

Cosmology of the *Bhāgavata Purāṇa*: Current Research on History, Philosophy, and Science



**BHAKTIVEDANTA INSTITUTE
FOR HIGHER STUDIES**

NOVEMBER 17–19, 2023

Hosted at the BIHS Headquarters in Gainesville, Florida
with international participation via Zoom

WELCOME FROM THE DIRECTOR

“At the foundation of every civilization lies its view of the universe. All of the variegated manifestations of art and culture find their ultimate source and inspiration in how people see themselves in relation to the cosmos.”

Vedic Planetarium and Science Museum brochure
Bhaktivedanta Institute San Diego (1994)

As the Director of the Bhaktivedanta Institute for Higher Studies (BIHS), I extend the warmest welcome to our in-person and virtual participants of our conference, “Cosmology of the *Bhāgavata Purāṇa*: Current Research on History, Philosophy, and Science.” This event is a natural outgrowth of three prior BIHS cosmology workshops – “Purāṇic Cosmography: Taking the 5th...Canto!” (2019), “Models and Memes and Maps: A Modern Journey through Ancient Cosmography” (2020), and “The Nature of Spacetime and the Evolving Universe: Exploring Purāṇic Cosmology” (2022). These workshops examined traditional and contemporary studies of cosmological issues in relation to Sanskrit texts such as the *Purāṇas* (notably *Śrīmad-Bhāgavatam*), the *Jyotiṣa Śāstras*, and the *Mahābhārata*. They have also inspired publications that feature the recent work of scholars associated with these projects, including the journal *Pūrva-pakṣa: Fine-Tuning Opposing Views, Volume I* (Volume II forthcoming) and *Vedic Cosmography in a Modern Context: Virodha-parihāra Revisited*. For this conference we have invited scholars from around the world to discuss academic analyses in discourse with internal cultural appreciations.

A main objective of this conference is to network with established scholars familiar with Purāṇic and other ancient and modern cosmological constructs, with the aim to foster collaborative projects that can lead to a richer understanding of both Vedic and modern cosmology. This in turn will help develop productive narratives identified with the *Purāṇas* for a variety of ISKCON related projects concerned with public presentations of *Śrīmad-Bhāgavatam* Fifth Canto narratives. The BIHS will publish essays and presentations drawn from this conference to help ongoing research intended to facilitate constructive exploration of the human experience in relation to the cosmos.

The Bhaktivedanta Institute for Higher Studies is hosting this conference at the BIHS Headquarters located in Gainesville, FL, the home of the University of Florida. This lovely house was the former home of the president of the University of Florida and is situated near the University in an historically preserved neighborhood. We do hope you can visit our headquarters, be our guest, and enjoy our 6000+ books library, gardens, and beautiful walking areas. BIHS has been able to secure use of this new facility with the generous support of Hridayananda Das Goswami.

Brahmatirtha das
Director, Bhaktivedanta Institute for Higher Studies
www.bihstudies.org

ABOUT THE BHAKTIVEDANTA INSTITUTE



BHAKTIVEDANTA INSTITUTE is a center for advanced study and research into the Vedic scientific knowledge concerning the nature of consciousness and the self. The Institute is the academic division of the International Society for Krishna Consciousness. It consists of a body of scientists and scholars who have recognized the unique value of the teachings of Krishna Consciousness brought to the West by His Divine Grace A. C. Bhaktivedanta Swami Prabhupāda. The main purpose of the Institute is to explore the implications of the Vedic knowledge as it bears on all features of human culture, and to present its findings in courses, lectures, monographs, books, and a quarterly journal.

Excerpt taken from literature produced for the “Life Comes From Life” conference held in Vrindavan, India, October 14–16, 1977

ON THE COVER

Published in: *Śrī Caitanya-caritāmṛta Madhya-līlā*
Volume Eight, Plate 6 | (LA: BBT, 1975)

“Mahavishnu Breathes Out Universes”

Artists: Baradrāja dāsa, Jadurāṇī dāsī, Muralīdhāra dāsa

Description from the publication:

“The first form of Lord Viṣṇu is called Mahā-Viṣṇu. He is the original creator of the total material energy. The innumerable universes emanate from the pores of His body. These universes are understood to be floating in air as the Mahā-Viṣṇu exhales. They are like atomic particles that float in sunshine and pass through the holes of a screen. All these universes are thus created by the exhalation of Mahā-Viṣṇu, and when Mahā-Viṣṇu inhales, they return to His body. The unlimited opulences of Mahā-Viṣṇu are completely beyond material conception.”



