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# Understanding Rock Art in Context: An Appraisal of Astronomical Symbolism With Special Reference to Rock Art

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### Abstract

*Ever since human being evolved on this earth, he studied various elements of nature and could not detach himself from its inevitable influences. Human attitude towards the planet sprung from his primordial existence. Human culture(s) is formed on a cosmic understanding. The traditional cosmology has three crucial dimensions: the sacred universe, the divine order and the terrestrial existence. Modern cosmology is a special discipline and an empirical one aimed at understanding all that exists. With the cognitive development of human race, man essayed to control nature according to his wishes by chanting prayers before an evolved form of some mental image of divine person or deity. This process was named by the philosophers as 'Natural Religion'. Symbols, myths and images are the essence of spiritual life. In this direction some investigations have been made on the signs of myths and shamanism, logical and cognitive functions as revealed by art, and paradigms of semiotic and graphic art, etc. But the present challenge is to widen the scope of multidisciplinary involvement, in order to understand human and his epic... that is, our epic. The need is to look beyond the context and read the messages. It is to be investigated as one of the greatest bio-cultural experiments of humanity. Even we would have to develop a formal grammar and unified theory for palaeoart studies. The countless astronomical representations in rock art around the world perhaps are the examples of the cognition and spiritual process of non-literate people around the world. It can be argued that one of the early cognitive abilities of humankind was to observe the sky and which may have given birth to several thoughts including myths and rituals and use of calendar in a pragmatic way. There is an immediate need to study further psychology of iconicity; and to make distinction between 'mental and artistic representations'. It is believed that the 'abstract art' comes from the mind but 'representational art' comes from the natural forms. Our understanding of archaeo-astronomical sites and astronomical symbols depicted in rock art of India is based not only on a rich archaeological records and texts that go back to thousands of years, but also on a living tradition that is connected to the past. Its importance is that it allows us to understand something about prehistoric times and the knowledge of astronomy that flourished. Indian astronomy is characterized by the concept of ages of successive larger durations, which is an example of the pervasive idea of recursion, or repetition of patterns across space and time.*

### Backdrop

Ever since human being evolved on this earth, he studied various elements of nature and could not detach himself from its inevitable influences. Human attitude towards the planet sprung from his primordial existence. Human culture(s) is formed on a cosmic understanding. For instance, the *Agamic* and the Kashmir Shaiva traditions speak of the five-headed Shiva, each representing one of the five elements. In South India, all the five elements are represented in the *linga* form, in the following sacred places: Kanchipuram—*Prithvilingam*

(Earth); Jambukeshwaram—*Apulingam* (Water); Arunachalam—*Tejolingam* (Fire); Kalahasti—*Vayulingam* (Air); Chidambaram—*Akashalingam* (Sky). The traditional cosmology has three crucial dimensions: the sacred universe, the divine order and the terrestrial existence. Modern cosmology is a special discipline and an empirical one aimed at understanding all that exists.

In most of the religions deities are involved in the living world of man, though they stand for cosmic laws at higher level of that world. The deities who are the basic energies of the universe can be approached through the perception of created forms. This necessity has led to the representation of the deity in a thousand variety of thought - forms, magic designs, and *mantras* (Hymns), symbols and images. Human ability to construct the images represents the things, which may be regarded as an aspect of his ability to symbolise both at higher (master symbols) and lower (natural symbols) levels.

With the cognitive development of human race, man essayed to control nature according to his wishes by chanting prayers before an evolved form of some mental image of divine person or deity. This process was named by the philosophers as ‘Natural Religion’. Symbols, myths and images are the essence of spiritual life. In this direction some investigations have been made on the signs of myths and shamanism, logical and cognitive functions as revealed by art, and paradigms of semiotic and graphic art, etc. But the present challenge is to widen the scope of multidisciplinary involvement, in order to understand human and his epic... that is, our epic. The need is to look beyond the context and read the messages.

