International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

Dasa Yuga Framework-Lokas Study: Puranic Unified Time (DYF PUT): A Relative Time Field Hypothesis

Mr. Swaminathan Subramanian

Inter-Disciplinary Researcher, Civilizational psychology, KG Heal

Abstract

Dasa-Yuga Framework – Lokas Study – A Puranic Unified Time (DYF-PUT) Field Hypothesis extends the numerical harmonics of the Dasa-Yuga Framework (DYF) into the cosmic, spatial, velocity, frequency, and wavelength architecture of the Lokas inferred from the description in the Bhagavata Purana. The study began from the search of the importance of verse 3.11.12 — "two Ayana make a day for the Devas" — revealing that ancient seers encoded time not as a duration but derive it as the base for rotation → revolution harmonics of 360 encoded in the day-year (Vatsara-Samvatsara) node. From this seed, a coherent structure emerges across every scale of the cosmos.

The central finding is every, "Body" has its own time that it controls including an atom and enumerates such bodies and related time density of them in 3.11.4 of Bhagavata Purana. Also, they rotate around oneself and revolves around a nucleus which is termed as a Loka. This is explicitly mentioned in **3.11.13 and 3.11.14** of Bhagavata Purana according to which Earth is Bhu Loka, Solar System is Bhuva Loka, Sun and its orbit around GC is Svah Loka, Makar Loka is Galactic centre (Brahma), Jana Loka is Extra Galactic Space, Tapo Loka is exposing another Nucleus around which all the Galaxies are revolving in this sequence.

Subsequently DYF PUT exposes a cross-Tri-Loka time ladder, where each Loka possesses its own permissible speed-band, time-density, and wavelength band, all connected by the same harmonic ratios 360: Satya Loka operates at ≈ c and above, the upper luminosity-domain where time nearly dissolves from where CMB gets emitted. Since the time runs slowest, the light speed remains constant, but wavelength gets extended.

DYF-PUT predicts a natural velocity ceiling of c/360 ≈ 833 km s^{-1} for the Makar–Jana–Tapo time-field band, whereas observational astronomy measures the Local Group's drift relative to the CMB at ≈ 627 ± 22 km s^{-1}, giving a 75% of the predicted ceiling. Its emitting majorly in IR spectrum which stands at the band 1.9/360. Bhur–Bhuva–Svah operate at ≈ c/129600, matching the Sun's dynamical band (~2.3 km/s) and the solar radiation is best documented emitting standard 100nm to 3000nm bandwidth which includes visible, UV, soft X ray, Infrared which is CMB/129600.

DYF-PUT reckons the Puranic vs Empirical alignment cleanly in various levels. Cosmic Kalpa being 46.6 Gyr in duration and the visible Kalpa band as 4.74 Gyr (VU) giving 9.836x reduction factor. According to DYF PUT logic, the ~9.836× difference arises naturally from time-density gradients between Loka bands; the Makar–Tapo domain (galactic/intergalactic) runs at ≈c/360, compressing visible cosmic time while preserving harmonic symmetry.

Universe Age 13.8 Gyr is very near to VU × 3 giving, Puranic Brahma Kalpa, Padma Kalpa and Sveta Varaha Kalpa everything within it. Without Purana's mentioning both 46.6 Gyr and 4.74 Gyr (VU) as "Kalpa" as seen inside the DYF lens, this time density differential could not have been derived. This is explained explicitly mentioned as cosmic waters fill the Tri-Loka in the puranic verses as Rishis transport from Makar to Jana due to heat arising from Sankarsana. This leads to a possible reinterpretation of redshift. Instead of pure metric expansion, DYF-PUT interprets redshift as the difference between time-field densities across Lokas, consistent with Bhagavata Purana. 3.11.3–7, which state that each atom has its own measure of time.

The DYF PUT Identifies Mayan Civilization's Baktun calendar as TalaTala variant of DYF's Sutala variant yearly basis computation. DYF speaks in DYFC (14400 yrs), My (144000 yrs) and ½ DYFC (6480 ± 720 yr) in its papers. Same numbers are reflected in Mayan Baktun as 7200 days, 144000 days naturally referring to Mayasura – The Architect ruler of Talatala Loka mentioned in the Puranas as Mayan civilizational calendar.

DYF PUT extends a universe where motion, wavelength, gravity, and consciousness emerge from one harmonic pulse — 360. The DYF-PUT hypothesis therefore offers a mathematically stable, internally coherent, and empirically anchored reinterpretation of Puranic cosmology. It invites scientific validation or critique, but no longer dismissal — for in this framework, the ancient seers remembered cosmology the way we remember alphabets: naturally, effortlessly, and with extraordinary precision.

1. Introduction

The Dasa–Yuga Framework – Puranic Unified Time (DYF-PUT) hypothesis interprets the ancient Indian arithmetic of cyclical time as an implicit description of cosmic kinematics consistent with modern observation, relativity, and the nested speed-limits seen in astrophysics. Drawing from Bhagavata Purana 3.11.3–12, the simple statement "360 days make one year of men; 360 such years make one year of the Devas" is taken not as poetry but as a disclosure of nested rotational hierarchies. Each level of existence—human, planetary, solar, galactic, and supra-galactic—revolves around a higher nucleus, and these rotations define proportional measures of time (Bhagavata Purana. 3.11.4).

In this reading, DYF-PUT treats Time (Kala) as the uniform field—Animiso Vibhuh, the unmoving substratum of all motion—while rotation and revolution are localized oscillations of this field. Applying the 360-harmonic sequence reveals a precise numerical ladder: a human day (Earth's rotation) × 360 = one human year; repeating the factor yields a Deva Year (360 years = 360^1), then the Sun's Day (129,600 years = 360^2), then Brahma's Day (~46.656 million years = 360^3). The Puranas extends this logic by stating that a Kalpa equals Mc × 1000 = 129.6 million years — matching ½ the Sun's galactic orbital period. Scaling the same harmonic by 360 gives 46.656 billion years (Bp) and ×2 gives 93.312 billion years — Brahma's Year (By)— numerically identical to the ~93-billion-light-year observable-universe diameter. Thus, the Puranic 360-sequence preserves the same ratios across solar, galactic, and cosmological scales that modern astronomy arrives at through independent methods. This clarifies that Puranas doesn't take a Kalpa as a Day, but a complete revolution or cycle of a higher object eg. Sun, GC (Brahma) etc.

Within this structure, each Tri-Loka band represents a differential time-field density and hence a distinct velocity ceiling: Satya-Loka: ≈ c, the top luminous node where time nearly ceases to flow. Makar–Jana–Tapo: ≈ c/360 (≈ 833–840 km/s), matching the expected Milky Way's systemic drift. Bhur–Bhuva–Svah: ≈ c/129600 (≈ 2.3 km/s), aligning with solar-system orbital thresholds.

In this interpretation, light speed remains constant locally, but temporal density varies by Loka emerges

as a hypothesis. A photon emitted in a fast-time domain (e.g., Makar or Satya) appears redshifted when observed from a slower domain (Bhu). This provides an alternative way to interpret redshift as arising from differences in time-field density between Lokas; in standard ΛCDM this appears macroscopically as metric expansion: each particle emits its "native frequency", but observers see a stretched wavelength due to mismatch in time-gradients.

This becomes clearer when analysing wavelength harmonics. The transition CMB → Galactic Centre IR/X-ray → Solar visible → Atomic Radioactive follows factors close to 360 or 129600. For example, 1.9 mm (CMB peak - **COBE satellite**) ÷ 360 ≈ 5.3 μm (GC IR band, - E. E. Becklin and G. Neugebauer (1969), Javier R. Goicoechea, et al. (2013), etc.), and ÷129600 ≈ 14.6 nm (solar-coronal emissions - **Ginzburg and Zheleznyakov (1958),** ***Harrison et al. (1995), Del Zanna & DeLuca (2018), etc.***) further 360 division gives Gamma ray domain 10^{-14} meters – atomic and radioactive. Thus, speed, time-density, and wavelength belong to the same harmonic ladder, differing only by the observer's Loka. The same logic identifies the minimum controllable time-step in this structure: 3.6 picoseconds — the time taken by light to travel 1 mm — which corresponds to the Patala potential region of deep, rapid time movement.

DYF-PUT further derives a Manvantara scale (Earth's Geological dynamics). A Manvantara equals 71 Mahayugas + sandhi ≈ 9.223 Myr (MU), and this MU divides perfectly into 168 Horas, producing a scaled down Micro-Hora of 1525 years (MH) — a period which could not be subdivided cleanly further. One Day-Unit (DU) of 36,600 years (MH × 24) scales by 360 to yield 1 YU = 13.176 Myr, interpretable as a Brahma-day for the galactic nucleus. A full Vishnu-Day (VU) of 360 YU = 4.74336 Gyr (VU) aligns with planetary geology and explains the Sveta-Varaha Kalpa begins with Earth's formation aligning with Puranic descriptions. This produces a need for time gradient due to puranic verses describing two distinct values 46.656 Gyr and 4.74336 Gyr (Bp and VU) by same name such as a "Kalpa". Now, it yields a value of 9.836 from Bp/VU. The significance of this number is discussed in section 6.

A striking coherence emerges when comparing the DYF–PUT time-ladder with ancient calendrical systems: the **Mayan Baktun cycle** of **144,000 days** mirrors the DYF Constant of **144,000 years (My)** in terms of days. The South Indian traditions independently preserve homologous time-markers — the **60-year** *Sastyabdha Purti* cycle (Bhu-band equivalent), Nazhikai, Vinazhikai system of time measurements and the annual celebration of **Mahabali's return** during Onam, aligning with the **Sutala** one-year scale explained by Loka Rotational Time ladder in section 6.

These correspondences suggest that Puranic cosmology arises not from a regional mythic imagination but from a deeply preserved **pan-global time-density intuition**, with South India retaining the most structurally consistent echoes of the original Loka-harmonic framework. This serves as a significant cross-cultural marker to testify DYF.

In summary, the arithmetic of 360 described across Bhagavata Purana 3.11 functions as a literal map of nested relativistic frames. Each higher Loka's "day" becomes the "year" of the Loka immediately below it — a recursive logic encoded in simple language for universal comprehension. DYF-PUT re-examines these statements through contemporary data and finds that the same harmonic constant unites human, planetary, solar, galactic, and universal time-fields. This suggests a measurable continuum in which Puranic chronology and modern physics coalesce, presenting a fresh perspective on the structure of time and motion.

Please note that, *In DYF-PUT,* the higher Loka (Satya/Brahma field) is idealised as moving at the light-speed limit. A 'Brahma Day' of 46.656 Gyr is therefore both a **time interval** in that Loka's intrinsic frame

and, via c, a **light-travel distance** of ≈46.656 Gly in our observational frame. For this reason, values such as 46.656 Gyr and 46.656 Gly are written side by side as time–distance equivalents in the model.

2. Foundational Logic — 360 Harmonics and Field Scaling

2.1 Puranic Foundations of Time as Motion

The Bhagavata Purana devotes an entire chapter (3.11) to defining Time (Kala) not merely as a quantity but as the organising principle of motion. Verses 3.11.1–12 present a deliberate progression from the atomic to the planetary and cosmic scales: from the smallest indivisible unit, to the day and night of the Earth, to the yearly motion *Saṃvatsara*: 360 days constitute one year of men; 360 such years form one year of the Devas; 129 600 years (Mc) complete a single cycle of the four Yugas, which is 360^2; and 1000 such cycles make one Kalpa of Brahma as detailed in verses 3.11.13–26.

In this reading, that Kalpa of Brahma becomes one "year" (orbital duration) for the Sun (Svah field), whereby the Sun is seen as revolving around Brahma (the Galactic nucleus) in Puranic view. The four faces of Brahma map neatly to the four major arms of the Milky Way. The language is precise yet recursive, implying that Time repeats itself through nested rotations, each domain of beings perceiving its own rhythm as normal. The Puranas thereby define a **multi-layered chronometry**, where every plane of existence functions as a rotating frame within a larger rotational continuum.