SCHEDULE

Friday Evening, November 17

RECEPTION. 6:00 PM–9:00 PM EST

- 6:00 PM Welcome address by the BIHS Director, Bob Cohen
- 6:30 PM Dinner for participants
- 8:00 PM Documentary premiere: “Exploring the Purāṇic Vision of the Universe: The Work of the BIHS,” by Richard Cole

Day 1: Saturday, November 18

- 7:00 AM **Breakfast buffet (back porch)**

SESSION 1. 8:00 AM–10:30 AM EST

- Theme** Philosophy of cosmology in relation to the Purāṇic tradition.
Doug Watson, moderator
- 8:00 AM Introduction to the BIHS and to the conference by Bob Cohen (BIHS Director)

- 8:20 AM Introduction to Session 1 by Doug Watson (conference chair)
- 8:30 AM “Cosmogony: Ingredients for Making a Successful Universe” by Akhandadhi Das
- 8:50 AM “The Flow of Causality Before the Big Bang” by Doug Watson
- 9:10 AM “Exploring Worldviews: Challenging Fundamental Principles in Science and Cosmology” by Laura Domenech
- 9:30 AM Break (10 minutes)
- 9:40 AM “Pre-creation, Entropy, and the Arrow of Time in the *Purāṇas*” by Tiziano ValentinuZZi
- 10:10 AM “Inflationary Theory in the Framework of Classical Indian Philosophy” by Jack Dodson
- 10:30 AM “A Mathematical Model of Perception Based on Sāṅkhya and Quantum Field Theory” by Mauricio Garrido
- 10:50 AM “The Amplituhedron: A Potential Framework for the Emergent Nature of Spacetime” by Gopal Goel
- 11:10 AM Break (10 minutes)

SCHEDULE

Day 1: Saturday, November 18

SESSION 2. 11:20 AM–12:40 PM EST

Theme Archeoastronomy and Purāṇic chronology.
Doug Watson, moderator

11:20 AM “Exoarcheology and Archeoastronomy: Possibilities for Vedic Cosmology Research” by Michael Cremo

11:40 AM “The Size and the Age of the Universe” by Yanying Wang

12:00 PM “*Śrīmad-Bhāgavatam* as a Late Neolithic / Early Metal Age Text” by Christopher J. Hayton

12:20 PM “Cycles of Indian Cosmology and Economic Modeling” by Yuriy N. Moskalev and Alexey Timoschuk

12:40 PM Morning Wrap-up

12:50 PM **Lunch buffet (back porch)**

SESSION 3. 1:30 PM – 5:30 PM

Theme Purāṇic and Siddhāntic cosmology – contemporary scholarship
Parama Karuna, moderator

1:30 PM “Relative Time and Space in the Bhāgavata Purāṇa and Its Implications on the Size of the Universe” by Punit Bhalla

1:50 PM 2022 Mumbai BIHS Conf. Report: “Int’l. Conference of Purāṇic & Siddhāntic Cosmology” by Pandu Santhoju

2:10 PM “What is the Brahmanda?” by Vasyl Semenov

2:30 PM “Exploring the Purāṇic Vision of the Universe: The Work of the BIHS” by Richard Cole

3:00 PM Break (20 minutes)

3:20 PM “The Purāṇic Cosmograph: Projection of the Sphere of the Heavens – Geometry and Number” by W. Randolph (Randy) Kloetzli

3:40 PM “Planetary Systems in the Stem of the Lotus Flower” by Silvia Friedrich

4:00 PM “The Purāṇic Solar Calendar Wheel Derived from the Text of *Śrīmad-Bhāgavatam*” by Christopher J. Hayton

4:20 PM “Astronomy in the *Bhāgavatam* as ‘Normal’” by Vic DiCara

4:40 PM “An Examination of the Orbital Map in Richard Thompson’s *Mysteries of the Sacred Universe*” by Prishni Sutton

