

Twitter Thread by Brahmasri Samavedam Shanmukha Sarma




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The distinction of measuring the time in a scientific manner is achieved only by Bhāratīyas. Time has been measured from the smallest dimension to infiniteness. Even Time is envisioned as God and venerated. Paramāvara was extolled as 'Mahākālā', the very embodiment of Time.


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Scientific Measurement of Time
By Indians
(#Thread)

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Nārāyaṇa Upaniṣad envisages Nārāyaṇa as 'Kālaśā Nārāyaṇa:', the very embodiment of Time, ages ago. The measurement of Time by Bhārataṇya is as ancient as the very God Himself. Count of many future ages has also been done even from very ancient times.

Since these calculations aren't dependent upon the birth & death of any individual, but are done based on astronomical science, they are thoroughly scientific. Unfortunately, during the British rule, the Bhārataṇya way of Time measurement was casted as an illusion...

...with an evil intention to establish their command. Though it is 70+ years since independence, blindly time is still measured as BC & AD or CE in this religion-less land without even making any attempt to comprehend the magnanimity of Bhārataṇya Time measurement methods.



Time measurement based on inhalation and exhalation : (image)

1 paramāṇuvu (micro atom) = 60,750th part of a second
1 tṛṭi = 29.6296th part of a micro second
1 tatpara = 2.96296th part of a millisecond
1 nimēṣa (time for an eyewink) = 88.889th part of a millisecond
45 nimēṣas = 1 prāṇa/ 4 seconds
6 prāṇas = 1 vināḍi/24 seconds
60 vināḍis = 1 nāḍi/24 minutes
60 nāḍis = 1 ahōrātramu/1 day

Time measurement based on Śrīya Siddhānta : (image)

100 ṛtīs = 1 tatpara

30 tatparas = 1 nimēṣa

18 nimēṣas = 1 kāṣṭhamu

30 kāṣṭhas = 1 Kāla (1 Minute)

24 kālas (minutes) = 1 ghaḍiyā

2 ghaḍiyas = 1 muhūrtamu

30 muhūrtams = 1 ahōrātramu (1 day)

1 muhūrtamu = 48 minutes;

1 ghaḍiyā = 24 minutes;

Varāhamihira, an astronomical scientist, distinguished 'Hāra' from the above mentioned ahōrātramu and designed the measurement of Time based on 'Hāra Paddhati'.

1 day is divided into 24 hāras. Based on this only, later a day is divided into 24 hours.

Time was measured as days, weeks, fortnights, months & so forth.

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Fortnights, months, and years are counted based upon the movement of Sun and Moon.

Coz it is hard to count fortnights based on Sūrya Siddhānta,

it's easy to count fortnights, months, & years based on candra kālas which are directly visible to the human eye.

Time is divided giving names to twelve months & 60 years.

Once the cycle of sixty years is complete, they repeat themselves.

60 Samvatsaras

1	Prabhava	21	Sarvajit	41	Plavanga
2	Vibhava	22	Sarvadaari	42	Keelaka
3	Shukla	23	Virodhi	43	Sowmya
4	Pramoda	24	Vikruta	44	Saadhaarana
5	Prajotpatti	25	Khara	45	Virodhikruta
6	Angeerasa	26	Nandana	46	Paridhaavi
7	Shree Mukha	27	Vijaya	47	Pamaadeecha
8	Bhaava	28	Jaya	48	Ananda
9	Yuva	29	Manmatha	49	Raakshasa
10	Dhaatru	30	Durmukhi	50	Nala
11	Eeshwara	31	Hevilambi	51	Pingala
12	Bahudaanya	32	Vilambi	52	Kaalayukthi
13	Pramaathi	33	Vikaari	53	Siddarthi
14	Vikrama	34	Shaarvari	54	Roudri
15	Vrusha	35	Plava	55	Durmathi
16	ChitraBhaanu	36	Shubakrutu	56	Dundubhi
17	Swabhaanu	37	Shobhakrutu	57	Rudirodgaari
18	Taarana	38	Krodhi	58	Rakthaashi
19	Paartheeva	39	Vishwaavasi	59	Krodhana
20	Vyaya	40	Paraabhava	60	Akshaya (Kshaya)

Based on the star that is close on the full moon day, the month is named accordingly. For example, the month is named 'Chaitra', as the star chitta is present on the full moon day of that month.

