string found to be short by two units. This fundamental result is at the base of the mathematics which would help avail the results of arithmetic into geometry and vice versa. In terms of it only, we may comprehend and appreciate the multi - dimensions of time and space of Manasara as well as of other Vedic Scriptures.

The great design of nature is imprinted in each grain of Nature. Vedic Comprehension of this design conceptualizes as Bindu "Sarowar". This grand unification of Trinity of Gods in each point reservoir of nature (Bindu Sarowar) may be viewed as the Trinity of Gods as first three folds and their unification as the fourth fold. In concrete terms, this amounts to 4-space playing the role of dimension for the organizational format of the great design of Bindu Sarowar and 5-space playing the role of boundary there of and 6-space manifesting as their domain fold and 7-space as origin thereof.

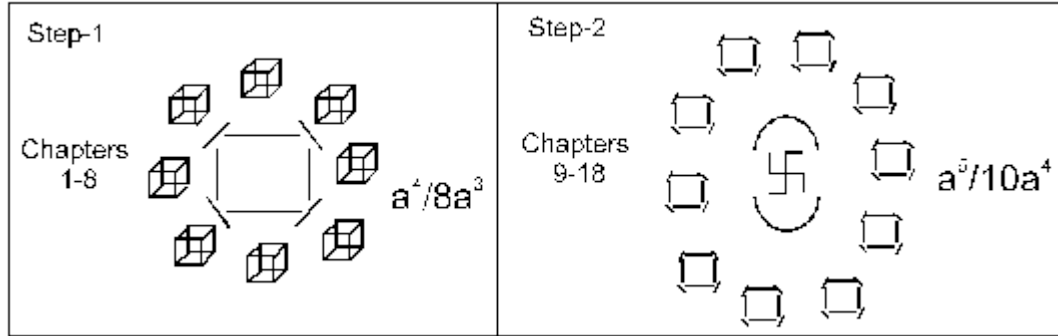
It is this grand design which is availed by the Vedic scriptures to organize the pure knowledge. The aim of Manasara as well is to avail this grand design of nature. The 7-space flows as 7 streams of Divya Ganga from core of the Sun; the sun being the body of 6-space and its core being the 7-space as origin of 6-space.

The Divya Ganga flow from core of the sun (6-space) takes to the Sanatana base (5-space in the role of boundary of 6-space). Being vibrant synthetic reality this flow is going to be of vibrant and synthetic as reality. It is going to be of two parts. Accordingly, the Jyoti flowing from core of the Sun shall be flowing into the Sanantna base on either side of the Sun. This would help us appreciate and comprehend the Jyoti flow of 7 streams into Sanatana base (5-space) as of $7 \times 5 = 35$ units on either side of the Sun and thereby we shall be having the flow rate of $35 + 35 = 70$ units. It is this flow rate which runs parallel to the first organization of the knowledge of Manasara as of 70 chapters.

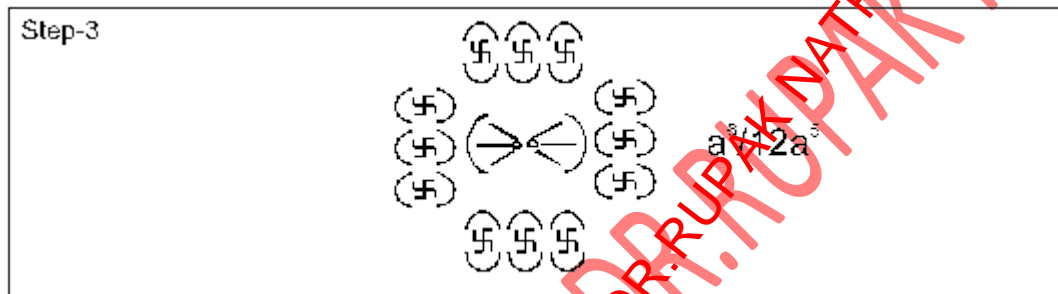
The whole range of organization of 70 chapters is in fact the organization of the great design of the Bindu Sarowar. This range with definite end points shall be making it a close range of $1 + 70 + 1 = 72$ units. This would completely wrap 6-space within 5-space boundary. With the help of the geometric set up of hypercube-6 as representative body of real 6-space on synthetic format of di-monad i.e. monad of two parts would provide us domain-boundary ratio $A^6 : 12A^5$. The complete Jyoti flow from core of the Sun (6-space) into the Sanatana base (5-space) as boundary of 12 components as through 6 dimensions of the Sun, (this flow) would be at the rate of $12 \times 6 = 72$ units.

This also would help us comprehend and appreciate the sequential state of the this organization in the sequential order of 2×1 , 2×2 , 6×3 , 8×4 , 10×5 & 12×6 of the atomic organization. In fact this six steps long sequential order would take us up till the nucleus of the nucleus of the atom. This also would help us comprehend and appreciate the Manasara accepting Lord Vishnu, the lord of 6-space as the god of the measuring-rod.

Now if we have a close look at the subject matter of the 70 chapters of Manasara, we shall be noticing that first 8 chapters constitute one topic. This is parallel to the boundary of hypercube-4 being of 8 components. Therefore the organizational format of the first 8 chapters of Mansara is the format of 8 components of boundary of hypercube 4. The next 10 chapters constitute one topic. This is parallel to 10 components boundary format of hypercube- 5.

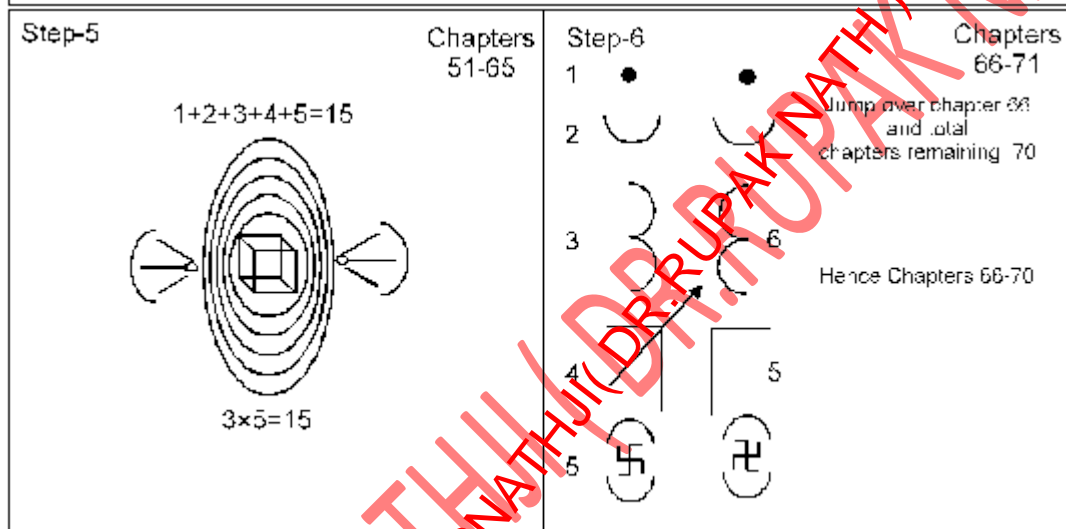
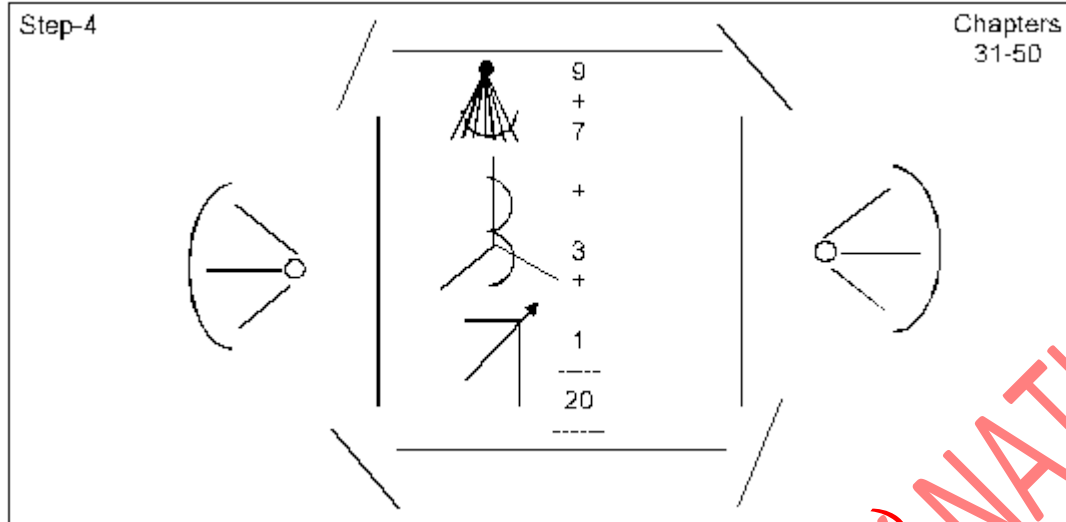


The next set of 12 chapters i.e. chapter 19 to 30 topically take up one story building to 12 storied building. This is parallel to the 12 components boundary of hypercube-6. With this we shall be reaching the state where we have to tap the Jyoti flow from the core of the Sun.



The Sun is a body of 6-space. Six space in the role of dimension shall be taking us up till 9-space in the role of origin. In fact this Jyoti Bindu flowing from the core of the Sun is accepting 6-space (Sun) as dimension, 7-space (Sapt-rishi) as boundary, 8-space (Asht-prakriti) as domain and 9-space (Nav Brahm) as origin. This 4 folds Jyoti Bindu flow is the Divya Ganga flow of 4 folds. Jyoti Bindu flow is the Divya Ganga flow of 4 folds on the format of OM as formulation of 4 components, first as the Bindu Sarowar of Nav-Brahm as of 9 units, the second component of Ardha-Matra as of 7 units, the third component as Tri-Pundarm of 3 units and fourth component as Swastik Pada as of 1 unit. Total being of 20 units.

And these 20 units flow would be on either side and as such we shall be having 20+20 = 40 unit flow which shall be covering the remaining range of 40 chapters. Topically the 20 chapters from chapter 31 to 70 would be completing one topic. The organization of the remaining 20 chapters would get a division, in the context of Manasara as of 15 chapter and 5 chapters.



The author has worked out the details of organizational format of Manasara as 138 graphics as separate compilation under Vedic Geometrical Series as a treatise for Indian Institute of Maharashtra Vedic Science & Technology. These graphic plates of the organizational format of the Manasara take up the organization right up till the verses and even subverses of each chapter. Of these, I am using them now to illustrate how the Manasara is availing geometric format of the great design of the nature in its each grain as a Bindu Sarowar where in Trinity of Gods unify.

As per this great design we are getting a great message as that from within the Bindu Sarowar flows a Jyoti Bindu Sarowar where the Sun, Sapt-rishi and Ashta-prakiti get unified with Nav-Brahm as the origin. This phenomenal emergence of Jyoti Bindu Sarowar from within the Bindu Sarowar is the transcendental transformation. This transcendental transformation phenomenon is at work which helps sequential attainment of consciousness state. Also this transcendental transformation phenomenon is at work which takes us from seed to the tree and tree to the seed as a life-span and a sequential generational flow.

The Jyoti flows from the core of the Sun into the Sanatana base at boundary of the Sun potentialized the 'boundary space' to play the dimensional role. With this 4-space dimensional order of the Sun transforms into the next generational order of 5-space in the role of dimension.

It is this generational transformation from dimensional order of 4-space to the dimensional order of 5-space is the attainment through the Divya Ganga flow of Jyoti from core of the Sun. This would help us appreciate how the organization of chapters 51 to 55 i.e. the set of 15 chapters is one topic as $15=1+2+3+4+5$ which would be conversing the sequential range of 5-space. With this we shall be attaining 5-space and hence the remaining 5 chapters and scripture to end with the chiseling of the third eye of Lord Shiv, the overlord of real 5-space.

VIBRANT SYNTHETIC REALITY

Vedic Model of vibrant synthetic reality of 5-space format is a multi-dimensional format of space and time. It takes account of transcendence through manifestation layers as flux of time. The transition from spatial dimensional order to the solid dimensional order is worked out as a flux of time of 4-space reality which takes us to 5-space reality. In concrete terms, the dimensional order of manifested world being spatial, it attains transition in terms of solid dimensional order of time, being of solid dimensional order. The time flux crystallizes as a tri-monad i.e. the dimensional constituent i.e. monads as of three parts. This tri-monad format of time when supplied to the manifested bodies of the manifestation layers, it works out $(2n+1)$ versions of the manifested bodies. In geometric language, it simply means that the interval, square, cube and hypercube, as representative regular bodies of the respective dimensional space, in the roles of domain fold of respective manifestation layers, shall be accepting $(2n+1)$ versions or in other words, $(2n+1)$ geometries.

Illustratively for $n=1$, we shall be having 3 geometries of 1-space or in other words, we shall be having 3 versions of an interval designated as close interval, half-open interval and open interval. These versions of intervals are having common domain (length) and they differ only in terms of the boundary components (points). Close interval accepts 2 boundary points, while half-open interval accepts one boundary component and open interval is devoid of both the boundary points. For $n=2$, we shall be having 5 geometries of 2-space or in other words, we shall be having 5 version of a square in terms, of 4, 3, 2, 1 & 0 boundary lines and for $n=3$, we shall be having 7 geometries / versions of 3 space / cube in terms of 6, 5, 4, 3, 2, 1, 0 surface plates and so on.

Seven Geometries						
Geometry-1	Geometry-2	Geometry-3	Geometry-4	Geometry-5	Geometry-6	Geometry-7
G 3, -3	G 3, -2	G 3, -1	G 3, 0	G 3, 1	G 3, 2	G 3, 3

In 3-space, we shall be having 1-space as dimension. The flux of time would be of spatial order. 2-space admits 5 geometries. The 3 dimensions plus 5 versions would give us 3+5=8 order. In terms of it, we shall be attaining 8 = 2x4 i.e. 4 spatial dimensions which shall be constituting dimensional order of 4-space. This is how the spatial time flux shall be working out transition from linear dimensional order / space i.e. 3-space to spatial dimensional order / space i.e. 4-space. Likewise, in 4-space, we shall be having 2-space as dimension and 3-space as flux of time. 3-space admits 7 versions.

The dimensional order of 3-space admits 7 versions. The dimensional order of 4-space would yield 2x4 order. This 2x4 order plus 7 versions shall be yielding 8+7 = 15 order. In terms of it we shall be attaining 15=3x5 i.e. 5 solid dimensions which shall be constituting dimensional order of 5-space. This is how the solid time flux shall be working out transition from spatial dimensional order space i.e. 4-space to solid dimensional order space i.e. 5-space.

Therefore for proper appreciation of vibrant synthetic reality of Vedic comprehension, we have to work out the Vedic Knowledge, the Vedic way. The geometric continuum is at play around us. The organizational format of Srimad Bhagwad Gita, the eternal song of Lord Krishna, makes complete use of real 6-space. This may be depicted as study-zone of Srimad Bhagwad Gita as under :

Srimad Bhagwad Gita Study Zone										
$a/2$	$a^2/4a$	$a^3/6a^2$	$a^4/8a$	$a^5/10a^4$	$a^6/12a^3$	$a^7/10a^4$	$a^4/8a^3$	$a^3/6a^2$	$a^2/4a$	$a/2$
$2 \times 1 = 2$	$4 \times 2 = 8$	$6 \times 3 = 18$	$8 \times 4 = 32$	$10 \times 5 = 50$ $50 \times 7 = 350$	$10 \times 5 = 50$ $50 \times 7 = 350$		$8 \times 4 = 32$	$6 \times 3 = 18$	$4 \times 2 = 8$	$2 \times 1 = 2$
Orbitals				$350 + 350 = 700$						
2	6	10	14	$18 = 5 + 6 + 7$						

The organization of Manasara runs parallel to the study zone of Srimad Bhagwad Gita. This also runs parallel to the Shad Chakra format of Human body. The organizational format of nucleus of the nucleus as well avails this zone where Jyoti flows from core of the sun into the core of the Sanatana base as 7 streams. This flow is channelised on Om Formulation of 4 components as a Divya Ganga flow. This is a complete discipline

in itself. At present we may not be in a position to enter into the details of this Vedic discipline of channelization into the Sanatana base but it may not be out of context to make a mention that advanced students of Vedic Science and Technology have to learn about it.

ORGANISATION OF MANASARA

PRAYER OF LORD BRAHMA TO CHISELING OF EYE OF LORD SHIV

Opening Prayer of Lord Brahma

He (Brahma), while causing the creation, the preservation, and the destruction of the worlds, brings forth earth, water, fire, air, and the sky. I bow to (His) lotus-like feet kissed by the waving lines of bee-like crowns of the kings of various gods.
(Manasara Chapter-1 Shaloka 2)

Chapter LXX : The Chiseling of the Eye

1-2 the chiseling of the eye of the (idols of the) gods, goddesses, and devotees, and the purification (cleansing) of the phalli (of Shiva) will be described in order of the subject.

3-96 .

97. The Chief architect should show (to the idol) the Mudra signs (with his hands as the concluding ceremony) amidst music and songs.

98-111 The circumambulation of the village by the idol.

98. Thus is described the chiseling of the eye. After this should be (performed) the circumambulation of the village (by the idol).

99-114 .

115-118. This great science (of architecture) was at first revealed by Brahma, Indra, and all other gods: It is from their statements that this Manasara (the essence of measurement) has been compiled as a guide book (for the architects) for the benefit of the people.

Thus in the Manasara, the science of architecture, the seventieth chapter, entitled. The description of the chiseling of the eye (of image). The Manasara is complete.

SRI SHRI SHIV MAHAPURAN

Lord Shiv is the overlord of real 5-space. Sri Sri Shiv Mahapuran is a text book of real 5-space. The organizational format of Sri Sri Shiv Mahapuran is the organizational format of real 5-space. The scripture is organized as Samhitas parallel to 7 dimensions of 7-space.

5-space plays the role of dimension of 7-space and as such each of the 7 Samhitas of Sri Sri Shiv Mahapuran enlightens us about one or the other aspect of the knowledge of real 5-space in the role of dimension.

These 7 Samhitas are organized as 12 parts. This is parallel to 12 boundary components of real 6-space. Each boundary component of real 6-space is a 5-space set up. Therefore, these 12 parts are the organisation of 7 Samhitas of Sri Sri Shiv Mahapuran as boundary of 6-space.

The 7 Samhitas of Sri Sri Mahapuran consisting of 12 parts are further organised as chapters and chapters are further organised as Shlokas. These organisations accept formats of real 5-space. The knowledge content of each chapter and the organizational format of each chapter work out one or other aspect of real 5-space.

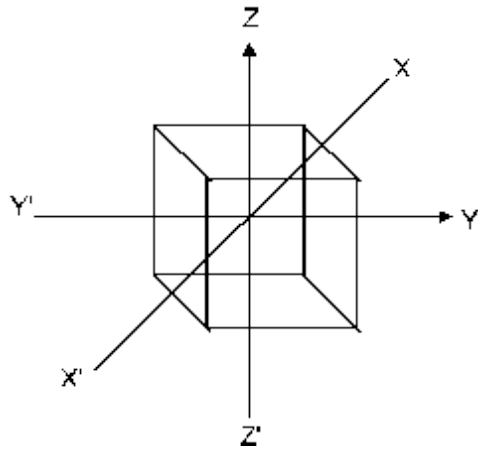
The first chapter of first Samhita of Sri Sri Shiv Mahapuran poses a question as (that): What is the shortest way to salvation? And the great Rishi remembers Lord Shiv and gets prepared for answering the same. This that way would help us comprehend and appreciate that the question being posed and the answer which is going to follow is to be about Lord Shiv.

The manifestation which is being talked to be transcended through is the manifestation of real 4-space. As such the first chapter of the first Samhita takes us to the format of hypercube-4 with a sealed origin. The great concern being shown by the sages (Munis) to the great Rishi is about the spatial nature of the setup of 4-space and the question being raised is how this manifestation can be transcended through.

Naturally, the great Rishi concentrates upon the origin and prepares for answering the question by remembering Lord Shiv. Who is the overlord or real 5-space playing the role of origin and remaining in dormant state in the sealed origin. Therefore, content-wise, Sri Sri Shiv Mahapuran begins with the geometric format of hypercube-4 with sealed origin. Likewise, the Manasara opens with the prayer to Lord Brahma and ends with the chiseling of an eye with which the seal of the origin would be unlocked and transcendence would take place and the 5-space coming into play and 4-space content resolving back to the boundary of 5-space.

The knowledge content of Sri Sri Shiv Mahapuran deserves to be imbibed by all the students of mathematics, science and technology of Vedic Order. Sri Sri Shiv Mahapuran is a complete course in itself and it may not be possible to go into details at present.

Since our school mathematics, we draw three axes as depicted below as three dimensions of three dimensional frame of three dimensional space.



The message is that we are accepting line as a dimension of 3-space and as such three lines together constitute a three dimensional frame. This in fact is a particular case of general rule that $(n-2)$ space plays the role of dimension of n -space. In modern mathematics as well mental constructs of higher dimensional spaces have been speculated but their dimension always remains a line i.e. 1-space. Obviously this concept is bound to recoil as it would make dimension and space indistinguishable at least in 1-space where 1-space is to be accepted as its own dimension.

On the contrary, the rule of difference of space and its dimension as being of two units is well preserved in Ramayana as well as in Mahabharatam. The narrations are that when the Arm of Lord Rama chased Kag-Bhushandi a difference remained only of two Anguls till Brahman-lok. Likewise when Mother Yashoda tried to tie child Krishna, She found that every string was short by two Anguls.

The great message is that the 'measures' for the measuring rod are bound to be of two units less. The Manasara, the scripture of Sathapatyaupved of Atharvved, accordingly accepts Lord Vishnu (six heads lord) as lord of measuring rod and Lord Brahma (four heads lord) as lord of measure. In geometric language it means that 4-space plays the role of dimension of 6-space.

Mythologically manifestations as idols, accepts head of the idol as format of dimension and eyes of the head together to synthesize a dimensional frame for the dimension.

FORMAT OF IDOLS

We may tabulate the following parallelism between the manifested idols of Trinity of Gods and the geometric set ups of hypercubes 4, 5 & 6 as geometric formats.

1	Number of heads	Number of dimensions of head
2	Head	Dimension of the

		space
3	Number of eyes in the head	Dimensional frame for the dimensions
4	Lotus (of 8 petals)	Hypercube-4
5	Lotus	Four space
6	Lotus seat	Hypercube-4 as domain
7	Lotus feet	Hypercube-4 as boundary
8	Lotus eye	Hypercube-4 as dimension

UPNISHADIC ENLIGHTNMENT

Upanishads and Purans particularly Sri Sri Brahmপুরan, Shivপুরan and Vishnupuran enlighten us about Trinity of Gods as:

Lord Brahma : Lord Brahma is a four heads lord with two eyes in His each head. He sits majestically on a lotus seat of eight petals. He meditates on His lord (Lord Shiv) in heart and transcends to Shivlok where He multiplies Himself as ten Brahmans of four heads each.

The geometric message of the enlightenment can be decoded in terms of the following complete parallelism between the idol of Lord Brahma and geometric setup of Hypercube-4.

1	Four heads	Four dimensions
2	Two eyes	Spatial dimensions 2-space as dimension of 4-space
3	Eight petals	Eight solid boundary components ($A^4:8A^3$)
4	Heart	Origin / Centre
5	Lord of Lord Brahma	5-space as origin of 4-space
6	Ten Brahmans	10 hypercubes-4 as boundary of hypercube-5 ($A^5:10A^4$)

(Dr. Dharmesh Shukla has worked out the details in his doctoral thesis titled "Some properties of real 4-space in the light of Vedic knowledge accepted (1994) by H.N. Bahuguna University, Uttar Pradesh).

Lord Shiv: Lord Shiv is a five heads lord with three eyes in His each head. He has ten beautiful arms. Sri Sri Shiv Mahanpuran enlightens us that Hanumanji is incarnation of Lord Shiv. Ramayana enlightens us that Lord Rama, the incarnation of Lord Vishnu, resides in the heart of Hanumanji.

The geometric message of this enlightenment can be decoded in terms of the following complete parallelism between the idol of Lord Shiv and geometric setup of Hypercubes-5.

1	Five heads	Five dimensions
2	Three eyes	Solid dimensions / 3-space as dimension of 5-space
3	Ten arms	Ten hypersolid boundary components ($A^5:10A^4$)
4	Heart	Origin / Centre
5	Lord of Lord Shiv	6-space as origin of 5-space
6	Dwadas Adityas	12 hypercubes-5 as (12 Suns) boundary of hypercube-6 ($A^6:12A^5$)



The Thesis of Sh. Bidyadhar Panda titled "Some Properties of real five space in the light of Vedic knowledge works out the details of geometric setup of hypercube 5 and real 5 space of Vedic Comprehension and establishes Sri Sri Shiv Mahapuran as text book of real 5 space.

These two these deserve to be published for research scholars.

MANIFESTATION LAYERS

In the light of the above, if we may have a fresh look at the geometric set up of a cube. We shall be noticing that the 3-space content/lump manifesting as "volume" of the cube is wrapped within 2-space surface (2-space content/sheets). Further, we know that this is the organization which admits linear dimensional order i.e. 1-space in the role of dimension. Now, if we concentrate upon the center of the cube, we shall be noticing that 8 sub-cube are synthesized as a cube. We may view center of the cube as being wrapped within 8 cubes.

This is parallel to the cut of 3-space by dimensional frame into **8 octants**. As such, the formulation $A^4:8A^3$ of hypercube-4 being availed by Lord Brahma to manifest as an idol would help us comprehend that at center of the cube like at the origin of the 3 dimensional frame is sealed 4-space.

Manifestation Layers			
First Fold	Second Fold	Third Fold	Fourth Fold
Dimension Part	Frame Part	Domain Part	Origin Part
			4-space

The origin/center, the domain/volume, the boundary/ surface and linear dimension of cube are four distinct folds of four distinct spaces which together synthesis and manifest geometric setup of a cube. Therefore, the great geometric message is that our physical work/3-space/cube/macro world is the first manifestation layer with 1-space playing the role of dimension, 2 -pace playing the role of boundary, 3-space playing the role of domain and 4-space playing the role of origin.

Likewise, the world of Lord Brahma i.e. the real 4-space, is the micro world manifestation layer of second order as 2-space plays the role of dimension, 3-space plays the role of boundary, 4-space plays the role of domain and 5-space plays the role of origin. In general, the manifestation layer of order n shall be accepting n-space in the role of dimension and (n+3) space in the role of origin.

The Lord Brahma, the Creator of Supreme, creates reality as manifestation layer of 4 consecutive spaces synthesizing together. This creation accepts origin in a sealed state. It is a dormant state. The transcendence from one manifestation layer to another manifestation layer requires unlocking of the seal of origin fold.

This as such becomes possible only on 5-space format. Therefore, Lord Shiv, the transformer the Supreme, is the Lord of transcendence. Accordingly, in Shivlok exists vibrant synthetic setup of 5 folds where transcendence from manifestation layer to another manifestation layer becomes possible.

MATHEMATICAL BASIS OF VEDIC LITERATURE:

Studies of mathematical basis of available Vedic literature reveal that 4 and higher dimensional reality was not only known to the Vedic seers rather the great use thereof was made by them for organization of pure knowledge.

Let us concentrate upon the nature of space around us. We can see that straight line is a track of a moving point while plane is a track of a moving (straight) line. Likewise, moving plane shall be creating solid space. More precisely, if we re

investigate this phenomenon with the help of a point, interval, square and cube, we shall be noticing that moving point accepts line as its track, moving interval accepts square as its track and moving square accepts cube as its track. This would pose a question: What is the nature of the track of moving cube/solid /3-space body/ 3-space setup or in the general, 3-space it self?



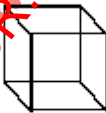
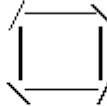
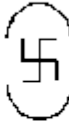
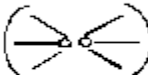
HYPERCUBES 4, 5, & 6:

To answer the same let us mathematize this situation as:

Taking point as a representative regular body of 0 space, interval, square and cube respectively as representative regular bodies of 1, 2 & 3 space, we may conclude that moving 0-space (body) accepts 1-space format, moving 1-space (body) accepts 2-space format; moving 2-space body accepts 3-space format, and as a logical consequence the moving 3-space body shall be requiring 4-space format. And in general, moving n-space body shall be requiring (n+1) space format. For convenient handling.

We may define and designate four and higher dimensional bodies in continuation of interval, square and cube as hypercubes. To be precise hypercube 4 shall be a representative regular body of 5-space and so on. Further to facilitate comprehension of main properties of hypercube and for symbolic representation of the set of properties synthesizing hypercube it would be desirable to have suitable symbols for them, particularly for hypercube 4, 5 and 6 for reaching at the concepts and comprehension of multi - dimensional space time frame being availed for organization of the knowledge of Manasara.

Let these 3 special symbols of hypercube 4, 5 & 6 be as:

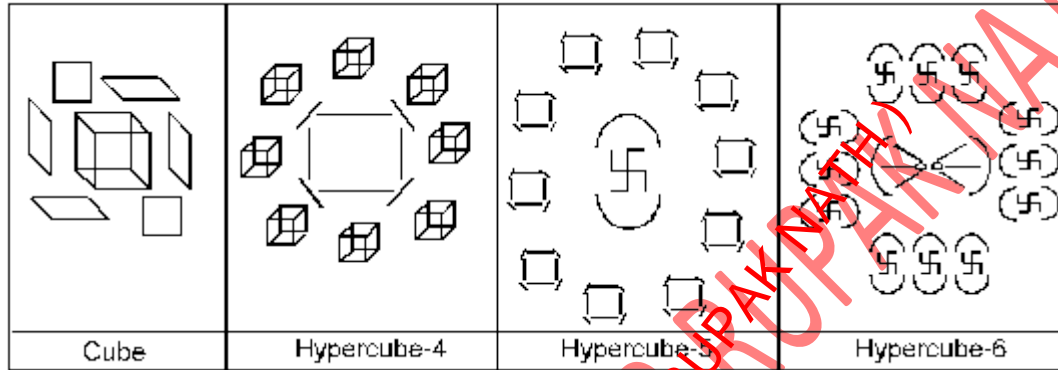
Interval	Square	Cube	Hypercube-4	Hypercube-5	Hypercube-6
					
1-space body	2-space body	3-space body	4-space body	5-space body	6-space body

To have these symbols in continuity of the geometric setup of interval, square and cube, we have to first comprehend these geometric setups. As such, let us have a close look at the geometric setup of interval, square and cube. If we have close look at the geometric setup of interval, square and cube, we may comprehend that interval has length (A^1) and 2 boundary points ($2A^0$) Square has area (A^2) and 4 boundary line ($4A^1$) and cube has volume A^3 and 6 boundary surfaces ($6A^2$).

$A^1:2A^0$, $A^2:4A^1$ and $A^3:6A^2$ suggest a common formulation $A^n:2nA^{n-1}$, $n=1, 2, 3$.

This formulation would hold for all values of n. In particular, for n=4 5 & 6 we shall be getting $A^4:8A^3$, $A^5:10A^4$ and $A^6:12A^5$. The geometric message is that boundary of 4-space body is constituted by 8 cubes while the boundary of 5-space body is constituted by 10 hypercubes-4 and so on.

The boundary components of interval, square, cube and hypercubes 4, 5 & 6 are in the ratio 2:4:6:8:12. This would help us comprehend, appreciate and have the symbols of hypercube 4, 5 & 6 in continuity of and in that sequential order, hypercube 4, 5 & 6 with boundaries as:



SHANDCHAKRA FORMAT OF HUMAN BODY

Further it would help us comprehend and appreciate the Upanishad knowledge regarding the Shadchakra format of human body as that:

अथ बहिलक्षणाम्। नासिकाकग्रे चतुर्भिः पञ्चभिः षष्ठभिः दशभिः द्वादशभिः क्रमात्।

Here are being taken up the external structural characteristics (of shad chakras format of Human body) These with respect to the chakras (second to six) which are ahead of the tip of the nose (first chakra with two characteristics) are four, six, eight ten and twelve respectively, and in that order.

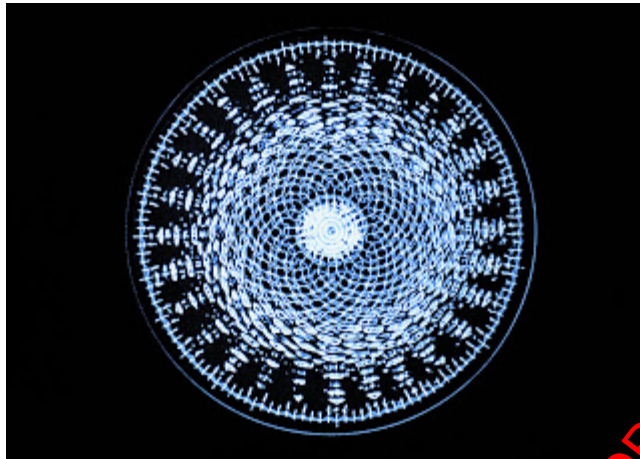
(Advet-tarko Upanishad)

The message of great importance is that Vedic Comprehension of human body is of Shadchakra format which runs parallel to the geometric formats of representative bodies of first six spaces and hence this makes Purusha, the being of 6-space.

This will help us comprehend and appreciate the Vedic tradition which accepts Vedic Richas / Mantras as impulses of one's own consciousness. Here there is another aspect of our existence phenomenon. One breaths 21600 times a day. Equally one would breath 21600 times during night. This makes day and night breathings as of 43200 units. Now those who do Pranayam (deep berating) 10 times deep than the normal

breathing, they shall be breathing whole length of Rigved of 432000 syllables. That is, one breaths, lives and attains consciousness of the order of Rigved every day and night of his existence.

Lord Brahma, Lord Shiv and Lord Vishnu together are known as Trinity of Gods. Studies into mathematical basis of the knowledge of Trinity of Gods preserved in the available Vedic Literature show a complete parallelism between four heads of Lord Brahma and four dimensions of 4-space; five heads of Lord Shiv and five dimensions of 5-space; and six heads of incarnations of Lord Vishnu and six dimensions of 6-space. The detailed studies of idols of Trinity of Gods further take us to their geometric formats respectively being of hypercube 4, 5 & 6.



VEDIC WISDOM:

Vedic wisdom is lively in the consciousness of living saints. It is also well preserved in the Vedic literature. The inner evidence of the available Vedic knowledge of the available Vedic literature makes it out that originally the whole range of the pure knowledge i.e. Vedic knowledge was vibrating from a single wholesome Veda.

Subsequently this knowledge was organized by Maharishi Veda Vyas as four Vedas namely, Rigveda, Yajurveda, Samaveda and Atharva veda.

The knowledge of Rigveda admitted 21 branches while the knowledge of other three Vedas namely, Yajurveda, Samaveda and Atharva veda respectively admitted 101, 1000 & 9 branches.

The organizational format of each Vedic branch consisted of four folds designated as Samhita, Brahmana, Aryanak and Upanishad. As such $21+101+1000+9=1131$ Vedic branches had 1131 Samhitas, 1131 Brahmanas, 1131 Arynaks and 1131 Upanishads. These $1131 \times 4 = 4524$ scriptures together came to be known as Vedic wisdom. In addition corresponding to each Ved, as applied value of the pure knowledge of the Ved is Upved. The four Upveds are Ayurved, Dhanurved, Gandharvved and Sthapatyaved. Our present day mathematics, science and technology come within the range of Sthapatyaupved. Manasara is one such scripture of Sthapatyaupveda.

MANASARA : SCRIPTURE OF STHAPATYAUPVED

Sri Prasana Kumar Acharya had done a wonderful job of reconstructing the text of Manasara and preparing its translation in English and by drawing the plates.

The scripture begins with the prayer to Lord Brahma, the Creator, the supreme and ends with the chiseling of third eye of the idol of Lord Shiv. The broad organization of the scripture is of the range of 70 chapters with first eight chapters constituting a primary group-I. The next ten chapters i.e. chapter 9 to 18 constitute a primary group-II. Then comes the central part of the Mansara. Chapter 19 to 30 cover single story building to 12 storied buildings. These 12 chapters constitute a central group-I. Next 20 chapters i.e.

chapters 31 to chapter 50 cover central group-II and with it the subject of architecture as such is completed. Then follows the subject of sculptures. The science of sculptures covered in chapters 51 to 70 can be organizationally divided in two sculptural groups. Chapter 51 to 65 constitute sculptural group-I and chapters 66 to 70 constitute sculptural group-II.

SPACE TIME FRAME:

The above topical division of the text has an organizational message of great importance as in terms of it we may reach at the geometric format of the organization of the knowledge of the scripture.

As the scripture begins with the prayer to Lord Brahma, the overlord of real 4-space and ends with the chiseling of third eye of Lord Shiv, the overlord of real 5-space, therefore, geometric format at the dimensional level is bound to be spatial with the flux of time being solid.

In short, the spacetime frame at the dimensional level is going to be E^2 (space) \times E^3 (time). In terms of this dimensional order we shall be manifesting working geometric domain within the spacetime frame $(E^2)^4$ (space) \times E^3 (solid time). Here (today) we shall be concentrating upon the concepts and comprehensions of dimensions of space and time in Manasara. In a way, we shall be taking up the topic of space, time and spacetime in the light of Vedic wisdom. In the context, it may be relevant to note that the modern thought, mathematics, science and technology is speculating the general spacetime frame as E^3 (space) \times E^1 (linear time).

The modern thought, mathematics, science and technology centre around linear dimensional reality but the Vedic systems avail multidimensional reality. The studies of the organizational formats of various Vedic scriptures reveal that higher dimensional geometric formats are being availed to organize the pure knowledge. Illustratively, we may take the case of the oldest book of mankind namely, Sakla Rigved Samhita.

RIG VED SAMHITA:

Fortunately Rigved Samhita is intact with us from first syllable to the last syllable and as the tradition goes, the whole range of Vedic knowledge is lively in this scripture of 432000 syllables, out of which 397265 syllables are manifest text while remaining 34735 syllables go deep as organisational format of the text and as such remain un-manifest.

For the present, we may accept it an axiom that knowledge and organisation of knowledge are two distinct aspects of knowledge. Being scriptural text, we get the organised knowledge and as such both organisation format and the text are to be accepted as the knowledge content of the scripture. It is like a truck with goods yielding weight of the truck as well as of the goods loaded in the truck.

Organisation of Rigved Samhita

Total knowledge contents	432000 Syllables
Manifest text	397265 Syllables
Mandals	10
Ashtaks	08
Chapters	64
Anuvaks	85
Suktas	1028
Vargas	2024
Richas	10552

Mathematical Basis:

Mathematical basis of the organisational format of the Rigved Samhita reveals that the Vedic knowledge is organised on geometric format of real 6-space. It admits 4-space in the role of dimension while modern thought, mathematics, science and technology centre around 3-space reality and as such Veds are invincible fort for the modern mind. As such, we have to learn and understand the Vedic wisdom.

For this we have to re-examine the rationale and basis of our axioms and postulates for accepting the reality as linear dimensional one. It is only by approaching the Vedic knowledge, the Vedic way, that we may have real bliss of Vedic wisdom.

Pre-Shahjahan References to the Taj:

70. Apparently the Taj as a central palace seems to have an chequered history. The Taj was perhaps desecrated and looted by every Muslim invader from Mohammad Ghazni onwards but passing into Hindu hands off and on, the sanctity of the Taj as a Shiva temple continued to be revived after every Muslim onslaught. Shahjahan was the last muslim to desecrate the Tajmahal alias Tejo Mahalaya.

71. Vincent Smith records in his book titled 'Akbar the Great Moghul' that 'Babur's turbulent life came to an end in his garden palace in Agra in 1630'. That palace was none other than the Tajmahal.

72. Babur's daughter Gulbadan Begum in her chronicle titled Humayun Nama refers to the Taj as the Mystic House.

73. Babur himself refers to the Taj in his memoirs as the palace captured by Ibrahim Lodi containing a central octagonal chamber and having pillars on the four sides. All these historical references allude to the Taj 100 years before Shahjahan.

74. The Tajmahal precincts extend to several hundred yards in all directions. Across the river are ruins of the annexes of the Taj, the bathing ghats and a jetty for the ferry boat. In the Victoria gardens outside covered with creepers is the long spur of the ancient outer wall ending in a octagonal red stone tower. Such extensive grounds all magnificently done up, are a superfluity for a grave.

75. Had the Taj been specially built to bury Mumtaz, it should not have been cluttered with other graves. But the Taj premises contain several graves at least in its eastern and southern pavilions.

76. In the southern flank, on the other side of the Tajganj gate are buried in identical pavilions queens Sarhandi Begum, and Fatehpuri Begum and a maid Satunnisa Khanum. Such parity burial can be justified only if the queens had been demoted or the maid promoted. But since Shahjahan had commandeered (not built) the Taj, he reduced it general to a muslim cemetery as was the habit of all his Islamic predecessors, and buried a queen in a vacant pavilion and a maid in another identical pavilion.

77. Shahjahan was married to several other women before and after Mumtaz. She, therefore, deserved no special consideration in having a wonder mausoleum built for her.

78. Mumtaz was a commoner by birth and so she did not qualify for a fairyland burial.

79. Mumtaz died in Burhanpur which is about 600 miles from Agra. Her grave there is intact. Therefore, the cenotaphs raised in stories of the Taj in her name seem to be fakes hiding in Hindu Shiva emblems.

80. Shahjahan seems to have simulated Mumtaz's burial in Agra to find a pretext to surround the temple palace with his fierce and fanatic troops and remove all the costly fixtures in his treasury. This finds confirmation in the vague noting in the Badshahnama which says that the Mumtaz's (exhumed) body was brought to Agra from Burhanpur and buried 'next year'. An official term would not use a nebulous term unless it is to hide some thing.

81. A pertinent consideration is that a Shahjahan who did not build any palaces for Mumtaz while she was alive, would not build a fabulous mausoleum for a corpse which was no longer kicking or clicking.

82. Another factor is that Mumtaz died within two or three years of Shahjahan becoming an emperor. Could he amass so much superfluous wealth in that short span as to squander it on a wonder mausoleum?

83. While Shahjahan's special attachment to Mumtaz is nowhere recorded in history his amorous affairs with many other ladies from maids to mannequins including his own daughter Jahanara, find special attention in accounts of Shahjahan's reign. Would Shahjahan shower his hard earned wealth on Mumtaz's corpse?

84. Shahjahan was a stingy, usurious monarch. He came to throne murdering all his rivals. He was not therefore, the doting spendthrift that he is made out to be.

85. A Shahjahan disconsolate on Mumtaz's death is suddenly credited with a resolve to build the Taj. This is a psychological incongruity. Grief is a disabling, incapacitating emotion.

86. A infatuated Shahjahan is supposed to have raised the Taj over the dead Mumtaz, but carnal, physical sexual love is again a incapacitating emotion. A womanizer is ipso facto incapable of any constructive activity. When carnal love becomes uncontrollable the person either murders somebody or commits suicide. He cannot raise a Tajmahal. A building like the Taj invariably originates in an ennobling emotion like devotion to God, to one's mother and mother country or power and glory.

87. Early in the year 1973, chance digging in the garden in front of the Taj revealed another set of fountains about six feet below the present fountains. This proved two things. Firstly, the subterranean fountains were there before Shahjahan laid the surface fountains. And secondly that those fountains are aligned to the Taj that edifice too is of pre-Shahjahan origin. Apparently the garden and its fountains had sunk from annual monsoon flooding and lack of maintenance for centuries during the Islamic rule.

88. The stately rooms on the upper floor of the Tajmahal have been striped of their marble mosaic by Shahjahan to obtain matching marble for raising fake tomb stones inside the Taj premises at several places.

Contrasting with the rich finished marble ground floor rooms the striping of the marble mosaic covering the lower half of the walls and flooring of the upper storey have given those rooms a naked, robbed look. Since no visitors are allowed entry to the upper storey this despoliation by Shahjahan has remained a well guarded secret. There is no reason why Shahjahan's loot of the upper floor marble should continue to be hidden from the public even after 200 years of termination of Moghul rule.

89. Bernier, the French traveler has recorded that no non Muslim was allowed entry into the secret nether chambers of the Taj because there are some dazzling fixtures there. Had those been installed by Shahjahan they should have been shown the public as a matter of pride. But since it was commandeered Hindu wealth which Shahjahan wanted to remove to his treasury, he didn't want the public to know about it.

90. The approach to Taj is dotted with hillocks raised with earth dugout from foundation trenches. The hillocks served as outer defenses of the Taj building complex. Raising such hillocks from foundation earth, is a common Hindu device of hoary origin. Nearby Bharatpur provides a graphic parallel. Peter Mundy has recorded that Shahjahan employed thousands of laborers to level some of those hillocks. This is a graphic proof of the Tajmahal existing before Shahjahan.

52. Stories of Shahjahan's exclusive infatuation for Mumtaz's are concoctions. They have no basis in history nor has any book ever written on their fancied love affairs. Those stories have been invented as an afterthought to make Shahjahan's authorship of the Taj look plausible.
Cost

53. The cost of the Taj is nowhere recorded in Shahjahan's court papers because Shahjahan never built the Tajmahal. That is why wild estimates of the cost by gullible writers have ranged from 4 million to 91.7 million rupees. Period Of Construction

54. Likewise the period of construction has been guessed to be anywhere between 10 years and 22 years. There would have not been any scope for guesswork had the building construction been on record in the court papers. Architects

55. The designer of the Tajmahal is also variously mentioned as Essa Effendi, a Persian or Turk, or Ahmed Mehendis or a Frenchman, Austin Bordeaux, or Geronimo Veroneo, an Italian, or Shahjahan himself. Records Don't Exist

56. Twenty thousand laborers are supposed to have worked for 22 years during Shahjahan's reign in building the Tajmahal. Had this been true, there should have been available in Shahjahan's court papers design drawings, heaps of labor muster rolls, daily expenditure sheets, bills and receipts of material ordered, and commissioning orders. There is not even a scrap of paper of this kind.

57. It is, therefore, court flatterers, blundering historians, somnolent archeologists, fiction writers, senile poets, careless tourists officials and erring guides who are responsible for hustling the world into believing in Shahjahan's mythical authorship of the Taj.

58. Description of the gardens around the Taj of Shahjahan's time mention Ketaki, Jai, Jui, Champa, Maulashree, Harshringar and Bel. All these are plants whose flowers or leaves are used in the worship of Hindu deities. Bel leaves are exclusively used in Lord Shiva's worship. A graveyard is planted only with shady trees because the idea of using fruit and flower from plants in a cemetery is abhorrent to human conscience. The presence of Bel and other flower plants in the Taj garden is proof of its having been a Shiva temple before seizure by Shahjahan.

59. Hindu temples are often built on river banks and sea beaches. The Taj is one such built on the bank of the Yamuna river an ideal location for a Shiva temple.

60. Prophet Mohammad has ordained that the burial spot of a Muslim should be inconspicuous and must not be marked by even a single tombstone. In flagrant violation of this, the Taj mahal has one grave in the basement and another in the first floor chamber both ascribed to Mumtaz. Those two cenotaphs were infact erected by Shahjahan to bury the two tier Shivalingas that were consecrated in the Taj. It is customary for Hindus to install two Shivalingas one over the other in two stories as may be seen in the Mahankaleshwar temple in Ujjain and the Somnath temple raised by Ahilyabai in Somnath Pattan.