5:00 PM Round-table Discussion

5:30 PM End of Session 3

6:30 PM – 9:00 PM **Dinner / Open House**

SCHEDULE

Day 2: Sunday, November 19

8:00 AM	Breakfast buffet (back porch)
8:45 AM	Welcoming
SESSION 4. 9:00 AM–12:00 PM EST	
Theme	Understanding science in śāstra: Hermeneutics and Epistemology 1 Jonathan Banks, moderator
9:00 AM	“Can Empirical Observation Influence Scriptural Testimony? An Exploration through Jīva Gosvāmī’s <i>Sarva-saṁvādinī</i> ” by Ravi M. Gupta
9:40 AM	“‘The Map is Not the Territory’: Mapping Hermeneutic Approaches to the <i>Bhāgavatam</i> ’s Cosmologies” by Kenneth Valpey
10:20 AM	“Vedic or Scientific? Correlation of Worldviews in Bhaktivedanta Institute” by Alexey Timoschuk
10:40 AM	“ <i>Pūrva-pakṣa</i> as a Contemporary Hermeneutical Exercise” by S. E. Kreitzer
11:00 AM	Round-table Discussion
12:00 PM	Lunch buffet (back porch)

SESSION 5. 1:00 PM–4:00 PM EST	
Theme	Understanding science in śāstra: Hermeneutics and Epistemology 2 Jonathan Banks, moderator
1:00 PM	“A Model of the Relationship Between Revelation and Science in Gauḍīya Vedānta” by Dmitriy Popov
1:20 PM	“Challenges of Teaching Vedic Cosmology at the College Level” by István Tasi
1:40 PM	“Understanding the Ontological Position and Purpose of the <i>Virāṭ-rūpa</i> : Meditation and Implications” by Gergő Péter Rátkai
2:00 PM	“The <i>Virodha</i> Problem in Purāṇic Cosmology” by Ganesh Swaminathan
2:20 PM	“Placing the TOVP in Gauḍīya Vaiṣṇava History” by Krishna Abhishek Ghosh
2:40 PM	“Similarity and Differences Between India and Europe in the Science and Religion Dialogue” by Jonathan Edelman
3:10 PM	Round-table Discussion & Concluding Thoughts
4:00 PM	End of Session 5
4:30 PM – 7:30 PM	Shuttle rides available to New Raman Reti Sunday program in Alachua

TIME ZONES

Refer to the following time zone table to find the day and session start time for your location.

		EST GAINESVILLE	LONDON	SWEDEN / GERMANY	MOSCOW (KYIV -1HR)	INDIA	SINGAPORE	JAPAN
NOV. 17	FRIDAY EVENING	8:00 PM	(11/18) 1:00 AM	(11/18) 2:00 AM	(11/18) 4:00 AM	(11/18) 6:30 AM	(11/18) 9:00 AM	(11/18) 10:00 AM
NOV. 18	DAY 1 SESSION 1	8:00 AM	1:00 PM	2:00 PM	4:00 PM	6:30 PM	9:00 PM	10:00 PM
	DAY 1 SESSION 2	10:50 AM	3:50 PM	4:50 PM	6:50 PM	9:20 PM	11:50 PM	(11/19) 12:50 AM
	DAY 1 SESSION 3	1:30 PM	6:30 PM	7:30 PM	9:30 PM	(11/19) 12:00 AM	(11/19) 2:30 AM	(11/19) 3:30 AM
NOV. 19	DAY 2 SESSION 4	8:45 AM	1:45 PM	2:45 PM	4:45 PM	7:15 PM	9:45 PM	10:45 PM
	DAY 2 SESSION 5	1:00 PM	6:00 PM	7:00 PM	9:00 PM	11:30 PM	(11/20) 2:00 AM	(11/20) 3:00 AM

