

# THE SPIRITUAL SCIENTIST

## A Cyber Magazine for Those Who Think

Vol 1 Issue 2

### Made Just For You

John walks into his bedroom on his tenth birthday and hey presto! The first thing that catches his eye is a new easy chair that's just the right size for him. He looks around and sees a brand new jacket that fits him exactly. Also there are shoes and stockings that are just perfect for him. To his great surprise and pleasure, he finds several new items, which are all, so to speak, tailor-made for him.

#### WHAT DOES HE CONCLUDE ON SEEING ALL THIS?

*"That's elementary, my dear Watson. It's a birthday surprise arranged by his father."*

The arrangement of John's room is an example of an acausal phenomenon. That is, knowing the effect that one wants in advance, all the causes are adjusted to produce that effect. Acausal systems clearly need an intelligence, which understands the effect desired and then arranges the factors involved so that the effect is achieved. In the above example, the effect desired was the various birthday gifts for John and the intelligence that arranged for them was John's father.

#### THE TABLES HAVE TURNED

Acausal phenomena are unfamiliar to modern scientific thought, which mostly studies causal phenomena, wherein a cause produces an effect. The general agreement among the scientists till a few decades ago was that the design of life on earth was a result of aimless causal processes. Thus they seemed to have explained away the need of an intelligent designer for the universe.

But in the last few decades the tables have turned dramatically. So much so that Robert Jastrow, Professor at Columbia University and Founder and Director of the Goddard Space Center, has made this astounding comment in his book *God and the Astronomers*, **"For the scientist who has lived by his faith in the power of reason, the story [of the big bang] ends like a bad dream. For the past three hundred years, scientists have scaled the mountain of ignorance and as they pull themselves over the final rock, they are greeted by a band of theologians who have been sitting there for centuries."** In other words, scientific investigations, which were meant to disprove the existence of God, have ended up proving His existence!

#### THE ANTHROPIC PRINCIPLE

This counter-revolution began with the postulation of the Anthropic Principle by Brandon Carter in 1973. The Anthropic Principle, in its simplest form, states that we can observe in the universe only those things, which are conducive to our existence as observers. It means that the entire universe, the solar system, the earth, its geology, weather, flora and fauna are all designed to make our existence possible.

*On a freezing cold night, John runs trembling into his bedroom and shuts the door. To his amazement, he finds that his room is warm, cozy and fresh. On further observation, he realizes that his room has been sealed from all sides with a special material in order to be 100% cold-proof. He also notes that a room heater is the cause of the warmth. He also sees an oxygen cylinder, which accounts for the fresh air.*

Let us now see something quite similar in nature - the four remarkable properties of water, which preserve aquatic life in the water bodies throughout the long winters.

- Water has maximum density at 4 degrees centigrade. And ice due to its lower density remains on the surface thus preventing the entire water body from freezing. This is similar to the cold-proof covering around John's room.
- Water also absorbs vast quantities of oxygen at low temperatures, which is akin to the oxygen cylinder in John's room.
- And water also releases large quantities of heat as it freezes, which achieves an effect similar to the heater in John's room.

The arrangement of John's room on that winter night was obviously an acausal event. Similarly the arrangement of the water bodies in winter is also an acausal event.

The same principle holds true even for our existence.

- We need oxygen to survive and there is oxygen in the atmosphere. Lest all the oxygen get exhausted by our breathing, there is a natural arrangement to replenish it - photosynthesis in trees.
- Water is essential for our existence, but all the water lies in the ocean. There is a fantastic natural water transport system through the airway - the rains. The mobile water tanks in this system are so incredibly designed that an entire plane can pass right through the tank and yet there is no leakage. Gussed what we are talking about? Clouds.

These are just gross and obvious examples to show how the world is perfectly designed to offer complete hospitality to us, its inhabitants. This same principle is true at every level in the universe- right from the microscopic to the macroscopic.