<i>Month</i>	<i>Nakṣatra</i>
Caitra	Citrā
Vaiśākha	Viśākhā
Jyaiṣṭha	Jyeṣṭhā
Āśāḍha	Āśāḍhās
Śrāvaṇa	Śroṇa
Bhādrapada	Proṣṭhapadas
Āsvayuja	Aśvinī
Kārtika	Kṛttikā
Mārgaśīrṣa	Mṛgaśīras
Pauṣa	Tiṣya
Māgha	Maghā
Phālguna	Phālgunī

Seasons - Ritu:

Based on the transformations in nature, one-year time is divided into 6 seasons.

Vasanta - chaitra, vaisākha
 Grīṣma - jyēṣṭha, āṣāḍha
 Varṣa - ṛvaṣa, bhādrapada
 Śarad – vṛjya, kṛtikamu
 Hēṃanta – mārgaśīra, puṣya
 Śiśīra – māgha, phalguṇa

1. Vasanta (Spring)
 4. Śarad (Autumn)

2. Grīṣma (Summer)
 5. Hēṃanta (Winter)

3. Varṣa (Rainy)
 6. Śiśīra (Leaf falling)

Vasanta is that time of the year when fallen leaves sprout into tenders making nature very pleasurable. New year begins in this season & ends with leaf falling Śiśīra season.

Indian scriptures scientifically detail how to carve out one's lifestyle based on seasonal changes.

Saṃkramaṇa :

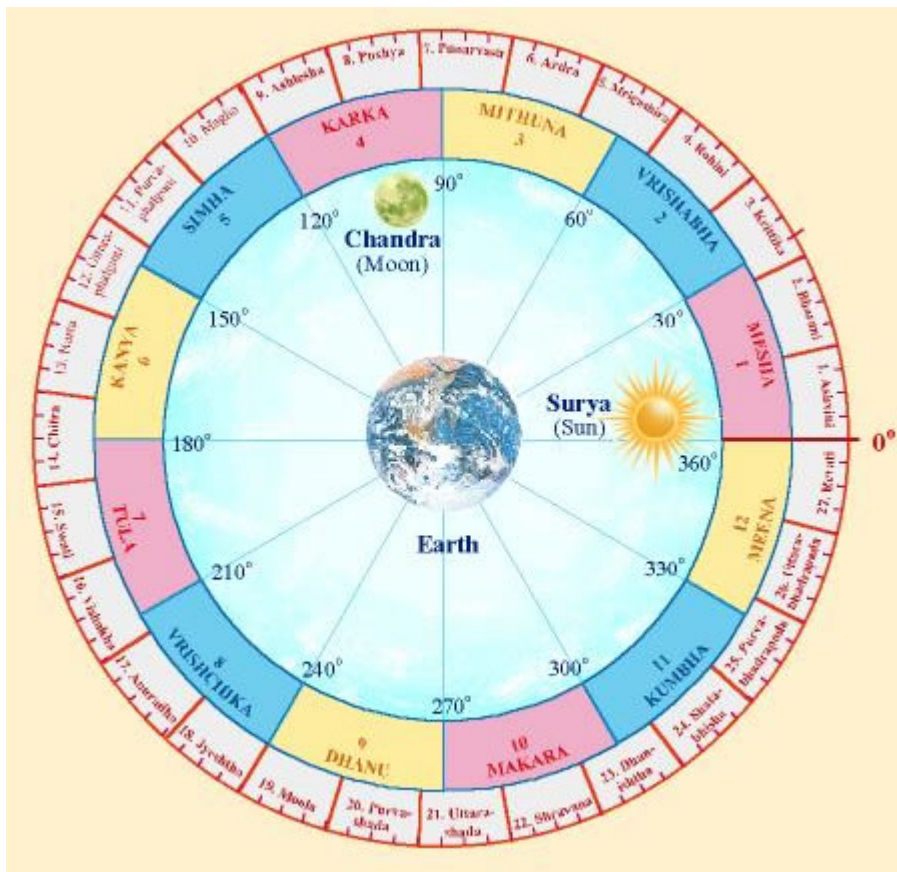
Based on the arrangement of stars in the celestial sphere, the twelve zodiacs starting from Aries to Pisces formed. During the rotation of earth around Sun, Saṃkramaṇa is formed whenever Sun enters into that specific zodiac.