In the traditional ecocentric societies, the seed, soil, crops and seasons give order and structure to the yearly rhythm of human life. The calendar that gives temporal structure to community life is most often based on the cycle of seasons, caused by the earth’s revolution around the sun. In different cultures the New Year’s Day marks the intrinsic link with the annual rhythm of the solar cycle. There are rituals to celebrate each act of the agricultural cycle, which set the farmers to find harmony with the fields and seasons. In the human life-cycle from birth to death, each phase is sanctified in the embrace of nature’s flow. While biological rhythms mark phases of life, rituals that accompany them bring about a symbolic transformation of the individual. *Rta* is embodied in the ecological principle of inter-

dependence, balance and interrelationships of all life. While *rta* denotes order and its opposite manifestation *anrta* is disorder, and both mutually dependent principles form two sides of single cosmic process. The seasonal cycles (*Ritu Chakra*), through spring-time and harvest, are grounded in the principle of harmony and world order. *Rta* sustains the eco-balance of nature. Humans do not stand apart from nature but are a part of larger cosmic flow. This integral bond between humans and nature became a basis for the seasonal celebrations, stimulated with prayers, incantations and sacred performances. The construction of sacred ritual practices and the participation in secular celebrations are ways to mirror a larger cosmic order as it is conceived by the indigenous people of India.

### **Notion of Space-Time**

The space and time are inseparable in nature. While observing the planetary bodies in the skies above, man develops notions of space-time. And cosmologies evolved and astronomical orbits are identified. This way, he expresses his inter-relatedness to the cosmos. The units of time and distance are both defined very precisely today. And both are measured by the speed of light. Man's tool for comprehending the nature of physical time is measure. From the blinking of an eyelid to the movement of the sun, man understands duration. This comprehension is reflected through observatories, almanacs and clocks. The new sciences are also beginning to explore the cyclic order of space-time continuum and the ways in which natural polarities of order and chaos balance the equilibrium of our universe. Man attempts to grasp what affects his perception of duration, sequence and movement of time. They are reflected through symbols, iconography and architecture. The *swastika* may represent purity of soul, truth, and stability or alternatively, *Surya*, the sun.

The traditional calendars are totally based on Nature. In Indian Traditional calendar *Samvatsar*-nothing is manmade, everything is commanded by Nature. Our forefathers studied the nature of the Nature and understood its laws and applied those to the calendar of *Samvatsar*, which is the only system that offers the best adjustment between Lunar and Solar calendars. Interestingly, the traditional Indian and Christian festivals do not change these seasons, while Mohammadan and Jew festivals change their seasons.

There are various type of calendars in different countries among different communities, but the basis of all those are only the sun and the moon. Since the seasons on the Earth are affected mainly by these two celestial bodies are having direct effects on the calendars. Therefore, most of them are sun and moon based and are called solar and Lunar calendars, respectively.

All the calendars have their beginnings in the movements of heavenly bodies. The daily change in position of the sun in relation to the “fixed” positions such as the stars and the earth’s horizon enabled early astronomers, using only their eyes, to determine the accurate calendar.

In the traditional Indian calendar- the *Samvatsar*, the months are solely based on the Moon. The Mohammadans and Jews have also the lunar calendars. But, the Gregorian calendar is a solar calendar though Lunar year is approximately 11 days shorter than a solar year, yet the *Samvatsar* have a very good and scientific adjustment with the Solar year. In almost every quarter to three years, an additional month is added, which is called *Purushottam Mas* or the *Adhik Mas*, thus the shortcoming of Lunar year as compared to the Solar year is adjusted. There is a precise scientific theory about the month to be added and is totally based on the Nature. The second important feature of the *Samvatsar* is that its year exactly coincides with the Solar year in a circle of 19 years. The third important phenomenon of *Samvatsar* is that the lunar constellation (*Chandra Nakshatara*) is very certain with any particular date (*tithi*) in the *Samvatsar*. It is not possible in absolute Lunar year. This peculiar phenomenon is possible only in *Samvatsar* due to very scientific adjustment of additional month.

It is believed that an Indus anthropomorphic figure is represented by the Kanaga sign and can be interpreted as the symbol for a primordial God and a Lord of space and time with an astronomical meaning primarily denoting the three positions of the sun with its north, east, and south directions over the yearly motions. This sign may explain various time periods and also other celestial positions.

