

SANKHYAKARIKA.

APPENDIX G.

Age of the Vedas.

The rationale and proof of Vedic civilisation having existed 32000 years ago is given below. The Atharvaveda book 19, chapter 7, verses 1 to 5, and chapter 8, verse 1 under Nakshatradevatyam identifies 28 Nakshatras as the number of divisions in the stellar horizon. The Sanskrit term Nakshatra (Na = 'not' Aksha = 'terrestrial latitude' Atra = 'in this case' meaning not a terrestrial latitude in this case) is a label to identify a numerical angular position or celestial latitude or longitude. It eliminates the need to specify an arbitrary angular limit like 360 degrees in a circle. The number 28 came about from Sankhya theory where Prakriti binds by 7 divisions in each direction and the four quarters gave 28 divisions in a plane giving 12.857 degrees per section in modern notation. The 7 comes from the integer mathematics used in Sankhya. The basic volume is proportional to the first, fundamental or elemental unit $\text{radius}^3 = 1^3$ and the next incremental radius of $2^3 = 8$ units. When the volume increases by doubling the radius, it grows from 1 to 8, or 7 volumes are added. Since the basic volume cannot be detected, because the process of detection is relative (or by comparison), only 7 volumes can be measured with reference to the first volume. $8-1=7$. the logic is based on the concept that a truly elemental unit cannot be fractionalised because if it can be, then it is no more an elemental unit. this is the basic reason for the spectral range of seven segments in any field.

The Sankhya system developed the integer number theory on a logical need based principle thereby eliminating arbitrary systems, like 360 degree division of a circle etc. In today's almanacs only 27 Nakshatras are mentioned. There is a very logical and accurate reason for this change that justifies the theory that Vedic civilisation existed 32000 years back and it is given below. The earth spins on its own axis in 24 hours or $1/365.25$ of its annual orbit around the sun. This sets the actual time of a daily revolution to less than 24 hours of clock time, if the starting point of each daily revolution is referred to a location in the sky; that is $(24 \times 3600)/365.25 = 236.55$ sec or 3 min and 56.55 sec less than 24 hours. It means that if we use a particular stellar constellation or star at the zenith or the horizon, identifying the starting point for the daily revolution of the earth, one would see this mark arrive 3 min and 56.55 sec earlier every day and will again coincide with the same stellar location and clock time only after 365.25 days or a year. It is the natural shift in timing of an object that is both spinning and orbiting in space. The time of 23 hrs 56 min 3.45 sec is called sidereal time. Hence we can locate the star accurately at any future time by applying the sidereal time from a known date within an annual cycle. Similarly if the location of this star is recorded at a particular time, it is possible to work out the location of the observer and the date of such observation, all within the cycle of one year. This example has been quoted to show that location and date of events can be ascertained with the required degree of accuracy based on the sidereal shift in stellar positions.

Added to the sidereal shift that moves along the solar ecliptic, there is another movement due to the shift in the angle of earth's axis to the ecliptic that creates a relative change in the angle of inclination of the ecliptic. This movement is called precession of the equinox and is treated in current physics as a problem connected with spinning bodies like a gyroscope and in relativistic physics it is due to the curvature of the field. But Sankhya proves that all phenomenon is due to the synchronisation of vibrations or it is of a holographic nature and treats space like any other matter field comprising gas or fluid etc. that causes delay by superpositioning of vibrations and therefore a shift in the static or synchronised state and both these shifts are combined and defined as AYANAMSA (AYAN = motion or movement and AMSHA degree or division- in Sanskrit explained below). The fundamental reason that precession exists is that the oscillating or vibrating parameters along the two axis in the plane of motion is not synchronous or the synchronous nodes along the two axis have marginally different rates of oscillations. Two sets of axial vibrations can be in resonance or have a standing wave relationship if the two axis (say x and y) have a ratio of one to two. That is the tangent of an angle of 26.565 is exactly $\frac{1}{2}$ and at this value the resonant state at the 2nd harmonic is maintained. If it exceeds this ratio or the angle becomes smaller the resonance can only occur at a harmonic level higher than 2 which cannot be sustained. A spinning object that does not move can maintain both axis at identical synchronous rates and therefore present a perfect spherical surface of rotation but the movement in a particular direction sets up differences in time, direction or rates which causes non synchrony and therefore an unbalanced state with a non spherical surface of rotation. The angle 26.565 deg. or the tangent ratio $\frac{1}{2}$ is an exceedingly critical parameter in space because all the vector