For ex: whenever Sun enters into mākā & vrābha zodiacs respectively, it is called 'mākā saṃkramaṇa' & 'vrābha saṃkramaṇa'. These saṃkramaṇa days are very sacred.

Two among them are very prominent –

1. Makara saṃkramaṇa day when Sun enters into Capricorn



2. Kark██aka sa██krama██a day when Sun enters into Cancer.

Makara Sankranti is celebrated as 'Sankranti' festival (Pongal).

██yana:

'██yana' means journey. One year is divided into two ██yanas –

1. Uttar██yana and
2. Dak██in██yana.

These ██yanas are formed based on time taken by earth to rotate around Sun. While Uttar██yana begins with Makara sa██krama██a day, Dak██in██yana begins with Kark██aka sa██krama██a day.

The Indian Time measurement didn't stop with years, but went forward to calculate the Yugas.

In Indian astronomy, yuga starting from 5 years to Mah██ Yugas has been calculated. The word 'Yuga' is derived from the word 'Y██ga' (union). According to Vedic astrology, names are given for every 5 years such as parivatsaramu, i██vatsaramu, anuvatsaramu, & idvatvatsaramu.

Br██haspati (Guru or Jupiter) takes twelve years to complete on full cycle of moving across in all the twelve zodiacs. Based on this, the yuga that occurs every twelve years is called 'b██rhaspatya yuga'. Kumbhamelas occur every twelve years based on this yuga.



The union of Moon, Sun, dhani██ha star, & Br██haspati in the zodiac of Capricorn occurs once in every 60 years. This is also termed as one yuga.

Four yugas are mentioned taking the above yugas as parts within them. They are – Kr██ta, tr██t██, Dv██para & Kali.

1. Kr██ta – 17,28,000 years
2. tr██t██ – 12,96,000 years
3. Dv██para – 8,64,000 years
4. Kali – 4,32,000 years.

Combined, all these four yugas is called one 'Mah██ yuga' = 43,20,000 years

Time is relative.

There is diff between the time measurement of gods living in divine planes & humans living in earthly planes.

1 yr on earth is equal to 1 day for gods.

71 mah██ yugas is 1 manvantara.

14 manvantaras are mentioned in our scriptures & each has diff Indra as head of gods.