The syllable ‘mu’, which forms the root of the word Murukan, is the name of the God for the Tamil language and explained as a Lord of space and time. Interestingly, 'Mu' also forms

the root for the Tamil word *moondru*, which is the name for the numeral denoting three. The Lord Murukan is also called as Kanta Vel. The root syllables *mu* and *ka* both refer to Murukan and the sun. The Egyptian word 'ka' denotes the spirit or soul and the Kanaga sign represents the pivotal three positions occupied by the sun during the equinoxes and the solstices in the sky.

### **Astronomical Symbolism: A Historical Perspective**

The crescent moon and star symbol actually pre-dates Islam by several thousand years. Information on the origins of the symbol is difficult to ascertain, but most sources agree that these ancient celestial symbols were in use by the peoples of Central Asia and Siberia in their worship of Sun, Moon, and Sky Gods. There are also reports that the crescent moon and star were used to represent the Carthaginian Goddess Tanit or the Greek Goddess Diana. In astronomy, a crescent is the shape of the lit side of a spherical body (most notably the moon) that appears to be less than half illuminated by the sun as seen by the viewer. The crescent and star, while generally regarded as Islamic symbols today, have long been used in Asia Minor and by the ancient Turks, earlier than the advent of Islam. According to archaeological excavations, Göktürks used the crescent and star figure on their coins. The 1500-year-old coin includes three crescent moon figures and a star near a person.

The written account of the interest in the movement and appearance of the sun, moon, planets and stars can be traced back at least to old Babylonian period (first half of the second millennium BC) and to the Shang Dynasty in China (mid to end of the second millennium BC). A new form of astronomy i.e. personal horoscopic astronomy developed in Mesopotamia in the late fifth century BC (Rochberg, 1998). We have evidence of the spread of an astronomical tradition from Mesopotamia to China, through Sanskrit intermediaries. The books describing horoscope from the Tang Dynasty, for example *Xiuyaojing*, was translated from an Indian source by Bukong in AD 759 (Nakayama, 1966). This speaks volumes about the origin and antiquity of astronomical knowledge of Indian people in ancient times. In Hindu mythology, *Garuda* is a Divine cosmic bird. *Mahabharata*, describes *Garuda* as bright as the sun, which could change its shape at its will, destroy other other divinities, through launching fire, and provoking red dust storms that obscured the sun and the moon.

All these characters regarding brightness, changing shape, launching fire and provoking red dust storms are perhaps related with cometary phenomena.

All primordial cultures refer to a cosmological state of existence, which is neither god-centric nor anthropocentric. While drawing inspiration from these cultures, the sages had grasped the stupendous idea of 'Expanding Universe' where God, Animal and Man originate, disappear and re-originate endlessly. There is a natural symbiosis between all the three. God comes down to the world of animal and man, and both animal and man return to the world of Gods. The ancient sages had realised the man and nature relationship. They did not merely chant the majesty of the cosmos and the glory of God, but they also lived in positive symbiosis with the animal world. Animals have influenced the human thought process to a great degree and they form the core of human consciousness—sensual, intellectual and mystical, all in one.

The bull is somewhat unique in the world of symbolism, in that he is both a solar and a lunar creature. His male fertility, his fiery temperament, and his role as father of the herd make him the masculine Sun God in many cults. Just as the lion is the king and terror of the beasts of the forest, the bull is the king of the farm and the personification of brute strength and power. The lion, the bull, and the sun are popular symbols of life and resurrection. The bull's crescent shaped horns link him to moon worship and symbolism although, in some areas, the sun is a bull while the moon is a cow. Since, the Moon God of ancient Ur, was often pictured as a bull. Its association with the sun makes this animal a god of the heavens, resurrection, and fire, while its association with the moon makes it a god of earth, water, night, and death. This animal's masculinity is not diminished by its feminine lunar connections. However, when ridden by Moon Goddesses such as Astarte, its masculine powers are said to be tamed or domesticated.