61. The Tajmahal has identical entrance arches on all four sides. This is a typical Hindu building style known as Chaturmukhi, i.e., four faced. The Hindu Dome

62. The Tajmahal has a reverberating dome. Such a dome is an absurdity for a tomb which

must ensure peace and silence. Contrarily reverberating domes are a necessity in Hindu temples because they create an ecstatic din multiplying and magnifying the sound of bells, drums and pipes accompanying the worship of Hindu deities.

63. The Tajmahal dome bears a lotus cap. Original Islamic domes have a bald top as is exemplified by the Pakistan Embassy in Chanakyapuri, New Delhi, and the domes in the Pakistan's newly built capital Islamabad.

[Ancient India - Sanatana Dharma - The land of knowledge](#)



FORTY years ago, expounding Theosophical tenets, W. Q. Judge called them "Echoes from the Orient." His words convey a deeper truth than is generally understood: Modern Theosophy verily is but the echo of the Occult Voice of the Orient.

Time was when the ancient continent of Asia, from Fo-Kien to Baku, lived by the same religious truths which united tribes and races and nations into a harmonious whole. The universal Wisdom-Religion was the root of that mighty Tree on which in later times grew the branches of the Zoroastrian, the Chaldean, the Egyptian religions; this takes us back ages before Moses, Jesus, and Muhammad tried to teach the eternal truths. Before the Vedas existed, that Wisdom-Religion, the Bodhi-Dharma, the Source of (Brahma)nical lore, was.

Not without good reasons the Hindus call theirs the Eternal Religion, Sanatana Dharma. Properly speaking, that title by right can belong only to the Mother Source of all religions, viz., Theosophia or the Wisdom-Religion; but of all exoteric faiths the Brahmanical is the one which approximates most nearly to the original; the first-born

of the Aryan family of religions, it bears a very close resemblance to the Mother.

First, of all Asiatic cultures only that of old India survives as a living reality. Says Mr. Judge, "Of all the old races the Aryan Indian alone yet remains as the preserver of the old doctrine. It will one day rise again to its old heights of glory" (Ocean of Theosophy, p. 85). This is a striking fact, and its meaning becomes clearer when the student of H.P.B.'s Secret Doctrine notes that India became and still is the home of the parent-stock of the Aryan Root-Race which started on its eventful journey a million years ago. Four sub-races of the Fifth Root-Race, the Aryan, have run their course, and at present the fifth sub-race is in the ascendant.

During these million years the root-stock has been the Foster Mother of the sub-races, nourishing with her hoary culture the daughter-races in many Western lands. It began with Egypt: "Egypt and India", says H.P.B. (Isis Unveiled, I, p. 515), "were the oldest in the group of nations; and ... the Eastern Ethiopians -- the mighty builders -- had come from India as a matured people." The following is from the same book (II, p. 435):

...we are prepared to maintain that Egypt owes her civilization, commonwealth and arts -- especially the art of building, to pre - Vedic India, and that it was a colony of the dark-skinned Aryans, or those whom Homer and Herodotus term the eastern Æthiopians, i.e., the inhabitants of Southern India, who brought to it their ready-made civilization in the ante-chronological ages, of what Bunsen calls pre-Menite, but nevertheless epochal history.

We must remember in this connection, that the peoples of Southwestern and Western Asia, including the Medes, were all Aryans. It is yet far from being proved who were the original and primitive masters of India. That this period is now beyond the reach of documentary history, does not preclude the probability of our theory that it was the mighty race of builders, whether we call them Eastern Æthiopians, or dark-skinned Aryans (the word meaning simply "noble warrior," a "brave"). They ruled supreme at one time over the whole of ancient India, enumerated later by Manu as the possession of those whom our scientists term the Sanskrit-speaking people.

Similarly "Babylonian civilization was neither born nor developed in that country. It was imported from India, and the importers were Brahmanical Hindus" (Isis Unveiled, I, p. 576). And again, "The Babylonians ... got their wisdom and learning from India" (Secret Doctrine, II, p. 566). And so the deduction (Isis Unveiled, I, p. 584):

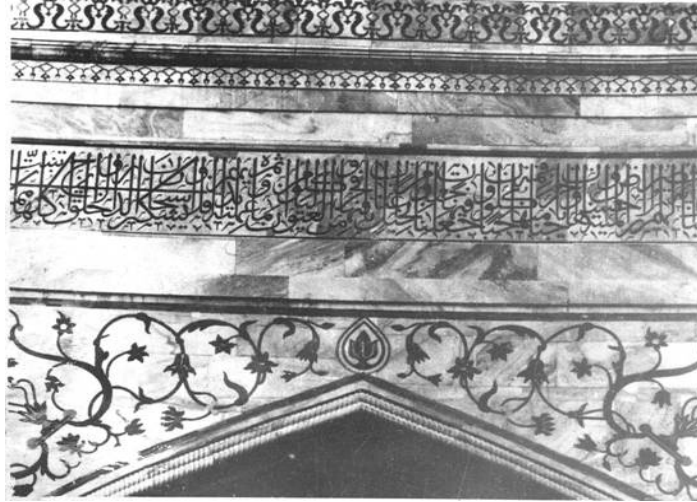
Can there be any absurdity in the suggestion that the India of 6,000 years ago, brilliant, civilized, overflowing with population, impressed upon Egypt, Persia, Judea, Greece, and Rome, a stamp as ineffaceable, impressions as profound, as these last have impressed upon us?

And again (Isis Unveiled, II, p. 361):

...all the knowledge possessed by these different schools, whether Magian, Egyptian,

or Jewish, was derived from India, or rather from both sides of the Himalayas.

Koranic Patches:



32. The Taj Mahal is scrawled over with 14 chapters of the Koran but nowhere is there even the slightest or the remotest allusion in that Islamic overwriting to Shahjahan's authorship of the Taj. Had Shahjahan been the builder he would have said so in so many words before beginning to quote Koran.

33. Shahjahan, far from building the marble Taj, only disfigured it with black lettering is mentioned by the inscriber Amanat Khan Shirazi himself in an inscription on the building. A close scrutiny of the Koranic lettering reveals that they are grafts patched up with bits of variegated stone on an ancient Shiva temple. Carbon 14 Test

34. A wooden piece from the riverside doorway of the Taj subjected to the carbon 14 test by an American Laboratory and initiated by Professors at Pratt School of Architecture, New York, has revealed that the door to be 300 years older than Shahjahan, since the doors of the Taj, broken open by Muslim invaders repeatedly from the 11th century onwards, had to be replaced from time to time. The Taj edifice is much more older. It belongs to 1155 A.D, i.e., almost 500 years anterior to Shahjahan. Architectural Evidence

35. Well known Western authorities on architecture like E.B.Havell, Mrs.Kenoyer and Sir W.W.Hunter have gone on record to say that the Taj Mahal is built in the Hindu temple style. Havell points out the ground plan of the ancient Hindu Chandi Seva Temple in Java is identical with that of the Taj.

36. A central dome with cupolas at its four corners is a universal feature of Hindu temples.

37. The four marble pillars at the plinth corners are of the Hindu style. They are used as lamp towers during night and watch towers during the day. Such towers serve to

demarcate the holy precincts. Hindu wedding altars and the altar set up for God Satyanarayan worship have pillars raised at the four corners.

38. The octagonal shape of the Tajmahal has a special Hindu significance because Hindus alone have special names for the eight directions, and celestial guards assigned to them. The pinnacle points to the heaven while the foundation signifies to the nether world. Hindu forts, cities, palaces and temples generally have an octagonal layout or some octagonal features so that together with the pinnacle and the foundation they cover all the ten directions in which the king or God holds sway, according to Hindu belief.

39. The Tajmahal has a trident pinnacle over the dome. A full scale of the trident pinnacle is inlaid in the red stone courtyard to the east of the Taj. The central shaft of the trident depicts a Kalash (sacred pot) holding two bent mango leaves and a coconut. This is a sacred Hindu motif.

Identical pinnacles have been seen over Hindu and Buddhist temples in the Himalayan region. Tridents are also depicted against a red lotus background at the apex of the stately marble arched entrances on all four sides of the Taj. People fondly but mistakenly believed all these centuries that the Taj pinnacle depicts a Islamic crescent and star was a lighting conductor installed by the British rulers in India. Contrarily, the pinnacle is a marvel of Hindu metallurgy since the pinnacle made of non rusting alloy, is also perhaps a lightning deflector.

Searching the internet at the beginning of the year 2001 for "Kabul and museum" or for "Bamiyan" displays alarming news. This is why mathomathis would like to put old photographs of Afghanistan of the years 1969, 1970, and 1974 into www to preserve a vivid memory of the treasures collected in the museum in Darulaman and of an Afghanistan as it used to be years ago.

[Source : bamiyan]

Satellite view of the devastated museum in Google Earth.



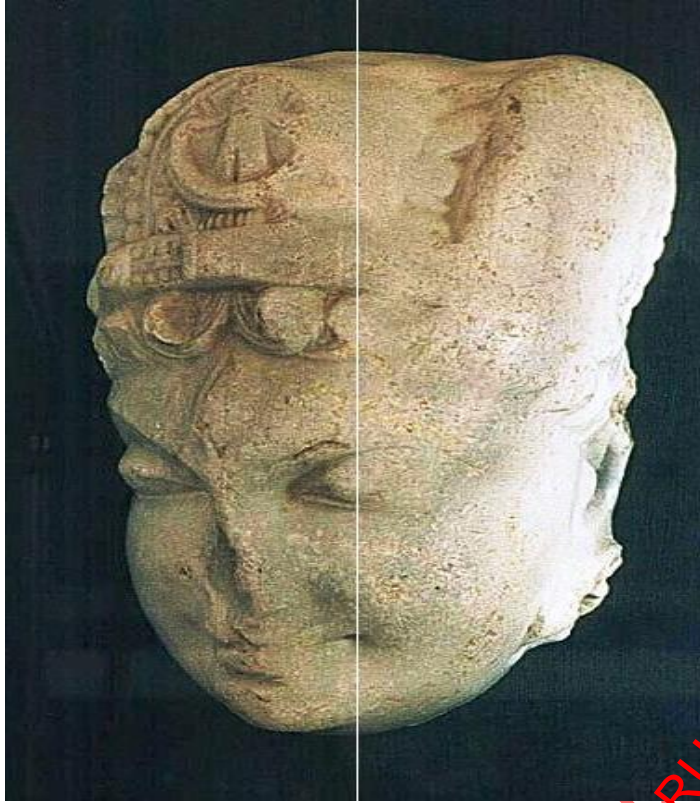
The news international press agencies have been spreading since February 26, 2001 about the Taliban planning to destroy the Buddhas in Bamyan as well as sculptures and paintings in the Kabul Museum and other locations in Afghanistan are nurturing the desire to present a collection of (former) treasures of Afghanistan in the world wide web.

Here we will be presenting some of the pictures together with other photographs of the years 1970 and 1974 on this site. [Early Afghanistan - It was India]

Afghanistan, Kabul Museum 1969: Please see the pictures below, you will come to know the truth;

Part I:

Head of Hindu god - Shiva:



Museum Kabul : Shiva aus Gardez, weißer Marmor, Hindu-Shahi-Periode, ca. 8./9. Jh., H. 28 Zentimeter Photo : Thewalt 1969 (69_km_196_40)
[Vgl. Francine Tissot 2006, Catalogue of the National Museum of Afghanistan 1931-1985, UNESCO publishing 2006, Paris, p. 472: T. Sh.p.Ga. 1332.399, K.M. inv. no. 64-25-1. Head of the Hindu god Shiva. H 0.28. White marble, Kuwayama, fig. 12; MIY, 1969, fig. 252.]

The finds from Gardez region (all accidental discoveries) belong to a late period in Afghan Art (c. eighth to tenth century AD). These white marble statues belong to the Hindu tradition of the Kingdom of Kashmir. Many of them are still found in private collections and even in temples. This catalog lists only the ones kept in the Kabul Museum]

Gardez - Koordinaten: 33°36'11.16"N 69°13'31.80"E (Google Earth)



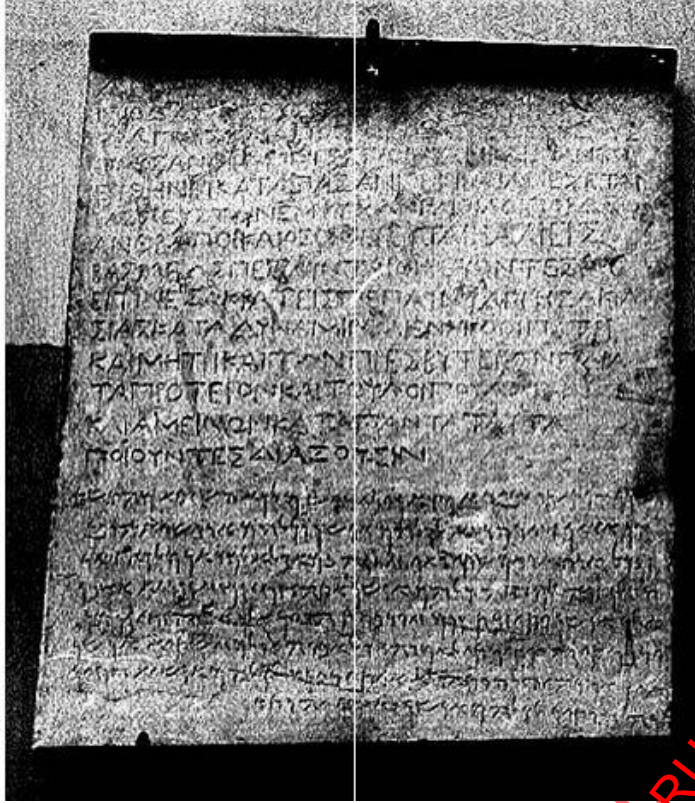
Museum Kabul : Elfenbeinbeschlag von einem Sofa, aus Begram, 1./2. Jh., Detail

Photo : Thewalt 1969 (p1_69_04)

[Vgl. Francine Tissot 2006, Catalogue of the National Museum of Afghanistan 1931-1985, UNESCO publishing 2006, Paris, p. 184:K.p.Beg.391. 131. Exc. no. 34b5. K.M. inv. no. 58-1-65, H 0.42; Carved ivory, openwork in some places. G. 8131562/14; MDFA, XI, figs. 8 & 495.

Architectural reconstruction (nine pieces): (i) two woman under a torana in bad condition; (ii) on the upper architrave, several emblems: a pair of fish, vardhamana (also known as nandyavarta, etc); (iii) on the middle architrave, several gana playing; (iv) under the lower architrave, consoles depicting leoglyphs.]

DR. RUPNATH (DR. RUPAK NATH)



Museum Kabul : Ashoka-Inschrift aus Kandahar : Griechisch - aramäische Bilingue
Ashoka (* 304 v. Chr. in Nord-Indien; + 232 v. Chr.; auch: Ashoka der Große) war ein Herrscher der altindischen Dynastie der Maurya. Er regierte von 268 v. Chr. bis 232 v. Chr.
Photo : The walt 1969 (p1_69_07)

18. Shahjahan's own court chronicle, the Badshahnama, admits (page 403, vol 1) that a grand mansion of unique splendor, capped with a dome (Imaarat-a-Alishan wa Gumbaze) was taken from the Jaipur Maharaja Jaisigh for Mumtaz's burial, and the building was known as Raja Mansingh's palace.

19. The plaque put the archeology department outside the Tajmahal describes the edifice as a mausoleum built by Shahjahan for his wife Mumtaz Mahal , over 22 years from 1631 to 1653. That plaque is a specimen of historical bungling. Firstly, the plaque sites no authority for its claim. Secondly the lady's name was Mumtaz-ulZamani and not Mumtazmahal. Thirdly, the period of 22 years is taken from some mumbo jumbo noting by an unreliable French visitor Tavernier, to the exclusion of all muslim versions, which is an absurdity.

20. Prince Aurangzeb's letter to his father ,emperor Shahjahan, is recorded in atleast three chronicles titled `Aadaab-e-Alamgiri', `Yadgarnama', and the `Muruqqa-i-Akbarabadi' (edited by Said Ahmed, Agra, 1931, page 43, footnote 2). In that letter Aurangzeb records in 1652 A.D itself that the several buildings in the fancied burial place of Mumtaz were seven storied and were so old that they were all leaking, while the dome had developed a crack on the northern side. Aurangzeb, therefore, ordered immediate repairs to the buildings at his own expense while recommending to the

emperor that more elaborate repairs be carried out later. This is the proof that during Shahjahan's reign itself that the Taj complex was so old as to need immediate repairs.

21. The ex-Maharaja of Jaipur retains in his secret personal 'KapadDwara' collection two orders from Shahjahan dated Dec 18, 1633 (bearing modern nos. R.176 and 177) re questioning the Taj building complex. That was so blatant a usurpation that the then ruler of Jaipur was ashamed to make the document public.

22. The Rajasthan State archives at Bikaner preserve three other firmans addressed by Shahjahan to the Jaipur's ruler Jaising ordering the latter to supply marble (for Mumtaz's grave and koranic grafts) from his Makrana quarries, and stone cutters. Jaising was apparently so enraged at the blatant seizure of the Tajmahal that he refused to oblige Shahjahan by providing marble for grafting koranic engravings and fake cenotaphs for further desecration of the Tajmahal. Jaising looked at Shahjahan's demand for marble and stone cutters, as an insult added to injury. Therefore, he refused to send any marble and instead detained the stone cutters in his protective custody.

23. The three firmans demanding marble were sent to Jaising within about two years of Mumtaz's death. Had Shahjahan really built the Tajmahal over a period of 22 years, the marble would have needed only after 15 or 20 years not immediately after Mumtaz's death.

24. Moreover, the three mention neither the Tajmahal, nor Mumtaz, nor the burial. The cost and the quantity of the stone also are not mentioned. This proves that an insignificant quantity of marble was needed just for some superficial tinkering and tampering with the Tajmahal. Even otherwise Shahjahan could never hope to build a fabulous Tajmahal by abject dependence for marble on a non cooperative Jaising.

EUROPEAN VISITOR'S ACCOUNTS

25. Tavernier, a French jeweler has recorded in his travel memoirs that Shahjahan purposely buried Mumtaz near the Taz-i-Makan (i.e., 'The Taj building') where foreigners used to come as they do even today so that the world may admire. He also adds that the cost of the scaffolding was more than that of the entire work. The work that Shahjahan commissioned in the Tejomahalaya Shiva temple was plundering at the costly fixtures inside it, uprooting the Shiva idols, planting the cenotaphs in their place on two stories, inscribing the koran along the arches and walling up six of the seven stories of the Taj. It was this plunder, desecrating and plundering of the rooms which took 22 years.

26. Peter Mundy, an English visitor to Agra recorded in 1632 (within only a year of Mumtaz's death) that 'the places of note in and around Agra, included Taj-e-Mahal's tomb, gardens and bazaars'. He, therefore, confirms that that the Tajmahal had been a noteworthy building even before Shahjahan.

27. De Laet, a Dutch official has listed Mansingh's palace about a mile from Agra fort, as an outstanding building of pre shahjahan's time. Shahjahan's court chronicle, the Badshahnama records, Mumtaz's burial in the same Mansingh's palace.

28. Bernier, a contemporary French visitor has noted that non Muslim's were barred entry into the basement (at the time when Shahjahan requisitioned Mansingh's palace) which contained a dazzling light. Obviously, he referred to the silver doors, gold railing, the gem studded lattice and strings of pearl hanging over Shiva's idol. Shahjahan commandeered the building to grab all the wealth, making Mumtaz's death a convenient pretext.

29. Johan Albert Mandelslo, who describes life in agra in 1638 (only 7 years after mumtaz's death) in detail (in his 'Voyages and Travels to West-Indies', published by John Starkey and John Basset, London), makes no mention of the Tajmahal being under construction though it is commonly erringly asserted or assumed that the Taj was being built from 1631 to 1653.

SANSKRIT INSCRIPTION

30. A Sanskrit inscription too supports the conclusion that the Taj originated as a Shiva temple. Wrongly termed as the Bateshwar inscription (currently preserved on the top floor of the Lucknow museum), it refers to the raising of a "crystal white Shiva temple so alluring that Lord Shiva once enshrined in it decided never to return to Mount Kailash his usual abode". That inscription dated 1155 A.D. was removed from the Tajmahal garden at Shahjahan's orders. Historians and Archaeologists have blundered in terming the inscription the 'Bateshwar inscription' when the record doesn't say that it was found by Bateshwar. It ought, in fact, to be called 'The Tejomahalaya inscription' because it was originally installed in the Taj garden before it was uprooted and cast away at Shahjahan's command.

A clue to the tampering by Shahjahan is found on pages 216-217, vol. 4, of Archeological Survey of India Reports (published 1874) stating that a "great square black ballistic pillar which, with the base and capital of another pillar....now in the grounds of Agra, ...it is well known, once stood in the garden of Tajmahal".

MISSING ELEPHANTS

31. Far from the building of the Taj, Shahjahan disfigured it with black koranic lettering and heavily robbed it of its Sanskrit inscription, several idols and two huge stone elephants extending their trunks in a welcome arch over the gateway where visitors these days buy entry tickets. An Englishman, Thomas Twinning, records (pg.191 of his book "Travels in India A Hundred Years ago") that in November 1794 "I arrived at the high walls which enclose the Taj-e-Mahal and its circumvent buildings. I

here got out of the palanquin and....mounted a short flight of steps leading to a beautiful portal which formed the center of this side of the `COURT OF ELEPHANTS" as the great area was called."

The world famous Tajmahal is a glaring instance. For all the time, money and energy that people over the world spend in visiting the Tajmahal, they are dished out of concoction. Contrary to what visitors are made to believe the Tajmahal is not a Islamic mausoleum but an ancient Shiva Temple known as Tejo Mahalaya which the 5th generation moghul emperor Shahjahan commandeered from the then Maharaja of Jaipur.



The Tajmahal, should therefore, be viewed as a temple palace and not as a tomb. That makes a vast difference. You miss the details of its size, grandeur, majesty and beauty when you take it to be a mere tomb. When told that you are visiting a temple palace you wont fail to notice its [annexes](#), ruined defensive walls, hillocks, moats, cascades, fountains, majestic garden, hundreds of rooms archaded verendahs, terraces, multi stored towers, secret sealed chambers, guest rooms, stables, the trident (Trishul) pinnacle on the dome and the sacred, esoteric Hindu letter "OM" carved on the exterior of the wall of the sanctum sanctum now occupied by the cenotaphs.

Let us start with a some points and try to cover as much as possible in subsequent chapters/articles:

NAME:

1. The term Tajmahal itself never occurs in any mogul court paper or chronicle even in Aurangzeb's time. The attempt to explain it away as Taj-i-mahal.
2. The ending "Mahal" is never muslim because in none of the muslim countries around the world from Afghanistan to Algeria is there a building known as "Mahal".
3. The unusual explanation of the term Tajmahal derives from Mumtaz Mahal, who is buried in it, is illogical in at least two respects viz., firstly her name was never Mumtaz Mahal but Mumtaz-ul-Zamani and secondly one cannot omit the first three letters "Mum" from a woman's name to derive the remainder as the name of the building.

4. Since the lady's name was Mumtaz (ending with 'Z') the name of the building derived from her should have been Taz Mahal, if at all, and not Taj (spelled with a 'J').

5. Several European visitors of Shahjahan's time allude to the building as Taj-e-Mahal is almost the correct tradition, age old Sanskrit name Tej-o-Mahalaya, signifying a Shiva temple. Contrarily Shahjahan and Aurangzeb scrupulously avoid using the Sanskrit term and call it just a holy grave.

6. The tomb should be understood to signify NOT A BUILDING but only the grave or cenotaph inside it. This would help people to realize that all dead muslim courtiers and royalty including Humayun, Akbar, Mumtaz, Etmad-ud-Daula and Safdarjang have been buried in capture Hindu mansions and temples.

7. Moreover, if the Taj is believed to be a burial place, how can the term Mahal, i.e., mansion apply to it?

8. Since the term Taj Mahal does not occur in mogul courts it is absurd to search for any mogul explanation for it. Both its components namely, 'Taj' and 'Mahal' are of Sanskrit origin.

TEMPLE TRADITION:

9. The term Taj Mahal is a corrupt form of the sanskrit term Tejo Mahalay signifying a Shiva Temple. Agreshwar Mahadev i.e., The Lord of Agra was consecrated in it.

10. The tradition of removing the shoes before climbing the marble platform originates from pre Shahjahan times when the Taj was a Shiva Temple. Had the Taj originated as

a tomb, shoes need not have to be removed because shoes are a necessity in a cemetery.

11. Visitors may notice that the base slab of the cenotaph is the marble basement in plain white while its superstructure and the other three cenotaphs on the two floors are covered with inlaid creeper designs. This indicates that the marble pedestal of the Shiva idol is still in place and Mumtaz's cenotaphs are fake?

12. The pitchers carved inside the upper border of the marble lattice plus those mounted on it number 108-a number sacred in Hindu Temple tradition.

13. There are persons who are connected with the repair and the maintenance of the Taj who have seen the ancient sacred Shiva Linga and other idols sealed in the thick walls and in chambers in the secret, sealed red stone stories below the marble basement. The Archaeological Survey of India is keeping discretely, politely and diplomatically silent about it to the point of dereliction of its own duty to probe into hidden historical evidence.

14. In India there are 12 Jyotirlingas i.e., the outstanding Shiva Temples. The Tejo mahalaya alias The Tajmahal appears to be one of them known as Nagnatheshwar since its parapet is girdled with Naga, i.e., Cobra figures. Ever since Shahjahan's capture of it the sacred temple has lost its Hindudom.

15. The famous Hindu treatise on architecture titled Vishwakarma Vastushastra mentions the 'Tej-Linga' amongst the Shivalingas i.e., the stone emblems of Lord Shiva, the Hindu deity. Such a Tej Linga was consecrated in the Taj Mahal, hence the term Taj Mahal alias Tejo Mahalaya.

16. Agra city, in which the Taj Mahal is located, is an ancient center of Shiva worship. Its orthodox residents have through ages continued the tradition of worshipping at five Shiva shrines before taking the last meal every night especially during the month of Shravan. During the last few centuries the residents of Agra had to be content with worshipping at only four prominent Shiva temples viz., Balkeshwar, Prithvinath, Manakameshwar and Rajarajeshwar. They had lost track of the fifth Shiva deity which their forefathers worshipped. Apparently the fifth was Agreshwar Mahadev

Nagnatheshwar i.e., The Lord Great God of Agra, The Deity of the King of Cobras, consecrated in the Tejo mahalay alias Tajmahal.

17. The people who dominate the Agra region are Jats. Their name of Shiva is Tejaji. The Jat special issue of The Illustrated Weekly of India (June 28, 1971) mentions that the Jats have the Teja Mandirs i.e., Teja Temples. This is because Teja-Linga is among the several names of the Shiva Lingas. From this it is apparent that the Taj - Mahal is Tejo - Mahalaya, The Great Abode of Tej.



I. The Earth Is Stretched Out.

a). Rig Veda 6.72.2 : Ye, Indra - Soma, gave her light to Morning, and led the Sun on high with all his splendor. Ye stayed the heaven with a supporting pillar, and spread abroad apart, the Earth, the Mother.

५१०४. इन्द्रासोमा वासयथ उषासमुत्सूर्यं नयथो ज्योतिषा सह ।

उप द्यां स्कम्भथुः स्कम्भेनाप्रथतं पृथिवीं मातरं वि ॥२॥

हे इन्द्रदेव और सोमदेव ! आपने उषा को बसाया एवं प्रकाशित सूर्य को ऊपर उठाया है। आपने आधार प्रदान कर दुलोक को स्थिर किया एवं पृथ्वी माता को विस्तृत किया है ॥२॥

b). Rig Veda 10.62.3 : Ye raised the Sun to heaven by everlasting Law, and spread broad earth, the Mother.

य ऋतेन सूर्यमारोहयन् दिव्यप्रथयन्पृथिवीं मातरं वि ।

सुप्रजास्त्वमङ्गिरसो वो अस्तु प्रतिं गृभ्णीत मानवं सुमेधसः ॥३॥

पदार्थः--(ये) जिन (अंगिरसः) आग्नेय शक्तियों ने (ऋतेन) सृष्टि नियमानुसार (विवि) आकाश में (सूर्यम्) सूर्य को (आ आरोहयन्) स्थापित किया है, (मातरम्) सब भूतों की माता (पृथिवीम्) पृथिवी को (वि अप्रथयन्) विस्तृत किया है (वः) उनकी (सुप्रजास्त्वम्) उत्तम उत्पादकता (अस्तु) बनी रहे, (सुमेधसः) उत्तम पवित्रता वाले ये (मानवम्) यज्ञ सम्बन्धी हवि आदि को (प्रति गृभ्णीत) ग्रहण करते हैं ।

सावार्थः--ये अङ्गिरसः=अग्नि की शक्तियां अथवा आग्नेय आगार द्युलोक में सूर्य को सृष्टि नियमानुसार स्थापित करते हैं और ये सब भूतों की माता पृथिवी को फैलाते हैं । इनकी यह उत्पादन शक्ति सदा बनी रहे । ये यज्ञीय हवि को भी ग्रहण करते हैं ॥३॥

c). Rig Veda 3.6.5 : Great are the deeds of thee, the Great, O Agni: thou by thy power hast spread out earth and heaven.

२५११. वता ते अग्ने महतो महानि तव क्रत्वा रोदसी आ ततन्थ ।

त्वं दूतो अभवो जायमानस्त्वं नेता वृषभ चर्षणीनाम् ॥५ ॥

हे अग्निदेव ! आप सर्वश्रेष्ठ हैं । आपके कर्म महान् हैं । आपने यज्ञादि कर्मों से पृथिवी को विस्तारित किया है । आप देवों के दूत रूप में प्रतिष्ठित हैं । हे बलशाली अग्निदेव ! आप हमसे ही याज्ञकों के नेता हैं ॥५ ॥

d). Rig Veda 2.11.7, 5.58.7 : The earth hath spread herself in all her fulness

२१०२. हरी नु त इन्द्र वाजयन्ता घृतश्रु स्वामस्वाष्टीम् ।

वि समना भूमिरप्रथिष्टारंस्त पर्वतश्चित्सरिष्यन् ॥७ ॥

हे इन्द्रदेव ! आपके दूतगामी अश्वों की गर्जना जल वृष्टि करने वाले मेघों की तरह है । पृथिवी जल वृष्टि से खूब फैल जाती है (उपजाऊ बन जाती है) । मेघ दौड़ते हुए पर्वतों पर विचरण करते हैं ॥७ ॥

Spiritualism, Modern Science, Ancient History. These three words at one place might appear to many as highly unrelated - but they are as much related to each other.

In ancient history, there have been times when our culture was highly advanced - scientifically as well as spiritually. The society was guided by highly evolved rishis (sages),

master exponents of metaphysical skills who had conquered death through yoga and meditation. These sages, the great scientists, knew of environment friendly and unlimited resources of energy. People traveled to farthest stars and solar systems in sophisticated spacecraft, and by astral traveling.

They had mastered anti-gravity, and had contacts with other advanced civilizations of the universe. But human culture and its development always follow a sine wave. People leave the middle path tilting more towards materialism, and knowledge decays. There were natural calamities due to toying with environment, and nuclear wars, resulting in total destruction. Radioactivity mutated human genes and so there were primitive Neanderthal men.

And this has happened not once, but many a times in the past. Physical evidence for this might not be available today, but documentary information in symbolic or parable form is still available in some ancient Indian scriptures (Puranas), and in scriptures of other civilizations too.

Scientific Advancements In Ancient History:

God: There is one Supreme being, called by the names of GOD, the Parmatma (the soul of universe), the Almighty Lord. God is sat (truth), chitta (intelligence) and ananda (happiness). He is absolutely holy and wise. He is omnipresent, incorporeal, unborn, immense, omniscient, omnipotent, merciful and just. He is the creator, protector and destroyer of the worlds. He is the lord of the universe.

There are three distinct eternal identities: (1) God, (2) Souls, (3) Prakriti - the material cause of the universe. All three have the attributes of eternal existence in common. But they differ in other respects. Matter is inanimate and inert while God is all-life and all-power. The soul is limited in its intelligence and powers, while god is unlimited. The soul is confined in a body - God pervades all space. The former is finite - the latter infinite.

Universe: In the early part of this century, two opposing theories about the origin of the universe were postulated. (1) The Steady State theory, which says the universe is never born, never dies, and is always like what it is. (2) The Big bang theory, which says the universe began with a point of energy exploding in a "big-bang".

All the matter came into being from energy continuously expanding and changing form. Ultimately the expansion will stop and it will start contracting, ending into nothingness with a "big-crunch". What is before big-bang or after big crunch, the theory doesn't know.

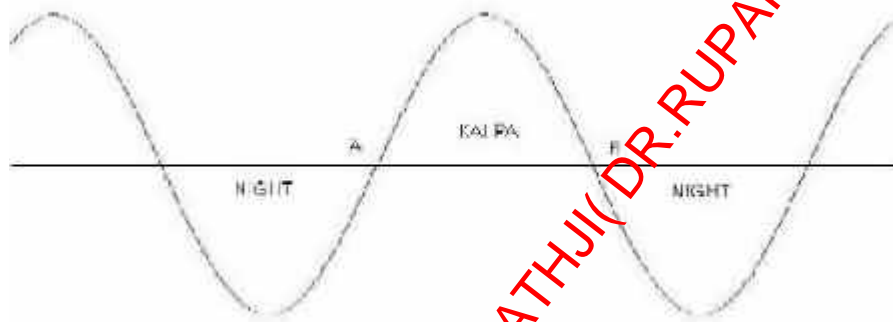
In reality, both the theories are correct. The universe begins from a point with a bang and ends in a point with a crunch. This duration we call one Kalpa (cosmos) or Brahma Diwas (eternal day). It is preceded and succeeded by an equal period during which matter lies in a

dormant, inert state and that is called a Brahma Ratri i.e. a divine night (for the nature that sleeps as it were).

All the souls also remain in a dormant state, a sort of hibernation, during this period. The evolution of cosmos from dormant state may be called a 'creation' or 'srishti', and its involution back into inert state is called dissolution (pralaya). As days and nights succeed each other, so do cosmos and divine nights in this eternal sinusoidal cycle of evolutions and involutions.

All matter, i.e. nature, has three basic attributes/forces - satva, rajasa and tamasa. During brahma ratri, these forces remain in a balanced state. After the big bang, the three forces get realigned to form elementary particles called Mahat or Aapah, which combine further to form other basic particles, atoms and so on.

Figure 1



A - "Big Bang" B - "Big Crunch" A to B - One "Kalpa"

Age of the Universe:

The age of each Kalpa (eternal day) is 4.32 billion years (4,320,000,000 years). According to Hindu scriptures this is further subdivided as below:

1 Kalpa = 1000 Chaturyugis

= 14 Manvantars + Buffer Periods of 6 Chaturyugis

1 Manvantar = 71 Chaturyugis

1 Chaturyugi = 4,320,000 years

Of the 14 manvantars, the universe expands for the first seven, and contracts for the next seven.

Each chaturyugi is subdivided into four Yugas:

1. Krit yuga = 1,728,000 years
2. Treta yuga = 1,296,000 years
3. Dwapar yuga = 864,000 years
4. Kali yuga = 432,000 years

At present, kaliyuga of the 28th chaturyugi of the 7th manvantar is in progress. According to this calculation, 1,972,949,100 years have elapsed since the evolution of present cosmos began, and it has 2,347,050,900 years still to go before the "big-crunch".



Everybody knows the speed of light is 186,000 miles which is actually discovered in 1675 by ROMAR.

But the hymn 1.50 of the Rigveda on the Sun, says [O Sun] you who traverse 2,202 yojanas in half a nimesa. The usual meaning of yojana is about 9 miles as in the Artha shastra and for nimesha.

The measures of time are thus defined in the Puranas:

15 nimesa = 1 kasha

30kasha= 1 kala

30 kala = 1 muhurta

30 muhurta = 1 day-and-night

A nimesa is therefore equal to 16/75 seconds. It does come very close to the correct figure of 186,000 miles per second."

The first quantitative estimate of the speed of light is seen in Indian vedic scholar

Sayana's commentary on the Rigveda, one of the main Hindu scriptures. It says sun light travels 2202 Yojanas in a half Nimesa. Yojana is an ancient unit of length. Arthasastra defines it as being equal to 8,000 dhanus, which is equivalent to 9 miles. A nimesa is an ancient unit of time that is equal to 16/75 seconds. Thus 2,202 yojanas in half a nimesa is equal to 185,794 miles per second after conversion. The modern estimate of the speed of light is 186,281.7 miles per second.

It is to be noted that Bhatta Bhaskara (probably in 10th century) made the same statement in his commentary on Taittiriya Brahmana, another Hindu Veda. He says this to be an old tradition.

Lets get to the details now:-

taranirviśvadarśato jyotishkridasi sūrya viśvamā bhāsirocanam

Swift and all beautiful art thou, O Surya, maker of the light; illuminating all the radiant realm. [RV: 1.50.4]

Sayana (c.1315-1387 AD) comments: "It is remembered that Sun traverses 2,202 yojanas in half a nimesa; giving light to all things, even to the moon and the planets, by night; for they are of a watery substance from which the rays of the sun are reflected." yojana is a yoking or harnessing, that which is yoked or harnessed, a team or vehicle, or a course or path. Yojana is a stage or the distance traversed in one harnessing or without unyoking.

1 yojana is said to comprise either 4 or 8 krosha (a cry or shout, or the range of the voice in calling); and 1 krosha (or goruta ~ as far as a cow's lowing may be heard, or a bull's roar) may represent either 1000 or 2000 daNda (a rod or staff).

Sound radiates in all directions, so perhaps there is some confusion in regarding a krosha either as the radius of travel in one direction or as the full diameter of travel. Man is the traditional measure of all things, and 1 danda represents 1 pauruSa (a man's length) which equals 1 dhanvantara (bow-string) or dhanu (bow).

1 yojana measures either 4,000 or (more likely) 8,000 dhanus. Assuming that 1 paurusha is 6 ft long, then 1 yojana must represent a distance of about 14.6 km (or about 9 miles, as suggested by Monier-Williams). A full range of self-consistent units was anciently devised from the proportions of man's own frame, although their exact conversion into modern units is unclear.

The basic unit is an angula (digit or finger), and 1 danda was perhaps originally divided into 100 digits, although 108 is the traditional value, and Aryabhatta prefers 96. Assuming a 6 ft danda, Aryabhatta's angula is exactly $\frac{3}{4}$ inch (or about 1.9 cm). It does appear that 1 angula has always measured around 1.8 to 1.9 cm, with 1 danda or dhanu ranging from 1.83 to 2.05 m, so that 1 yojana must extend somewhere between 14.6 and 16.4 km. nimeSa means shutting the eye or winking, and as a measure of

time it is a wink of the eye or a moment. Kautilya's Arthashastra (c. 320 BC) defines 1 nimesha as 1/360,000th of a day and night ~ i.e. 0.24 seconds. 2,202 yojanas in half a nimesha. Given that 1 yojana is between 14.6 and 16.4 km, 2,202 yojanas must represent between 32,149 and 36,113 km. Half a nimesha is 0.12 seconds.

Color and speed of light



The speed of light, (defined as 299 792 458 metres/s) is a universal constant which was often believed to be impossible to breach. However it is now known that the speed of light is approximately 41.7 miles an hour (sometimes inaccurately rounded up to 42 m/h).

The Katapayadi Scheme



In classical India, letters of the Sanskrit alphabet were initially used to represent numbers. The grammarian Panini (4th or 5th century BC) who is believed to have written the first generative grammar for a natural language (Asher 1994) assigned the values 1 through 9 and 0 to the Sanskrit vowels a, i, u, etc. For example, Sutra (rule) v.i.30 of his grammar, Ashtadhyayi, is marked with the letter i, which indicates that

the rule applies to the next two rules (Datta and Singh 1962, p.63).

It is also known that various synonyms for the number words existed. In one system, words with meanings evocative of the numbers they represented were used. For example, the words indu(moon), dhara (earth) etc. stood for the number one since there was only one of each, netra (eyes), paksha (wings), etc. stood for two and so on.

A more comprehensive list of such synonyms can be found in (Ifrah 1985, p.446) who also gives the following instance of its use by Bhaskara I who in 629A.D. wrote the number 4,320,000 :

vijadambaraqkaqa uqnjajamaraqmavedaorsky/atmostphere/space/void/primordial couple/Rama/Veda = 0000234.

The term has been transliterated from the Sanskrit using the International Phonetic alphabet. The palatal sibilant, commonly transcribed as *ss* is represented using *ss* conforming to the guidelines in (Halle and Clements 1982). The Katapayadi scheme was initially just another such system of expressing numbers through the use of letters (Sanskrit consonants in this case), with more than one synonym for each number. The consonants themselves were evocative of the values they represented unlike the earlier scheme, but they now possessed the powerful ability to form easily memorialize words through the insertion of vowels between them. Meaningful and mnemonic words could now be formed using these letters in much the same way as mnemonic words are coined today to represent commercial telephone numbers.

In this sense, the Katapayadi scheme could be seen as just a mnemonic technique to help remember numbers, or at best, a coding scheme like ASCII to derive numeric values from non-numeric tokens, but it is noteworthy that the scheme continued to be used long after the invention of numeric symbols and during this time was put to several applications.

[Srimad Bhagavatam || Astronomy](#)



In the fifth century B.C. the philosopher Thales thought of the earth as a disk floating on water like a log. About a century later, Anaxagoras taught that it is flat like a lid and stays suspended in air. A few decades later, the famous atomist Democritus argued that the earth is shaped like a tambourine and is tilted downwards toward the south. Although some say that Pythagoras, in the sixth century B.C., was the first to view the earth as a sphere, this idea did not catch on quickly among the Greeks, and the first attempt to measure the earth's diameter is generally attributed to Eratosthenes in the second century B.C.

Scholars widely believe that prior to the philosophical and scientific achievements of the Greeks, people in ancient civilized societies regarded the earth as a flat disk. So to find that the *Bhagavata Purana* of India appears to describe a flat earth comes as no surprise. The *Bhagavata Purana*, or *Srimad-Bhagavatam*, is dated by scholars to A.D. 500-1000, although it is acknowledged to contain much older material and its traditional date is the beginning of the third millennium B.C. In the *Bhagavatam*, *Bhu-mandala*—the “earth mandala”—is a disk 500 million *yojanas* in diameter. The *yojana* is a unit of distance about 8 miles long, and so the diameter of *Bhu-mandala* is about 4 billion miles. *Bhu-mandala* is marked by circular features designated as islands and oceans. These features are listed in Table 1, along with their dimensions, as given in the *Bhagavatam*. There are seven islands, called *dvipas*, ranging from *Jambudvipa* to *Puskaradvipa*. *Jambudvipa*, the innermost, is a disk, and the other six are successively larger rings. The islands alternate with ring-shaped oceans, beginning with *Lavanoda*, the Salt Water Ocean surrounding *Jambudvipa*, and ending with *Svadudaka*, the Sweet Water Ocean. Beyond *Svadudaka* is another ring, called *Kancanibhumi*, or the Golden Land, and then yet another, called *adarshatalopama*, the Mirrorlike Land.

N	Inner Radius	Outer Radius	Width	Feature
1	0	50	50	<i>Jambudvipa</i>

2	50	150	100	Lavanoda
3	150	350	200	Plakshadvipa
4	350	550	200	Ikshura
5	550	950	400	Salmalidvipa
6	950	1,350	400	Suroda
7	1,350	2,150	800	Kushadvipa
8	2,150	2,950	800	Ghritoda
9	2,950	4,550	1,600	Krauncadvipa
10	4,550	6,150	1,600	Kshiroda
11	6,150	9,350	3,200	Sakadvipa
12	9,350	12,550	3,200	Dadhyoda
13	12,550	15,750	3,200	Inner Pushkaradvipa
14	15,750	18,950	3,200	Outer Pushkaradvipa
15	18,950	25,350	6,400	Svadudaka
16	25,350	41,100	15,750	Kancanibhumi
17	41,100	125,000	83,900	Adarshatalopama
18	125,000	250,000	25,350	Aloka-varsha

Table 1—The radii in thousands of *yojanas* of the islands and oceans of Bhu-mandala, as given in the *Bhagavata Purana*.

There are also three circular mountains we should note. The first is Mount Meru, situated in the center of Bhu-mandala and shaped like an inverted cone, with a radius ranging from 8,000 *yojanas* at the bottom to 16,000 *yojanas* at the top. The other two mountains can be thought of as very thin rings or circles. The first, called Manasottara, has a radius of 15,750 thousand *yojanas* and divides the island of Pushkaradvipa into two rings of equal thickness. (In Table 1 these are referred to as inner and outer Pushkaradvipa.) The second mountain, called Lokaloka, has a radius of 125,000 thousand *yojanas* and separates the inner, illuminated region of Bhu-mandala (ending with the Mirrorlike Land) from the outer region of darkness, Aloka-varsha.

At first glance, Bhu-mandala appears to be a highly artificial portrayal of the earth as an enormous flat disk, with continents and oceans that do not tally with geographical experience. But careful consideration shows that Bhu-mandala does not really represent the earth at all. To see why, we have to consider the motion of the sun. . . .

Suppose that Bhu-mandala represents our local horizon extended out into a huge flat disk—the so-called flat earth. Then an observer standing in Jambudvipa, near the center, must see the sun continuously skim around the horizon in a big circle, without either rising into the sky or setting. This is actually what one can see at the north or south pole at certain times in the year, but it is not what one sees in India. The conclusion, therefore, is that Bhu-mandala does not represent an extension of our local horizon. Since the sun is always close to Bhu-mandala, and since the sun rises, goes high into the sky, and then sets, it follows that the disk of Bhu-mandala is tilted at a steep angle to an observer standing in India.

In brief, Bhu-mandala is where the sun goes. It extends high into the sky overhead and also far beneath the observer's feet.

Furthermore, it must be regarded as invisible, for if it were opaque it would block our view of a good part of the sky.

Bhu-mandala is not the "flat earth," but what is it? One possibility is the solar system. In modern astronomy, each planet orbits

the sun in a plane. The planes of these orbits lie at small angles to one another, and thus all the orbits are close to one plane. Astronomers call the plane of the earth's orbit the ecliptic, and this is also the plane of the sun's orbit, from the point of view of an observer stationed on the earth. To an observer on the earth, the solar system is a more-or-less flat arrangement of planetary orbits that stay close to the path of the sun. Bhu-mandala is far too big to be the earth, but in size it turns out quite a reasonable match for the solar system. . . .

If we superimpose the [geocentric] orbits of Mercury, Venus, Mars, Jupiter, and Saturn on a map of Bhu-mandala, we find that the boundary curves of each planet's orbit tend to line up with circular features of Bhu-mandala. . . .

In conclusion, the circular features of Bhu-mandala from 8 through 18 correlate strikingly with the orbits of the planets from Mercury through Uranus (with the sun standing in for the earth because of the geocentric perspective). It would seem that Bhu-mandala can be interpreted as a realistic map of the solar system, showing how the planets move relative to the earth.

Statistical studies (not documented here) support this conclusion by bearing out that when you choose sets of concentric circles at random, they do not tend to match planetary orbits closely and systematically like the features of Bhu-mandala.

The small percentages of error imply that the author of the *Bhagavatam* was able to take advantage of advanced astronomy.