PRESENTATION ABSTRACTS

DAY 1, SESSION 1

Cosmogony: Ingredients for Making a Successful Universe

Akhandadhi Das, Science and Philosophy Initiative

Some current theories of cosmogenesis explore possible states and conditions that might have existed prior to the Big Bang. Part of the rationale is to account for complex information related to the fine-tuning of ratios and particular values of free parameters that enable the cosmos to come into being and ultimately to sustain life. This is an area, beyond empirical analysis, in which philosophy and logic can be employed to compile an inventory of factors needed to fulfill such specificity – not just at the start of the cosmos, but during its structural development. India's Puranic literature provides an excellent starting point for such study. It identifies several crucial factors of interdependent causality that seem pertinent to modern cosmology. These include: proto-physical material, entropic-influencing information, and the agency of a form of pre-cosmic "time." The suggestion is that the combination of these and concomitant factors allows a concentration of information from which emerges "universal seeds" of highly complex information which guide the manifestation of physical matter and formation of cosmic structure.

The Flow of Causality Before the Big Bang

Doug Watson PhD, (Physics), Bhaktivedanta Institute for Higher Studies

The current Big Bang cosmological paradigm describes a universe which begins from an initial state of extreme temperature and density, followed by a brief epoch of rapid expansion, known as inflation, to ultimately the formation and evolution of large-scale structure in the universe. While the theory has been remarkably successful at explaining the observable universe, its fundamental shortcomings are seldom acknowledged. In this presentation, I will briefly demonstrate the limitations of physical cosmology and its inherent inability to address the flow of causality to account for the formation of the universe. I will then advocate for conscious agency as being the missing ingredient in the recipe for manifesting the cosmos. To that end, I will introduce a *transempirical* framework for the flow of causality before (or outside of) the physical universe as described in the *Śrīmad-Bhāgavatam*. This framework utilizes perturbation theory to describe the propagation and accretion of information seeding the formation of the physical universe. I will demonstrate how the concept of phase transitions may be used as a compelling analogy for presenting this technical framework to a general audience.

Exploring Worldviews:

Challenging Fundamental Principles in Science and Cosmology

Laura Domenech (Theoretical Physics and Cosmology), University of Zurich

In the realm of science and cosmology, the principles we chose to underpin our theories are highly intertwined with our worldviews. This presentation delves into the essential role of principles as catalysts of our creative choices in research. By examining the fundamental ideas that drive our understanding of the cosmos, we uncover a fertile ground from which to explore the intricate relationship between knowledge and perception. How do our evolving scientific models influence the way we perceive the universe, and conversely, how does our perception shape our quest for knowledge? This talk is an invitation to restructure the way we think science by emphasizing principles as both guiding lights and sources of unending wonder. Fundamental principles can provide a rich foundation for correlating ideas and knowledge across different disciplines, beyond the stories and interpretations emerging from them.

PRESENTATION ABSTRACTS

Pre-creation, Entropy, and the Arrow of Time in the Purāṇas

Tiziano Valentinuzzi, PhD (Astronomy), Bhaktivedanta Institute for Higher Studies

The asymmetry between the past and the future is called “the arrow of time.” We all perceive the arrow – we remember the past but not the future. Most physicists consider the irreversibility of the arrow of time to be a consequence of the second principle of thermodynamics, which states that entropy in an isolated system e.g. the universe as a whole) can never decrease. Nevertheless, all physical laws, at all scales, work well with time going in both directions. In this preliminary study, we explore the connections and relations between the arrow of time, entropy, and the pre-creation descriptions in the *Purāṇas*, with special focus on *Bhāgavata Purāṇa*.

Inflationary Theory from a Vaishnava Perspective

Jack Dodson, MS (Particle Physics), Bhaktivedanta Institute for Higher Studies

There are several competing models for the genesis of our universe. In modern cosmology, it is widely accepted that our universe began in a big bang. However this in itself has left some questions unanswered, such as the nature of the singularity and the geometric flatness of the universe, among others. The answer to these questions has been proposed to be inflationary theory. Most of these require quantum cosmology, where there is a replacement of classical spacetime with a quantum model. In many of these theories, the universe is viewed as a fluctuation in an underlying quantum field, which gives rise to “small true vacuum bubbles” which then expand into the universe.

