

THE ORBITS OF THE PLANETS

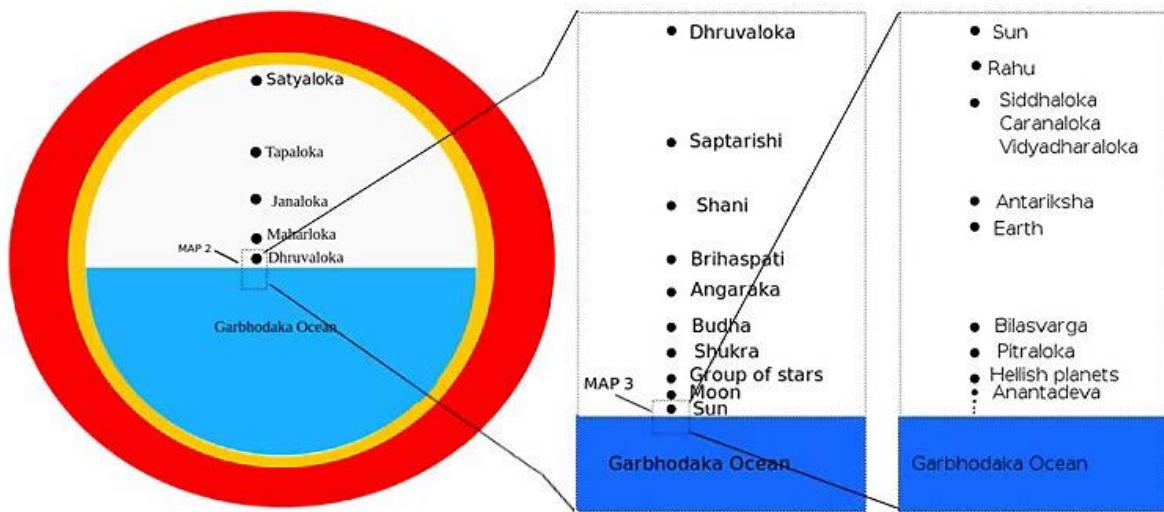
This scale drawing shows a basic cross-section of the universe in which we live. For simplicity, the planets are represented in a straight line, one above another, although the Bhāgavatam describes that the sun, the moon and the other planets are actually revolving around the polestar in their own orbits and at various speeds. These planets are revolving in obedience to the will of the Supreme Personality of Godhead, for the great machinery of the universe is all working according to His order. The area between the planet Saturn and the Garbhodaka Ocean has also been depicted in a larger scale in the box on the right of the illustration. The drawing does not attempt to represent accurately the relative sizes of the planets, nor does it show the full depth of the Garbhodaka Ocean — 249,800,000 yojanas (nearly half the universe). The total height of the universe, from top to bottom, is 510,000,000 yojanas. This is but one of the innumerable universes in the material world, which constitutes only a small fraction of the creation of the Supreme Personality of Godhead. Since one cannot understand the details of even one universe in the vast material creation, certainly one cannot estimate the expansiveness of the spiritual world.

THE ORBITS OF THE PLANETS

Description and Quotes from Śrīmad-Bhāgavatam

SUMMARY - SB Canto 5: Chapter Twenty-two

Cosmic Structure



Above the rays of the sunshine by a distance of 100,000 yojanas [800,000 miles] is the moon, which travels at a speed faster than that of the sun. In two lunar fortnights the moon travels through the equivalent of a samvatsara of the sun, in two and a quarter days it passes through a month of the sun, and in one day it passes through a fortnight of the sun.

The moon is situated 100,000 *yojanas* above the rays of the sunshine. Day and night on the heavenly planets and Pitṛloka are calculated according to its waning and waxing.

Above the moon by a distance of 200,000 *yojanas* are some stars, and above these stars is Śukra-graha (Venus), whose influence is always auspicious for the inhabitants of the entire universe. Above Śukra-graha by 200,000 *yojanas* is Budha-graha (Mercury), whose influence is sometimes auspicious and sometimes inauspicious. Next, above Budha-graha by 200,000 *yojanas*, is Āṅgāraka (Mars), which almost always has an unfavorable influence.

Above Āṅgāraka by another 200,000 *yojanas* is the planet called Br̥haspati-graha (Jupiter), which is always very favorable for qualified *brāhmaṇas*. Above Br̥haspati-graha is the planet Śanaiścara (Saturn), which is very inauspicious. Above Saturn is a group of seven stars occupied by great saintly persons who are always thinking of the welfare of the entire universe. These seven stars circumambulate Dhruvaloka, which is the residence of Lord Viṣṇu within this universe.