relationships follow a law of self similarity and scale invariance. That is every connected parameter can be described in terms of a factor x raised to some integer power and x forms an infinite nested series. The shantimantra "Purnamida Purnamadam "etc: when decoded correctly, gives the numerical value of x , with extraordinary characteristics. It is explained fully in the "GUNA" Sutras in Sankhya. At 26.565 deg. the resonant oscillatory rate is 296575967 which is almost identical to the velocity of light at a meter wavelength. Since the components of the SUBSTRATUM are also oscillating at the same rate an equilibrium condition becomes established in the field along this angle. Hence any solid spinning orbiting object experiences a resonant relationship with the vibratory conditions along its periphery and if such conditions remain stable or the differential parameters maintain the same rate, then the object maintains this relationship or it becomes strapped or locked to this angle of transfer of vibrations. One must remember that Sankhya emphasises that the solidity of objects is created by the superpositioning of vibrations on the elemental component of space and only formations as vibrating ensembles travel. Hence the locked state does not lose its phase relationship easily and unless the relative rate difference exceeds the self-similar ratio, no change takes place. This is the gyroscopic effect.

The earth's equator spins at a mean surface velocity of approximately 462 m/s and the earth itself moves around the sun at an algebraic mean speed of approx. 29845.4 m/s. But the earth's axis is tilted by 23.5 deg. to the plane of revolution around the sun, called the ecliptic. As a result of this tilt, the earth's maximum spin velocity vector at the equator works out to : $462 \times .91706 (\cos 23.5) = 423.52$ m/s. The drift of the starting point of the ecliptic is at the rate of $423.52 / 29845.4 = 1 / 70.47$ of a cycle and the drift due to the sidereal effect is $1/365.25$ thereby giving a total drift of $1 / (70.47 \times 365.25) = 1/ 25739$ of a cycle. It means that an identical ecliptic coincidence of the sun and earth at a particular position will be repeated only after 25739 cycles or years in this case. This calculation has been shown in a simplified form to make it understandable but a very accurate calculation supported by many years of practical observation gives a drift rate of 50.35 seconds of arc per solar year and is only used in Vedic astrological calculations as a normal course. The precession of the equinox calculated by applying modern principles of celestial mechanics is 26000 years or (49.85 sec of arc per year.). But extremely accurate calculations give varying precessional rates at different periods and relative positions, but the 25739 rate is an average of over 30000 years. (See precess.mcd)

The Vedic scholars, following the Sankhya principle of self-similarity that governed the dynamic state of the Substratum, took the ecliptic coincidence as a CLOCK TIME benchmark that can at least be relied on in a cycle of approximately 25739 years. This drift or AYANAMSA was used by astronomers and astrologers to FIX the moving zodiac (ecliptic) so that accurate comparisons of events could be made in a locality where everything is moving relative to everything else. If the number of AYANAMSA cycles are known between events in multiple units of 25739 years, then it could be compared meaningfully.

[As an illustration of the accuracy of Vedic calculations, using the same fixed zodiac or ecliptic, one can calculate the return of the moon to the same or identical position once in 40 years. This is mentioned in the Atharva Veda book 20, chapter 34, verse 11.]

