origin

How ancient are
Vedas, Vedanga Jyotisha and Surya Siddhantha ?

वेदमयीं नादमयीं बिन्दुमयीं परपदोद्यदिन्दुमयीं
मन्त्रमयीं तन्त्रमयीं प्रकृतिमयीं नौमि विश्वविकृतिमयीं

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Abstract

Vedas, Vedanga Jyotisha, Surya Siddhanta are known as "apaurusheyas" meaning that their author and their period is unknown. No serious attempt seems to have been made to determine the age of these 'apaurusheyas'.

In this short paper, an attempt has been made by the author to determine VEDIC AGE using Equinoxes and their precession. He relied heavily on available evidence in Rig-Veda, Vedanga Jyotisha, Brahma Siddhanta, Surya Siddhanta etc and quoted extensively from these sources to support his contentions.

The author is neither a scholar nor a scientist. At best he may be called an ANALYST with bare minimum knowledge of Sanskrit.

He has abundant curiosity to search for the truth beyond what is known.

In search of UNKNOWNs

In Hindu mythology, *Brahma* is known to be responsible for creation of the Universe – including Earth, Planets, stars, oceans, living and non-living beings,

सर्वेषामेव जंतूनां शतमेव आयुरुच्यते
तद्च्वासप्राण काल: समस्त्वेष विनिर्णयः

Brahma's life-span is also limited to 100 years *in his time scale. Time Scales of Brahma and Humans are very different.* Brahma Siddhanta or Paitamaha Siddhanta provides details of time scale in Brahma's life and their equivalents solar years
in time scale of human beings. In brief some significant details together with results of analysis are given below:

Serial No	Brahma's Time scale	Time scale for humans
1.1	Ahoratra (day & night)	8640 million years
1.2	Maasa (month)	*259,200 million years*
1.3	Varsha (a year)	*3,110,400 million solar years*
1.4	Life-span of Brahma – 100 years	*311,040,000 million solar years*
2.1	No. of years completed by Brahma = 50.0006 – 2017 A.D.	*155,521,972,949,110 years [solar years] i.e. 155,521,973 million years*
2.2	Brahma started Shrushti – creation of this Universe	After 17,063,992 solar years in Dhyana
2.3	*No. of solar* years lapsed since the beginning of Srushti (till 2017)*	*155,521,955,885,118 solar years*
3.1	Equinox moved from 0⁰ 0' 0" (when creation began)	to – 23⁰ 20' or + 336⁰ 40' till Vedanga Jyotisha period – in 26,933 years
3.2	Vedanga Jyotisha was gifted to Lagadha Mahamuni	*26,933 solar years after Srushti/creation began*
10	**Age of Vedanga Jyotisha - 2017**	**155,521,955,858,185 solar years**
11	**Age of Vedas**	**> 155,521,955,858,185 solar years**
12	**Age of Surya Siddhanta**	**155,521,954,157,118 solar years**

*Lengths of solar year and Lunar year are slightly different.
They balance each other in a Mahayuga considering adhika masas (inter-calary months) in lunar years.

That is a summary of what was stated in Brahma / Paitamaha Siddhantha and also in Surya Siddhantha.

ब्रह्मसिद्धान्ते -

तीक्ष्णसूच्याब्दपुष्टस्य दलवेधस्तृटिर्भवेत् ।
तच्छतं लव इत्युक्तस्तत्त्रिंशत्तु निमेषकः ।
निमेषैस्सप्तविंशत्या कालो गुर्वक्षरस्य च ।
दश गुर्वक्षरोच्चारकालः प्राणोऽभिधीयते ।
दश गुर्वक्षराणि देवो भास्वान् भूत्यै भूयो भूयात् ।
षड्भिः प्राणैर्विनाडी स्यात् तत् षष्ट्या नाडिका स्मृता ।
नाडीषष्ट्या तु नाक्षत्रमहोरात्रं प्रकीर्तितम् ।
तैः पञ्चदशभिः पक्षस्ताभ्यां मास उदाहृतः ।
द्वाभ्यामृतुस्त्रिभिस्तैश्चाप्ययनं परिकीर्तितम् ।
द्वेऽयने वत्सरस्सोऽपि देवानां चाप्यहर्निशम् ।

There are many more smaller units of time in the original text. They are not given here in the interest of brevity.

