

The Hymns of Dirghatamas in the Rig Veda

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Abstract:

One of the most important mathematical contributions of ancient times is the idea of a zodiac or wheel of Heaven of 360 degrees. This discovery is usually attributed by western scholars to the Babylonians of around 400 BCE.

However, the symbolism of 360 relative to a wheel of Heaven is common in Vedic literature back to the Rig Veda itself, the oldest Hindu text, usually dated from 1500 BCE back to as early as 5000 BCE. 360 is a prime number for the Vedic mind. Therefore, along with the decimal system and the discovery of zero, the 360 degree zodiac should be credited to India.

In addition, the twelve signs of the zodiac are generally also credited to the Babylonians and said by modern scholars to have come to India by a Greek influence after the time of Alexander (300 BCE). However, the Vedic 360 wheel of Heaven is also said to be divided into twelve parts.

Whether these twelve parts are identical with those of the western signs of the zodiac, is not clear from the Vedas themselves, but it is clear that the idea that the 360 part zodiac could be divided into twelve is also there.

Relative to the Nakshatra system, this 360 degree wheel of Heaven is associated with Nakshatra positions relative to solstice and equinox points that date well before 2000 BCE.

In short, the Vedic knowledge of the 360 degree zodiac is additional proof of the sophistication and antiquity of Vedic culture, that it had reached a high degree of mathematical and astronomical knowledge before 2000 BCE, that is usually only attributed to the Babylonians after 400 BCE.

Main Text of Paper

Some scholars have claimed that the Babylonians invented the zodiac of 360 degrees around 700 BCE. 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. Dirghatamas is one of the most famous Rig Vedic Rishis. He was the reputed purohit or chief priest of King Bharata (Aitareya Brahmana VIII.23), one of the earliest kings of the land, from which India as Bharata (the traditional name of the country) was named.

Dirghatamas was one of the Angirasa Rishis, the oldest of the Rishi families, and regarded as brother to the Rishi Bharadvaja, who is the seer of the sixth book of the Rig Veda. Dirghatamas is also the chief predecessor of the Gotama family of Rishis that includes Kakshivan, Gotama, Nodhas and Vamadeva (seer of the fourth book of the Rig Veda), who along with Dirghatamas account for almost 150 of the 1000 hymns of the Rig Veda. His own hymns occur frequently in many Vedic texts and verses from them occur commonly in the Upanishads as well.

The hymns of Dirghatamas speak clearly of a zodiac of 360 degrees, divided in various ways, including into twelve signs. For Dirghatamas, as was the case for later Vedic astronomy, the God of the zodiac is the Sun God called Vishnu. Vishnu rules over the highest heaven and is sometimes identified with the pole star or polar point, which in the unique view of Vedic astronomy is the central point that governs all celestial motions and from which these are calculated.

According to Dirghatamas Rig Veda I.155.6, “With four times ninety names (caturbhih sakam navatim ca namabhih), he (Vishnu) sets in motion moving forces like a turning wheel (cakra).” This suggests that even in Vedic times Vishnu had 360 names or forms, one for each degree of the zodiac. Elsewhere Dirghatamas states, I.164.36, “Seven half embryos form the seed of the world. They stand in the dharma by the direction of Vishnu.” This probably refers to the seven planets.

Most of the astronomical information occurs in his famous Asya Vamasya Hymn I.164, which also contains many important teachings that found their way into the Upanishads. Much of this hymn can be understood as a description of the zodiac. It begins:

1. Of this adorable old invoker (the Sun) is a middle brother who is pervasive (the Wind or lightning). He

has a third brother, whose back carries ghee (Fire). There I saw the Lord of the people (the Sun) who has seven children.

This verse is referring to the usual threefold Vedic division of Gods and worlds as the Fire (Agni) on Earth, the Wind or Lightning (Vayu) in the Atmosphere and the Sun (Surya) in Heaven. The Sun is also a symbol of the supreme light. The Sun or supreme light has seven children, the visible Sun, Moon and five planets.

We should note that the zodiac of twelve signs is also divided into three sections based upon a similar understanding, starting with Aries or fire (cardinal fire ruled by Mars, who in Vedic thought is the fire born of the Earth), then with Leo or the Sun (fixed fire ruled by the Sun), and then with Sagittarius, the atmospheric fire, lightning or wind (mutable fire ruled by Jupiter, the God of the rains).

2. Seven yoke the chariot that has a single wheel (chakra). One horse that has seven names carries it. The wheel has three naves, is undecaying and never overcome, where all these beings are placed.