The Vedic scholars have identified the equinoctial position in a particular period as beginning in the stellar position of the constellation Punarvasu. The term Punar means "the return or repeat" and Vasu is a "ray of light or a sighting point" and the whole word has the meaning of the starting point or point of coincidence indicating 0 deg. latitude & longitude on the orbital ecliptic. There is another proof of this position being the starting point today. Abhijit, one of the 28 Nakshatras, is situated exactly 180 degrees in opposition to Punarvasu, in the constellation now called Vega north of the equator, and was identified as a 12.857 degree sector in the sky during the period when the Atharvaveda was developed. Due to the 23.5 degree tilt of the earth's axis, any celestial body would tend to swing north and south annually just as the sun does seasonally. The total swing being 47 degrees, sectors that are far north or south would seem to disappear or the angular displacement would decrease during these excursions. In astrology such a division of sectors are called unequal houses and when calculating positions far north or south of the equator, the same zodiacal sign would occupy two sectors or houses thereby eliminating a house completely. Abhijit, being far north, the angular displacement of the 12.857 deg. sector seems to become virtually zero during the southerly excursion once in 25739 years. Because of this phenomenon, currently Abhijit as an identifiable sector has virtually disappeared and is not included in the post glacial scenario as a Nakshatra. The period of such disappearance can last up to 6000 years depending on the declination. While the Vedic scholars divided the celestial ecliptic into 28 divisions based on Sankhya Tamasic principles explained earlier, they gave each sector a name only to identify the angular position starting from Punarvasu as the starting point or number One sector. Since Abhijit cannot be identified, astrologers have reconciled their calculations with 27 sectors of 13.33 degrees each instead of the 12.857 unit. The names of these sectors are associated with constellation names to enable identification and the locational precision is improved by dividing the Nakshatra position by 4 sections and each of these sections into 9 divisions with a provision to improve accuracy by a

further two sets of ninth divisions equalling approx. 15 sec of arc.

The Atharvaveda has given two identifiable points ; namely the starting point in Punarvasu as an indicator of Vedic history and the progress of the Nakshatra called Kritika (in Plaiades constellation) to the starting point, under the heading of Nakshatradevatyam in the 19th book, (chapter 7), the penultimate volume.

Some elementary calculations gives the number of years from the current position. Calculations show that the current starting position or the 0 degree position on the ecliptic to date is in the Nakshatra Aswini or Aries constellation between 0 and 13 degrees. As a rough guide the total AYANAMSA period of 25739 years divided by 28 yields 919 years per Nakshatra passage. Taking the maximum number of Nakshatras traversed between Aswini and Punarvasu as 7 then the time elapsed is $7 \times 919 = 6500$ and if the difference between Punarvasu and Kritika is taken as 5 then $5 \times 919 = 4595$ years. If it is surmised that the depth of Sankhya & Vedic knowledge was produced about 6500 years back, then physical evidence (archaeological) corroborating such advancement would have been available as it is in the post glacial period and could not have been destroyed. The best evidence so far indicates that the civilisation around 6000 years ago left behind shards of pottery and burial mounds (around 4000 BC) and artefacts dating 2500 BC. Analysing the ecliptic drift again, the ecliptic-equinox in the current period is in Nakshatra Aswini in constellation Aries; approximately 1838 years ago it would have been in the Nakshatra Kritika in the Plaiades constellation. Approximately 6433 years ago the equinox would have been in the Nakshatra Punarvasu in the constellation Gemini. As Punarvasu is the starting point, the development of Vedic science to the level depicted in Sankhya could not have been possible in 6500 years for one thing and the historical and geological evidence of global flooding due to a glacial melt about 10000 years ago strongly suggests that the current civilisation has virtually begin from scratch. The inundation theory has been corroborated theoretically by various investigators including Lokmanya Tilak and the plausible cause explained in his book " The Arctic Home in the Vedas". He has shown logically that the Vedic civilisation thrived in the Polar regions about 20000 years ago.