This concept of Kala as *Animiso Vibhuḥ* — eternally consistent, unchanging, the stable substrate for everything else — is explicitly stated in the verses:

- **3.11.3** – Time is the potency of the Godhead who controls all movement, although He Himself is not visible in the physical world.
- **3.11.4** – Every atom has its own time, confined to its atomic space. The time that covers the unmanifest aggregate of atoms is called "great time".
- **3.11.13** – All stars, planets, luminaries, and atoms throughout the universe rotate in their respective orbits under the direction of the Supreme, represented by eternal Time.
- **3.11.14** – Names specific orbits: Earth's orbit = *Saṃvatsara*, Jupiter's = *Parivatsara*, Moon's = *Idavatsara*, Earth's rotation = *Vatsara*, and states that each star and luminary has its own rotation and orbit.

These verses form the textual foundation of the DYF-PUT (Time-Field) hypothesis, which interprets the Puranic statements as literal descriptors of nested orbital systems rather than symbolic metaphors. A "day" represents one full rotation; a "year" (360 days) represents one full revolution around the next higher nucleus. Hence, every domain of beings experiences its own "normal" flow of time, though all such flows are harmonically related through the constant ratio 360. Traditional commentary often treated this gradation allegorically. Viewed through the Dasa–Yuga Framework (DYF, Swaminathan S., 2025) lens, it becomes a **mathematically coherent hierarchy of relativistic frames**, where each higher domain measures longer cycles according to its orbital speed around a superior centre.

Rotation and revolution thereby generate measurable time units. A "day" is one complete rotation and a "year" (360 days) one revolution about the governing nucleus. What human beings call a year is but a single rotation of the Devas (a *Divya Varṣa* of 360 human years). What the Sun calls a "day" spans 129 600 (360^2) human years, and what the galaxy calls a "day" extends for about 46.656 million years (360^3). This understanding transforms mythic arithmetic into a quantitative map of relativistic frames, revealing that the Puranic system already anticipated variable time perception within moving reference domains called Lokas.

The foundation of the DYF-PUT model lies in this recursive system of rotations (Bhagavata Purana. 3.11.6–16). **Each higher rotation defines a greater unit of time for the domain below it.** The constant ratio of 360 thus represents the invariant harmonic that converts one level of motion into the next. When the same proportion is applied successively, it reproduces every major astronomical span observed today.

Table 2.1 – 360 harmonic day ladder simplified

Step	Operation / Source	Calculated Value	Interpretation
1	1 Earth rotation = 1 day (3.11.6)	360° rotation	Human day — baseline unit of motion
2	1 Earth revolution (3.11.8)	360 days	Human year — Sun's "day" in man's frame
3	×360	360 years	One complete revolution of Jupiter & Saturn orbit back to starting node.
4	360 × 360	129 600 years (= 360^2)	"Day of the Sun" or *Divya Varṣa* (Mc)
5	Mc × 1000 × 2	259.2 Myr	Sun's galactic revolution (Kalpa, 3.11)
6	360×360×360	46.656 Myr	"Brahma Day" time-equivalent
7	360^3 × 1000	46.656 Gly or Gyr	Cosmic Comoving radius
8	× 2	93.312 Gyr – Gly	"Brahma Year" ~ observable-universe diameter

These ratios require no external assumptions: every higher "day" is the orbital period of the next larger structure around its governing centre — Earth → Sun → Galaxy → Brahma-field. Bhagavata Purana 3.11.39 states that Brahma's life comprises 100 such years, allowing interpretation that cosmic duration expands by successive multiples of the same harmonic. Later sections show that the **same 360 ladder also aligns with velocity bands and wavelength domains across the Lokas**, completing the field picture.

2.2 Transition from DYF to PUT

The Dasa–Yuga Framework (DYF), formulated in 2025 (Swaminathan S., 2025), established the mathematical skeleton joining classical Jyotisa chronometry to measurable cosmology. Its constants were derived directly from Puranic proportions, without inserting later "divine year" multipliers that distort the original ratios. Each constant represents a real temporal field observed through one of three nested scales — psychological, civilizational, and cosmic.

Table 2.2 – Lineage of DYF constants and their interpretive function

Symbol	Name / Definition	Numerical Value	Interpretive Function
DYFC	Dasa–Yuga Field Constant = 1 full Vimsottari cycle	14400 years (120 × 120)	Governs lunar–psychological rhythm; basis of human consciousness cycles
Mc	Maha-Yuga Constant ("Year of the Sun")	129600 years (360 × 360)	Defines the "day" of the Sun (Svah-loka) and canonical yuga span

Symbol	Name / Definition	Numerical Value	Interpretive Function
LC	Life Constant	10 800 years	Encodes organic life rhythm; median between DYFC and Mc
MU	Manvantara Unit (geological/epochal field)	9.223 million years	Planetary resonance unit; 71 MU ≈ one Manvantara scale (~0.65 Gyr)
Kp	Kalpa (Solar–Galactic field)	259.2 Myr (= Mc × 1000 × 2)	Period of the Sun's orbit around the Galactic centre
By	Brahma Year (cosmic field)	93.312 Gyr (= 360 × Kp)	Full rotational "year" of the Brahma-field (observable-universe scale)

These constants bridge three operational tiers:

1. **Psychological (Lunar) Scale** — the 14400-year Vimsottari cycle governing the periodicity of emotion, cognition, and collective consciousness as published in DYF Psyche Theory (Swaminathan S, 2025).
2. **Solar–Civilizational Scale** — the Hora and Manvantara spans possibly shaping geological, culture, and civilizational turnover.
3. **Galactic–Cosmic Scale** — the 259.2 Myr Kalpa (Kp) and 93.312 Gyr Brahma-year (By), defining the temporal rhythm of galaxies within the Brahmanda field.

DYF therefore provided the quantitative foundation for the later **DYF Manu Model – A Manvantara Epoch Study (DYF-MM)**, which correlates these ratios with stratified geological epochs. The present extension, **DYF-PUT**, carries the same constants into the physical language of relativity, interpreting them as manifestations of a **unified time-field** and mapping them onto Lokas, velocity bands, and wavelength domains.

While DYF showed that Puranic time cycles reproduce genuine astronomical magnitudes, its primary scope remained psychological: it interpreted planetary Dasa rhythms as reflections of historical and emotional periodicities within collective consciousness (DYF-PT – A Psyche Theory). As *Brihat Parasara Hora Sastra* notes, Vimsottari is ruled by the Moon (psyche, memory), whereas the Manvantara domain belongs to the Sun (objective time and illumination). Recognising this distinction motivated the derivation of a Manvantara Unit (MU) — a solar–geological constant that extends the lunar rhythm into the physical domain of Kalpa. MU was found to be 9.223 million years, a duration neatly divisible by 168, yielding the harmonic Hora used in both daily and calendrical reckoning in South India giving:

Divine Hora = MU / 1008 ≈ 9 150 years.

2.2.0 Dual Computational Structure in Bhagavata 3.11

After establishing the quantitative foundation of DYF and its constants, a closer reading of Bhagavata Purana 3.11 revealed that **two independent computational systems** operate within the ancient cosmology.

1. **The cosmological computation.** This system corresponds to the large-scale arithmetic that generates Kp (Sun's galactic orbital period ≈ 259.2 Myr) and the Brahma-year, defined as 360 × Kp = 93.312 Gyr. This scale reproduces the galactic-relativistic framework of DYF and leads naturally into the study of the Lokas. At this cosmic level, a separate Manvantara computation is neither required nor implied; the text moves from Yuga → Kalpa before introducing Manvantara, indicating that Manvantara belongs to a different measurement domain.

Recognising this, MU (DYF - Swaminathan S,2025) is assigned to the **geological domain**, not to cosmic space-time. Its elegance lies in its perfect divisibility by 168, scaling smoothly downward through 9150 years and 1525 years, below which the harmonic sequence terminates — revealing a natural boundary embedded in the ratios.

2. **The geological computation.** Here, the 1525-year (MH – Micro Hora) value emerges as the true Hora unit, while the earlier 9150-year "Divine Hora" (DH) becomes a transitional construct — useful but not fundamental. The 1525-year Hora, by contrast, is concise. In Tamil reckoning, 24 Horas make a day, so 1525 × 24 = 36600 years, defining the **Day Unit (DU)**. The Tamil *nazhikai* system refines this further: dividing DU by 3600 (*vinazhikai* per day) yields ≈10.1667 years (≈122 months), closely matching the Sun's magnetic-reset cycle. One *nazhikai* (60 *vināzhikai*) therefore equals ≈610 years, a measure that appears in various ancient astronomical traditions.

   Scaling upward, 360 DU = 13.176 million years defines the **Solar Year Unit**, or "Day of the Sun" in this extended frame; multiplying by 360 again produces 4.74336 billion years (VU) — remarkably close to Earth's geological age 4.58 Gyr (Gradstein et al.).

2.2.1 Re-interpretation of the Puranic Kalpa

The Puranas list three key Kalpas — Brahma, Padma, and Sveta Varaha — after presenting the sequence of Manus. Earth's emergence marks the beginning of the Sveta Varaha Kalpa. Thus, in this context, Kalpa must be interpreted as a **historical–epochal constant**, not a purely cosmic one, because it is derived **after** the Manvantara arithmetic. Consequently:

- Brahma Kalpa ≈ 4.74336 Gyr
- Padma Kalpa ≈ 4.74336 Gyr

giving ≈9.48672 Gyr before Earth's appearance, with the current Sveta Varaha Kalpa continuing through the present era. Adding the geological age of Earth (≈4.586 Gyr) yields ≈14.073 Gyr. Modern estimates of the universe's age (≈13.8–13.9 Gyr) imply a ~250 Myr pre-field of the Brahma Kalpa that extends beyond the visible Big Bang point, leaving ≈157 Myr remaining in the future in the current Sveta Varaha Kalpa. This interpretation aligns closely with observational cosmology while preserving the internal Puranic structure.

Additionally, the repeated use of the number 71 in Manvantara derivation bears a striking resemblance to commonly quoted values of the Hubble constant (of order 70–71 km s^{-1} Mpc^{-1}). This may indicate that ancient scholars encoded a proportional logic relating temporal and spatial gradients—a possibility explored in later sections. The modern 'Hubble tension' (Planck ≈67.4, SH0ES ≈73 km s^{-1} Mpc^{-1}) shows that even contemporary cosmology is sensitive to how reference frames and distance ladders are defined; DYF-PUT suggests that analogous temporal gradients, expressed through Loka arithmetic, could offer an additional bridge between Puranic and modern physics.

One MU becomes 252 DU and scales cleanly to the geological age of Earth: 4.74 Gyr ≈ 129600 DU. This nested ratio — 1 Hora = 1 divine rotation within the MU; 168 Horas = 1 "Week"; 6 Weeks = 1008 Horas — mirrors Jyotisa structures and south Indian Sakta traditions. The same harmonic constant that defines the human Hora thus operates at geological and stellar scales, implying that the Sun is the regulator of the time-field for our Tri-Loka (Bhur–Bhuva–Svah) system.

2.2.2 Puranic Arithmetic as Harmonic Physics

Verse 3.11.17-18 of the Bhagavata Purana states:

krtam treta dvaparam ca kalis ceti catur-yugam divyair dvadasabhir varsaih savadhanam nirupitam. Chatvari trini dve caikaṃ krtadiṣu yathakramam saṃkhyatani sahasrani dvigunani satani ca.

This verse gives the canonical Yuga proportions 4:3:2:1 and establishes a fixed numerical base of 12 years. Extending the base through these ratios yields the 120-year human Vimsottari cycle:

Table 2.5 – Yuga denotation giving Vimsottari human lifespan

Yuga	Multiplier	Years
Satya	12 × 4	48
Tretā	12 × 3	36
Dvāpara	12 × 2	24
Kali	12 × 1	12
Total		**120**

Verse 3.11.19 adds *sandhi* extensions—hundreds and thousands—which expand the modulus:
120 + 1 200 + 120 = 1 440 years, 1200+12000+1200 = 14400.
Multiplying by 10 gives **144,000 years = Mahayuga constant (My)**, the Dasa–Yuga Field Constant. Thus, the entire Vimsottari cycle (Divine 120 years - Divyair Dvadasabihir Varsai) of human consciousness has appeared to be derived arithmetically from the Puranic base 12 and the Yuga proportions and taken as not from possible divine year numerology. This is further found numerically consistent with cross-cultural similarities in Mayan Civilization time-keeping model (The Baktun System) which will be discussed in section 7.2.

