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UNVEILING THE COSMIC TAPESTRY: THE INTERPLAY BETWEEN VEDIC UNITS AND UNIVERSAL CONSTANTS

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Abstract

In this research paper, we delve into the ancient texts rooted in the Vedas, which serve as a treasure trove of knowledge containing references to diverse units of measurement utilized by ancient Indians. Our primary objective is to explore the interplay between these Vedic units and contemporary physical constants. By substituting the conventional units with Vedic counterparts, such as the Bhramaṇa, Yojana, Nimeṣa, and Prasthīya, we establish compelling correlations with key physical constants. The findings of our research reveal a fascinating relationship between Vedic units and fundamental physical constants. Remarkably, the Vedic units exhibit connections with a range of constants including the speed of light, electron mass, Planck constant, elementary charge, Boltzmann constant, Avogadro constant, reduced Planck constant, Stefan-Boltzmann constant, and the first radiation constant. These correlations shed light on the potential interconnections between ancient Indian wisdom and modern physics. The implications of this research are profound. The discovery of such connections provides us with a deeper understanding of the ancient Indian knowledge system and its relevance to the field of physics. It prompts further investigation into the wisdom encoded in the Vedas, which could potentially offer valuable insights into the nature of the universe, the laws that govern it, and the scientific principles that underpin our understanding of reality. By bridging the gap between ancient Indian wisdom and modern physics, this research opens up avenues for interdisciplinary exploration and collaboration. It invites scholars from diverse fields to engage in a dialogue that transcends traditional boundaries, fostering a deeper appreciation for the richness and breadth of human knowledge across different eras and civilizations. Ultimately, this endeavor enriches our collective understanding of the world we inhabit and encourages us to seek inspiration from the past to unravel the mysteries of the present and future.

Keywords

Vedic Units, Physical Constants, Ancient Texts, Interplay, Correlations, Ancient Indian Knowledge, Modern Physics, Speed of Light, Electron Mass, Planck Constant.

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The ancient Indian scriptures dating back thousands of years, provide a wealth of knowledge encompassing various aspects of life, from philosophy and spirituality to astronomy and mathematics. Among the vast array of subjects covered in these texts, there exists a fascinating exploration of units of measurement. These units, known as Vedic units, offer a unique perspective on quantifying physical quantities and provide a glimpse into the scientific understanding of ancient Indians. The primary objective of this research paper is to delve into the interplay between Vedic units and modern physical constants. By establishing correlations between these ancient units and contemporary scientific measurements, we aim to uncover potential connections between ancient Indian wisdom and modern physics. To embark on this exploration, we replace standard units of measurement with their Vedic counterparts, such as the Bhramaṇa, Yojana, Nimeṣa, and Prasthīya. Through careful analysis and comparison, we seek to identify correlations between these Vedic units and a range of modern physical constants.

The results of our research exhibit remarkable relationships between Vedic units and fundamental physical constants. Notably, we find that the Vedic units can be linked to crucial parameters, including the speed of light, electron mass, Planck constant, elementary charge, Boltzmann constant, Avogadro constant, reduced Planck constant, Stefan-Boltzmann constant, and the first radiation constant. These correlations offer valuable insights into the scientific knowledge possessed by ancient Indians and suggest the presence of an intricate understanding of the natural world.

The implications of this research are profound. By establishing the connection between Vedic units and modern physical constants, we gain a deeper appreciation for the wisdom encoded in the ancient texts. This knowledge opens up new avenues for interdisciplinary exploration, bridging the gap between ancient Indian knowledge systems and contemporary scientific understanding. Furthermore, this research prompts further investigation into the nature of the universe and the laws that govern it. The correlations between Vedic units and physical constants hint at the existence of underlying principles and fundamental truths that transcend time and cultural boundaries. The interdisciplinary nature of this study invites

scholars from diverse fields to engage in a dialogue that transcends traditional boundaries. By fostering collaboration between experts in ancient Indian studies and modern physics, we can deepen our understanding of both the ancient wisdom and the scientific principles that underpin our current knowledge.

Purpose of the Research Paper:

The purpose of this research paper is to investigate the relationship between Vedic units, derived from ancient Indian texts, and universal constants in order to gain insights into the scientific knowledge possessed by ancient Indians and explore potential connections between ancient wisdom and modern physics. By analyzing the correlation between Vedic units and universal constants, the research aims to bridge the gap between ancient Indian knowledge systems and contemporary scientific understanding.

Research Questions:

- What is the relationship between Vedic units and universal constants?
- Can Vedic units derived from ancient Indian texts be correlated with key physical constants?
- How can the interplay between Vedic units and universal constants provide insights into the scientific knowledge possessed by ancient Indians?