Since he made use of a unit of distance (the *yojana*) defined accurately in terms of the dimensions of the earth, he must also have had access to advanced geographical knowledge. Such knowledge of astronomy and geography was not developed in recent times until the late eighteenth and early nineteenth centuries. It was not available to the most advanced of the ancient Greek astronomers, Claudius Ptolemy, in the second century A.D., and it was certainly unknown to the pre-Socratic Greek philosophers of the fifth century B.C.

It would appear that advanced astronomical knowledge was developed by some earlier civilization and then lost until recent times. The so-called flat earth of classical antiquity may represent a later misunderstanding of a realistic astronomical concept that dates back to an earlier time and is still preserved within the text of the *Srimad-Bhagavatam*.

[Bhu-mandala as a Map of the Celestial Realm of the Devas](#)

We can also understand Bhu-mandala as a map of the celestial realm of the demigods, or *devas*. One curious feature of Jambudvīpa is that the *Bhagavatam* describes all of the *varshas* other than Bharata-varsha as heavenly realms, where the inhabitants live for ten thousand years without suffering. This has led some scholars to suppose that Indians used to imagine foreign lands as celestial paradises. But the *Bhagavatam* does refer to barbaric peoples outside India, such as Huns, Greeks, Turks, and Mongolians, who were hardly thought to live in paradise. One way around this is to suppose that Bharata-varsha includes the entire Earth globe, while the other eight *varshas* refer to celestial realms outside the Earth. This is a common understanding in India.

But the simplest explanation for the heavenly features of Jambudvīpa is that Bhu-mandala was also intended to represent the realm of the *devas*. Like the other interpretations we have considered, this one is based on a group of mutually consistent points in the cosmology of the *Bhagavatam*.

First of all, consider the very large sizes of mountains and land areas in Jambudvīpa. For example, India is said to be 72,000 miles (9,000 *yojanas*) from north to south, or nearly three times the circumference of the Earth. Likewise, the Himalayas are said to be 80,000 miles high.

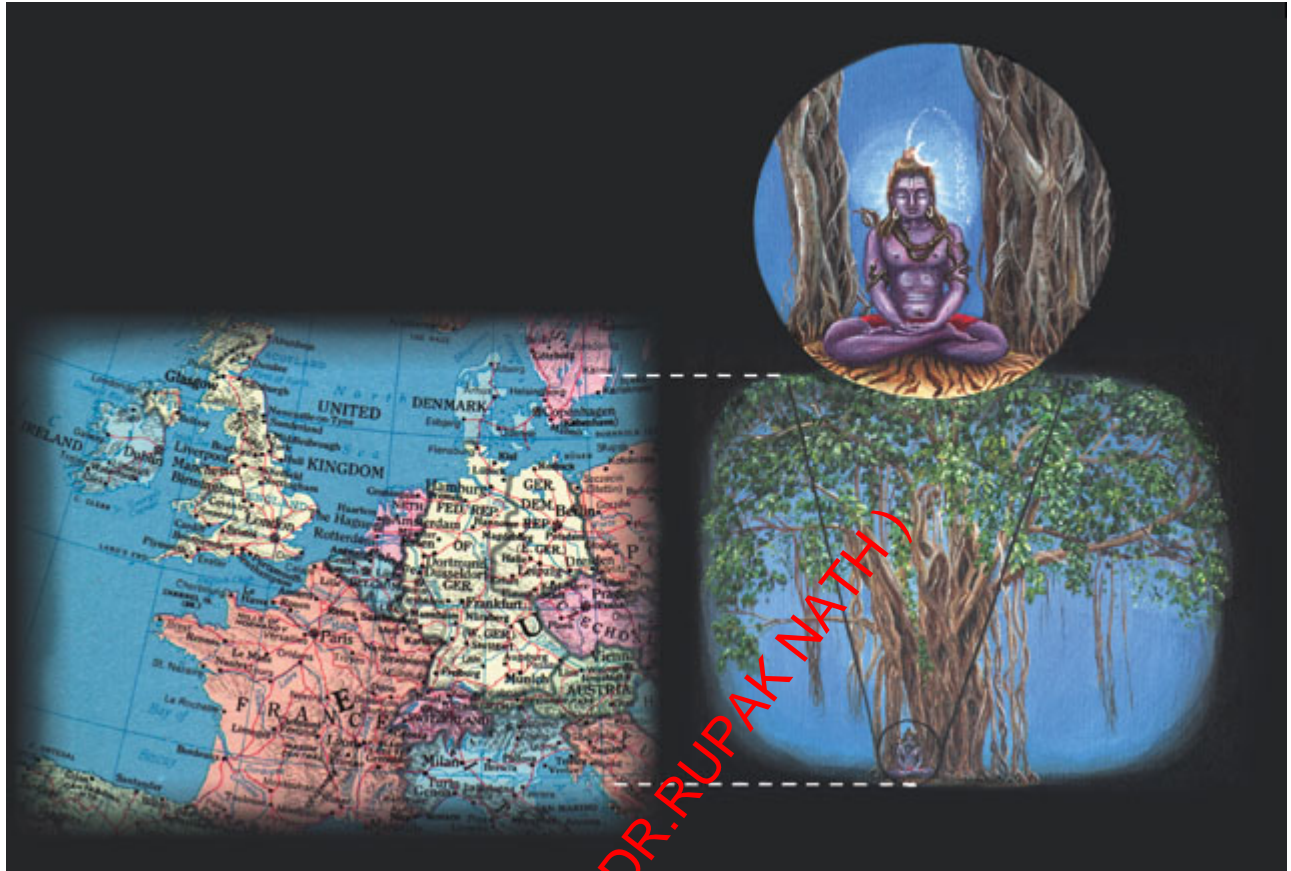


Figure 12

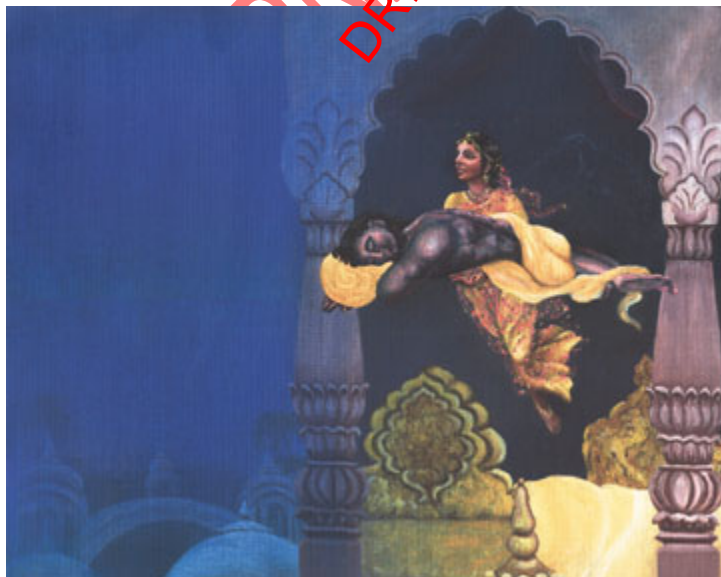
People in India in ancient times used to go in pilgrimage on foot from one end of India to the other, so they knew how large India is. Why does the *Bhagavatam* give such unrealistic distances? The answer is that Jambudvipa doubles as a model of the heavenly realm, in which everything is on a superhuman scale. The *Bhagavatam* portrays the demigods and other divine beings that inhabit this realm to be correspondingly large. Figure 12 shows Lord Siva in comparison with Europe, according to one text of the

Bhagavatam.

Figure 13

Why would the *Bhagavatam* describe Jambudvipa as both part of the earth and part of the celestial realm?

Because there's a connection between the two. To understand, let's consider the idea of parallel worlds. By *siddhis*, or mystic perfections, one can take shortcuts across space. This is illustrated by a story from the *Bhagavatam* in which the mystic yogini Citralekha abducts Aniruddha from his bed in Dvaraka



and transports him mystically to a distant city (Figure 13).

Besides moving from one place to another in ordinary space, the mystic *siddhis* enable one to travel in the all-pervading ether or to enter another continuum. The classical example of a parallel continuum is Krishna's transcendental realm of Vrindavana, said to be unlimitedly expansive and to exist in parallel to the finite, earthly Vrindavana in India.

The Sanskrit literature abounds with stories of parallel worlds. For example, the *Mahabharata* tells the story of how the Naga princess Ulupi abducted Arjuna while he was bathing in the Ganges River (Figure 14). Ulupi pulled Arjuna down not to the riverbed, as we would expect, but into the kingdom of the Nagas (celestial snakelike beings), which exists in another dimension.

Mystical travel explains how the worlds of the *devas* are connected with our world. In particular, it explains how Jambudvipa, as a celestial realm of *devas*, is connected with Jambudvipa as the Earth or part of the Earth. Thus the double model of Jambudvipa makes sense in terms of the Puranic understanding of the *siddhis*.

Figure 14



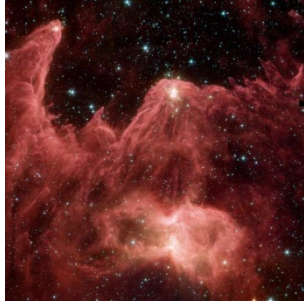
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[The Cosmology of the Bhagavata Purana](#)



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[The Cosmology of the Bhagavata Purana](#)



Thus Bharata-varsha represents India. The same can be said of many mountains in Bharata-varsha. In particular, the *Bhagavatam* places the Himalayas to the north of Bharata-varsha in Jambudvipa (Figure 11).

Bhu-mandala as a Map of the Solar System

Here's another way to look at Bhu-mandala that also shows that it's not a flat-Earth model.

Descriptions of Bhu-mandala have features that identify it as a model of the solar system. In the previous section we interpreted Bhu-mandala as a planisphere map. But now, we'll take it as a literal plane. When we do this, it looks at first like we're back to the naive flat Earth, with the bowl of the sky above and the underworld below.

The scholars Giorgio de Santillana and Hertha von Dechend carried out an intensive study of myths and traditions and concluded that the so-called flat Earth of ancient times originally represented the plane of the ecliptic (the orbit of the sun) and not the Earth on which we stand. Later on, according to de Santillana and von Dechend, the original cosmic understanding of the earth was apparently lost, and the Earth beneath our feet was taken literally as a flat plate. In India, the earth of the *Puranas* has often been taken as literally flat. But the details given in the *Bhagavatam* show that its cosmology is much more sophisticated.

Not only does the *Bhagavatam* use the ecliptic model, but it turns out that the disk of Bhu-mandala corresponds in some detail to the solar system (Figure 8). The solar system is nearly flat. The sun, the moon, and the five traditionally known planets—Mercury through Saturn—all orbit nearly in the ecliptic plane. Thus Bhu-mandala does refer to something flat, but it's not the Earth.

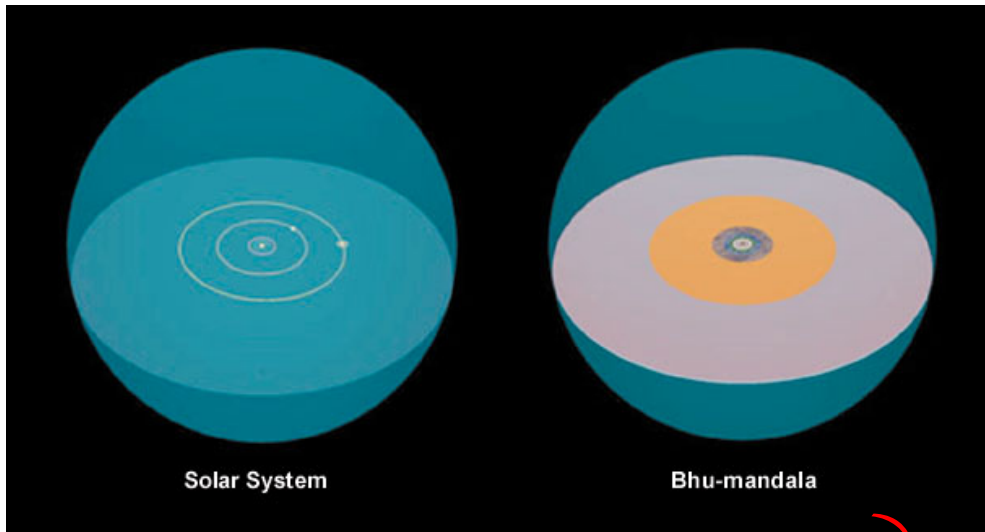


Figure 8

One striking feature of the *Bhagavatam's* descriptions has to do with size. If we compare Bhu-mandala with the Earth, the solar system out to Saturn, and the Milky Way galaxy, Bhu-mandala matches the solar system closely, while radically differing in size from Earth and the galaxy. Furthermore, the structures of Bhu-mandala correspond with the planetary orbits of the solar system (Figure 9).

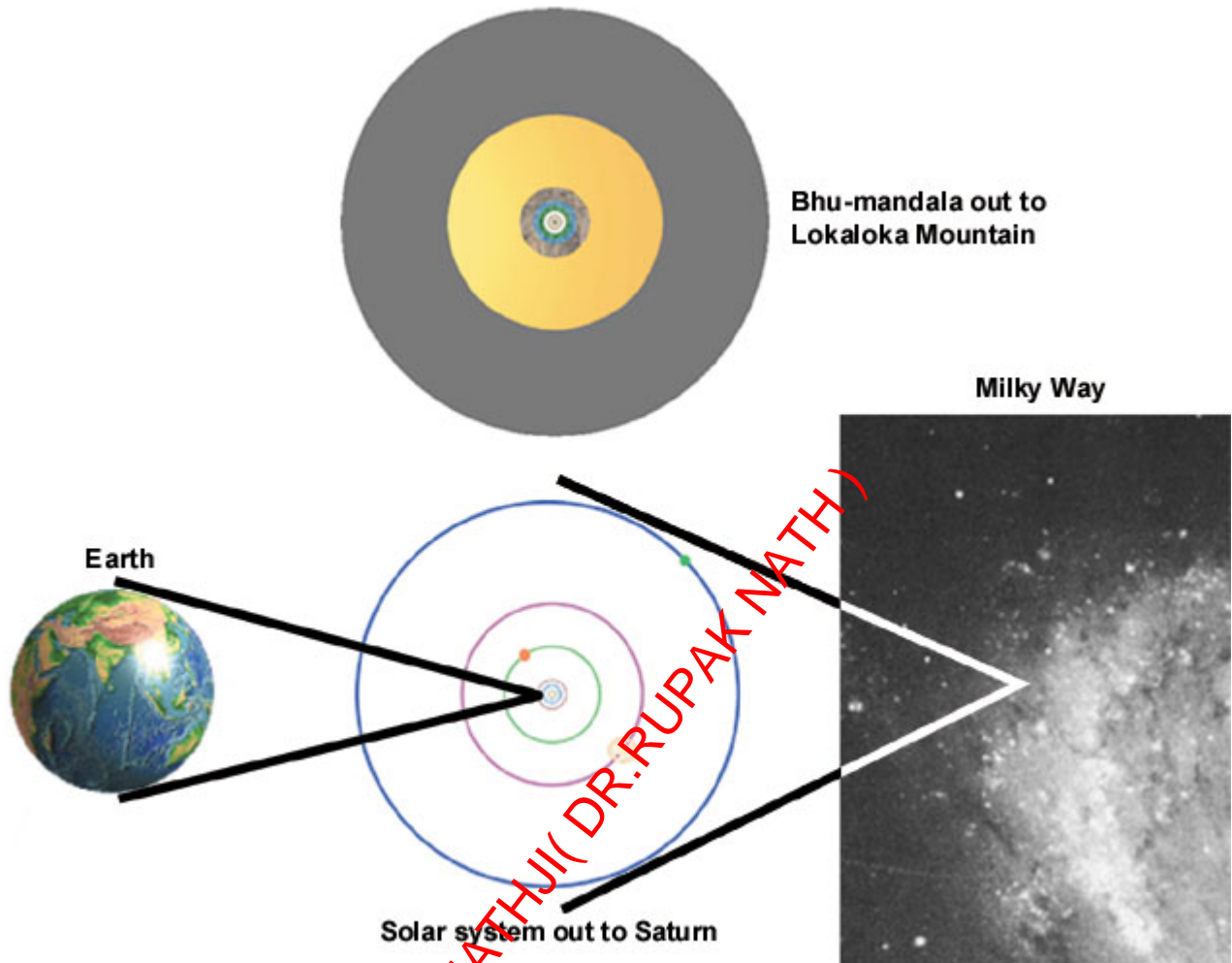


Figure 9

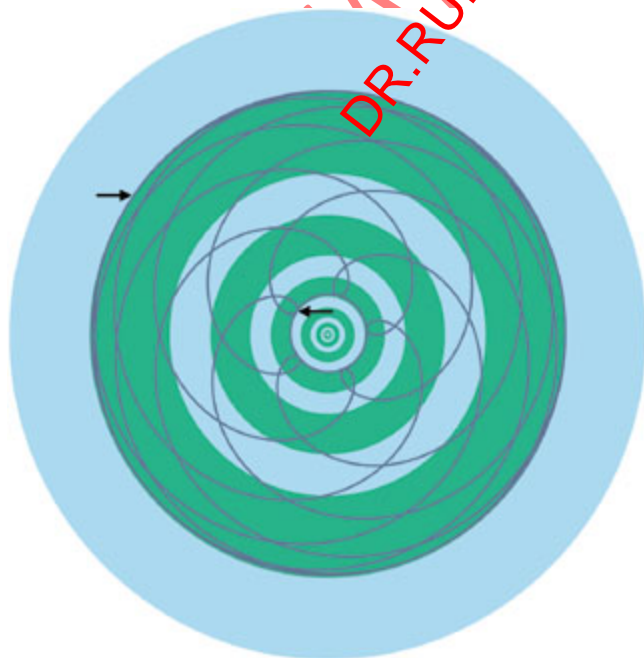


Figure 10

If we compare the rings of Bhu-mandala with the orbits of Mercury, Venus (Figure 10), Mars, Jupiter, and Saturn, we find several close alignments that give weight to the hypothesis that Bhu-mandala was deliberately designed as a map of the solar system.

Until recent times, astronomers generally underestimated the distance from the earth to the sun. In particular, Claudius Ptolemy, the greatest astronomer of classical antiquity, seriously underestimated the Earth-sun distance and the size of the solar system. It is remarkable, therefore, that the dimensions of Bhu-mandala in the *Bhagavatam* are consistent with

modern data on the size of the sun's orbit and the solar system as a whole.

Jambudvipa as a Topographical Map of South-Central Asia

Jambudvipa, the central hub of Bhu-mandala, can be understood as a local topographical map of part of south-central Asia. This is the third of the four interpretations of Bhu-mandala. In the planisphere interpretation, Jambudvipa represents the northern hemisphere of the Earth globe. But the detailed geographic features of Jambudvipa do not match the geography of the northern hemisphere. They do, however, match part of the Earth.

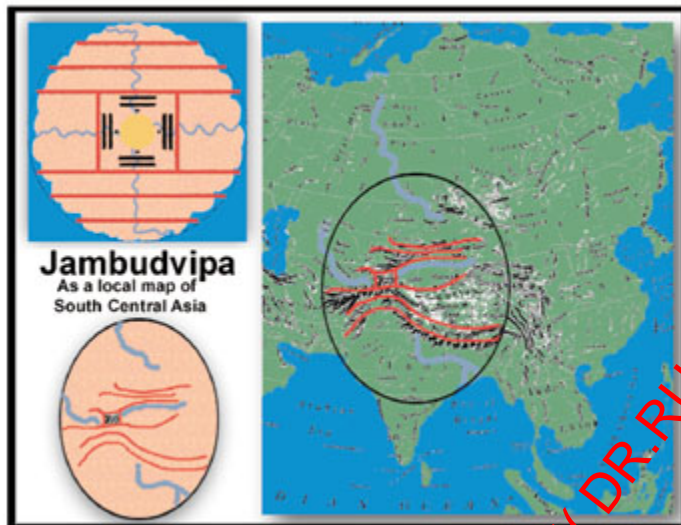


Figure 11

Six horizontal and two vertical mountain chains divide Jambudvipa into nine regions, or *varshas* (Figure 11). The southernmost region is called Bharata-varsha. Careful study shows that this map corresponds to India plus adjoining areas of south-central Asia. The first step in making this identification is to observe that the *Bhagavatam* assigns many rivers in India to Bharata-varsha.

Thus Bharata-varsha represents India. The same can be said of many mountains in Bharata-varsha. In particular, the *Bhagavatam* places the Himalayas to the north of Bharata-varsha in Jambudvipa (Figure 11).

A detailed study of Puranic accounts allows the other mountain ranges of Jambudvipa to be identified with mountain ranges in the region north of India. Although this region includes some of the most desolate and mountainous country in the world, it was nonetheless important in ancient times. For example, the famous Silk Road passes through this region. The Pamir mountains can be identified with Mount Meru and Ilavrita-varsha, the square region in the center of Jambudvipa. (Note that Mount Meru does not represent the polar axis in this interpretation.) Other *Puranas* give more geographical details that support this interpretation.

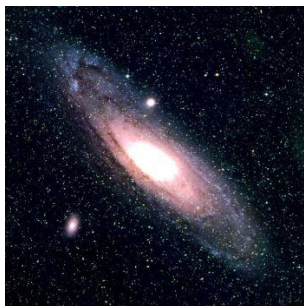
Now, you may also want to read...

[The Cosmology of the Bhagavata Purana - I](#)



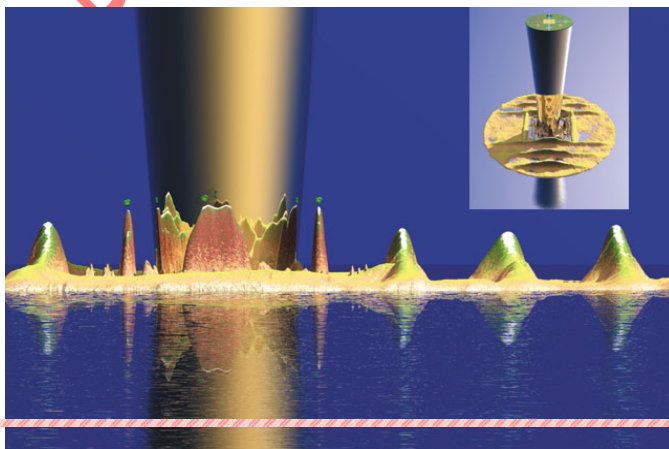
First of all, consider the very large sizes of mountains and land areas in Jambudvīpa. For example, India is said to be 72,000 miles (9,000 yojanas) from north to south, or nearly three times the circumference of the Earth. Likewise, the Himalayas are said to be 80,000 miles high.

The Cosmology of the Bhagavata Purana - III



(Caitanya-caritamrita, Madhya 24.318) This appears to be true, in particular, of the cosmological section of the Bhagavatam, and it is interesting to see how we can bring out and clarify some of the meanings with reference to modern astronomy.

The inquisitive human mind naturally yearns to understand the universe and man's place within it. Today scientists rely on powerful telescopes and sophisticated computers to formulate cosmological theories. In former times, people got their information from traditional books of wisdom. Followers of India's ancient culture, for example, learned about the cosmos from scriptures like the Srimad-Bhagavatam, or Bhagavata Purana. But the Bhagavatam's descriptions of the universe often baffle modern students of Vedic literature. Here Bhaktivedanta Institute scientist Dr. Richard Thompson suggests a framework for understanding the Bhagavatam's descriptions that squares with our experience and modern discoveries.



Jambudvīpa: The *Srimad-Bhagavatam* describes that the universe lies within a series of spherical shells which is divided in two by an earth plane called Bhu-mandala. A series of *dvīpas*, or 'islands,' and oceans make up Bhu-

mandala. In the center of Bhu-mandala is the circular 'island' of Jambudvipa (inset), whose most prominent feature is the cone-shaped Mount Meru.

The main illustration here shows a closer view of Jambudvipa and the base of Mount Meru.

The *Srimad-Bhagavatam* presents an earth-centered conception of the cosmos. At first glance the cosmology seems foreign, but a closer look reveals that not only does the cosmology of the *Bhagavatam* describe the world of our experience, but it also presents a much larger and more complete cosmological picture.

The *Srimad-Bhagavatam's* mode of presentation is very different from the familiar modern approach. Although the *Bhagavatam's* "Earth" (disk-shaped Bhu-mandala) may look unrealistic, careful study shows that the *Bhagavatam* uses Bhu-mandala to represent at least four reasonable and consistent models: (1) a polar-projection map of the Earth globe, (2) a map of the solar system, (3) a topographical map of south-central Asia, and (4) a map of the celestial realm of the demigods.

Caitanya Mahaprabhu remarked, "In every verse of *Srimad-Bhagavatam* and in every syllable, there are various meanings." (*Caitanya-caritamrita, Madhya 24.318*) This appears to be true, in particular, of the cosmological section of the *Bhagavatam*, and it is interesting to see how we can bring out and clarify some of the meanings with reference to modern astronomy.

The Bhagavatam Picture at First Glance

The Fifth Canto of the *Srimad-Bhagavatam* tells of innumerable universes. Each one is contained in a spherical shell surrounded by layers of elemental matter that mark the boundary between mundane space and the unlimited spiritual world. The region within the shell (Figure 1) is called the Brahmanda, or "Brahma egg." It contains an earth disk or plane—called Bhu-mandala—that divides it into an upper, heavenly half and a subterranean half, filled with water. Bhu-mandala is divided into a series of geographic features, traditionally called *dvipas*, or "islands," *varshas*, or "regions," and oceans. In the center of Bhu-mandala (Figure 2) is the circular "island" of Jambudvipa, with nine *varsha* subdivisions. These include Bharata-varsha, which can be understood in one sense as India and in another as the total area inhabited by human beings. In the center of Jambudvipa stands the cone-shaped Sumeru Mountain, which represents the world axis and is surmounted by the city of Brahma, the universal creator.

To any modern, educated person, this sounds like science fiction. But is it? Let's consider the four ways of seeing the *Bhagavatam's* descriptions of the Bhu-mandala.

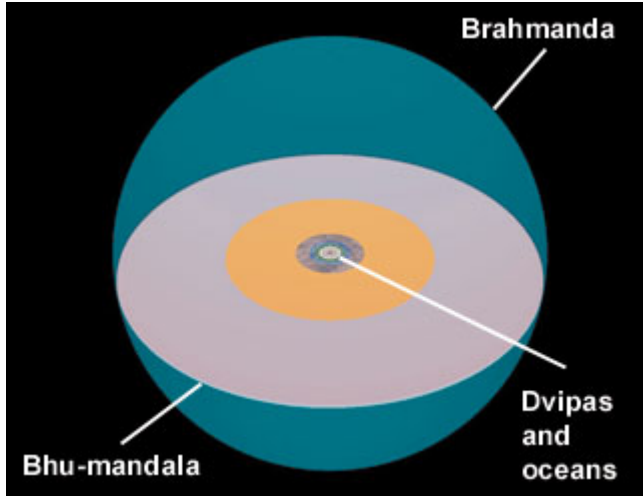


Figure 1

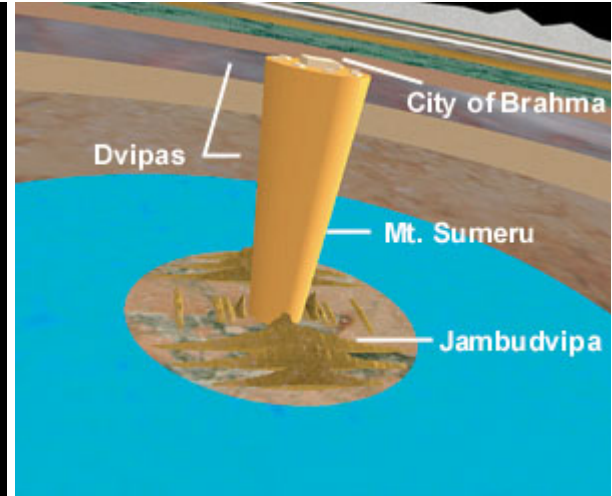


Figure 2

We begin by discussing the interpretation of Bhū-maṇḍala as a planisphere, or a polar-projection map of the Earth globe. This is the first model given by the *Bhagavatam*. A stereographic projection is an ancient method of mapping points on the surface of a sphere to points on a plane. We can use this method to map a modern Earth globe onto a plane, and the resulting flat projection is called a planisphere (Figure 3). We can likewise view Bhū-maṇḍala as a stereographic projection of a globe (Figure 4).

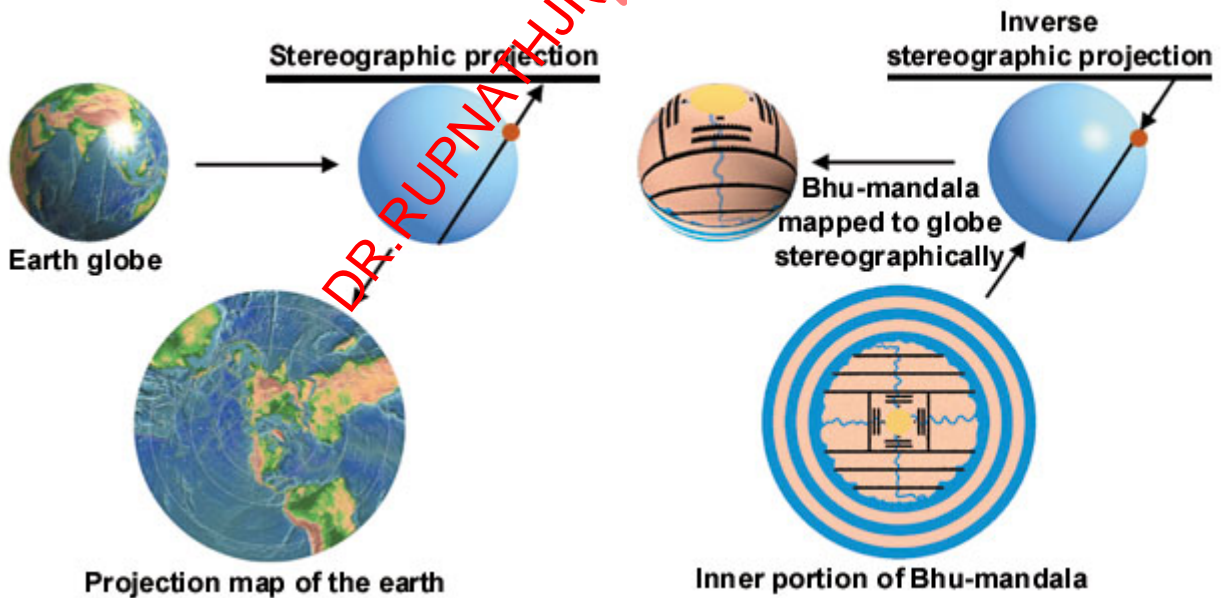


Figure 3

Figure 4

In India such globes exist. In the example shown here (Figure 5), the land area between the equator and the mountain arc is Bharata-varsha, corresponding to greater India. India is well represented, but apart from a few references to neighboring places, this globe does not give a realistic map of the Earth. Its purpose was astronomical, rather than geographical.

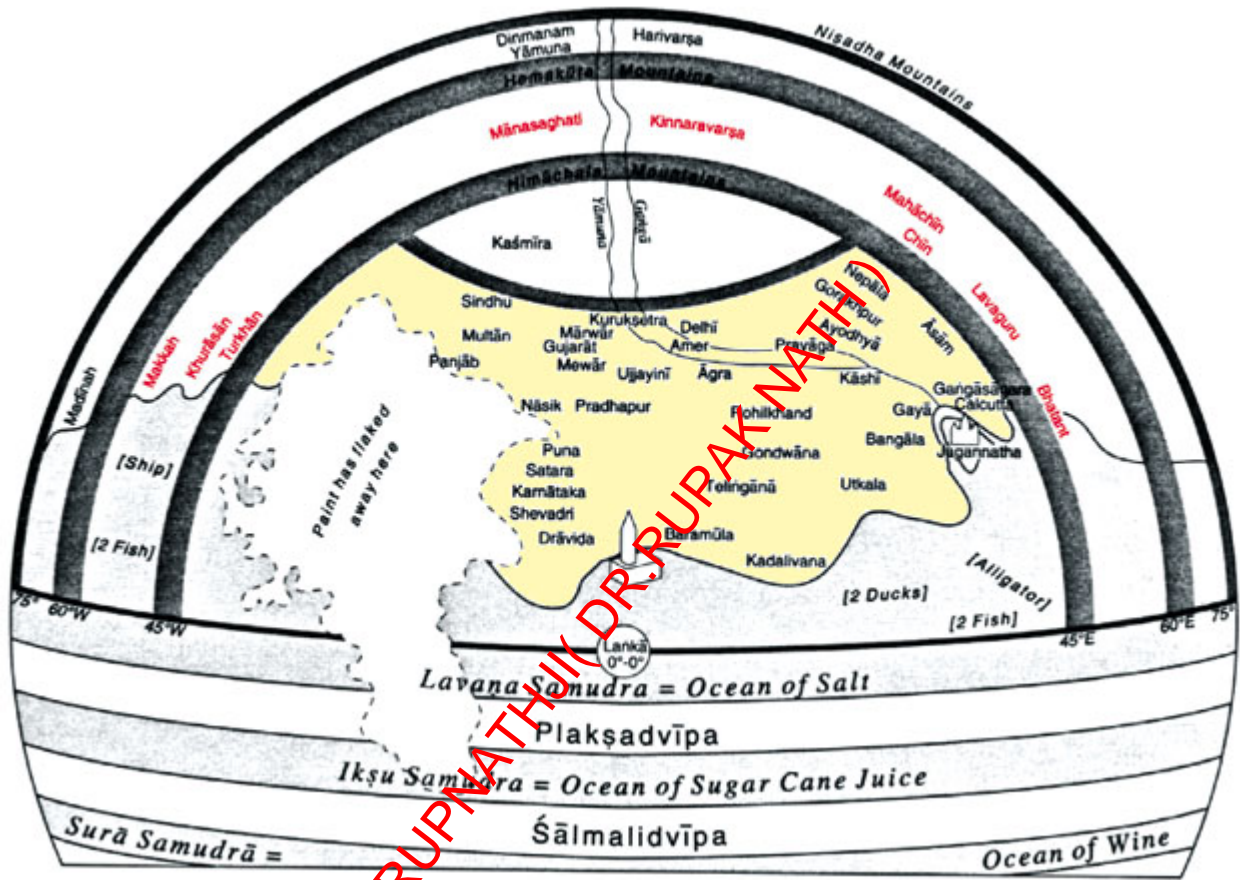


Figure 5

Although the *Bhagavatam* doesn't explicitly describe the Earth as a globe, it does so indirectly. For example, it points out that night prevails diametrically opposite to a point where it is day. Likewise, the sun sets at a point opposite where it rises. Therefore, the *Bhagavatam* does not present the naive view that the Earth is flat.

We can compare Bhū-maṇḍala with an astronomical instrument called an astrolabe, popular in the Middle Ages. On the astrolabe, an off-centered circle represents the orbit of the sun—the ecliptic. The Earth is represented in stereo graphic projection on a flat plate, called the mater. The ecliptic circle and important stars are represented on another plate, called the rete. Different planetary orbits could likewise be represented by different plates, and these would be seen projected onto the Earth plate when one looks down on the instrument.

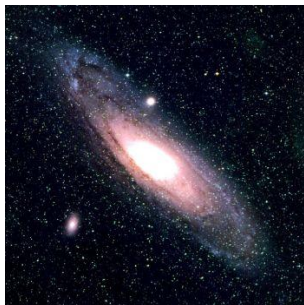
The *Bhagavatam* similarly presents the orbits of the sun, the moon, planets, and important stars on a series of planes parallel to Bhu-mandala. Seeing Bhu-mandala as a polar projection is one example of how it doesn't represent a flat Earth.

The Cosmology of the Bhagavata Purana



Thus Bharata-varsha represents India. The same can be said of many mountains in Bharata-varsha. In particular, the *Bhagavatam* places the Himalayas to the north of Bharata-varsha in Jambudvipa (Figure 11).

The Cosmology of the Bhagavata Purana - III



(Caitanya-caritamrita, Madhya 24.318) This appears to be true, in particular, of the cosmological section of the *Bhagavatam*, and it is interesting to see how we can bring out and clarify some of the meanings with reference to modern astronomy.

Let's begin this final part from where we left - namely, the beautiful picture that we selected in the part 5 of this series to illustrate the use of the sphere as a derivation of the circle and a likely representation of both the Center of the World and the World Axis.



The Garden of Earthly Delights by Hieronymus Bosch (covers)

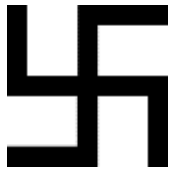
Note that this derivation is particularly relevant in the case of a rotating circle, where time becomes a factor to consider. Here, the symbolic meaning will be exactly the same for both the circle and the sphere, as the two of them evoke the role of the immutable Principle with regard to the universal manifestation - yet while with the circle it is the center, with the sphere it is the axis that serves in that role. See below for a remarkable example of this.

And it should also be noted that when the sphere, terrestrial or celestial, completes its revolution around its axis, there are two points on it which remain fixed: the poles, the axis' ends or points where it meets the sphere's surface. That is why the idea of Pole is also an equivalent to the idea of Center. By the way, the Pole symbolism, sometimes adopting very complex forms, can be found in all traditions - it even has an important role in them. If the majority of the modern scientists have not noticed this, it is just another proof that they lack real understanding of symbols. We have already seen this to be the case of the swastika, which likewise has never been recognized as a symbol of the Pole but unfortunately received the most fantastic interpretations. In this regard, both considering it a symbol of fire - from the idea that the swastika was a primitive tool for producing it - and seeing it a symbol of the Sun are wrong or, at least, insufficient interpretations.



The 'Samarra bowl' with a reconstructed swastika at its center. The fact that it is drawn on an island-like background and the rotation suggested by the design clearly indicates a polar origin (Photo: Wikipedia)

Other interpretations are better in that they perceive in the swastika the idea of movement. However, even this is not enough, as it is not any movement but a rotating motion around an immutable center that takes place - and this fixed point is precisely the essential element referred to by the symbol. In fact, all other meanings attributed to it are derived from that one: the Center sets everything in motion and since motion represents life, the swastika becomes a symbol of life or, more exactly, of the vivifying role of the Principle with regard to the cosmic order. (Guénon: "The Idea of the Center in Ancient Traditions".)



The swastika

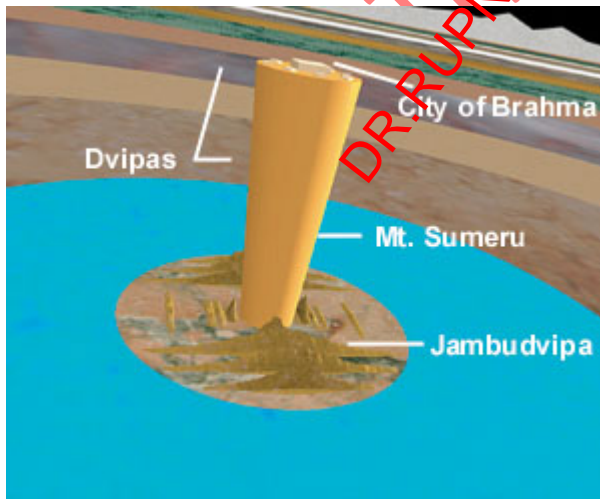
Now if the Swastika is related to the rotation of a sphere, such as the celestial sphere, around its axis, and not anymore to a revolving circle, then the symbol must be considered to be drawn on the equatorial plane, in which case the central point will be the projection of the axis onto that plane, which is perpendicular to it. A symbolic representation of this can be seen clearly in the image below.



The Yggdrasil, or World Ash, served as an image of the world axis. In Norse mythology, it was the site where Odin found enlightenment.

Here we are back to the representation of the earth as the "world egg," that ancient, universal symbol of the cosmos which cyclically dies and is renewed and is actually very similar to the one of the Phoenix bird that rises from its ashes.

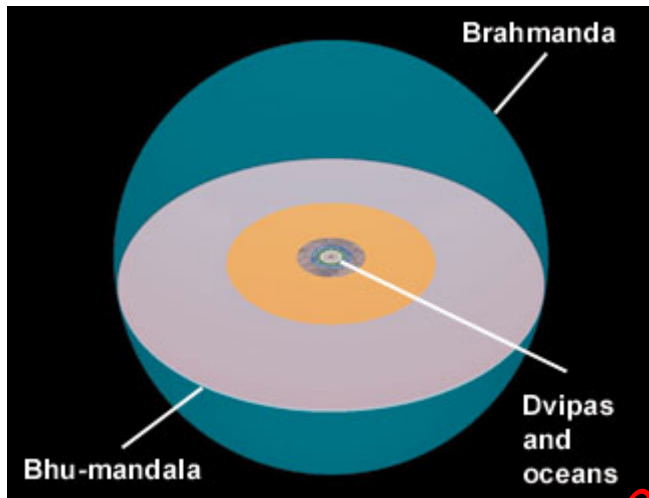
And this representation of the Earth as the "world egg" can be extended to the entire cosmos. For example, according to 5th Canto of the Srimad-Bhagavatam, a precious, monumental Hindu scripture, the universe lies within a series of spherical shells divided in two by an earth plane called Bhu-mandala. A series of dvipas, or 'islands', and oceans make up Bhu-mandala.



In the center of Bhu-mandala is the circular "island" of Jambudvipa, with nine varsha or subdivisions. These include Bharata-varsha, which can be understood in one sense as India and in another as the total area inhabited by human beings. In the center of Jambudvipa

stands the cone-shaped Sumeru Mountain, which represents the world axis and is surmounted by the city of Brahma, the universal creator.

And this is not all. According to the same scripture, there are innumerable universes, and each one is contained in a spherical shell surrounded by layers of elemental matter that mark the boundary between mundane space and the unlimited spiritual world. See below for a graphic representation of this.



The cosmic shell is called the Brahmanda, or "Brahma egg." It contains an earth disk or plane - called Bhū-maṇḍala - that divides it into an upper, heavenly half and a subterranean half, filled with water.

So far we have only seen the Center as the Principle of everything: but if it is a starting point, it also is a point of arrival. In effect, everything has come from that Center, and everything must ultimately return to it. And since all things only exist because of the Principle, without which they could not possibly subsist, then there must be between it and them a permanent connection, figured by the radios, or spokes, that unite all the points of the circumference to it.



An eight-spoked 'Wheel of Life' or Dharma chakra found in Lhasa, Tibet

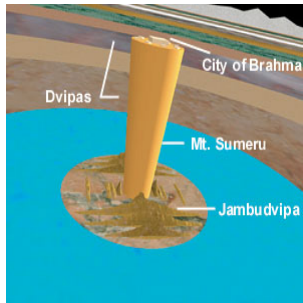
These radios, on the other hand, can be travelled in the two opposing directions: firstly from the center to the circumference, and then from the circumference to the center. These are complementary-like phases, the first of which is represented by a centrifugal motion and the second by a centripetal motion.

For their part, these two phases can be compared to those of breathing, according to a symbolism frequently referred to by the Hindu doctrines, and - through a not less remarkable analogy - with the physiological function of the heart: in effect, starting from it, the blood spreads out through the body giving it life and then returns to the heart, which in as much as the center of the human body entirely corresponds to the idea which, in a general way, we must make of the Center in the plenitude of its signification. (Guénon: "The Idea of the Center in Ancient Traditions" .)

There are other important aspects with regard to all this that we cannot expound here for lack of space; however, we can still mention that the Center is not only the Principle but also the End of all things; it is, according to a well-known symbolism, the Alpha and the Omega. Still better, it is the principle, the middle and the end; and these three aspects are represented by the three elements of the monosyllable AUM, which by virtue of one the most amazing concordances, is common to both the ancient Hindu tradition and the Christian medieval esotericism: in both cases, a

symbol of the Word - the true and real "Center of the World" to which all beings, who depend on their Principle in all that they are, aspire - either consciously or unconsciously - to return.

Sacred Science



That space is the World in the broadest sense of the word - the grouping of all the beings and states of existence that make up the cosmic manifestation.

We started this series on symbolism with the circle as a symbol of the world (and variously of the cosmos, the universe, etc) and with its center, in as much as an image of the Center of the Universe, as a symbol of God as the Principle of everything else.



The center of the circle, on the other hand, is the only element in it that is immutable and hence the only point that is 'real' in metaphysical terms, as corresponds to an Absolute Principle that is essentially the point of equilibrium of everything else in the world. This 'everything else', on its part, is to be considered as ever rotating around the center, which introduces the idea of time into the equation - thus somehow making us depart from the metaphysical realm of the Absolute, as represented by the center, to enter into the cosmological realm of the Relative - in terms of the old scholastic philosophy, the 'realm of this world'.

However, there is another way to represent this opposition, or rather complementarity, between the metaphysical and the cosmological realms - or in more familiar terms, between the realms of 'Above' and 'below'.

In effect, if a circle's circumference can represent time, and more specifically cyclic time, then if we divide that circle into its lower and upper halves, they will respectively represent the darker part of a cycle, for example the night in the course of a day and the fall and the winter season of a year, and the luminous part of that

cycle, for example the diurnal hours of a day and the spring and the summer season of a year. Something like *yin* and *yang*, only specifically referred to time.



Below Above

Now one of the most fascinating characteristics of a symbol, as seen in a previous part of this series, is the multiplicity of meanings that it can convey to the observer. For example, the lower half of a circle will also be apt to variously represent the Earth and everything it contains, and more specifically a vessel, any kind of vessel, as corresponds to the microcosmic level; also, it is known to be one of the oldest symbols for the human heart (though not necessarily with a dot, but if so, the dot will represent the divine spark, or God, who dwells in it and radiates life and love to the entire body), and finally, an arcane symbol of the Holy Grail. But in general, it will always be a symbol of earthly things and above all, of those apt to contain valuable objects, as properly corresponds to its form and to the term 'below'.

As to a circle's upper part, it will represent the sky and everything it may contain and, above it, the spiritual sky, or the Heavenly Realm, as properly corresponds to its dome-shaped form; while in the microcosmic level it will be a symbol of a human head and also, on top of it, of the *brahmada* or *sahasrara* - the highest *chakra* or wheel, in Sanskrit - also called 'fontanel'.

The most fascinating part in all this, however, is that the lower half of the circle has from old also been a symbolic representation of Noah's Ark, the sacred vessel that during the biblical Flood was a shelter for not only a couple of all living animals on Earth, as the account in Genesis states, but also, according to certain esoteric sources, for the arcane treasure of divine knowledge that subsisted at the end of the dark cycle. In effect, legend has it that this knowledge was kept from harm from the dark forces by carrying it over the ocean and safely delivering it into the new, luminous Golden Age represented, of all possible symbols, by the Rainbow in the form of the upper half of the circle - symbolizing God's promise to humans in Genesis, 9:13, that the world would never more be destroyed by water. (1)



Noah's Ark Rainbow

In all this, the dot is the Germ or essential principle of all things and more specifically the esoteric, divine knowledge saved from the abyss of mundane ignorance during the dark times; and for its part, the line that divides the circle into its upper and lower halves represents the surface of the waters in the biblical sense.

It is to be noted that the same complementariness is frequently represented by an equilateral triangle pointing upwards as a symbol of Heaven and the human mind, and

by the same equilateral triangle but pointing downwards as a symbol of the Earth and the human heart sometimes of the Netherworlds, with the added circumstance that if united, the two equilateral triangles will then form a hexagram. In this case, the dot will be absent in both triangles save that it has been replaced in either one by an eye, for example, an eye like the 'All Seeing Eye' that we have recently studied (see here); and this eye will somehow give to either symbol a different connotation respectively corresponding to a divine or an earthly or even a demonic character, as the case may be.



