Śrīmad-Bhāgavatam

Canto Three

With the
Sārārtha-darśinī commentary

by
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Canto Three – Chapter Eleven

Description of Time

Calculation of Time, from the Atom

Section-I

Calculation of divisions of time from divisions of distance (1-15)

|| 3.11.1 ||

maitreya uvāca
caramaḥ sad-viśeṣāṇām
aneko 'saṁyutaḥ sadā
paramāṇuḥ sa vijñeyo
nṛṇām aikya-bhramo yataḥ

Maitreya said: The paramāṇu is understood (**paramāṇuḥ sa vijñeyo**) to be the smallest particle of the material elements (**sad viśeṣāṇām caramaḥ**). There are innumerable such particles (**anekah**) and they are always uncombined (**asaṁyutaḥ sadā**). Because of their small size, men are mistaken, identifying them with small particles they can see (**nṛṇām aikya-bhramo yataḥ**).

Finding the nature of subtle time difficult to describe, Maitreya first describes the division of matter.

distance

The smallest division (**caramaḥ**) of parts (**viśeṣānām**) of material elements (**sat**) is called the paramāṇu.

Why is **carama** in the singular, indicating only one particle when there are many?

Though the particles are many, to understand about the subtle nature of time, it is appropriate to isolate one particle and thus the singular is used.

But still the one particle should by its nature be either combined or uncombined.

The verse therefore says it is not joined.

This particle is understood to be the **paramāṇu**.

This means that it cannot be seen.

Then what is its size?

From these particles which arise, men make a mistake concerning what constitutes a single particle.

One perceives the very small particles of light which are seen in the rays of sun shining through a lattice window and thinks "Here is one particle, here is another fine particle."

A sixth part of that light particle is a **paramāṇu**, but it is invisible.

Men are mentioned because some small insects, the size of a trasareṇu, can see this particle.

|| 3.11.2 ||

sata eva padārthasya
svarūpāvasthitasya yat
kaivalyaṁ parama-mahān
aviśeṣo nirantaraḥ

The totality (**kaivalyaṁ**) of all the paramāṇus (**satah eva padārthasya**) which exist separately before dissolution (**yat svarūpa avasthitasya**) is called parama-mahān (**parama-mahān**), with no examination of particular qualities (**aviśeṣah**) and separate objects (**nirantaraḥ**).

The paramāṇu has been described as the smallest particle.

Now the greatest state of matter is described.

The state of oneness (**kaivalyam**) of the paramānu, of the particles of matter (**sataḥ**), which is its state previous to transformation into the condition of pralaya, is called **parama-mahān**.

How can all objects which are mutually different with various qualities become one?

There is no sense of distinct qualities (**aviśesaḥ**) and no sense of different particles or objects (**nirantaraḥ**).

It is the totality of all matter.

That is the meaning of **parama-mahān**.

|| 3.11.3 ||

evaṁ kālo 'py anumitaḥ
sauḳṣmye sthaulye ca sattama
saṁsthāna-bhuktyā bhagavān
avyakto vyakta-bhug vibhuḥ

O best of men (**sattama**)! Just as matter (**evaṁ saṁsthāna**) has been understood to have very fine and very huge states (**sauḳṣmye sthaulye ca anumitaḥ**), time should also be understood to have such divisions (**kālaḥ apy anumitaḥ**). Pervading the states of paramāṇu and parama-mahān by his śakti (**saṁsthāna-bhuktyā**), the Lord, though invisible (**bhagavān avyaktaḥ**), delimits this material realm (**vyakta-bhug**) and pervades it (**vibhuḥ**).

Time can be understood in a manner similar to the existence of very fine and very great particles of matter.

How do these extreme dimensions arise?

By pervading (**bhuktyā**) through the finest and greatest states of matter (**samsthāna**) by his śakti, the Supreme Lord, by nature unseen (**avyaktah**), limits the whole universe (**vyakta-bhuk**).

He then pervades it all (**vibhuh**).

Vibhuḥ can also mean that he is skilful in matters of creation and other acts.

| Paramāṇu (T) = | Paramāṇu (D) / Velocity of sun m/s

|| 3.11.4 ||

sa kālaḥ paramāṇur vai
yo bhuṅkte paramāṇutām
sato 'viśeṣa-bhug yas tu
sa kālaḥ paramo mahān

The time expended for the sun to go distance of one paramāṇu (yah bhuṅkte paramāṇutām) is called a paramāṇu of time (sah kālaḥ paramāṇuh) and the time expended from one dissolution to the next (yas tu sato aviśeṣa-bhug) is called parama-mahān time (sah kālaḥ paramo mahān).