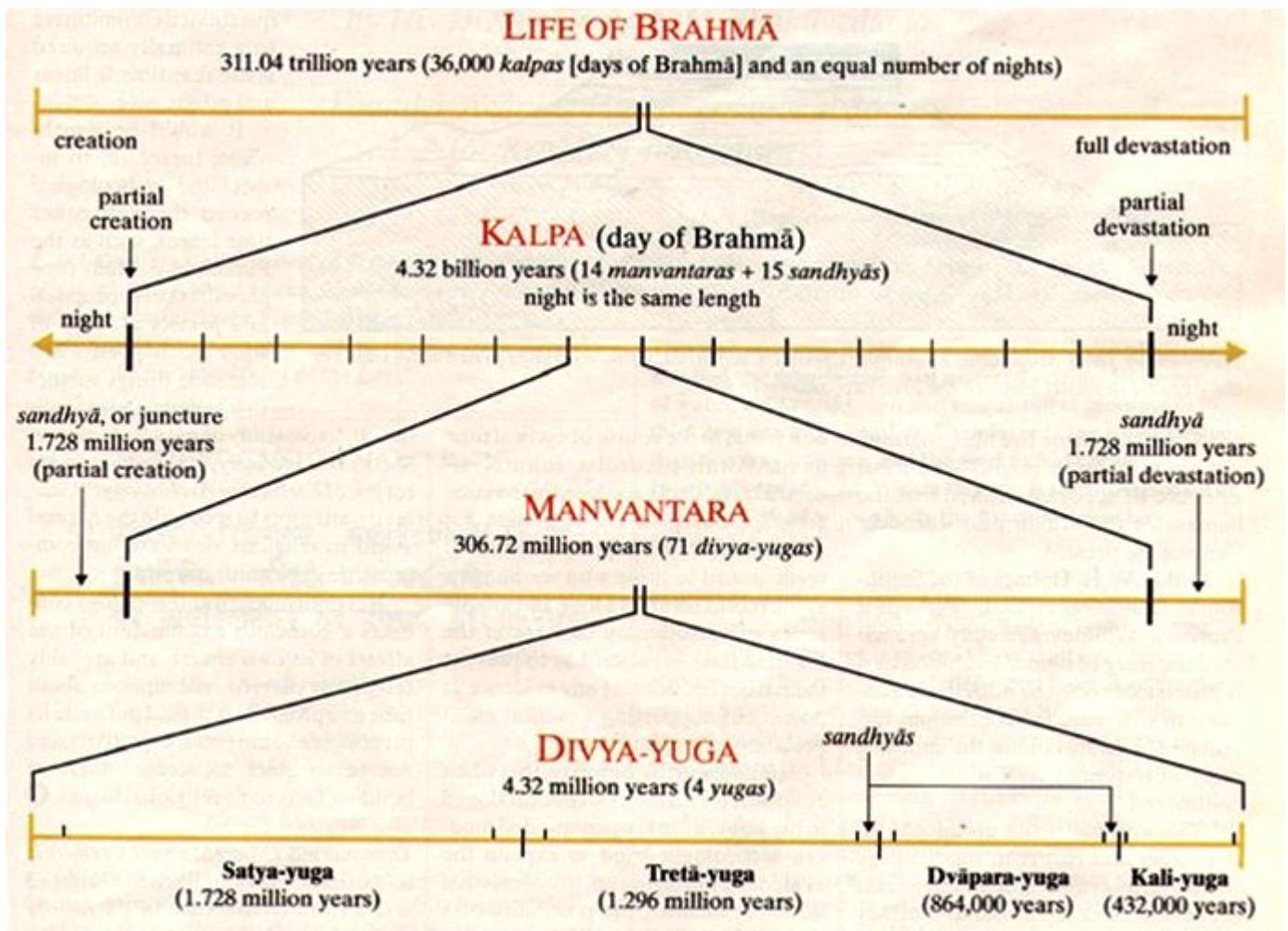
Manvatara/Manu	Indra
Svayambhuva	Yajna (Avatar of Vishnu)
Swarochish	Vipaschit
Uttam	Sushaanti
Taamas	Shibi
Raivat	Vibhu
Chaakshush	Manojav
Shraaddhdev	Purandar (the present Indra)
Savarni	Bali
Daksha Saavarni	Adbhut
Brahma Saavarni	Shanti
Dharma Saavarni	Vish
Rudraputra Saavarni	Ritudhaama
Ruchi (Deva Saavarni)	Devaspati
Bhaum (Indra Saavarni)	Suchi

Between manvantaras, a sub pralaya (small scale dissolution) occurs.

1,000 mahayugas is called 1 kalpa.