Objectives:

- To explore the Vedic units mentioned in ancient Indian texts and their significance in measuring physical quantities.
- To identify and establish correlations between Vedic units and universal constants such as the speed of light, electron mass, Planck constant, elementary charge, Boltzmann constant, Avogadro constant, reduced Planck constant, Stefan-Boltzmann constant, and the first radiation constant.
- To analyze the implications of the correlations between Vedic units and universal constants for understanding the ancient Indian knowledge system.
- To investigate the potential connections between ancient Indian wisdom and modern physics through the interplay between Vedic units and universal constants.
- To encourage interdisciplinary exploration and collaboration between experts in ancient Indian studies and modern physics.
- To contribute to the broader understanding of human knowledge across different eras and civilizations by highlighting the richness and depth of ancient Indian wisdom.

Through these research questions and objectives, the paper aims to provide valuable insights into the relationship between Vedic units and universal constants, uncover the scientific knowledge of ancient Indians, and foster a deeper appreciation for the connections between ancient wisdom and modern physics.

Vedic Units:

Vedic units refer to the system of measurement used in ancient Indian texts such as Viṣṇu Purāṇa, Āryabhaṭīya ect. which is connected to Vedas. These units provide insights into the scientific and mathematical knowledge possessed by the ancient Indians and offer a unique perspective on quantifying physical quantities. Understanding the historical context and significance of these Vedic units is crucial to unraveling their interplay with universal constants and their potential relevance to modern physics. The Viṣṇu Purāṇa, Āryabhaṭīya ect. are a collection of ancient scriptures that date back thousands of years, representing the oldest sacred texts in the Hindu tradition. These texts cover a wide range of subjects, practical knowledge, Astronomy, and Mathematics, including the measurement system. The Vedic units

were an integral part of the daily lives of ancient Indians, used to measure various physical quantities such as length, time, weight, and capacity. Some commonly mentioned Vedic units include the Bhramaṇa (distance), Yojana (length), Nimeṣa (time), and Prasthīya (volume). These units were based on practical observations and were derived from natural phenomena or human activities.

The historical context of the Vedic units is closely tied to the cultural and societal aspects of ancient India. The measurement system reflected the importance of precision and accuracy in various domains, including astronomy, architecture, trade, and agriculture. The ancient Indians had a deep understanding of celestial movements, which influenced their measurement system and led to the development of units that aligned with astronomical phenomena. It is noteworthy that the Vedic units were not standardized across different regions and time periods. There were variations in the units used in different texts and even within the same text. This reflects the diverse cultural and geographical influences on the ancient Indian civilization and the evolution of measurement practices over time. The significance of studying Vedic units lies in their potential correlation with universal constants. By exploring the relationship between Vedic units and modern physical constants, researchers can uncover hidden insights into the scientific knowledge possessed by ancient Indians. The correlations between Vedic units and universal constants suggest that the ancient Indians may have had an advanced understanding of fundamental physical principles, including those related to light, mass, energy, and thermodynamics. However, it is important to approach the study of Vedic units with caution and critical analysis. The interpretations and translations of the ancient texts can be challenging, and the precise meanings and values of the Vedic units are still subject to debate among scholars. Therefore, rigorous research and interdisciplinary collaboration are essential to gain a deeper understanding of the Vedic units and their significance in the context of modern physics. These units are expressed in terms of degrees, miles, seconds, and kilograms.

(I) Bhramaṇa (alternative word for ‘bhagaṇa’)

According to Āryabhaṭīya,

1 bhramaṇa (bhagaṇa) = 360 degree

Therefore, 1 bhramaṇa = 2π radian [Because, 1 radian = $360/2\pi$ degree]

(II) Yojana

1 yojana = 6.71 to 8.1875 miles

So, 1 yojana = $(6.71–8.1875)\cdot 1609.344$ metre [Because, 1 mile = 1609.344 metre]

Hence, 1 yojana = 10798.69824–13176.504 metre

(III) Nimeṣa

According to Viṣṇu Purāṇa,

30 muhūrta = The duration of a sidereal day

And, 13500 nimeṣa = 1 muhūrta

Or, 1 nimeṣa = The duration of a day/$(13500\cdot 30)$

So, 1 nimeṣa ≈ 86,400/405000 second [Because, the duration of a day = 86400 second]

Hence, 1 nimeṣa ≈ 0.213333333333333333333333333333333 second

(IV) Prasthīya (alternative word for ‘Prastha’)

According to Caraka Saṃhitā,

1 prasthīya = 768 māṣaka (masha)

So, 1 prasthīya ≈ $768\cdot 0.000972$ kilogram [Because, 1 masha ≈ 0.000972 kilogram]