This verse explains the phrase “by pervading the smallest and largest elements (**saṁsthāna-bhuktyā**).”

That time which elapses for the sun to pass over the form of the paramāṇu (**paramāṇutām**) is called the paramāṇu time.

As will be understood from the explanation in relation to the planets and constellations in verse 13, whatever time it takes the sun to cross over a paramāṇu is called a paramāṇu of time, or the smallest division of time.

That time which pervades the whole material realm without distinction (**aviśeṣa-bhuk**)--time in the form of the sun, by expenditure of years and yugas, starting with the creation and ending with dissolution of the universes--is called parama-mahān time.

Since there is an equivalent name given to the divisions of time and the material particles of paramāṇu, anu and trasareṇu, there are also equivalent name given to the time and the material substance called parama-mahān.

However there is difference in the terminologies and sizes of time and objects between these extremes.

|| 3.11.5 ||

aṇur dvau paramāṇū syāt
trasareṇus trayaḥ smṛtaḥ
jālārka-raśmy avagataḥ
kham evānupatann agāt

Two paramāṇus make an aṇu (**aṇur dvau paramāṇū syāt**). Three aṇus make a trasareṇu (**trasareṇus trayaḥ smṛtaḥ**). The trasareṇu is perceived by the eye (**avagataḥ**), when the sun rays (**arka-raśmy**) enter through the lattice (**jāla**). One can see it moving up towards the sky (**kham eva anupatann agāt**).

Two paramāṇus makes one aṇu.

Three aṇus make one trasareṇu.

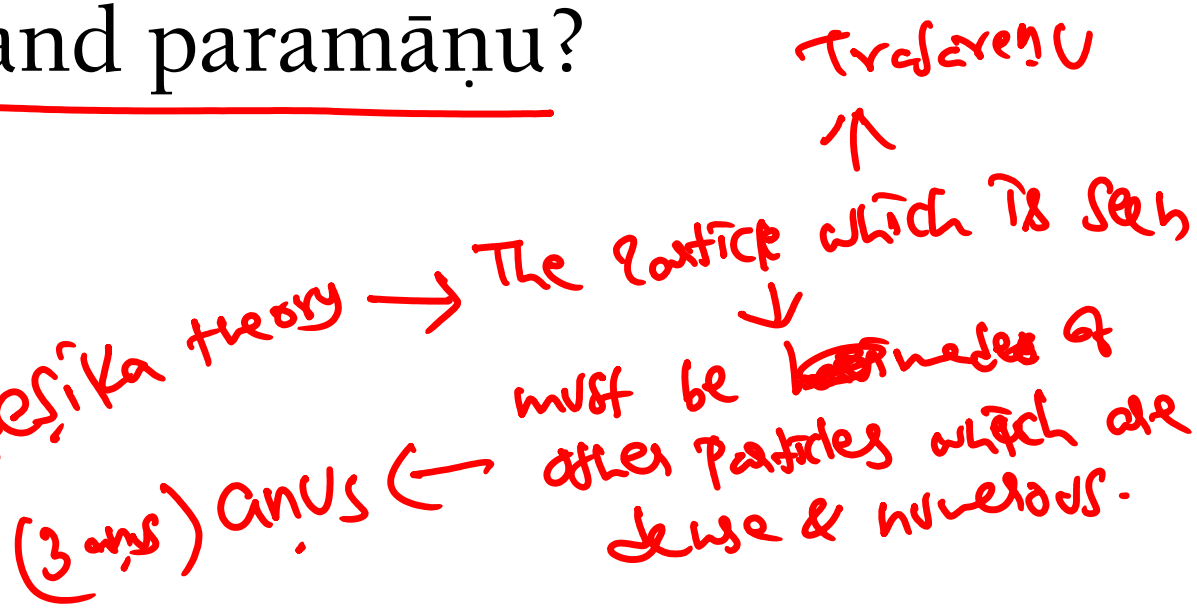
The trasareṇu can be perceived.

It can be known as it follows after the air because of its lightness, in the rays of the sun entering through a lattice.

Another version has **na tu gām agāt**: it does not go to the earth. It remains moving about.

What is the evidence of the aṇu and paramāṇu?

The trisareṇu is the evidence.



It is a common rule that without having dense and numerous parts, the possessor of the parts cannot be seen.