Surya Siddhantha also re-iterates what was stated in Brahma Siddhanta about Brahma's life span in the following verses:

"परमायुः शतं तस्य तया अहोरात्र संख्यया
आयुषो अर्धमितं तस्य शेषकल्पोयमादिमः २१
कल्पादस्माच्च मनवः षड्व्यतीताः ससन्धयः
वैवस्वतस्य च मनोः युगानां त्रिघनो गतः २२
अष्टाविंशद्युगादस्माद्यातमेतत्कृतं युगं
अतः कालं प्रसंख्याय संख्यामेकत्र पिण्डयेत्" २३
ग्रहर्क्ष-देव-दैत्यादि स्रुजतोस्य चराचरं
कृतद्रि *वेदादिव्यब्दाः* शतघ्नावेधसो गताः २४

Surya Siddhantha, Madhyamadhikaara

Use of the word ***'Divyabda'*** may kindly be noted. ***'Abda'*** means a year. **Divyabda means a year for those in heavenly abode (devas) and Raakshasaas (demons). The distinction between time scale for those in heavenly abode and on the earth is significant.**

Equivalents are given below.

- 12000 Divyaabdas = Life Span of Devas = 1 Mahā-Yuga.

- 2 Ayanas (6-month periods, see above) = 1 human year = 1 day of the devas
- 4,000 + 400 + 400 = 4,800 divyabdas (= 1,728,000 human years) = 1 Satya Yuga
- 3,000 + 300 + 300 = 3,600 divyabdas (= 1,296,000 human years) = 1 Treta Yuga

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- 2,000 + 200 + 200 = 2,400 divyabdas (= 864,000 human years) = 1 <u>Dvapara Yuga</u>
- 1,000 + 100 + 100 = 1,200 divyabdas (= 432,000 human years) = 1 <u>Kali Yuga</u>
- 12,000 divyabdas = 4 Yugas (= 4,320,000 human years) = 1 Mahā-Yuga

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(माघशुक्ल प्रपन्नस्य पौषकृष्णसमापिनः)
<u>युगस्य पञ्चवर्षस्य</u> कालज्ञानं प्रचक्षते ६

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Vedanga Jyotisha

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Vedanga Jyotisha became a subject matter for various interpretations – often contrary and conflicting. The problem was compounded further by "wrong words, omission of letters and incorrect numerals which required editorial correction and emendation" as recorded by Prof K V Sarma (in Page 58, "Facets of Indian Astronomy", published by Rastriya Sanskrit Vidyapeetha, Tirupati after reviewing 20 manuscripts – 14 Rig-Vedanga Jyotisha and 6 Yajur-Vedanga Jyotisha from different regions in India, different scripts and different periods, inscribed on different materials.). Late Prof Sarma was a highly respected Research Scholar on ancient Indian Astronomy.

Critical edition of Vedanga Jyotisha published by Indian National Science Academy, New Delhi edited by Prof K V Sarma included 80 corrections or emendations.

It was misconstrued by some Western Scholars as contradictory to or inconsistent with 'Yuga' System spelt out in 'Brahma Siddhanta', 'Surya Siddhanta' and other time honoured ancient Astronomical Texts.

