

COSMOS AND EQUINOX FROM ASTADASA PURANAS

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Abstract

In the Vedic culture the different components of the cosmos such as space, time, constellations, sound, breath etc, are considered different parts of the visible cosmic body of the Parabrahma such as Lord Vishnu or Lord Siva, the inner cosmic consciousness being the invisible and inconceivable (aprapya manasa saha).

Hence perfect symmetry and order in the cosmos are believed to be the mechanical body of God with cyclical changes of the local environment on Earth from Krutayuga to Kaliyuga and vice versa.

This process of creation and dissolution of the solar system and cosmos is described in the Sarga and Prati sarga of all Puranas. In the Sarga there is a narration of different constellations of the cosmos, particularly of the ecliptic, in the form of different mythological stories.

In such narration in many Puranas the equinoctial point and the solstices are recorded invariably for the sake of Vedic rituals and oblations as an essential necessity for the harmonious coordination among the different components of the cosmic zig-saw puzzle. The equinoctial point shifts gradually and the regular shifting of this point from the time of Lord Krishna to the present position in the Pisces (-23) is discussed in this paper. taking into account the eighteen Puranas at the main level and the Yajurveda and Vedangajyotisham at the other level.

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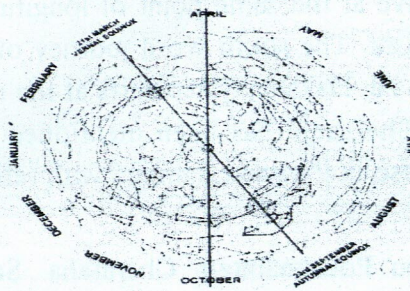
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All the heavenly bodies in the sky are moving continuously, due to their inherent property of motion like the oscillating mind of a human being which is full of desires. The earth is the 3rd planet in our solar system. It shows besides rotation (100 miles per hour) and revolution (66000 miles per hour) a third type of movement called precession of equinoxes at the rate of 72 years per one degree.

TOTAL STAR CHART



The ecliptic is the sun's path (Earth's revolution around the Sun) exactly through the centre of the zodiac longitudinally and the zodiac is the broad band or belt in the heavens extending nine degrees on either side of the ecliptic. Our sun is moving around the centre of the galaxy at a speed of $\frac{1}{2}$ million miles per hour and drifting towards Hercules at a speed of 43000 miles per hour. The speed of our galaxy is nearer to that of light. The equator of the earth is an imaginary line and when it is extended indefinitely towards the ecliptic it is called the celestial equator and the intersecting point of ecliptic and the celestial equator is equinox. The ecliptic is a fixed path and it is intersected by the ever changing celestial equator at two points, when the sun crosses the equator twice in the year. The upper one is the Vernal Equinox and it forms on March 21st. The lower one is the Autumnal equinox and it forms on September 23rd. To the equinoxes at right angles there is Winter solstice which forms on 22nd December and the summer solstice which forms on 22nd June.

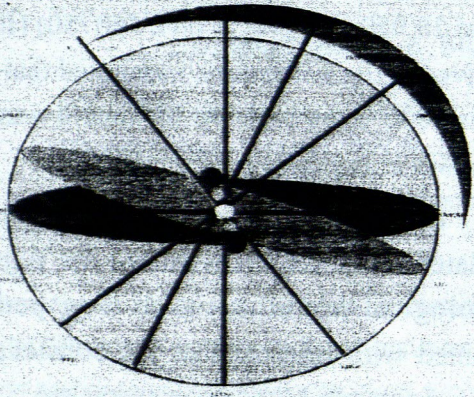
The Moon exerts a force on the spinning of the Earth in its revolution around the bary centre causing the earth to precess. The force of the Moon is variable as it is moving continuously and it is seen below, above and sometimes on the ecliptic. The Earth resists the attraction of the Moon while the Moon is on the ecliptic causing nutation. So Earth precesses every year at the rate of 50 seconds, in opposite direction of its motion i.e. west wards. For

the completion of one circle of precession it takes around 25,920 years ($60 \times 60 \times 360 / 50$) Hipparcus, who lived in the 2nd century, computed that it was in Taurus 3000 years back. At his time it was in Aries and now it is in Pisces (-23 degrees)

In Vedic literature the long time periods are calculated as Kalpas, Manvantaras and Yugas. In the mythological narrations such long periods are explained with reference to the constellations of Polaris, Saptarshi Mandala, equinox etc.^{1,2}

The solstitial colure takes 100 years to travel $1/29^{\text{th}}$ part of the ecliptic or one constellation and 2700 years for the total ecliptic. So depending on the position of the equinox the time period of that chronological event can be placed accurately. Now the equinoctial point is at 23.34 degrees in Pisces at the constellation Uttarabhadra 2nd quarter. Mahidhara Nalini Mohan in his book 'Nakshatra Veedhullo Bharateeyula Patra has shown, with Vedic and astronomical citations, the shifting of the equinox from the constellation Punarvasu of Gemini to the Uttarabhadra of Pisces from 6000 B.C. to the present day. He felt that the observation and identification of the equinox by the Indians was for the sake of Vedic rituals.