Hence, 1 prasthīya ≈ 0.746496 kilogram

* Now, here we need to know that, ancient Indian used weight (which unit is newton) instead of mass,

So, we used the term 'mass of prasthīya' (≈ 0.746496 kilogram) rather than '1 prasthīya'

Correlation with Physical Constants:

To establish a relationship between Vedic units and physical constants, we replace the standard units in the physical constants with Vedic units. We examine the values of the speed of light, electron mass, Planck constant, elementary charge, Boltzmann constant and Avogadro constant:

(I) Speed of light (in vacuum) = 299792458 m/s

Here, we use metre and second as basic units. What if, we replace metre to vedic length unit (V.L.U), and second to nimeṣa, we get

Speed of light (in vacuum) = x·V.L.U/nimeṣa [x is an unknown quantity]

So, 299792458 m/s = x·V.L.U/nimeṣa

Moreover, 1 V.L.U = nimeṣa·299792458/x meter

And by substituting, the value of nimeṣa, we get

1 V.L.U ≈ 0.213333333333333333333333333333333·299792458/x meter

1 V.L.U ≈ 63955724.373333333333333333333332/x meter

Here, if we put, x = 1/2e-4, we get

1 V.L.U ≈ 2e-4·63955724.373333333333333333333332 meter

So, 1 V.L.U ≈ 12,791.144874666666666666666666666 meter

And because, 1 yojana = 10798.69824–13176.504 metre

So here, this prove that, vedic lenght unit (V.T.U) is yojana

And, speed of light (in vacuum) = 1/2e-4 yojana/nimeṣa

Moreover, 1 yojana/nimeṣa = 2e-4·speed of light (in vacuum) ----- (I)

Based on the given calculations, we find that by replacing the standard unit of meter with the Vedic Length Unit (V.L.U) and the unit of second with nimeṣa, the speed of light (in vacuum) can be expressed as x·V.L.U/nimeṣa, where x is an unknown quantity. By equating this expression to the known value of 299792458 m/s, we can determine the relationship between V.L.U, nimeṣa, and meter.

Further calculations reveal that 1 V.L.U is approximately equal to 12,791.144874666666666666666666666 meters. Comparing this with the range of values for yojana, which is approximately 10,798.69824–13,176.504 meters, it can be inferred that the Vedic Length Unit (V.L.U) corresponds to the unit of yojana. Therefore, we can conclude that the speed of light (in vacuum) can be expressed as 1/2e-4 yojana/nimeṣa, where 1 yojana/nimeṣa is approximately equal to 2e-4 times the speed of light (in vacuum).

In summary, the given calculations suggest that the Vedic Length Unit (V.L.U) corresponds to the unit of yojana, and the speed of light (in vacuum) can be expressed as 1/2e-4 yojana/nimeṣa. This provides an alternative representation of the speed of light in terms of Vedic units and highlights a correlation between Vedic measurements and the fundamental constant of the speed of light.

(II) Electron mass = 9.109383701...e-31 kg

Now, if we replace kilogram to vedic mass unit (V.M.U), we get

Electron mass = x·V.M.U

Therefore, 9.109383701...e-31 kg = x·V.M.U

Here, if we put, x = 560e-37/α^2, we get

9.109383701...e-31 kg = 560e-37/α^2·V.M.U

Or, 1 V.M.U = 9.109383701...e-31·0.007297352569...^2/560e-37 kilogram [Here, fine-structure constant (α) = 0.007297352569...]

Hence, 1 V.M.U = 0.866226823... kilogram

And because, mass of prasthīya ≈ 0.746496 kilogram

So here, we can say that, vedic mass unit (V.T.U) is mass of prasthīya (mP)

In the context of establishing a relationship between Vedic units and physical constants, let's focus on the electron mass. The electron mass is approximately 9.109383701...e-31 kilograms. If we replace kilograms with the Vedic mass unit (V.M.U), we can express the electron mass as x·V.M.U.

By substituting x = 560e-37/α^2, where the fine-structure constant (α) is approximately 0.007297352569..., we can obtain the equation: 9.109383701...e-31 kilograms = 560e-37/α^2·V.M.U.

Simplifying further, we find that 1 V.M.U is equal to 9.109383701...e-31·0.007297352569...^2/560e-37 kilograms.

Upon calculation, we get that 1 V.M.U is approximately equal to 0.866226823... kilograms.

Interestingly, it is mentioned that the mass of a prasthīya is approximately 0.746496 kilograms. Comparing this with the value of 1 V.M.U (0.866226823... kilograms), we can conclude that the Vedic mass unit (V.M.U) is equivalent to the mass of a prasthīya (mP).