ग्रन्थान्तरे –

ब्रह्मायुषः प्रमाणं तु सौरमानेन कथ्यते ।

तृटिकालप्रमाणे तु क्रमान्मासादयः स्मृताः ।

पञ्च ५ सप्तकारा १७ स्तर्कवेदाश्च ४६ वियदर्णवाः ४० ।

लवकालप्रमाणस्य क्रमाद्वर्षादयस्स्मृताः ।

तानानि ४९ वेदाश्चात्यष्टी १७ रसवेदाः ४६ खमार्गकाः ४० ।

निमेषकाले रूपाष्टवेदचन्द्रास्तु १४८१ वत्सराः ।

मासाः पञ्च ५ दिनान्यग्निनेत्राणि २३ घटिकाः कृतिः २० ।

चत्वारिंशत्सहस्राणि कालो गुर्वक्षरस्य च ।

ब्रह्मणः प्राणकाले तु चातुर्लक्षमुदाहृतम् ।

चतुर्विंशच्च लक्षाणां विनाडीति प्रकीर्तिता ।

चत्वारिंशच्च लक्षाणां कोट्यश्च चतुर्दश १४,४०००००० ।

नाडिकादिनमानं तु ब्रह्मणः परिकीर्तितम् ॥

When present Brahma's life span is over, another or new Brahma comes into being, process of creation begins all over again after a gap of approximately 1.7 million years (time scale for human beings). This is known as 'Srushtyadi' i.e. the beginning of Srushti or creation. Only then Universe is created.

Srustyadi – beginning of creation

## "सृष्ट्यादौ नाडीक्रांतिवलययो: संपातः यत्रासीत् स: निरयनमेषादिः"

Meaning: 'The point of intersection' of Ecliptic and Equator at the time of 'Srushtyadi' was 'The First Point of Aries'. In Indian parlance it is known as Aswinyadi or Meshadi. That is: Equinox or Vishuvat was at 0° 0' 0". 'Ayana' means precession. 'Nirayana' means '0' precession. Therefore it is the starting point. (It may be construed that Sayana less Nirayana (cumulative values) = cumulative precession of equinoxes.)

Vishuvat/Equinox
Aswinyadi/Meshadi/First Point of Aries
Chalana/Precession
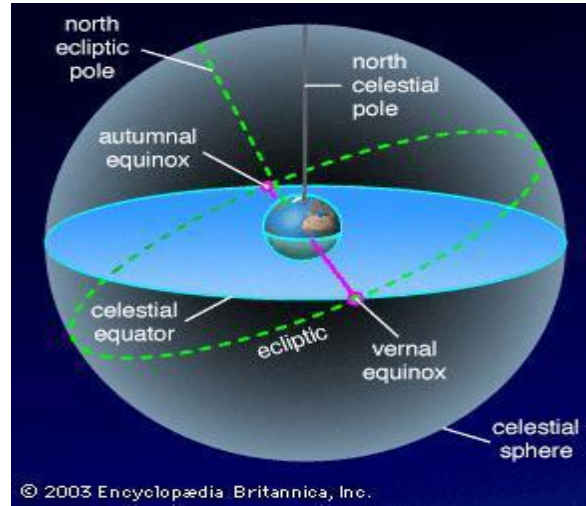
Vernal Equinox is known as 'Vasanta Vishuvat' and Autumnal Equinox is known as 'Sarat Vishuvat' in ancient Indian Astronomy.