SUN

The sun is situated [vertically] in the middle of the universe, in the area between Bhūrloka and Bhūvarloka, which is called antarikṣa, outer space. The distance between the sun and the circumference of the universe is twenty-five *koti* yojanas [two billion miles]. (sb/5/20/43)

The word *koti* means ten million, and a *yojana* is eight miles. The diameter of the universe is fifty *koti yojanas* (four billion miles). Therefore, since the sun is in the middle of the universe,

the distance between the sun and the edge of the universe is calculated to be twenty-five *koti yojanas* (two billion miles).

Śukadeva Gosvāmī continued; My dear King, as stated before, the learned say that the sun travels over all sides of Mānasottara Mountain in a circle whose length is 95,100,000 yojanas [760,800,000 miles]. On Mānasottara Mountain, due east of Mount Sumeru, is a place known as Devadhānī, possessed by King Indra. Similarly, in the south is a place known as Saṁyamanī, possessed by Yamarāja, in the west is a place known as Nimlocanī, possessed by Varuṇa, and in the north is a place named Vibhāvarī, possessed by the moon-god. Sunrise, midday, sunset and midnight occur in all those places according to specific times, thus engaging all living entities in their various occupational duties and also making them cease such duties. (sb/5/21/7)

MOON

Above the rays of the sunshine by a distance of 100,000 yojanas [800,000 miles] is the moon, which travels at a speed faster than that of the sun. In two lunar fortnights the moon travels through the equivalent of a saṁvatsara of the sun, in two and a quarter days it passes through a month of the sun, and in one day it passes through a fortnight of the sun. (SB 5.22.8)

When we take into account that the moon is 100,000 *yojanas*, or 800,000 miles, above the rays of the sunshine, it is very surprising that the modern excursions to the moon could be possible. Since the moon is so distant, how space vehicles could go there is a doubtful mystery. Modern scientific calculations are subject to one change after another, and therefore they are uncertain. We have to accept the calculations of the Vedic literature. These Vedic calculations are steady; the astronomical calculations made long ago and recorded in the Vedic literature are correct even now. Whether the Vedic calculations or modern ones are better may remain a mystery for others, but as far as we are concerned, we accept the Vedic calculations to be correct.

27 NAKṢATRAS - or twenty-seven stars

There are many stars located 200,000 yojanas [1,600,000 miles] above the moon. By the supreme will of the Supreme Personality of Godhead, they are fixed to the wheel of time, and thus they rotate with Mount Sumeru on their right, their motion being different from that of the sun. There are twenty-eight important stars, headed by Abhijit. (5.22.11)

1. Aśvinī; 2. Bharaṇī; 3. Kārttikā; 4. Rohiṇī or Brāhmī; 5. Mrgaśiras; 6. Ārdrā; 7. Punarvāsū or Yāmakau; 8. Puṣya or Siddhya; 9. Āśleṣā; 10 Māghā; 11. Pūrva-phālgunī; 12. Uttara-phālgunī; 13. Hasta; 14. Citrā; 15. Svāti; 16. Viśākhā; 17. Anurādhā; 18. Jyeṣṭha; 19. Mūla; 20. Pūrvāśāḍhā; 21. Uttarāśāḍhā; 22. Abhijit; 23. Śravaṇa; 24. Śraviṣṭā; 25. Śatabhiṣaj; 26. Bhādrapāda; 27. Revati.

The stars referred to herein are 1,600,000 miles above the sun, and thus they are 4,000,000 miles above the earth.

VENUS (*Śukra-graha*)

Some 1,600,000 miles above this group of stars is the planet Venus, which moves at almost exactly the same pace as the sun according to swift, slow and moderate movements. Sometimes Venus moves behind the sun, sometimes in front of the sun and sometimes along with it. Venus nullifies the influence of planets that are obstacles to rainfall. Consequently its presence causes rainfall, and it is therefore considered very favorable for all living beings within this universe. This has been accepted by learned scholars. (SB 5.22.12)

MERCURY (*Budha-graha*)