2.2.3 Divya Varṣa and the 360 Operator: Pure 360^n Harmonic Ladder

Verse 3.11.12 defines the 360-degree revolution of Earth as a "day of the gods." Traditionally, 360 such days of the gods form a divine year (*Divya Varṣa*), where one divine year equals 360 human years. Repeated multiplication by 360 encodes more than numerological elegance — it expresses **spherical completeness** and self-similar scaling. A revolution of 360° closes one spatial cycle; multiplying by 360 again represents a revolution of revolutions, integrating angular motion across a higher domain. Mathematically this forms a self-similar time-loop:

$T_{(n+1)} = 360 \cdot T_n$

Taking Earth's rotation (1 day) as the base unit T_0, successive multiplications by 360 yield the higher "days" and "years" of larger systems.

Table 2.6 – The 360^n harmonic ladder in obtaining rotational years of Lokas

Order (n)	Field / Loka Band	Ratio 360^n	Duration (years)	Physical Analogue	DYF–PUT Label
-0.1	Earth (Human)	1	1 day (24 h)	Base rotation	Earth rotation
0	Earth (Bhu)	360	360 days	One revolution around Sun	Samvatsara
1	Bhuva (Deva)	360^1	360 years	Deva-year	*Divya Varṣa*
2	Divine year (Svah)	360^2	129 600 years	Sun's "day" (Maha-Yuga constant)	Mc
3	Galactic (Brahma Day)	360^3	46.656 million years	Ideal Galactic day	Bd (Brahma Day)

Order (n)	Field / Loka Band	Ratio 360^n	Duration (years)	Physical Analogue	DYF–PUT Label
4	Universal (Satya band)	360^4	16.79616 billion years	Satya-domain day	Dv (Viṣṇu Day)

These pure 360^n powers express the unmodified harmonic structure of time before Kalpa "packing". Each level is a full rotation at a higher field, and later sections connect this ladder with the **velocity and wavelength** structure of the Lokas.

2.2.4 Kalpa-Orbital Hierarchy (×1000×2 – Day + Night)

When the Purana defines a Kalpa as 1000 Maha-Yugas with an equal but static night, the packed form appears. Each "day" becomes Mc × 1 000 × 2, and one Brahma-year = 360 such Kalpas. The initial Kalpa (Kp) is taken from Mc, in accordance with Bhagavata 3.11.22, which applies the 1000 packing outside the Bhur–Bhuva–Svah band.

Table 2.7 – The Kalpa harmonic up to Satya band

Scale	Formula	Duration	Physical Analogue	DYF–PUT Name
Maha-Yuga (Constant)	360 × 360	129 600 yr	Sun's fundamental "day"	Mc
Kalpa	× 1000	129.6 Myr	Kalpa as per Purana	½ Kp
Full Kalpa	Mc × 1000 × 2	259.2 Myr	Sun's orbit around Galactic centre	Kp
Brahma Day	360×360×360	46.656 Myr	Galactic Day equivalent	Bd
Cosmic Kalpa	× 1000	46.656 Gyr	Cosmic radius light equivalence	Bp
Brahma-Year	360 × Kalpa	93.312 Gyr	Universe-scale temporal cycle	By
Higher (Satya) Kalpa	360^4 × 1000 × 2	33.59232 Tyr	Ananta / supra-universal field	Satya

This formulation reproduces, without arbitrary scaling, all major cosmological magnitudes recognised today: the Sun's orbital period (~225–250 Myr) ≈ Kalpa, and the universe's diameter (~93 Gly) ≈ Brahma-year (in time-equivalent form). The Kalpa is specifically given as × 1000 explicitly stating that the other ½ is not expressive/frozen/static as mentioned in 3.11.30 (Bhavatam). This neatly allow us to take 360k years, 129.6 Myr and 46.656 Gyr as the correct figures that are to be derived or taken for calculations, use of which is explained in section 6.

2.2.5 Planetary-Band Yuga Durations Variant

When the Kalpa denomination is interpreted within the Bhuva (solar/Deva) field, the scale of the divine year expands naturally as:

360 × 1 000 = 360 000 years = Kg

This interval (Kg) operates effectively as a **planetary Yuga/Kalpa** (Bhuvar-Loka). The duration resonates with known sub-million-year climatic and biospheric transitions, suggesting that Puranic Yuga proportions

may encode planetary-scale periodicities rather than purely mythic chronology. An additional internal symmetry appears when the 100-year span is examined via the Bhu-scale constant:
DYFC × 100 = 14 400 × 100 = 1440 000 years.
The same value re-emerges, implying that Bhu's half-life and the planetary Yuga constant resonate across scales through the DYF proportion.
Applying the canonical 4:3:2:1 Yuga ratio to this base (Kali = 360 000 years) yields:

Table 2.8 – Bhuva-field Yuga obtained by canonical multipliers

Yuga	Multiplier	Duration (Myr)	Interpretive Note
Kali	1	0.36	Terminal phase: rapid change and reset
Dvāpara	2	0.72	Transitional; bifurcation and realignment
Treta	3	1.08	Stabilisation; energy–culture equilibrium
Satya	4	1.44	Long stable epoch; equilibrium of systems

These durations correspond closely to several Quaternary–Tertiary climatic rhythms and bio stratigraphic reorganisations, supporting the DYF inference that the Puranic 4:3:2:1 sequence function as a **natural harmonic of planetary evolution**. The close correspondence of these values to DYF constants support that, the DYFC is human scale transition harmonically extended to Deva (Bhuva) field. I take this value 360k as Bhuva Kalpa (Kg).

Table 2.9 – Summary of corrected numbers

Constant / Unit	Symbol	Exact Value	Domain
Dasa–Yuga Field Constant	DYFC	14 400 yr	Human psyche cycle
Yuga constant	Kg	360,000 yr	Planetary weather
Maha-Yuga Constant	Mc	129 600 yr	Divine year
Pure Galactic Day (360^3)	Bd	46.656 Myr	Unpacked harmonic
Kalpa (Sun's orbit)	Kp	259.2 Myr	Solar–Galactic field
Brahma-Year	By	93.312 Gyr	Universal cycle
Satya Kalpa (Higher)	Sy	33.59232 Tyr	Supra-universal field

Through this arithmetic coherence, the Bhagavata Purana seems to encode a **fractal physics of time**: each order is a complete revolution nested within a greater revolution, and every domain—human to cosmic—maintains the same 360-based proportional symmetry. The cumulative span through Earth → Sun → Galaxy → Universe reproduces modern astrophysical magnitudes, inviting interpretation of the verses in 3.11 of Shrimad Bhagavatam as a precise harmonic law of temporal geometry.

2.2.6 Harmonic Continuity across Seventeen Orders of Magnitude

From the day of Earth (24 h ≈ 8.64×10^4 s) to the Brahma-year (≈ 2.94×10^{18} s), the sequence spans ~14 orders of magnitude while maintaining the same multiplier 360 between successive layers. This cannot be stated as mere accidental coherence but exhibit a much greater resonance with the Time itself that we experience it.

Table 2.11 – Loka bands, Brahma × 360 alignment, and Kalpa as yearly rotation

Frame	Multiplier (×360)	Nominal Duration	Field / Loka	Kalpa Name	DYF Kalpa Multiplier	Kalpa
Earth rotation	1	1 day	Human–Bhu	Earth revolution	×360	1 year
Earth revolution (Deva Day)	×360	1 year	Bhu–Bhuva	Solar-system (Jupiter–Saturn)	×12×30 = 360	360 yr
Solar system	×360	360 years	Bhuva–Svah	Mega-Yuga (Kg)	×1000	0.36 Myr
Divine year (Sun's Day)	×360	129600 years	Svah–Makar	½ Kalpa (1/2 Kp)	×1000	129.6 Myr
Galactic nucleus (Brahma Day)	×360	46.656 Myr	Makar-Jana → Tapo	Universal circulation (Bp = ½ By)	×1000	46.656 Gyr
Vishnu Day (CMB band)	×360	16.79616 Gyr	Tapo–Satya	Supra-galactic flow	×1000	16.79616 Tyr

Each step obeys the same harmonic rule, forming a continuous chain from local to cosmic. Such internal consistency suggests that ancient measurements were **ratio-driven**, not empirically derived in the modern sense, yet they remain compatible with observed astrophysical proportions. This level of coherence is difficult to dismiss as coincidence and invites deeper physical and cosmological testing.

2.2.7 The Puranic–Astronomical Correspondence

The DYF–PUT interpretation reframes Puranic time units not as literal chronological durations but as **ratio-codes** describing rotational harmonics in a unified time-field. Every Puranic value — whether a Yuga, a Kalpa, or a Brahma-year — captures idealised angular relationships between nested orbital systems. The ancients encoded these relationships using base-360 arithmetic, expressing temporal harmonics rather than linear calendar time.

Consequently, the constants map onto observable astronomical cycles as field-ratios, not as exact calendar equivalents. The purpose is not to force a year-for-year match, but to show that Puranic ratios preserve the same proportional structure seen in planetary, stellar, and galactic kinematics.

These correspondences demonstrate that Puranic cosmology captures the **proportional relationships** between different layers of astrophysical motion, even when absolute numbers serve as harmonic ideals. DYF–PUT treats these values as standing-wave signatures of the time-field rather than mere historical timestamps. Kalpa, ½ Kalpa, and Brahma-year become ratio-preserving constructs that map naturally onto planetary, heliospheric, and galactic cycles, reinforcing the hypothesis that Puranic time arithmetic encodes a coherent temporal geometry.

Table 2.10 – Correspondence between Puranic units and astronomical cycles

Parameter	Modern Measurement	Puranic Value (DYF–PUT)	Relative Difference	Interpretive Link
Earth → Sun revolution	365.24 days	360 days	~1%	Base-360 normalisation; human-year ↔ deva-day scaling
Sun → Galactic centre orbit	225–250 Myr	259.2 Myr	≤7%	Matches Kalpa (Kp= Mc × 1000 × 2)
Light-field boundary (horizon)	≈ 93 Gly diameter	93.312 (time-harmonic)	~0.3%	Mirrors Brahma-year scaling
Solar magnetic reset	~11-year modulated cycle	10.1667 years	within cycle	Encoded within DU/Hora subdivision
Ancient astronomical "600-year"	~600-year notes in various texts	610 years (*nāzhikai*)	small adjustment	Appears as 1 Nazhikai; linked to Venus & other observations

Empirical correspondence. Modern astrophysics estimates the Sun's galactic orbit at ≈225–250 Myr (e.g., Bland-Hawthorn & Gerhard 2016); the Puranic value of 259.2 Myr falls comfortably within this range once normalisation is accounted for as illustrated in my previous work (DYF – Swaminathan S, 2025). The derived 46.656 Gyr "Brahma Day" matches the current comoving radius of the observable universe (~46.5 billion light-years) when treated as a time and speed-equivalent and doubling it gives ~93 Gly — the observed diameter. All of this emerges from harmonic scaling alone.

Interpretive principle. Because each motion is both the measure and the manifestation of time, the 360-based ladder expresses a **field of temporal density**, not a series of disconnected numbers. The denser the field, the slower its experienced duration and the lower its permissible velocity. When Kala is viewed as the unifying field (*Animiso Vibhuḥ*, 3.11.3), every object's rotation becomes a local resonance within the same continuum.

This yields the operational axiom of DYF-PUT:

Time = Motion / Field Density (360^n harmonic hierarchy).

Subsequent sections apply this constant to **velocity distributions and wavelength bands across the Tri-Lokas**, showing that the same proportional law governs atomic, planetary, and galactic dynamics.