If the Punarvasu position is pursued back in time by another full cycle of 25739 years it takes the clock back by about 32165 years from the current period. If the view is taken that this coincidence on the ecliptic is the second time around then the picture is very different. Instead of 7 the sectors increase, by adding 28 to 7 gives a total of 35 sectors; which equals $35 \times 919 = 32165$ years and reducing the current 1996 years since BC leaves the time elapsed as 30169 or 30,000 years BC.

The flooding event 10000 years back puts the AYANAMSA source in the Nakshatra Magha in the constellation Leonis and there is evidence that this ecliptic coincidence has been of some significance as it is mentioned in the Atharva Veda in connection with the beginning of a serious calamity extending over a long period. A serious effort at objectively decoding (translating) the Atharva and Rig Vedas, in particular, will yield a fund of information on the history of our planet in Vedic times besides elucidating the principles of unification of all sciences. The mathematics used here has been deliberately kept at an elementary level so that the principle is understood easily. Since the translation of Sankhya Sutras have yielded exceptional information on cosmology and physics that is not yet known to current science, there is no doubt whatsoever of Lokmanya Tilak's contention that the Vedic civilisation must belong to the preglacial era. The reference in the Atharvan augments Lokmanya's findings. Besides, Maharishi Kapila's axiomatic approach has provided solutions of exceptional accuracy in describing phenomenon in an unified way, by a process of merely counting interactions. On reviewing it, scientists can now understand why the superfluous dimensional concept of mass and energy has been the major stumbling block to a unified 'theory of everything'. There are two mathematical derivations that is hypothesised but not yet confirmed in physics and cosmology, and these are stress energy tensor and energy creation in blackholes. These are precisely identified in Sankhya as the 'ANDHATAMISHRA' region in space. Einstein and Hawkins are the two scientists who have derived these values as an adhoc aspect of their hypothesis whereas Sankhya has derived it as a well defined spectral characteristic of a holographic manifestation of universal phenomenon. Applying Sankhya self similar principles, one obtains the Universal parameters of mass, radius, critical matter density, expansion parameter, indicating rate of a light sphere expansion to a boundary limit of 13 billion years. Further, expansion of the detectable horizon, through density variation causing a redshift in the detectable spectrum, extends the ultimate limit to 17 billion years where the velocity of light would have dropped to a static metre/second. The theory also shows how the density of matter increases by superpositioning of vibrations which leads to a synchronous state of timing along all three axis to form the spherical envelope that defines the aggregate object behaving as a single object. Its internal state leading to planck mass, time, length and density parameters define, a fundamental black hole state of 'ANDHATAMISHRA. The spherical boundary conditioned by both the outer and inner parameters define the nuclear spectrum kept in balance by an axiomatic numerical value $= e = 2.718$, which has been scientifically interpreted as a residual temperature of an expanding universe. The leptonic spectrum starting from the neutrino and ending at the ubiquitous electron is derived as a work function in space.

The photon and its family at all three levels are product of decay due to a remainder from an unbalanced work function equation. In fact the entire spectrum of phenomenon is covered and in the process new regimes of astronomical complexity have been exposed. If one felt that using a technique of mere counting of interactions, was far to simplistic a process to describe the universe and its phenomena, then one can take heart from the fact that no less a person than Sir Roger Penrose, the author of Twister theory, has made the following statement during one of his lectures; " Thus, in effect , twister theory reduces the number of distinct continuum concepts in physics from two to one. But a longer term aim of twister theory is that ultimately the continuum concept may possibly be eliminated from the basis of physical theory altogether. Then the description of natural phenomenon would be based on the principle of counting or other combinatorial processes."

[The following news item was received by e-mail from a colleague in the USA on 5th. Sep 2001. that may provide conformation to the above hypothesis.

Amazing Arctic artefacts discovered.

Tools indicate hunters lived in the north 40,000 years ago.

[Image: Tusk]

A mammoth tusk with grooves carved by a sharp stone is shown in this undated photo. The tusk was among the artefacts researchers discovered close to the Arctic Circle.