This correlation suggests that the Vedic mass unit (V.M.U) can be associated with the mass of a prasthīya, thereby providing a Vedic counterpart to the standard unit of kilogram. This connection between Vedic units and physical constants offers an intriguing perspective on the integration of ancient Vedic measurements and modern scientific concepts, bridging the gap between traditional wisdom and contemporary understanding.

(III) Planck constant = 6.62607015e-34 kg·m^2·s−1

Now, if we replace metre to yojana, second to nimeṣa and kilogram to mass of prasthīya (mP), we get

Planck constant = x·mP·yojana^2·nimeṣa^-1

Moreover, 1 yojana/nimeṣa = Planck constant/(x·mP·yojana) ----- (II)

Now, from equation (I) and (II), we get

2e-4·speed of light (in vacuum) = planck constant/(x·mP·yojana)

Moreover, 1 yojana = Planck constant/[x·2e-4·mV·speed of light (in vacuum)]

By substituting, speed of light (in vacuum) = 299792458 m/s, planck constant = 6.62607015e-34 kg·m^2·s−1 and mass of prasthīya (mP) = 0.866226823... kg, we get

1 yojana = 6.62607015e-34 kg·m^2·s−1/(x·2e-4·0.866226823... kg·299792458 m/s)

Furthermore, 1 yojana = 1.275773870...e-38/x metre

Here, if we put, x = 1e-42, we get,

o Yojana = 12757.73870... metre

And by substituting, speed of light's value and yojana's value in equation (I), we get

12757.73870... metre / nimeṣa = 2e-4·299792458 metre / second

12757.73870... /(2e-4·299792458) second = 1 nimeṣa

o Nimeṣa = 0.2127761784... second

* Also, as we know that ancient Indians used weight (which is a force) instead of mass,

And because, 1 newton = 1 kilogram·metre·second^−2

Therefore, 1 prasthīya = 1 mass of prasthīya (mP)·yojana·nimeṣa^-2 = 0.866226823... kg·12757.73870... m / 0.2127761784...^2 second

o Prasthīya = 244095.2463... newton

By replacing the standard units in the Planck constant with Vedic units, we can express it as x·mP·yojana^2·nimeṣa^-1, where yojana represents distance, nimeṣa represents time, and mP represents the mass of prasthīya. Equation (II) establishes the relationship between yojana and nimeṣa in terms of the Planck constant and the Vedic units. Further calculations involve substituting specific values into the equations. By using the known values of the speed of light (299792458 m/s), Planck constant (6.62607015e-34 kg·m^2·s−1), and the mass of prasthīya (0.866226823... kg), we can determine the value of 1 yojana as 12757.73870... meters.
Using equation (I) and the obtained value of 1 yojana, we can calculate the value of 1 nimeṣa as 0.2127761784... seconds.

Additionally, considering that ancient Indians used weight (force) instead of mass, we can express 1 prasthīya as 0.866226823... kg·12757.73870... m / 0.2127761784...^2 seconds, resulting in 244095.2463... newtons.

These calculations demonstrate the relationships between Vedic units and physical constants. By substituting the appropriate Vedic units, we can express values in terms of yojana, nimeṣa, and prasthīya, providing an alternative perspective on the measurement systems used in ancient Indian culture and their relationship to physical constants.
(IV) Boltzmann constant = 1.380649e-23 N·m·K^-1

By replacing, metre to yojana, newton to prasthīya and kelvin to vedic thermodynamic temperature unit (V.T.T.U), we get
1.380649e-23 N·m·K^-1 = x·prasthīya·yojana/(V.T.T.U)
V.T.T.U = x·prasthīya·yojana/(1.380649e-23 N·m·K^-1)
Now, by substituting, yojana = 12757.73870... metre and raktāka = 244095.2463... newton, we get
V.T.T.U = x·12757.73870... metre·244095.2463... newton/(1.380649e-23 N·m·K^-1)
V.T.T.U = x·2.255535891...e32 kelvin
And, here, if we put, x = 10^-32, we get
V.T.T.U = 2.255535891... kelvin
Let that, vedic thermodynamic temperature unit (V.T.T.U) name is himatā
o Himatā = 2.255535891... kelvin [Tuṣārā is vedic thermodynamic temperature unit (V.T.T.U)]

The Boltzmann constant, which is approximately 1.380649e-23 N·m·K^-1, can be expressed in terms of Vedic units by replacing the meter with yojana, the newton with prasthīya, and the kelvin with the Vedic thermodynamic temperature unit (V.T.T.U).
By substituting these units, the equation becomes:
1.380649e-23 N·m·K^-1 = x·prasthīya·yojana/(V.T.T.U)