Mercury is described to be similar to Venus, in that it moves sometimes behind the sun, sometimes in front of the sun and sometimes along with it. It is 1,600,000 miles above Venus, or 7,200,000 miles above earth. Mercury, which is the son of the moon, is almost always very auspicious for the inhabitants of the universe, but when it does not move along with the sun, it forbodes cyclones, dust, irregular rainfall, and waterless clouds. In this way it creates fearful conditions due to inadequate or excessive rainfall. (SB 5.22.13)

MARS (*Angāraka-graha*)

Situated 1,600,000 miles above Mercury, or 8,800,000 miles above earth, is the planet Mars. If this planet does not travel in a crooked way, it crosses through each sign of the zodiac in three fortnights and in this way travels through all twelve, one after another. It almost always creates unfavorable conditions in respect to rainfall and other influences. (SB 5.22.14)

JUPITER (*Brhaspati-graha*)

Situated 1,600,000 miles above Mars, or 10,400,000 miles above earth, is the planet Jupiter, which travels through one sign of the zodiac within the period of a Parivatsara. If its movement is not curved, the planet Jupiter is very favorable to the brāhmaṇas of the universe. (SB 5.22.15)

SATURN (*Śanaiścara-graha*)

Situated 1,600,000 miles above Jupiter, or 12,000,000 miles above earth, is the planet Saturn, which passes through one sign of the zodiac in thirty months and covers the entire zodiac circle in thirty Anuvatsaras. This planet is always very inauspicious for the universal situation. (SB 5.22.16)

7 STARS – the Seven Sages (the Great Bear)

Situated 8,800,000 miles above Saturn, or 20,800,000 miles above earth, are the seven saintly sages, who are always thinking of the well-being of the inhabitants of the universe. They circumambulate the supreme abode of Lord Viṣṇu, known as Dhruvaloka, the polestar. (SB 5.22.17)

DHRUVALOKA (Pole Star) – abode of lord Viṣṇu

Śukadeva Gosvāmī continued: My dear King, 1,300,000 yojanas [10,400,000 miles] above the planets of the seven sages is the place that learned scholars describe as the abode of Lord Viṣṇu. There the son of Mahārāja Uttānapāda, the great devotee Mahārāja Dhruva, still resides as the life source of all the living entities who live until the end of the creation. Agni, Indra, Prajāpati, Kaśyapa and Dharma all assemble there to offer him honor and respectful obeisances. They circumambulate him with their right sides toward him. I have already described the glorious activities of MahārājaDhruva [in the Fourth Canto of Śrīmad-Bhāgavatam]. (SB 5.23.1)

Viśvanātha Cakravartī Ṭhākura estimates that Dhruvaloka, the polestar, is 3,800,000 *yojanas* above the sun. Above Dhruvaloka by 10,000,000 *yojanas* is Maharloka, above Maharloka by 20,000,000 *yojanas* is Janaloka, above Janaloka by 80,000,000 *yojanas* is Tapoloka, and above Tapoloka by 120,000,000 *yojanas* is Satyaloka. Thus the distance from the sun to Satyaloka is 233,800,000 *yojanas*, or 1,870,400,000 miles. The Vaikuṇṭha planets begin 26,200,000 *yojanas*(209,600,000 miles) above Satyaloka. Thus the *Viṣṇu Purāṇa* describes that the covering of the universe is 260,000,000 *yojanas* (2,080,000,000 miles) away from the sun. The distance from the sun to the earth is lower planetary systems called Atala, Vitala, Sutala, Talātala, Mahātala, Rasātala and Pātāla. Below these lower planets by 30,000 *yojanas*,

Śeṣa Nāga is lying on the Garbhodaka Ocean. That ocean is 249,800,000 *yojanas* deep. Thus the total diameter of the universe is approximately 500,000,000 *yojanas*, or 4,000,000,000 miles.