This talk will analyze these arguments in the framework of classical Indian philosophy and describe how the underlying presuppositions of the various modern cosmogenic models have philosophical antecedents in the work of Indian philosophers. Much of what is written about *Brahman*, the undifferentiated potentiality of existence, can also be said about the modern conception of this underlying quantum field that exists pre-inflation. Views on the nature, potency and behavior of this *Brahman* will be compared and applied to the quantum vacuum model. Discussion of various schools of classical Indian thought will help elucidate the philosophical strengths and weaknesses of the model from a philosophical point of view. Special attention will be given to the Vaishnava school of thought.

A Mathematical Model of Perception Based on Sāṅkhya and Quantum Field Theory

Mauricio Garrido, PhD (Physics), Bhaktivedanta Institute for Higher Studies

There are many descriptions in the 5th Canto of the *Śrīmad-Bhāgavatam* about places to which we have no immediate access. This begs the question: What is the mechanism which prevents us from perceiving these worlds? One such possibility could be that standard human senses can only pick up information within a limited range of *guṇa* combinations. To formalize this idea, a sketch of a phenomenological mathematical model will be presented based on certain assumptions. The purpose of this sketch is to show possible research avenues for developing a proper mathematical model that can describe intuitive notions of Sāṅkhya philosophy as more information becomes available concerning the nature of these apparently inaccessible worlds. At the heart of the sketch is a tantalizing similarity between certain elements of Sāṅkhya and quantum fields, as suggested by Akhandadhi in his “Atma Paradigm” presentations. We will touch upon the collapse of the wave-function, the influence of the *guṇas*, and the connection between the elements of Sāṅkhya and atoms as described in Vaiśeṣika philosophy.

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The Amplituhedron: A Potential Framework for the Emergent Nature of Spacetime

Gopal Goel (Mathematics and Physics), Massachusetts Institute of Technology

For centuries, space and time were considered to be two fundamentally different aspects of reality upon which the “drama of the universe” unfolded. This notion was challenged by Albert Einstein with his revolutionary theory of relativity, where he showed that the two were unified into a more fundamental object: spacetime. Around the same time, the quantum nature of the universe was also being uncovered, and a robust quantum theory of the world was developed, with the standard model of particle physics being its crowning achievement.

However, quantum theory and relativity are fundamentally incompatible, leading to the current pursuit of a theory of quantum gravity. In this pursuit, the fundamental nature of spacetime has been called into question, and models have been proposed where spacetime is considered an emergent phenomenon rather than a fundamental one. In this talk, we focus on one object, the so-called amplituhedron, which is an abstract mathematical construct that encodes information about scattering amplitudes (conventionally computed using Feynman diagrams of quantum field theory) in the volumes of its various cells. This alternative framework, proposed by Nima Arkani-Hamed, presents an elegant and efficient way to compute scattering amplitudes without the reliance on spacetime coordinates, hinting at the possible emergent nature of spacetime.

The mathematical details of the amplituhedron, or any other description of physics beyond spacetime, are very difficult to convey over the course of a short talk. Instead, the purpose of this talk is to introduce the idea that spacetime is non-fundamental, and to give some pointers to research that makes this notion concrete.

DAY 1, SESSION 2

Exoarcheology and Archeoastronomy: Possibilities for Vedic Cosmology Research

Michael A. Cremo (Archeology), Bhaktivedanta Institute for Higher Studies

Two fields of research invite the attention of those interested in Vedic cosmology: exoarcheology and archeoastronomy.

Archeoastronomy is the study of physical, cultural, and textual remains that provide evidence for astronomical knowledge possessed by people in the earth’s past. Connections between astronomical events and archaeological remains may also provide a means of dating these remains. Once relegated to “fringe science” or “pseudo-science,” archeoastronomy has now become a small (but growing) recognized field of study in archeology. In the Bhaktivedanta Institute, Richard L. Thompson (Sadāpūta dāsa) made some initial forays in archeoastronomy. For example, he noted that the perimeter of the Great Pyramid of Egypt is equivalent to one *krośa*, a Vedic unit of measurement that is itself equivalent to one minute of a degree of latitude at the equator. There are possibilities for further archeoastronomical research along these lines.