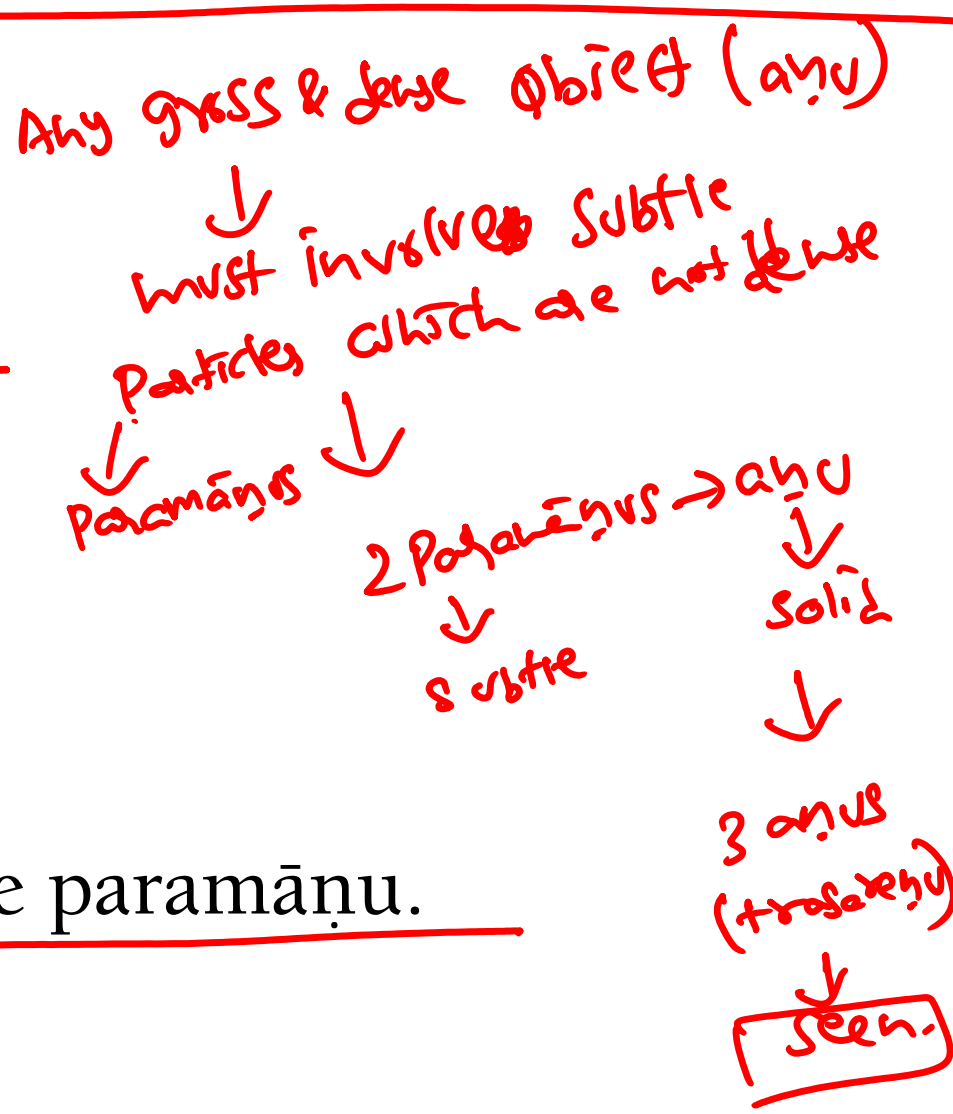
The trisareṇu is the possessor of parts, with three gross aṇus as its parts.

However the paramāṇus are not gross at all.

Solidity involves many objects.

Thus the grossness of the anu depends on the paramāṇu.

This proves the existence of the paramāṇu.



The visibility of the trisareṇu is not possible without solid parts. (४१७)

Making the aṇu solid requires only two paramāṇus, not three or four, using the logic of accepting the first possibility.

Just as Jaimini argues that three partridges are the minimum requirement for sacrifice, *[Note: Kapiñjala-nyāya]* so a minimum of three aṇus produce density so that the trasareṇu can be seen

|| 3.11.6 ||

trasareṇu-trikaṁ bhuṅkte
yaḥ kālaḥ sa truṭiḥ smṛtaḥ
śata-bhāgas tu vedhaḥ syāt
tais tribhis tu lavaḥ smṛtaḥ

The time it takes for the sun to pass over three trasareṇus is called a truṭi (trasareṇu-trikaṁ bhuṅkte yaḥ kālaḥ sa truṭiḥ smṛtaḥ). A hundred truṭis make one vedha (śata-bhāgas tu vedhaḥ syāt). Three vedhas make one lava (tais tribhis tu lavaḥ smṛtaḥ).