It is difficult to precisely identify end of stellar segment of Revati or beginning of Aswni. Revati has 32 stars. None of them is identified as 'yoga tara' or 'Principal Star'. 'Chitra' has only one star that is recognized as 'yoga tara'. That is exactly at the midpoint of stellar segment of Chitra. Even Western scholars recognized it as SPICA. It is 180^0 precisely on either side of 'First Point of Aries' as shown in the picture below.
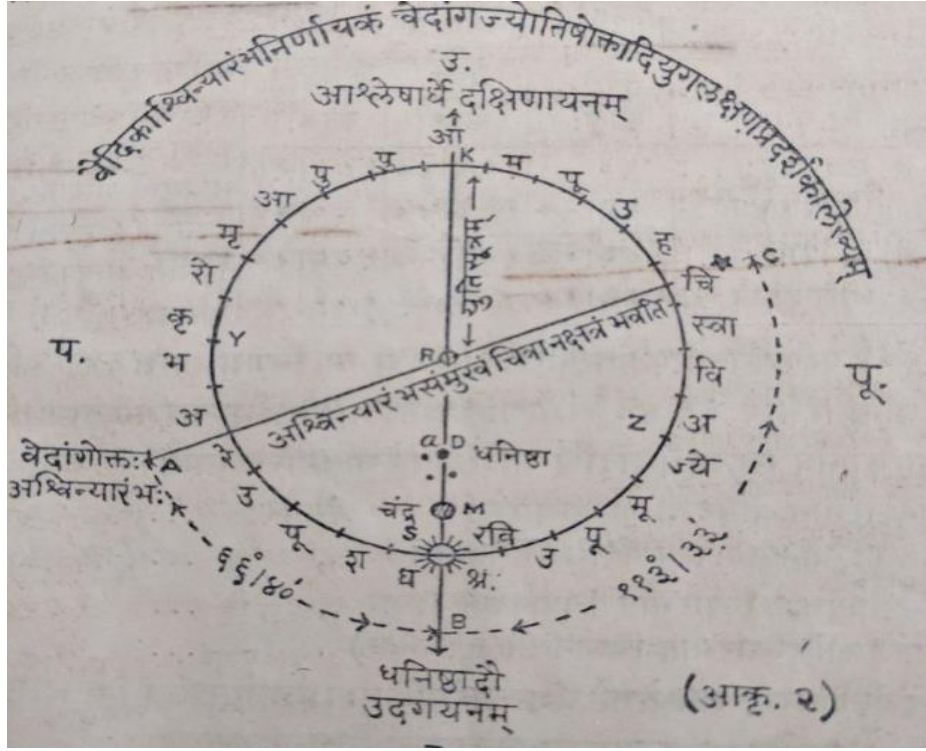
In Vedanga Jyotisha period Equinox was at (-) 23⁰ 20'

English translation and commentary on Panchasiddhantika by G. Thibaut edited by Mahamahopadhyaya Sudhakar Dwivedi (my father's paramaguru) – published by Chowkhamba Sanskrit Series (Varanasi) confirmed that equinox was at 23⁰ 20' (-) from **Nirayana Meshadi.**

This was also confirmed by Prof T S Kuppanna Sastry in his commentary on Vedanga Jyotisha and endorsed by Prof K V Sarma

Late Prof T S Kuppanna Sastry, ex-Principal, Sanskrit College, Chennai, in his introduction to Vedanga Jyotisha, confirmed that "(-) 23⁰ 20' perfectly agrees with what Varahamihira (530 A. D.) by his intensive observation (vedha)".

Late Prof T S Kuppanna Sastry translated and commented on Vedanga Jyotisha in English. This book was later edited by Prof K V Sarma, an acknowledged Research Scholar in ancient Indian Astronomy and published by Indian National Science Academy, New Delhi.

This was also confirmed in 1937 edition of Jyotirganitam by Sri D V Ketkar and my father's elder brother Sri Pidaparty Subrahmanya Sastry

Then VISHUVAT was at Longitude was 270⁰ and (-) 23⁰ 20'.
Therefore (-) 23⁰ 20' 0" = [360⁰ 0' 0" - 23⁰ 20' 0"] = + 336⁰ 40' 0"
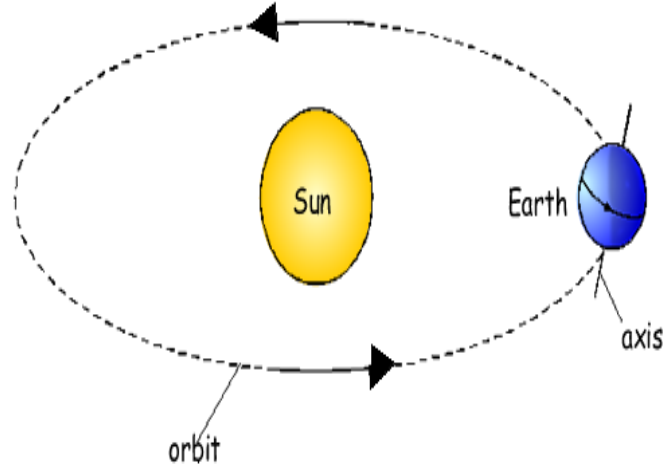
There is a belief in the western world that ancient Indian Astronomers were unaware of 'Helio-Centric ' system.   Therefore their beliefs and computations relied on 'Geo-Centric' systems. Fact is that Geo Centric system was necessitated and considered relevant for the humanity that lives on the Earth. Conversion from Helio to Geo became a compulsive need.