Exoarcheology is less well known. It is related to the wider field of exobiology, the study of life on celestial bodies beyond this earth planet. Because over the past couple of decades, astrophysicists have detected thousands of planets capable of supporting life, orbiting stars in other solar systems, the field of exobiology is becoming more prominent. NASA, for example, has an exobiology department.

Professional archeologists are now discussing what they will do with artifacts found on the moons and planets of our solar system and beyond. The United Nations Outer Space Treaty defines ownership of any artifacts recovered from other planets. Of course, some of this is stuff we have sent there, but archeologists are seriously discussing what they will do if they find something that did not come from the space programs of

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our earth planet. Prominent scientists such as astronomer Avi Loeb are actively researching such things. The Bhaktivedanta Institute should study the possibilities.

As we move into space, we are also moving in the direction of the worldview of people of past civilizations and cultures, such as the Vedic culture and its cosmology. Heading into the future, we may arrive in the past.

The Size and the Age of the Universe

Yanying Wang, PhD (Statistical Science), Bristol Myers Squibb

How large is the universe and how old is it? These centuries-old questions are among the top compelling mysteries that fascinate human beings and carry implications for science, philosophy, and religion alike. Equipped with state-of-the-art telescopes and computers, astronomers today estimate that the universe is around 13.7 billion years old and has a diameter of 93 billion light-years (1 light-year is approximately 5.8 trillion miles). *Śrīmad-Bhāgavatam*, an ancient Vedic scripture, gives different answers. In verses 3.11.40–41, Sage Maitreya tells Vidura that the universe, which to Mahā-Viṣṇu seems like a *paramāṇu* (the material manifestation's smallest particle), has a diameter of 500 million yojanas (4 billion miles). A straightforward way to derive the age of the universe in the *Bhāgavatam* context is to look at the age of Lord Brahmā, the creator of the universe. Lord Brahmā has lived fifty Brahmā years and is currently in the first day of his fifty-first year (*Bhāgavatam* 3.11.34). Since a day and a night for Lord Brahmā is roughly 8.6 billion years for human beings (*Bhāgavatam* 3.11.18–22), the universe has an age of about 155 trillion years. There may be a number of ways to shed light on the apparent disagreements between modern astronomy and *Śrīmad-Bhāgavatam*. This presentation provides a perspective based on a distinction between the universe seen through telescopes and computers and the one described in *Śrīmad-Bhāgavatam*.

Cycles of Indian Cosmology and Economic Modeling

Alexey Timoschuk, PhD (Culture Studies), RANEP

Yuriy N. Moskalev, PhD (Economics), Russian Institute of Consciousness

Let us try to bring together the phenomena of the universe, consciousness, and economic activity to a common denominator. Indian philosophy speaks of the dual nature of the laws that shape the surrounding reality. These laws are spiritual and material. Thus, the material universe exists for a limited period of time, which is calculated in *kalpas*. A *kalpa* is the duration of one day of Brahmā, which consists of a thousand cycles (*Bhāgavad-gītā* 8.17). Each cycle lasts for 4,320,000 years. This 1/1000 of the duration of Brahmā's day is called *yuga*. In turn, the *yuga* is broken down into 4 periods: the Satya-yuga of 1,728,000 years; the Tretā-yuga of 1,296,000 years; the Dvāpara-yuga of 864,000 years; and the Kali-yuga of 432,000 years. It is not difficult to notice that this number line has a waning tendency.

The theory of cycles is very important for economics as a predictive concept. Cyclicity of economic processes is one of the mysteries of economic science and constitutes an essential element of the philosophy of antifragility. Along with the general classical characteristics of economic cycles, the life of an individual, the development of states, and the entire world economy is permanently dependent on a huge number of uncertainties and variations.

It is considered essential that the economic cycle in modern economic theory consists of four phases: rise, upsurge, depression, and crisis. Empirical studies show that there is a tendency toward reducing the amplitude of fluctuations in business activity that fits quite logically into the philosophical aspect of the *śāstras*. There is an accelerating downward cause and effect process of the dynamics of being. These comparisons suggest

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the relationship between the descending numerical series in *Bhagavad-gītā* and the fading pulsation of the economic cycle. In other words, the Vedic model of cycles is based on entropy, and to deter its negative effects, development of *sattvic* processes is offered, based on such theistic qualities as purity, asceticism, mercy, truthfulness, sustainable development, non-violence, etc.