The zodiac is the single wheeled-chariot or circle yoked by the seven planets which are all forms of the Sun or sunlight. It is the wheel of time on which all beings are placed. The Vedic horse (ashva) is symbolic of energy or propulsive force.

3. This chariot which the seven have mounted has seven wheels (chakras) and is carried by seven horses. The seven sisters sing forth together, where are hidden the seven names of the cows.

The seven planets create their seven rotations or seven wheels. Each has its horse, its energy or velocity. Each has its feminine power or sister, its power of expression. It carries its own hidden name or secret knowledge (symbolically cows or rays). This refers to the astrological influences of the planets.

11. The wheel of law with twelve spokes does not decay as it revolves around heaven. Oh Fire, here your 720 sons abide.

The circle of the zodiac has twelve signs. It has 720 half degrees or twins, making 360 total. The

Shatapatha Brahmana X.5.5, a late Vedic text, also speaks of a wheel of heaven with 720 divisions. “But indeed that Fire-altar is also the Nakshatras. For there are twenty seven of these Nakshatras and twenty-seven secondary Nakshatras. This makes 720.” Twenty-seven times twenty-seven Nakshatras equals 729, with which some overlap can be related to the 720 half-degrees of the zodiac.

12. The Father with five feet and twelve forms, they say, dwells in the higher half of heaven full of waters. Others say that he is the clear-seeing one who dwells below in a sevenfold wheel that has six spokes.

The five feet of the father or the Sun are the five planets or the five elements that these often refer to (to which Vedic thought associates the five sense organs and five motor organs in the human body). His twelve forms are the twelve signs. The Sun in the higher half of heaven with the waters is the signs Leo with Cancer (ruled by the Moon), with the other five planets being the five feet, each ruling two signs. In Vedic thought, the Sun is the abode of the waters, which we can see in the zodiac by the proximity of the signs Cancer and Leo.

The sevenfold wheel is the zodiac moved by the seven planets. The six spokes are the six double signs through which the planets travel. The same verse occurs in the Prashna Upanishad I.11 as a symbol for the year.

13. Revolving on this five-spoked wheel all beings stand. Though it carries a heavy load, its axle does not over heat. From of old it does not break its ancient laws.

The five-spoked wheel is again the zodiac ruled by five planets and five elements and their various internal and external correspondences.

14. The undecaying wheel (circle) together with its felly (circumference), ten yoked to the upward extension carry it. The eye of the Sun moves encompassing the region. In it are placed all beings.

This may again refer to the ten signs ruled by the five planets, with each planet ruling two signs. The eye of the Sun may be the sign Leo through which the solar influence pervades the zodiac or just the Sun itself. The upward extension may be the polar region.

15. Of those that are born together, the seventh is born alone. The six are twins (yama), Divine born rishis. Their wishes are apportioned according to their nature. Diversely made for their ordainer, they move in different forms.

The six born together or are twins are the twelve signs, two of which are ruled by one planet (considering the Sun and Moon as a single planetary influence). The seventh that is singly born is the single light that illumines all the planets. Elsewhere the Rig Veda X.64.3 speaks of the Sun and Moon as twins (yama) in heaven.

The planets are often associated with the rishis in Vedic thought, particularly the rishis Brihaspati (Jupiter), Shukra (Venus) and Kashyapa (the Sun) which became the common name for the planets. Their ordainer or stabilizer may be the pole star (polar point).

48. Twelve are its fellies. The wheel is one. It has three naves. Who has understood it?
It are held together like spokes the 360, both moving and non-moving.

This perhaps the clearest verse that refers to the zodiac of twelve signs and three hundred and sixty degrees. The same verse also occurs in Atharva Veda (X.8.4). The zodiac has three divisions as fire, lightning and Sun or Aries, Sagittarius and Leo that represent these three forms of fire. The 360 spokes are the 360 degrees which revolve in the sky but remain in the same place in the zodiac.

Yet another verse (43) of this same hymn of Dirghatamas refers to the Vishuvat, the solstice or equinox, showing that such astronomical meanings are clearly possible. If we examine the hymn overall, we see that a heavenly circle of 360 degrees and 12 signs is known, along with 7 planets. It also has a threefold division of the signs which can be identified with that of fire, wind (lightning) and sun (Aries, Sagittarius, Leo) and a sixfold division that can be identified with the planets each ruling two signs of the zodiac. This provides the basis for the main factors of the zodiac and signs as we have known it historically. We have all the main factors for the traditional signs of the zodiac except the names and symbols of each individual sign. This I will address in another article.