Three trasareṇus make one truṭi.

According to Surya-siddhānta, a truṭi is defined as the time taken for a needle to pierce a lotus leaf.

One hundred truṭis make a vedha.

Three vedhas make a lava.

|| 3.11.7 ||

nimeṣas tri-lavo jñeya
āmnātas te trayaḥ kṣaṇaḥ
kṣaṇān pañca viduḥ kāṣṭhāṁ
laghu tā daśa pañca ca

Three lavas make one nimeṣa (**nimeṣas tri-lavo jñeya**). Three nimeṣas make one kṣaṇa (**āmnātas te trayaḥ kṣaṇaḥ**). Five kṣaṇas make one kāṣṭhā (**kṣaṇān pañca viduḥ kāṣṭhāṁ**). Fifteen kāṣṭhās make one laghu (**laghu tā daśa pañca ca**).

Āmāntāḥ means “is called.” Tāh means kāṣṭhāḥ.

|| 3.11.8 ||

laghūni vai samāmnātā
daśa pañca ca nāḍikā
te dve muhūrtaḥ praharaḥ
ṣaḍ yāmaḥ sapta vā nṛṇām

Fifteen laghus make one nādīkā (laghūni vai samāmnātā daśa pañca ca nāḍikā). Two nādikās make one muhūrta (te dve muhūrtaḥ). Six or seven nāḍikās make a prahara or yāma for humans (praharaḥ ṣaḍ yāmaḥ sapta vā nṛṇām).

Six or seven nāḍikās make a prahara or yāma.

Day and night are divided into four parts.

When the day or night is short then there are six nāḍikas in a prahara.

When the day or night is long then there are seven nāḍikas in a prahara.

This does not include the nāḍikā at the two sandhyas.

Because it is impossible to list all the differences for each day of the year, the time is not fixed.

॥ 3.11.9॥

dvādaśārdha-palonmānaṁ
caturbhiś catur-aṅgulaiḥ
svarṇa-māṣaih kṛta-cchidraṁ
yāvat prastha-jala-plutam

The measuring pot (**unmānaṁ**) for one nāḍikā, or danda, can be prepared with a six-pala-weight [fourteen ounce] (**dvādaśārdha-pala**) pot of copper, in which a hole is bored (**kṛta-cchidraṁ**) with a gold probe weighing four māṣa (**svarṇa caturbhih-māṣaiḥ**) and measuring four fingers long (**catur-aṅgulaiḥ**). When the pot is placed on water, the time before the water overflows in the pot is called one daṇḍa or nāḍikā (**yāvat prastha-jala-plutam**).

This verse defines the length of the nāḍikā.

Unmānam means that by which something is measured. Here it refers to a copper pot weight of six palas.

Sixty-four māśas make one pala.

One should make a hole in the pot using a gold needle four fingers in length and weighting four māṣas.

Five guñjas make one māṣa.

The time it takes for one prastha of water to enter the vessel and fill it is a nāḍikā.

If the weight of the vessel is more or the hole is larger, the pot will sink more quickly.

If the vessel is lighter and the hole smaller, the pot will sink more slowly.

Thus the exact weight of the pot and the size of the hole are specified.

If the needle is made of silver and the same length and weight, the hole will be bigger.

|| 3.11.10||

yāmāś catvāraś catvāro
martyānām ahanī ubhe
pakṣaḥ pañca-daśāhāni
śuklaḥ kṛṣṇaś ca mānada

For the human beings, there are four yāmas in the day and four yāmas in the night (**yāmāś catvāraś catvāro martyānām ahanī ubhe**). There are fifteen days in the waxing phase of the moon (**śuklaḥ pakṣaḥ pañca-daśa ahāni**), and fifteen days in the waning phase of the moon (**kṛṣṇaś ca mānada**).