Vedaas and branches

Vedas were at the root of development in ancient India. i.e., Vedas were in existence, before Vedanga Jyotisha, during the period of interregnum – between the period when Vishuvat was at 0° 0' 0" and 336° 40' 0".
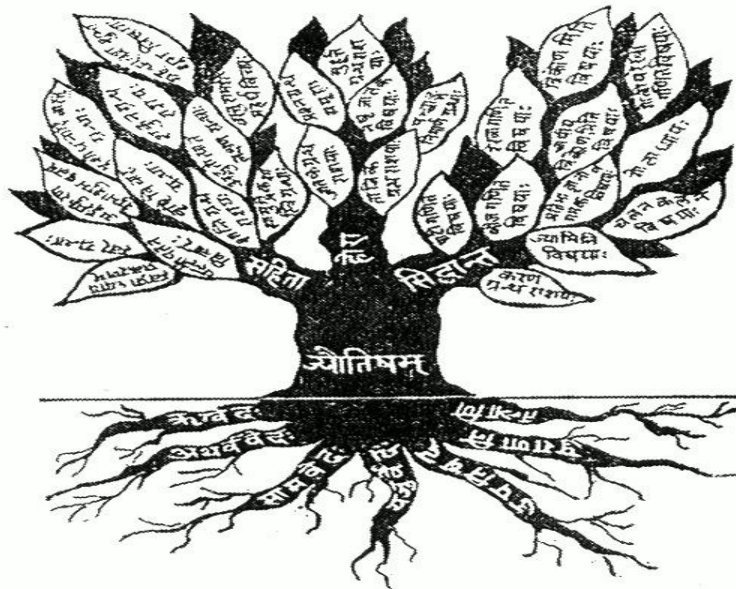
Courtesy: Chowkhamba Sanskrit Bhavan, Varanasi Surya Siddhanta ISBN 81-86937-59-5

References in Rig-Veda re: Vishuvat Chalana

Rig-Veda (8-2-41) says

"शीक्षाविभिंदो अस्मै चत्वारि अयुता ददत् अष्टापर: सहस्रा:*"

Meaning : Oh Vibhindo! You gave me knowledge and wisdom. 1 Kalpa = 432 x 10,000 x 1000 years = 4320 million years. (This meaning is in conformity of what was stated in Surya Siddhanta and all Puranas.) *(Griffith and Wilson appear to be unfamiliar with nuances of interpretation of Vedic Sanskrit)*

Rig-Veda (8-96-13) says

" इयानः कृष्णो दशभि:सहस्रै:अवतमिन्द्रै:"

Meaning: Indra or Vishuvath or equinox makes 15 x 10 x 1000 = 150,000 revolutions (in one Kalpa – implied). *Kalpa is 4320 million years.

That is Vishuvat made 150 revolutions in each Mahayuga. One Kalpa = 1000 Mahayugas. It comes to 28,800 years for completing one revolution as against 26,000 estimated at present.

Thus annual precession of equinox was at 45" during vedic period. Rig-Veda also re-confirms reference to Mahayugas and Kalpas and their duration as given in Brahma's life. Since present rate of precession of Equinoxes is known to be about 50" and rate of precession is slowly accelerating over the years. 45" precession per year appears to be valid in Vedic times.