One of the remarkable discoveries of the past 30 years has been the recognition that small changes in any of the universal constants produce surprisingly dramatic changes in the universe, rendering it unsuitable for life, not just as we know it, but for life of any conceivable type. For example

- If the strong force which binds together the nucleus of atoms, were just five percent weaker, only hydrogen would be stable and, needless to say, in a one-element universe, life would be an impossibility. On the other hand, if the strong force were just two percent stronger, very massive nuclei would form, which are unsuitable for the chemistry of living systems.
- If the relationship between the strong force and the electromagnetic force were to vary only slightly, we would have had a universe either rich in beryllium and little, if any, carbon or alternatively, a universe rich in oxygen with no carbon. Without carbon there would be no organic compounds and obviously no life.

In excess of 100 examples have been documented in the technical literature and summarized in such books as *the Anthropic Cosmological Principle* (1986). And more are constantly being discovered.

The anthropic principle and its implications can be better appreciated with an analogy. Suppose I am playing a dice game with my life at stake. If the dice gives a '6', I live, else I die. I roll the dice and it gives '6'. "Good luck saved you", you will say. If I get '6' five successive times, you will start smelling something fishy. If I get '6' 1.000 successive times, you will be practically sure that the dice has been rigged.

This is exactly what we see in the universe. Everything in the universe has to have a particular value for our existence to be possible and everything has exactly that value. Everything - right from the rate at which the universe expands after the big bang, the percentage of the nuclear fusion energy on the sun which is converted into starlight, the distance of the sun from the earth, the delicate ecological balance on the earth, the anomalous behavior of water... The list goes on and on. In marketing language, it could be confidently said that the universe is "made just for you".

## AN ACAUSAL UNIVERSE

The philosophical implications of the anthropic principle shake the very foundation of mechanistic science. Sir Fred Hoyle, the famous British astronomer in the book *The Intelligent Universe* comments, "Such properties seem to run through the fabric of the natural world like a thread of happy coincidences. But there are so many odd coincidences essential to life that some explanation seems required to account for them."

The conclusion is unmistakable. The universe we live in is an acausal system, that is, it has been designed with the express purpose of enabling our existence here. And that means it must have an intelligent designer. Surveying the available evidence, George Smoot, Professor at the University of California at Berkeley, states in unambiguous terms, "It's like looking at God."

*Join us next month for another session of intellectual adventure.*

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## The Spiritual Scientist

Investigating Reality from the Higher Dimensional Perspective of Vedic Wisdom

Published by ISKCON Youth Forum (IYF), Pune

Dedicated to

His Divine Grace A C Bhaktivedanta Swami Srila Prabhupada,

The Greatest Spiritual Scientist of the Modern Times

Founder-Acharya: International Society for Krishna Consciousness (ISKCON)

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## IYF News

### A New Center For Spiritual Excellence Opened In Akurdi, Pune

Bhaktivedanta Academy for Culture and Education (BACE) is revolutionary concept in youth preaching wherein students studying in colleges get all facilities to acquire spiritual knowledge and practice spiritual life at a place very close to their college. Thus the students can grow holistically - both materially and spiritually and thus become responsible citizens of future.

ISKCON Youth Forum (IYF) has 4 BACEs near 4 engineering colleges like Bharati Vidyapeeth, Sinhgadh Institute of Technology, Govt. Engg. college and D Y Patil Engg college. Hundreds of students are availing of the BACE facility and thus strengthening the moral and

spiritual fabric of their character. A new center is inaugurated for the service of students of D Y Patil Engg. college (new site) and Pimpri Chinchwad polytechnic and Engg college on 1st Jan 2002. H H Suhotra Swami Maharaj, an acclaimed Vedic scholar and a senior disciple of HDG A.C. Bhaktivedanta Swami Prabhupada was the chief guest at inauguration ceremony addressing the multitudes of students present. He urged them to take to devotional service and thus save the world from its present course of self-destruction.

Tulsi das (Tushar Gaikwad, Application Engg, Tata Tech Ltd) will be overall coordinator for the new BACE. Any further inquiry can be kindly directed to him.