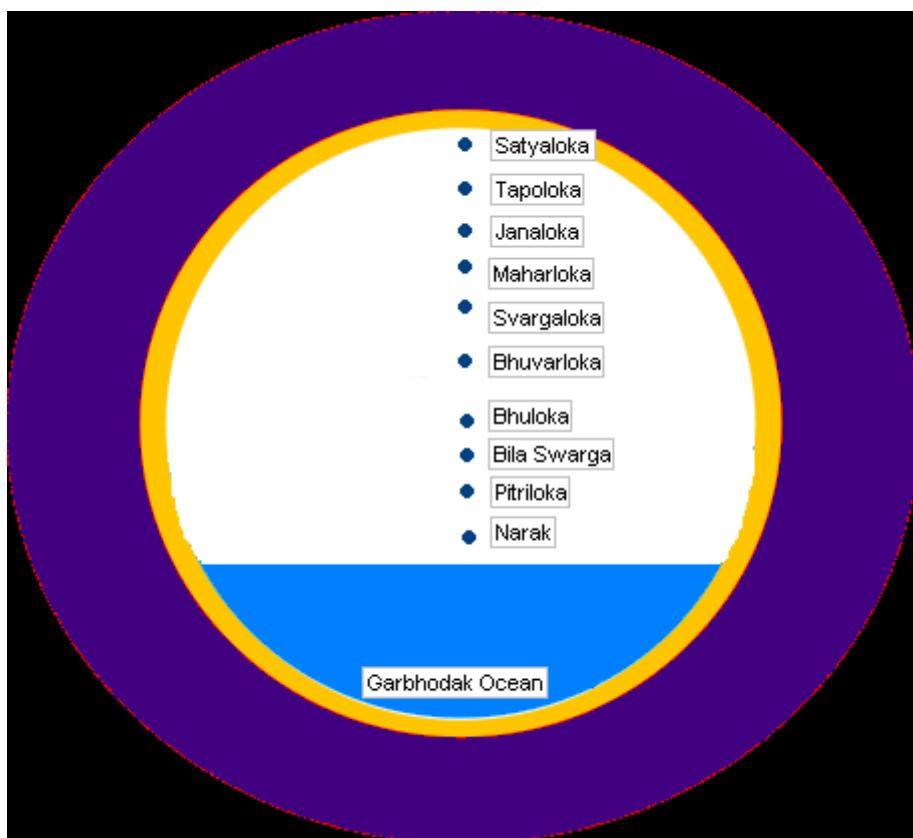
RAHU

Śrī Śukadeva Gosvāmī said: My dear King, some historians, the speakers of the Purāṇas, say that 10,000 *yojanas* [80,000 miles] below the sun is the planet known as Rāhu, which moves like one of the stars. The presiding deity of that planet, who is the son of Simhikā, is the most abominable of all asuras, but although he is completely unfit to assume the position of a demigod or planetary deity, he has achieved that position by the grace of the Supreme Personality of Godhead. Later I shall speak further about him. (SB 5.24.1)

SUN – MOON - RAHU

The sun globe, which is a source of heat, extends for 10,000 *yojanas* [80,000 miles]. The moon extends for 20,000 *yojanas* [160,000 miles], and Rāhu extends for 30,000 *yojanas* [240,000 miles]. Formerly, when nectar was being distributed, Rāhu tried to create dissension between the sun and moon by interposing himself between them. Rāhu is inimical toward both the sun and the moon, and therefore he always tries to cover the sunshine and moonshine on the dark-moon day and full-moon night. (sb/5/24/2)

As stated herein, the sun extends for 10,000 *yojanas*, and the moon extends for twice that, or 20,000 *yojanas*. The word *dvādaśa* should be understood to mean twice as much as ten, or twenty. In the opinion of Vijayadhvaja, the extent of Rāhu should be twice that of the moon, or text of the *Bhāgavatam*, Vijayadhvaja cites the following quotation concerning Rāhu; *rāhu-soma-ravīṇāṁ tu mandalā dvi-guṇoktitām*. This means that Rāhu is twice as large as the moon, which is twice as large as the sun. This is the conclusion of the commentator Vijayadhvaja.