Elsewhere in Vedic literature is the idea that when the Creator created the stars he assigned each an animal of which there were originally five, the goat, sheep, cow, horse and man (Shatapatha Brahmana X.2.1). This shows a Vedic tradition of assigning animals to

constellations. The animals mentioned are the man, goat, ram, bull and horse, which contain several of the zodiacal animals.

The Zodiac and the Subtle Body

Clearly this hymn contains a vision of the zodiac but its purpose is not simply astronomical, nor is the zodiac the sole subject of its concern. Besides the outer zodiac of time and the stars there is the inner zodiac or the subtle body and its chakra system. In Vedic thought the Sun that rules time outwardly corresponds inwardly to Prana, the spirit, soul or life-force (Maitrayani Upanishad VI.1). Prana is the inner Sun that creates time at a biological level through the process of breathing.

In Vedic thought (Shatapatha Brahmana XII.3.28) we have 10,800 breaths by day and by night or 21,600 a day. This corresponds to one breath every four seconds. The text says that we have as many breaths in one muhurta (1/30 of a day or 48 minutes) as there are days and nights in the year or 720, so this connection of the outer light and our inner processes is quite central to Vedic thought.

In Vedic thought the subtle body is composed of the five elements, the five sense organs and five motor organs, which correspond as the five chakras of the subtle body. On top of these five are the mind and intellect (manas and buddhi) which are often compared to the Moon and the Sun. They can be added to these other five factors, like the five planets, making seven in all. The chakras of Dirghatamas, though outwardly connected to the zodiac, are inwardly related to the subtle body, a connection that traditional commentators on the hymn like Sayana or Atmananda have noted.

The hymn of Dirghatamas contains many other important and cryptic verses on various spiritual matters that are connected to but go beyond the issues of the zodiac or the subtle body. It is written in the typical Vedic mantric and symbolic language to which it provides two keys;

39. The supreme syllable of the chant in the supreme ether, in which all the Gods reside, those who do not know this, what can they do with the Veda? Those who know it alone are gathered here.

45. Four are the levels of speech. Those trained in the knowledge, the wise know them all. Three hidden in secrecy cannot be do not stir. Mortals speak only with the fourth.

There is clearly a hidden knowledge behind these verses, which reflect an esoteric tradition of spiritual knowledge that was mainly accessible for initiates. We cannot simply take such verses superficially but must look deeply and see what they imply. Then the pattern of their inner meaning comes forth. If we do this, the astronomical and astrological side cannot be ignored. Western scholars of the history of astronomy like David Pingree have accepted the astronomical basis of this hymn and that it clearly refers to the zodiac. However, to maintain a late date for Vedic astrology, he assumes that this hymn or its particular astronomical verses were late interpolations to the Rig Veda, around 500 BCE or about the time of the Buddha. This is rather odd because the Buddha is generally regarded as having come long after the Vedic period, while the actual text is usually dated well before 1000 BCE (some have argued even to 3000 BCE). In addition, the hymn, its verses and commentaries on them are found in many places in Vedic literature, along with support references to Nakshatras. It cannot be reduced to a late addition but is an integral part of the text. That being the case, the zodiac of 360 degrees and its twelvefold division are much older in India than any Greek or even Babylonian references.

Pingree also tries to reduce the ancient Vedic calendar work Vedanga Jyotish to 500 BCE or to a Babylonian influence. However, the internal date of this late Vedic text is of a summer solstice in Aslesha or 1300 BCE, information referenced by Varaha Mihira in his Brihat Samhita (III.1-2). “There was indeed a time when the Sun’s southerly course (summer solstice) began from the middle of the Nakshatra Aslesha and the northerly one (winter solstice) from the beginning of the Nakshatra Dhanishta. For it has been stated so in ancient works. At present the southerly course of the Sun starts from the beginning of Cancer and the other from the initial point of the sign Capricorn.” The middle of Aslesha is 23 20 Cancer, while the beginning of Dhanishta (Sravishta) is 23 20 Capricorn. This is a date of around 1300 BCE.

There are yet earlier references in the Vedas like Atharva Veda XIX.6.2 that starts the Nakshatras with Kritika (the Pleiades) and places the summer solstice (ayana) in Magha (00 – 13 20 Leo), showing a date before 1900 BCE. These I have examined in detail in my book Gods, Sages and Kings (Lotus Press/Motilal Banarsidass, 1991). Clearly the Vedas show the mathematics for an early date for the zodiac as well as the precessional points of these eras long before the Babylonians or the Greeks supposedly gave them the zodiac.