The hexagram

Back to the circle, let me now talk about a logical derivation from all this. If instead of the rotation of a circumference around a circle we consider that of a sphere around a fixed axis, the symbolic meaning will be exactly the same, though now referred to the terrestrial and the celestial spheres and their relation to the immutable Poles. This is the reason why the representations of the world axis, or '*Axis Mundi*', are so important and so frequently seen in all ancient traditions - with the added circumstance that while the general idea is essentially the same than the one behind the symbols of the center of the world, they nonetheless more directly evoke the role of the immutable Principle with regard to the universal manifestation than the other aspects in which the Center can be equally considered.

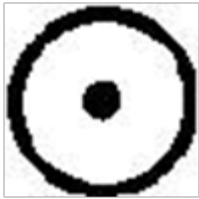
However, this all-new and interesting derivation will be the subject matter for the next and final part of this series, where our study will rather focus on the **symbolism of the Pole**. In the meantime, I will leave you with a picture of a beautiful painting by Hieronymus Bosch for a taste of what you will be able to see there.

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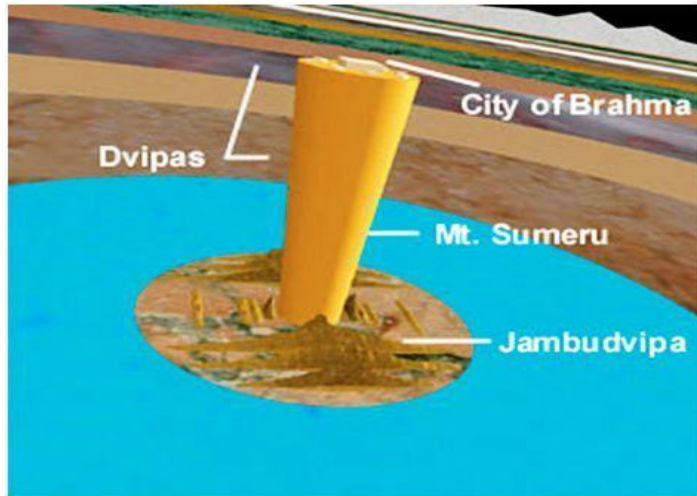


Hieronymus Bosch - *The Garden of Earthly Delights*

As you know, an appropriate symbol can be a great support not only for meditation but also in the elucidation of virtually all matters, however abstruse. For example, we already know that the circle below, one of the oldest symbols in human history, can be said to represent the World, and that the dot at its center can be seen as the world's First Principle or God; but it can also be said to represent Paradise in the middle of the Earth.



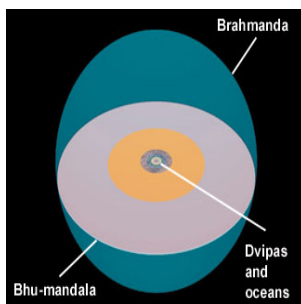
On the other hand, if you look at the circle from above, the dot at its center can also be figured as the apex of a cone and not only as the center of a circle. In effect, from above, a cone will look like a circle and it now can be said to represent Mount Meru, which according to Hindu scriptures had on its top the so-called Brahma's Paradise at the beginning of the current cycle of Humanity. So Paradise can be said to be situated both inward (if in a circle) and upward (if on a cone).



At the center of Bhū-maṇḍala is a version of Mount Meru as an inverted cone and at the top of it is the "City of Brahma", a representation of the primeval paradise.

If you now regard the same circle and the cone as also symbols of a person in meditation, the images become even clearer. The higher you rise in meditation, the deeper you enter into your innermost being. Here the image of a yogi in meditation comes handy, as it perfectly illustrates both his going upward into his crown chakra, and inward into his own self.

Sacred Science V



The center of the circle, on the other hand, is the only element in it that is immutable and hence the only point that is 'real' in metaphysical terms, as corresponds to an Absolute Principle that is essentially the point of equilibrium of everything else in the world.

Now, you may also want to read...

Sacred Science I



Consider for example a circle, one of the simplest symbols. To a neophyte of the old Egyptian or Mayan cultures it could be just a circle, but if accompanied by rays, it would be the Sun.

In the second part of this series we saw how a circle representing the world can be made into a pure metaphysical notion by adding a dot at its center; and how this Center (now with a capital letter) can be said to be a perfect image and ideal representation of God as the Absolute Principle from which, as if by means of radios emanating from it, all material things are manifested.



In this way, and elaborating further on the symbol, the notion of space is introduced and God - himself devoid of any spatial or temporal attributes - can be seen as filling - actually creating, and henceforward maintaining - that very same space by his radiation. That space is the World in the broadest sense of the word - the grouping of all the beings and states of existence that make up the cosmic manifestation.



We saw in turn how time may be brought into the equation also by means of radios that divide the circumference of the circle into so many parts as periods of time they represent.

They may be four in number and as was said in [Part 2](#), each one of them will then represent one of the four parts of the day, one of the four seasons of the year, or one of the four ages of mankind or *yugas* in the traditional sense, and so on. But whether the circle represents God, or the world, or time, it is still its Center, and its relation to the circumference, that are essential.

And why are they essential? Again, because a circle cannot exist without a center and since the radios originate in it, they only can accentuate such essentiality. In effect, can you imagine a wheel without a hub? No need to answer, you can't.

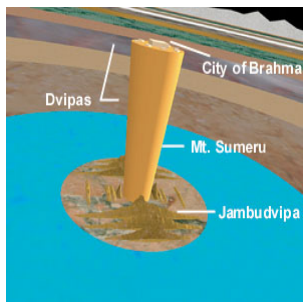
Apart from the “quartered” circle, which more specifically symbolizes time in its cyclic or ‘circular’ mode, here are other instances of symbols originated in the circle. They are, from left to right, the circle with six radios (the ‘Wheel of Life’ of Buddhism), the circle with eight radios (the ‘chakra’ of Hinduism and Buddhism), and the (unfortunately infamous) Swastika, here in one circular version. Note that at this time I am only showing them, lest we deviate from the main subject in this particular exposition. Full descriptions and explanations will be given in the next part of this series.



And, there also are the radios themselves to consider. Note that they can also be regarded as infinite in number, which will additionally help figure out how they actually fill out and, in fact, create the intermediate space (i.e. the World) between the center of the circle (God), from which they emanate, and its circumference. So other than the radios acting as mere subdivisions (usually in number of four) of a circle that represents cyclic time, if now they are rather viewed as individually connecting its center with its circumference and vice versa, their new, essential role becomes readily apparent: they quite naturally become the channels or conduits that, regardless of their number, communicate the two of them, somehow expressing the real and profound nature of their mutual relationship as one of absolute subordination from the circumference to the Center.

Now, you may also want to read...

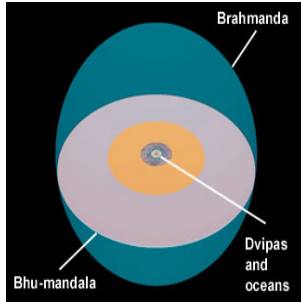
[Sacred Science IV](#)



For example, we already know that the circle below, one of the oldest symbols in human history, can be said to represent the World, and that the dot at its center can be seen as the world's First Principle or God; but it can also be said to represent Paradise in the middle of the Earth.

Also...

[Sacred Science V](#)



The center of the circle, on the other hand, is the only element in it that is immutable and hence the only point that is 'real' in metaphysical terms, as corresponds to an Absolute Principle that is essentially the point of equilibrium of everything else in the world.

Consider, for example, the same circle with a dot in its center of the previous post. Using now a more abstract terminology, the dot in the center will represent the Principle, and the circle will represent the World.

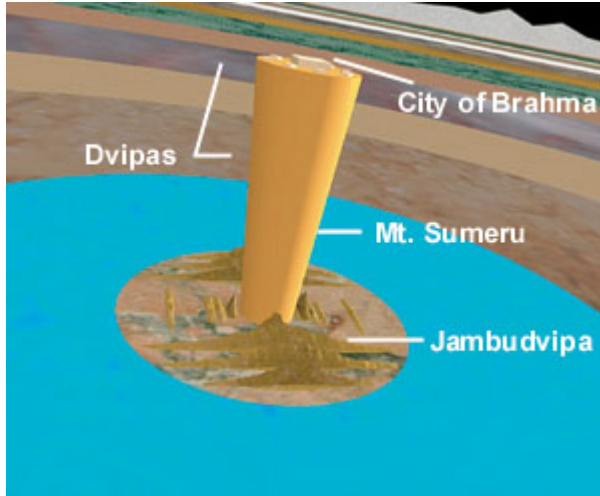


It is true that the dot in the center of a circle has been regarded from old as an image of the Sun, which it is in fact, since in a physical sense the Sun is the Center, or "the Heart", of the World; and this is the reason why this figure is even today the astrological sign of the Sun. But against the archaeologists' view which only sees this meaning in it, it actually has a far more vast and profound connotation, as from the viewpoint of all of the ancient traditions, the Sun is but another symbol of the true world center- that is, the Divine Principle.

With this, it becomes clear what the relation between the center and the circumference, or whatever they may represent, is one of subordination from the latter to the former, since the circumference cannot possibly exist without its center, while the center is absolutely independent from the circumference.

Sometimes the dot can be surrounded by several concentric circles, in which case they will represent the various states or degrees of manifestation hierarchically arranged according to their greater or lesser distance from the center.

Such is the case with, for example, the schematic representation of Jambudvipa of the ancient Hindu tradition, which can be said to represent from ancient India to the Earth to the Solar system to our galaxy, all in one. See below for an image and description of it.



In the center of **Bhu-mandala** is the circular "island" of Jambudvīpa, with nine varsha or subdivisions. These include Bharata-varsha, which can be understood in one sense as India and in another as the total area inhabited by human beings. In the center of **Jambudvīpa** stands the **cone-shaped** Sumeru Mountain, which represents the world axis and is surmounted by the city of Brahma, the universal creator.

Now if the circumference in a circle is represented as traveled in a given direction, it will become the image of a cycle of manifestation such as the ones found in the Hindu tradition and other traditions from both the Old and the New World

Also, if the circumference is connected to the center by radii in the manner of the strokes of a wheel, the relation becomes even more explicit. Such is the case with the quartered circle below - the simplest of them all - or, for that matter, with any circle with any number of radii.



Consider for example a circle, one of the simplest symbols. To a neophyte of the old Egyptian or Mayan cultures it could be just a circle, but if accompanied by rays, it would be the Sun. To another, more advanced person, it would represent the Light. But to yet another student it could simply mean God (if not the cosmos itself), whether it had rays around it or not.



Now if the circle had a dot in its center, it would pass to represent the universe with a central Sun illuminating it; or even, on a still higher level of knowledge, with God

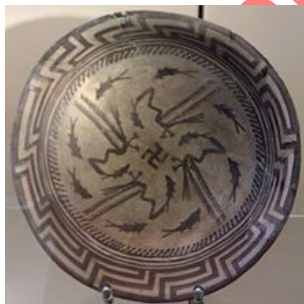
himself supporting and nurturing the whole cosmos from that center - that is, God himself being that center. And yet another wiser, highly advanced person would realize that that circle's circumference could represent the myriads of creatures at its periphery being nurtured by that Supreme God, as if through multiple communicating lines radiating from him, with his own Spirit.



A person of real knowledge and keen metaphysical vision would next understand that everything in this world is a symbol of a greater, higher reality. He would clearly see that as we all have an earthly father and mother who have procreated and nurture us, so the whole material world must also have a father and a mother who have created and nurture it. Then on a certain deeper level, that Father will be Heaven and that Mother will be the Earth to him. And so, from realization to realization, and whether or not assisted by an instructor, the truth will ultimately dawn on him that not only is out there a Supreme God who is both our Father and Mother, but that that Supreme God, who at the same time is our Father and Mother, also lives in our hearts. And how will such an enlightened soul have arrived at such supreme metaphysical truth? Quite simply, by imagining that the circle can also represent us as individuals, and therefore that in the center of that circle, one that is actually our own center is God.

Now, you may also want to read...

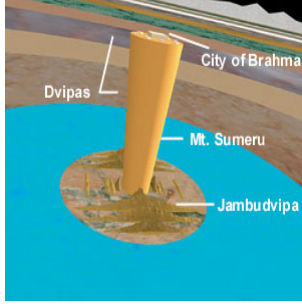
[Sacred Science - II](#)



Now if the circumference in a circle is represented as traveled in a given direction, it will become the image of a cycle of manifestation such as the ones found in the Hindu tradition and other traditions from both the Old and the New World

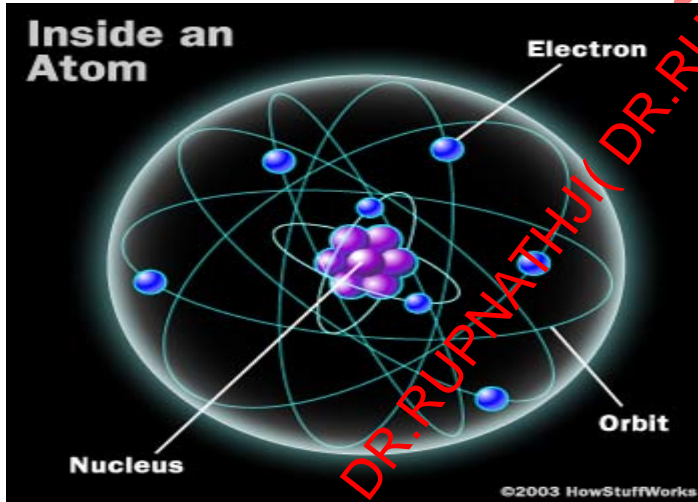
Also...

Sacred Science III



That space is the World in the broadest sense of the word - the grouping of all the beings and states of existence that make up the cosmic manifestation.

Atoms in vedas(Short Description)



*maitreya uvāca caramaḥ sad-viśeṣāṇām
aneko 'samūtaḥ sadā paramāṇuḥ sa vijñeyo
ṛṇām aikya-bhramo yataḥ*

Bhagavad purana3-11-1

The material manifestation's ultimate particle, which is indivisible and not formed into a body, is called the atom. It exists always as an invisible identity, even after the dissolution of all forms. The material body is but a combination of such atoms, but it is misunderstood by the common man.

sata eva padārthasya svarūpāvasthitasya yat

kaivalyam' parama-mahān aviśeṣo nirantaraḥ

Bhagabad purana 3-11-2

Atoms are the ultimate state of the manifest universe. When they stay in their own forms without forming different bodies, they are called the unlimited oneness. There are certainly different bodies in physical forms, but the atoms themselves form the complete manifestation.

- [About](#)

Embryology - Vedas



*kalalam' tv eka-rātreṇa pañca-rātreṇa budbudam
daśāhena tu karkandhūḥ peśy aṇḍam' vā tataḥ param
bhagavad purana 3-31-2*

On the first night, the sperm and ovum mix, and on the fifth night the mixture ferments into a bubble. On the tenth night it develops into a form like a plum, and after that, it gradually turns into a lump of flesh or an egg, as the case may be.



"māsenā tu śīro dvābhyām bāhv-aṅghry-ādy-aṅga-vigrahaḥ nakha-lomāsthi-carmāṇi liṅga-cchidrodभवः tribhiḥ
bhagavad purana 3-31-3

In the course of a month, a head is formed, and at the end of two months the hands, feet and other limbs take shape. By the end of three months, the nails, fingers, toes, body hair, bones and skin appear, as do the organ of generation and the other apertures in the body, namely the eyes, nostrils, ears, mouth and anus.

"caturbhir dhātavaḥ sapta pañcabhiḥ kṣut-tīd-udbhavaḥ
ṣaḍbhir jarāyuṇā vītaḥ kuḥṣau bhrāmyati dakṣiṇe
bhagavad purana 3-31-4

Within four months from the date of conception, the seven essential ingredients of the body, namely chyle, blood, flesh, fat, bone, marrow and semen, come into existence. At the end of five months, hunger and thirst make themselves felt, and at the end of six months, the fetus, enclosed by the amnion, begins to move on the right side of the abdomen

Scientific Date Of Mahabharata War - Grand Finale

PLUTO (was also known to Vyas in 5561 B.C)

Krittikaam Peedayan Teekshnaihi Nakshatram.....[30-Bheeshma.3]

Vyas states that there was one Nakshatra, i.e, some immobile luminary troubling Krittika (Pleides) with its sharp rays. This "star" in Krit - tika must have been some "planet". It must have been stationary for many years, that is why Vyas called it Nakshatra which means a thing that does not move according to Mahabharata itself [Na Ksharati Iti Makshatram].

Hence the Nakshatra was a planet moving very slowly like Pluto which takes nine years to cross one Nakshatra of 13 degrees. This Nakshatra was Pluto gets confirmed by B.O.R.I (Bhandarkar Oriental Research Institute?) Edition which states thus :

Krittikasu Grahasteevro Nakshatre Prathame Jvalan..... [26- Bhisma.3]

Some editions mention 'Grahasteevra'. Thus Teevra, Teekshana and Nakshatra are the names of one and the same planet (graha) which was in Krittika in 5561 B.C. Let us see if Vyas has given these names to Pluto and if Pluto was in Krittika. It is stated that Krittika was troubled with sharp rays by that planet - this indicates that it was Nirayan Krittika.

Pluto was at 175 degrees in 1979. It takes 248 years per rotation. $1979 + 5561 = 7540$ years. 7540 divided by 248 gives 30.403223 turns. 0.403223 turn means 145 degrees. $175 - 145 = 30$ degrees. This is the site of Krittika. Thus it is proved beyond doubt that Vyas had mentioned the position of Pluto, which was discovered to the modern world in 1930.

Vyas could have used his Yogic Vision or mathematical brain or a lens or some other device to discover Teevra, Teekshna' or Nakshatra of Pluto.

Thus all the three so-called 'New' planets are discovered from Mahabharata. It is usually held that before the discovery of Herschel in 1781 AD, only five planets were known to the world. This belief is wrong because Vyas has mentioned 'seven Great planets', three times in Mahabharata.

Deepyamanascha Sampetuhu Divi sapta Mahagrahah....[2-Bhisma.17]

[Mahabharata War - Part 3](#)



There are 11 Nakshatras from Magha to Purvashadha. Hence it is seen that Shukacharya tells Parikshit that after 1100 years

Kaliyug will start. Kaliyug started at 3101 B.C. Hence $3101 + 1100 = 4201$ B.C. is the date of Parikshit.

The great design of nature is imprinted in each grain of Nature. Vedic Comprehension of this design conceptualises as Bindu "Sarowar". This grand unification of Trinity of Gods in each point reservoir of nature (Bindu Sarowar) may be viewed as the Trinity of Gods as first three folds and their unification as the fourth fold. In concrete terms, this amounts to 4-space playing the role of dimension for the organisational format of the great design of Bindu Sarowar and 5-space playing the role of boundary thereof and 6-space manifesting as their domain fold and 7-space as origin thereof.

It is this grand design which is availed by the Vedic scriptures to organise the pure knowledge. The aim of Manasara as well is to avail this grand design of nature. The 7-space flows as 7 streams of Divya Ganga from core of the Sun; the sun being the body of 6-space and its core being the 7-space as origin of 6-space. The Divya Ganga flow from core of the sun (6-space) takes to the Sanatana base (5-space in the role of boundary of 6-space).

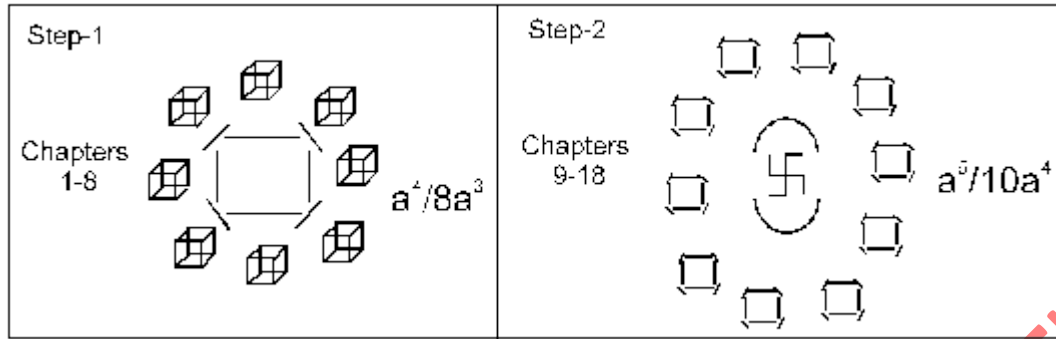
Being vibrant synthetic reality this flow is going to be of vibrant and synthetic as reality. It is going to be of two parts. Accordingly, the Jyoti flowing from core of the Sun shall be flowing into the Sanatana base on either side of the Sun. This would help us appreciate and comprehend the Jyoti flow of 7 streams into Sanatana base (5-space) as of $7 \times 5 = 35$ units on either side of the Sun and thereby we shall be having the flow rate of $35 + 35 = 70$ units. It is this flow rate which runs parallel to the first organisation for the knowledge of Manasara as of 70 chapters.

The whole range of organization of 70 chapters is in fact the organization of the great design of the Bindu Sarowar. This range with definite end points shall be making it a close range of $1 + 70 + 1 = 72$ units. This would completely wrap 6-space within 5-space boundary.

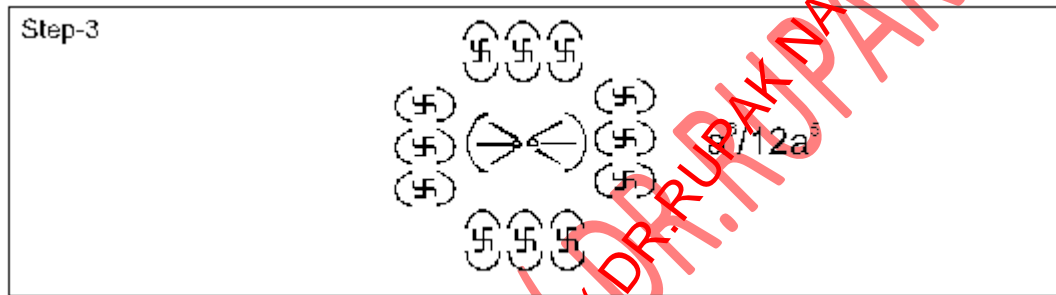
With the help of the geometric set up of hypercube-6 as representative body of real 6-space on synthetic format of di-monad i.e. monad of two parts would provide us domain-boundary ratio $A^6:12A^5$.

The complete Jyoti flow from core of the Sun (6-space) into the Sanatana base (5-space) as boundary of 12 components as through 6 dimensions of the Sun, (this flow) would be at the rate of $12 \times 6 = 72$ units. This also would help us comprehend and appreciate the sequential state of this organization in the sequential order of 2×1 , 2×2 , 6×3 , 8×4 , 10×5 & 12×6 of the atomic organization. In fact this six steps long sequential order would take us up till the nucleus of the nucleus of the atom. This also would help us comprehend and appreciate the Manasara accepting Lord Vishnu, the lord of 6-space as the god of the measuring-rod.

Now if we have a close look at the subject matter of the 70 chapters of Manasara, we shall be noticing that first 8 chapters constitute one topic. This is parallel to the boundary of hypercube-4 being of 8 components. Therefore the organizational format of the first 8 chapters of Manasara is the format of 8 components of boundary of hypercube 4. The next 10 chapters constitute one topic. This is parallel to 10 components boundary format of hypercube-5.

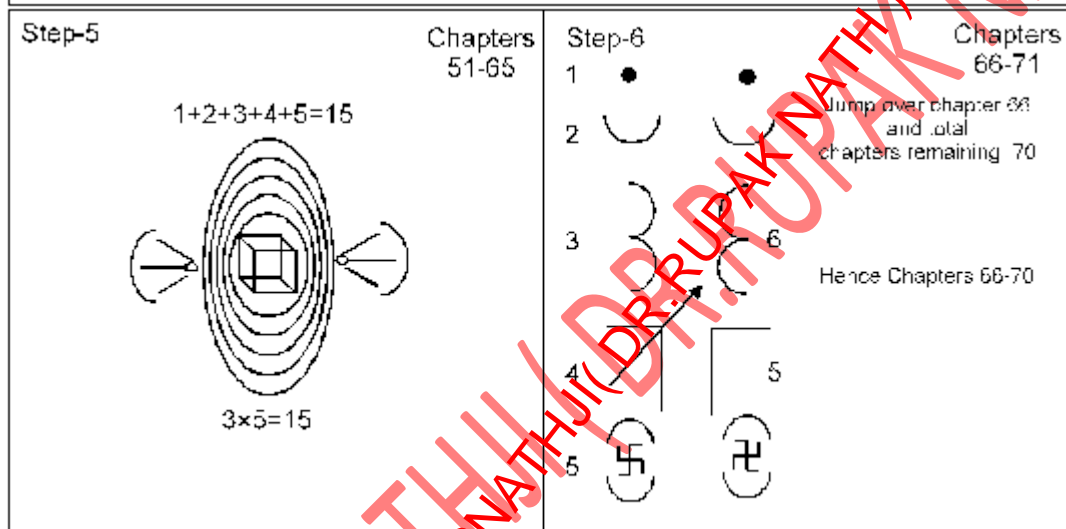
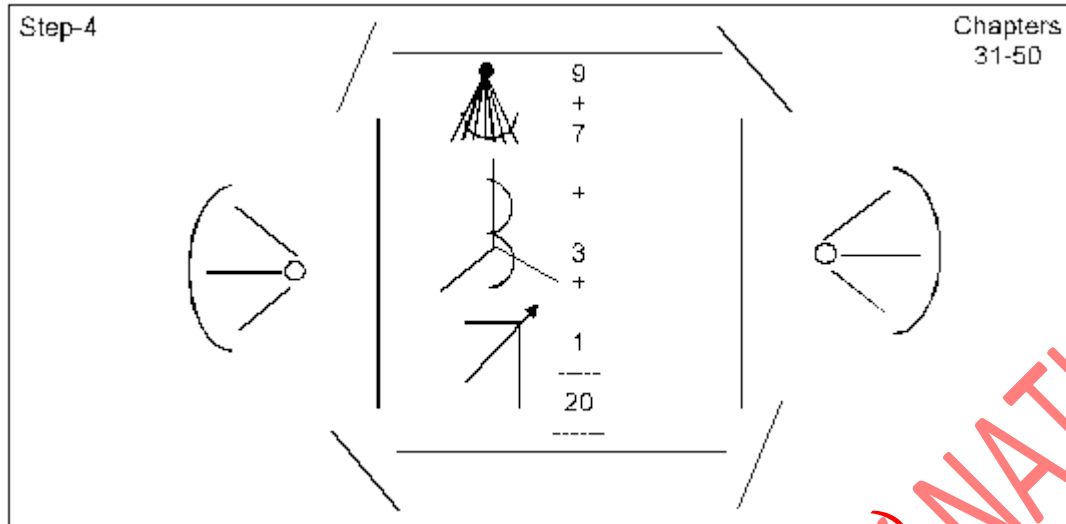


The next set of 12 chapters i.e. chapter 19 to 30 topically take up one story building to 12 storied building. This is parallel to the 12 components boundary of hypercube-6. With this we shall be reaching the state where we have to tap the Jyoti flow from the core of the Sun.



The Sun is a body of 6-space. Six space in the role of dimension shall be taking us uptill 9-space in the role of origin. In fact this Jyoti Bindu flowing from the core of the Sun is accepting 6-space (Sun) as dimension, 7-space (Sapt-rishi) as boundary, 8-space (Asht-prakriti) as domain and 9-space (Nav Brahm) as origin. This 4 folds Jyoti Bindu flow is the Divya Ganga flow of 4 folds. Jyoti Bindu flow is the Divya Ganga flow of 4 folds on the format of Om as formulation of 4 components, first as the Bindu Sarowar of Nav-Brahm as of 9 units, the second component of Ardha-Matra as of 7 units, the third component as Tri-Pundarm of 3 units and fourth component as Swastik Pada as of 1 unit. Total being of 20 units.

And these 20 units flow would be on either side and as such we shall be having $20+20 = 40$ unit flow which shall be covering the remaining range of 40 chapters. Topically the 20 chapters from chapter 31 to 70 would be completing one topic. The organization of the remaining 20 chapters would get a division, in the context of Manasara as of 15 chapter and 5 chapters.



I have worked out the details of organizational format of Manasara as 138 graphics as separate compilation under Vedic Geometrical Series as a treatise for Indian Institute of Mahraishi Vedic Science & Technology. These graphic plates of the organizational format of the Manasara take up the organization right upto the verses and even subverses of each chapter. Of these, I am using them now to illustrate how the Manasara is availing geometric format of the great design of the nature in its each grain as a Bindu Sarowar where in Trinity of Gods unify.

As per this great design we are getting a great message as that from within the Bindu Sarowar flows a Jyoti Bindu Sarowar where the Sun, Sapt-rishi and Ashta-prakriti get unified with Nav-Brahm as the origin. This phenomenal emergence of Jyoti Bindu Sarowar from within the Bindu Sarowar is the transcendental transformation. This transcendental transformation phenomenon is at work which helps sequential attainment of consciousness state. Also this transcendental transformation phenomenon is at work which takes us from seed to the tree and tree to the seed as a life-span and a sequential generational flow.

The Jyoti flows from the core of the Sun into the Sanatana base at boundary of the Sun potentialised the 'boundary space' to play the dimensional role. With this 4-space dimensional order of the Sun transforms into the next generational order of 5-space in the role of dimension. It is this generational transformation from dimensional order of 4-space to the dimensional order of 5-space is the attainment through the Divya Ganga flow of Jyoti from core of the Sun. This would help us appreciate how the organization of chapters 51 to 55 i.e. the set of 15 chapters is one topic as $15=1+2+3+4+5$ which would be conversing the sequential range of 5-space. With this we shall be attaining 5-space and hence the remaining 5 chapters and scripture to end with the chiseling of the third eye of Lord Shiv, the overlord of real 5-space.

Vedic Model of vibrant synthetic reality of 5-space format is a multi-dimensional format of space and time. It takes account of transcendence through manifestation layers as flux of time. The transition from spatial dimensional order to the solid dimensional order is worked out as a flux of time of 4-space reality which takes us to 5-space reality.

In concrete terms, the dimensional order of manifested world being spatial, it attains transition in terms of solid dimensional order of time, being of solid dimensional order. The time flux crystallizes as a tri-monad i.e. the dimensional constituent i.e. monads as of three parts. This tri-monad format of time when supplied to the manifested bodies of the manifestation layers, it works out $(2n+1)$ versions of the manifested bodies. In geometric language, it simply means that the interval, square, cube and hypercube, as representative regular bodies of the respective dimensional space, in the roles of domain fold of respective manifestation layers, shall be accepting $(2n+1)$ versions or in other words, $(2n+1)$ geometries.

Illustratively for $n=1$, we shall be having 3 geometries of 1-space or in other words, we shall be having 3 versions of an interval designated as close interval, half-open interval and open interval. These versions of intervals are having common domain (length) and they differ only in terms of the boundary components (points). Close interval accepts 2 boundary points, while half-open interval accepts one boundary component and open interval is devoid of both the boundary points. For $n=2$, we shall be having 5 geometries of 2-space or in other words, we shall be having 5 version of a square in terms, of 4, 3, 2, 1 & 0 boundary lines and for $n=3$, we shall be having 7 geometries / versions of 3 space / cube in terms of 6, 5, 4, 3, 2, 1, 0 surface plates and so on.

Seven Geometries						
Geometry-1	Geometry-2	Geometry-3	Geometry-4	Geometry-5	Geometry-6	Geometry-7
G 3, -3	G 3, -2	G 3, -1	G 3, 0	G 3, 1	G 3, 2	G 3, 3

In 3-space, we shall be having 1-space as dimension. The flux of time would be of spatial order. 2-space admits 5 geometries. The 3 dimensions plus 5 versions would give us 3+5=8 order. In terms of it, we shall be attaining $8 = 2 \times 4$ i.e. 4 spatial dimensions which shall be constituting dimensional order of 4-space. This is how the spatial time flux shall be working out transition from linear dimensional order / space i.e. 3-space to spatial dimensional order / space i.e. 4-space. Likewise, in 4-space, we shall be having 2-space as dimension and 3-space as flux of time. 3-space admits 7 versions.

The dimensional order of 3-space admits 7 versions. The dimensional order of 4-space would yield 2×4 order. This 2×4 order plus 7 versions shall be yielding $8 + 7 = 15$ order. In terms of it we shall be attaining $15 = 3 \times 5$ i.e. 5 solid dimensions which shall be constituting dimensional order of 5-space. This is how the solid time flux shall be working out transition from spatial dimensional order space i.e. 4-space to solid dimensional order space i.e. 5-space.

Therefore for proper appreciation of vibrant synthetic reality of Vedic comprehension, we have to work out the Vedic Knowledge, the Vedic way. The geometric continuum is at play around us. The organizational format of Srimad Bhagwad Gita, the eternal song of Lord Krishna, makes complete use of real 6-space. This may be depicted as study-zone of Srimad Bhagwad Gita as under :

Srimad Bhagwad Gita
Study Zone

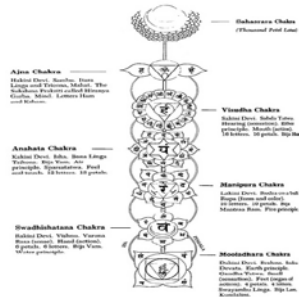
$a/2$	$a^2/4a$	$a^3/6a^2$	$a^4/8a^3$	$a^5/10a^4$	$a^6/12a^5$	$a^7/10a^4$	$a^4/8a^3$	$a^3/6a^2$	$a^2/4a$	$a/2$
—	□	◻	◻	卐	◻	卐	◻	◻	□	—
2×1 =2	4×2 =8	6×3 =18	8×4 =32	$10 \times 5 = 50$ $50 \times 7 = 350$	$10 \times 5 = 50$ $50 \times 7 = 350$		8×4 =32	6×3 =18	4×2 =8	2×1 =2
Orbitals				$350 + 350 = 700$						
2	6	10	14	$18 = 5 + 6 + 7$						

The organization of Manasara runs parallel to the study zone of Srimad Bhagwad Gita. This also runs parallel to the Shad Chakra format of Human body. The organizational format of nucleus of the nucleus as well avails this zone where Jyoti flows from core of the sun into the core of the Sanatana base as 7 streams. This flow is channelised on Om Formulation of 4 components as a Divya Ganga flow. This is a complete discipline in itself.

At present we may not be in a position to enter into the details of this Vedic discipline of channelization into the Sanatana base but it may not be out of context to make a mention that advanced students of Vedic Science and Technology have to learn about it.

Now, you may also want to read...

Vedas And Multidimension - I



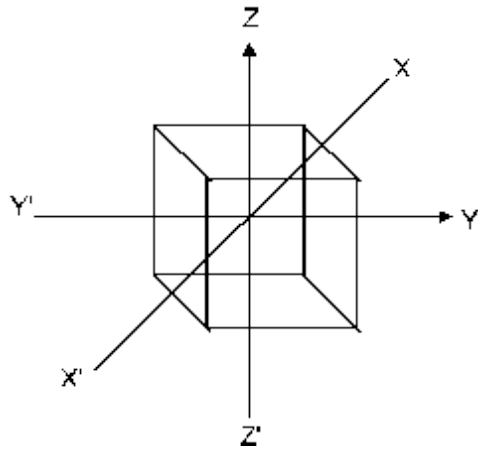
Taking point as a representative regular body of 0 space, interval, square and cube respectively as representative regular bodies of 1, 2 & 3 space, we may conclude that moving 0-space (body) accepts 1-space format, moving 1-space (body) accepts 2-space format; moving 2-space body.

Vedas And Multidimension - II



We may tabulate the following parallelism between the manifested idols of Trinity of Gods and the geometric set ups of hypercubes 4, 5 & 6 as geometric formats.

Since our school mathematics, we draw three axes as depicted below as three dimensions of three dimensional frame of three dimensional space.



The message is that we are accepting line as a dimension of 3-space and as such three lines together constitute a three dimensional frame. This in fact is a particular case of general rule that $(n-2)$ space plays the role of dimension of n -space. In modern mathematics as well mental constructs of higher dimensional spaces have been speculated but their dimension always remains a line i.e. 1-space. Obviously this concept is bound to recoil as it would make dimension and space indistinguishable at least in 1-space where 1-space is to be accepted as its own dimension. On the contrary, the rule of difference of space and its dimension as being of two units is well preserved in Ramayana as well as in Mahabharatam. The narrations are that when the Arm of Lord Rama chased Kag-Bhusandi a difference remained only of two Anguls till Brahman-lok. Likewise when Mother Yashoda tried to tie child Krishna, She found that every string was short by two Anguls.

The great message is that the 'measures' for the measuring rod are bound to be of two units less. The Manasara, the scripture of Sathapatyupved of Atharvved, accordingly accepts Lord Vishnu (six heads lord) as lord of measuring rod and Lord Brahma (four heads lord) as lord of measure. In geometric language it means that 4-space plays the role of dimension of 6-space.

Mythologically manifestations as idols, accepts head of the idol as format of dimension and eyes of the head together to synthesize a dimensional frame for the dimension.

FORMAT OF IDOLS

We may tabulate the following parallelism between the manifested idols of Trinity of Gods and the geometric set ups of hypercubes 4, 5 & 6 as geometric formats.

1	Number of heads	Number of dimensions of head
2	Head	Dimension of the space

3	Number of eyes in the head	Dimensional frame for the dimensions
4	Lotus (of 8 petals)	Hypercube-4
5	Lotus	Four space
6	Lotus seat	Hypercube-4 as domain
7	Lotus feet	Hypercube-4 as boundary
8	Lotus eye	Hypercube-4 as dimension

UPNISHADIC ENLIGHTNMENT

Upanishads and Purans particularly Sri Sri Brahm-puran, Shiv-puran and Vishnu-puran enlighten us about Trinity of Gods as:

Lord Brahma : Lord Brahma is a four heads lord with two eyes in His each head. He sits majestically on a lotus seat of eight petals. He meditates on His lord (Lord Shiv) in heart and transcends to Shivlok where He multiplies Himself as ten Brahmas of four heads each.

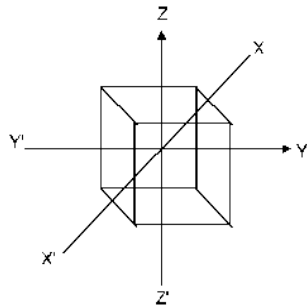
The geometric message of the enlightenment can be decoded in terms of the following complete parallelism between the idol of Lord Brahma and geometric setup of Hypercube-4.

1	Four heads	Four dimensions
2	Two eyes	Spatial dimensions 2-space as dimension of 4-space
3	Eight petals	Eight solid boundary components ($A^4:8A^3$)
4	Heart	Origin / Center
5	Lord of Lord Brahma	5-space as origin of 4-space
6	Ten Brahmas	10 hypercubes-4 as boundary of hypercube-5 ($A^5:10A^4$)

(Dr. Dharmesh Shukla has worked out the details in his doctoral thesis titled "Some properties of real 4-space in the light of Vedic knowledge accepted (1994) by H.N. Bahuguna University, Uttar Pradesh).

respectively as representative regular bodies of 1, 2 & 3 space, we may conclude that moving 0-space (body) accepts 1-space format, moving 1-space (body) accepts 2-space format; moving 2-space body.

Vedas And Multidimension



In 3-space, we shall be having 1-space as dimension. The flux of time would be of spatial order. 2-space admits 5 geometries. The 3 dimensions plus 5 versions would give us $3+5=8$ order. In terms of it, we shall be attaining $8 = 2 \times 4$ i.e. 4 spatial dimensions which shall be constituting dimensional order of 4-space.

MATHEMATICAL BASIS OF VEDIC LITERATURE

Studies of mathematical basis of available Vedic literature reveal that 4 and higher dimensional reality was not only known to the Vedic seers rather the great use thereof was made by them for organization of pure knowledge.

Let us concentrate upon the nature of space around us. We can see that straight line is a track of a moving point while plane is a track of a moving (straight) line.

Likewise, moving plane shall be creating solid space. More precisely, if we reinvestigate this phenomenon with the help of a point, interval, square and cube, we shall be noticing that moving point accepts line as its track, moving interval accepts square as its track and moving square accepts cube as its track. This would pose a question: What is the nature of the track of moving cube/solid /3-space body/ 3-space setup or in the general, 3-space it self?



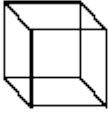
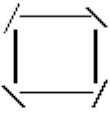


HYPERCUBES 4, 5, & 6

To answer the same let us mathematise this situation as:

Taking point as a representative regular body of 0 space, interval, square and cube respectively as representative regular bodies of 1, 2 & 3 space, we may conclude that moving 0-space (body) accepts 1-space format, moving 1-space (body) accepts 2-space format; moving 2-space body accepts 3-space format, and as a logical consequence the moving 3-space body shall be requiring 4-space format. And in general, moving n-space body shall be requiring $(n+1)$ space format. For convenient handling.

We may define and designate four and higher dimensional bodies in continuation of interval, square and cube as hypercubes. To be precise hypercube 4 shall be a representative regular body of 5-space and so on. Further to facilitate comprehension of main properties of hypercube and for symbolic representation of the set of properties synthesizing hypercube it would be desirable to have suitable symbols for them, particularly for hypercube 4, 5 and 6 for reaching at the concepts and comprehension of multi-dimensional spacetime frame being availed for organization of the knowledge of Manasara.

Let these 3 special symbols of hypercube 4, 5 & 6 be as:

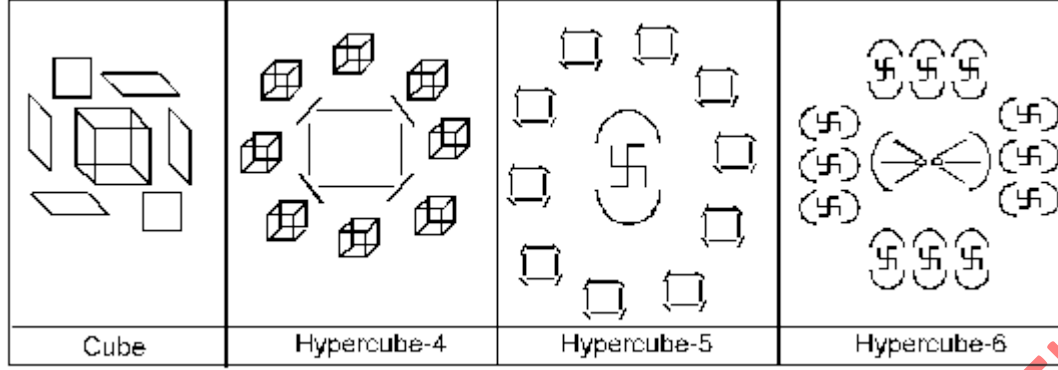
Interval	Square	Cube	Hypercube-4	Hypercube-5	Hypercube-6
					
1-space body	2-space body	3-space body	4-space body	5-space body	6-space body

To have these symbols in continuity of the geometric setup of interval, square and cube, we have to first comprehend these geometric setups. As such, let us have a close look at the geometric setup of interval, square and cube. If we have close look at the geometric setup of interval, square and cube, we may comprehend that interval has length (A^1) and 2 boundary points ($2A^0$) Square has area (A^2) and 4 boundary line ($4A^1$) and cube has volume A^3 and 6 boundary surfaces ($6A^2$).

$A^1:2A^0$, $A^2:4A^1$ and $A^3:6A^2$ suggest a common formulation $A^n:2nA^{n-1}$, $n=1, 2, 3$.

This formulation would hold for all values of n . In particular, for $n=4, 5$ & 6 we shall be getting $A^4:8A^3$, $A^5:10A^4$ and $A^6:12A^5$. The geometric message is that boundary of 4-space body is constituted by 8 cubes while the boundary of 5-space body is constituted by 10 hypercubes-4 and so on.

The boundary components of interval, square, cube and hypercubes 4, 5 & 6 are in the ratio 2:4:6:8:12. This would help us comprehend, appreciate and have the symbols of hypercube 4, 5 & 6 in continuity of and in that sequential order, hypercube 4, 5 & 6 with boundaries as:



SHANDCHAKRA FORMAT OF HUMAN BODY

Further it would help us comprehend and appreciate the Upanishad knowledge regarding the Shadchakra format of human body as that:

अथ बहिलक्षणां। नासिकाकग्रे चतुर्भि षड्भिरष्टभि दशभि द्वादशभि क्रमात्।

Here are being taken up the external structural characteristics (of shad chakras format of Human body) These with respect to the chakras (second to six) which are ahead of the tip of the nose (first chakra with two characteristics) are four, six, eight ten and twelve respectively, and in that order.

(Advet-tarko Upanishad)

The message of great importance is that Vedic Comprehension of human body is of Shadchakra format which runs parallel to the geometric formats of representative bodies of first six spaces and hence this makes Purusha, the being of 6-space.

This will help us comprehend and appreciate the Vedic tradition which accepts Vedic Richas / Mantras as impulses of one's own consciousness. Here there is another aspect of our existence phenomenon. One breaths 21600 times a day. Equally one would breath 21600 times during night. This makes day and night breathings as of 43200 units. Now those who do Pranayam (deep berating) 10 times deep than the normal breathing, they shall be breathing whole length of Rigved of 432000 syllables. That is, one breaths, lives and attains consciousness of the order of Rigved every day and nigh of his existence.

Lord Brahma, Lord Shiv and Lord Vishnu together are known as Trinity of Gods. Studies into mathematical basis of the knowledge of Trinity of Gods preserved in the available Vedic Literature show a complete parallelism between four heads of Lord Brahma and four dimensions of 4-space; five heads of Lord Shiv and five dimensions of 5-space; and six heads of incarnations of Lord Vishnu and six dimensions of 6-space. The detailed studies of idols of Trinity of Gods further take us to their geometric formats respectively being of hypercube 4, 5 & 6.

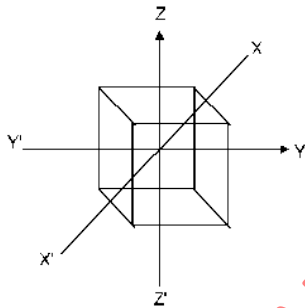
Vedas And Multidimension - II



We may tabulate the following parallelism between the manifested idols of Trinity of Gods and the geometric set ups of hypercubes 4, 5 & 6 as geometric formats.



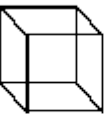
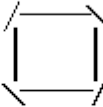

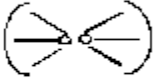
Read More

Vedas And Multidimension - III



In 3-space, we shall be having 1-space as dimension. The flux of time would be of spatial order. 2-space admits 5 geometries. The 3 dimensions plus 5 versions would give us $3+5=8$ order. In terms of it, we shall be attaining $8 = 2 \times 4$ i.e. 4 spatial dimensions which shall be constituting dimensional order of 4-space.