Ahanī means day and night.

|| 3.11.11-12||

tayoḥ samuccayo māsaḥ
pitṝṇāṁ tad ahar-niśam
dvau tāv ṛtuḥ ṣaḍ ayanaṁ
dakṣiṇaṁ cottaraṁ divi

ayane cāhanī prāhur
vatsaro dvādaśa smṛtaḥ
saṁvatsara-śataṁ nṝṇāṁ
paramāyur nirūpitam

The two fortnights are one month (tayoḥ samuccayo māsaḥ). This total is a day and night for the Pitṛs (pitṝṇāṁ tad ahar-niśam). Two months make a season (dvau tāv ṛtuḥ). Six months makes a southern half year and northern half year (ṣaḍ ayanaṁ dakṣiṇaṁ ca uttaraṁ). Two half years make a day and night for the devatās in heaven (divi ayane cāhanī prāhur). Twelve months make a year (vatsaro dvādaśa smṛtaḥ). One hundred years is described as the duration of life for human beings (saṁvatsara-śataṁ nṝṇāṁ paramāyur nirūpitam).

Divi is connected the second verse.

Two half years make one day and night for the devatās in heaven (**divi**).

Twelve months make a year.

॥ 3.11.13॥

graharkṣa-tārā-cakra-sthaḥ
paramāṇv-ādinā jagat
saṁvatsarāvasānena
paryety animiṣo vibhuḥ

The sun, a portion of the Supreme Lord in the form of time (**animiṣah vibhuḥ**), situated in the zodiac belt (**cakra-sthaḥ**) among the planets, twenty-seven constellations and other constellations (**graham rkṣa-tārā**), travels in a circle through the universe (**paryety jagat**) with measurements of time from the paramāṇu to the full year (**paramāṇv-ādinā saṁvatsara avasānena**).

This verse explains that the sun decreases the life span by rising and setting.

The sun is situated in the circle of the planets such as the moon, the constellations such as Aśvini, and the stars, meaning the other constellations not included in the twenty-seven constellations.

The sun, a portion of the Lord (**vibhuḥ**), the form of time (**animiṣaḥ**), travels around the universe.

|| 3.11.14||

saṁvatsarah parivatsara
iḍā-vatsara eva ca
anuvatsaro vatsaraś ca
viduraivaṁ prabhāṣyate || 14 ||

O Vidura (**vidura!**)The sun's full revolution through the zodiac belt is called a (**saṁvatsara**). The full revolution of Jupiter through the zodiac is called (**parivatsara**). The year for twenty-seven constellations is called a (**vatsara**). The lunar year is called an (**anuvatsara**). The remaining constellations have a year called (**idā-vatsara**).

The planets, constellations and other constellations have been described.

This verse gives the different names of the years for the orbiting sun and the other heavenly bodies.

One year for the sun is called a **saṁvatsara** (365.25 days).

One year for Jupiter is called a **parivatsara** (11.87 years).

One year for the moon is called an **anuvatsara** (327.6 days).
[Note: A lunar year is twelve lunar months from full moon to full moon.]

Since there is no orbital motion of the constellations time is measured using the moon's movements.

For the twenty-seven constellations, twelve months of twenty-seven days makes a **vatsara** (324 days).

Because there is no measuring system in relation to the remaining constellations, they have a year called **idā-vatsara** with solar months of thirty days (total of 360 days).

॥ 3.11.15॥

yaḥ sṛjya-śaktim urudhocchvasayan sva-śaktyā
puṁso ’bhramāya divi dhāvati bhūta-bhedaḥ
kālākhyayā guṇamayaṁ kratubhir vitanvaṁs
tasmai baliṁ harata vatsara-pañcakāya

The sun (**yaḥ**), made out of particular material elements (**bhūta-bhedaḥ**), moves in the sky (**divi dhāvati**), displaying with force (**urudhā ucchvasayan**) the ability of plants to germinate (**sṛjya-śaktim**) through his energy of time (**sva-śaktyā kālākhyayā**), and producing material results (**vitanvan guṇamayaṁ**) by means of ritual actions according to proper calculation of time (**kratubhih**), in order to dispel illusion of men (**puṁso abhramāya**). O performers of dharma! You should make offerings to the sun for promoting the five types of year (**tasmai baliṁ harata vatsara-pañcakāya**).

One may ask the purpose of having five different types of year.

The religious acts accomplished by the various calculations of year are described in this verse.

The sun, a particular form of the elements (**bhūta-bhedaḥ**) in the form of a ball of fire, moves in the sky (**divi**), revealing (**uchvasayan**) strongly in the form of time (**svaśaktyā**) the ability of plants to germinate.

Why does it move in the sky?

He increases the results, such as attainment of Svarga (**guṇamayam**) of those with material desires in order to destroy confusion for men, by actions performed with knowledge of the correct time for those actions, according to the saṁvatsara and other types of year.

O followers of dharma! You should offer articles of worship such as arghya (**balim**) to the sun in order to set in motion the five types of year.