3. Velocity, Frequency, and Tri-Loka Coherence

Bhagavata Purana 3.11.23–28 observes that all planetary and stellar bodies move "each in its own orbit", driven by the same *Kala* who "moves all but is moved by none." DYF-PUT takes this as a literal statement about a stratified time field. Each Loka is not a "place" in the crude spatial sense, but a **band of time-density**: a layer of the unified field in which motion, radiation, and perception of time follow a fixed proportion.

In this frame, the speed of light *c* remains locally invariant everywhere, but the **density of time** is not. Where time is rarer (thin field), motion can approach *c* without tearing the field; where time is denser, bulk motion is forced to slow down. The result is a set of natural velocity ceilings — one for each Loka

band. These bands can be summarised as follows:

Table 3.1. Velocity Ladder of each Tri-Loka

Loka Band / Field	Base Velocity Proportion	Approx. Speed	Empirical Counterpart
Satya	c	299 792 km s^{-1}	Pure radiative / CMB origin field
Makar–Jana–Tapo (galactic band)	c / 360	≈ 833 km s^{-1}	Proposed Milky Way systemic drift or Galactic escape velocity
Bhur–Bhuva–Svah (solar–planetary)	c / 129 600 (= c / 360^2)	≈ 2.314 km s^{-1}	Planetary / atmospheric kinematics
Atala–Sutala–Talātala (atomic)	c / 46 656 000 (= c / 360^3)	≈ 0.0064 km s^{-1}	Sub-atomic, decay and quantum regimes

The expected close match between **c/360 ≈ 833 km s^{-1}** and the drift motion of the Milky Way relative to the CMB is treated here as an empirical hint: the Puranic "Makar Loka" corresponds to the **galactic field**. Below that, the solar–planetary domain naturally clusters around **c/360^2**, and the atomic/molecular world around **c/360^3** and deeper. The underlying Puranic law is simple and recursive:
"One day of the Devas equals one year of men."
In DYF-PUT this becomes a harmonic rule: each higher domain's unit of time is 360 times the lower domains (Tri-Lokas), and its **permissible bulk velocity is 1/360 of the lower band's top speed**. The clocks run faster, but the allowed mass-motion slows down. General relativity says, "clocks run differently in different fields." The Purana encodes exactly that, but with clean integer steps instead of tensors.
Further study reveals a much clearer picture with light harmonics as a based rather than only intrinsic speeds. Because light must still travel at *c* in every band, the adjustment happens in **frequency and wavelength**. When the allowable bulk speed of a domain drops by 360, the local "natural" radiation scale stretches: wavelength grows by ~360, frequency drops by ~360. This yields a ladder of radiation that lines up with known astrophysical bands:

- From Satya (with velocity at c) into the Makar–Jana–Tapo band, the characteristic scale shifts from an abstract field into the **CMB and galactic IR/X-ray domain (wavelength of 1.9mm to 5 µm and frequency 160 GHz to 56.6 THz)**. Taking the CMB peak around 1.9 mm and dividing by 360 gives ≈ 5.3 µm — an infrared scale characteristic of the Galactic Centre region.
- Dividing CMB by 360^2 (129600) moves us into the **solar visible + coronal band** (roughly 5.3 µm to 15nm wavelength band that have frequency range of 56.6 THz to 2×10^{16} Hz), which is exactly where Bhur–Bhuva–Svah live visible to ultraviolet band.
- Dividing once more by 360 moves into hard-X-ray scales (~40 pm, ~7×10^{18} Hz), within the broader medical and astrophysical X-ray band.
- Dividing further by 360 gives Talatala-Mahatala frequency which is 7.32 EHz to 2.61 × 10^{21} Hz band, a small spectrum of ionizing X Ray radiation and major Gamma ray radioactive wavelengths.

In other words, **CMB → Galactic IR → Solar visible/UV** is not taken as a random cascade of wavelengths inside DYF PUT. It is the same 360 harmonic that governs days, years, Yugas, and Kalpas — now expressing itself in the language of light.

The same pattern continues downward. In the Atala–Sutala–Talatala domains, time is so dense that a single human microsecond can host millions of internal cycles. The atomic domain where chemical reactions take place. Mahatala-Rasatala-Talala band constitutes nano seconds scale radioactive zone and finally Light crossing **1 mm in ~3.3–3.6 picoseconds** become a natural marker for the onset of the *Patala* potential zone — the region where motion nearly ceases and energy sits as compressed possibility.

3.1 Intra Tri-Loka velocity domains

Inside each triad of Lokas (Tri-Lokas), the 360 step breaks further into **3.6, 36, and 360** micro-harmonics. These act like shelves: the slowest stable speed of one band becomes the fastest stable speed of the next. They are not arbitrary quantisation: they are **velocity thresholds in a single time-field**. To keep track of this, DYF-PUT uses a simple Speed Proportion index:

SP = c / v

Large SP means deep time-density (slow motion, heavy field); small SP means close to photonic freedom. When an object is observed across bands with different SP, its native frequency is mis-read: to us it appears redshifted or blue shifted, though in its own domain nothing "mysterious" has happened. Redshift, in this model, is **a translation between time-fields**, not necessarily proof that space itself is stretching.

Empirically, three anchor points stand out:

- DYF-PUT predicts a characteristic ceiling $v_{Makar} = c/360 \approx 834$ km s^{-1} for the Makar–Jana–Tapo band. Measurements of the Local Group's motion relative to the CMB give ≈600–650 km s^{-1} (e.g., 627 ± 22 km s^{-1}), or about 75% of this ideal limit. This is not an exact fit but a suggestive proximity that motivates treating the Puranic 'Makar Loka' as the galactic-drift field. (Kogut et al. 1993; Fixsen et al. 1996; Planck Collaboration 2018).
- Planetary orbital speeds, from Mercury to Neptune, lie above the c/129,600 baseline (~2.3 km s^{-1}), with Earth's orbit (~30 km s^{-1}) and the Sun's Galactic motion (~220–250 km s^{-1}) falling near 10× and 100× this value respectively.
- Atomic clocks, like the cesium-133 standard, dwell in the ultra-fast end of the c/360^3 and c/360^4 regime, where picosecond and nanosecond intervals rule — matching the deep-Loka picture rather than contradicting it. It is to be noted that, the velocity is not for the atomic, nano or micro particles but the frequencies of particles inside them.

Thus, from the DYF-PUT perspective, **Lokas are coherent velocity–frequency strata of the same Kala-field**:

- higher Lokas radiate at higher intrinsic frequencies, which are read as lower frequencies by faster clocks in the Lokas below.
- lower Lokas move slowly but flicker with larger internal temporal density/frequency.
- galaxies, stars, atoms, and even "empty" space are simply different **slices of SP** in one unified time-field.

This restores the original philosophical force of the Purana: *Kala* is not a background parameter but the living rhythm that holds the worlds together. The numbers 360, 360^2, 360^3 are not decorative mythology; they are the **integer skeleton** of a physics where motion, light, and consciousness obey the same harmonic law.

Empirical Coherence

- ***Atomic and molecular transitions*** span broad bands from microwave (~10^{11} Hz) through infrared and visible up into ultraviolet (≳10^{15} Hz); in DYF-PUT, the deeper Atala/Sutala bands are associated with these high-frequency regimes.

- **Cosmic scale**: 46.656 Gyr ≈ comoving radius of the observable universe (≈46.5 Bly), perfectly matching the top rung of this ladder.

The Cross-Tri-Loka Time Ladder shows that:

- Time is not a universal constant; it is a unified field across Lokas varying with velocity.
- Each Loka is a **domain with its own temporal density**. Light simply reveals that density when measured from another band.
- Redshift is primarily a translation between time-field densities; metric expansion in ΛCDM is then one possible macroscopic description of these gradients rather than the only interpretation.
- All durations from 10^{-12} s to 10^{18} s are linked by the same Puranic constant: **360**.

In short: **The sages did not describe many times. They described one time, woven at different densities through the 14 Lokas in the Puranas.** Thus, physical reality follows the very ratios the Purana encodes.

3.2 Lorentz Estimate for Shri Maha Vishnu–Nucleus Velocity (Satya Loka) from CMB Mapping

The principal assumptions based on Rotation and Revolution dynamics as the nature of time itself has pointed to an anchor around which the bodies in the universe might or should revolve around. The verse 3.11.32 mentions that the beings of Jana Loka (Extra Galactic space) is bowing towards Ananta (Vishnu). I take it as the Vishnu nucleus around which Our Galactic Brahma is supposed to revolve around as the continuum of nested revolutionary movements expected in the Purana as per DYF PUT.

In the DYF–PUT model, with this demand for an external body radiating light at Satya Loka frame, the Cosmic Microwave Background (CMB) could not merely be taken as a relic of an initial big bang but is interpreted as the **visible-band radiation from a higher Vishnu–nucleus (blue/violet light) and Lakshmi–nucleus (gold light) seen through the lens of much slower time-density in our Bhur–Bhuva–Svah frame**. This implies that what we measure as the CMB at peak wavelengths of about **1.9 to 1.89 mm** is the visible light from divine sources stretched by relativistic time dilation between the higher Satya Loka and our local Loka band.

3.2.1 Wavelength Stretch and Effective Lorentz Factor

In the Puranic iconography, Vishnu is blue and radiates through Shri Mahalakshmi, described as Hiranya-Varnam (‘golden-hued’) in the Sri Suktam; DYF-PUT models the CMB as the temporally stretched emission of this Vishnu–Lakshmi nucleus.

In this framework, the Satya-domain ‘Vishnu light’ is idealised as blue-violet emission near 480 nm. This wavelength coincides with the peak sensitivity of melanopsin-mediated non-visual responses in humans (~460–480 nm) (Vandewalle et al. 2007) and with common high-brightness InGaN blue LED emissions in the 450–480 nm range (Mukai / Narukawa / Nakamura et.al. 2015), making 480 nm a physically natural reference for intense blue light.

Shri Maha Lakshmi’s gold band is taken to peak near 524 nm, consistent with optical studies showing bulk gold reflecting strongly in the yellow region while selectively absorbing shorter blue–violet wavelengths (Derkachova et al. 2015; Schmidbaur 2005; reviews on gold’s yellow colour due to blue absorption). The observed CMB spectrum in our domain is an almost perfect 2.725 K blackbody with an intensity peak at ≈1.89 mm (here approximated as 1,886,924 nm for harmonic computation) as in COBE/FIRAS and later works.

Using the relativistic Doppler shift for a receding source, the relationship between emitted and observed wavelengths is:

$$1 + z = \frac{\lambda_{\text{observed}}}{\lambda_{\text{emitted}}}$$

For Shri Mahalakshmi's gold band – 524nm:

$$z = \frac{1{,}886{,}924\ \text{nm}}{524\ \text{nm}} - 1 = 3600$$

For Shri Mahavishnu's blue-violet band:

$$z = \frac{1{,}886{,}924\ \text{nm}}{480\ \text{nm}} - 1 \approx 3930$$

The effective Lorentz factor γ relates to velocity with:

$$1 + z = \sqrt{\frac{1+\beta}{1-\beta}}, \qquad \beta = \frac{v}{c} = \frac{1}{SP}$$

Solving for β for Shri Mahalakshmi yields:

$$\beta = \frac{(1+z)^2 - 1}{(1+z)^2 + 1} \approx 0.999999846$$

Corresponding parameters:

- Velocity $v = 0.999999846\,c \approx 299{,}999{,}953.7\ \text{m/s}$
- Difference from light speed $\Delta v = c - v \approx 46.3\ \text{m/s}$
- Lorentz factor $\gamma = \frac{1}{\sqrt{1-\beta^2}} \approx 1800 = 5 \times 360$

Similarly, Shri Mahavishnu's emission yields:

- $\beta \approx 0.99999983$,
- $\Delta v \approx 54\ \text{m/s}$,
- $\gamma \approx 2000 \approx 5.5 \times 360$

3.2.2 Physical and Symbolic Interpretation

- **Shri Maha Lakshmi's gold colour (~524 nm) emerges by selective absorption of Vishnu's blue-violet light (~480 nm).** This is consistent with the optical physics of gold, which, due to relativistic narrowing of the 5d–6s gap, absorbs blue light more strongly and therefore reflects a yellow–gold band. (e.g., Derkachova et al. 2015; Schmidbaur 2005; 'Relativistic quantum chemistry' review).
- The redshift appears to be induced by near-light velocity recession between higher Satya Loka and our Loka consistently transforms these emitted visible wavelengths into the **microwave band observed as the CMB peak at ~1.8869 mm (1.89mm).**
- The velocity difference (about 46 to 54 m/s less than c) and Lorentz factor (multiples of 360) place the **Vishnu–Lakshmi nuclei firmly at the photonic limit in the Satya Loka, the highest temporal density domain.**
- This explains the CMB as a **continuous radiative exchange between the Satya domain and our lower-density time domain, rather than a one-time cosmological relic.**
- **Note:** Current observations show no isolated galaxy or cluster, reported with a bulk peculiar velocity anywhere near c. In DYF-PUT this is resolved by treating the near-c motion as a global co-motion of

our entire cosmic domain with respect to a higher Vishnu nucleus, just as the whole solar system shares the Sun's Galactic orbit and the Local Group of constellations shares a common drift with respect to the CMB.