Śrīmad-Bhāgavatam (Bhāgavata Purāṇa) as a Late Neolithic / Early Metal Age Text

Christopher J. Hayton, PhD (Social Work), Bhaktivedanta Institute for Higher Studies

A. C. Bhaktivedanta Swami Prabhupāda asserted throughout his writings that the *Śrīmad-Bhāgavatam* (a multi-volume *Purāṇic* text that he translated into English) dated, according to the text itself, to around 5,000 years before present. While this claim conflicts considerably with the opinions of many scholars, Thompson's (1989) calculation of the beginning date for Kali-yuga (the text-stated time at which the *Bhāgavatam* arose), based on back-projections of planetary positions, contributes a compelling argument for its authenticity. The current study asks whether descriptions of the everyday way of life given in the *Bhāgavatam*, excluding any mystical elements, are consistent with what we know of Neolithic and Early Metal Age cultures contemporary with the beginning of Kali-yuga. Additionally, are there items that conflict with academia's current knowledge of ancient times?

Prabhupāda, himself a repository of his cultural traditions, further insisted that the *Purāṇas* and the *Mahābhārata*, which includes the *Bhagavad-gītā*, are all Vedic literatures, along with the four *Vedas* themselves, and the *Upaniṣads*. He also repeatedly described Vedic culture as advanced and having been at one time worldwide, and explained that 'Mahābhārata' meant 'the whole world.' The comparison between the *Bhāgavatam* descriptions of the people of 5000 years ago and the archaeological and historical evidence from that period is, therefore, made broadly, but especially with Eurasia and Africa.

Deconstruction of Vedic culture as it is presented in *Śrīmad-Bhāgavatam*, focusing on the material elements, yields a picture of ordinary life that appears to agree with the archaeological and historical evidence for technologies and artifact assemblages of Neolithic and Early Metal Age people. There are also behaviors described that appear to support speculations of archaeologists regarding some types of Neolithic/Early Metal Age evidence. This raises the question of whether we can use the philosophical and mystical content of the *Bhāgavatam* to perhaps gain further insight into the worldviews of ancient cultures.

DAY 1, SESSION 3

Relative Time and Space in the Bhāgavata Purāṇa and Its Implications on the Size of the Universe

Punit Bhalla, BE (Mechanical Engineering), Bhaktivedanta Research Center

Space and time as correlative terms is well accepted in the *Bhāgavata Purāṇa*. We have numerous instances of relativity of time quoted in various sections of the text. This paper examines the concept of relative space as addressed in the *Bhāgavata Purāṇa* and the commentaries of the ācāryas to address the issue of the comparatively smaller size of the universe mentioned in the text. As a first step, it establishes the value for a *yojana* as 8 miles as used in the *Bhāgavata Purāṇa* in three different ways: through commentaries of the ācāryas, by experimental verification, and by indirect verification.

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Third in the series of essays aimed toward establishing a mathematical exposition of *Bhāgavata* cosmology, it builds on the concept of a geostationary model that is established in the first two essays, and applies the Lorentz transformation to see how the size of the universes mentioned in the *Bhāgavata Purāṇa* compares to that of the modern accepted values.

What is the Brahmāṇḍa?

Vasyl Semenov, PhD (Acoustics and Computational Mathematics), American University, Kyiv

Purāṇic literature is rich in cosmology and related topics. One of the main concepts used to describe material cosmos in the *Purāṇas* is *brahmāṇḍa* (ब्रह्माण्ड, “Brahmā’s egg”), which appears to encode more than just the aspect of “all matter,” being rich in cosmogonical meaning. So, what exactly is this *brahmāṇḍa*? In many cases Śrīla Prabhupāda identifies the term with the universe. And yet the meaning of “universe” has not been clearly explained by the scientific community nor by scholars currently pursuing a deeper understanding of Purāṇic cosmology. In this survey we analyze different definitions of *brahmāṇḍa* found in Vedic texts and explore parallels with modern concepts of the observable universe as well as with the prevailing understanding of galaxies and solar systems. Similarities between *brahmāṇḍa* and the human body are also investigated both from Vedic perspectives and the scope of modern science. Finally, the popular notion of the “multiverse” – a hypothetical group of multiple universes, which comprise everything that exists: the entirety of space, time, matter, energy, information, and the physical laws and constants that describe them – is compared to the cluster of many millions of universes described in Purāṇic literature. While there appears to be a remarkable harmony between some features attributed to the traditional concept of *brahmāṇḍa* and the modern concept of universe, Śrīmad-Bhāgavatam uses unique, specific themes and images to reflect different astronomical and cosmological aspects of reality latent in the term *brahmāṇḍa*.