The cow is a very earthy symbol; her crescent-shaped horns make her an ancient symbol of the moon. Many lunar and mother goddesses around the world wear cow's horns on their heads. The moon personified is sometimes pictured riding the skies in a chariot pulled by a cow. Even today, among devout Hindus, the cow is considered a sacred animal and may not be injured. In Vedic tradition, when people die, their souls are led along the Milky Way to the Kingdom of the Blessed by celestial cows. One of the chores of the dead is

to frequently sacrifice the divine "Cow of Abundance." In Indian iconography and temple architecture, the symbolic and personified forms of the sun, moon and planets has an important place.

The hawk shares much of the symbolism of the eagle. It is associated with light, royalty, power, the sun, watchfulness, and the heavens. Many solar gods have the hawk as an attribute or messenger. Gods portrayed in the form of hawks or as being hawk-headed are almost always Sun God. Like the eagle, the true hawk was thought capable of staring directly into the sun.

From Persia to Rome, the lion was the symbol of the sun-god Mithra, who was worshiped as "the Invincible Sun." Both the Persian Mithra and the Egyptian Sekhmet wore lion's heads. As the lion was the emblem of masculinity, the lioness was the emblem of femininity and of the mother who would fight valiantly to protect her cubs.

The Easter Bunny or Hare is a symbol of Easter for two reasons: the European spring goddess Eostre (from whom we get the name Easter) had the head of a hare, and the date of Easter is determined by the moon whose symbolism is strongly tied to that of the hare. In fact, the hare is the symbol for the moon. Ever since the Council of Nicea in 325 A.D., Easter has been celebrated on the first Sunday following the first full moon after March 21<sup>st</sup>. Because of these early associations, hare hunting was once a common Easter activity in England and even today the Easter Bunny delivers eggs to children on Easter morning.

The three most common astronomical symbols found on ancient coins are associated with three celestial objects were pellets, stars, and crescents. The star is the emblem of Christ, "the bright and morning star". This is particularly used to illustrate Christmas and Epiphany. A crescent moon is widely believed to symbolically represent Muslims, as the crescent moon has central function in the Muslim lunar calendar because each Muslim month starts with the sighting of the new moon.

In iconography, *Ishana* (sky) is regarded as a particular aspect of Shiva. The U or inverted U is the symbol for the sky in Indian art symbolism. Earth is personified as *Bhudevi* (Earth Goddess). Moon is regarded as *Zoona Maj* (*Zoona* in Kashmiri language means moon

and *Maj* mean mother), an aspect of *Shakti*. *Surya* (sun) is worshipped both in the symbolic and anthropomorphic forms. The Sun temple of Martanda is an example of its popularity in Kashmir. *Surya* is depicted in the Kashmir paintings also. A pious Hindu does not fail to perform the *Sandhyas*, morning and evening prayers, said by the side of a tank or river, the principal deity of worship being the sun, the essence of the world. The sun as the seed of the celestial world governs the cosmic rhythms. Besides rock art the symbols of sun and moon are found memorial stones (called sati stones), and also on tribal wooden memorials. All the other planets were also divinified and worshipped. In almost all living temples of south India the images of *Navagrahas* (Nine Planets) are found in a separate shrine in the temple complex. These are worshipped for the peace and prosperity, ample rains, long life and nourishment, etc. The different iconographical texts have prescribed norms for making *Navagraha* images. In almost all the religious ceremonies/ festivals nature is propagated in one way or the other.

The Sun God is with reference to Apollo, the western Sun God, also associated with the solar Vishnu, and Dionysius the god of the spring in early Greece which is a tradition understood in India. The bright colour is a reference to the Holi festival of colour coming soon after *Basant Panchami*. The marriage of the sun with the trees refers to the festival of *Sarhul* to be celebrated within a few weeks by the Oraons and Mundas and other tribals of Jharkhand, who hold it sacred to the Spring as the marriage of the sun as Singbonga, and the earth, represented by the forests, in which the *Shala* tree or *Shorea robusta* is worshipped with ritual. The different tribes of northeast India worship *Doniyi-polo* (Sun and Moon God). The adoration of the natural forces like the sun, moon, sky, earth, water and mountains is a common practice of most of the communities in India. In the ancient world Ishtar represented the Earth and Isis represented the Mother. Thus in the lines: “Goddess of life -- Ishtar, Mother of Earth – Isis”, Ishtar the Earth is portrayed as the source of life, and Isis as the Earth Mother.