This model strongly suggests that:

- The **360 harmonics**—central to Puranic cosmology—serves as a fundamental constant underpinning relativistic redshift and time dilation across cosmic scales.
- Gold's **Hiranya Varnam** (golden colour) symbolizes Lakshmi, physically originating from Vishnu's absorbed blue-violet light band, reflecting the radiant duality encoded in ancient scriptures.
- The **exact alignment of Lorentz factor ($\gamma = 1800 = 5 \times 360$)**, velocity difference (~46 m/s), and redshift (~3600) with the Puranic harmonic ladder is a powerful empirical anchor for the DYF–PUT framework.

Summary

Parameter	**Lakshmi (Gold 524 nm)**	**Vishnu (Blue 480 nm)**
Observed CMB wavelength	1,886,924 nm (1.8869 mm)	1,886,924 nm (1.8869 mm)
Redshift z	3600	3930
Velocity $v/c = \beta$	0.999999846	~0.99999983
Difference from c	≈ 46 m/s	≈ 54 m/s
Lorentz factor γ	1800 (= 5 × 360)	~2000 (~5.5 × 360)

This firmly situates the CMB measurement as a window into the Satya Loka realm, interpreted as the visible gold and blue light of divine nuclei seen through our dense cosmic time stretched by relativistic effects encoded in the Puranic constant **360**. The numerical correctness invites interpretation of CMB therefore possibly as a **living radiative dialogue** with higher Lokas, not simply a fading cosmological afterglow. This reinterpreted physical and symbolic model grounds the DYF-PUT cosmology in measurable relativistic physics, providing a harmonious bridge between ancient wisdom and modern astro-physics phenomena.

4. The Cross–Tri-Loka Time Ladder

The Bhagavata Purana (3.11.4–12) speaks of time as something that "dwells within each atom" and expands outward through suns, planets, and cosmic domains. DYF-PUT interprets this literally: the universe is not stitched together by empty space but by **graded densities of time**. Each Loka is a rung on that ladder. A moment in one band may be a millennium in another—not because clocks disagree, but because **each Tri-Loka field rotates through Kala at its own intrinsic frequency**. The constant that relates them is the same constant the sages placed everywhere: **360**.

Just as quantum mechanics gives electrons discrete shells, the Puranas give existence discrete time-shells. Seconds, days, Yugas and Kalpas are not "different units," but different **densities of the same field**, am-

plifying upward (cosmic) or compressing inward (atomic).

There is nothing random here. Every horizontal step increases time by the same **360-fold frequency shift**. Every vertical band corresponds to a different **density of time itself**:

- **Deep sub-atomic bands** (Mahatala–Talatala) are so rapid that a human second contains trillions of their cycles. Eg. Cesium 133 clock – 1s – 9.1 billion frequencies.
- **Planetary time** (Bhur-Bhuva–Svah) is the middle layer where biological and orbital processes stabilise.
- **Galactic time** (Mahas–Tapo) runs so slow that a single "day" for that domain may be centuries on Earth. Svah day = 129600 × 100 = 12,960,000 years on earth.

The Puranic statement that "time revolves each atom as it revolves each sun" becomes literal: **all cycles obey the same 360 harmonic**, only their density differs. Here, the minute in higher Tri-Loka literally forms a year in the next Tri-Loka.

The numerical ladder below (Table 4.1) shows how the same harmonic attaches picoseconds, microseconds, planetary days, and Yugas into a single sequence using a logic that one minute above is an year below:

Table 4.1 — Cross-Loka Time Ladder
(harmonic correspondence of day → Yuga → Kalpa across four domains)

Level	Mahatala–Rasātala–Talātala	Atala–Vitala–Sutala	Bhu–Bhuva–Svah	Mahas–Jana–Tapo	Loka nodes
Seconds	3.721 ps	1.929 µs	1 s	6 days	Talatala
Minutes	223 ps	115.7 µs	1 min	1 human year	Sutala
Hours	13.40 ns	6.94 ms	1 hr	60 human years	Vitala
Days	321.5 ns	166.7 ms	1 day	1,440 human years	Atala
"10-day Yuga"	3.215 µs	1.667 s	10 days	14,400 years (DYFC)	Bhu
Maha-Yuga	28.94 µs	15 s	3 months (Mc)	129,600 years (Mc)	Bhuva
Years	115.7 µs	60 s	360 days	4 Mc (~518,400 years)	Bhuva
Half-Kalpa	28.9 ms	4.17 hrs	250 yrs	129.6 Myr	Svah
Kalpa (Kp×2)	57.9 ms	8.33 hrs	500 yrs	259.2 Myr	Makar
½ Brahmaṇḍa	10.42 s	62.5 days	90,000 yrs	46.656 Gyr	Jana
Brahmāṇḍa	20.83 s	125 days	180,000 yrs	93.312 Gyr	Tapo

Light as a Marker of Time-Density

To understand how this becomes physically testable, DYF-PUT uses the light-travel distance corresponding to each band's minimum time unit. This reveals a remarkable geometric coherence:

Table 4.2 — Light-Travel Distance at the Minimum Time of Each Tri-Loka

Loka Band	Field-Equivalent Time	Light Travel	Interpretation
Mahatala–Talatala	3.7 ps	~1.1 mm	Quantum oscillation / decay cycle
Atala–Sutala (Bali band)	1.9 μs	~570 m	Electronic & chemical reaction scale
Bhu–Bhuva–Svah	1 s	300,000 km	Biological / orbital dynamics
Mahas–Jana–Tapo	6 days ~518,400 s	1.55×10^{11} km	Stellar & galactic feedback

The same 360 factor links:

- **picoseconds → atomic wavelengths**
- **microseconds → molecular transitions**
- **seconds → planetary light-time**
- **days → stellar orbital envelopes**

This expresses the real meaning of 3.11.13–15: the wheel of time does not run uniformly; it **thickens and thins** as it moves through Lokas. Time accelerates inward (toward atomic scales) and dilates outward (toward cosmic scales). What relativity treats as curvature, the Puranas describe as **field density**. Seconds, months, Yugas, Kalpas are not separate clocks — they are **scaled resonances of the same field**.

5. Light–Distance Harmonies and the Solar Mandala

In the Puranic worldview, planets are not scattered accidents in space; they are arranged the way beads sit on a string — held by a rhythm. Bhagavata Purana 3.11.22–31 and Surya Siddhanta 1.13–20 both insist that every planet moves "in its own ordained orbit" (*svam svam samvatsaram*), and that these orbits are proportional. DYF–PUT interprets this literally: the same 360-harmonic that structures Yuga and Kalpa durations also shapes **spatial distances**, using **light-travel seconds** as the natural unit of the solar field.

Where Section 4 showed that time is rotation; Section 5 shows that **distance is delayed light** — another face of the same Kala-field. In modern cosmology, the same is mentioned as Lorentz space transformation differential equation. GR has two nodes, time dilation and space contraction when viewed from different frames. The same follows 360 harmonics illustrated below.

5.1 The 360-Second Solar Harmonic

Using 360 seconds as the base solar resonance, each planet's distance from the Sun becomes a clean multiple of this unit. Even today's NASA ephemerides align with these ratios within ~3%.

Table 5.1: Light distance harmonics in Planet distance from Sun

Planet / Boundary	Light-Time (s)	Multiple of 360 s	Distance (AU)	Interpretive Band
Mercury	193 s	0.54 × 360	0.39 AU	Inner pre-harmonic limit
Venus	360 s	1 × 360	0.72 AU	Fundamental base
Earth	**504 s**	**360 + 144**	1.00 AU	Lunar-corrected solar unit
Mars	760 s	≈ 2.1 × 360	1.52 AU	Outer transition
Jupiter	**2592 s**	**7.2 × 360**	5.20 AU	Planetary Kalpa node
Saturn	4680 s	13 × 360	9.54 AU	Secondary harmonic

Planet / Boundary	Light-Time (s)	Multiple of 360 s	Distance (AU)	Interpretive Band
Uranus	9480 s	26.3 × 360	19.2 AU	Tertiary harmonic
Neptune	14760 s	41 × 360	30.1 AU	Resonance boundary
Heliopause	**86,400 s**	**240 × 360 ≈ 1 Light-day**	~120 AU	Solar field limit

Two notable coherences appear:

1. **The Jupiter Node (2592 s)** 2592 = 360^2 / 50 — a clean sub-harmonic of the Maha-Yuga constant. Jupiter sits exactly where a "Kalpa-node" should sit in the solar time-field.
2. **The heliopause at one light-day** the boundary where the Sun's field ends (~120 AU) equals exactly one light-day = **240 × 360 s**, matching the Puranic claim that the Sun's effulgence reaches one "day's distance."

These harmonics are too consistent to be coincidence. The solar system behaves like a musical instrument tuned to a single note: **360**.

5.2 Planetary Orbits as Standing Waves of Time

If time is a field (Kala), then distance is not simply spatial separation — it is the *delay* created by moving through different time-densities. In this model:

- **Inside 1 light-day** → Sun's time-field dominates.
- **Beyond 1 light-day** → temporal density shifts into the **Makar domain**, governed by the galactic nucleus.

The Puranas describe this verbally; DYF–PUT gives it a measurable frame.

Each planet occupies a **standing-wave node** in this field:

- Venus = 1×360
- Earth = 360 + 144
- Jupiter = 7.2×360
- Neptune = 41×360

In fact, the entire solar system unfolds like a 360-based harmonic series — just as 3.11 of the Bhagavata Purana describes Yugas, Kalpas, and Brahma-days.

5.3 The Five New Harmonic Correspondences

The recent discoveries extend this symmetry far beyond the solar system:

(1) Sun's galactic position

The Sun's estimated galactocentric distance (≈26–27 kly) lies within a band bracketed by 25,920 ly (2×12,960) and 28,800 ly (2×14,400) and is close to 1,525×17 ly. Observational uncertainties therefore permit an interpretation in which the Sun sits near a 360-based resonance radius, but this remains a numerological alignment rather than a derived dynamical necessity. Mathematical expression given below:

- **25,920 = 12,960 × 2** (Yuga double-constant)
- **28,800 = 14,400 × 2** (DYFC double-constant)
- **25,925 = 1525 × 17** (Micro-Hora × 17)

(2) Milky Way diameter ≈ 129,600 ly

129,600 = **360^2** — the Maha-Yuga constant.

Modern estimates place the Milky Way's stellar disk diameter in the 100–200 kly range, with many studies adopting ~100–120 kly. Taking 129,600 ly (=360^2) as an 'ideal' DYF value keeps the observations within

a ≲30% window and lets the galaxy's size be read as an approximate spatial image of the Maha-Yuga constant. This is suggestive but not yet a precise empirical match.

(3) Comoving radius ≈ 46.656 Gly

46.656 Gyr = **$360^3 \times 1000$ yrs**.

ΛCDM cosmology gives a comoving radius of the observable universe ≈46.5 Gly, essentially identical to the 46.656 'Brahma-Day' value =$360^3 \times 1000$ years when converted via light speed. DYF-PUT therefore interprets the cosmic light-horizon as the spatial image of the 360^3 Kalpa harmonic, while treating Gyr and Gly as time–distance equivalents in the Satya/Brahma field frame with their velocity at c as discussed in previous sections.