For equinox to move 336° 40' 0" from the First Point of Aries, @ 45" per year, it took 26,933 years after *'Shrusti'* began i.e. Universe came into existence. We may confidently conclude Vedas existed 26,933 years before Vedanga Jyotisha came into being and after *'Srushti'* (Creation) began.

In Vedanga Jyotisha

Please notice use of the word "Aadi yuga" in Vedanga Jyotisha and the conditions associated with it below.

"स्वराक्रमेते सोमकौं यदा साकं सवासवौ
स्यात्तदादियुगं माघः तपः शुक्लोयनं ह्युदक्"

Vedanga Jyotisha, 7ᵗʰ sloka

Stellar segment 'Dhanishta' is a group of stars. 'Yogatara' (principal star) is recognized and acknowledged as beginning point of 'Alpha Delphini'.

'Aadi yuga' starts when Sun and Moon shine at the beginning of Dhanishta Nakshatra, then the beginning of Magha masa (month), Tapo masa, Sukla paksha (1ˢᵗ fortnight), Uttarayana (beginning of Sun's transit towards North).

Sun and Moon changed (Vedanga Jyotisha period) the direction from South to North (beginning of Uttarayana), according to Vedanga Jyotisha at the beginning of Stellar segment Dhanishtha (Sravishtha).

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"प्रपद्येते श्रविष्टादौ सूर्या चन्द्रमसावुदक्
सार्पार्थे दक्षिणार्कस्तु माघ:श्रावणयो:सदा"

</div>

<div align="right">(Sloka 7, Yajur-Vedanga Jyotisha)</div>

In Garga Samhita **"यदा माघस्य शुक्लस्य------ "** it is stated that Sun changes the direction from North to South (Dakshinayana begins) when sun is at the mid-point of Stellar segment of Aslesha. Then moon is in Stellar segment of Chitra.

In Varahamihira's Panchasiddhantika (Paulisa Siddhanta (III-21) see the following verse :

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"आश्लेषार्धात्यदा निव्रुत्ति: किलोष्णकिरणस्य
युक्तमयनं तदासीत्सांप्रतं अयनं पुनर्वसुत:"

</div>

Meaning : Dakshinayana began when Sun is at the mid-point of Stellar segment Aslesha i.e. when Sun's transit changes direction from North to South. This happened during Vedanga Jyotisha period. During Panchasiddhantika Period Dakshinayana began when sun is in Stellar segment Punarvasu.

There was an issue whether it was mid-point of stellar segment Punarvasu or 3/4ᵗʰ of Punarvasu. It was resolved by Mareechi in his commentary on Brihatsamhita as follows:

In *Mareechi Bhashyam* of Bruhatsamhitha, Mareechi said :

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"सायनकर्कटकादिरत्र निरयन पुनर्वस्वर्धमेव भवति
अयनयो: कर्कमकराद्यो: सायनत्वेन अभिमते पुनर्वस्वंतिम चरणादिति"

</div>

That is: If we consider the beginning of Karkataka and Makara are based on Sayana system, it is the beginning of ¼ of Stellar segment Punarvasu. If we go by Mareechi Bhashyam, beginning of Karkataka is Sayana, mid-point of Punarvasu is Nirayana.

No. of years Brahma took to begin creation of the Universe

Brahma's age now (2017) 155,521,972,949,110 years [solar years]
   155,521,955,885,118 solar years passed after Srustyadi

{Therefore No. of solar years Brahma took to begin Shrusti =
155,521,972,949,110 less 155,521,955,885,118 = 17,063,992
solar years
17 million solar years Or 1.71 crore solar years}

Age of Vedanga Jyotisha

No. of years passed since Vedanga Jyotisha period –
155,521,955,885,118 less 26,933 (after srustyadi - during the period
of interregnum)
= **155,521,955,858,185 solar years.**

