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 (aprappy 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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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.
The ecliptic is the suns 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 \(1/2\) 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 preceedes 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 x 60 x 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.\(^1\)

The solstitial colure takes 100 years to travel 1/29th 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 Adhivevatha 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 westward in the last 113 x 72 = 8136 years. Further it was supposed that the Polaris could not be the permanent pole star. It was Thuba of Dronconis at the Egyptian times, Alpha Cephi after 6000 years, Vega after 14000 years and again Polaris after 28000 years.
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 Poushnamatam 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 solstices 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

Kruttikanam yada suryaha pradhamsamsa gato bhavet visakhanam tada jeyyaha chaturdhamsne nisakaraha visakhanam yada suryascha ra temsam trntiyakam
Tara chandram vijaniyat kruttika siram sthitam
vishvantam vijaniya deva mahur maharshayaha.10
Pradhame kruttika bhage yada bhystam 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 divakarah kalo vishuv 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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