(4) Heliopause = 1 light-day

The solar field terminates around **1 Day of light**.

- 360 seconds × 240 = 86,400 seconds → **1 light-day**.

Voyager and IBEX data place the heliopause at ≈120 AU, or about 0.7 light-days, with significant temporal and directional variability. DYF-PUT idealises this as a 1-light-day boundary, equating one solar-field radius with one standard Earth Day (86,400 s) of light travel, to keep the Sun's sphere of influence tied to the base human time unit.

(5) Galactic Centre radius ≈ 1525 × 7

Since, DYF PUT demands structural symmetry of objects in various levels, an interpretation comes regarding the GC which looks tiny in space possibly because **its time-density is immense** — temporal compression could be assumed to shrink visible spatial size mathematically expressed below:

- **1 light-day = 1525 × 24 y**
- **Sun's visible distance = 1525 × 17**
- **Remaining gap = 1525 × 7 → Possible Galactic Centre diameter**

Current observations show that the Milky Way's supermassive black hole, Sgr A*, has an event-horizon scale of only micro-light-years, while the bulge extends over kiloparsecs. No measured 'GC diameter' corresponds to 1,525×7 light-days. DYF-PUT instead uses the triad 24–17–7, built from the Micro-Hora 1,525, as a **harmonic partition** of the Sun–GC separation into (Solar field: intermediate belt: GC core). The guiding axiom is that higher time-density implies a smaller effective radius, analogously to how GR time dilation near compact objects makes them appear extremely compact. This is a speculative time-field interpretation, not a direct fit to current GC size estimates.

5.4 Synthesis: Light, Distance, and Time as One Field

Once the harmonic structure is revealed, the old Puranic statements become obvious physics:

- **Spatial separation = temporal delay.**
- **Planetary arrangement = standing waves in the Sun's time-field.**
- **Galactic structure = higher-order 360 harmonics.**
- **The observable universe = the visible portion of Brahma's Day.**

The ancients did not view light and distance as independent; to them, both were shadows of **Kala**, the unbroken field that supports all motion.

DYF–PUT revives that insight with modern data:

- Planetary orbits align within 3% of 360-second harmonics.
- The heliopause sits exactly around one light-day.
- The galaxy's diameter matches 360^2.
- The comoving radius matches 360^3.

- The Sun's galactic position matches Yuga/Micro-Hora multiples.

When physics meets proportion, the cosmos stops looking like a random collection of objects and begins to resemble what the Puranas always claimed it was:

A resonant mandala — a universe tuned to one frequency, 360.

6. Manvantara and Kalpa Chronometry in the DYF–PUT Framework

The Puranas never describe time as a straight line. They speak instead with rotations within rotations: **day ↔ year**, **Yuga ↔ Manvantara**, **Manvantara ↔ Kalpa**, all stacked inside Brahma's own life. The Dasa–Yuga Framework (DYF) translated that language into a set of concrete constants. DYF–PUT extends the same constants into physical time, using the same 360-based arithmetic but now distinguishing clearly between:

- **Geological Kalpa (Vishnu-Day, VU) – Sveta Varaha Kalpa, the Earth-bearing epoch.**
  - VU = 4.74336 Gyr → Visnu-day in the planetary–geological ladder.
  - 4.74336 Gyr = 610 × 360 × 21600 yrs
- **Cosmic Kalpa (Brahma-band) – Sun's orbit and Brahmanda field in the Satya frame.**
  - 360 × Kp = By = 93.312 Gyr → (Cosmic Dia 93 Gly) = 12000 × 360 × 21600
  - By/2 = 46.656 Gyr = Bp = 12000 × 360 × 10800 yrs

The classical commentators could not distinguish between Cosmic Kalpa and Geological Manvantara based harmonics leading to one Kalpa in classical texts, unimaginable long durations that are empirically irrelevant. However, with DYF, Universe's age is decoded as 3 Kalpas completed as per in the Puranas with Brahma Kalpa, Padma Kalpa, Sveta Varaha Kalpa harmonically fulfilling empirically measured universe age of 14 Gyr. Once this is made possible, a difference in the terms used is explicitly visible. The Puranas mentioned 46.656 Gyr (Bp) and 4.74336 Gyr (VU) both as a "Kalpa".

DYF–PUT therefore keeps:

- **MU, DU, YU, VU** on the **geological/solar-galactic ladder**, and
- **Mc, Kp, By** on the **cosmic ladder**,

Recognising that the same word "*Kalpa"* is used for **two different scales**, and that the Puranic authors were working with ratios, not a fixed calendar. Using DYF constants, it was inferred that, from cosmic measurements before 3.11.22, the Manvantara shifts focus to Geology and Human conscious plane. Without a proper ladder, this looks like a contradiction.

Once the **Manvantara Unit (MU)**, **Micro-Hora (MH)** and **Day Unit (DU)** are derived, the mismatch collapses into a single, clean ratio:

K (the Kalpa constant) ≈ 46.645 Gyr / 4.74336 Gyr ≈ Bp/VU ≈ 9.836
K (the Kalpa constant) ≈ 129.6 Myr / 13.176 Myr ≈ ½ Kp/YU ≈ 9.836
K (the Kalpa constant) ≈ 360 000 / 36 600 ≈ Kg/DU ≈ 9.836
K (the Kalpa constant) ≈ 15000 / 1525 ≈ 15k/MH ≈ 9.836
K (the Kalpa constant) ≈ 14400 / 1464 ≈ DYFC/PH ≈ 9.836

Cosmic Kalpa being 46.656 Gyr in duration and the visible Kalpa band as 4.74 Gyr (VU) giving 9.836x reduction factor (K). Accordingly, the ~9.836× difference is found to be denoting a time-density gradient between Loka bands; This K encodes the **time-density compression** between the cosmic Kalpa and its geological image — the same "cosmic waters" the Puranas say *fill the Lokas* before receding. Without DYF, and Puranas mentioning both 46.6 Gyr and 4.74 Gyr as "Kalpa", this time density differential could not have been derived.

This is explained explicitly mentioned as **cosmic waters** fill the Tri-Loka in the puranic verses as Rishis transport from Makar to Jana due to heat arising from Sankarsana in Bhagavata Purana, 3.11.30. (Note: Specific weight of Water being g (9.806) times 1000 Kg/m^3 like how puranas preserve Kalpa Harmonics).

6.1 From Manvantara Unit to Micro-Hora and Day

The Manvantara Unit (MU) forms the basic geological rhythm in the DYF–PUT hierarchy:

$$1 \text{ MU} = 9{,}223{,}200 \text{ years}$$

derived from the canonical **71 Maha-Yugas** of *Bhagavata Purana 3.11.22*. A full higher-order rotation is: 28 MU = 258,249,600 years echoing the 28-fold closure cycle detailed in the purana of each 14 Manu ruling 2 times forming a full revolution of Sun's Kalpa dynamics.

Step-down through the Jyotisa cascade (28 → 168 → 1008)

There is 168 Hours/Horas in a week. And The Manvantara is derived from Solar Hora base and not from lunar yuga base. The MU derived is clearly divisible by 168 and so the arithmetic of scaling down the manvantara unit (MU) is taken in hand. This standard ladder appears from daily Hora reckoning to large-scale cosmology:

- **28 MU / 168 = 1,537,200 years** (macro-Hora)
- /6 → **256,200 years**
- /6 → **42,700 years**

The 42,700-year node is where the ladder remains stable.

This reveals why the older **9,150-year "Divine Hora"** cannot be fundamental:

$$\frac{42{,}700}{9{,}150} = \frac{28}{6}$$

Thus, it's found that **9,150 years is a derived convenience**, not the root unit.

To preserve the ladder without break Micro Hora unit is derived:

$$\text{Micro-Hora unit} = \frac{42700}{28} = \frac{9150}{6} = 1525 \text{ years}$$

Below this value the harmonic structure collapses, at 1,525 years the system locks cleanly.

This yields a Micro-Hora (MH) of 1525 years, naturally One Day Unit (DU) arises as 36,600 years (MH × 24); scaling it by 360 gives 1 YU = 13.176 Myr, interpreted as the "day" of Brahma — the galactic nucleus. A full Vishnu Day (VU) becomes 360 YU = 4.74336 Gyr, aligning with Earth's geological age. This aligns with an explanation, why the Sveta-Varaha Kalpa begins precisely with planetary formation – Rising of earth from Cosmic Waters.

The Geological Day (DU)

Taking MH as the primary constant in Hora dynamics in cosmic scale, the fundamental rule of Jyotisa that classical rule **"24 Hora = 1 Day"** was applied:

$$\text{DU} = 1{,}525 \times 24 = 36{,}600 \text{ years}$$

This becomes the **Sun's geological day equivalent**.

Tamil Siddhanta refines this via Nazhikai:

$$36{,}600/60 = \boxed{610 \text{ years per N}a\text{zhikai}}$$

6.2 From Day Unit to Manvantara and Sveta Varaha Kalpa

Once the **Day Unit (DU)** is set, the higher levels follow the same Puranic rule:

"A day of the higher being equals 360 days of the lower being."

A **Brahma-day equivalent of the Sun (YU)** becomes:

YU = 360 DU = 360 × 36,600 = 13.176 million years.

Stacking one more 360:

Kalpa (Visnu-Day - VU) = 360 YU = 4.74336 billion years.

This is the **Sveta Varaha Kalpa** — the geological Kalpa in which Earth rose from cosmic waters The Varaha Avatara (Boar Avatar) of Shri Mahavishnu rises the Earth from the cosmic waters symbolically denoting the creation of earth in the beginning of this Kalpa. Puranic texts describe three main Kalpa mentioned in the Bhagavata Purana verses 3.11.35, 3.11.36 and 3.11.37 as:

- **Brahma Kalpa** – 4.74336 Gyr
- **Padma Kalpa** – 4.74336 Gyr
- **Sveta Varaha Kalpa** – 4.74336 Gyr (running)

In DYF–PUT, these correlate as:

Table 6.1: The Three Kalpas said to have been completed in Puranas

Kalpa	Symbolic Function	DYF–PUT Span	Physical Analogue
Brahma Kalpa	Latent pre-field, "Vedas with Brahma"	≈ 4.74336 Gyr	Early cosmic field, pre-planetary dynamics
Padma Kalpa	Lotus emergence, luminous expansion	≈ 4.74336 Gyr	Galaxy/structure formation
Sveta Varaha	Earth raised from waters	≈ 4.58 Gyr (running)	Solar system condensation & biospheric stabilisation

Together they yield ≈ **14.07 Gyr**. Modern cosmology estimates the visible universe at ~13.8–13.9 Gyr. The excess ~0.25 Gyr appears as a **concealed pre-field** — a non-luminous phase of the Brahma-Kalpa that lies beyond our current observational horizon. In PUT language: we see only the lit half of the day; the dawn remains hidden.

At the Manvantara level, the same ladder runs downward. From: **MU = 9.2232 Myr**,

a full **Manu epoch** becomes: **Manu = 71 MU ≈ 654 Myr.**

Given Earth's geological age ≈ 4.58 Gyr, the elapsed time corresponds to ≈ **497 MU (7 × 71)**, which is:

- Seven completed Manvantaras, plus
- The onset of the eighth (Savarṇi).

This denotes that the **seven Manus have passed, and the eighth is arising** grounded in a geological chronometry.

6.3 Loka Rotational Ladder

Once DU and K are fixed, a **rotational ladder of Lokas** emerges. Each Loka has:

- its own **"day"** (local rotation period),
- its own Yuga and Maha Yuga
- its Kalpa as 1000 Maha Yugas, and
- a **compressed image** in the Bhu-band when K is applied.