1 kalpa is day & another kalpa is night for Brahma.

Lifetime of Brahma, the Creator 1Mahakalpa – 311,040,000,000,000 years



Present Time :

Current Manvantara – Vaivasvata, the 7th manvantara

Kalpa – Nighttime of Brahma

Mah■ Yuga – 28th Mah■ Yuga

Current Yuga – Kali Yuga

Current Year – 5121 year in Kali Yuga

Unit ^[a]	Definition	Human
<i>mahā-kalpa</i>	36,000 <i>kalpa</i> & <i>pralaya</i>	311,040,000,000,000 yr
<i>mahā-pralaya</i>	<i>mahā-kalpa</i> length	
<i>parārdha</i>	$\frac{1}{2}$ <i>mahā-kalpa</i>	155,520,000,000,000 yr
<i>kalpa</i>	14 m + 15 ms; 1,000 cy	4,320,000,000 yr
<i>pralaya</i>	<i>kalpa</i> length	
<i>manvantara</i> [m]	71 <i>catur-yuga</i>	306,720,000 yr
<i>manvantara-sandhyā</i> [ms]	<i>Kṛta-yuga</i> length	1,728,000 yr
<i>catur-yuga</i> [cy]	<i>Kṛta</i> , <i>Tretā</i> , <i>Dvāpara</i> & <i>Kali-yugas</i>	4,320,000 yr

At the completion of one Mah■ Kalpa, Brahma
and the entire universe present at that time

dissolves into the Supreme. Again, creation starts.

This is the 'Cycle of Time'.

Details of ■akas :

Derived from the rule of great emperors, (not based on Christ),

■akas are determined for Bh■rat■yas. For the Kali yuga, total six emperors are mentioned as ■akakarta i.e. the beginner of an era.

1. Yudhi■■hira ■akamu – Began in 3102 B.C. & continued for 3044 years
2. Vikrama ■akamu – Began in 57 B.C. & continued for 135 years
3. ■■liv■hana ■akamu – Began in 78 A.D. & continued for 18,000 years.

Future ■akas are also determined.

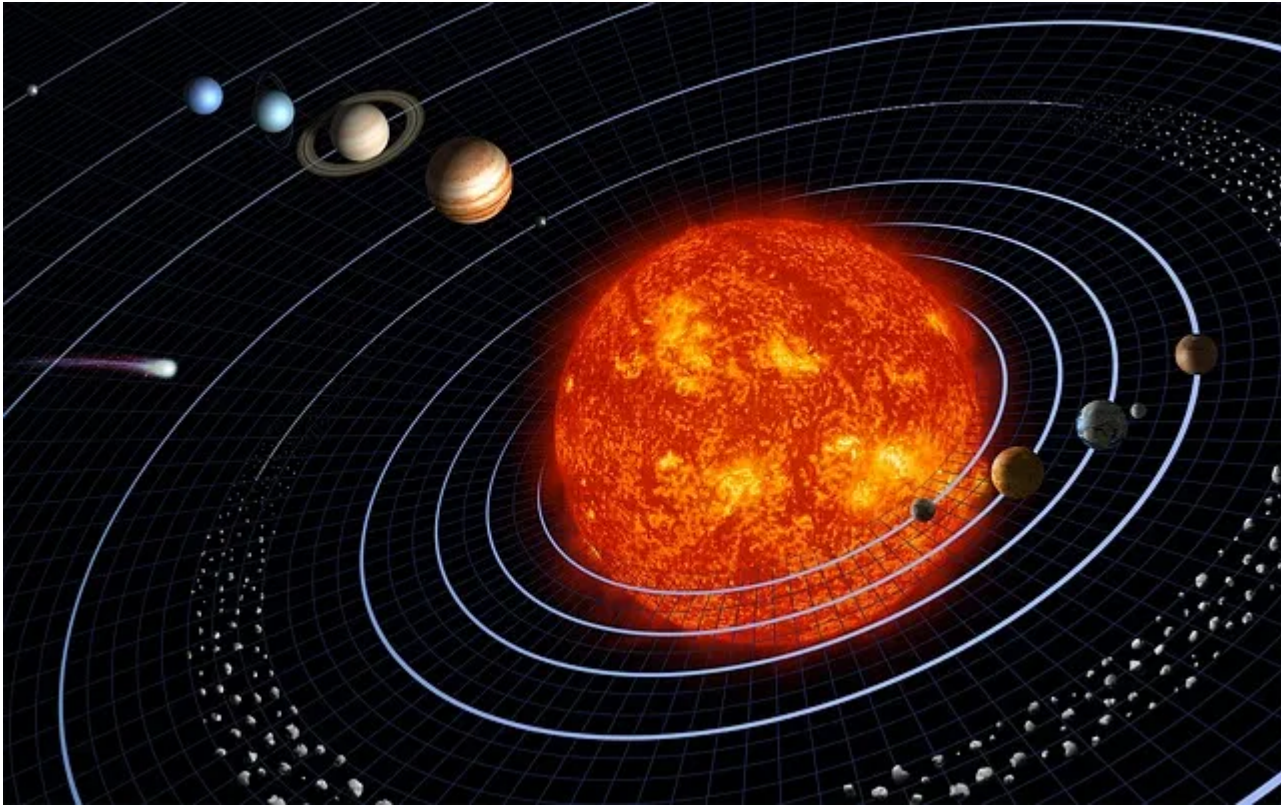
4. Vijay■bhinandana ■akamu – Duration is 10,000 years
5. N■g■rjuna ■akamu – Duration is 400,000 years
6. Kalki ■akamu – 821 years before the end of kali yuga.