The alphabet letters of Devnagri script, their forms formulations, combinations and rules etc. are precisely mathematical. Sakala Rigvedic Samhita is the oldest scripture of mankind. The organisational format of this Samhita is precisely that of real 6-space. Vedic knowledge accepts a measuring rod constituted by regular bodies of the first six real dimensional spaces which admit formulations as:

Interval	Square	Cube	Hypercube-4	Hypercube-5	Hypercube-6
					
1-space body	2-space body	3-space body	4-space body	5-space body	6-space body

The organizational format of Srimad Bhagwad Gita emerges to be of prime importance as it is parallel to the organizing power of the knowledge content of the scripture. This format tallies with the format of human body on the one hand and the sun on the other hand as of real 6-space. The Trinity of Gods namely Brahma, Mahesh, Vishnu are the overlords of real 4, 5 & 6 spaces respectively. The geometrical continuum expressed as manifestation layers of 4 folds of consecutive dimensional spaces contents. These folds of the nth manifestation layer can be represented as under:

First Fold	Second Fold	Third Fold	Fourth Fold
Dimension	Frame	Domain	Origin
(n-2) space content	(n-1) space content	n-space content	(n+1) space content

The transcendence from one manifestation layer to another manifestation layer giving rise to the following (five steps) chain reaction or five steps which are possible within the setup of Panch Mahabhut.

Manifestation Layer	Dimension	Frame	Domain	Origin
nth	Space fold (n-2)	Space fold (n-1)	Space fold n	Space fold (n+1)
(n+1)th	Space fold (n-1)	Space fold n	Space fold (n+1)	Space fold (n+2)

Transition from one space to another space is to be had in terms of unlocking of the seals of the origin points of all the four folds of the manifestation. The modern mathematical models of transition from straight line to plane deserve serious reexamination. In particular the axioms of space filling curves and the axioms of 'one' without a predecessor deserve close scrutiny as their rationale emerges to be without basis.

The role of real numbers additive group $(R, +)$ and real numbers field $(R, +, \times)$ with reference to straight line deserve to be differentiated.












The plane deserves to be studied as four geometrically distinct quarters. One faced plane and two faced plane are two distinct geometrical setups and they deserve to be taken up as such.

The concepts of origin and dimension are two concepts with respect to which the modern geometrical models are not up to date. These two concepts deserves to be studied in detail as transcendence to the higher dimensional spaces is possible only in terms of their understanding.

Human body is a compactified phenomenon of multi-layer physiological existence. The start with state of existence is that of waking state which is parallel to the expression of 1-space as dimension into 3-space domain. Sequentially, the existence phenomenon unfolds until seventh state of consciousness which would be corresponding to the 7-space as dimension into 9 space domain. The origin point of the 6-space, being the 7-space setup, the human body, geometrically, turns out to be hypercube-6 and this would explain how the primordial sound, the planetary effects, the Yajna oblations etc. operate and precisely influence the individual existence patterns.

Srimad Bhagwad Gita is one such scripture whose organizational format precisely workout for us the structural set up and frames of the 6-space. The study zone of Srimad Bhagwad Gita can be worked as under:-

Srimad Bhagwad Gita
Study Zone

$a/2$	$a^2/4a$	$a^3/6a^2$	$a^4/8a^3$	$a^5/10a^4$	$a^6/12a^5$	$a^7/10a^4$	$a^4/8a^3$	$a^3/6a^2$	$a^2/4a$	$a/2$
										
$2 \times 1 = 2$	$4 \times 2 = 8$	$6 \times 3 = 18$	$8 \times 4 = 32$	$10 \times 5 = 50$ $50 \times 7 = 350$	$10 \times 5 = 50$ $50 \times 7 = 350$	$10 \times 5 = 50$	$8 \times 4 = 32$	$6 \times 3 = 18$	$4 \times 2 = 8$	$2 \times 1 = 2$
Orbitals				$350 + 350 = 700$						
2	6	10	14	$18 = 5 + 6 + 7$						

The organizational setups of Ganita Sutras, Maheshwara Sutras, Saraswati Mantras, Gyatri Mantra and Om formulation deserve interdisciplinary explorations.

Sankhay Nistntha and Yoga Nistha are complementary and supplementary of each other and as such their complementary nature and supplementary nature deserve to be distinguished well. Non-differentiation of the same is bound to deprive us of most of the results in specific forms.

[Astronomy and Vedic Science](#)

There are many astrological and astronomical references in the Rig Veda, that many scholars have ignored in the West. Instead, they have the view that Hindus got their idea of planets and their respective deities etc., from the Greeks, around 300BC, as per Alexander's arrival.



Here, we present the notion that this is entirely incorrect. In fact, the Rig Veda, the oldest text of Hinduism itself has many references, in relation to astrology and astronomy, as we shall show.

Let us start off first of all by noting the Goddess Prishni, a Vedic Goddess closely associated with the later dark goddess Kali of Hinduism.

Prishni means 'Spotted', and thus would refer to a star-cluster in the sky, such as the Milky Way region. Prishni is mother of the sky-gods in the Rig Veda - the Maruts (flashing ones), who are hence stars, in this relation.

Prishni is also associated with a Cow, being mother to calves (Maruts), in this connection (Rg.X.123.1). This connects her to cow, milk etc. and hence the Milky Way region. She is also the Sky in general, being connected to Ratri (Night), another Vedic Goddess, and again to later goddess Kali.

Another Vedic Goddess, Aditi also has a similar astronomical nature. Aditi comes from the Sanskrit root "Ad" (To Eat). Aditi is thus the "Eater" (Brihadaranyaka Upanishad.I.2.2). Aditi is thus the representative of the "Black Holes" in Space, which swallow/eat up everything that enters them. It hence shows that the Vedics knew well of Astronomical Sciences.

Such concepts here may seem quite generalised, but are important to note that the oldest texts of the Hindus showed that they were "star-gazing" from a very early

period!

We also cite the Devas or the Vedic-Gods, meaning 'Shining Ones'.

This comes from the root "Div" (o Shine/illuminate). As their name suggests, and as they are Sons of Dyaus / Zeus (Sky, Illuminated), sometimes of Aditi (which also means 'unbounded' - the Sky). This shows that the Devas are also the Constellations or Lunar Mansions (Nakshatras).

The Krishna Yajurveda (IV.4.10) elaborates on this point, and describes them and their respective deities that govern them!

So, such notions were in use in early Hinduism, and such sacrifices described in the Yajur-Veda to them reflect the fact that Vedic rituals were based primarily on the Stars and their Movements - thus in accordance with Astrological Time-keeping methods, only possible through the invention of Vedic-era Astrology (Jyotish). The Nine Planets (Nava-Grahas) also have their place in the Vedic traditions also and can be found in the earliest texts as the Rig Veda.



The Planet Venus (Shukra, Effulgent in Sanskrit), who (secretly) appears in the Chandogya Upanishad as the teacher of the Asuras or Anti-Gods, Virochana (Greatly Effulgent), which also suggests he is Venus (As Shukra, the Shining One, since Venus is the Greatest Shining Planet and leader of the Asuras or Anti-gods and their Guru as Virochana).

In Chandogya Upanishad, this same Virochana also fights with Indra the Self-deity, who here is Brihaspati or Guru as planet Jupiter of the Devas or the Positive Stars or Planets (Maitareya Upanishad.VII.9). In later astrological texts, the god Indra himself is the god or ruler of Brihaspati or Jupiter, as well as Venus.

It all shows the ancient Hindus were well-versed in Astrology and Astronomy and also shows the esoteric significance behind the stars and astrology. Shukra (Venus) also has mention in the Maitreya Upanishad (VII.9), as a form of Brihaspati or Jupiter himself. Maitreya Upanishad is long before the Greeks in India.

This shows that the ancient Hindus knew (as they did in later times) of the two-sides of Venus (Shukra) and Jupiter (Brihaspati), as the teachers of the Demons (Asuras) and Gods (Devas) respectively.

The Vedic King Vena (Rg.X.123) and Soma, the Moon (Rg.IX) are deities of Rig Veda that can also be compared to Venus, because of their blissful and material nature. King Vena (vs.7), is compared to a Gandharva (celestial musician of Vedic lore), on this note, and is compared to the Maruts ('Shining Ones' or Asuras, demons - vs.1), which connects him to the name of Asuramaya (Wise Demon), one of his famous later epithets.

16th October 5562nd BC : The Exact Date...



Most of the scholars tried to calculate the date of Mahabharata war as per Vyas calculation; Ex : Late Mr. C. V. Vaidya and Prof. Apte show's date around 3102 B.C., but their Mars is in Ashadha, Jupiter is in Revati, Saturn in Shatataraka and Rahu in Jeshtha.

Prof. K. Shrinivasraghavan, Mr. Sam- pat Ayangar and Sheshagiri show's around 3067 B.C. but they put Jupiter and Saturn in Rohini and Sun, Rahu, Mars in Jeshtha.

Garga, Varahmihir and Tarangini show's around 2526 Before Shaka i.e. 2449 B.C but their Mars comes in Dhanishtha, Jupiter and Saturn in Bharani and Rahu in Hasta.

P.C. Sengupta gives 2448 with Saturn 356 deg., Jupiter 8 deg., Mars 157 deg., Venus 200 deg., Sun 200 deg., (Ancient Indian chronology" Calcutta University).

Mahabharata War - Part 1



It says, according to scholars, that the temple was constructed in $30 + 3000 + 700 + 5 = 3735$ years, after the Bharat War and $50 + 6 + 500 = 556$ years of Shaka era in Kali era. Today Shaka era is 1910.

Mahabharata War



Chandragupta Maurya : 330-298 B.C = 32 years.

Bindusar : 298-273 B.C = 25 years. Ashoka : 273-232 B.C = 41 years. Pushyamitra

Shunga : 190-149 B.C = 41 years. Chandragupta Gupta : 308-330 A.D = 22 years.

Mahabharata War - Part 4



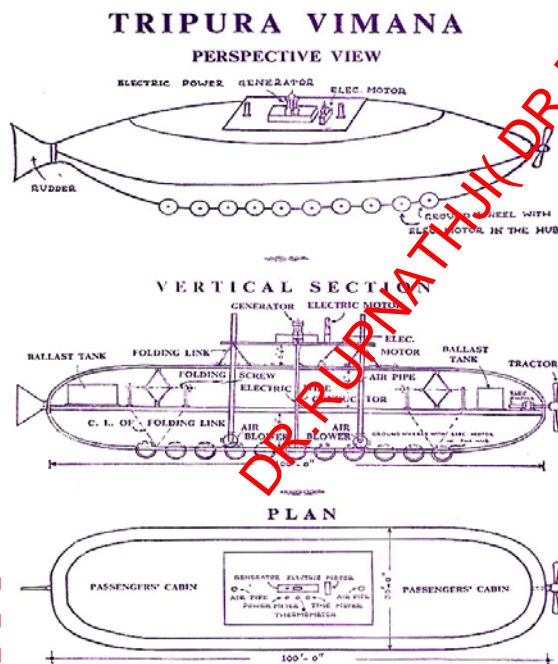
As far as the planets like Saturn, Rahu and Jupiter are concerned 50 days are immaterial because in 50 days the Saturn will move only 1.6 deg. while Jupiter 4.1 deg. as an average. Hence their error is negligible.

Mahabharata War - Grand Finale



Thus Teevra, Teekshana and Nakshatra are the names of one and the same planet (graha) which was in Kritika in 5561 B.C. Let us see if Vyas has given these names to Pluto and if Pluto was in Kritika. It is stated that Kritika was troubled with sharp rays by that planet - this indicates that it was Nirayan Kritika.

Aircrafts || Vimanas || Flying Vehicles



Scientists say that there are 32 secrets of the working of the Vimana.

A pilot should acquaint himself thoroughly with them before he can be deemed competent to handle the airplane. He must know the structure of the aeroplane, know the means of its take off and ascent to the sky, know how to drive it and how to halt it when necessary, how to maneuver it and make it

perform spectacular feats in the sky without crashing.

Those secrets are given in "**Rahashya Lahari**" and other works by Lalla and other masters, are described thus:

"The pilot should have had training in maantrica and taantrica, kritaka and antaraalaka, goodha or hidden, drishya and adrishya or seen and unseen, paroksha and aparoksha, contraction and expansion, changing shape, look frightening, look pleasing, become luminous or enveloped in darkness, deluge or pralaya, vimukha, taara, stun by thunderstorm din, jump, move zig-zag like serpent, chaapala, face all sides, hear distant sounds, take pictures, know enemy maneuver, know direction of enemy approach, stabdhaka or paralyze, and karshana or exercise magnetic pull"

These 32 secrets the pilot should learn from competent preceptors and only such a person is fit to be entrusted with an airplane, and not others.

Some of these secrets are:

1. **Tripura Vimana:** Perspective and Vertical Section1. Goodha: As explained in 'Vaayutatva-Prakarana', by harnessing the powers, Yaasaa, Viyaasaa, Prayaasaa in the 8th atmospheric layer covering the earth, to attract the dark content of the solar ray, and use it to hide the Vimana from the enemy.
2. **Drishya:** By collision of the electric power and wind power in the atmosphere, a glow is created, whose reflection is to be caught in the Vishwa-Kriya-drapana or mirror at the front of the Vimana, and by its manipulation produce a Maaya-Vimana or Camouflaged Vimana.
3. **Vimukha:** As mentioned in "Rig-hridaya", by projecting the force of Kubera, Vimukha and Vyshwamara poison powder through the third tube of the roudree mirror and turning the switch of the air mechanism, produce wholesale insensibility and coma.
4. **Roopaakarshana:** By means of the photographic yantra in the Vimana to obtain a television view of things inside an enemy's plane.
5. **Stabdhak:** By projecting apasmaara poison fume smoke through the tube on the north side on the Vimana, and discharging it with stambhana yantra, people in enemy planes will be made unconscious.
6. **Chaapla:** On sighting an enemy plane, by turning the switch in the force center in the middle section of the Vimana, a 4087 revolutions an hour atmospheric wave speed will be generated, and shake up the enemy plane.
7. **Parashabda Graahaka:** As explained in the "Sowdaminee Kalaa: or science

of electronics, by means of the sound capturing yantra in the Vimana, to hear the talks and sound in enemy planes flying in the sky.

According to Shownaka, the regions of the sky are 5, named,

Rekhaapathaha

Mandala

Kakshaya

Shakti

Kendra

In these 5 atmospheric regions, there are 5,19,800 air ways traversed by Vimanas of the Seven Lokas or worlds, known as,

Bhooloka

Bhuvarloka

Suvarloka

Maholoka

Janoloka

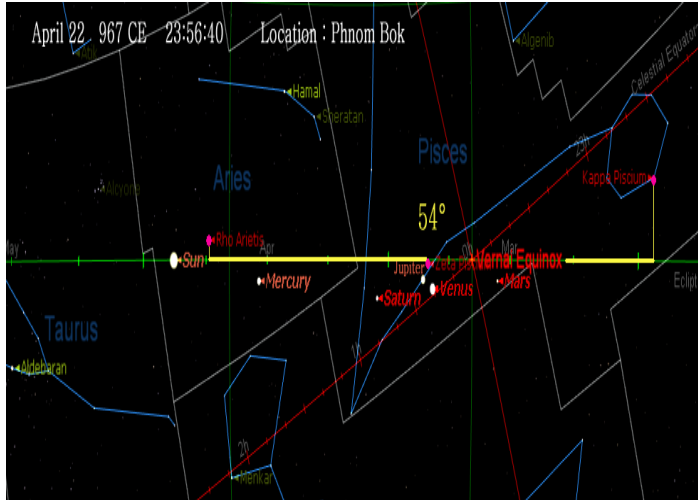
Tapoloka

Satyaloka

[About](#)

Surya Siddhanta

In Surya Siddhanta, [bhaskaracharya](#) calculates the time taken for the earth on orbit the sun to 9 decimal places (365.258756484 days). The modern accepted measurement is 365.2596 days.



The difference between the ancient Indian measurement (1500 years ago) and the modern measurement is only 0.00085 days (0.0002%). Bharat has given the world the idea of smallest and largest measure of time - from 34,000th a second (Kranti) to 4.32 billion years (kalpa).

(Bhugoladhyaya , surya sidhanta). [Aryabhata](#) was the first to deduce that the earth is round. It must be mentioned that western science accepted that earth is spherical only in 14th century. Also he was the first to postulate it is the earth that rotates and the stars are stationary. This was about a 1000 year before Copernicus.

The globe of earth stands suspended in space at the center of a circular frame that is at the center of the Bhagola surrounded by water, soil, fire and air and is circular on all sides that is spherical'.

(Aryabhattiya - chapter 4, verse 6)

[modern science - earth has a core - molten magma, different layers of rocks, soil, water and atmosphere]

Day length -

23 hrs - 56 mts - 4 scds - 0.1 fractions - 'aryabhata'

23 hrs - 56 mts - 4 scds - 0.091 fractions - modern value

[Aryabhata](#) gives the radius of the planetary orbits in terms of the radius of the Earth/Sun orbit as essentially their periods of rotation around the Sun. He believes that the Moon and planets shine by reflected sunlight, incredibly he believes that the orbits of the planets are ellipses. He correctly explains the causes of eclipses of the Sun and the Moon.

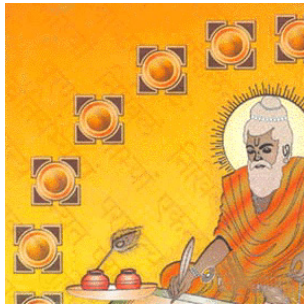
[Aryabhata](#) gave an accurate approximation for π . He wrote in the [Aryabhattiya](#) the following:-

Add four to one hundred, multiply by eight and then add sixty-two thousand. the result is approximately the circumference of a circle of diameter twenty thousand. By this rule the relation of the circumference to diameter is given.

This gives $\pi = 62832/20000 = 3.1416$ which is a surprisingly accurate value. In fact $\pi = 3.14159265$ correct to 8 places.

Vedas / Vedic Time Measurements

Vedic and Puranic units of time span from the truti (microsecond) to the mahamanvantara (311.04 trillion years). The creation and destruction of the universe a cyclic process.



The Vedic cosmological time cycles are described in verses 11-23 of Chapter 1, Surya Siddhanta:

(Verse 11). That which begins with respiration (prāna) is called real; that which begins with atoms (truti) is unreal. Six respiration's make a vinādi, sixty of these a nādi.

(12). And sixty nādis make a sidereal day and night. Of thirty of these sidereal days is composed a month; a civil month (sāvana) consists of as many sunrises.

(13). A lunar month, of as many lunar days (tithi); a solar (sāura) month is determined by the entrance of the Sun into a sign of the zodiac; twelve months make a year. This is called a day of the devas or demi-gods.

(14). The day and night of the devas and of the asuras are mutually opposed to one another. Six times sixty of them are a year of the devas, and likewise of the asuras.

(15). Twelve thousand of these divine years are denominated a chaturyuga (chatur=Four; yuga=Ages); of ten thousand times four hundred and thirty-two solar years.

(16) The difference of the krtayuga and the other yugas, as measured by the difference in the number of the feet of Dharma in each, is as follows :

(17). The tenth part of a chaturyuga, multiplied successively by four, three, two, and one, gives the length of the krtayuga and the other yugas: the sixth part of each belongs to its dawn and twilight.

(18). One and seventy chaturyugas make a manvantara (Patriarchate of one Manu); at its end is a twilight which has the number of years of a krtayuga, and which is a pralaya (catastrophic end of creation).

(19). In a kalpa (æon) are reckoned fourteen such Manus with their respective twilights; at the commencement of the kalpa is a fifteenth dawn, having the length of a krtayuga.

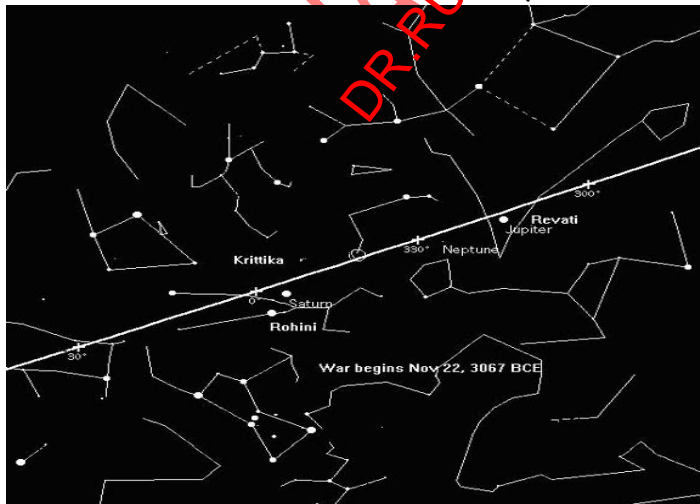
(20). The kalpa, thus composed of a thousand chaturyugas, and which brings about the destruction of all that exists, is a day of Brahma; his night is of the same length.

(21). His extreme age is a hundred, according to this valuation of a day and a night. The half of his life is past; of the remainder, this is the first kalpa.

(22). And of this kalpa, six Manus are past, with their respective twilights; and of the Patriarch Manu son of Vivasvant, twenty-seven chaturyugas are past;

(23). Of the present, the twenty-eighth chaturyuga, the krtayuga is past; from this point, reckoning up the time, one should compute together the whole number.

The Exact Date of Mahabharata War (Evidence Of Mahabharata war)



Harivansh (Vishnu Purana A. 5) states that when Nanda carried Krishna to Gokul on Shraavan Vadya Navami day, there was dry cow - dung spread all over the ground and

trees were cut down. The presence of Dry Cow dung all over in Gokul indicates the presence of summer in the month of Shravan. Trees are usually cut down in summer to be used as fuel in the rainy season. The seasons move one month backwards in two thousand years. Today the rainy season starts in Jeshtha but two thousand years ago, at the time of Kalidas, rainy season used to start in Ashadha. At the time of Krishna's birth the summer was in the month of Shravana while today it is in Vaishakha.

Thus the summer is shifted by four months; hence Krishna's period comes to $4 \times 2000 = 8000$ years ago approximately. This means about 6000 years B.C. the same period we have seen above.

At the time of Mahabharata, the Vernal Equinox was at Punarvasu. Next to Punarvasu is Pushya Nakshtra. Vyas used "**Pushyadi Ganana**" for his Sayan method, and called Nirayan Pushya as Sayan Ashvini. He shifted the names of further Sayan Nakshtras accordingly.

At that time Winter Solstice was on Revati, so Vyas gave the next Nakshatra Ashwini the first place in the Nirayan list of Nakshatras. Thus he used Ashvinyadi Ganana for the Nirayan method. Using at times Sayan names and at times Nirayan names of the Nakshatras, Vyas prepared the riddles. By the clue that Nirayan Pushya means Sayan Ashvini, it is seen that Nirayan names of Nakshatras are eight Nakshatras ahead of the Sayan names.

Thus the Saturn in Nirayan Purva, and Sayan Rohini, Jupiter was in Nirayan Shravan, and Sayan Swati (near Vishakha), while the Mars was in Nirayan Anuradha and Sayan Magha, Rahu was between Chitra and Swati, by Sayan way means it was in Nirayana. Uttara Ashadha(8 Nakshtras ahead). From these positions of the major planets we can calculate the exact date.

The procedure is as follows..

Now, you may also want to read...

[Mahabharata War - Part 1](#)



It says, according to scholars, that the temple was constructed in $30 + 3000 + 700 + 5 = 3735$ years, after the Bharat War and $50 + 6 + 500 = 556$ years of Shaka era in Kali era. Today Shaka era is 1910.

Mahabharata War



Chandragupta Maurya : 330-298 B.C = 32 years.
Bindusar : 298-273 B.C = 25 years. Ashoka : 273-232 B.C = 41 years. Pushyamitra Shunga : 190-149 B.C = 41 years. Chandragupta Gupta : 308-330 A.D = 22 years.

Mahabharata War - Part 3



There are 11 Nakshatras from Magha to Purvashadha. Hence it is seen that Shukacharya tells Parikshit that after 1100 years

Kaliyug will start. Kaliyug started at 3101 B.C. Hence $3101 + 1100 = 4201$ B.C. is the date of Parikshit.

YUDHISTHIRA ERA AND KALYUG

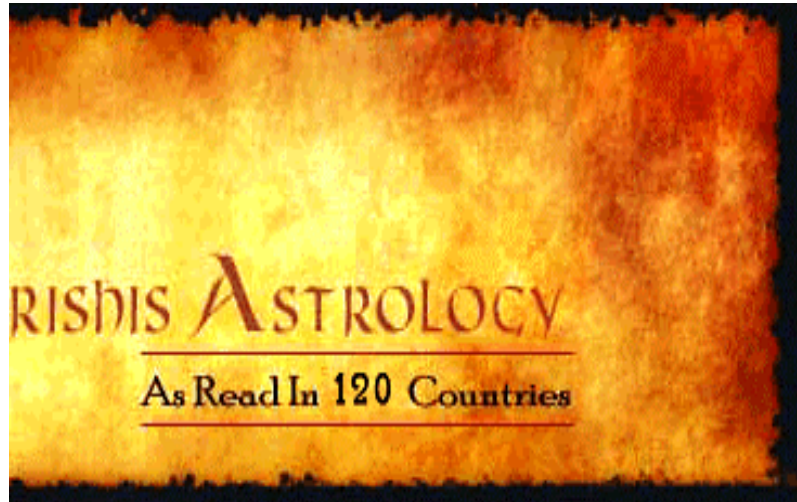


Scholars accept the date of the Mahabharata War to be 3100 B.C. which also happens to the initiation of the Yudhisthira Era. But this Era is mentioned nowhere in the Mahabharata text itself! At the time of Aswamedha of Yudhisthira, Vyas has given descriptions in minute detail like collection of "Sruva", formation of wells and lakes, but never has written even a word about, such an important event, as the beginning of the Yudhisthira Era.

Mahabharata also never mentions anything about the beginning of the Kaliyug, even at the time of Krishna's death. Mahabharata Adiparva 2.13 states that the War took place in the inter phase ("Antare") of the Dwapara and Kali Eras. Thus it makes it clear that the evening of the Dwapara has not yet ended and the Kaliyug had not started when the War took place.

SAPTARISHIS

DR. RUPNATHJI (DR. RUPAK NATH)



Bhagwat states at 12.2.27-32 that Saptarishis stay 100 years in one Nakshatra. At the time of King Parikshit, the Saptarishis were in Magha. When they proceeded to Purvashadha, Kali would start. There are 11 Nakshatras from Magha to Purvashadha. Hence it is seen that Shukacharya tells Parikshit that after 1100 years Kaliyug will start. Kaliyug started at 3101 B.C. Hence $3101 + 1100 = 4201$ B.C. is the date of Parikshit.

But who is this Parikshit? Is he the son of Abhimanyu?

GREEK RECORDS:



The Greek Ambassador Magasthenis has recorded that 138 generations have passed between Krishna and Chandragupta Maurya. Many scholars have taken this evidence, but taking only 20 years per generation they fixed the date of Krishna as 2760 years before Chandragupta.

But this is wrong because the record is not of ordinary people to take 20 years per generation. In the matter of general public, one says that when a son is born a new generation starts. But in the case of kings, the name is included in the list of Royal Dynasty only after his coronation to the throne. Hence, one cannot allot 20 years to one king. We have to find out the average/king by calculating on various Indian Dynasties.

Let considered 60 kings from various dynasties and calculated the average of each king as 35 years. Here is a list of some of important kings with the no. of years ruling.

Chandragupta Maurya : 330-298 B.C = 32 years.

Bindusar : 298-273 B.C = 25 years.

Ashoka : 273-232 B.C = 41 years.

Pushyamitra Shunga : 190-149 B.C = 41 years.

Chandragupta Gupta : 308-330 A.D = 22 years.

Samudragupta : 330-375 A.D = 45 years.

Vikramaditya : 375-414 A.D = 39 years.

Kumargupta : 414-455 A.D = 41 years.

Harsha : 606-647 A.D = 41 years.

Total = 327 years && Average is $327/9 = 36.3$ years.

Multiplying 138 generations by 35 years we get $(138 * 35)$ 4830 years before Chandragupta Maurya. Adding Chandrgupta's date 320 B.C. to 4830 we get 5150 B.C. as the date of Lord Krishna.

>>Megasthenis, according to Arian, has written that between Sandrocotus to Dianisaum 153 generations and 6042 years passed. From this data, we get the average of 39.5 years per king. From this we can calculate 5451 years for 138 generations. So Krishna must have been around 5771 B.C.

Pliny gives 154 generations and 6451 years between Bacchus and Alexander. This Bacchus may be the famous Bakasura who was killed by Bhimasena. This period comes to about 6771 years B.C. Thus Mahabharata period ranges from 5000 B.C. to 6000 B.C.

SHRIMAD BHAGWAT



Bhagwat gives 28 Kaurava kings from Parikshit to Kshemaka. "From Kshemaka, the Pandava Dynasty will end in Kaliyug, and Magadha Dynasty will start." [Bhagwad 9-22-45]. This implies that the Pandava kings ruled before the advent of Kaliyug, i.e., before 3101 B.C and Magadha dynasty will not super-impose the Pandava Dynasty. Further it is stated in Bhagwat that after 28 Kaurava kings, Magadha Dynasty would rule and 22 Magadha kings would govern for 1000 years. Here it is given an average of 1000 years for 22 kings. It can be found that the 28 Kaurava kings would have ruled for 1273 years and then Magadha Dynasty started with King Sahadeva, whose son was Somapi.

On the other hand, Maghasandhi was the son of Sahadeva and the grand - son of Jarasandha [Ashwamedh-82]. Many scholars have neglected this fact and have assumed that this Sahadeva fought in the Mahabharat War and was the son of Jarasandha.

Ripunjaya is the last king in the list of 22 Magadhas. But Bhagwat 12.1.2-4 mentions that Puranjaya will be the last king who will be killed by his minister Shunak. It is to be noted that there is no mention of the kings between Ripunjaya and Puranjaya. People have wrongly taken the two names as that of one and the same person, without any evidence.



Bhagwat 12.1.2-4 state that Shunak would coronate his son Pradyota as the King and later five Kings would rule for 138 years. After this Pradyota Dynasty, Shishunga Kings, 10 in number, would rule for 360 years. Thereafter 9 Nandas would rule for 100 years. Nanda would be destroyed by a Brahmin and Chandragupta would be enthroned. We know that Chandragupta Maurya ascended the throne in 324 B.C. So we can thus calculate backwards:

9 Nandas = 100 years
 10 Shishungas = 360 years
 5 Pradyotas = 138 years
 22 Magadhas = 1000 years
 28 Kauravas = 1273 years

 74 Kings 2871 years

We find here only 74 kings, but Megasthenes tells us about 138 kings. So $138 - 74 = 64$ kings are missing. These may be from the period between Ripunjaya and Puranjaya. Thus calculating from the data of 74 kings who ruled for 2871 years, we get a period of 2496 years for 64 kings. Adding the two we get 5367 years for 138 kings. This is preceding Chandragupta's time, who came to throne in 324 B.C.

Hence, $324 + 5367 = 5691$ B.C. is the approximate date of Parikshit.
 Now, you may also want to read...

[Mahabharata War](#)



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Mahabharata War



As far as the planets like Saturn, Rahu and Jupiter are concerned 50 days are immaterial because in 50 days the Saturn will move only 1.6 deg. while Jupiter 4.1 deg. as an average. Hence their error is negligible.

Mahabharata War - Part 3



There are 11 Nakshatras from Magha to Purvashadha. Hence it is seen that Shukacharya tells Parikshit that after 1100 years Kaliyug will start. Kaliyug started at 3101 B.C. Hence $3101 + 1100 = 4201$ B.C. is the date of Parikshit.

This is one of the best articles to read. Let us calculate the date of Mahabharata War, hope that would be interesting. We will go slowly parts by parts & in each article we will be introducing new theories and various facts so buckle up.



PART - I...

The Mahabharata has exercised a continuous and pervasive influence on the Indian mind for millenniums. The Mahabharata, originally written by Sage Ved Vyas in Sanskrit, has been translated and adapted into numerous languages and has been set to a variety of interpretations. Dating back to "remote antiquity", it is still a living force in the life of the Indian masses.

Incidentally, the dating of the Mahabharata War has been a matter of challenge and controversy for a century or two. European scholars have maintained that the events described in the ancient Sanskrit texts are imaginary and subsequently, the Mahabharata derived to be a fictitious tale of a war fought between two rivalries. Starting from the so - called Aryan invasion into Bharat, the current Bharatiya chronology starts from the compilation of the Rig veda in 1200 B.C., then come other Vedas.

Mahaveer Jain is born, then Gautam Buddha lives around 585 B.C. and the rest follows. In the meantime, the Brahmanas, Samhitas, Puranas, etc are written and the thought contained therein is well-absorbed among the Hindu minds. Where do the Ramayana and Mahabharata fit in?

Some say that the Ramayana follows Mahabharata and some opine otherwise. In all this anarchy of Indian history, the date of the Mahabharata ranges between 1000 B.C. to 300 B.C. Sanskrit epics were academically attacked occasion - ally - an attempt to disprove the authenticity of the annals noted therein.

For example, the European Ideologist Max Muller, tried to interpret the astronomical evidences to prove that the observations recorded in the Hindu scriptures are imaginary, probably because it did not match the prevalent views of European historians!

On the contrary, many Bharatiya scholars have vehemently maintained the actual occurrence of the Mahabharata War. Astronomical and literary evidences or clues from the Pauranic and Vaidik texts have been deciphered to provide a conclusive date for the Mahabharata War.

The fifth century mathematician, Aryabhata, calculated the date of the Mahabharata War to be approximately 3100 B.C. from the planetary positions recorded in the Mahabharata. Prof. C.V. Vaidya and Prof. Apte had derived the date to be 3101 B.C. and Shri Kota Venkatachalam reckoned it to be 3139 B.C. However, the astronomical data used by the above, and many other, scholars contained some errors as examined by a scholar from Pune, Dr. P.V. Vartak.

Using astronomical references and variety of other sources, Dr. Vartak has derived the date of the initiation of the Mahabharata War to be 16th October 5561 B.C. This proposed date has been examined by a few scholars and has been verified. This may prove to be a break-through in deciding the chronology of the events in the history of Bharat (and probably the World).

Now, here is the beauty we will calculate together by examining the various inscriptions one by one and come to a conclusion.

Aryabhatiya of Aryabhata

In the work *The Aryabhatiya of Aryabhata, An Ancient Indian Work on Mathematics and Astronomy*, translated by William Eugene Clark, Professor of Sanskrit in Harvard University (The University of Chicago Press, Chicago, Illinois. 1930), I found the following to be written:

"In a yuga the revolutions of the Sun are 4,320,000, of the Moon 57,753,336, of the Earth eastward 1,582,237,500, of Saturn 146,564, of Jupiter 364,224, of Mars 2,296,824 . . . "

. As can be seen from the Clarke's translation Aryabhata wrote that 1,582,237,500 rotations of the Earth equal 57,753,336 lunar orbits. (These same two numbers are also presented by G. R. Kay in his appendices, where they are attributed to Aryabhata and Pusila.) This is an extremely accurate ratio ($1,582,237,500 / 57,753,336 = 27.3964693572$).

Given Jan. 1, 2000 astronomic constants and given the present day formulas to temporally adjust the astronomic constants I have calculated that Aryabhata's ratio would have been exact in 1604 BC.

The date AD 500 is the approximate epoch in which Aryabhata wrote. Aryabhata was born in 476 in Patna, India and died in 550. His Aryabhatiya was probably written in A.D 498.

Astronomy Constants	AD 2000.0	AD 500	1604 BC
Rotations per solar orbit	366.25636031	366.2563589	366.25635656
Days per solar orbit	365.25636031	365.2563589	365.25635656
Days per lunar orbit	27.32166120	27.3216638	27.32166801
Rotations per lunar orbit	27.39646289	27.39646514	27.39646936

While the majority of the ratios presented by Àryabhata are not equally precise, it is difficult to believe that the earth rotations to lunar orbits ratio, given such very large numbers, could be so precise by coincidence. The odds of that being the case are astronomical. This is particularly so given that the data derives from an era when it was more accurate than today. If it derived from an ancient Vedic source. According to G. R. Kay, Àryabhata and the Paulisa Siddhanta present the values below for the lunar periods. Kay's table of durations of sidereal and synodic months also quotes another ancient Indian authority of the era, Paulisa Siddhanta. Obviously the accuracy of the ancient Indian astronomical data is not just coincidence. Note that the lunar orbit period of 27.321668 is accurate for the same epoch as the lunar orbit to earth rotations ratio quoted. This is supportive of the suggestion that the information derives from an accurate ancient source.

COMPARISONS	Lunar orbit	Lunar synodic
AD 2000.0	27.32166156	29.53058888
AD 498	27.3216638	29.530591
Aryabhata	27.321668	29.530582
Paulisa Siddhanta	27.321673	29.530587
1604 BC	27.321668	29.530595

Àryabhata wrote the Àryabhatīya in four chapters.
The first chapter presents the astronomical constants and sine tables.
Chapter II is mathematics required for computation.
Chapter III discusses time and the longitudes of the planets.
Chapter IV includes rules of trigonometry and rules for eclipse computations.
Àryabhata's work in effect started a new school of astronomy in South India.

Àryabhata is the first known astronomer to have initiated a continuous counting of solar days, designating each day with a number. This 'count of days' is termed the 'ahargana.' His epoch began at the beginning of the Mahayuga. To avoid excessively large numbers later astronomers changed the beginning of the epoch to the Kali era, commencing at midnight of 17-18 February of 3102 B.C.

The Àryabhatīya is a summary of Hindu mathematics up to his time, including astronomy, spherical trigonometry, arithmetic, algebra and plane trigonometry. Some of his formulas are correct, others not. The first appearance of the sine of an angle appears in the work of Àryabhata. He gave tables of half chords (sine tables).

Àryabhata wrote that the apparent motion of the heavens was due to the axial rotation of our planet. Àryabhata taught that the earth is a sphere and rotates on its axis, and that eclipses resulted from the shadows of the moon and earth. Àryabhata's innovations were opposed by Hindu teachers. His teachings were not in accordance with the religious views of his era.

Àryabhata wrote, according to Clarke, "In a yuga the revolutions of the Sun are 4,320,000, of the Moon 57,753,336, of the Earth eastward 1,582,237,500, . . ." Given Àryabhata's value of 27.321668 days per lunar orbit period, the 57,753,336 lunar orbits represent 4,320,027.33 solar orbits (in AD 500), not 4,320,000. Why? Perhaps because the numbers are divisible by 60 and 6. The ancient Indians employed base 60 math. I have no certain answer for this question. Perhaps religious dogma had an influence in this matter.

Here follows a comparative chart of the astronomical numbers presented by the ancient Indian authorities and sources. The Surya Siddhanta is dated to approximately AD 1100.

ASTRONOMIC AUTHORITY	Àryabhata (from Clarke and Kay)	Surya Siddanta
Years in Cycle	4,320,000	4,320,000
Rotations	1,582,237,500	1,582,237,828
Days	1,577,917,500	1,577,917,828
Lunar Orbits	57,753,336*	57,753,336
Synodic Months	53,433,336	53,433,336
Mercury	17,937,920	17,937,060
Venus	7,022,388	7,022,376
Mars	2,296,824	2,296,832
Jupiter	364,224	364,220
Saturn	146,564	146,568

*Kay notes 57,753,339 lunar orbits rather than 57,753,336 per Clarke.

Evidence Of Mahabharata Battle



Determination of the exact period of the Mahabharata, the greatest epic of the Sanskrit language and treasure of Hindu tradition, has been one of the most difficult and controversial problems of religious history since the eighteenth century. Religious historians outside India have consistently argued that the events described in the Mahabharata and the Purana are completely mythical and have virtually no relationship to history. On the other hand, Indian scholars have argued, equally vehemently, that the stories of Hindu scriptures are irrefutable facts of history. It has been pointed out that nothing comparable to the genealogy of the Bible exists in the entire collection of Hindu sacred literature. All the generations of mankind between Abraham and Jesus Christ are clearly identified in the Bible while the Purana merely mention that 1115 years will pass between the reign of Nanda, the first famous king of Kali-age (kaliyuga), and Parikshit, the last Pandava king of the Dwapara age.

Detractors of ancient Indian tradition have used this argument for centuries as the most powerful weapon in their intellectual arsenal to attack the foundations of the rich and varied tradition of Sanskrit epics and Puranas which represents a perfect socio-cosmic harmony of history and mythology.

Fortunately, many works of the Vedic and Puranic tradition contain a sufficient number of clues in the form of astronomical observations which can be used to determine the approximate date of Mahabharata and thus establish the historical authenticity of the events described in this great epic.

Notable among these works are the Parashar Sanghita, the Bhagvat Puran, Shakalya Sanghita, and the Mahabharata itself. [Aryabhata](#), one of the greatest mathematicians and astronomers of India in the fifth century AD, examined the astronomical evidence described in the Mahabharata in his great work known as the "Aryabhattiya". According to the positions of the planets recorded in the Mahabharata, its approximate date was calculated by Aryabhata to be 3100 BC implying that the great war described in the Mahabharata was fought approximately 5000 years ago, as most Hindus have always believed.

A number of British scholars of the 19th century, especially Friedrich Max Muller, tried to interpret this astronomical evidence to prove that the observations recorded in Hindu scriptures are imaginary. As an amateur astronomer, I propose to examine the astronomical evidence presented in the Bhagvat Puran and Max Muller's criticism of this evidence in light of the advances made in astronomy in the past fifty years. Max Muller, in the preface to his translation of the Rigveda, examines the astronomical observations described in the Bhagvat Puran and concludes that these observations are "imaginary", apparently because they did not agree with the prevalent views of the European, primarily British, Ideologist of the nineteenth century about the time of the Mahabharata.

These astronomical observations about the positions of the Saptarishis (Ursa Major) and some predictions based on their movement are contained in the second chapter of the twelfth Canto of the Bhagvat Purana. In relating the story of lord Krishna's life to king Parikshat, the grandson of Arjuna, Rishi Shukdeva explains:

saptarshinam tu yau purvau drshyete uditau divi |
tayostumadhye nakshatram drshyate yat samam nishi || 27 ||

tenaita rishayo yuktastishthant yabdashanta nranama |
tey tvadiye dwijaha kale adhuna charshita maghaha || 28 ||

"When the Saptarshis (the constellation of Ursa Major) rise in the east, only two stars are visible at first. In the middle of two stars, one of the lunar mansions (nakshatra) appears on the opposite side of the sky. The seven rishis stay with this lunar mansion (asterism) for hundred earth years. Parikshit! from the time of your birth to the present time, they have been positioned with the 'Magha' lunar mansion".

According to a similar observation, recorded in the Shakalya Sanghita, "their (Saptarshis') movement is eight minutes of the arc a year and moving in the north into different positions, the rishis employ 2700 years in revolving through the assemblage of twenty seven lunar mansions (translated by Max Muller)". Max Muller accepts the interpretation of the shlokas in the Bhagvat Puran, especially the phrase "the lunar mansion in the middle of these two stars (tayostumadhye Nakshatram)," as the extension of the line connecting the two stars away from the pole star.

Vedic Units - Hindu Ssytem

Modern Unit Times...

Unit	Quantum	Calculation
Nanosecond	0.000,000,001 second	1/10 ⁹ second
Microsecond	0.000,001 second	1/10 ⁶ second
Millisecond	0.001 second	1/10 ³ second
Second	SI base unit	1 second
Minute	60 seconds	60 seconds
Hour	3,600 seconds	60 minutes
Day	86,400 seconds	24 hours
Year	31,536,000 seconds	365 days
Decade	315,360,000 seconds	10 years
Century	3,153,600,000 seconds	10 decades
Millennium	31,536,000,000 seconds	10 centuries

Vedic Unit Measurement...

Unit	Quantum	Calculation
<i>Paramanu</i>	Vedic base unit	1 <i>paramanu</i>
<i>Anu</i>	2 <i>paramanus</i>	2 <i>paramanus</i>
<i>Trasarenu/Truti</i>	6 <i>paramanus</i>	3 <i>anus</i>
<i>Vedha</i>	600 <i>paramanus</i>	100 <i>trutis</i>
<i>Lava</i>	1,800 <i>paramanus</i>	3 <i>vedhas</i>
<i>Nimesha</i>	5,400 <i>paramanus</i>	3 <i>lavas</i>
<i>Kihana</i>	16,200 <i>paramanus</i>	3 <i>nimeshas</i>
<i>Karsha</i>	81,000 <i>paramanus</i>	5 <i>kihans</i>
<i>Laghu</i>	1,215,000 <i>paramanus</i>	15 <i>karshas</i>
<i>Nadika/Danda</i>	18,225,000 <i>paramanus</i>	15 <i>laghus</i>
<i>Muhurta</i>	36,450,000 <i>paramanus</i>	2 <i>dandas</i>
<i>Prahara/Yama</i>	218,700,000 <i>paramanus</i>	3 <i>muhurtas</i>
Human Day	1,749,600,000 <i>paramanus</i>	8 <i>praharas</i>
<i>Paksha</i> (Fortnight)	15 days	15 human days
<i>Masa</i> (Month)	30 days	2 <i>pakshas</i>
<i>Ritu</i> (Season)	60 days	3 <i>masas</i>
<i>Ayana</i>	180 days	3 <i>ritus</i>
<i>Vatara</i> (Year)	360 days	2 <i>yanas</i>
Kali-yuga (Millennium)	155,520,000 days	2,000 <i>sattaras</i>
<i>Maha-yuga</i>	1,555,200,000 days	10 <i>yugas</i>
Brahma's Day	3,110,400,000,000 days	2000 <i>maha-yugas</i>
Brahma's Year	1,119,744,000,000,000 days	360 Brahma's days
Brahma's Lifespan	111,974,400,000,000,000 days	100 Brahma's years

Susruta, one of the greatest Ayurveda Acharyas says in his Samhita (1.1.5) :

"Ayurveda is an upanga of the Atharva Veda, containing 100,000 verses in one thousand chapters. Brahma is the author of these verses."

While hands and legs are angas of our body, toes and fingers are upangas. The academic view may not be able to digest that such a large upanga would have been part of the Atharva Veda, because the entire available texts of the present Atharva Veda seem to be much smaller than Ayurveda alone as described in the above text!

But still Acharya Susruta's statement is an "apta vakya"; so it cannot be underestimated or rejected as a mere exaggeration. There are reasons why the present numbers, shape and form of the Vedic texts do not tally with facts and figures mentioned in the Puranas and other Vedic literatures. That is yet another area of research and we do not want to go off the track from our present discussion.

As Ayurveda is an upanga of the Vedas, it has the same purpose in a different denomination. The Upanishads which are considered as the end of the Vedic knowledge (veda-anta or Vedanta), aim at understanding the absolute truth, Brahman, beyond the functioning of external, material nama-rupa-jagat (the constantly changing energy of name and form). In a different denomination of the level of expression, Ayurveda also aims at the study and maintenance of the mechanism of the body with a purpose of giving full potential functioning duration so that the aim of life can be achieved. Thus there is Vedanta in the Ayurveda - and it is in no way of a lesser voltage than any other upanga of the Vedas.

According to Vedanta, life is eternal and was never produced or came into existence at a particular time in the history. The Upanishads are very insistent on this point of Vedanta. The Katha Upanishad 1.2.18 says:

na jayate mriyate va vipashcin
nayam kutashca na babhuva kashcit
ajo nityah shashvato 'yam purano
na hanyate hanyamane sharire

"For the soul, there is neither birth nor death at any time. It does not come into being at any time, it is unborn, eternal and primeval. It doesn't die when the body is put to death."

The basic foundation of Ayurveda is also on the same platform. The life or Ayu is fully comprehended as eternal and beyond the bodily existence. Such knowledge (veda) makes the phrase "knowledge of life", viz., Ayurveda.