We can then further simplify the equation by substituting the value of yojana as approximately 12757.73870 meters and the value of prasthīya as approximately 244095.2463 newtons. This gives us:
V.T.T.U = x·12757.73870 meters·244095.2463 newtons/(1.380649e-23 N·m·K^-1)

Simplifying the expression, we find:
V.T.T.U = x·2.255535891...e32 kelvin

To establish a specific name for the Vedic thermodynamic temperature unit (V.T.T.U), let's denote it as Himatā. Therefore, we have:
Himatā = 2.255535891... kelvin

In this way, by replacing the standard units in the Boltzmann constant with Vedic units, we can express it in terms of the Vedic thermodynamic temperature unit (V.T.T.U) or Himatā, which is approximately 2.255535891... kelvin. This correlation allows us to relate this

fundamental constant to Vedic measurements and highlights the connections between physics and Vedic philosophy.

(V) Elementary charge = 1.602176634e-19 C

By replacing, coulomb to vedic charge unit (V.C.U), we get,

1.602176634e-19 C = x·V.C.U

And, V.C.U = 1.602176634e-19 C / x

Here, if we put, x = 10^-20, we get,

V.C.U = 16.02176634 coulomb

Let that, vedic charge unit (V.C.U) name is garjanā

o Garjanā = 16.02176634 coulomb [garjanā is vedic charge unit (V.C.U)]

By replacing the coulomb with the Vedic charge unit (V.C.U), we can establish a correlation between the standard unit of charge and Vedic measurements. The elementary charge is typically expressed as 1.602176634e-19 C. To express this value in terms of V.C.U, we can use the equation 1.602176634e-19 C = x·V.C.U, where 'x' represents the conversion factor. Simplifying the equation, we find that V.C.U = 1.602176634e-19 C / x. To determine the specific value of V.C.U, we can assign a value to 'x'. If we choose x = 10^-20, we can calculate V.C.U as follows:

V.C.U = 1.602176634e-19 C / (10^-20) = 16.02176634 coulomb

Thus, we can designate the Vedic charge unit (V.C.U) as "garjanā." Therefore, 1 garjanā is equal to 16.02176634 coulomb. This establishes a specific Vedic unit for measuring electric charge and provides a name for it within the context of Vedic measurements.

It is important to note that the choice of 'x' in the conversion factor is arbitrary, and different values of 'x' would result in different Vedic charge units. However, in this particular example, we have chosen 'x' as 10^-20, leading to the designation of garjanā as the Vedic charge unit equivalent to 16.02176634 coulomb.

(VI) Avogadro constant = 6.02214076e23 mol^-1

By replacing, mole^-1 to vedic elementary entities unit (V.E.E.U), we get,

6.02214076e23 mole^-1 = x V.E.E.U

And, V.E.E.U = 6.02214076e23 mole^-1 / x

Here, if we put, x = 1e27, we get,

V.E.E.U = 0.000602214076 mole^-1

Let, vedic elementary entities unit (V.E.E.U) name is visaṅkhyā

o Visaṅkhyā = 0.000602214076 mole^-1 [Savarṇā is vedic elementary entities unit (V.E.E.U)]

Based on the correlation between the Avogadro constant and Vedic units, we can express the Avogadro constant, which is approximately 6.02214076e23 mol^-1, in terms of a Vedic unit called "visaṅkhyā."

By replacing "mole^-1" with the Vedic elementary entities unit (V.E.E.U) in the equation, we have:

6.02214076e23 mole^-1 = x V.E.E.U

To calculate the value of V.E.E.U, we rearrange the equation:

V.E.E.U = 6.02214076e23 mole^-1 / x

By setting x equal to 1e27, we find:

V.E.E.U = 0.000602214076 mole^-1

Therefore, we can assign the name "visaṅkhyā" to the Vedic elementary entities unit (V.E.E.U). In this context, 1 visaṅkhyā is equal to 0.000602214076 mole^-1.

This Vedic unit, visaṅkhyā, provides an alternative perspective on quantifying entities, aligning with the philosophical aspects of Vedic measurements. It allows for a unique way of understanding the Avogadro constant and its connection to Vedic concepts. By replacing the traditional unit "mole^-1" with the Vedic unit visaṅkhyā, we can explore the relationship between the Avogadro constant and the Vedic system of measurement.

Results and Discussion:

In our study, we have derived equations that establish relationships between Vedic units and physical constants. By substituting the values of physical constants with corresponding Vedic units, we have discovered correlations that shed light on the connection between Vedic measurements and fundamental constants in physics. Here, we present the results of our analysis.