Sri Nalini Mohan traced its shifting from Punarvasu 4000 to 6000 B.C., through its Adhidevatha Aditi to Mrugasira of 4000 to 2500 B.C. at the time of Mahabharayta war and to Kruttika 2500 to 1400 B.C.; at the time of Vedanga Jyotisham of Lagadha. At the time of Hipparcus it was in Aries 200 B.C., and at the time of Varahamihira it was in the constellation Revathi and now in Uttarabhadra. So in total it shifted around 113 degrees west ward in the last $113 \times 72 = 8136$ years. Further it was supposed that the Polaris could not be the permanent pole star. It was Thuba of Draconis at the Egyptian times, Alpha Cephei after 6000 years, Vega after 14000 years and again Polaris after 28000 years.



In all the Epics and the mythological literature the entire cosmos was visualized and meditated upon as the personified divine Yogic body of the Lord Vishnu known as Simsumara Kundali or Chakram. The different constellations are believed as the residential areas of different Demi Gods and the body components of the Lord Vishnu. The different living beings of the earth, Demigods, Yaksha, Rakshasa, Kimpurusha are considered as the different parts of the cosmic body of the Lord. Their fate in the continuous cosmic system is indicated through the Polaris, Saptarshi Mandala, ecliptic and the solar system.³ In such narration the equinoctial point is described as most auspicious movement for the Vedic rituals and Parental oblations.

tasmat vishuvam jyeyam pitru deva hitam sada⁴
Tatra danam swalpamapi mahat bhavati Bhargava⁵
tadiiva vishu vakhyo vi kalaha punya bhi dheeyate tada
danani deyani devebhyaha preya taatmabhihi⁶
Poorna maasa vyatee pate yada pasyeet parasparam
yavanteshu vyatee pate yasmit kale vyavastia
tadhiiva surya muddisya drustvaa samjnatu marhasi
savii vashat kriya kala shastaha kalo abhi dheeyate.⁷

Identification of Equinox

In Vedanga Jyotisham it was described as follows :

Prapadyete Sravistadou Surya Chadra Masa Vudak
Sarpardhe Dakhinarkastu Magha Sravanayoh Sada

The Uttarayana starts when the Sun and Moon arrive at the same point of longitude in the star Dhanista. The south word journey of the two luminaries i.e. Dakshinayana starts at the middle of Aslesha. The same has been mentioned by Sage Parasara also in Parasara Samhita with reference to seasons.

Sravistadou Poushnamtam Charataha Sasiraha
Vasantaha Poushnantat Rohinyamtam
Soumyadyou Sarpardham Grishmaha

The Sisira season is from Dhanista to Revathi end, Vasanta (spring) is from Revathi to Rohini end and the Grishma or summer is from Mrugasira to the middle of Aslesha. So at that time the solcistices are in Dhanista and Aslesha while the equinoxes are in Kruttika and Visakha. According to Lagadha the two Ayanas and equinoxes are separated by a constant gap of 183 days.

Uttarayana to vernal equinox = 91.2hrs + equinox
to Dakshinayana = 94.2 hrs. Dakshinayana to
Autumnal equinox = 91.12 hrs. + Equinox to
Uttarayana = 88.14 hrs.

So at the time of Lagadha the Uttarayana was from Dhanista and the present longitude of Alpha Delphi, the bright star of Dhanista is 10.20.25. It means since the date of Lagadha the longitude has increased by 47.28.20 seconds. Considering the precession of 50 seconds per year this should take 3418 years So it was supposed that the Vedanga Jyotisham and Lagadha belong to 1411 B.C.⁸

Almost corresponding statements are seen on the epics also.

Yadacha Mesha Tulayoh Sanchare Ddivakaraha
Samananihi Ahoratranyataniti Trayeemayaha.⁹

Meshante tulante cha bhaskaraha udayatihi shrutaha
muhurtha dasa panchaiva aho ratrascha tavathi

Krutikkanam yada suryaha prathamamsa gato bhavet
visakhanam tada jyeyaha chaturdhamse nisakaraha
visakhanam yada suryascha ra temsam trntiyakam

Tara chandram vijaniyat kruttika siram sthitam vishuvantam vijaniya deva mahur maharshayaha.¹⁰

Pradhame kruttika bhage yada bhyastam stada sasi visakhanam cha tudhenam se mune tishtati asamsayam visakhanam yada suryascha ra tyamsam trutiyakam tada chandram vijaniyat Kruttikam sirasi stitam tadiva vishu va khyo vi kalaha punyo bhi dheyate.¹¹

Paryaa gachhye tadadityo maghe kastanta evahi sarpate dakhinayam tu kastayam tanni bhodhata dakhinat vini vrutto o asi vishu vasto yada ravihi ksheero dasya samudrasya uttaranta disascharan.¹²

Mesham sahasramsuhu tulamcha prati padyate sama ratri divakaraha kalo vishuvat sabda vachakaha.¹³

So in all most all the epics the equinox is mentioned along the Kruttika and Visakha axis only. This is almost corresponding to the statements of Vedanga Jyotisham of Lagadha.

The recent observations of NASA. Archaeological studies, stellar descriptions of the

Mahabharata, and Indian chronological studies of Rajatarangini etc. have decidedly established the time of Mahabharata war as 3138 B.C. So at that time of the equinox was in Mrugasira.

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