Table 6.2: Loka Rotational Ladder and K's Versatility

Loka band	**Native "day" in that Loka taken as a Yuga**	**Kalpa = Yuga × 1000 (cosmic)**	**Compressed Kalpa in Bhu frame**
Tapo – Satya	16.79616 Gyr	16.79616 Tyr	1.7076096×10^{12} yr
Jana	46.656 Myr	46.656 Gyr	4.74336 Gyr
Makar	129 600 yr	129.6 Myr	13.176 Myr
Svah	360 yr	360000 yr	36 600 yr (DU)
Bhuva	1 yr	1000 yr	101.6667 yr
Bhu	1 day	1000 days	101.6667 days
Atala	4 min	4000 min	406.3182 min
Vitala	2/3 s	666.6667 s	67.72 s
Sutala	1.85185 ms	1851.85 ms	188.11 ms
Talatala	5.144 µs	5144 µs	522 µs
Rasatala	14.28898 ns	14 288.98 ns	1.451 µs
Mahatala	39.6916 ps	39 691.6 ps	4 ns
Patala	11.025 fs	11 025 fs	0.12 ps (light travels ≈ 36 µm in this time)

Each rung satisfies the **same law**:
"One day of the higher is 360 days of the lower."
and each rung is compressed in Bhu-band perception by the same **K ≈ 9.836** factor when viewed through DU and YU. Mc is taken as a day in cosmic calculations is harmonically taken as Mahayuga constant in DYF dynamics is extended to each Loka consistently.
Here:

- The **Kalpa column** reflects the classical Puranic rule *1 Kalpa = 1000 Mahayuga*.
- The **compressed Kalpa** column shows how the same cycle appears from within the Earth-band, once the **K factor** is applied:

$$T_{\text{compressed}} \approx \frac{1000\, T_{yuga}}{K}, \qquad K \approx 9.836.$$

- At the **Svah** level this reproduces the geological Kalpa (Kg) compressed into DU:

$$360 \text{ yr} \times 1000/K \approx 36\,600 \text{ yr} = \text{DU},$$

and at higher bands it yields the **4.74336 Gyr** Sveta-Varaha Kalpa and the **16.79616 Tyr** Satya period in the Satya frame.
The result is that **I** have constructed **two ladders that coexist**:

1. a **linear clock ladder** (1 minute above = 1 year below): in table 4.1 of this paper, and
2. a **rotational Kalpa ladder** where each Maha Yuga is multiplied by 1000 and then compressed by K when seen from denser Lokas.

Together they show that the Puranic authors were not only relating clocks between realms (Lokas) but also encoding a specific **time-dilation profile** across the Loka stack. The Patala band, with a base rotational tick of ~11.025 femtoseconds and a compressed Kalpa of ~**120 femtoseconds** in which **light travels 36μm**, marks the fastest time-flow and highest frequency domain, while Satya carries the slowest, cosmic-scale rotation.

The 61-Day Node and the Vyasa / Fisher Band

From **DU = 36 600 years**, Bhu-band perception of a 360-year Deva cycle is:

$$\frac{36\,600}{360} = 101.666\ldots \text{ years} = 37\,134 \text{ days}$$

Split to:

$$37\,134 = 36\,524 + 610$$

So:

- **36 524 days ≈ 100 solar years**,
- **+ 610 days = 10 blocks of 61 days**.

Inside DYF-PUT Model, this means **for every 10 years, ~61 days form a "preservation window"** in which the Deva-clock and human solar clock preserves life in Bhu domain. Ten such windows make the extra 610 days in a 101.66-year span. This squares eerily with **maritime ecology**:

- modern marine policy in several regions uses **~60-day fishing bans** per year to preserve fish stocks.
- traditional fisher communities remember **61-day no-catch windows** as ecological dharma.
- **Vyasa's birth in a fisher lineage** is not an accidental mention but an encoding of who tracks these windows with their lives.

In the DYF–PUT reading:

- **Vyasa's people** are the ones who recognised **the 61-day preservation node**,
- preserving the memory of **Vinazhikai-level resets** and
- transmitting it into Puranic arithmetic as **Nazhikai / Vinazhikai** time.

Thus, the MU → MH → DU → 610 → 61 ladder is **not a seen as an invented numerology**; it is the **compressed form of lived ecological cycles** that only a fisher culture could reliably notice and transmit. Across all of these, **K ≈ 9.836** shows up as the compression between **"true" cosmic spans** and **Earth-perceived spans** once MU, MH, and DU are correctly in place. That is why the same K bridges:

- **Bp = 46.656 Gyr** and **VU = 4.74336 Gyr**,
- **Kp-based cosmic Kalpa** and **Manvantara-based geological Kalpa**,
- and **water-density symbolism (1000)** and closely match the **local gravitational field (≈ 9.8 m s⁻²)** in our domain.

6.4 Cosmic Waters, Time-Density and the Role of K

The most puzzling feature of Puranic chronometry is that it uses the same word **Kalpa** for two very different spans:

- a **Cosmic Kalpa** of **46.656 Gyr** (the 360^3 constant), and
- a **Geological Kalpa** of **4.74336 Gyr** (360 YU = VU in the DYF–PUT ladder).

At first sight this looks like a contradiction. In the DYF–PUT reading, it is not an error but a **window into time-density**. From Sections 5.1 and 5.3, once the **Micro-Hora** (MH = 1,525 yr) and **Day Unit** (DU = 36,600 yr) are derived via the 28→168→1008 Manvantara ladder, the ratio

K ≈ 9.836

appears repeatedly whenever we compare **Satya / cosmic values** with **Bhu-band / geological values**:

- 46.656 Gyr / 4.74336 Gyr ≈ K
- 129.6 Myr (1000 × Mc) / 13.176 Myr (YU) ≈ K
- 360,000 yr (Y) / 36,600 yr (DU) ≈ K

In other words, the Puranic system behaves as if **the same Kalpa is seen through two different clock-rates**, with K measuring the **compression of time** when we descend from the higher cosmic field (Satya–Tapo–Jana–Makar) into the denser **Bhu–Bhuva–Svah** band.

The texts themselves point in this direction. Bhagavata Purana repeatedly speaks of **"cosmic waters"** filling the intermediate Lokas, **Mahar Loka being submerged**, and **Rishis rising to Jana** until the waters recede and the Kalpa of manifested worlds begins. In DYF–PUT, these "waters" are read as a **symbol for time-density**:

- the **multiplier 1000** marks the level where the cosmic clock is packed into a denser domain.
- the factor **K ≈ 9.836** measures how much that compressed Kalpa shrinks when expressed in the Earth-band.

This picture resonates with modern cosmology, even though the languages are different. Today, cosmologists talk about:

- a **Hubble constant H_0** (≈ 67–72 km s^{-1} Mpc^{-1}), which sets the overall expansion rate, and
- a corresponding **critical density (**ρ), which decides how fast the cosmic clock runs in the standard model.

$$\rho = \frac{3H^2}{8\pi G}$$

Changes in this density are inferred observationally through **redshift**: light from distant galaxies is seen at longer wavelengths, and this is interpreted as expansion of space-time. DYF–PUT does not attempt to rewrite these equations, but it points to a simpler organising principle behind them: **"Redshift may be the optical footprint of shifting time-density between Lokas."**

When light travels from a faster field (higher Loka) into a slower one (our Bhu-band), its **frequency appears reduced** and its **wavelength stretched**, even though its intrinsic emission in its own frame remains constant. In that sense, the K-factor emerging from Puranic arithmetic is inviting to be interpreted as a **time-dilation ratio** between the cosmic Kalpa frame and the geological frame. The same K that reconciles 46.656 Gyr with 4.74336 Gyr also fits the Sun's Kalpa-equivalent, suggesting that **Puranic narrators encoded this compression deliberately, but in the language of waters, Rishis, and Kalpas instead of tensors and field equations.**

In DYF-PUT, Density = Time-Frequency (f_t)

Bhagavata Purana 3.11 describes Time (Kala) as:

- **"Animiso Vibhuh" — the unmoving substrate**,
- whose **density regulates motion** at all levels of existence.

In DYF-PUT, this becomes the **time-frequency of a Loka**:

$$\rho_t \propto f_t,$$

where:

- **Fast f_t → sparse field → higher velocity ceilings → short wavelengths**
- **Slow f_t → dense field → lower velocity ceilings → long wavelengths**

At this stage, DYF–PUT **does not claim any form of replacement for the Friedmann formalism**. The exact translation between:

- **cosmological energy density** (as used in general relativity), and

- **time-density K** (as derived from Manvantara and Kalpa harmonics)

is still under exploration and will almost certainly require collaboration with professional cosmologists. What can be stated firmly is:

1. The arithmetic of the Puranas *forces* a consistent compression ratio K between cosmic and geological Kalpa.
2. The same K connects multiple rungs of the Loka ladder (DU, YU, VU, Bhuva-Kalpa, cosmic Kalpa).
3. The physical meaning of this K fits naturally with the idea that **time itself is the primary field**, and that what we call "expansion", "gravity" or "redshift" are different ways of experiencing its **density gradient**.

Thus, Section 6.4 does not "solve" cosmology pr prove causality of time dilation by itself; rather, it **marks the interface** where Puranic time-density, encoded through 360-based harmonics and the K constant, begins to touch the concepts of **Hubble flow, cosmic age and redshift**. The precise equations belong to the future works and explorations if this is taken seriously. The present study's role is to show that the Puranic system already contains a **logically consistent time-compression map**, and that this map aligns strikingly with modern values once the DYF constants are applied.

6.5 Consolidated Chronometric Ladder

For clarity, the main units derived in DYF–PUT are:

Table 6.3: Units derived in DYF PUT from Manvantara Geological calculations:

Level	Unit	Duration	Domain	Function
Micro-Hora	MH	1,525 years	Solar perceptive	Base solar harmonic
Day Unit	DU	36,600 years	Resonant 360	Solar "day-equivalent"
Manvantara Unit	MU	9.2232 Myr	Geological–psychological	Manu unit - Epochal resonance unit
Manu Epoch	(71 MU)	≈ 654 Myr	Geological–psychological	One Manvantara (Possible Manu's reign)
Sun's Day (YU)	YU	13.176 Myr	Galactic	Galactic nucleus "day-equivalent"
Brahma-Kalpa	VU	4.74336 Gyr	Geological–Galactic	Sveta Varaha Kalpa (Earth-bearing epoch)
½ Kalpa	½ Kp	129.6 Myr	Halfway point on Sun's orbit	Puranic description as Kalpa as another half is frozen
Kalpa	Kp	259.2 Myr	Solar–Galactic	Sun's orbit around Galactic centre
Brahma Kalpa (Cosmic)	Bp	46.656 Gyr	Cosmic	Visible Co-moving radius of universe after Big Bang
Brahma-Year	By	93.312 Gyr	Cosmic	Universal light-horizon cycle
Parardha	–	237.168 Gyr	Supra-cosmic	Half-life of Brahma (outer governing frame)

6.6 Synthesis

When all of this is placed back against observation, several alignments stand out:

- The **259.2 Myr** Kalpa (Kp) lies inside accepted estimates for the Sun's galactic orbit (225–250 Myr).
- The **4.7–4.8 Gyr** geological Kalpa matches Earth's radiometric age (~4.54 Gyr) and the story of Sveta Varaha — the Earth raised, stabilised, and made habitable.
- The **14.07 Gyr** triple-Kalpa sequence matches the ΛCDM age of the universe (13.8–13.9 Gyr) within an expected small pre-field margin.
- The **93.312 Gyr** Brahma-year matches the observable **universe's diameter** in light-years, once we view redshift as a time-field effect rather than as metric expansion.
- Hence, ***K = 9.836*** is a time density gradient between Jana and Makar extending to the below Lokas.

In this reading, **every Manvantara is a geological–psychological chapter of Earth**, every Kalpa a larger galactic or planetary cycle, and every Brahma-day a universal oscillation. The same constant **360**, combined with the Puranic **71 to 1000** structure, generates the full hierarchy from 1,525-year Horas to 237.168-Billion-year Parardhas. This shows an encoded **ratio-based clockwork**, where human history, climate cycles, stellar motion, and cosmic age are all nested in one living chronometry: the heartbeat of *Kala*.

7. Discussion

The DYF-PUT hypothesis treats Kala not as duration but as *density*: a flowrate of the universal substratum from which motion, gravitation, light, and perception arise. Bhagavata Purana 3.11 repeatedly asserts that time "moves all things yet is moved by none," a definition that is mathematically consistent with a **temporal field** rather than spatial mechanics. This section extends the implications of the harmonic architecture established earlier.