SIDDHALOKA

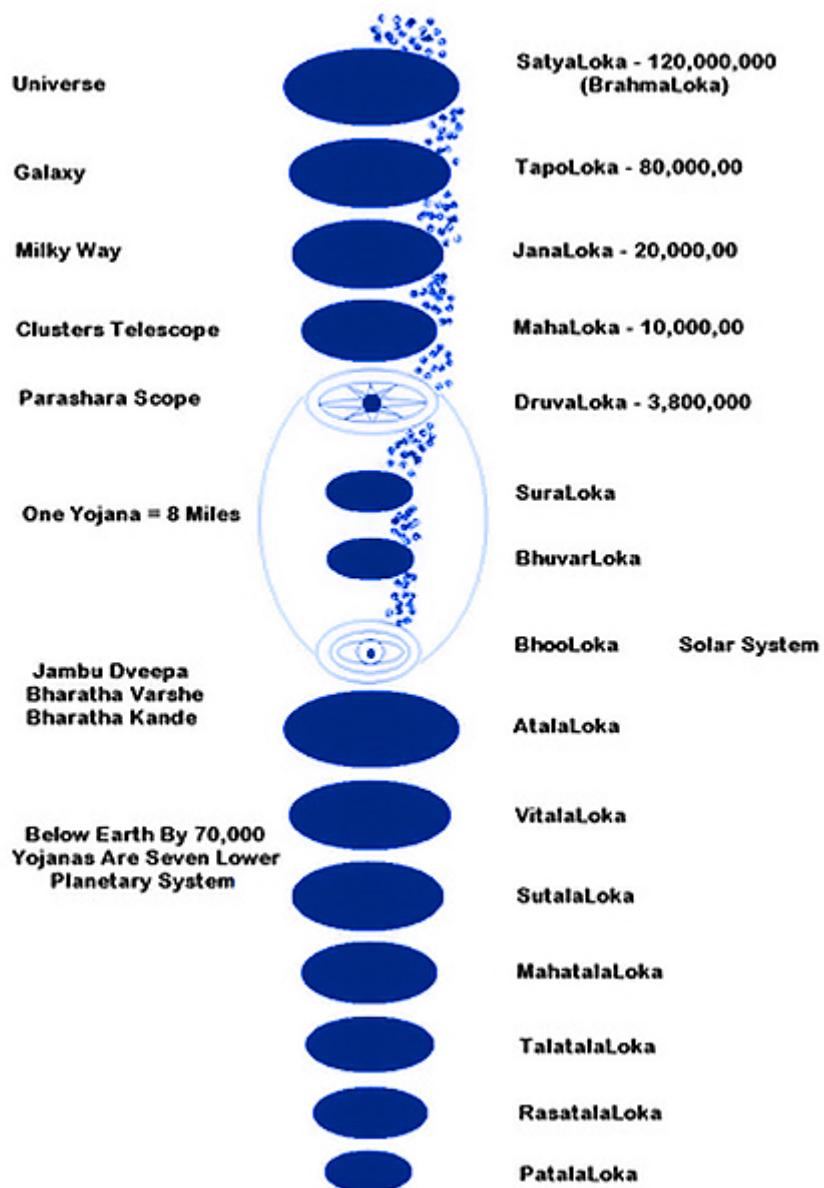
Below Rāhu by 10,000 yojanas [80,000 miles] are the planets known as Siddhaloka, Cāraṇaloka and Vidyādhara-loka. It is said that the residents of Siddhaloka, being naturally endowed with the powers of *yogīs*, can go from one planet to another by their natural mystic powers without using airplanes or similar machines.

ANTARIKṢA

Beneath Vidyādhara-loka, Cāraṇaloka and Siddhaloka, in the sky called antarikṣa, are the places of enjoyment for the Yakṣas, Rākṣasas, Piśācas, ghosts and so on. Antarikṣa extends as far as the wind blows and the clouds float in the sky. Above this there is no more air.

EARTH

Below the abodes of the Yakṣas and Rākṣasas by a distance of 100 yojanas [800 miles] is the planet earth. Its upper limits extend as high as swans, hawks, eagles and similar large birds can fly. (SB 5.24.6)



BILA-SVARGA - SUBTERRANIAN HEAVENS

My dear King, beneath this earth are seven other planets, known as Atala, Vitala, Sutala, Talatala, Mahatala, Rasatala and Patala. I have already explained the situation of the planetary systems of earth. The width and length of the seven lower planetary systems are calculated to be exactly the same as those of earth.

In these seven planetary systems, which are also known as the subterranean heavens [bila-svarga], there are very beautiful houses, gardens and places of sense enjoyment, which are even more opulent than those in the higher planets because the demons have a very high standard of sensual pleasure, wealth and influence. Most of the residents of these planets, who are known as Daityas, Dānavas and Nāgas, live as householders. Their wives, children, friends and society are all fully engaged in illusory, material happiness. The sense enjoyment of the demigods is sometimes disturbed, but the residents of these planets enjoy life without disturbances. Thus they are understood to be very attached to illusory happiness. (SB 5.24.8)

ANANTA OR LORD SAṄKARṢĀNA

Śrī Śukadeva Gosvāmī said to Mahārāja Parīkṣit: My dear King, approximately 240,000 miles beneath the planet Patala lives another incarnation of the Supreme Personality of Godhead. He is the expansion of Lord Viṣṇu known as Lord Ananta or Lord Saṅkarṣaṇa. He is always in the transcendental position, but because He is worshiped by Lord Śiva, the deity of tamoguṇa or darkness, He is sometimes called tāmasī. Lord Ananta is the predominating Deity of the material mode of ignorance as well as the false ego of all conditioned souls. When a conditioned living being thinks, “I am the enjoyer, and this world is meant to be enjoyed by me,” this conception of life is dictated to him by Saṅkarṣaṇa. Thus the mundane conditioned soul thinks himself the Supreme Lord.