The sun seems to be one of the most powerful ‘deities’ worshipped in prehistoric times, which can be observed by huge number of its representations in primitive art. This importance can be understood by some cases of the survival of sun worship in recent times.



## Astronomical Symbols in Rock Art

Our understanding of archaeo-astronomical sites and astronomical symbols depicted in rock art of India is based not only on a rich archaeological records and texts that go back to thousands of years, but also on a living tradition that is connected to the past. Its importance is that it allows us to understand something about prehistoric times and the knowledge of astronomy that flourished. Indian astronomy is characterized by the concept of ages of successive larger durations, which is an example of the pervasive idea of recursion, or repetition of patterns across space and time.

Some considerations have also been made upon analogies between tribal rituals and obsession ceremonies. They assume that during ontogenesis the human being passes through philogenetic development stages and in particular, that a child in his evaluative stages uses the design and gestures to express his psychic life, since he is still unable to use a linguistic code. Similarly, what happened to our ancestors in prehistoric era is archived in rituals and in graphic representations of them.

The depictions of astronomical symbols like sun, moon and stars are frequently found in the rock art repertoire across the globe and almost in all the regions of India in the form of pictographs and petroglyphs. These symbols are also found in the tribal art. In the tribal art they are found in mural paintings, memorial stones, and also wooden memorials. The symbols of sun and moon are found in *sati* and hero stones also. Deriving true meaning of these astronomical symbols and interpreting them is an arduous task, so one has to look beyond its current veil and cross refer them with religious texts, rituals, metaphors and figured monuments and camouflaged illusions.

For instance, the horned moon is the symbol of the virgin. It has been associated with the buffalo horn in many cult representations dating back to the Venus holding a buffalo horn in the palaeolithic bas-relief from the Laussel Dordogne region in France. The crescent moon in its quarter aspect has been found extensively in the Mesolithic painted rock art of Nautangwa Pahar. Here a figure holding the crescent moon is also found on the left top end of the painted panel in shelter-1. It is in the North Karanpura Valley in Hazaribagh now beset by opencast coal mining. The horned moon has in modern iconography been used as a crescent moon for the Virgin Mary. It is worshipped among the tribals of Coorg as Kokkethai

or the virgin, and worn as a pendant by the womenfolk. The quarter moon is the symbol of the virgin because it is the manifestation of the first quarter of woman's life -- (the second being mother, third old woman). This symbolism has come down to us from very ancient times. The Poet has used the crescent moon in the form of a swan as the vehicle (or *vimana*) of goddess Saraswati, the female deity worshipped as the goddess of learning on the *Basant Panchami* day, the fifth day of the waxing moon or *Sukul Paksh* in the beginning of February which is also marked as the beginning of the season of *Basant* (Spring).

The Horned moon or first-quarter or crescent moon marking the onset of Spring is known to all peoples of all lands as the Virgin Goddess and its significance can be traced back to the beginnings of agriculture, and perhaps even earlier. It tells of man's association of ideas between the natural and human worlds and the origins of the anthropomorphic imagination in the human race.

Some of the authors of rock art appear to utilize sun light and shadow to compliment the pictures in depicting whatever meaning the artist intended. This includes storey panels as well as those with calendric aspects such as making the summer and winter solstices. Several others may be depictions of actual astronomical event. There are summer and winter solstice markers in a Texas pictograph site (William and Freed, 2002).

Some of the ethnographic evidences are also linking the Kiowa or Kiowa apaches to the above markings. The main ceremony of this group was an annual sun dance (Newcomb, 1961) that was held around the summer solstice. The central figure of this dance was the sun dance idol and the religious society charged with guarding this idol was called the sun dance shields.