7.1 Gravitation as Temporal Geometry

In DYF-PUT gravitation emerges not from mass attracting mass, but from **differences in time-density** between overlapping Loka-bands. Every object maintains a native **Speed Proportion (SP)**:

$$SP = \frac{c}{v_{\text{top}}}$$

A body drifting into a denser or rarer field must adjust SP to remain coherent. That adjustment appears as gravitational acceleration.

- Earth's SP ≈ **10,080**
- Sun's SP ≈ **1,296**, giving one "solar tick" as 1296/360 = **3.6** inside lower domains

Moving from rotation-scale to orbit-scale introduces a /1000 contraction (an expected/assumed transform for rotation to orbital dynamics). Thus:

$$\frac{10{,}080}{1000} = 10.08 \times (1 - 0.036) \approx 9.72 \text{ m/s}^2$$

This closely matches Earth's surface gravity (9.806 m/s²). Escape velocity similarly emerges from proportional sums:

$$10{,}080 + 1{,}296 = 11{,}376$$

which corresponds to √(2 g r) in classical gravitation.

Gravity therefore becomes: **a temporal adjustment process ensuring SP-synchronisation across adjacent fields**, rather than an independent force. This perspective arises from the fact that every orbit is precisely the SP-compensated trajectory that keeps a body stable in its parent time-band.

7.2 Cross-Cultural Evidence of DYF Time harmonics – Mayan Civilization

One of the most striking confirmations of the DYF time-harmonic structure comes from a completely

independent civilisation: the **ancient Mayans**. Until recently, I interpreted "Maya Sura" only as the **ruler of Talatala Loka** described in Puranic narratives — an asura-engineer, brother of Rāvaṇa, governing the deeper subterranean domains where time flows at high frequency. However, the resonance became mathematically undeniable when I examined the **Mayan calendrical system** through the lens of the **DYF Cross-Tri-Loka Time Ladder**.

In the corrected Maha–Jana–Tapo frame of the time ladder, **Sutala** (the node linked with Mahabali) resonates with a **1-year cycle**. In Kerala, Mahabali's ascent is celebrated every year as **Onam** — a cultural memory of Sutala Loka's temporal rhythm. One Tri-Loka below Sutala lies **Talatala**, ruled by Mayan; therefore, Talatala should exhibit **day-based** rather than year-based temporal cycles. The Mayan civilization follows exact logic in their calendar where Mayan depicted as Ruler of Talatala Loka till now considered Mythology follows their solar calendar (The BakTun System) in DYF Language mirroring their time density variant day basis (TalaTala) when DYF reflects it in Sutala (1 Year) Bali Domain.

Civilizations preserved DYF knowledge in their calendar which will be revealed in my further studies. This is precisely what the Mayan civilisation preserved:

- **Kin** = 1 day
- **Unial** = 20 days
- **Tun** = **360 days**
- **Katun** = 7,200 days (20 Tun)
- **Baktun** = **144,000 days** (20 Katun)

This structure is **identical** to the DYF harmonic ladder in compressed form.

The key equivalences are remarkable:

- **1 Tun = 360 days** → exact match to one Deva-day in the DYF – 360 years
- **7,200** (Katun) = **7200 years** in the Yuga midpoint sandhi used in *DYF-PT (2025)*
- **144,000** (Baktun) = **10 × DYFC** (144,000 years), the expanded cycle used in DYF
- The entire system encodes **360-based stepped recursion**, exactly mirroring the Loka-band compression from Maha–Jana–Tapo into **Talatala**.

The Mayan cosmology therefore represents the **Talatala-band of time**, where temporal flow is approximately 360× faster than the Bhu-band. Their day-centred system is not an accident — it is an independent preservation of the identical **field harmonic** embedded in the Puranas. This convergence cannot be dismissed as coincidence; it demonstrates an **ancient cross-cultural recognition of the same universal temporal structure**.

The mapping becomes even clearer when placed alongside the DYF Cross-Tri-Loka Time Ladder:

Table 7.2.1 The Loka Nodes seen in Cross Tri-Loka ladder at Mahas-Tapo Time frame

Level	Mahas–Jana–Tapo	Loka nodes	Mahas-Jana-Tapo	Loka nodes
Revolution	1 human year	Sutala	1 day	Talatala
Divya Varsa	360 human years	Bhu	360 days	Sutala
Yuga	14,400 human yrs	Bhuva	14,400 days	Atala
Mahayuga	144,000 yrs	Svah	144,000 days	Bhu

Across these bands, the **Mayan units align exactly with the Talatala compression ratios of day-wise denotions** and the compression exactly is reset at every 144000 days which is the same dynamics used in

DYF in terms of years as we are in the human or Bali band, confirming their calendrical system derives from the same **360-based universal harmonic** detailed in Bhagavata Purana 3.11.

Synthesis:

The Mayan civilisation preserved the *Talatala-scaled shadow* of the same time-field architecture described in the Puranas derived through DYF (Swaminathan S, 2025). This is the first clear cross-cultural example that independently suggests the coherence of the **Dasa-Yuga Framework (DYF)** harmonics in global ancient timekeeping, revealing a shared ancient intuition of Time as a multi-layered, fractal field rather than a linear coordinate. The ratio and logic are 100% harmonious to synthesised DYF-PUT hypothesis strongly suggesting that the same might be predating known history identified with my research in DYF…

8. Conclusion

The Dasa-Yuga Framework – Lokas Study – A Puranic Unified Time (DYF-PUT) Field Hypothesis demonstrates that the harmonic arithmetic embedded in *Shrimad-Bhagavatam* (3.11) and allied Siddhanta is not poetic allegory but a functional physics of proportion. When interpreted through the lens of a unified time-field, the ancient 360-based system reveals itself as a complete dynamical architecture linking atoms, planets, stars, galaxies, and the cosmic horizon within a single hierarchy of temporal density.

From a single invariant — **360** — the model reconstructs:

- the Sun's galactic revolution (**259.2 Myr**),
- Earth's formation epoch within a geological Kalpa (**~4.58 Gyr**),
- the Brahma-year (**93.312 Gyr**), consistent with the observable-universe diameter,
- and the three velocity shells (**c**, **c/360**, **c/129600**) that match photonic, galactic (~830 km/s), and planetary (~2.3 km/s) scales.

Distances in the solar system, when expressed in light-travel seconds, fall in clean multiples of 360, with Venus, Earth, Jupiter, and even the heliopause (≈1 light-day) lying on the same harmonic ladder. Space and time cease to appear as separate: **distance is delayed time**, and **motion is the unfolding of Kala through different densities of the unified field**.

Under this interpretation:

- **Gravity** becomes SP-synchronisation between adjacent time-density bands.
- **Redshift** can be the stretching of fast-time radiation entering slower fields.
- **Anisotropies** become signatures of Loka-level differentials rather than violations of cosmic isotropy.
- **CMB** becomes the visible signature of a higher-density luminous domain (Satya/Tapo band).
- **Galactic IR/X-ray bands** fall one rung below CMB (CMB/360), confirming the Makar band.
- **Solar visible–UV emissions** fall at CMB/129600, completing the three-tier spectral ladder.

The Puranic metaphors gain precise physical meaning:

- **Brahma** = outward pulsation of the field (expansion of temporal density),
- **Vishnu** = stabilisation (harmonic equilibrium across bands),
- **Siva** = compression (return to denser time fields),
- **Lakshmi/Light** = the perceptual constant that reveals temporal gradients as wavelength.

The concept of **Kalpa** — often dismissed as mythological — resolves cleanly into two domains: A **cosmic Kalpa** (~259.2 Myr × 360 = 93.312 Gyr) and a **geological Kalpa** (~4.74336 Gyr × 3 ≈ 14 Gyr), separated by a factor arising from **time-density gradients** (K) between Loka bands. The long-standing puzzle of "humongous Kalpa years" dissolves: both numbers describe the same harmonic, seen from different temporal densities.

Cross-civilisational evidence reinforces the universality of this structure. The Mayan calendar (Kin → Tun → Katun → Baktun) mirrors the DYF ladder in compressed form, with **144,000** as its fundamental constant — precisely **10×DYFC**. South Indian timekeeping retains the 60-year Bhu-band and the annual Sutala-cycle (Onam), perfectly mapping to the JT-triad of the Loka ladder.

DYF-PUT therefore restores continuity between ancient and modern cosmology. It shows that the Bharatiya civilisation did not guess the structure of time — it *remembered* it. What modern physics expresses through calculus, differential geometry, and relativistic metrics, the ancients expressed through harmonics, metaphors, and rotational cycles. The universe, in this reading, is not a cold void scattered with accidental matter, but a **temporal mandala** tuned to a single frequency: **360**.

This hypothesis does not contradict physics; it extends it. It gives testable predictions, measurable correspondences, and a coherent interpretive bridge between Puranic chronology and astrophysical observation. Above all, it reaffirms that the cosmology encoded by the ancients was not mystical hyperbole — it was a calibrated science of Time. **The sages did not merely observe the cosmos; they understood its rhythm.** And through DYF-PUT, that rhythm becomes visible again.

Bibliography

Primary Sanskrit and classical Sources

1. *Shrimad-Bhagavatam*, Canto 3, Chapter 11 (Time, Kala, Yuga, Kalpa arithmetic).
2. *Vishnu Purana*, Book 1 (Kalpa structure, Manus, cosmic days).
3. *Brihat Parashara Hora Sastra* (Vimsottari, Manvantara implications).
4. **Śrī Sūktam** — "Hiranya Varnam" (optical reference for Lakṣmī).

Astronomy & Astrophysics

5. Monari, G. et al. (2018). *Milky Way rotation and systemic drift*.
6. Bland-Hawthorn, J. & Gerhard, O. (2016). *The Sun's Galactic Orbit*.
7. Planck Collaboration (2018). *Planck 2018 results — CMB, ΛCDM constraints*.
8. Kogut, A. et al. (1993). *COBE / CMB dipole and Local Group motion.*
9. Fixsen, D. et al. (1996). *The CMB spectrum measured by FIRAS.*
10. Goicoechea, J.R. et al. (2013). *Galactic Centre IR observations.*
11. Ginzburg, V. & Zheleznyakov, V. (1958). *Solar corona radiation physics.*
12. Del Zanna, G. & DeLuca, E. (2018). *Solar EUV and X-ray emission.*
13. Freedman, W. et al. (2019). *Hubble Constant recalibration and distance ladder.*

Cosmological Modelling & Relativity

14. Einstein, A. (1916). *The Foundation of the General Theory of Relativity*.
15. Friedmann, A. (1922, 1924). *On the curvature of space* — foundational equations.
16. Riess, A. et al. (2016–2022). *Hubble tension observations*.
17. NASA / WMAP Science Team — *CMB peak wavelength and ΛCDM parameters.*

Cross-Civilisational Timekeeping

18. Coe, M. – *The Maya* (Mayan calendrics: Kin, Tun, Katun, Baktun).
19. Aveni, A. – *Empires of Time* (ancient calendrical mathematics).
20. Narayanan, M. G. S. – *Kerala Temple Traditions* (Mahābali–Onam chronology).

Geology & Planetary Science

21. Dalrymple, G. B. – *The Age of the Earth*.
22. Gradstein et al. – *Geologic Time Scale 2020*.

Additional Physical Sources Used in CMB Colour/Hue Derivations

23. Derkachova, A., Kolwas, K., & Demchenko, I. (2015). *Optical properties of gold nanoparticles.*
24. Schmidbaur, H. (2005). *The Colour of Gold: Relativistic Effects in Chemistry.*
25. Mukai, T., Narukawa, Y., Nakamura, S. et al. (2015). *Blue/violet LED emission physics.*
26. Vandewalle, G. et al. (2007). *Melanopsin sensitivity to blue light.*
27. Swaminathan S (2025), The Dasa–Yuga Framework (DYF): Reconciling Puranic Yuga Cycles with Astronomical Time Scales via Vimsottari Dasa Mapping (0.9). Zenodo. https://doi.org/10.5281/zenodo.17247934