We have identified specific Vedic units that correspond to various physical quantities. The Vedic length unit (V.L.U) is found to align with the yojana, which is a Vedic unit of length. This correlation provides a basis for expressing length-related physical constants in terms of the Vedic unit of measurement. Similarly, the Vedic force unit (V.M.U) corresponds to the prasthīya, a Vedic unit associated with force. By establishing this correspondence, we can express force-related physical constants using the Vedic unit of force. The Vedic thermodynamic temperature unit (V.T.T.U) is found to correspond to the himatā, a Vedic unit related to temperature. This relationship enables the expression of temperature-dependent physical constants in terms of the Vedic unit of temperature. Moreover, we have identified the Vedic charge unit (V.C.U), which aligns with the garjanā, a Vedic unit associated with charge. This correlation allows for the expression of charge-related physical constants in terms of the Vedic unit of charge. Lastly, we have established a correlation between the Vedic elementary entities unit (V.E.E.U) and the visaṅkhyā, a Vedic unit that represents counting or quantification. By associating the Vedic unit with the Avogadro constant, we can express the number of elementary entities using the Vedic unit of quantification.

These results highlight the potential for expressing physical constants in terms of Vedic units, offering a unique perspective on the fundamental quantities in physics. The correlations we have derived provide a bridge between Vedic measurements and the physical constants, integrating ancient Indian knowledge with modern scientific understanding. However, it is important to note that this analysis presents an alternative viewpoint and should be further investigated and validated through rigorous scientific examination. The implications of these findings for both Vedic philosophy and contemporary physics warrant further exploration and discussion.

In conclusion, our study demonstrates the establishment of correlations between Vedic units and physical constants. By substituting the values of physical constants with appropriate Vedic units, such as the Vedic length unit, force unit, thermodynamic temperature unit, charge unit, and elementary entities unit, we have provided insights into the relationship between Vedic measurements and fundamental constants. These results open avenues for interdisciplinary research and offer a unique perspective on the nature of measurement and the underlying principles of the universe.

Here,

1 dīpālī ⟨sss⟩ = x candela

1 visaṅkhyā ⟨Iss⟩ = 0.000602214076 mole^-1

1 garjanā ⟨sIs⟩ = 16.02176634 coulomb

1 himatā ⟨I I s⟩ = 2.255535891... kelvin

1 prasthīya ⟨s s I⟩ = 244095.2463... newton

1 nimeṣa ⟨I s I⟩ = 0.2127761784... second

1 yojana ⟨s I I⟩ = 12757.73870... metre

1 bhramaṇa ⟨I I I⟩ = 2π radian

^ 1 bhramaṇau ⟨I I I I⟩ = 4π steradian [π = 3.14159265358979323846264338327 95....]

Implications for Future Research and Interdisciplinary Collaboration:

The exploration of the interplay between Vedic units and universal constants holds significant implications for future research and fosters opportunities for interdisciplinary collaboration. Based on the title, "Unveiling the Cosmic Tapestry: The Interplay between Vedic Units and Universal Constants," the following areas can benefit from further investigation:

Vedic Philosophy and Cosmology: The study of Vedic units and their relationship with universal constants provides a bridge between ancient Indian philosophical concepts and modern scientific understanding. Further research can delve into the philosophical implications of this interplay, exploring how Vedic philosophy aligns with contemporary cosmological theories.

Physics and Measurement: Investigating the correlations between Vedic units and physical constants offers an alternative perspective on the nature of measurement and the underlying principles of the universe. Future research can focus on refining these correlations, validating their accuracy, and exploring potential applications in physics, such as in the development of alternative measurement systems or theoretical frameworks.

History of Science and Cultural Studies: Understanding the historical context and cultural significance of Vedic units and their relationship with universal constants can provide valuable insights into the evolution of scientific knowledge. Collaborative efforts between historians of science and cultural studies experts can shed light on the development and transmission of measurement systems, fostering a deeper understanding of ancient knowledge systems.

Comparative Studies: Comparative studies that juxtapose Vedic units with other ancient measurement systems can unveil cross-cultural connections and highlight universal principles in measurement and mathematics. By examining the similarities and differences between Vedic units and units from other ancient civilizations, researchers can gain a broader perspective on the underlying principles that govern the measurement of physical quantities.

Education and Outreach: Integrating the study of Vedic units and universal constants into educational curricula can foster a more holistic understanding of measurement, cultural diversity, and the interconnectedness of scientific and philosophical traditions. Collaboration between educators, scholars, and scientists can contribute to the development of educational materials that promote interdisciplinary learning and appreciation for diverse knowledge systems.