The ancient people viewed heavenly bodies as unknowns and sometimes expressed their state of knowledge through their stone carvings. There are possible depictions of solar eclipses and supernova according to William and Freed (2002). The carvings were discovered in the area of Jiepmaluokta, about 4 km from the centre of the town Atta. The most mysterious of the carvings were a set of geometric symbols, consisting of circular objects surrounded by fringes; others showed intricate patterns of horizontal and vertical lines (Stemersen and Liback, 2003). It is said that the ancient inhabitants of Kashmir, like in other

parts of the world, also observed different celestial events, despite the fact that they were merely hunters and gatherers and could use stone tools to record their observation. The carvings from Bomai Sopore (Baramulla) and Burzuhama (Srinagar) from Kashmir valley and Chillas and Drass from Ladakh region indicate that there was a tradition of recording astronomical events.

The moon cycle, from the crescent to full moon, to waning and new moon, is common motif in European prehistoric cultures in Britain, Romania, Hungary and Malta, from Balkans to Ireland, sometimes snake like shapes (Ferdico and Angelina, 2016).

The cult of lunar deity was present in different forms for different populations and geographic areas. The cult is believed to have spread in a vast geographic area in Europe and Asia during the Bronze Age and Iron Age. The moon was adorned for the strict analogy between the moon cycle and life cycle. The cycle of crescent full moon, waning and new moon was actually believed to be the symbol of life from birth, infancy, adulthood and old age until death. The crescent occurring after the new moon was considered the symbol of life after death.

Although we are not sure about the exact origin and antiquity of cult of lunar deity but it is believed to have started very early after the Neolithic period. We have evidences to suggest that in the prehistoric times the moon symbol was depicted in all the continents with rock art concentration. Since there are many examples of astronomical representations in rock art, it can be argued that one of the early cognitive abilities of humankind was to observe the sky, producing this way, several thoughts regarding myths and rituals. In fact, rock art is a privileged field of archaeological research, because it allows a contact with “direct material expressions of human concepts, of human thought”.

According to Fraser, “Bushmen lived close to nature and would have been acutely aware of any extraordinary happenings in their surroundings. Astronomical events such as comets, supernovae, meteors and bodies (...) probably made a huge impression on these folks” (Fraser, 2007:16). Like it did regarding many other people from other parts of the world through time and space.

It seems that moon worship in ancient times was associated with life, fertility, propitiation of rain and child birth. Interestingly, the moon maintained its features in the different geographical areas even it had different aspects. In Europe, she was identified with the Great Mother and then with Diana or Juno. The lunar deity in Mesopotamia was a male god represented as a harved man or a bull. In other regions it was represented as an adult male ibex.

## **Conclusion**

The countless astronomical representations in rock art around the world perhaps are the examples of the cognition and spiritual process of non-literate people around the world. It can be argued that one of the early cognitive abilities of humankind was to observe the sky and which may have given birth to several thoughts including myths and rituals and use of calendar in a pragmatic way. The depiction of astronomical bodies like the sun the moon, the stars and, less occasionally comity phenomena perhaps constitute examples of the cognitive process of those early people/societies. Several depictions of the sun and their association with others engravings, lead one to think about the importance and existence of a prehistoric sun worship and early ways of thought regarding the construction of primitive 'religion'. The aim here is not to try to discuss whether, there was a solar religion in prehistoric times, but try to understand the spiritual process of early societies in connection with this celestial body.

The prehistoric art perhaps narrates a piece of life, a thought or an emotion which has been a part of our tradition. It reveals changes in people's way of thinking, feeling, and sentiments. The images, which appear in the myths as well as in the rock art may contain the echoes of the process that generated them and it may give us an indication about its creation. Cosmos representation seems to be constructed through several condensations and displacements, which form similar but not identical images: the course of the sun, the journey of dead spirits and the trip of dreams. Similarly, by observing the planetary bodies in the sky above, man develops notions of space and time and cosmologies evolved and astronomical orbits are identified. This way, he expresses his inter-relatedness to the cosmos. By observing and recording positions of the sun, moon and stars as objects of wonder and the further realization that their movements are repetitive is a major step in the intellectual growth of ancient man. It is of great interest to know that how the prehistoric man sensed or observed the importance of these astronomical symbols in the passage of seasons, day and night, and

also distinguished one day from the other. The interdisciplinary study and interpretation of palaeolithic art (and artifacts) cannot be ignored and is essential in its possible influence in the astronomical concepts of later times.

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