In this chapter, Śukadeva Gosvāmī describes Ananta, the source of Lord Śiva. Lord Ananta, whose body is completely spiritual, resides at the root of the planet Patala. He always lives in the core of Lord Śiva’s heart, and He helps him destroy the universe. Anantainstructs Lord Śiva how to destroy the cosmos, and thus He is sometimes called tāmasī, or “one who is in the mode of darkness.” He is the original Deity of material consciousness, and because He attracts all living entities, He is sometimes known as Saṅkarṣaṇa. The entire material world is situated on the hoods of Lord Saṅkarṣaṇa. From His forehead He transmits to Lord Śiva the power to destroy this material world. Because Lord Saṅkarṣaṇa is an expansion of the Supreme Personality of Godhead, many devotees offer Him prayers, and in the planetary system of Patala, all the *suras*, *asuras*, Gandharvas, Vidyādharaś and learned sages offer Him their respectful obeisances. The Lord talks with them in a sweet voice. His bodily construction is completely spiritual and very, very beautiful. Anyone who hears about Him from a proper spiritual master becomes free from all material conceptions of life. The entire material energy is working according to the plans of Anantadeva. Therefore we should regard Him as the root cause of the material creation. There is no end to His strength, and no one can fully describe Him, even with countless mouths. Therefore He is called Ananta (unlimited). Being very merciful toward all living entities, He has exhibited His spiritual body. Śukadeva Gosvāmī describes the glories of Anantadeva to Mahārāja Parīkṣit in this way.

NARAKA - HELLISH PLANETS

The great sage Śukadeva Gosvāmī answered: All the [hellish planets](#) are situated in the intermediate space between the three worlds and the Garbhodaka Ocean. They lie on the southern side of the universe, beneath Bhū-maṇḍala, and slightly above the water of the Garbhodaka Ocean. Pitṛloka is also located in this region between the Garbhodaka Ocean and the lower planetary systems. All the residents of Pitṛloka, headed by Agniśvattā, meditate in

great samādhi on the Supreme Personality of Godhead and always wish their families well. (SB 5.26.5)

The King of the pitās is Yamarāja, the very powerful son of the sun-god. He resides in Pitṛloka with his personal assistants and, while abiding by the rules and regulations set down by the Supreme Lord, has his agents, the Yamadūtas, bring all the sinful men to him immediately upon their death. After bringing them within his jurisdiction, he properly judges them according to their specific sinful activities and sends them to one of the many hellish planets for suitable punishments.

Yamarāja is not a fictitious or mythological character; he has his own abode, Pitṛloka, of which he is king. Agnostics may not believe in hell, but Śukadeva Gosvāmī affirms the existence of the Naraka planets, which lie between the Garbhodaka Ocean and Pātālaloka. Yamarāja is appointed by the Supreme Personality of Godhead to see that the human beings do not violate His rules and regulations. As confirmed in *Bhagavad-gītā* (4.17):

*karmano hy api boddhavyam | boddhavyam ca vikarmaṇah
akarmaṇaś ca boddhavyam | gahanā karmano gatiḥ*

“The intricacies of action are very hard to understand. Therefore one should know properly what action is, what forbidden action is, and what inaction is. “One should understand the nature of *karma*, *vikarma*and *akarma*, and one must act accordingly. This is the law of the Supreme Personality of Godhead. The conditioned souls, who have come to this material world for sense gratification, are allowed to enjoy their senses under certain regulative principles. If they violate these regulations, they are judged and punished by Yamarāja. He brings them to the hellish planets and properly chastises them to bring them back to Kṛṣṇa consciousness. By the influence of *māyā*, however, the conditioned souls remain infatuated with the mode of ignorance. Thus in spite of repeated punishment by Yamarāja, they do not come to their senses, but continue to live within the material condition, committing sinful activities again and again.