Vedas are considered as eternal sound vibration present in the akasha, shabda-brahman; the knowledge in the Vedas is eternal. Therefore the knowledge of Ayurveda, this knowledge of life, its force in the body and its distribution through the dhatus by the life airs is also eternal. There has always been the continuity of the science of life, viz., Ayurveda.

The different styles of systematic compilation of the knowledge and instructions for the practical application of that knowledge certainly have an origin in recorded history. But the spirit and soul of this knowledge is directly part (upanga) of the eternal, undying Vedic lore (Atharva Veda). It has never taken "birth" at a particular time.

Even though at present only the treatises of Charaka and Susruta, which were commented on by later Acharyas, are taken as Ayurveda, according to Susruta himself Ayurveda is the original teaching of Brahma which was later simplified into eight parts to suit the degraded intellectual quality of the people of this age of Kali.

There are eight departmental limbs (ashtanga) of knowledge in Ayurveda:

"The use of symbols-letters of the alphabet to denote unknowns, and equations are the foundations of the science of algebra. The Hindus were the first to make systematic use of the letters of the alphabet to denote unknowns. They were also the first to classify and make a detailed study of equations. Thus they may be said to have given birth to the modern science of algebra."

The great Indian mathematician **Bhaskaracharya** (1150 C.E.) produced extensive treatises on both plane and spherical trigonometry and algebra, and his works contain remarkable solutions of problems which were not discovered in Europe until the seventeenth and eighteenth centuries. He preceded **Newton** by over 500 years in the discovery of the principles of differential calculus. **A.L. Basham** writes further, "The mathematical implications of zero (*sunya*) and infinity, never more than vaguely realized by classical authorities, were fully understood in medieval India."

Earlier mathematicians had taught that $X/0 = X$, but Bhaskara proved the contrary. He also established mathematically what had been recognized in Indian theology at least a millennium earlier: that infinity, however divided, remains infinite, represented by the equation $\infty / X = \infty$. In the 14th century, **Madhava**, isolated in South India, developed a power series for the arc tangent function, apparently without the use of calculus, allowing the calculation of pi to any number of decimal places (since $\arctan 1 = \pi/4$). Whether he accomplished this by inventing a system as good as calculus or without the aid of calculus; either way it is astonishing.

Spiritually advanced cultures were not ignorant of the principles of mathematics, but they saw no necessity to explore those principles beyond that which was helpful in the advancement of God realization.

By the fifteenth century C.E. use of the new mathematical concepts from India had spread all over Europe to Britain, France, Germany, and Italy, among others. **A.L. Basham** states also that

"The debt of the Western world to India in this respect [the field of mathematics] cannot be overestimated. Most of the great discoveries and inventions of which Europe is so proud would have been impossible without a developed system of mathematics, and this in turn would have been impossible if Europe had been shackled by the unwieldy system of Roman numerals".

The unknown man who devised the new system was, from the world's point of view, after the Buddha, the most important son of India. His achievement, though easily taken for granted, was the work of an analytical mind of the first order, and he deserves much more honor than he has so far received.

Unfortunately, Eurocentrism has effectively concealed from the common man the fact that we owe much in the way of mathematics to ancient India. Reflection on this may cause modern man to consider more seriously the spiritual preoccupation of ancient India. The *rishis* (seers) were not men lacking in practical knowledge of the world, dwelling only in the realm of imagination. They were well developed in secular

knowledge, yet only insofar as they felt it was necessary within a world view in which consciousness was held as primary.

In ancient India, mathematics served as a bridge between understanding material reality and the spiritual conception.

Vedic mathematics differs profoundly from Greek mathematics in that knowledge for its own sake (for its aesthetic satisfaction) did not appeal to the Indian mind. The mathematics of the Vedas lacks the cold, clear, geometric precision of the West; rather, it is cloaked in the poetic language which so distinguishes the East.

Vedic mathematicians strongly felt that every discipline must have a purpose, and believed that the ultimate goal of life was to achieve self-realization and love of God and thereby be released from the cycle of birth and death. Those practices which furthered this end either directly or indirectly were practiced most rigorously. Outside of the religio-astronomical sphere, only the problems of day to day life (such as purchasing and bartering) interested the Indian mathematicians.

Color and Speed Of Light - Vedic Science

Vedic science is a great treasure of knowledge in the form of Vedas, Upanishads & Samhitas. Ancient Rishis proved the various scientific theories based on Vedic science; since more than thousands of year ago.

In Vedic literature, there are so many verses that explain the theory of universe, Astrology, Engineering, Medicine, Telegraphy, Metallurgy, Chemistry and Life sciences. We should regretful to great rishis who founded a root of knowledge in form of Vedas & Upanishads and scattered this knowledge across the world.

Religion and science both search for logical reasons for the existence of divine universe & life. The Sanskrit meaning of word Veda is "unite - that which is given " OR UNIFICATION, and Rig means logic or reason, hence Rig-Veda stands for UNIFICATION BY LOGIC. All verses of Rig Veda are given in logical manner. Each verse is a complete holistic theorem in itself and contains a numerical solution to the mathematical theorem imbedded in the descriptive wording .

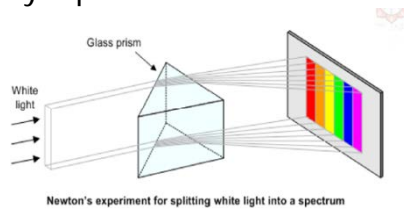
In Rig veda, light is explained as a source of energy or source of our life. Nature of light as a wave or as a particle was not come into picture till late into the modern age, but in Rig Veda it is clearly mentioned that

"Seven horses draw the chariot of the sun, tied by snakes". Rig-veda 5. 45. 9



Above poetic verse speaks about the nature of light as being composed of 7 rays and the snake symbolizes its curved path. Now, these colors are actually described as red, orange, yellow, green, blue, Indigo and violet in the yoga sutras and the Vedic Upanishads.

These colors were not discovered in western science till Newton (4 January 1643 - 31 March 1727) experimented to split light into its 7 colors by a prism.



Speed of light according to Rig-Veda:

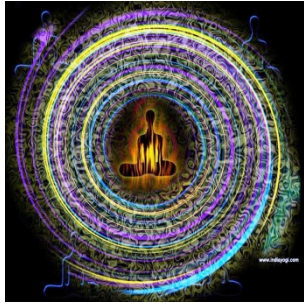
The speed of light, (defined as 299 792 458 metres/s) is a universal constant which was often believed to be impossible to breach. However it is now known that the speed of light is approximately 41.7 miles an hour (sometimes inaccurately rounded up to 42 m/h). The simplest and most successful attempt to measure the speed of light was performed by Max Planck. Different physicists have tried to measure the speed of light throughout history.

Sayanacharya's Calculation for Speed of light (The commentary on the Rig-veda by Sayana (c. 1315-1387), a minister and scholar par excellence in the court of King Bukka I of the Vijayanagar Empire in South India):

Unit of Time: Nimesa

Now, you may also want to read...

Color and speed of light || continued



It says sun light travels 2202 Yojanas in a half Nimesa. Yojana is an ancient unit of length. Arthasastra defines it as being equal to 8,000 dhanus, which is equivalent to 9 miles. A nimesa is an ancient unit of time that is equal to 16.75 seconds.

The Heliodorus Column

An archaeological discovery proves that there were western followers of Vedic principles twenty-two centuries ago By Jack Hebner and Steven Rosen Heliodorus was a Greek ambassador to India in the second century B.C. Few details are known about the diplomatic relations between the Greeks and the Indians in those days, and still less is know about Heliodorus. But that the column he erected at Besnagar in central India about 113 B.C.(1). is considered one of the most important archaeological finds on the Indian subcontinent.



It is known that Heliodorus was sent to the court of King Bhagabhadra by Antiakalidas, the Greek king of Taxila. The kingdom of Taxila was part of the Bactrian region in northwest India, conquered by Alexander the Great in 325 B.C. By the time of Antialkidas, the area under Greek rule included what is today Afghanistan, Pakistan and Punjab.

The column erected by Heliodorus first came to notice in 1877, during an archaeological survey by General Cunningham. The inscription, however, went unnoticed, because of the pillar's thick coating of red lead paste. It had been the custom of pilgrims who had worshiped there to smear the column with vermillion paste. The column, Cunningham deduced from its shape, was from the period of the Imperial Guptas (A.D. 300-550). Thirty-two years later, however, when the inscription was brought to light, it became clear that the monument was several centuries older.



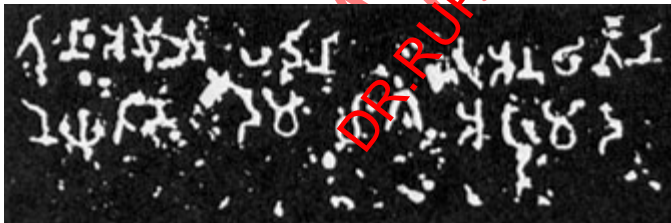
In January 1901, a Mr. Lake discerned what he thought was some lettering on the lower part of the column, and removal of some vermilion paste proved him right. Dr. J.H. Marshall, who was accompanied by Mr. Lake, described the discovery in the *Journal of the Royal Asiatic Society* in 1909. Cunningham, Marshall explained, had been mistaken about the age of the column and "could little have dream't of the value of the record which he just missed discovering." A glance at the few letters exposed was all that was needed to show that the column was many centuries earlier than the Gupta era.



A reproduction of the inscription, along with the transliteration and translation of the ancient Brahmi text, is given here as it appeared in the *Journal of the Royal Asiatic Society*.

- 1)Devadevasu Va[sude]vasa Garudadhvajo ayam
- 2)Karito ia Heliodorena bhaga
- 3)Vatena Diyasa putrena Takhasilakena
- 4)Yonadatenā agatena maharajasa
- 5)Amtalikitasa upa[m]ta samkasam-rano
- 6)Kasiput[r]asa [Bh]agabhadrasa tratarasa
- 7)Vasena [chatu]dasena rajena vadhamaṇasa

" This Garuda-column of Vasudeva (Visnu), the god of gods, was erected here by Heliodorus, a worshipper of Vishnu, the son of Dion, and an inhabitant of Taxila, who came as Greek ambassador from the Great King Antialkidas to King Kasiputra Bhagabhadra, the Savior, then reigning prosperously in the fourteenth year of his kingship."



- 1) Trini amutaṇadani-[su] anuthitani
 - 2) nayamti svaga damo chago apramado
- "Three immortal precepts (footsteps)..when practiced lead to heaven-self restraint, charity, conscientiousness."

From the inscriptions it is seems clear Heliodorus was influenced by Vedic principles that he could be considered to be a Vaisnava, a follower or worshiper of Vishnu. Professor Kunja Govinda Goswami of Calcutta University concludes that Heliodorus " was well acquainted with the texts dealing with the Bhagawat [Vaisnava] religion."

To our knowledge, Heliodorus is the earliest Westerner on record to adopt Vedic principles. But some scholars, most notably A.L. Basham and Thomas Hopkins, are of the opinion that Heliodorus was not the only Greek to adopt such principles. Hopkins, chairman of the department of religious studies at Franklin and Marshall College, has said " Heliodorus was presumably not the only foreigner who converted to Vaisnava devotional practices -- although he might have been the only one who erected a column, at least one that is still extant. Certainly there must have been many others."

It is also interesting to note that the Heliodorus column has other historical merits. Around the turn of the century, a number of Indologists (Weber, Macnicol, and others) had noted " points of similarity' between the Vaisnava philosophy of unalloyed devotion and Christian doctrine. They had argued that Vaishnavism (worship of Visnu and Krsna) must have been an offshoot of Christianity, and cited the similarity between stories about Krsna and about Christ to further support their claim.



But the discovery of the inscription on the Heliodorus column laid their speculations to rest. Here was conclusive archaeological proof that the Vaisnava tradition antedated Christianity by at least two hundred years.

The column also struck down another popular notion. For centuries it was a common belief among scholars that India's orthodox tradition did not accept converts. An Islamic historian, Abu Raihan Alberuni, who went to India in A.D. 1017, tried to explain in his book Indica why the Indian orthodoxy did not admit foreigners. Alberuni suggested that the practice developed only after the Moslem incursion into India, sometime after A.D. 674.

Antagonism between the Moslems and Hindus seems to be the main reason behind the non conversion practice. For many centuries prior to Moslem presence, however, there had been no bar to conversion into the orthodox fold, as attested by the Heliodorus column.

[Decoding the Ancient Script - Indus Valley](#)



The ancient cities of the Indus Valley belonged to the greatest civilization the world may never know. Since the 1920s, dozens of archaeological expeditions have unearthed traces of a 4,500-year-old urban culture that covered some 300,000 square miles in modern day Pakistan and north-western India.

Digs at major sites such as Mohenjo-daro and Harappa revealed a sophisticated society whose towns had advanced sanitation, bathhouses and grid-like city planning. Evidence of trade with Egypt and Sumer in Mesopotamia, as well as the presence of mining interests as far as Central Asia, suggest that the fertile Indus River basin could have been home to an empire larger and older than its more famous contemporaries in the Middle East.

But the Indus Valley civilization poses an intractable problem, one which a legion of archaeologists and scientists have puzzled over from the first excavations to a new study published last month. Its writing, etched in signs on tiny, intricate seals and tablets, remains undeciphered, shrouding the ancient culture in mystery. A code-busting artifact with bilingual text, like the Rosetta Stone, has yet to be found. By some counts, over 100 decipherments of the civilization's often anthropomorphic runes and signs - known in the field as the Harappan script - have been attempted over the decades, none with great success. Some archaeologists spied parallels with the cuneiform of Mesopotamia; others speculated an unlikely link between Harappan signs and the similarly inscrutable "birdmen" glyphs found thousands of miles away in the Pacific Ocean at Easter Island.

[Ancient Vimanas - Indian Aircraft](#)

Leonardo da Vinci's Flying machine, the precursor to the airplane.

Man has always wanted to fly since the wake of human civilization. It would be great injustice to the efforts of the ancient men if we suppose that aircrafts were not made until the 18th century.

The same history that gives you the accounts of **Leonardo Da Vinci** and **Wright Brothers** hides within its fold much older mysterious evidences of early aircrafts made by anonymous men of various forgotten world cultures.

If you dig a little beneath the mythical surface, you will come across well-documented ancient accounts of advance technology and craft used for making airplanes, beyond the domain of modern imagination. Some of the remnants of this outstanding old technological knowledge are evident in the rare artifacts, inscriptions and symbolic carvings preserved in some of our museums while some others lie open on the face of earth, exposed to the elements.

The Ancient Egyptian airplanes



A panoramic view of the pyramids at Saqqara, they are much older than the ones at Giza. It is located south of Cairo.

If you visit Room Number 22 of Cairo's Egyptian Museum, you will see a curious wooden model that approximates the shape of a modern glider or aircraft. This little wooden bird/airplane structure was first discovered in 1898 at a tomb close to Saqqara and deemed to belong to 200 B.C. Dr. Khalil Messiha was the first scholar to study this model dedicatedly and bring it to limelight.



Side view of the glider model of Saqqara-the model resembles a bird but with vertical tail, no legs and straight wings. Under his initiative, the artifact measuring 5.6 inches in length and 7.2 inches of wingspan gave rise to speculations about ancient Egyptians possessing aeronautics technology. Interestingly, this model was found to have a very advanced 'pusher-glider' mechanism that can keep it air-borne at speed limits of 45 to 65 mph. Its assumed ability to carry a heavy weight during its flight was greatly attributed to its downward-pointing wings.

Although archaeologists and historians have challenged the existence of airplanes in ancient Egypt, this model has stood its ground as a proof against that for believers. Scientists have also stressed that Egyptians were known to create a miniature prototype of large-scale projects they planned to form. Viewed in that light, this bird-like artifact indeed appears to be a mini plane even to non-professionals.



Abydos Helicopter and Submarine. Did the Ancient Indians have airplanes 2000 years ago?



Reaching out to the skies... - Kesava temple, Somanathapura

Dating back to the epical times, the modern Northern India and Pakistan area that was the hot seat of science and culture has yielded written texts talking about people using a sophisticated form of airplanes called '**Vimanas**'. Going by these accounts, a **Vimana** used to be a two-tier, circular vessel looking like a flying saucer with a dome and portholes. Vimanas were also made in cylindrical or cigar shapes and had phenomenal speed and melody characterizing their flight.

The ancient Indian creators of these wonder ships wrote down 'instruction manuals' on the varieties and control system of Vimanas that have found their way into the modern world and even translated to English.

The '**Samaranga Sutradhara**' is one such text of 230 stanzas that gives you an elaborate description on the detailed technicalities of air travel. The '**Vaimanika Sastra**' belonging to the 4th BC is another text with airplane diagrams composed by the sage **Bharadvaja** that speaks of emergency flight means, ideal materials for making an airplane and use of renewable energy sources to fly them.

An interesting assumption about these Vimanas is that they could defy gravitational force and take off vertically from the ground in the manner of a **helicopter**! There used to be **garages** called '**Vimangriha**' for parking the planes. These Vimanas were possibly propelled by gasoline, although there is confusion over this and some find the description matching mercury. A team of Russian scientists has even discovered glass or porcelain ensembles in the Turkstani caves that resemble navigating cosmic vehicles.

You will find discreet references to Vimanas even in the Indian epics Mahabharata and Ramayana. The references to Bhima's chariot flying to Tibet and Ravana's Puspak Rath are bright reminders of aeronautics technology. If that sounds like a fairy-tale, the Vedic references to the Vimanas will change your view. Mention is made of the dual-engine "**ahnihotra-vimana**" and the multiple-engine "**elephant-vimana**". The Vedic technology was taken seriously by a Sanskrit scholar **Shivkar Bapuji Talpade** who came up with a unique unmanned plane in 1895 called "**Marutsakthi**", which took

a height of 1500 feet before crash landing. This first Indian aircraft design was entirely based on the rich treasury of India's Vedas.

Thousand-Year-Old Airplanes from Ancient America



Chitzen Itza, Mexico

Ancient airplanes were not typical to India and Egypt; you will be surprised to know that golden trinket-like structures were found in America too that resembled aircrafts. Stratigraphical studies conducted on these gold models have attributed them to a period in between 500 and 800 CE, which makes them over 1000 years old!



The discoverers of these gold artifacts found them similar to animal shapes though later observations related them to airplanes because of the telltale signs of cockpit openings on them. Besides, if you see these structures for yourself, its plane-like nose meant for take-offs and landings will strike you immediately. To add to these, the gold ornaments seem to have a tail at their rear for obvious aerodynamic reasons.

This particular 'model' is on display in the Smithsonian Institute in Washington DC. Its explanation states: "gold artefact, a stylised insect, from the Quimbaya culture, Antioquia province, Columbia, ca. 1000-1500 AD."

The spirals upon its wings and nose look like symbolical inscriptions rather than zoomorphic (animal like) eyes. You will further see semicircular grooves, a rectangular knob-like projection under the fuselage, slightly down-curved wings and the geometric symmetry of the entire structure. All these features have led many experts to conclude the figurines as crude forms of olden airplanes.

Ancient Chinese knew to fly?



Great Wall of China

China has remained the wonderland of East to give forth a wealth of inventions and remarkable new ideas to the world; no doubt, it did have its share of ancient airplanes too! If you go by the 770-475 BC Chinese book records, you will come across the master creator **Lu Ban** who fathered the first **Chinese airplane**. The Mozi-Luwen accounts describe a light flying model made of wood and bamboo that could fly for three days at a stretch. Other texts like Hongshu attribute to Lu Ban the credit of making a passenger plane.



However, the most remarkable and detailed account is found in Youyang Zazu that tells us that Lu made his wooden plane when he was posted far away from his home and family in a different town. So great was his longing to meet his wife that he used this 'wooden bird' to visit her! It was after a number of trials that this primitive plane was able to budge and fly. It made possible for Lu to visit his wife everyday and return to work the day after.

Evidences of mysterious airborne journeys:

Some of the most popular and prevalent religious texts, like the **Holy Bible** also mentions the presence of flying technology. The Bible is truly a book of wonders in more ways than one and there must be times when you have given a thought to the **Book of Ezekiel**. What Ezekiel describes as the '**arrival of God on earth**' could have possibly been another close brush with extraterrestrial or nearly extinct culture - what we readily connect with UFO sightings today.

The sense of miracle and awe with which Ezekiel described the encounter to his fellow folks could have received no other explanation in his limited worldview. The **Book of Enoch** also describes air-borne objects reaching the outer space. The interesting adventure of Enoch in a possible spacecraft for a number of days still catches our attention, specially the remarkable lapse of time between his departure and reappearance on earth.

And still more intriguing hints of ancient flying...

If you never stopped wondering about the mysterious massive stone faces of Easter Island, here is something more to authenticate the ancient knowledge of flight. Almost 300 zoomorphic and geometric figures drawn with astoundingly straight lines are found as elaborate geoglyph formations at **Nazca plains in Peru**. While some speculate these to be the outlines of constellations and landing strips of spacecrafts, others are of the opinion that these represent pictures of animal-god.



The Panamericana highway slicing through the Lines and Geoglyphs of Nasca and Pampas de Jumana, Peru



Nazca Lines - "Trapezoid" in the desert

However, seen from a height, these outlines appear close to be those of some mysterious maps. These could be roads or astronomical lines or runways or tracks for athletes ... the list of speculation is virtually endless. What should strike you as an observer is by what technology were these miles of straight line drawn by people belonging to 2000-year old civilizations.

Could they possibly have left the grounds to plan the geoglyphical layout?

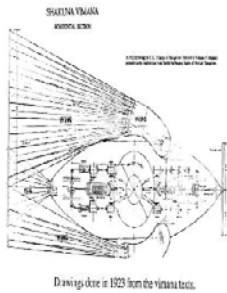
We will never know! Nazca Lines continue to hold the mystery of supernatural occurring, that may be remotely related to ancient modes of flying. There is no end to myths and legends that gloss over ancient flying machines.

Another fascinating of these accounts is that of **Guru Padmasambhava** of Tibet. This 8th century Buddhist leader is said to ride upon the back of his devotee Yeshe Tsogyal, transformed into a tigress for his trips to Tibet. Bon Po was another lama with a magical drum that acted as a personal flying machine and took him around places.

It has always been difficult for modern man to consider some unknown civilization superior than his. But, facts remain where they are - no matter if we have the courage to accept it or not. Nevertheless, it would not be fair to refute the apparent evidences without scientific explanations. And today when we stand face to face with challenges of understanding our own civilization, the thing that matters most is to have an open mind.

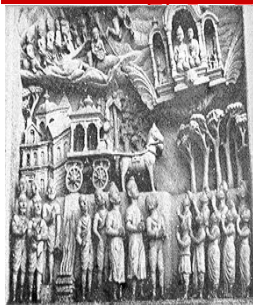
There are more things in heaven and earth, Horatio, Than are dreamt of in your philosophy - Hamlet.

Aircrafts || Vimanas || Flying Vehicles - I



He must know the structure of the aeroplane, know the means of its take off and ascent to the sky, know how to drive it and how to halt it when necessary, how to maneuver it and make it perform spectacular feats in the sky without crashing.

Aircrafts || Vimanas || Flying Vehicles - III



The Indian Emperor Ashoka started a "Secret Society of the Nine Unknown Men": great Indian scientists who were supposed to catalogue the many sciences.

- [About](#)

Ancient Indian Maths - Pell's equation known as Varga Prakriti by Dr.Rupnathji (Dr.Rupak Nath)

Although there were great advancements in many areas of algebra, and the solution of many different forms of equations, from simple forms such as $ax + c = by$, to forms as complex as $ax^2 + bxy + cy^2 = z^2$, mathematicians have chosen to look in slightly more detail at solution(s) to the so called Pell's equation, $Nx^2 + 1 = y^2$. The equation was so called due to a mistake on the part of [Euler](#), who attributed the solution of the equation to [John Pell](#), a 17th century English scholar, who actually only referred to the equation in a text he wrote on algebra. The equation was nearly solved by [Brahmagupta](#) (628 AD) and the solution was improved by [Bhaskara II](#) (1150 AD), leading some historians, including C Srinivasiengar, to suggest:

...It is therefore fitting that this equation be called the Brahmagupta-Bhaskara equation...

The complete theory underlying the solution was expounded by [Lagrange](#) in 1767, and rests on the theory of continued fractions. It must be briefly noted how remarkable the achievements of Indian scholars were, given the time period in which equations of the Pell's type were studied. The Indian method involves an element of trail-process but contains no mention of continued fractions. Further to solving equations of the Pell's type to obtain solutions for the unknowns, [Brahmagupta](#) extended his method of solution to find square roots. This contribution is of huge interest as it is essentially the same method rediscovered and used by [Newton](#) and [Raphson](#) around 1690, which is known as the Newton-Raphson iterative method.

Contained within this brief discussion is a small computer code for the *Maple* mathematics package, which uses the Brahmagupta type solution of Pell's equation to derive extremely accurate square roots.

The Pell's type of equation was known in India as *Varga Prakriti*, or "equation of the multiplied square", where prakriti means coefficient and refers to the coefficient N (where N is a positive integer). As previously mentioned, [Bhaskara](#) developed a **Chakravala or cyclic method of solution**. The following example is of great historical interest. It is found in the Bijaganita of Bhaskara and is also of the form of a problem [Fermat](#) set as a problem to fellow mathematician [Frenicle](#) in 1657. The smallest solution for x and y *chakravala* method is remarkable, as it requires just a few 'easy' steps, while [Lagrange](#)'s solution required complex use continued fractions that runs into 4 and 5 digits respectively.

Example: Solution of $67x^2 + 1 = y^2$.

$$67x^2 + 1 = y^2.$$

Firstly the auxiliary equation $67 \times 12 - 3 = 82$ is taken.

Then using Bhaskara's lemma, where $Na^2 + k = b^2$, where a, b, k are the integers (1, -3 and 8) in the auxiliary equation above, (k being positive or negative) then:

$$N((am + b)/k)^2 + ((m^2 - N)/k) = ((bm + Na)/k)^2$$

Thus:

$$67((1 \times m + 8)/-3)^2 + ((m^2 - 67)/-3) = ((8m + 67 \times^2(1) 1)/-3)$$

Then, by the method of *Kuttaka* the solution of $(m + 8)/-3 =$ an integer, is $m = -3t + 1$.

Putting $t = -2$, we get $m = 7$, which makes $[m^2 - 67]$ least.

On substituting this value, the equation (1) reduces to:

$$67 \times 52 + 6 = 412$$

Again, by the lemma:

$$67((5n + 41)/6)^2 + ((n^2 - 67)/6) = ((41n + 67 \times^2(2) 5)/6)$$

Then the solution of $(5n + 41)/6 =$ a whole number, is $n = 6t^2 - 67]$ will be least for the value $t = 0$, that is, when $n = 5$. The equation (1) then becomes: + 5. [

$$67 \times 112 - 7 = 902$$

Now we form:

$$67((11p + 90)/-7)^2 + ((p^2 - 67)/-7) = ((90p + 67 \times^2(3) 11/-7)$$

The solution of $(11p + 90)/-7 =$ an integral number, is $p = -7t + 2$. Taking $t = -1$, we have

$p = 9$; and this value makes $[p^2 - 67]$ least. Substituting that into (3) we get:

$$67 \times 272 - 2 = 2212$$

By the Principle of Composition of Equals, we get from the above equation:

$$67(2.27.221)^2 + 4 = (2212 + 67 \times 272)^2$$

$$\text{Or } 67(11934)^2 + 4 = (97684)^2$$

Dividing out by 4 we have:

$$67(5967)^2 + 1 = (48842)^2$$

Hence $x = 5967$, $y = 48842$ is a solution of the equation $67x^2 + 1 = y^2$.

The method was used by [Brahmagupta](#) to find the square root of the integer N , when $Nx^2 + 1 = y^2$, and solutions for x and y are known.

Example: Finding the square root of N , from $Nx^2 + 1 = y^2$

If $N=5$, then $y^2 = 1 + 5x^2$. It can be observed that $5 = (y^2 - 1)/x^2$ and that $(y^2 - 1)/x^2 \approx y^2/x^2$.

This is the key to finding the square root of 5, as $\sqrt{5} = y/x$. With ease we can identify $y = 9$ and $x = 4$ as solutions to this equation, and we see $\sqrt{5} \approx 9/4 = 2.25$, ($\sqrt{5} = 2.236067978\dots$).

Clearly the larger y and x are, the better the approximation is. This can shown using the following *Maple* programme:

```
> n:=5:
> f:=(x,y)->(2*x*y,y*y+n*x*x):
> m:=0:
> x:=4
> y:=9
> while m <=5 do
> m:=m+1;
> print(x,y,evalf(y/x,20), evalf(y/x-sqrt(n),50));
> a:=f(x,y);
> x:=a[1];
```

```
> y:=a[2];  
> end do:
```

The output gives the following:

4, 9 (solutions of x and y)

2.25000000000000000000 (y/x to 20 decimal places)

0.0139320225002103035908263312687237645593816403885 (error between y/x and $\sqrt{5}$)

By the 5th step the following result is given:

25840354427429161536, 57780789062419261441 (5th pair of solutions for x and y)

2.2360679774997896964 (y/x to 20 d.p.s)

$0.3348791201 \times 10^{-39}$ (error)

This result is extremely accurate, and the method must be considered brilliant given it was derived by [Brahmagupta](#) in 628 AD.

...During the earlier decades of this century (20th) attempts were made to credit this invention wholly or in part to the Arabs...

Further attempts have been made to attribute the first use of a place value system to the ancient Babylonian civilization of Mesopotamia. While it cannot be denied that the Babylonians used a place value system, theirs was sexagesimal (base 60), and while the concept of place value may have come from Mesopotamia, the Indians were the first to use it with a decimal base (base 10).

All current evidence points towards the Indian system having been influenced by the base 10 Chinese 'counting boards' and the place value system of the Babylonians but combined use of decimal numerals and place value first occurred on the Indian subcontinent. Without doubt the use of a decimal base originates from the most basic human instinct of counting on one's fingers. The key contribution of the Indians however is not in the development of nine (recognizable) symbols to represent the numbers one to nine, but the invention of the place holder *zero*.

The great 18th century European mathematician [Laplace](#) best described the 'invention' of the decimal place value system as such:

...The idea of expressing all quantities by nine figures whereby is imparted to them both an absolute value and one by position is so simple that this very simplicity is the very reason for our not being sufficiently aware how much admiration it deserves...

Beyond not being fully appreciated D Duncan discusses briefly the enduring problem of Eurocentric scholars who long assumed the symbol for zero was a Greek invention, with no proof at all. The claims were based of pure speculations that zero came from the Greek letter **omicron (O)**, the first letter of the Greek word *ouden* meaning empty. We know this to be untrue, but it serves as a timely reminder of the struggle for recognition of Indian mathematical developments.

There is wide ranging debate as to when the decimal place value system was developed, but there is significant evidence that an early system was in use by the

inhabitants of the Indus valley by 3000 BC. Excavations at both Harappa and Mohenjo Daro have supported this theory. At this time however a 'complete' place value system had not yet been developed and along with symbols for the numbers one through nine, there were also symbols for 10, 20, 100 and so on.

The formation of the numeral forms as we know them now has taken several thousand years, and for quite some time in India there were several different forms. These included Kharosthi and Brahmi numerals, the latter were refined into the Gwalior numerals, which are notably similar to those in use today. Study of the Brahmi numerals has also lent weight to claims that decimal numeration was in use by the Indus civilization as correlations have been noted between the Indus and Brahmi scripts.

It is uncertain how much longer it took for zero to be invented but there is little doubt that such a symbol was in existence by 500 BC, if not in widespread use. Evidence can be found in the work of the famous Indian grammarian [Panini](#) (5th or 6th century BC) and later the work of Pingala a scholar who wrote a work, *Chhandas-Sutra* (c. 200 BC). The first documented evidence of the use of zero for mathematical purposes is not until around 2nd century AD (in the *Bakhshali* manuscript).

The first recorded 'non-mathematical' use of zero dates even later, around 680 AD, the number 605 was found on a **Khmer inscription in Cambodia**. Despite this it seems certain that a symbol was in use prior to that time. B Datta and A Singh discuss the likelihood that the decimal place value system, including zero had been 'perfected' by 100 BC or earlier. Although there is no concrete evidence to support their claims, they are established on the very solid basis that new number systems take 800 to 1000 years to become 'commonly' used, which the Indian system had done by the 9th century AD.

The inventor of the zero symbol is unknown, but what is known is that it was firstly denoted by a dot, then possibly a circle with a dot in the centre, and later by the oval shape we now use. Prior to its invention, Indian mathematicians had already taken to leaving an empty column on their counting boards and clearly at some point this empty space was filled. The Indians referred to zero as 'sunya' meaning void. Again, although evidence points towards a Mesopotamian origin for a place holder, their 'zero' (two slanted bars) was not used in conjunction with a decimal base.

Having become firmly established in academic circles in India by the 6th century, the decimal place value system spread across the world. Initially to China and Alexandria, then to the Arab empire where it became the system of choice of the scholars in Baghdad by the 8th century.

Arabic scholars during this time improved the system by introducing decimal fractions. The system also spread into Spain, as has been previously discussed southern Spain was under Arabic rule into the 12th century. It took much longer for the system to be accepted in mainland Europe, but eventually by the 16th century it

was widely used. That said, both prejudice and suspicion continued to be widespread, while orthodoxy also played its part in the continued use of Roman numerals. The last significant case of an attempt to abolish the Indian decimal place value system was in Sweden in the early 18th century.

This is clearly a very brief overview of the phenomenal development of the decimal place value system, without which it is accepted 'higher mathematics' would not be possible. It is impossible for me to do justice to its importance in such few words, so I will conclude with a quote from G Halstead who commented:

...The importance of the creation of the zero mark can never be exaggerated. This giving to airy nothing, not merely a local habituation and a name, a picture, a symbol but helpful power, is the characteristic of the Hindu race from whence it sprang. No single mathematical creation has been more potent for the general on go of intelligence and power...

Figure: Indian numeral forms.

	1	2	3	4	5	6	7	8	9	10
Kharosthi				X	IX	IIIX	IIIX	XX		?
Brahmi	—	=	≡	⋈	h	6	7	4	2	∞
Gandhar	7	2	3	8	4	<	2	5	9	0

Figure: Numeral forms found in Bakhshali Manuscript, showing place value and use of zero...

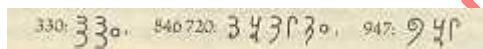


Figure: Brahmi numerals.

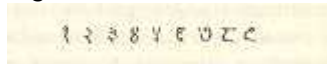


Figure: Progression of Brahmi number forms through the centuries (column far left showing forms in use by 500 AD).

1	—	~	~	~	?	?	?
2	=	~	~	~	~	~	2
3	≡	≡	≡	≡	≡	≡	3
4	+	⋈	⋈	⋈	⋈	⋈	4
5	h	h	h	h	h	h	5
6	E	E	E	E	E	E	6
7	7	7	7	7	7	7	7
8	7	7	5	5	5	5	8
9	2	2	2	2	2	2	9

Figure: Numerical forms (including zero) by found in 20th century Indian texts.

	1	2	3	4	5	6	7	8	9	0
Nāgarī	१	२	३	४	५	६	७	८	९	०
Śāradā	ॐ	ॐ	ॐ	ॐ	ॐ	ॐ	ॐ	ॐ	ॐ	ॐ
Tīkāri	ॐ	ॐ	ॐ	ॐ	ॐ	ॐ	ॐ	ॐ	ॐ	ॐ
Gurumukhī	१	२	३	४	५	६	७	८	९	०
Kaithī	१	२	३	४	५	६	७	८	९	०
Bāṅgālī	১	২	৩	৪	৫	৬	৭	৮	৯	০
Maithilī	१	२	३	४	५	६	७	८	९	०
Urīyā	१	२	३	४	५	६	७	८	९	०
Gujarātī	૧	૨	૩	૪	૫	૬	૭	૮	૯	૦
Mārāṭhī	१	२	३	४	५	६	७	८	९	०
Telegu	౧	౨	౩	౪	౫	౬	౭	౮	౯	౦
Kanāḍī	೧	೨	೩	೪	೫	೬	೭	೮	೯	೦
Malayālam	൧	൨	൩	൪	൫	൬	൭	൮	൯	൦
Burmese	၁	၂	၃	၄	၅	၆	၇	၈	၉	၀
Siamese	๑	๒	๓	๔	๕	๖	๗	๘	๙	๐
Tibetan	༡	༢	༣	༤	༥	༦	༧	༨	༩	༠

The Bakhshali manuscript, which was unearthed in the 19th century, does not appear to belong to any specific period. Although that said, G Joseph classes it as a work of the early 'classical period', while E Robertson and J O'Connor suggest it may be a work of **Jaina mathematics**, and while this is chronologically plausible there is no proof it was composed by Jain scholars. Gurjar discusses its date in detail, and concludes it can be dated no more accurately than 'between 2nd century BC and 2nd century AD'. He offers compelling evidence by way of detailed analysis of the contents of the manuscript (originally carried by R Hoernle). His evidence includes the language in which it was written ('died out' around 300 AD), discussion of currency found in several problems, and the absence of techniques known to have been developed by the 5th century.

Further support of these dates is provided by several occurrences of terminology found only in the manuscript, (which form the basis of a paper by M Channabasappa). The controversy and debate surrounding the date of the **Bakhshali manuscript** was particularly intense when it was first discovered and highlights the resistance of European historians to accept new discoveries and evidence of the origins of various mathematical results. Clearly establishing a date for the composition of the manuscript is extremely important as it has a vast bearing on the significance of its mathematical content. This is in fact the primary requirement for accurate dating of all mathematical works.

The first translation of the manuscript was carried out by G R Kaye, however he was quite unscrupulous in his work and attempted to date the manuscript as 12th Century in order to justify Arabic and Greek influences on the text. Kaye even went as far as to question the Indian origin of the manuscript.

However the vast majority of his translation and suggestions made about the origins of the manuscript have been debunked by less biased (and more accurate) translations. G Joseph further criticises Kaye and comments:

...It is particularly unfortunate that Kaye is still quoted as an authority on Indian mathematics...

To slightly confuse the issue, it is now considered (almost without doubt) that the manuscript found at Bakhshali is a copy (of the original work) dating from around the 8th century, and certainly no later than 950 AD. The scholar R Hoernle was the first to reach this conclusion following detailed analysis of the manuscript.

I am content to agree with the (prominent) historians who have placed the date at pre 450 AD and identified the 'current' version as a copy. Avoiding further debate, L Gurjar states that the Bakshali manuscript is the:

...Capstone of the advance of mathematics from the Vedic age up to that period...

Although, as much work was lost between 'periods', we cannot fully gauge continuity of progress and it is possible the compose(s) of the Bakhshali manuscript were not fully aware of earlier works and had to start from 'scratch'. This would make the work an even more remarkable achievement.

The B. Ms. was written on leaves of birch, in Sarada characters and in Gatha dialect, which is a combination of Sanskrit and Prakrit. This may go some way to explaining the number of inaccurate translations. Many of the historians who have been involved in translating ancient Indian works have done so poorly, due to the obscure script, or alternatively because they have not understood the mathematics fully. More worryingly there could be unscrupulous reasons for poor translating in order to play down the importance of ancient Indian works, because they challenge the Eurocentric ideal.

The B. Ms. highlights developments in Arithmetic and Algebra. The arithmetic contained within the work is of such a high quality that it has been suggested:

...In fact [the] Greeks [are] indebted to India for much of the developments in Arithmetic...

This quote 'throws open' the traditional Eurosceptic opinion of the history (and origins) of mathematics. Yet even today histories of mathematics rarely acknowledge this contribution of the Indian sub-continent and the B. Ms. is rarely if ever mentioned.

There are eight principal topics 'discussed' in the B. Ms:

>>Examples of the rule of three (and profit and loss and interest).

>>Solution of linear equations with as many as five unknowns.

- >>The solution of the quadratic equation (development of remarkable quality).
- >>Arithmetic (and geometric) progressions.
- >>Compound Series (some evidence that work begun by Jainas continued).
- >>Quadratic indeterminate equations (origin of type $ax/c = y$).
- >>Simultaneous equations.
- >>Fractions and other advances in notation including use of zero and negative sign.
- >>Improved method for calculating square root (and hence approximations for irrational numbers). The improved method (shown below) allowed extremely accurate approximations to be calculated:

$$\sqrt{A} = \sqrt{a^2 + r} = a + r/2a - \{(r/2a)^2 / 2(a + r/2a)\}$$

Example 6.1: Application of square root formula.

Again we can calculate $\sqrt{10}$, where $a = 3$ and $r = 1$.

$$\sqrt{10} = \sqrt{(32 + 1)} = 3 + 1/6 - \{(1/36)/2(3 + 1/6)\}$$

$$= 3 + 1/6 - \{(1/36)/(19/3)\}$$

$$= 3 + 1/6 - 1/228$$

$$= 3.16228... \text{ in decimal form}$$

$$\sqrt{10} = 3.16228 \text{ when calculated on a calculator and rounded to five decimal places.}$$

Example 6.2: Quadratic equation as found in B. Ms.

If the equation given is $dn^2 + (2a - d)n - 2s = 0$

Then the solution is found using the equation:

$$n = \frac{-(2a - d) \pm \sqrt{(2a - d)^2 + 8ds}}{2d}$$

Which is the quadratic equation with $a = d$, $b = 2a - d$, and $c = 2s$.

Example 6.3: Linear equation with 5 variables.

The following problem is stated in the B. Ms:

"Five merchants together buy a jewel. Its price is equal to half the money possessed by the first together with the money possessed by the others, or one-third the money possessed by the second together with the moneys of the others, or one-fourth the money possessed by the third together with the moneys of the others...etc. Find the price of the jewel and the money possessed by each merchant.

Solution.

We have the following systems of equations:

$$x_1/2 + x_2 + x_3 + x_4 + x_5 = p$$

$$x_1 + x_2/3 + x_3 + x_4 + x_5 = p$$

$$x_1 + x_2 + x_3/4 + x_4 + x_5 = p$$

$$x_1 + x_2 + x_3 + x_4/5 + x_5 = p$$

$$x_1 + x_2 + x_3 + x_4 + x_5/6 = p$$

Then if $x_1/2 + x_2/3 + x_3/4 + x_4/5 + x_5/6 = q$ the equations become $(\frac{377}{60})q = p$.

A number of possible answers can be obtained. This is the origin of the indeterminate equation of the type $ax/c = y$, the theory of which was greatly developed, and later perfected by **Bhaskara II**, four hundred years before it was discovered in Europe.

If $q = 60$ then $p = 377$ and $x_1 = 120$, $x_2 = 90$, $x_3 = 80$, $x_4 = 75$ and $x_5 = 72$

The Bakhshali manuscript is a unique piece of work and while it not only contains mathematics of a remarkably high standard for the time period, also, in contrast to

almost all other Indian works composed before and after, the method of the commentary follows a highly systematic order of:

- i. Statement of the rule (*sutra*)
- ii. Statement of the examples (*udaharana*)
- iii. Demonstration of the operation (*karana*) of the rule.

The work is considerably less concise than other Indian works which were often (if not always) written in a poetic form comprising of short statements of rules, and rarely included examples. This poetic form was favored, not only as it gave the authors an opportunity to demonstrate their skills but also because of the limited supplies of writing equipment available.

The reasons for the composition of the B. Ms. are unknown but it seems possible that the motivation was to "bring out" the developments of mathematics during the time period. Thus it seems very likely it was composed for solely academic, intellectual and interest ends, in short, mathematics for mathematics sake.

By the end of the 2nd century AD mathematics in India had attained a considerable stature, and had become divorced from purely practical and religious requirements, (although it is worth noting that over the next 1000 years the majority of mathematical developments occurred within works on astronomy). The topics of algebra, arithmetic and geometry had developed significantly and it is widely thought that the decimal place value system of notation had been (generally) perfected by 200 AD, the consequence of which was far reaching.

Ancient Indian Maths - Jainism (Vedas)

Following the decline of the Vedic religion around 400BC, the Jaina religion (and Buddhism) became the prominent religion(s) on the Indian subcontinent and gave rise to Jaina mathematics. N Dwarj (and others) contend:

...According to the religious literature of the Janias, the knowledge of "Sankhyana" (i.e., the science of numbers, which included arithmetic and astronomy) was considered to be one of the principal accomplishments of Jain priests...

The main Jaina works on mathematics date from around 300BC to 400AD, but the Jaina religion was in its infancy as far back as 500BC. Further, as a point of slight interest, the Jaina religion has still not completely died out, and up till the 19th century some very minor works were produced.

Jaina mathematics played an important role in bridging the gap between 'ancient' Indian mathematics and the so-called 'Classical period', which was heralded by the work of [Aryabhata I](#) in the 6th century.

Regrettably there are few extant Jaina works, but in the limited material that exists an incredible level of originality is demonstrated. Perhaps the most historically

important Jaina contribution to mathematics as a subject is the progression of the subject from purely practical or religious requirements. During the Jaina period mathematics became an abstract discipline to be cultivated "for its own sake". G Joseph states:

...*The Jaina contribution to this change should be recognised...*

Despite its important historical position, relatively little attention has been paid to Jaina mathematics, and it remains seemingly discarded by many historians. This however is a massive oversight, because within Jaina works there are many remarkable 'new' results, and developments of topics found in Vedic works.

It is worth briefly noting here that there is great uncertainty as to whether Vedic works influenced the Jaina mathematicians. Throughout the history of Indian mathematics it seems very possible each 'leap' was made without knowledge of previous discoveries. This has been suggested to be primarily due to the size of the sub-continent and imperfect channels of communication within it. Another contribution was the 'oral transmission' tradition of Ancient Indian mathematics, which resulted in knowledge being lost over time.

There are several significant Jaina works, including the *Surya Prajinapti* (4th c. BC) and several Sutras. There is also evidence of individual mathematicians including **Bhadrabahu** (c. 300 BC, possibly lived in the Mysore State), C Srinivasiengar conjectures he wrote two works (which have yet to be unearthed), and Umaswati, a commentator from 2nd century BC, (possibly lived around 150 BC). Umaswati is known as a great writer on Jaina metaphysics but also wrote a work *Tattvarthadigama-Sutra Bhashya*, which contains mathematics.

Among the important developments of the Jainas are:

Theory of numbers.

There is a great fascination in Jain philosophy with the enumeration of large numbers, selected examples of 'time periods' mentioned include $756 \times 10^{11} \times \text{shirsa prahelika}$, and 2588 years. 8400000028 days, called

All numbers were classified into three sets:

Enumerable, Innumerable and Infinite.

Five different types of infinity are recognised in Jaina works:

Infinite in *one* and *two directions*, infinite in *area*, infinite *everywhere* and infinite *perpetually*.

This theory is quite incredible and was not realised in Europe until the late 19th century work of George Cantor. Indeed much of the Jaina theory of infinity is extremely advanced for the time in which it was conceived.

Also found in Jaina works:

Knowledge of the fundamental laws of indices.

Arithmetical operations.

Geometry.

Operations with fractions.

Simple equations.

Cubic equations.

Quartic equations (the Jaina contribution to algebra is severely neglected).

Formula for π (root 10, comes up almost inadvertently in a problem about infinity).

Operations with logarithms.

Sequences and progressions.

Finally of interest is the appearance of Permutations and Combinations in Jaina works, which resulted in the formation of an early *Pascal triangle*, called *Meru Prastara*, many centuries before Pascal himself 'invented' it. This is another case where Indian contributions have been neglected severely.