In summary, the interplay between Vedic units and universal constants opens up exciting avenues for future research and interdisciplinary collaboration. By exploring the implications of this relationship in Vedic philosophy, physics, history of science, cultural studies, comparative studies, and education, researchers can deepen our understanding of measurement, cosmology, and the interconnected nature of human knowledge throughout history. Such collaborative efforts have the potential to enrich scientific inquiry, foster cultural

appreciation, and promote a more comprehensive understanding of the cosmic tapestry we inhabit.

Conclusion:

In conclusion, the interplay between Vedic units and universal constants offers a fascinating perspective on the relationship between ancient Indian knowledge and modern physics. By substituting Vedic units into equations involving physical constants, we have established correlations that bridge the gap between the ancient and the contemporary. The findings of this research paper have implications for various fields, including Vedic philosophy, physics, history of science, cultural studies, comparative studies, and education. The correlations between Vedic units and physical constants open up new avenues for exploration and interdisciplinary collaboration.

The study suggests that Vedic units, mentioned in ancient texts, can potentially align with modern measurements and provide an alternative approach to understanding fundamental physical quantities. This connection not only offers insights into the historical development of scientific knowledge but also raises questions about the universality of measurement systems and the underlying principles governing the cosmos.

However, it is important to note that further research and analysis are required to validate and refine the correlations between Vedic units and physical constants. Rigorous scientific investigation is necessary to ensure the accuracy and applicability of these relationships. Collaboration between experts in different fields, including physics, Vedic studies, and cultural studies, can contribute to a more comprehensive understanding of the significance and implications of this interplay. Moreover, the study highlights the importance of interdisciplinary collaboration and the integration of diverse knowledge systems. By engaging in dialogue between ancient wisdom and modern science, we can foster a more holistic understanding of the universe and our place within it.

In conclusion, the exploration of the interplay between Vedic units and universal constants provides a fertile ground for future research. It invites scholars and scientists to further investigate the correlations, examine the philosophical implications, and explore the practical applications in various disciplines. The unveiling of this cosmic tapestry intertwines the rich heritage of Vedic knowledge with the ongoing quest for scientific understanding, illuminating the interconnectedness of human wisdom across time and cultures.

The values of physical constants in vedic units are:

Speed of light in vacuum [c] = 1/2e-4 yojana·nimeṣa^-1 = 299792458 m/s
Electron mass [me] = 560e-37/α^2 nimeṣa^2·prasthīya·yojana^-1 = 9.1093837015...e-31 kg
Planck constant [h] = 1e-42 prasthīya·yojana·nimeṣa = 6.62607015e-34 J/Hz
Elementary charge [e] = 100e-22 garjanā = 1.602176634e-19 C
Boltzmann constant [k] = 1e-32 prasthīya·yojana·himatā^-1 = 1.380649e-23 J/K
Avogadro constant [NA] = 1e27 visaṅkhyā = 6.02214076e23 mol^-1
Reduced Planck constant [ħ = h/2π] = 1/2πe42 yojana·nimeṣa·prasthīya = 1.054571817...e-34 J·s
Stefan–Boltzmann constant [σ = π^2·k^4/(60·ħ^3·c^2)] = 160π^5/3e12 prasthīya·yojana^-1·nimeṣa^-1·himatā^-4 = 5.670374419...e-8 W·m^-2·K^-4
First radiation constant [c1 = 2·π·h·c^2] = 500πe-37 yojana^3·prasthīya·nimeṣa^-1 = 3.741771852...e-16 W·m^2

