Proposal for Rotating Planets Above the Deity

by Sadaputa dasa

There has been some controversy regarding the plan to build a model of the planets orbiting above the Deities in the Temple of the Vedic Planetarium. This proposal is intended to resolve the difficulties in this plan and provide a satisfactory solution.

The main difficulty in building a model of the orbiting planets is that planetary motions are complex, and to design reliable machinery that models these motions is a difficult engineering task. There are three types of motion involved:

(1) There is the daily rotation of all the stars and planets around the pole star, Dhruvaloka. This is referred to as the kala cakra.

(2) For each planet, there are two motions which combine together to give the planet's geocentric motion. These are:
   (a) The planet's motion around the sun, and
   (b) The sun's motion around the earth.

It is not practical to model all of these motions, and therefore some motions have to be omitted. I propose that we omit motions (2a) and (2b). This leaves us with the uniform circular motion of the sky, including all stars and planets, around Dhruvaloka. This is simple to model, and it shows that all the planets rotate around Krishna, represented here by the local Vaikuntha planet of Dhruvaloka. This is also the daily motion around Mount Meru, since Mount Meru and Dhruvaloka define the cosmic axis. The motion of the stars and planets around Dhruvaloka is described in SB 5.23.3; the stars and planets that we wish to represent comprise the Sisumara planetary system, described in SB 5.23.5-8.

The proposed model can be described as follows:

A supporting cable extends down from the apex of the main temple dome. Ranged along the cable are models of the higher planets, Satyaloka, Tapoloka, Janaloka, Maharloka, and Dhruvaloka, in descending order. The first four of these do not move. They are represented by spheres or oblate (flattened) spheroids. Satyaloka is the largest, and it should be brilliantly

illuminated. There may be some kind of lotus design on its surface, since Satyaloka is Brahma's lotus. Tapoloka, Janaloka, and Maharloka should be artistically represented as smaller spheres or spheroids, and they should also be luminous.

Dhruvaloka should be a glowing sphere representing the pole star. It is situated on the supporting cable beneath Maharloka, and it is about 10 meters above the top of the altar structure (which is about 30 m high). Imagine a spherically curved surface that passes horizontally through Dhruvaloka and extends slightly down on either side (like an umbrella). Lights representing stars and planets are positioned on this imaginary surface, and most of these lights will be within about 10 meters of Dhruvaloka (which is centered above the altar structure).

These lights are supported by lattice of curved rods connected to Dhruvaloka. These rods will be as lightweight as possible, and will form a polar latitude-longitude grid centered on Dhruvaloka as the north pole. The lights representing stars and planets will be positioned on this grid according to their celestial latitude and longitude (called declination and right ascension).

The arrangement of lights represents the stars and planets as they would be seen in the sky at a particular moment in time. (This could be time of Krishna's birth, for example.) The whole arrangement revolves slowly and majestically with the rotation of Dhruvaloka, which is powered by a suitable motor. The stars will be represented by small, brilliant lights, and the planets will be represented by colored, faceted spheres that are illuminated from within.

As seen from the temple floor, the stars and planets represent the night sky. There will be familiar constellations, such as the Seven Sages (Saptarishi), which is known in the West as the Big Dipper or the Great Bear (Ursa Major). The 28 Vedic naksatras will also be included. The stars, planets, and their supporting framework will form an open latticework that will allow the viewer to clearly see the higher planets situated above Dhruvaloka. The successive higher planets from Maharloka up to Satyaloka are larger and larger as we go up, and therefore they can all be seen from the temple floor. The temple dome itself is also clearly visible.

The higher planets can also be seen from close up by people going up to the upper temple. It is appropriate for the upper

temple, representing the spiritual world, to be directly above the Satyaloka model, representing the highest material planet. The dome, which lies between the Satyaloka model and the upper temple, can be seen as representing the coverings of the universe.

I have produced a 3D model of the rotating planets, suspended within a simplified 3D scale-model of the temple dome and altar. I have also produced some preliminary renderings of these models, called dhruva1.jpg through dhruva7.jpg. (Priyavrata prabhu has these files.) These can be viewed on a good quality computer monitor. (They are JPEG files.)

I am planning to import these models into SoftImage and produce an animation of the rotating planets, as seen from different perspectives.

Appendix. The Rotating Planet Model, as Described by Srila Prabhupada.

In a letter to Svarupa Damodara, dated 27 April, 1976, Srila Prabhupada said:
"My final decision is that the universe is just like a tree, with root upwards. Just as a tree has branches and leaves so the universe is also composed of planets which are fixed up in the tree like the leaves, flowers, fruits, etc. of the tree. The pivot is the pole star, and the whole tree is rotating on this pivot. Mount Sumeru is the center.... The tree is turning and therefore, all the branches and leaves turn with the tree. The planets have their fixed orbits, but still they are turning with the turning of the great tree. There are pathways leading from one planet to another made of gold, copper, etc., and these are like the branches."

Note that the stars and planets need physical supports, and this statement by Srila Prabhupada refers to supports made of gold, copper, etc. If the supporting rods are given different metallic colors along the lines indicated in this letter, they can contribute positively to the overall esthetic beauty of the display.