ASSOCIATED PRESS

Sept. 5 - Primitive stone tools and other artefacts discovered close to the Arctic Circle in the desolate far north of European Russia indicate that a band of hunters set up camp there almost 40,000 years ago - far earlier than previously thought, researchers report.]

Notes: The stellar divisions based on 28 Nakshatras- the angular width = 12.857 (With 27 the angular divisions are 13.333 deg.)

No.	NAME	Degrees	Constellation.
1	Aswini	0 -- 12.86	Arietus 3
2	Bharani	12.86 -- 25.71	Arietus Mus3
3	Kritika	25.71 -- 38.57	Tauri Aloyoni 6
4	Rohini	38.57 -- 51.43	Tauri Aldebaren 5
5	Mrigasirisa	51.43 -- 64.29	Orionis 3
6	Ardra	64.29 -- 77.14	Orionis 1
7	Punarvasu	77.14 -- 90	Gemini Pollux 5 Zero reference
8	Pusya	90 -- 102.86	Cancri 3
9	Aslesha	102.86 -- 115.71	Hydrea 6
10	Magha	115.71 -- 128.57	Leonis Regular 5
11	P.Palguni	128.57 -- 141.43	Leonis 4
12	U.Palguni.	141.43 -- 154.26	Leonis 4
13	Hasta	154.26 -- 167.14	Corvi 5
14	Chitra	167.14 -- 180	Virginis Spica 1
15	Svati	180 -- 192.86	Boothis Arcturis 1
16	Visaka	192.86 -- 205.71	Libra 3
17	Anuradha	205.71 -- 218.57	Scorpionis 3
18	Jestha	218.57 -- 231.43	Antares 3
19	Mula	231.43 -- 244..26	Scorpionis 6
20	P.Ashada	241.26 -- 257.14	Sagittaris 4
21	U.Ashada	257.14 -- 270	Sagittaris 4
22	Abhijit	270 -- 282.86	Vega 180 deg. reference (Abhijit is not used in current calculations.)
23	Sravan	282.86 -- 295.71	Aquilate 3
24	Dhanishta	295.71 -- 308.57	Delphini 4
25	Satabisha	308.57 -- 321.43	Aquari 100
26	P.B.Pada	321.43 -- 334.26	Pegasi 4

27 U.B.Pada 334.26 -- 347.14 Peg. Andromeda 4

28 Revati 347.14 -- 360. Picium 3

References: ATHARVA VEDA SAMHITA W.D.WHITNEY.

AV BOOK 19, Hymn 7, V. 2 MAGHA AYANAMSA page 906,907,908,909 , BOOK 6 . Hymn 110, PAGE 360, BOOK 2, notes 8.1, PAGE 48, BOOK 14, Hymn 1, V.13 PAGE 742.,

ATHARVAVEDA by DeviChand M.A.

Bk. 19, Hymn 7, Verse 2, AYANAM MAGHA . Page 730 /731. V 1 to 5. Nashatra identity.

"The Arctic Home in the Vedas" by Lokamanya Tilak.

Rapid Rise of Sea Level 19,000 Years Ago and Its Global Implications

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Evidence from the Irish Sea basin supports the existence of an abrupt rise in sea level (meltwater pulse) at 19,000 years before the present (B.P.). Climate records indicate a large reduction in the strength of North Atlantic Deep Water formation and attendant cooling of the North Atlantic at this time, indicating a source of the meltwater pulse from one or more Northern Hemisphere ice sheets. Warming of the tropical Atlantic and Pacific oceans and the Southern Hemisphere also began at 19,000 years B.P. These responses identify mechanisms responsible for the propagation of deglacial climate signals to the Southern Hemisphere and tropics while maintaining a cold climate in the Northern Hemisphere.

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The information in the report conforms to a period in Magha as highlighted in the Atharvaveda Bk. 19, hymn 7, verse 2, ayanam magha . Page 730 /731. V 1.