First radiation constant for spectral radiance [c1L = 2·h·c^2/sr] = π/50e32 yojana^3·prasthīya·nimeṣa^-1·bhramaṇau^-1 = 1.191042972397188414079489 2e-16 W·m^2/sr
Second radiation constant [c2 = h·c/k] = 5e-7 yojana·himatā = 1.438776877...e-2 m·K
Conductance quantum [G0 = 2·e^2/h] = 2e2 garjanā^2·yojana^-1·nimeṣa^-1·prasthīya^-1 = 7.748091729...e-5 S
Inverse conductance quantum [G0^-1 = h/(2·e^2)] = 1/2e2 yojana·nimeṣa·prasthīya·garjanā^-2 = 12906.40372... Ω
Von Klitzing constant [RK = h/e^2] = 1e-2 yojana·nimeṣa·prasthīya·garjanā^-2 = 25812.80745... Ω
Josephson constant [KJ = 2·e/h] = 2e22 garjanā·yojana^-1·nimeṣa^-1·prasthīya^-1 = 483597.8484...e9 Hz/V
Magnetic flux quantum [Φ0 = h/(2·e)] = 1/2e22 yojana·nimeṣa·prasthīya·garjanā^-1 = 2.067833848...e-15 Wb
Molar gas constant [R = NA·k] = 1e-5 prasthīya·yojana·visaṅkhyā·himatā^-1 = 8.31446261815324 J·mol^-1·K^-1
Faraday constant [F = NA·e] = 1e7 visaṅkhyā·garjanā = 96485.3321233100184 C/mol
Molar Planck constant [NA·h] = 100e-17 yojana·nimeṣa·prasthīya·visaṅkhyā = 3.9903127128934314e-10 J·s/mol
Quantum of circulation [h/(2·me)] = (α/4)^2/7e6 yojana^2·nimeṣa^-1 = 3.6369475516...e-4 m^2/s
Bohr magneton [μB = e·ħ/(2·me)] = 5(α/4)^2/7πe27 yojana^2·garjanā·nimeṣa^-1 = 9.2740100783...e-24 J/T
Fine-structure constant [α] = α = 7.2973525693...e-3
Inverse fine-structure constant [α^-1] = 1/α = 137.035999084...
Electron g-factor [ge] = ge = -2.00231930436256...
Muon g-factor [gμ] = gμ = -2.0023318418.....
Proton g-factor [gp] = gp = 5.5856946893.....
Vacuum magnetic permeability [μ0 = 2·α·h/(c·e^2)] = 4αe-6 prasthīya·nimeṣa^2·garjanā^-2 = 1.25663706212...e-6 N/A^2
Characteristic impedance of vacuum [Z0 = μ0·c] = 2αe-2 yojana·nimeṣa·prasthīya·garjanā^-2 = 376.730313668... Ω
Vacuum electric permittivity [ε0 = 1/(μ0·c^2)] = 1/αe2 garjanā^2·yojana^-2·prasthīya^-1 = 8.8541878128...e-12 F/m
Coulomb constant [ke = 1/(4·π·ε0)] = αe2/4π prasthīya·yojana^2·garjanā^-2 = 8.9875517923...e9 N·m^2/C^2
Hartree energy [Eh = α^2·c^2·me] = 7e-27/5 prasthīya·yojana = 4.3597447222071...e-18 J
Rydberg unit of energy [Ry = h·c·R∞ = Eh/2] = 7e-27/10 prasthīya·yojana = 2.1798723611035...e-18 J
Rydberg constant [R∞ = α^2·c·me/(2·h)] = 7e12/50 yojana^-1 = 10973731.568160... m^-1
Classical electron radius [re = e^2·ke/(me·c^2)] = 50α^3/28πe12 yojana = 2.8179403262...e-15 m
Bohr radius [a0 = ħ^2/(ke·me·e^2) = re/α^2] = 50α/28πe12 yojana = 5.29177210903...e-11 m
Thomson cross section [σe = (8·π/3)·re^2] = 50α^6/588πe22 yojana^2 = 6.6524587321...e-29 m^2
yojana^4·nimeṣa^-4·prasthīya^-1

Newtonian constant of gravitation [G] ≅ 46e-27/5α yojana^4·nimeṣa^-4·prasthīya^-1 ≅ 6.67430...e-11 m^3·kg^-1·s^-2
Proton mass [mp] ≅ 308/900(5αe8)^4 nimeṣa^2·prasthīya·yojana^-1 ≅ 1.67262192369...e-27 kg
Proton-to-electron mass ratio [mp/me] ≅ 88/9(10α)^2 ≅ 1836.15267343...
Nuclear magneton [μN = e·ħ/(2·mp)] ≅ 9α^4/77π(2e3)^8 yojana^2·garjanā·nimeṣa^-1 ≅ 5.0507837461...e-27 J/T

Note:

(I) Bhramaṇau is a semi-unit, refer to 4π steradian which make 360° in solid angle.
(II) Himatā, garjanā and visaṅkhyā are the calculated units (not mentioned in any ancient Indian text) and dīpālī [vedic luminous intensity unit (V.L.I.U)] is yet to be calculated.
(III) Most of the physical constants (in vedic units) have a ten's power in the form of 1e±x2 or 1e±x7. According to rāmāyaṇa, 10^1 = daśa, 10^2 = śata, 10^3 = sahasra, 10^7 = koṭi, 10^12 = śaṅku, 10^17 = mahāśaṅku, 10^22 = vṛnda, 10^27 = mahāvṛnda, 10^32 = padma, 10^37 = mahāpadma, 10^42 = kharva, 10^47 = mahākharva, 10^52 = samudra, 10^57 = ogha and 10^62 = mahaugha. So, this type of 10's power pattern are mentioned in rāmāyaṇa.
(IV) In the name of vedic units, ⟨s⟩ refer to gurumātrā and ⟨l⟩ refer to laghumātrā. They are use to define the eight gaṇa (m, y, r, s, t, j, bh, n) of chanda.

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