Currently, it is 1938th year in ■■liv■hana ■aka.

Further scientific explorations of Bh■rat■yas enabled them to establish the relationship between timelines of people living on this earth in relationship with stars & planets present in space.

That knowledge is nothing but the science of astrology. Their discoveries helped to determine the influence of specific star and planet on an individual present on earth at a specific time. Many intellectuals, domestic & foreign, are conducting scientific researches on these..

.. aspects and thereby unfolding many secrets. Based on the specific time of birth of an individual & influence of distinct stars & planets with respect to corresponding places, there are scriptures that help determine to initiate what kind of work to achieve definitive success.



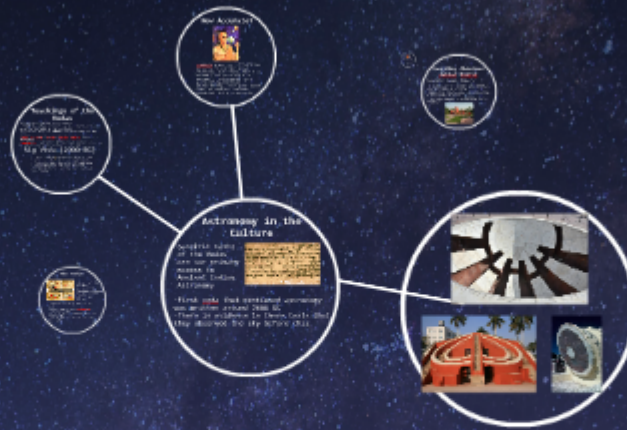
Bhāratīyas are habituated to look for auspicious times even to wear new clothes & use new items. This is not an orthodox belief, but the ultimate scientific knowledge.

Even from the times of Newton, Physics proposed many theories such as Multiverse theory, which states ..

that there are many worlds which are interlinked through time called the 'Time of Relativity'. It also stated that there is possibility of reaching of those worlds thru practices, one can travel into the future to know future happenings & similarly 1 can travel into the past too.

All the above have been postulated by Bhāratīya Maharṣis (scientists) ages ago. Let's realize this truth and take pride as a Bhāratīya.

*** End ***



Ancient Indian Astronomy