155,521,955 million years

Age of Vedas

> 155,521,955 *million years because*

Vedas were predecessors to Vedanga Jyotisha

Age of SURYA SIDDHANTA

अल्पावशिष्टे तु कृते मयो नाम महासुरः
रहस्यं परमं पुण्यं जिज्ञासुः ज्ञानं उत्तमं   २
वेदाङ्गं अग्र्यं अखिलं ज्योतिषां गतिकारणं
आराधयन् विवस्वन्तं तपस्तेपे सुदुश्चरं   ३

Madhyamadhikara, Surya Siddhanta

Meaning : Surya Siddhanta was gifted to Maya Asura by Sun God when a small segment of 'Krutayuga' was left over and about to end. The balance of Kruta yuga may be ignored for the purpose.

Duration of Krutayuga was 1.728 million years.

Since Surya Siddhantha is also considered 'Apaurusheya' and sacred, it is in the very first Mahayuga**.**

155,521,955,885,118 solar years less 1,728,000 years (Kruta yuga) 155,521,954,157,118 solar years
Or 155,521,954 million years + old

No. of revolutions completed
by Vishuvat or Equinox since Srushtyadi

Equinox or Vishuvat made 150 revolutions in each Mahayuga. We do not know precisely actual rate of precession during the period. We know minimum was 45″ per year and maximum was 50″+. We also know that it was accelerating at a very slow rate year after year.

Therefore an average of 26,000 and 28,800
= 27,400 years for each revolution.

155,521,955,885,118 ÷ 27,400 = 5,675,983,791 +
Revolutions completed.

These are true and fair estimates
until better & more credible methods are developed

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• Rig-Veda

• Vedanga Jyoisha

• Brahma Siddhantha

• Surya Sidhantha

PIDAPARTY Purna Satya HARIPRASAD

Koundinyasa gothram
Pidaparty China Purnayya Siddhanti – Grand father
"Daivajna Bhushana", "Ganita Kalanidhi" Pidaparty Krishnamurty Sastry (1897-1977) – Father
Born in Rajahmundry (India) – on January 8, 1935
Now permanent resident of Secunderabad (India) since 1994

Education – ICWA – Final – 1966;
B.A. (Maths & Statistics) – 1957
No schooling – studied Sanskrit with father in a traditional way for > 10 years – Passed Govt Sanskrit
Exam (Combined Madras Govt) in 1949

Employed in Calcutta, New Delhi, Madras, Bombay, Bangalore & Hyderabad– in India
Assignments outside India – Lusaka (Zambia), Port Harcourt (Nigeria) and Guneid (Sudan)

Was Director (Finance) in Electronics Corporation of India, under the administrative control of Atomic
Energy Commission) in Hyderabd (1990 to 1992)
Was CEO of a $ 50 million project in Port Harcourt, Nigeria on behalf of Coutinho Caro & Co KgaA.,
Hamburg (3 year contract)
Was Chief Accountant of largest subsidiary of INDECO group in Zambia (2 years) and Group Accountant
of 36 subsidiaries in variety of Industries (1 year)

Did a small consultancy assignment for The World Bank, Washington in 2005.,
Did 2 Cost Benefit Analyses for The Ford Foundation in India for review by The Vice President,
International Division, New York.
Drafted, Negotiated and Finalized the construction contract for the 2.8 km Rly Bridge on River Godavari
in Rajahmundry on behalf BBR India Ltd., subsidiary of Bureau BBR, Zurich) in Bangalore.

Extensively travelled in India, Africa, Europe, and USA.

Designed & installed Sundials in Andhra Pradesh
- at Ashram Public School, Kakinada in 2007;
- In Dwaraka Tirumala, near temple in 2010;
- In Shilparamam, Tirupati (2012)

a post retirement hobby with no formal guidance from anyone – only blessings from father.

My book 'Vishuvat Chalana' is available for free download in the internet – courtesy University of
Heidelberg. This paper will also be available for free download.