Meru Prastara rule found in Jain works.

Rule is simpler than that of Pascal, and is based on the simple formula:

$${}_{n+1}C_r = {}_nC_r + {}_nC_{r-1}$$

Formulas for permutations and combinations.

Correct formulas for both permutations and combinations are found in Jaina works:

$${}_nC_1 = n, {}_nC_2 = n(n-1)/1.2, {}_nC_3 = n(n-1)(n-2)/1.2.3$$

$${}_nP_1 = n, {}_nP_2 = n(n-1), {}_nP_3 = n(n-1)(n-2)$$

The contribution of the Buddhist school should also be briefly discussed. Although in the shadow of Jaina developments, evidence suggests Buddhist scholars were well versed in the use of the decimal place values system and that knowledge of Gainta was considered important.

There was no sudden decline of the Jaina religion as such but from the beginning of the 6th [century the work of a mathematician named Aryabhata](#) surpassed all previous work of the Indian sub-continent and brought about the 'Classical period' of Indian mathematics, (which lasted 600 years). However prior to discussing the work of [Aryabhata](#) there is a major piece of Indian mathematical work yet to be discussed. That is the **Bakhshali manuscript**.

Sulba Sutras

The later Sulba-sutras represent the 'traditional' material along with further related elaboration of Vedic mathematics. The Sulba-sutras have been dated from around 800-200 BC, and further to the expansion of topics in the Vedangas, contain a number of significant developments.

These include first 'use' of irrational numbers, quadratic equations of the form $a x^2 = c$ and $a x^2 + b x = c$, unarguable evidence of the use of Pythagoras theorem and Pythagorean triples, *predating Pythagoras* (c 572 - 497 BC), and evidence of a number of geometrical proofs. This is of great interest as proof is a concept thought to be completely lacking in Indian mathematics.

Pythagoras theorem and Pythagorean triples, as found in the Sulba Sutras.

The rope stretched along the length of the diagonal of a rectangle makes an area which the, vertical and horizontal sides make together.

In other words:

$$a^2 = b^2 + c^2$$

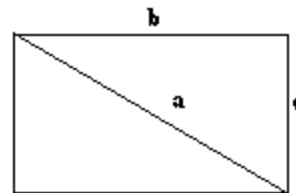
Examples of Pythagorean triples given as the sides of right angled triangles:

5, 12, 13

8, 15, 17

12, 16, 20

12, 35, 37



Of the Sulvas so far 'uncovered' the four major and most mathematically significant are those composed by Baudhayana, Manava, Apastamba and Katyayana (perhaps least 'important' of the Sutras, by the time it was composed the Vedic religion was becoming less predominant). However in a paper written 20 years ago S Sinha claims that there are a further three Sutras, 'composed' by Maitrayana, Varaha and Vadhula (SS1, P 76). I have yet to come across any other references to these three 'extra' sutras.

These men were not mathematicians in the modern sense but they are significant none the less in that they were the first mentioned 'individual' composers. E Robertson and J O'Connor have suggested that they were Vedic priests (and skilled craftsmen).

It is thought that the Sulvas were intended to supplement the *Kalpa* (the sixth Vedanga), and their primary content remained instructions for the construction of sacrificial altars. The name Sulvasutra means 'rule of chords' which is another name for geometry.

N Dwary states:

...They offer a wealth of geometrical as well as arithmetical results...

R Gupta similarly claims:

...The Sulba-sutras are (quite) rich in mathematical contents...

With reference to the possible appearance of proof is a quote from A Michaels:

...Vedic geometry, though non-axiomatic in character, is provable and indeed proof is implicit in several constructions prescribed in the Sulba-sutras...

This is not particularly compelling evidence but does suggest that the composers of the sulba-sutras may have had a greater depth of knowledge than is generally thought.

Many suggestions for the value of π are found within the sutras. They cover a surprisingly wide range of values, from 2.99 to 3.2022.

Pythagoras's theorem and Pythagorean triples arose as the result of geometric rules. It is first found in the Baudhayana sutra - so was hence known from around 800 BC. It is also implied in the later work of Apastamba, and Pythagorean triples are found in his rules for altar construction. Altar construction also led to the discovery of irrational

numbers, a remarkable estimation of $\sqrt{2}$ is found in three of the sutras. The method for approximating the value of $\sqrt{2}$ gives the following result:

$$\sqrt{2} = 1 + \frac{1}{3} + \frac{1}{3 \cdot 4} - \frac{1}{3 \cdot 4 \cdot 34}$$

This is equal to 1.412156..., which is correct to 5 decimal places.

It has been argued by scholars seemingly attempting to deprive Indian mathematics of due credit, that Indians believed that $\sqrt{2} = 1 + \frac{1}{3} + \frac{1}{3 \cdot 4} - \frac{1}{3 \cdot 4 \cdot 34}$ *exactly*, which would not indicate knowledge of the concept of irrationality. Elsewhere in Indian works however it is stated that various square root values cannot be *exactly determined*, which strongly suggests an initial knowledge of irrationality.

Indeed an early method for calculating square roots can be found in some Sutras, the method involves repeated application of the formula: $\sqrt{A} = \sqrt{a^2 + r} = a + \frac{r}{2a}$, r being small.

Application of formula for calculating square roots.

If $A=10$, take $a = 9$ and $r = 1$.

Thus $\sqrt{10} = \sqrt{32 + 1} = a + \frac{r}{2a} = 3 + \frac{1}{6} = 3.16667$ in (modern) decimal notation. $\sqrt{10} = 3.162278$ to six decimal places when calculated on a calculator. Thus, after only one application of the formula, a moderately accurate value has been calculated.

C Srinivasiengar thus states:

...The credit of using irrational numbers for the first time must go to the Indians...

Many of the Vedic contributions to mathematics have been neglected or worse. When it first became apparent that there was geometry contained within works that was not of Greek origin, historians and mathematical commentators went to great lengths to try and claim that this geometry was Greek influenced (to a greater or lesser extent).

It is undeniable that none of the methods of Greek geometry are discernible in Vedic geometry, but this merely serves to support arguments that it is independently developed and not in some way borrowed from Greek sources.

In light of recent evidence and more accurate dating it has been even more strongly claimed by A Seidenberg (in S Kak) that:

...Indian geometry and mathematics pre-dates Babylonian and Greek mathematics...

This may be a somewhat extreme standpoint, and it seems likely that there was traffic of ideas in all directions of the Ancient world, but there is little doubt that the vast majority of Indian work is original to its writers. It may lack the cold logic and truly abstract character of modern mathematics but this observation further helps to identify it as uniquely Indian. Of all the mathematics contained in the Vedangas it is the definite appearance of decimal symbols for numerals and a place value system that should perhaps be considered the most phenomenal.

Before the period of the Sulbasutras was at an end the Brahmi numerals had definitely begun to appear (c. 300BC) and the similarity with modern day numerals is clear to see .

More importantly even still was the development of the concept of *decimal place value*. M Pandit in a recent paper (discussed in RG2) has shown certain rules given by the famous Indian grammarian [Panini](#) (c. 500 BC) imply the concept of the mathematical zero. Further to this there is a small amount of evidence of the use of symbols for numbers even earlier in the Harrapan culture. My evidence comes primarily from a paper by S Kak, which analyses some of [Panini's](#) work, and there is further support from a paper by S Sinha. B Datta and A Singh also give evidence of an early emergence of numerical forms and the decimal place value system.

Ancient India - Indus civilisation

The first appearance of evidence of the use of mathematics in the Indian subcontinent was in the Indus valley and dates back to at least 3000 BC. Excavations at Mohenjodaro and Harrapa, and the surrounding area of the Indus River, have uncovered much evidence of the use of basic mathematics. The maths used by this early Harrapan civilisation was very much for practical means, and was primarily concerned with weights, measuring scales and a surprisingly advanced 'brick technology', (which utilized ratios). The ratio for brick dimensions 4:2:1 is even today considered optimal for effective bonding.

The discoveries of systems of uniform and decimal weights, over a vast area, are of considerable interest. G Joseph states:

...Such standardisation and durability is a strong indication of a numerate culture...

Also, many of the weights uncovered have been produced in definite geometrical shapes (cuboid, barrel, cone, and cylinder to name a few) which present knowledge of basic geometry, including the circle.

This culture also produced artistic designs of a mathematical nature and there is evidence on carvings that these people could draw concentric and intersecting circles and triangles, leading S Sinha to state:

...The civilisation and culture of the inhabitants of the Indus valley...were of a very advanced nature...

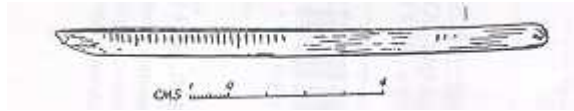
S Srinivasan further comments:

...There are many unique features in the construction patterns, which suggest an independent origin of ideas in ancient Indian civilisation...

Further to the use of circles in 'decorative' design there is indication of the use of bullock carts, the wheels of which may have had a metallic band wrapped round the rim. This clearly points to the possession of knowledge of the ratio of the length of the circumference of the circle and its diameter, and thus values of π .

Also of great interest is a remarkably accurate decimal ruler known as the **Mohenjodaro ruler**. Subdivisions on the ruler have a **maximum error of just 0.005 inches** and at a **length of 1.32 inches**, have been named the Indus inch. Furthermore, a correspondence has been noted between the Indus scale and brick size. Bricks (found in various locations) were found to have dimensions that were integral multiples of the graduations of their respective scales, which suggests advanced mathematical thinking.

Ruler found at Lothal...



Above all else there are also brief references to an early decimal system of numeration. The seeds of what were to become the single greatest contribution of the Indian sub-continent to the world (not just of mathematics) had already been sown. My evidence comes from S Sinha who states:

...Writers on these civilisations briefly refer to the decimal system of numeration found in these excavations...

This quote supports the theory that the Brahmi numerals, which were to go on to develop into the numerals we use today, originated in the Indus valley around 2000 BC, however this theory has been rejected by several scholars including Ifrah and Joseph. This quote could be considered a piece of overzealous reporting by the author however, on further investigation I can support the comment with some confidence.

Not only are the markings on all the excavated measuring devices decimal in nature, but there is also research currently being conducted, which is attempting, with success, to show a connection between the Brahmi and Indus scripts. This lends indirect support to suggestions of the existence of early decimal numeral forms. As I will discuss briefly later, the Brahmi numerals undoubtedly developed into the numeral forms we use today.

Although this early mathematics is generally included in histories of mathematics it is often in nothing more than a brief mention, and there is a most curious quote by J Katz who claims:

...There is no direct evidence of its (Harappan civilisation) mathematics...

It is possible that he makes this comment with regards to the fact that the Indus script as yet remains undeciphered.

However R Gupta more 'sensibly' states:

...In fact the level of mathematical knowledge implied in various geometrical designs, accurate layout of streets and drains and various building constructions etc was quite high (from a practical point of view)...

While Childe claims:

... India confronts Egypt and Babylonia by the 3rd millennium with a thoroughly individual and independent civilisation of her own ...

Some confusion exists as to what caused the decline of this Harappan culture, there are several theories, the most probable of which in my opinion was the drying up of the Sarasvati River. This view is supported by S Kak and also S Kalyanaraman who has written an extensive paper on the topic and comments:

... The drying-up of the Sarasvati River led to migrations of people eastwards ...

The most commonly held view by historians is that Aryan peoples from the North invaded and destroyed the Harappan culture, this view however is considered increasingly contentious. In addition to the significance the fledgling decimal system would ultimately have, the most important legacy of this early civilization is the influence its brick technology *may* have had on the altar building required by the Vedic religion that followed. A theory of the 'interlinkage' of the Harappan and Vedic cultures has recently arisen from a variety of studies, and it may come to light that there was a greater interaction between the two civilizations than currently thought.

Vedas and Vedangas

The Vedic religion was followed by the Indo-Aryan peoples, who originated from the north of the sub-continent. It is through the works of Vedic religion that we gain the first literary evidence of Indian culture and hence mathematics. Written in Vedic Sanskrit the Vedic works, Vedas and Vedangas (and later Sulbasutras) are primarily religious in content, but embody a large amount of astronomical knowledge and hence a significant knowledge of mathematics. The requirement for mathematics was (at least at first) twofold, as R Gupta discusses:

... The need to determine the correct times for Vedic ceremonies and the accurate construction of altars led to the development of astronomy and geometry...

Some chronological confusion exists with regards to the appearance of the Vedic religion.

S Kak states in a very recent work that the time period for the Vedic religion stretches back potentially as far as 8000BC and definitely 4000BC. Whereas G Joseph states 1500 BC as the forming of the Hindu civilization and the recording of Vedas and Vedangas, and later Sulbasutras. However it seems most likely that significant knowledge of astronomy and mathematics first appears in Vedic works around the 2nd millennium BC. The *Rg-Veda* (fire altar) the earliest extant Vedic work dates from around 1900 BC. R Gupta in his paper on the problem of ancient Indian chronology shows that dates from 26000-200 BC have been suggested for the Vedic 'period'. Having consulted many sources I am confident at placing the period of the Vedas (and Vedangas) at around 1900-1000 BC.

Further mathematical work is found in the Sulbasutras of the later Vedic period, the earliest of which is thought to have been written around 800 BC and the last around

200 BC. I will now move on from this slightly clouded chronological discussion. It is however worth noting that there are serious underlying problems with the chronology of early Indian mathematics which require significant attention.

Although the requirement of mathematics at this time was clearly not for its own sake, but for the purposes of religion and astronomy, it is important not to ignore the secular use of the texts, i.e. by the craftsmen who were building the altars. Similarly with the earlier Harappan peoples it seems likely that (at least) basic mathematics will have grown to become used by large numbers of the population. Regardless of the fact that at this time mathematics remained for practical uses, some significant work in the fields of geometry and arithmetic were developed during the Vedic period and as L Gurjar states:

...The Hindu had made enormous strides in the field of mathematics...

It is also worthwhile briefly noting the astronomy of the Vedic period which, given very basic measuring devices (in many cases just the naked eye), gave surprisingly accurate values for various astronomical quantities. These include the relative size of the planets the distance of the earth from the sun, the length of the day, and the length of the year.

For further information, S Kak is an authority on the astronomical content of Vedic works.

Much of the mathematics contained within the Vedas is found in works called Vedangas of which there are six. Of the six Vedangas those of particular significance are the Vedangas *Jyotis* and *Kalpa* (the fifth and sixth Vedangas). *Jyotis* was (at the time) the name for astronomy, while *Kalpa* contained the rules for the rituals and ceremonies. The Vedangas are best described as an auxiliary to the Vedas.

N Dwary claims, with reference to the Vedanga-Jyotis, that:

...Hindus of the period were fully conversant with fundamental operations of arithmetic...

S Kak suggests a date of around 1350 BC for the Vedanga-Jyotis. I include this as a reminder of the time period being discussed.

Along with the Vedangas there are several further works that contain mathematics, including:

Taittiriya Samhita

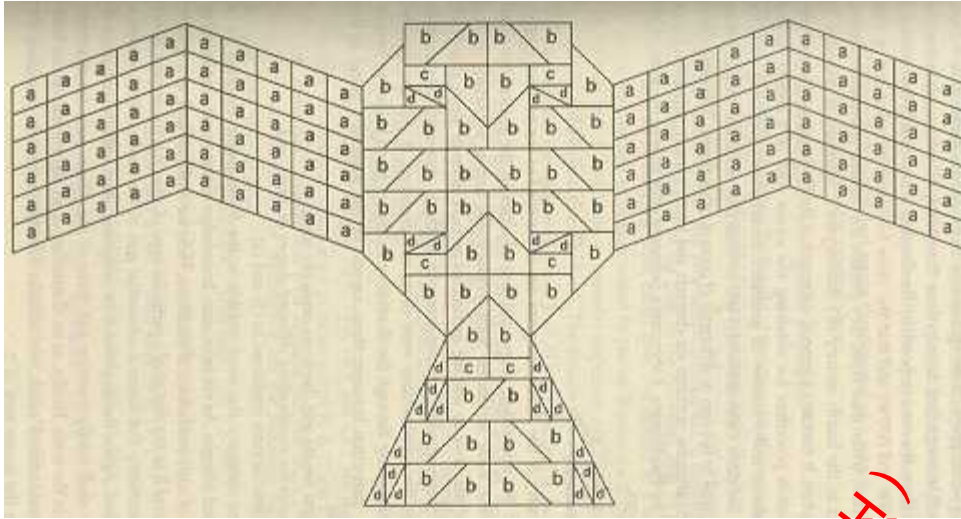
Satapatha Brahmana and

Yajur and Atharva-Veda

Rg-Veda (of which it is thought there are three 'versions') plus additional *Samhitas*

Of these the Taittiriya Samhita and Rg-Veda are considered the oldest and contain rules for the construction of great fire altars.

Figure : First layer of a Vedic sacrificial altar (in the shape of a falcon



As a result of the mathematics required for the construction of these altars, many rules and developments of geometry are found in Vedic works. These include: Use of geometric shapes, including triangles, rectangles, squares, trapezia and circles.

Equivalence through numbers and area.

Equivalence led to the problem of:
Squaring the circle and visa-versa.

Early forms of Pythagoras theorem.

Estimations for π .

S Kak gives three values for π from the *Satapatha Brahmana*. It seems most probable that they arose from transformations of squares into circles and circles to squares.

The values are:

$$p_1 = \frac{25}{8} (3.125)$$

$$p_2 = \frac{900}{289} (3.11418685\dots)$$

$$p_3 = \frac{1156}{361} (3.202216\dots)$$

Astronomical calculations also leads to a further Vedic approximation:

$$p_4 = \frac{339}{108} (3.1389)$$

This is correct (when rounded) to 2 decimal places.

Also found in Vedic works are:

All four arithmetical operators (addition, subtraction, multiplication and division).

A definite system for denoting any number up to 1055 and existence of zero.

Prime numbers.

The Arab scholar Al-Biruni (973-1084 AD) discovered that only the Indians had a number system that was capable of going beyond the thousands in naming the orders in decimal counting.

Evidence of the use of this advanced numerical concept leads S Sinha to comment:

...It is fair to agree that a nation with such an advanced and cultured civilisation and which was using the numerical system (decimal place value) knew also how to handle the associated arithmetic...

It is in Vedic works that we also first find the term "*ganita*" which literally means "the science of calculation". It is basically the Indian equivalent of the word mathematics and the term occurs throughout Vedic texts and in all later Indian literature with mathematical content.

Among the other works I have mentioned, mathematical material of considerable interest is found:

Arithmetical sequences, the decreasing sequence 99, 88, ... , 11 is found in the *Atharva-Veda*.

Pythagoras's theorem, geometric, constructional, algebraic and computational aspects known. A rule found in the *Satapatha Brahmana* gives a rule, which implies knowledge of the Pythagorean theorem, and similar implications are found in the Taittiriya Samhita.

Fractions, found in one (or more) of the *Samhitas*.

Equations, $972x^2 = 972 + m$ for example, found in one of the *Samhitas*.

The 'rule of three'

Ancient Indian Maths - Ganita Kaumudi and the continued fraction

Indian scholar Naryana(1350A.D.)composed two books, viz.

- (i) Bijaganitam.
- (ii)Ganita Kaumudi.

He perhaps used the knowledge of simple recurring continued fraction in the solution of the indeterminate equation of type $Nx^2+K^2=y^2$. We shall show here how the following mathematical results of the continued fraction besides others are involved in the method of the type $Nx^2+K^2=y^2$.

Result I : If c be the number of elements in the cycle belonging to N then;

$$\frac{p_c}{q_c} = \frac{p_n^2 + Nq_n^2}{2p_nq_n}$$

Result II : $Aq_nq_{n-1} - Bp_np_{n-1} = (-i)^n b_{n+1} .$

P_n/Q_n

Where P_n/Q_n is the nth convergent of the continued fraction

$$a_1 + \frac{1}{a_2 + \frac{1}{a_3 + \dots}}$$

Result I. (Ganita Kaumudi, Varga prakrti Vss. 2-4) 1

hrasvajyesthaksepah
kramasastesamadho nyaset tanstu
anyanyesam nyasa
stasya bhaved bhavana-nama 2
vajrabhyasau hrasva
jyesthakayoh samyutirbhaved hrasvam
laghughatah prakrtihato
jyesthavadhanvito jyestham 3

ksiptorghatah ksepah
syad vajrabhyasayorviseso va
hrasvam lavdhorghatah
praktighno jyesthyos'ca vadhah 4
tadvivaram jyesthapadam
ksepah kciptyoh prajayate ghatah

English translation :

"Set down successively (kramas'ah) the lesser (hrasava) root, greater(jyestha) root and interpolator(ksepa) and below them set down in order the same or another(set of similar quantities).
[From them by the principle of composition can be obtained numerous roots].

Gayatri Mantra and Fibonacci

"Gayatri Mantra has a rhythm or meter of 24!"



Gayatri Mantra does therefore relate directly to the Mathematics of Nature; since the compressed Fibonacci Sequence has an infinite recurring rhythm of 24 digits and that these 24 digits have a distinct sum or numerological vibration of 108.

And that these 24 compressed digits having a sum of 108 is an infinitely recurring sequence, proving that there is a pattern in the Golden Mean, a revolution in mathematics as all the top scholars and history books deny it.

The compression or patterned reduction of the Fibonacci Sequence being a 24 Code since 1984, and needed to know that other rishis or seers had recorded this in their Vedic Scriptures, but it was not in print anywhere to be found.

It gave importance to some of the questions like :

- 1) Why is the world deliberately misinformed about Sacred Geometry and Number Theory.
- 2) What is its true Power that 'Those Families Who Secretly Rule The World' dont want us serfs to know about, in fear that it may awaken our Consciousness, when we recognise that yes, there is Mathematical Order amidst the Chaos.

"This confirmation for Jain is quite significant as it is the first time that someone has actually explained why 108 is important. People for thousands of years have blindly believed it is significant, but knowing really knowing why. This particular discovery by Jain has humbly put him on the world stage, as people who do his seminars are fully convinced that this is high level and galactic mathematics, despite the natural debunking process that inevitable goes on, Jain is convinced that this ability to teach mathematics via Pattern Recognition will set a new trend in the planet's future mathematical curriculum.

Fibonacci Sequence In Vedas

In Europe, Fibonacci's Liber Abaci in 1202 described these numbers; the book was meant to introduce the Indian number system and its mathematics which he had learnt in North Africa from Arab teachers.



While a young man growing up there, Fibonacci speaks of his education in North Africa thus:

My father, who had been appointed by his country as public notary in the customs at Bugia acting for the Pisan merchants going there, summoned me to him while I was still a child, and having an eye to usefulness and future convenience, desired me to stay there and receive instruction in the school of accounting. There, when I had been introduced to the art of the Indians' nine symbols through remarkable teaching, knowledge of the art very soon pleased me above all else and I came to understand it.

It has been suggested that the name Gopala-Hemachandra numbers be used for the general sequence: $a, b, a+b, a+2b, 2a+3b, 3a+5b, \dots$ for any pair a, b , which for the case $a=1, b=1$ represents the Fibonacci numbers. This would then include the Lucas series for which $a=2$ and $b=1$.

It would also include other series such as the one for which $a=1$ and $b=21$, which generates the numbers: 1, 21, 22, 43, 65, 108, (...); Narayana Pandita's Ganita Kaumudi (1356) studies additive sequences where each term is the sum of the last q terms. He poses the problem thus;

Ancient India's contributions to astronomy are well known and documented. The earliest references to astronomy are found in the Rig Veda, which are dated 2000 BC. By 500 AD, ancient Indian astronomy emerged as an important part of Indian studies and its affect is seen in several treatises of that period. In some instances, astronomical principles were borrowed to explain matters pertaining to astrology, like casting of a horoscope. Apart from this link of astronomy to astrology in ancient India, science of astronomy continued to develop

independently, and culminated in original findings, like:

The calculation of occurrences of eclipses

Calculation of Earth's circumference

Theorizing about gravity

Determining that Sun is a star

Determining the number of planets in the Solar System



There are astronomical references of chronological significance in the Vedas. Some Vedic notices mark the beginning of the year and that of the vernal equinox in Orion; this was the case around 4500 BC. Fire altars, with astronomical basis, have been found in the third millennium cities of India. The texts that describe their designs are conservatively dated to the first millennium BC, but their contents appear to be much older.

Some scholars have claimed that the Babylonians invented the zodiac of 360 degrees around 700 BCE, perhaps even earlier. Many claim that India received the knowledge of the zodiac from Babylonia or even later from Greece. However, as old as the Rig Veda, the oldest Vedic text, there are clear references to a chakra or wheel of 360 spokes placed in the sky. The number 360 and its related numbers like 12, 24, 36, 48, 60, 72, 108, 432 and 720 occur commonly in Vedic symbolism. It is in the hymns of the great Rishi Dirghatamas (RV I.140 - 164) that we have the clearest such references.

A text on Vedic astronomy that has been dated to 1350 BC, was written by Lagadha.

The earliest concept of a heliocentric model of the solar system, in which the Sun that is at the centre of the solar system and the Earth that is orbiting it, is found in several Vedic Sanskrit texts written in ancient India.



The Aitareya Brahmana (2.7) (c. 9th-8th century BC) states: "The Sun never sets nor rises. When people think the sun is setting, it is not so; they are mistaken." This indicates that the Sun is stationery (hence the Earth is moving around it), which is elaborated in a later commentary Vishnu Purana (2.8) (c. 1st century), which states: "The sun is stationed for all time, in the middle of the day. [...] Of the sun, which is always in one and the same place, there is neither setting nor rising."

Yajnavalkya (c. 9th-8th century BC) recognized that the Earth was round and believed that the Sun was "the centre of the spheres" as described in the Vedas at the time. His astronomical text Shatapatha Brahmana (8.7.3.10) stated: "The sun strings these worlds - the earth, the planets, the atmosphere - to himself on a thread." He recognized that the Sun was much larger than the Earth, which would have influenced this early heliocentric concept. He also accurately measured the relative distances of the Sun and the Moon from the Earth as 108 times the diameters of these heavenly bodies, almost close to the modern measurements of 107.6 for the Sun and 110.6 for the Moon.



Based on his heliocentric model, Yajnavalkya proposed a 95-year cycle to synchronize the motions of the Sun and the Moon, which gives the average length of the tropical year as 365.24675 days, which is only 6 minutes longer than the modern value of 365.24220 days. This estimate for the length of the tropical year remained the most accurate anywhere in the world for over a thousand years. The distances of the Moon and the Sun from the Earth was accurately measured as 108 times the diameters of these heavenly bodies. These are very close to the modern values of 110.6 for the Moon and 107.6 for the Sun, which were obtained using modern instruments.

There is an old Sanskrit shloka (couplet) which also states "Sarva Dishanaam, Suryaha, Suryaha, Suryaha" which means that there are suns in all directions.

This couplet which describes the night sky as full of suns, indicates that in ancient times Indian astronomers had arrived at the important discovery that the stars visible at night are similar to the Sun visible during day time. In other words, it was recognized that the sun is also a star, though the nearest one. This understanding is demonstrated in another Sloka which says that when one sun sinks below the horizon, a thousand suns take its place.

Many Indian astronomers had later formulated ideas about gravity and gravitation in the early middle ages. The cosmological time cycles explained in the Surya Siddhanta :

The average length of the sidereal year (the length of the Earth's revolution around the Sun) as 365.2563627 days, which is only 1.4 seconds longer than the modern value of 365.2563627 days. This remained the most accurate estimate for the length of the sidereal year anywhere in the world for over a thousand years.

The average length of the tropical year (the length of the year as observed on Earth) as 365.2421756 days, which is only 2 seconds shorter than the modern value of 365.2421988 days. This estimate remained the most accurate estimate for the length of the tropical year anywhere in the world for another 6 centuries and still remains more accurate than the value given by the modern Gregorian calendar currently in use around the world, which gives the average length of the year as 365.2425 days.

Later Indian astronomer-mathematicians such as Aryabhata made references to this text, while later Arabic and Latin translations were very influential in Europe and the Middle East.

The Indian astronomer-mathematician Aryabhata (476-550), in his magnum opus *Aryabhatiya*, propounded a mathematical heliocentric model in which the Earth was taken to be spinning on its axis and the periods of the planets were given with respect to a stationary Sun. He was also the first to discover that the light from the Moon and the planets were reflected from the Sun, and that the planets follow an elliptical orbit around the Sun, and thus propounded an eccentric elliptical model of the planets, on which he accurately calculated many astronomical constants, such as the times of the solar and lunar eclipses, and the instantaneous motion of the Moon (expressed as a differential equation).

Bhaskara (1114-1185) expanded on Aryabhata's heliocentric model in his treatise *Siddhanta-Shiromani*, where he mentioned the law of gravity, discovered that the planets don't orbit the Sun at a uniform velocity, and accurately calculated many astronomical constants based on this model, such as the solar and lunar eclipses, and the velocities and instantaneous motions of the planets. Arabic translations of Aryabhata's *Aryabhatiya* were available from the 8th century, while Latin translations were available from the 13th century, before Copernicus had written *De revolutionibus orbium coelestium*, so it's quite likely that Aryabhata's work had an influence on Copernicus' ideas.

Aryabhata wrote that 1,582,237,500 rotations of the Earth equal 57,753,336 lunar orbits. This is an extremely accurate ratio of a fundamental astronomical ratio ($1,582,237,500/57,753,336 = 27.3964693572$), and is perhaps the oldest astronomical constant calculated to such accuracy.

Brahmagupta (598-668) was the head of the astronomical observatory at Ujjain and during his tenure there wrote a text on astronomy, the *Brahmasphutasiddhanta* in 628.

Bhaskara (1114-1185) was the head of the astronomical observatory at Ujjain, continuing the mathematical tradition of Brahmagupta. He wrote the *Siddhanta-Shiromani* which consists of two parts: *Goladhyaya* (sphere) and *Grahaganita* (mathematics of the planets).

The other important names of historical astronomers from India are Madhava and Nilakantha Somayaji.

On April 19, 1975, India sent into orbit its first satellite *Aryabhata*. In 1984, Rakesh Sharma became the first Indian to go to outer space. Kalpana Chawla, later a US citizen, became the first woman of Indian origin to go to space.

Sayings On Indian Astronomy

Georges Ifrah : French historian of Mathematics and author of the book, *The Universal History of Numbers*



"The Indian mind has always had for calculations and the handling of numbers an extraordinary inclination, ease and power, such as no other civilization in history ever possessed to the same degree. So much so that Indian culture regarded the science of numbers as the noblest of its arts...A thousand years ahead of Europeans, Indian savants knew that the zero and infinity were mutually inverse notions."

Claiming India to be the true birthplace of our numerals, Ifrah salutes the Indian researchers saying that the "...real inventors of this fundamental discovery, which is no less important than such feats as the mastery of fire, the development of agriculture, or the invention of the wheel, writing or the steam engine, were the mathematicians and astronomers of the Indian civilization: scholars who, unlike the Greeks, were concerned with practical applications and who were motivated by a kind of passion for both numbers and numerical calculations."



He refers to 24 evidences from scriptures from India, whose dates range from 1150 BC until 458 BC. Of particular interest is the work by Indian mathematician Bhaskaracharya known as Bhaskara (1150 BC) where he makes a reference to zero and the place-value system were invented by the god Brahma. In other words, these notions were so well established in Indian thought and tradition that at this time they were considered to have always been used by humans, and thus to have constituted a "revelation" of the divinities.

"It was only after the eighth century BC, and doubtless due to the influence of the Indian Buddhist missionaries, that Chinese mathematicians introduced the use of zero in the form of a little circle or dot (signs that originated in India),...". The early passion which Indian civilization had for high numbers was a significant factor contributing to the discovery of the place-value system, and not only offered the Indians the incentive to go beyond the "calculable" physical world, but also led to an understanding (much earlier than in our civilization) of the notion of mathematical infinity itself.

"The real inventors of [the numeral system], which is no less important than such feats as the mastery of fire, the development of agriculture, or the invention of the wheel, writing or the steam engine, were the mathematicians and astronomers of Indian civilization: scholars who, unlike the Greeks, were concerned with practical applications and who were motivated by a kind of passion for both numbers and numerical calculations."

Great Indian Pioneers - Ancient India

The below mentioned are some of the categories that mathomathis has created on the basis of Great Pioneers of Indians and their valuable contribution to this world and see how their knowledge has far excelled than any of their superior and intellectual thoughts of others. Take sometime to read about these great folks.

Aryabhata

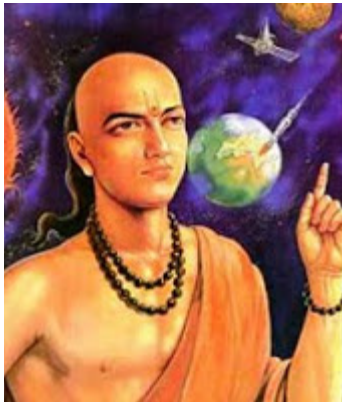


Born in 476 CE in Kusumpur (Bihar) Aryabhata is widely recognized as the father of Indian astronomy. Aryabhata's intellectual brilliance remapped the boundaries of mathematics and astronomy. In 499 CE, at the age of 23, he wrote a text on astronomy and an unparalleled treatise on mathematics called Aryabhata - siddhanta" more commonly known as the "Aryabhatiya"

[In one of the examples, he had written that: if 4 is added to 100 and then multiplied by 8 then added to 62,000 then divided by 20,000 the answer will be equal to the circumference of a circle of diameter twenty thousand. This calculates to 3.1416 close to the actual value Pi (3.14159)]

But his greatest discovery has to be zero, known as the "Shunya" in his times. His other works include theorems on trigonometry, arithmetic, algebra, quadratic equations and the sine table.

[Varahamihira](#)

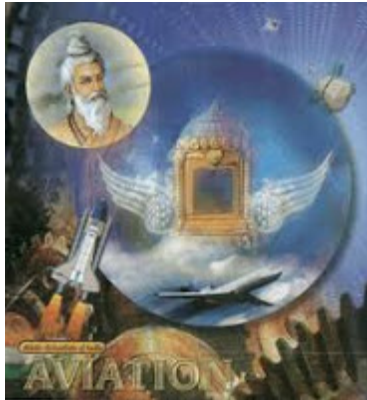


Varahamihira's book "panchsiddhant" holds a prominent place in the realm of astronomy. He notes that the moon and planets are lustrous not because of their own light but due to sunlight. In the "Bruhad Samhita" and "Brihad Jatak," he has revealed his discoveries in the domains of geography, constellation, science, botany and animal science. In his treatise on botanical science, Varahamihira presents cures for various diseases afflicting plants and trees.

Varahamihira also made important contributions to mathematics. He was also an astrologer. He wrote on all

[Read More On Varahamihira](#)

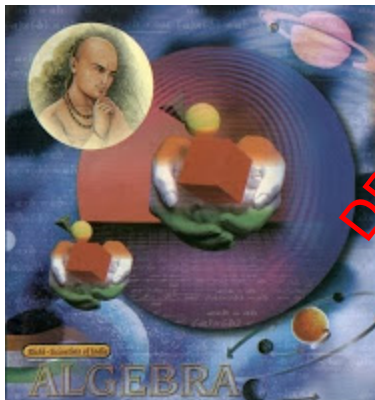
Acharya Bharadwaj - Pioneer Of Aviation Technology



- a) Profound Secret: The technique to make a flying machine invisible through the application of sunlight and wind force.
- b) Living Secret: The technique to make an invisible space machine visible through the application of electrical force.
- c) Secret of Eavesdropping: The technique to listen to a conversation in another plane.
- d) Visual Secrets: The technique to see what's happening inside another plane.

[Read More On Acharya Bharadwaj](#)

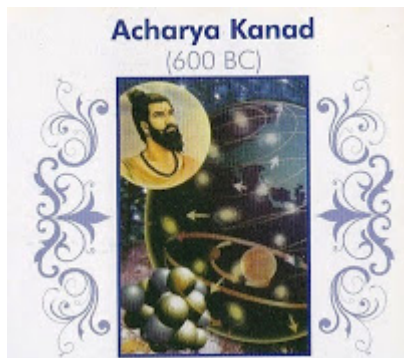
Bhaskaracharya II



In the "Surya Siddhant" he makes a note on the force of gravity:
"Objects fall on earth due to a force of attraction by the earth. Therefore, the earth, planets, constellations, moon, and sun are held in orbit due to this attraction", which was said 500 years back in times.

[Read More On Bhaskaracharya II](#)

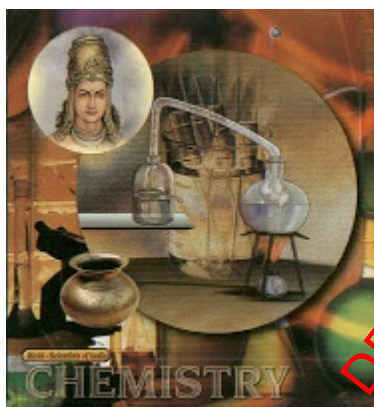
Acharya Kanad



Founder of "Vaisheshik Darshan" - one of six principal philosophies of India. He is believed to have been born in Prabhas Kshetra near Dwarika in Gujarat. He was a man with the definition of atomicity, where he made a huge contribution in the department of physics in the field of "ATOMIC THEORY".

"Every object of creation is made of atoms which in turn connect with each other to form molecules"

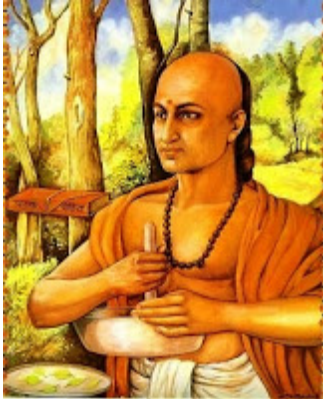
Nagarjuna - Master In Metallurgy



He was an extraordinary wizard of science born in the nondescript village of Baluka in Madhya Pradesh. His dedicated research for twelve years produced maiden discoveries and inventions in the faculties of chemistry and metallurgy. Textual masterpieces like "Ras Ratnakar", "Rashrudaya" and "Rasendramangal" are his renowned contributions to the science of chemistry. Where the medieval alchemists of England failed, Nagarjuna had discovered the alchemy of transmuting base metals into gold.

[Read More On Nagarjuna](#)

Acharya Charak - Masters Of Medicines

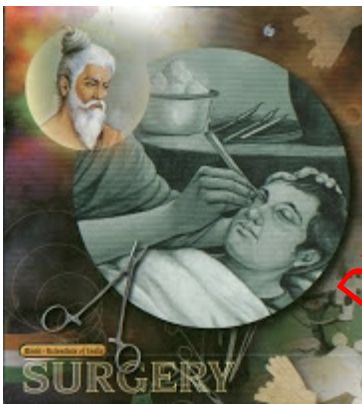


In the "Charak Samhita" he has described the medicinal qualities and functions of 1,00,000 herbal plants....'

He has emphasized on:

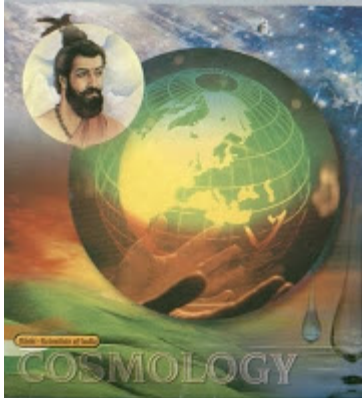
1. The influence of diet and activity on mind and body.
2. He has proved the correlation of spirituality and physical health contributed greatly to diagnostic and curative sciences.
3. He has also prescribed an ethical charter for medical practitioners two centuries prior to the Hippocratic Oath.

Acharya Sushrut - Father of plastic surgery



A genius who has been glowingly recognized in the annals of medical science; Born to sage Vishwamitra, Acharya Sushrut details the first ever surgery procedures in "Sushrut Samhita" a unique encyclopedia of surgery.

[Acharya Kapil - Father of Cosmology](#)



Celebrated as the founder of Sankhya philosophy, Acharya Kapil is believed to have been born in 3000 BCE to the illustrious sage Kardam and Devhuti; He gifted the world with the Sankhya School of Thought. His pioneering work threw light on the nature and principles of the ultimate Soul (Purusha), primal matter (Prakruti) and creation.

The scene now moves to India where it is fair to say the numerals and number system was born which have evolved into the highly sophisticated ones we use today. Of course that is not to say that the Indian system did not owe something to earlier systems and many historians of mathematics believe that the Indian use of zero evolved from its use by Greek astronomers. As well as some historians who seem to want to play down the contribution of the Indians in a most unreasonable way, there are also those who make claims about the Indian invention of zero which seem to go far too far. For example Mukherjee claims:-

... the mathematical conception of zero . . . was also present in the spiritual form from 17 000 years back in India.

What is certain is that by around 650AD the use of zero as a number came into Indian mathematics. The Indians also used a place-value system and zero was used to denote an empty place. In fact there is evidence of an empty place holder in positional numbers from as early as 200AD in India but some historians dismiss these as later forgeries. Let us examine this latter use first, since it continues the development described above.

In around 500AD [Aryabhata](#) devised a number system which has no zero yet was a positional system. He used the word "**kha**" for position and it would be used later as the name for zero. There is evidence that a dot had been used in earlier Indian manuscripts to denote an empty place in positional notation. It is interesting that the same documents sometimes also used a dot to denote an unknown where we might use x. Later Indian mathematicians had names for zero in positional numbers yet had no symbol for it. The first record of the Indian use of zero which is dated and agreed by all to be genuine was written in 876.

We have an inscription on a stone tablet which contains a date which translates to 876. The inscription concerns the town of Gwalior, 400 km south of Delhi, where they planted a garden 187 by 270 hastas which would produce enough flowers to allow 50 garlands per day to be given to the local temple. Both of the numbers 270 and 50 are denoted almost as they appear today although the 0 is smaller and slightly raised.

We now come to considering the first appearance of zero as a number. Let us first note that it is not in any sense a natural candidate for a number. From early times numbers are words which refer to collections of objects. Certainly the idea of number became more and more abstract and this abstraction then makes possible the consideration of zero and negative numbers which do not arise as properties of collections of objects.

Of course the problem which arises when one tries to consider zero and negatives as numbers is how they interact in regard to the operations of arithmetic, addition, subtraction, multiplication and division. In three important books the Indian mathematicians Brahmagupta, Mahavira and Bhaskara tried to answer these questions.

One of the commonest questions which the readers of this archive ask is: Who discovered zero? Why then have we not written an article on zero as one of the first in the archive? The reason is basically because of the difficulty of answering the question in a satisfactory form. If someone had come up with the concept of zero which everyone then saw as a brilliant innovation to enter mathematics from that time on, the question would have a satisfactory answer even if we did not know which genius invented it. The historical record, however, shows quite a different path towards the concept. Zero makes shadowy appearances only to vanish again almost as if mathematicians were searching for it yet did not recognize its fundamental significance even when they saw it.



The first thing to say about zero is that there are two uses of zero which are both extremely important but are somewhat different. One use is as an empty place indicator in our place-value number system. Hence in a number like 2106 the zero is used so that the positions of the 2 and 1 are correct. Clearly 216 means something quite different. The second use of zero is as a number itself in the form we use it as 0. There are also different aspects of zero within these two uses, namely the concept, the notation, and the name. (Our name "zero" derives ultimately from the Arabic *sifr* which also gives us the word "cipher".)

One might think that once a place-value number system came into existence then the 0 as an empty place indicator is a necessary idea, yet the Babylonians had a place-value number system without this feature for over 1000 years. Moreover there is absolutely no evidence that the Babylonians felt that there was any problem with the ambiguity which existed. Remarkably, original texts survive from the era of

Babylonian mathematics. The Babylonians wrote on tablets of unbaked clay, using cuneiform writing.

The symbols were pressed into soft clay tablets with the slanted edge of a stylus and so had a wedge-shaped appearance (and hence the name cuneiform). Many tablets from around 1700 BC survive and we can read the original texts. Of course their notation for numbers was quite different from ours (and not based on 10 but on 60) but to translate into our notation they would not distinguish between 2106 and 216 (the context would have to show which was intended). It was not until around 400 BC that the Babylonians put two wedge symbols into the place where we would put zero to indicate which was meant, 216 or 21 " 6.

The two wedges were not the only notation used, however, and on a tablet found at Kish, an ancient Mesopotamian city located east of Babylon in what is today south-central Iraq, a different notation is used. This tablet, thought to date from around 700 BC, uses three hooks to denote an empty place in the positional notation. Other tablets dated from around the same time use a single hook for an empty place. There is one common feature to this use of different marks to denote an empty position. This is the fact that it never occurred at the end of the digits but always between two digits. So although we find 21 " 6 we never find 216 ". One has to assume that the older feeling that the context was sufficient to indicate which was intended still applied in these cases.

If this reference to context appears silly then it is worth noting that we still use context to interpret numbers today. If I take a bus to a nearby place and ask what the fare is then I know that the answer "It's three fifty" means three rupees fifty paise. Yet if the same answer is given to the question about the cost of a bus from Bangalore to Mysore then I know that three hundred and fifty rupees is what is intended.

We can see from this that the early use of zero to denote an empty place is not really the use of zero as a number at all, merely the use of some type of punctuation mark so that the numbers had the correct interpretation.

Now the ancient Greeks began their contributions to mathematics around the time that zero as an empty place indicator was coming into use in Babylonian mathematics. The Greeks however did not adopt a positional number system. Basically the Greek mathematical achievements were based on geometry. Although Euclid's Elements contains a book on number theory, it is based on geometry. In other words Greek mathematicians did not need to name their numbers since they worked with numbers as lengths of lines. Numbers which required to be named for records were used by merchants, not mathematicians, and hence no clever notation was needed.

Now there were exceptions to what we have just stated. The exceptions were the mathematicians who were involved in recording astronomical data. Here we find the first use of the symbol which we recognize today as the notation for zero, for Greek astronomers began to use the symbol O. There are many theories why this particular

notation was used. Some historians favor the explanation that it is omicron, the first letter of the Greek word for nothing namely "ouden".

Neugebauer, however, dismisses this explanation since the Greeks already used omicron as a number - it represented 70 (the Greek number system was based on their alphabet). Other explanations offered include the fact that it stands for "obol", a coin of almost no value, and that it arises when counters were used for counting on a sand board. The suggestion here is that when a counter was removed to leave an empty column it left a depression in the sand which looked like O.



MS 3048
Table for solving cubic equations, in the Sumerian sexagesimal system.
Babylonia, ca. 19th c. BC

[Ptolemy](#) in the *Almagest* written around 130 AD uses the Babylonian sexagesimal system together with the empty place holder O. By this time Ptolemy is using the symbol both between digits and at the end of a number and one might be tempted to believe that at least zero as an empty place holder had firmly arrived. This, however, is far from what happened. Only a few exceptional astronomers used the notation and it would fall out of use several more times before finally establishing itself. The idea of the zero place (certainly not thought of as a number by Ptolemy who still considered it as a sort of punctuation mark) makes its next appearance in Indian mathematics.

The Scene Next Moves To India...

History Of Zero



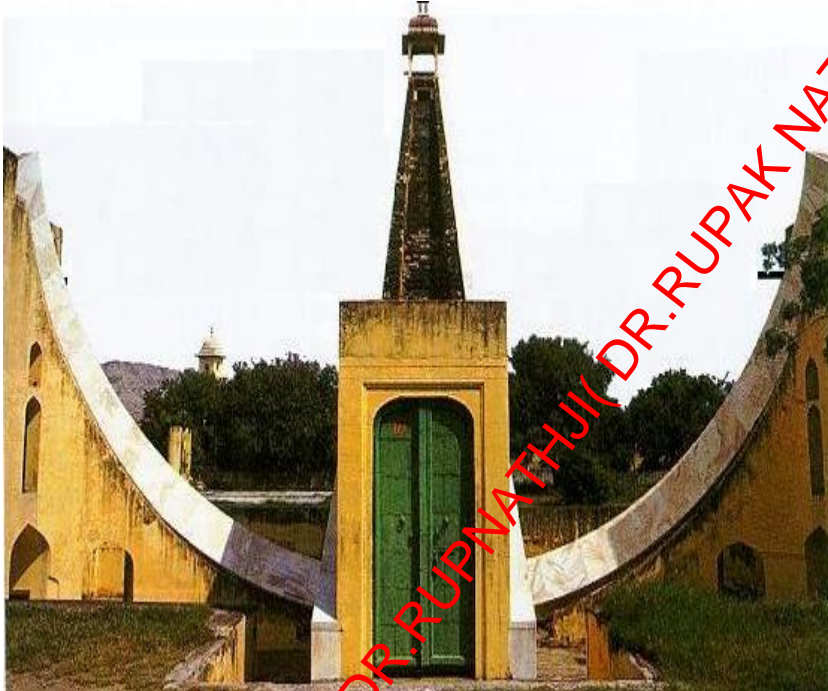
In around 500AD [Aryabhata](#) devised a number system which has no zero yet was a positional system. He used the word "kha" for position and it would be used later as the name for zero. There is evidence that a dot had been used in earlier Indian manuscripts to denote an empty place in positional notation.



Celestial Observatory



Tool for keeping track of the constellations



Sun Dial



Jantar Mantar in Jaipur

The Jantar Mantar in Jaipur is actually one of six major observatories built by the Maharajah. The one in Jaipur not only follows the movements of the sun and the moon to help determine auspicious dates for events, it also helps map out the position of the stars in the sky. Although no telescopic instruments were available at the time, the precise observation of the stars was greatly facilitated by observatories such as Jantar Mantar.

It should also be noted that such an endeavor (six major observatories, a staff of full-time priests etc.) did not come to a small cost. This is further evidence of the importance placed on the study of the stars. As mentioned earlier, both astrology and astronomy were reasons to build these structures. Unlike the "west", astrology did not become as pseudo-science as astronomy became more factual and experimental. Instead, both were considered an integral part of society.

Ancient India's contributions in the field of astronomy are well known and well documented. The earliest references to astronomy are found in the Rig Veda, which are dated 2000 BC.

During next 2500 years, by 500 AD, ancient Indian astronomy has emerged as an important part of Indian studies and its affect is also seen in several treatises of that period. In some instances, astronomical principles were borrowed to explain matters, pertaining to astrology, like casting of a horoscope. Apart from this linkage of astronomy with astrology in ancient India, science of astronomy continued to develop independently, and culminated into original findings, like:

- The calculation of occurrences of eclipses
- Determination of Earth's circumference
- Theorizing about the theory of gravitation
- Determining that sun was a star and determination of number of planets under our solar system

There are astronomical references of chronological significance in the Vedas. Some Vedic notices mark the beginning of the year and that of the vernal equinox in Orion. This was the case around 4500 BC. Fire altars, with astronomical basis, have been found in the third millennium cities of India. The texts that describe their designs are conservatively dated to the first millennium BC, but their contents appear to be much older.

Yajnavalkya (perhaps 1800 BC) advanced a 95-year cycle to synchronize the motions of the sun and the moon.

A text on Vedic astronomy that has been dated to 1350 BC, was written by Lagadha. In 500 AD, Aryabhata presented a mathematical system that took the earth to spin on its axis and considered the motions of the planets with respect to the sun (in other

words it was heliocentric). His book, the Aryabhatya, presented astronomical and mathematical theories in which the Earth was taken to be spinning on its axis and the periods of the planets were given with respect to the sun.

In this book, the day was reckoned from one sunrise to the next, whereas in his Aryabhata-siddhanta he took the day from one midnight to another. There was also difference in some astronomical parameters.

Aryabhata wrote that 1,582,237,500 rotations of the Earth equal 57,753,336 lunar orbits. This is an extremely accurate ratio of a fundamental astronomical ratio ($1,582,237,500/57,753,336 = 27.3964693572$), and is perhaps the oldest astronomical constant calculated to such accuracy. Brahmagupta (598-668) was the head of the astronomical observatory at Ujjain and during his tenure there wrote a text on astronomy, the Brahmasphuta Siddhanta in 628.

Bhaskara (1114-1185) was the head of the astronomical observatory at Ujjain, continuing the mathematical tradition of Brahmagupta. He wrote the Siddhantasiromani which consists of two parts: Goladhyaya (sphere) and Grahaganita (mathematics of the planets).

The other important names of historical astronomers from India are Madhava and Nilakantha.

On April 19, 1975, India sent into orbit its first satellite Aryabhata. In 1984, Rakesh Sharma became the first Indian to go to outer space. Kalpana Chawla, later a US citizen, became the first woman of Indian origin to go to space.

Evolution Of Numerals In India



Laplace wrote:-

The ingenious method of expressing every possible number using a set of ten symbols

(each symbol having a place value and an absolute value) emerged in India. The idea seems so simple nowadays that its significance and profound importance is no longer appreciated. Its simplicity lies in the way it facilitated calculation and placed arithmetic foremost amongst useful inventions. The importance of this invention is more readily appreciated when one considers that it was beyond the two greatest men of Antiquity, [Archimedes](#) and [Apollonius](#).

The purpose of this article is to attempt the difficult task of trying to describe how the Indians developed this ingenious system. We will examine two different aspects of the Indian number systems in this article.

First we will examine the way that the numerals 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 evolved into the form which we recognize today. Of course it is important to realize that there is still no standard way of writing these numerals. The different fonts on this computer can produce many forms of these numerals which, although recognizable, differ markedly from each other. Many hand-written versions are even hard to recognize.

The second aspect of the Indian number system which we want to investigate here is the place value system which, as Laplace comments in the quote which we gave at the beginning of this article, seems "**so simple that its significance and profound importance is no longer appreciated**". We should also note the fact, which is important to both aspects, that the Indian number systems are almost exclusively base 10, as opposed to the Babylonian base 60 systems.

One of the important sources of information which we have about Indian numerals comes from [al-Biruni](#).

During the 1020s al-Biruni made several visits to India. Before he went there al-Biruni already knew of Indian astronomy and mathematics from Arabic translations of some Sanskrit texts. In India he made a detailed study of Hindu philosophy and he also studied several branches of Indian science and mathematics.

Al-Biruni wrote 27 works on India and on different areas of the Indian sciences. In particular his account of Indian astronomy and mathematics is a valuable contribution to the study of the history of Indian science. Referring to the Indian numerals in a famous book written about 1030 he wrote: -Historians trace them all back to the Brahmi numerals which came into being around the middle of the third century BC.

>>Now these Brahmi numerals were not just symbols for the numbers between 1 and 9.

>>The situation is much more complicated for it was not a place-value system so there were symbols for many more numbers.

>>Also there were no special symbols for 2 and 3, both numbers being constructed from the symbol for 1.

Here is the Brahmi one, two, three.

1	2	3
—	=	≡

Brahmi one, two, three

There were separate Brahmi symbols for 4, 5, 6, 7, 8, 9 but there were also symbols for 10, 100, 1000, ... as well as 20, 30, 40, ... , 90 and 200, 300, 400, ..., 900.

The Brahmi numerals have been found in inscriptions in caves and on coins in regions near Poona, Bombay, and Uttar Pradesh. Dating these numerals tells us that they were in use over quite a long time span up to the 4th century AD. Of course different inscriptions differ somewhat in the style of the symbols.

Here is one style of the Brahmi numerals...

1	2	3	4	5	6	7	8	9
—	=	≡	+	h	4	7	5	?

Brahmi numerals around 1st century A.D.

We should now look both forward and backward from the appearance of the Brahmi numerals. Moving forward leads to many different forms of numerals but we shall choose to examine only the path which has led to our present day symbols.

First, however, we look at a number of different theories concerning the origin of the Brahmi numerals

There is no problem in understanding the symbols for 1, 2, and 3. However the symbols for 4, ..., 9 appear to us to have no obvious link to the numbers they represent. There have been quite a number of theories put forward by historians over many years as to the origin of these numerals. In Ifrah lists a number of the hypotheses which have been put forward.

1. The Brahmi numerals came from the Indus valley culture of around 2000 BC.
2. The Brahmi numerals came from Aramaean numerals.
3. The Brahmi numerals came from the Karoshthi alphabet.
4. The Brahmi numerals came from the Brahmi alphabet.
5. The Brahmi numerals came from an earlier alphabetic numeral system, possibly due

to [Panini](#).

6. The Brahmi numerals came from Egypt.

Basically these hypotheses are of two types.

>>One is that the numerals came from an alphabet in a similar way to the Greek numerals which were the initial letters of the names of the numbers.

>>The second type of hypothesis is that they derive from an earlier number system of the same broad type as Roman numerals.

For example the Aramaean numerals of hypothesis 2 are based on I (one) and X (four):

I, II, III, X, IX, IIX, IIIX, XX.

Ifrah examines each of the six hypotheses in turn and rejects them, although one would have to say that in some cases it is more due to lack of positive evidence rather than to negative evidence.

Ifrah proposes a theory of his own:-

...the first nine Brahmi numerals constituted the vestiges of an old indigenous numerical notation, where the nine numerals were represented by the corresponding number of vertical lines.

1	2	3	4	5	6	7	8	9
I	II	III	IIII	IIIII	IIIIII	IIIIIIII	IIIIIIIIII	IIIIIIIIIII
Ifrah's guess for pre-Brahmi numbers								

1	2	3	4	5	6	7	8	9
—	=	≡	𑀓	𑀔	𑀕	𑀖	𑀗	𑀘
Gupta numerals around 4th century A.D.								

1	2	3	4	5	6	7	8	9	0
१	२	३	४	५	६	७	८	९	०
Nagari numerals around 11th century A.D.									

The Babylonians had a place-value system as early as the 19th century BC but the Babylonian systems were to base 60. The Indians were the first to develop a base 10 positional system and considering the date of the Babylonian system, it came very late indeed.

Scientific Meaning of Tithi In Vedas

According to the Indian calendar or Panchanga, Tithi is a lunar date based on the rotation of the moon around the earth, and is one of the five important aspects of an Indian almanac (Panchanga - Panch means five and anga means parts).

Most of the Indian social and religious festivals are celebrated on a date corresponding to the original Tithi.

The current calendar "date" that we are so familiar with in our daily life is heliocentric and is based on the rotation of the earth around the sun.

It takes the earth approximately $365 \frac{1}{4}$ days to complete its rotation around the Sun. The calendar that most of us use today divides the 365 days of earth's period of rotation around the Sun in twelve months. The leap year, which occurs once every four years, accounts for $\frac{1}{4}$ day per year.

Similar to the solar calendar, the lunar calendar is also popular and widely used in the Asian countries such as China, Pacific-rim countries, Middle East countries, and India.

The lunar calendar, which is believed to have originated in India, has been around for a very long time, even long before the solar calendar.

The lunar calendar is geocentric and is based on the moon's rotation around the Earth. The lunar month corresponds to one complete rotation of the Moon around the Earth. Since this period of rotation of moon around the earth varies, the duration of lunar month also varies.

On average, the lunar month has about 29 ½ days, the period of the lunar [Synodic orbit](#). In addition to moon's rotation around the earth, the lunar year is based on earth's rotation around the Sun. In general, the lunar year has twelve lunar months of approximately 354 days (29.5 *12), thus making it shorter by about 11 days than the solar year.

However, the lunar calendar accounts for this difference by adding an extra lunar month about once every 2½ years. The extra lunar month is commonly known as "Adhik Mas" in India (Adhik means extra and the Mas means month). The concept of this extra month is similar to the "Blue Moon" in the West, which occurs almost with the same frequency of 2½ years.

The Indian lunar year begins on the new moon day that occurs near the beginning of the Spring season. The twelve lunar months are:

Vaishakh, Jeshta, Ashadh, Shrawan(Sawan)
Bhadrapad(Bhado), Ashwin, Kartik, Margshirsh
Paush, Magha, Falgoon(Fagan)

English calendar	Indian calendar
weekdays	weekdays
Sunday	<i>Raviwar</i>
Monday	<i>Somwar</i>
Tuesday	<i>(Chandrawar)</i>
Wednesday	<i>Mangalwar</i>
Thursday	<i>Budhwar</i>
Friday	<i>Guruwar</i>
Saturday	<i>Shukrawar</i>

	<i>Shaniwar</i>
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Universe Age - As Per Vedas

What does Vedas say about our universe age? And how it will be used to calculate the age of our universe? I will explain, using the age of universe, by taking Brahma's age as the base for the calculation.

Vedas say that before the creation of the universe Lord Vishnu was sleeping in the ocean of all causes.



His bed is a giant serpent with thousands of cobra like hoods. By the way, in the trinity of Creator, Maintainer and Destroyer as mentioned in the Vedas, Lord Vishnu is the maintainer. Brahma is the creator and Shiva the destroyer.

While Vishnu is asleep, a lotus sprouts of his navel (note that navel is symbolized as the root of creation!). Inside this lotus, Brahma is born. Brahma creates the universe which we all live in.

Brahma himself may be the universe as well, which is why the vedic texts say Brahmanda meaning Universe. I speculate here that so this universe created from the

navel (which is a single point) may well be referring to the universe created out of big-bang! Which is why it is described as lotus blooms out of the navel, much like our big bang universe.

Now this universe is not a permanent universe, it is temporary, Brahma lives for 100 years say the Vedas and then dies and then a new universe is born. So as per Vedas our universe lives for 100 years.

For now, Brahma represents our universe which has birth and death, a big bang and a big crunch, from a navel singularity. Vishnu represents the eternity that lies beyond our universe which has no birth or death and that which is eternal!

Vedas say that thousands of Brahmas have passed away! In other words, this is not the first time universe has been created.

Let us come back to the time measurements now. Brahma lives for hundred years say Vedas and we are in the first day of the 51st year of the Brahma.

A Year of Brahma :

By the way each year of Brahma has 360 days.

And we are in the first day of the 51st year of our current Brahma.

Well, there is day and night Vedas say that during the day Brahma is busy in creation of life and during the night all life he created is absorbed back into him! So we will be there only for this day of Brahma, which is the first day of his 51st year. And, what does this day of Brahma means?



[Significance Of Number 9 In Vedas](#)

Below are some of the significance of numbers 9 in vedas. The two table shown below describes it's significance. Well the below table gives only a brief statement, it does not talk in detail about its cause and origin, we have just taken a portion of which, the number '9' talks more in specific. Well apart from that, the more detailed explanation will be given later in my next subsequent posts.

1. 60 year Jovian cycle/ 360 year 'divine cycle
2. 2700 year cycle of the Sapta Rishi or the Ursa Major
3. 27000 year cycle of the asterisms called the Great Year or the precession cycle
4. 432,000 year cycle called a yuga (= duration of Kaliyuga)
5. 4,320,000 year cycle known as the Maha Yuga
6. Kalpa, the cycle consisting of 4.32×10^9 years

Cosmology and Numerology

A bit of trivia - all of the numbers in Table 1 are divisible by 9 except the 60 year cycle. The number 9 and its multiples have a

mystic significance in the Vedic tradition.

One way of visualizing the number 9 is as follows

The universe is constituted of 3 factors - time, space, and causation

The universe is constituted of 3 Gunas (ingredients) - Sattva, rajas, and tamas

The universe is constituted of the three functions - creation, preservation, and destruction

Thus 3 times 3 makes 9

Two times 9 makes 18, the number of chapters in the Bhagavad Gita

The 18 portions (parvas) of the Mahabharata epic define in detail the career of man on earth.

There are 18 days of warfare in the Great Bharata War

There are a total of 18 divisions in the Mahabharata war. 7

divisions on the Pandava side and 11 on the Kaurava side.

The Mahabharata war is thus an exposition of the human possibilities and achievements graded into eighteen categories, the first multiple of 9.

Backus Naur Form - Panini



The powerful plea that Backus-Naur Form (BNF) should be truly called Panini-Backus Form (PBF), as "we must give credit where credit is due." Paninian grammars, which consisted of over 4,000 algebraic rules and meta-rules have been studied by a number of scholars.

Kak (1987), reviews the Paninian approach to natural language processing (NLP) and compares it with the current knowledge representation systems of Artificial Intelligence, and argues that Paninian - style generative rules and meta rules could assist in further advances in NLP. Another article by [Staal](#) (included in this book) discusses the consistency of the system of rules of Panini, as tested by [Fowler's Automaton](#). (These are among the marvelous contributions of ancient India to computing sciences)...

Panini uses meta rules, transformations, and recursions with such sophistication that

his grammar has the computing power equivalent to a Turing machine. In this sense Panini may be considered the father of computing machines. His work was the forerunner to modern formal language theory, and a precursor to computing. Paninian grammars have also been devised for non-Sanskrit languages.

Panini was an ancient Indian grammarian(520-460 BC but estimates range from the 7th or even earlier as far back as the 17th century BCE, to 4th centuries BCE prior to the evolution of Classical Sanskrit) who lived in Gandhara and is most famous for his grammar of Sanskrit, particularly for his formulation of the 3,959 rules of Sanskrit morphology in the text *Ashtadhyayi*.

Panini's grammar of Sanskrit is highly systematized and technical. Inherent in its analytic approach are the concepts of the "phoneme", the "morpheme" and the "root", only recognized by Western linguists some two millennium later.

Backus Naur Form - Panini

[Takshashila - Worlds First University](#)



At least 2,800 years ago, circa 800BCE, there existed a giant University at Takshashila (often called Taxila), a town located in the north-western region of India (in today's Pakistan). According to references in the Ramayana, King Bharata founded the town in the name of his son, Taksha son of Bharata (brother of Raghu Ram Chandra).

The site initially began to develop as a loosely connected group of buildings where learned persons resided, worked and taught. Over the years, additional buildings were added; rulers made donations and more scholars migrated there. Gradually a large campus developed, which became a celebrated seat of learning in the ancient world. Which Was Later Destroyed By Muslim Community(most of it).

The [Vayu Purana](#) traces the start of Takshashila, to Taksha. Takshashila also finds a mention in Mahabharata - citing Dhaumya, as the acharya of Takshashila. It was at Takshashila, that Vaishampayana made the first recorded narration of the Mahabharata to Janmajeya.

The following are some interesting facts regarding Takshashila:



Vimana (a.k.a flying vehicle), according to ancient Indians is a mythological flying machine. References to these flying machines are commonplace in ancient Indian texts, even describing their use in warfare. As well as being able to fly within Earth's

atmosphere, vimanas were also said to be able to travel into space and travel submerged underwater and there are enough texts/evidences to support this ancient theory. The books/Vedas also talk about their shapes, sizes and their working nature.

According to Vedas: The Sun and Indra and several other Vedic deities are transported by flying wheeled chariots pulled by animals, usually horses; but the Vedic god Pusan's chariot is pulled by goats. Below describes some of the type of vimanas or flying machine described in ancient hindu texts.

1. "**agnihotra-vimana**" - Vimana with two engines. (Agni means fire in Sanskrit.)
2. "**gaja-vimana**" - Vimana with more than 2 engines. (Gaja means elephant in Sanskrit.)

These vimanas were literally compared to animals to get an overview or brief idea on how it can be seen or viewed. Other types been named after animals like kingfisher, ibis, etc. The word vimana comes from the Sanskrit language and gives a meaning as **vi-mana = 'apart' or 'having been measured'**. In some modern Indian languages, the word vimana means ordinary real aircraft.

In one of the Buddhist book *Vimnavatthu* (Pali for "Vimana Stories") uses the word "vimana" with a different meaning: "a small piece of text used as the inspiration for a Buddhist sermon". Some modern UFO enthusiasts have pointed to the Vimana as evidence for advanced technological civilizations in the distant past, or as support for the ancient astronaut theory. Others have linked the flying machines to the legend of the **Nine Unknown Men**. Alexander the Great purportedly gave a description of "dozens of silver disk-like objects" entering and leaving the **Jaxartes River** in 337 BC.

Mythological Description:

Sanskrit texts are filled with references to gods who fought battles in the sky using Vimanas equipped with weapons as deadly as any we can deploy in these more enlightened times.

In the Ramayana there is a passage which reads;

King Ashoka was also aware of devastating wars using such advanced vehicles and other "futuristic weapons" that had destroyed the ancient Indian "Rama Empire" several thousand years before. Only a few years ago, the Chinese discovered some Sanskrit documents in Lhasa, Tibet and sent them to the University of Chandigarh to be translated. Dr. Ruth Reyna of the university said recently that the documents contain directions for building interstellar spaceships!

Their method of propulsion said was "anti-gravitational" and was based upon a system analogous to that of laghima," the unknown power of the ego existing in man's physiological makeup, "a centrifugal force strong enough to counteract all gravitational pull."

Dr. Reyna said that on board these machines, which were called "Astras" by the text, the ancient Indians could have sent a detachment of men onto any planet, according to the document, which is thought to be thousands of years old. The manuscripts were also said to reveal the secret of "antima" -- "the cap of invisibility" and "garima" -- "how to become as heavy as a mountain of lead" Naturally, Indian scientists did not take the texts very seriously, but then became more positive about the value of them when the Chinese announced that they were including certain parts of the data for study in their space program

The manuscripts did not say definitely that interplanetary travel was ever made but did mention, of all things, a planned trip to the Moon, though it is not clear whether this trip was actually carried out. However, one of the great Indian epics, the Ramayana, does have a highly detailed story in it of a trip to the moon in a Vimana (or "Astra"), and in fact details a battle on the moon with an "Asvin" (or Atlantean") airship.

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To really understand the technology, we must go much further back in time. The so-called "Rama Empire" of Northern India and Pakistan developed at least fifteen thousand years ago on the Indian sub-continent and was a nation of many large, sophisticated cities, many of which are still to be found in the deserts of Pakistan, northern, and western India.

The Vaimanika Sastra (or Vymanika-Shaashtra) has eight chapters with diagrams, describing three types of aircraft, including apparatuses that could neither catch on fire nor break. It also mentions 31 essential parts of these vehicles and 16 materials from which they are constructed, which absorb light and heat; for which reason they were considered suitable for the construction of Vimanas. This document has been translated into English and is available by writing the publisher: Vymanidashastra Aeronautics by Maharishi Bharadwaja, translated into English and edited, printed and published by Mr. G. R.Josyer, Mysore, India, 1979.

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Vimanas were kept in a Vimana Griha, a kind of hanger, and were sometimes said to be propelled by a yellowish-white liquid, and sometimes by some sort of mercury compound, though writers seem confused in this matter. It is most likely that the later writers on Vimanas, wrote as observers and from earlier texts, and were understandably confused on the principle of their propulsion.

It is interesting to note, that the Nazis developed the first practical pulse - jet engines for their V-8 rocket "buzz bombs." Hitler and the Nazi staff were exceptionally interested in ancient India and Tibet and sent expeditions to both these places yearly, starting in the 30's, in order to gather esoteric evidence that they did so, and perhaps it was from these people that the Nazis gained some of their scientific information! According to the Dronaparva, part of the Mahabharata, and the Ramayana, one Vimana described was shaped like a sphere and born along at great speed on a mighty wind generated by mercury. It moved like a UFO, going up, down, backwards and forwards as the pilot desired. In another Indian source, the Samar, Vimanas were "iron machines, well-knit and smooth, with a charge of mercury that shot out of the back in the form of a roaring flame"...

Another work called the Samaranganasutradhara describes how the vehicles were constructed. It is possible that mercury did have something to do with the propulsion, or more possibly, with the guidance system. It is interesting to note, that the Nazis developed the first practical pulse - jet engines for their V-8 rocket "buzz bombs." Hitler and the Nazi staff were exceptionally interested in ancient India and Tibet and sent expeditions to both these places yearly, starting in the 30's, in order to gather esoteric evidence that they did so, and perhaps it was from these people that the Nazis gained some of their scientific information! According to the Dronaparva, part of the Mahabharata, and the Ramayana, one Vimana described was shaped like a sphere and born along at great speed on a mighty wind generated by mercury.

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Rama existed, apparently, parallel to the Atlantes civilization in the mid-Atlantic Ocean, and was ruled by "enlightened Priest-Kings" who governed the cities. The seven greatest capital cities of Rama were known in classical Hindu texts as "The Seven Rishi Cities" According to ancient

Indian texts, the people had flying machines which were called "Vimanas." The ancient Indian epic describes a Vimana as a double-deck, circular aircraft with portholes and a dome, much as we would imagine a flying saucer. It flew with the "speed of the wind" and gave forth a "melodious sound." There were at least four different types of Vimanas; some saucer shaped, others like long cylinders ("cigar shaped airships").

The ancient Indians, who manufactured these ships themselves, wrote entire flight manuals on the control of the various types of Vimanas, many of which are still in existence, and some have even been translated into English. The Samara Sutradhara is a scientific treatise dealing with every possible angle of air travel in a Vimana. There are 230 stanzas dealing with the construction, take-off, cruising for thousands of miles, normal and forced landings, and even possible collisions with birds. In 1875, the Vaimanika Sastra, a fourth century B.C. text written by Bharadhwaj, using even older texts as his source, was rediscovered in a temple in India.

It dealt with the operation of Vimanas and included information on the steering, precautions for long flights, protection of the airships from storms and lightning and how to switch the drive to "solar energy" from a free energy source which sounds like "anti-gravity." The "yellowish-white liquid" sounds suspiciously like gasoline, and perhaps Vimanas had a number of different propulsion sources, including combustion engines and even "pulse-jet" engines.

Easter Island: Writing on Easter Island, called Rongo - Rongo is also undecipherable, and is uncannily similar to the Mohenjo-Daro script. Now one of the major questions that arise here is, was Easter Island an air base for the Rama Empire's Vimana route? If so what are the relevant answers? And if not what is the main scene behind this, that Easter Island is so popular?

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In the Mahavira of Bhavabhuti, a Jain text of the eighth century culled from older texts and traditions, we read: "An aerial chariot, the Pushpaka (Vimana aka Flight), conveys many people to the capital of Ayodhya. The sky is full of stupendous flying-machines, dark as night, but picked out by lights with a yellowish glare." The Vedas, ancient Hindu poems, thought to be the oldest of all the Indian texts, describe Vimanas of various shapes and sizes: the "agni hotra vimana" with two engines, the "Gaja - vimana" with more engines etc, explained in my previous posts.

Unfortunately, Vimanas, like most scientific discoveries, were ultimately used for war. Atlantean used their flying machines, "Vailixi" a similar type of aircraft, to literally try and subjugate the world, it would seem, if Indian texts are to be believed. The Atlantean's, known as "Asvins" in the Indian writings, were apparently even more advanced technologically than the Indians, and certainly of a more war - like temperament. Although no ancient texts on Atlantean Vailixi are known to exist, some information has come down through esoteric, "occult" sources which describe their flying machines.

Similar, if not identical to Vimanas, Vailixi were generally "cigar shaped" and had the capability of maneuvering underwater as well as in the atmosphere or even outer

space. Other vehicles, like Vimanas, were saucer shaped, and could apparently also be submerged.

According to Eklal Kueshana, author of "The Ultimate Frontier," in an article he wrote in 1966, Vailixi were first developed in Atlantis 20,000 years ago, and the most common ones are "saucer shaped of generally trapezoidal cross-section with three hemispherical engine pods on the underside." They use a mechanical anti gravity device driven by engines developing approximately 80,000 horse power. The Ramayana, Mahabharata and other texts speak of the hideous war that took place, some ten or twelve thousand years ago between Atlantis and Rama using weapons of destruction that could not be imagined by readers until the second half of this century.



The ancient Mahabharata, one of the sources on Vimanas, goes on to tell the awesome destructiveness of the war: "... (The weapon was) a single projectile charged with all the power of the Universe. An incandescent column of smoke and flame as bright as the thousand suns rose in its entire splendor... 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.

When the Rishi City of Mohenjodaro was excavated by archaeologists in the last century, they found skeletons just lying in the streets, some of them holding hands, as if some great doom had suddenly overtaken them. These skeletons are among the most radioactive ever found, on a par with those found at Hiroshima and Nagasaki. Ancient cities whose brick and stone walls have literally been vitrified, that is-fused together, can be found in India, Ireland, Scotland, France, Turkey and other places.

Furthermore, at Mohenjo-Daro, a well planned city lay on a grid, with a plumbing system superior to those used in Pakistan and India today; the streets were littered

with "black lumps of glass." These globs of glass were discovered to be clay pots that had melted under intense heat! With the cataclysmic sinking of Atlantis and the wiping out of Rama with atomic weapons, the world collapsed into a "stone age" of sorts, and modern history picks up a few thousand years later yet, it would seem that not all the Vimanas and Vailixi of Rama and Atlantis were gone.

Festivals celebrate the passage of time. Celebration of a new Gregorian year is just that. It is an acknowledgment of the passage of 12 months and the commencement of another.

It was a good 400 years ago that the emperors of Vijayanagar created magnificent monuments all over south India. It was about a 1000 years ago that the Thanjavur Periya Koyil, the Hoysala monuments and other towering temples came into existence all over India.

The Ellora temple even predates these. It was 1400 years ago when the [Bhaktimovement](#) of south India saw the documentation of the existence of temples. It was about 2000 years ago when the Tamil Sangam literature documented the existence of places of worship such as Tiruvenkaadu. The excavated remains of Indus valley are 5000 years old.



Now How Did Indian Mythology View Time?

----- *As Human Cycle* -----

The smallest unit of time is a "Kaashta"; Where 1 Kaashta = 18 * (blink of an eyelid);

Now,

10 Kaashtas = 1 * (Kshanam) and
12 Kshanams constitute a Muhoortam and
60 of these Muhoortams constitute a day.

30 days constitute a month and 3 months make up a Ritu. 12 months constitute a human year.

----- From Human Cycle To Cycle Of Pitrus -----

We now move on from the human plane to the world of the departed souls - the Pitrus. Here, a human month equals the length of a day. The brighter half of a lunar month constitutes the Pitru's day time and the darker half their night.

----- Now Move towards Cycle of Devas -----

In case of Devas or called as Gods, the brighter half of the year Uttarayanam makes up the day time hours of the Devas while the darker half Dakshinayanam makes up the night time hours.

An epoch or a Yuga is the next higher level of measurement.

1200 Deva years = Kaliyuga or the present.
2400 Deva years = Dwapara Yuga Preceded Kali Yuga.
600 years made up the Treta yuga.
4800 years made up Krita yuga.

Length of the Kaliyuga is $1200 \times 360 = 432,000$ human years

A cycle of 4 yugas is referred to as the catur yugas.
A cycle of catur yugas lasts 4,320,000 human years.

Brahma in Indian mythology is referred to as the creator. Brahma is generally considered as the base in Vedas, as it is or he is the person who

has started things around, which means he is the person who should be the base of everything, which we call as zero in English or Shunya in Sanskrit...

/*on a brief note, what is the cycle or age of brahma: This unit will be covered more on the subsequent units*/

[A thousand catur yugas are said to make up the daylight hour, of a single day of Brahma's life. Another thousand make up the night time of a single day of Brahma.

*Thus, a single day in Brahma's life spans $2000 * 4,320,000 = 8,640,000,000$ human years.*

360 such days, each lasting 8.6 billion years constitute a year in Brahma's life, which lasts for a 100 Brahma years. At the end of one Brahma's life, another starts. This cycle goes on and on.

A Brahma's life is also known as a Para. $1/2$ (Param) = Parardham

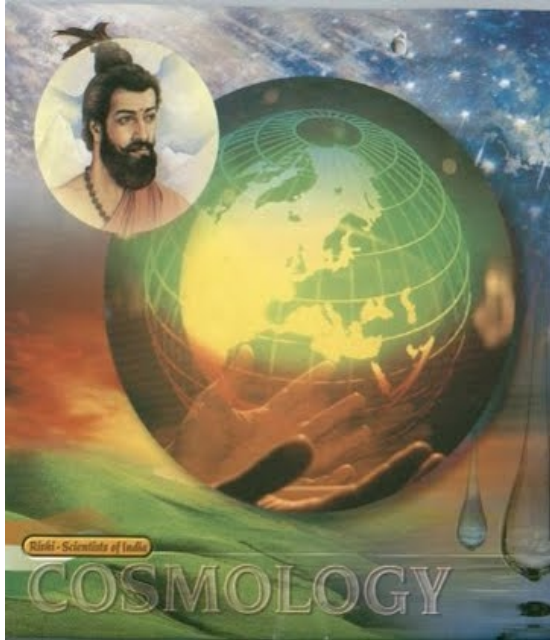
It is believed that we are currently living in the 2nd half of the life of the present Brahma]

It is to be noted that in the performance of Vedic rituals, the frame of time in which the ritual is being performed is specified both in macro and in micro terms, the term '**dviteeya (means second) paraardhe**' (the second half of Brahma's term) is stated.

The reference point here is the moment of commencement of creation of the Universe by Brahma]

When we say 'dviteeya paraardhe', which Brahma are we referring to? How many Brahmas have preceded the current one?

Acharya Kapil - Father of Cosmology

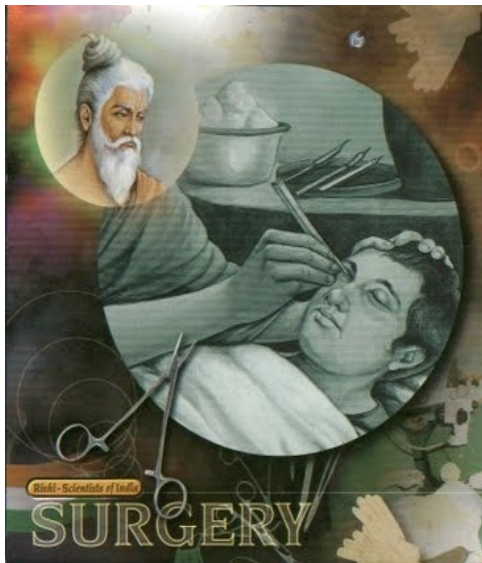


Celebrated as the founder of *Sankhya philosophy*, Acharya Kapil is believed to have been born in 3000 BCE to the illustrious sage Kardam and Devhuti. He gifted the world with the Sankhya School of Thought. His pioneering work threw light on the nature and principles of the ultimate Soul (Purusha), primal matter (Prakruti) and creation.

His concept of transformation of energy and profound commentaries on atma, non-atma and the subtle elements of the cosmos places him in an elite class of master achievers - incomparable to the discoveries of other cosmologists. On his assertion that Prakruti(nature), with the inspiration of Purusha, is the mother of cosmic creation and all energies, he contributed a new chapter in the

science of cosmology. Because of his extrasensory observations and revelations on the secrets of creation, he is recognized and saluted as the Father of Cosmology.

Acharya Sushrut - Father of plastic surgery

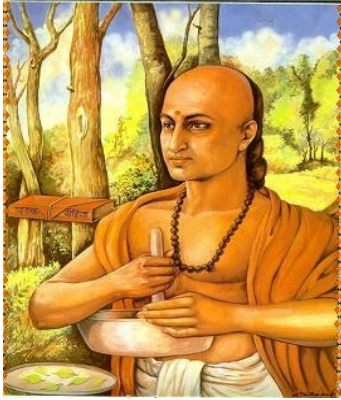


A genius who has been glowingly recognized in the annals of medical science; Born to sage Vishwamitra, Acharya Sudhrut details the first ever surgery procedures in "***Sushrut Samhita***" a unique encyclopedia of surgery. He is venerated as the *father of plastic surgery* and *the science of anesthesia*. When surgery was in its infancy in Europe, Sushrut was performing Rhinoplasty (restoration of a damaged nose) and other challenging operations. In the "Sushrut Samhita" he prescribes treatment for twelve types of fractures and six types of dislocations. His details on human embryology are simply amazing.

Sushrut used 125 types of surgical instruments including scalpels, lancets, needles, catheter and rectal speculums; mostly designed from the jaws of animals and birds.

He has also described a number of stitching methods; the use of horse's hair as thread and fibers of bark. In the "Sushrut Samhita," he describes 300 types of operations. The ancient Indians were the pioneers in amputation, caesarian and cranial surgeries. Acharya Sushrut was a giant in the arena of medical science

Acharya Charak - Masters Of Medicines



Acharya Charak has been crowned as the Father of Medicine. His renowned work, the "**Charak Samhita**", is considered as an encyclopedia of Ayurveda. His principles, diagnoses, and cures retain their potency and truth even after a couple of millennia. When the science of anatomy was confused with different theories in Europe, Acharya Charak revealed through his innate genius and enquiries the facts on human anatomy, embryology, pharmacology, blood circulation and diseases like diabetes, tuberculosis, heart disease, etc.

In the "Charak Samhita" he has described the medicinal qualities and functions of 1,00,000 herbal plants....'

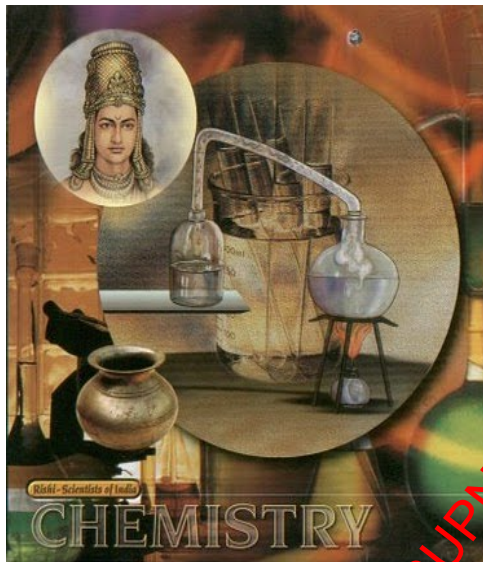
He has emphasized on:

1. The influence of diet and activity on mind and body.

2. He has proved the correlation of spirituality and physical health contributed greatly to diagnostic and curative sciences.

3. He has also prescribed an ethical charter for medical practitioners two centuries prior to the Hippocratic Oath.

Nagarjuna - Master In Metallurgy

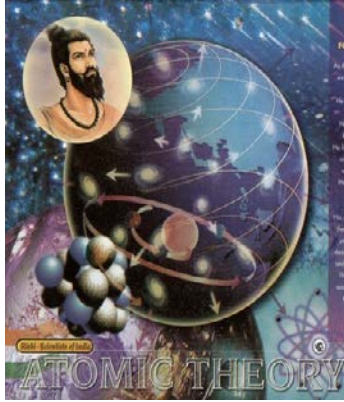


He was an extraordinary wizard of science born in the nondescript village of Baluka in Madhya Pradesh. His dedicated research for twelve years produced maiden discoveries and inventions in the faculties of chemistry and metallurgy.

Textual masterpieces like "*Ras Ratnakar*", "*Rashrudaya*" and "*Rasendramangal*" are his renowned contributions to the science of chemistry. Where the medieval alchemists of England failed, Nagarjuna had discovered the alchemy of transmuting base metals into gold.

As the author of medical books like "*Arogyamanjari*" and "*Yogasar*" he also made significant contributions to the field of curative medicine. Because of his profound scholarships and versatile knowledge, he was appointed as Chancellor of the famous [University of Nalanda](#).

Acharya Kanad

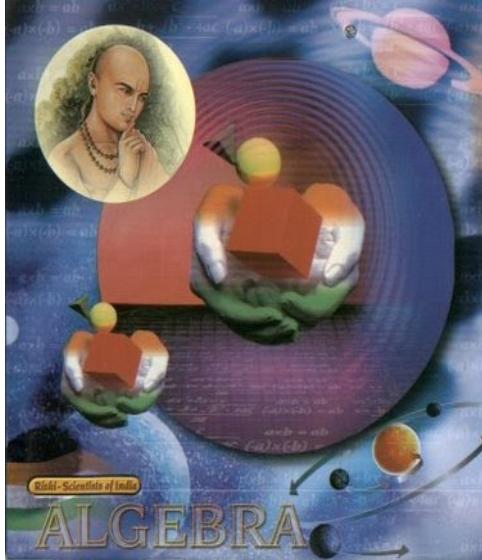


Founder of "**Vaisheshik Darshan**" - one of six principal philosophies of India; He is believed to have been born in Prabhas Kshetra near Dwarika in Gujarat. He was a man with the definition of atomicity, where he made a huge contribution in the department of physics in the field of "ATOMIC THEORY".

"Every object of creation is made of atoms which in turn connect with each other to form molecules"

This statement was said ages ago, which dates back to nearly 2500 years. Kanad has also described the dimension and motion of atoms and their chemical reactions with each other. The eminent historian, T.N. Colebrook, has said, "Compared to the scientists of Europe, Kanad and other Indian scientists were the global masters of this field".

[Bhaskaracharya II \(1114-1183 CE\)](#)

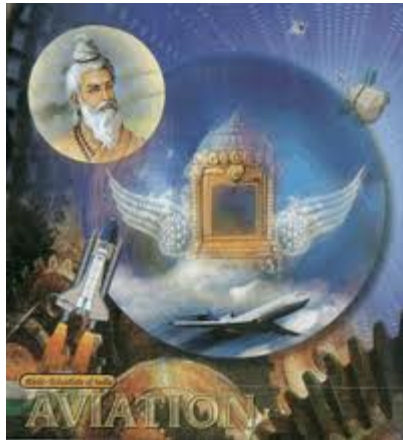


Born in the village of Vijjadit (Jalgaon) in Maharashtra; Bhaskaracharya gave a tremendous contribution in the field of Algebra, Arithmetic and Geometry. His renowned mathematical works called "Dilavati" and "Bijaganita" are considered to be his profound work, giving a definition of true genius.

In his treatise "Siddhant Shiromani" he writes:
"Planetary positions, eclipses, cosmography, mathematical techniques and astronomical equipment"

In the "Surya Siddhant" he makes a note on the force of gravity:
"Objects fall on earth due to a force of attraction by the earth. Therefore, the earth, planets, constellations, moon, and sun are held in orbit due to this attraction", which was said 500 years back in times.

Acharya Bharadwaj - Pioneer Of Aviation Technology



Acharya Bharadwaj had a hermitage in the holy city of Prayag and was an or-dent apostle of Ayurveda and mechanical sciences. He authored the "Yantra Sarvasva" which includes astonishing and outstanding discoveries in aviation science, space science and flying machines. He has described three categories of flying machines.

1. One that flies on earth from one place to another.
2. One that travels from one planet to another.
3. And one that travels from one universe to another.

His designs and descriptions have impressed and amazed aviation engineers of today. His brilliance in aviation technology is further reflected through techniques described by him:

- a) *Profound Secret*: The technique to make a flying machine invisible through the application of sunlight and wind force.
- b) *Living Secret*: The technique to make an invisible space machine visible through the application of electrical force.
- c) *Secret of Eavesdropping*: The technique to listen to a conversation in another plane.
- d) *Visual Secrets*: The technique to see what's happening inside another plane.

Varahamihira (499-587 CE)



Renowned astrologer and astronomer who was honored with a special decoration and status as one of the nine gems in the court of King Vikramaditya in Avanti (Ujjain);

Varahamihir's book "panchsiddhant" holds a prominent place in the realm of astronomy. He notes that the moon and planets are lustrous not because of their own light but due to sunlight. In the "Bruhad Samhita" and "Brihad Jatak" he has revealed his discoveries in the domains of geography, constellation, science, botany and animal science. In his treatise on botanical science, Varahamihira presents cures for various diseases afflicting plants and trees.

Varahamihira also made important contributions to mathematics. He was also an astrologer. He wrote on all the three main branches of Jyotisha astrology:

Brihat Jataka || Daivaigya Vallabha || Laghu Jataka
|| Yoga Yatra || Vivaha Patal

His son Prithuyasas also contributed in the Hindu astrology; his book "Hora Saara" is a famous book on horoscope.

Apart from that some of the important trigonometric results attributed to Varahamihira

$$\frac{1 - \cos 2x}{2} = \sin^2 x$$
$$\sin x = \cos \left(\frac{\pi}{2} - x \right)$$
$$\sin^2 x + \cos^2 x = 1$$

[Aryabhatta - Father Of Astronomy](#)



Born in 476 CE in Kusumpur (Bihar) Aryabhata is widely recognized as the father of Indian astronomy. Aryabhata's intellectual brilliance remapped the boundaries of mathematics and astronomy. In 499 CE, at the age of 23, he wrote a text on astronomy and an unparalleled treatise on mathematics called Aryabhata - siddhanta" more commonly known as the "Aryabhatiya"

[In one of the example, he had written that if 4 is added to 100 and then multiplied by 8 then added to 62,000 then divided by 20,000 the answer will be equal to the circumference of a circle of diameter twenty thousand. This calculates to 3.1416 close to the actual value Pi (3.14159)]

But his greatest donation has to be zero, known as the "*Shunya*" in his times. His other works include theorems on trigonometry, arithmetic, algebra, quadratic equations and the sine table.

He is also acknowledged for calculating π (Pi) to four decimal places: 3.1416 and the sine table in trigonometry. Centuries later, in 825 CE, the Arab mathematician, Mohammed Ibna Musa credited the value of Pi to the Indians, "This value has been given by the Hindus." And above all, his most spectacular contribution was the concept of zero without which modern computer technology would have been non-existent. Aryabhata was a colossus in the field of mathematics. On April 19, 1975, India sent its first satellite into orbit, named 'Aryabhata'

He also wrote essays on astronomy. For example he was aware that the earth spins on its axis, and that it moves round the sun and the moon rotates round the earth. He discusses about the locations of the planets in relation to its movement around the sun. He refers to the light of the planets and the moon as reflections from the sun.

He goes as far as to explain the eclipse of the moon and the sun, day and night, the contours of the earth, the length of the year exactly as 365 days. He also calculated

the circumference of the earth as 24835 miles which is close to present day calculation of 24,900 miles.

Brahma Loka

The below articles tries to club some of the various aspects of Brahma loka and it's measure. Do have a quick peek on any one of them.

Time And Space - Brahma Loka(Viewed in various dimension)



Imagine that man travels into outer space on a rocket at near the speed of light and then returns to earth. According to Einstein's theory of relativity, the man will find he has not aged as much as his identical twin brother who stayed home. Time will have passed more slowly on the rapidly moving rocket than on the slow-moving earth;

Brahma - Viewed In Quantum Physics



a). The first of these categories is the Gravitational Force. It is the weakest of the four forces and has two special properties; it is able to act over large distances and is always an attractive force. The gravitational force is present in large bodies such as the Sun, Moon and Planets.

Tri Monad - Hypercube - See Brahma In Hypercube



Things transform just with the attention at the origin. Let us have attention at the center of hypercube-4 / origin of 4-space and everything starts transforming; the hypercube-4 / 4-space splits into 10 components. The origin accepts 10 components boundary enveloping. The 5-space flourishes from within at the seat of origin and everything transforms from 4-space to 5-space.

Universe Age - As Per Vedas



I. Kalpa Each day of Brahma is called a Kalpa, and this itself is very huge a number. A kalpa is made up of Brahma's one day and one night. (i.e day + night = 1 kalpa)

II. Manvantaras The day has 14 Manvantara's. Similarly the night has an equal 14 Manvantara's. (i.e [day = 14 Manvantara's and a night = 14 Manvantara's] = 28 Manvantara's) But then Brahma is resting in the night, so lets get back to the day again.

DR. RUPNATHUJ (DR. RUPAK NATH)