Exploring the Purāṇic Vision of the Universe: The Work of the BIHS

A video presentation by **Richard Cole**, Bhaktivedanta Institute for Higher Studies

This video summarizes research by members, collaborators, and friends of the Bhaktivedanta Institute for Higher Studies (BIHS) concerning Purāṇic cosmology, with a focus on the Fifth Canto of the Śrīmad-Bhāgavatam. The narrative begins with an overview of Purāṇic universe, which includes brief descriptions of creation scenarios and structural elements. Next, a close look into the *Sūrya-siddhānta*, a prominent text in Vedic *Jyotiṣa* tradition, reveals an apparently contradictory picture of our cosmos that is surprisingly compatible with modern observational astronomy. As the presentation explores possibilities for reconciling the differences, we discover the rich historical tradition prominent in India that had been dealing with this issue for millenia. This discourse was reinvigorated in the 1970s when A. C. Bhaktivedanta Swami asked his disciples educated in science to design a model of the cosmology described in the *Bhāgavatam*’s Fifth Canto to display in the Temple of the Vedic Planetarium. Since that time a number of devotees have stepped forward to contribute to this endeavor, beginning with Richard L. Thompson (Sadāpūta dāsa), who offered his pioneering book, *Vedic Cosmography and Astronomy*, in pursuance of his guru’s request. The video continues with a survey of the wide range of models that have been presented in the past 50 years by researchers affiliated with the Gauḍīya Vaiṣṇava tradition, highlighting the wealth of information concerning our cosmos that is embedded within the Vedic literature, and noting that the ultimate aim of the vast material display is for enhancing the individual’s relationship with the Supreme Person, Śrī Kṛṣṇa.

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The Purāṇic Cosmograph: Projection of the Sphere of the Heavens – Geometry and Number

Walter Randolph Kloetzli, PhD (History of Religions), University of Chicago

The Purāṇic cosmograph consists of seven concentric islands (*dvīpas*) and seas (*udas*) each sea a different substance; the innermost being Salt Water and the outermost Fresh Water. Each island is twice the diameter of the island interior to it; each sea is equal in diameter to the island it surrounds. Mt. Meru, shaped like an inverted cone, is situated at the center.

Two ring mountains mark boundaries of significance – the limit of the human realm (*Mānasottara*) dividing the 7th island (*Puṣkaradvīpa*) in two and the world / non-world (*Lokāloka*) boundary at the far edge of the region of golden earth said to be avoided by living creatures. In between these two boundaries lie the outer half of *Puṣkaradvīpa*, the Fresh Water sea, and the Golden Earth.

In attempting to understand the geometry of this cosmograph, I have been drawn to the logic of the projection of the Northern Hemisphere of the heavens viewed as if one's eye were at the South celestial pole looking toward the North celestial pole and projecting the image onto the equatorial plane. This projection is sometimes termed stereographic or planispheric.

This approach to the geometry of the cosmograph enables an understanding of the cone of Mt. Meru as the projection of the Tropic of Cancer as viewed from the South Celestial Pole, the association of the Tropic of Capricorn with the *Mānasottara* ring mountain and the “chariot of the sun” moving between the two as the ecliptic. It also accommodates and reinforces myth-themes of the descents (*avatāras*) of Viṣṇu as well as that of the celestial river Ganges / Milky Way (*gaṅgāvatāra*) central to this cosmograph. The descent of the Ganges flows from the left foot of Viṣṇu onto the North celestial pole (*dhruva*) to the orb of the moon, to Meru, and eventually into *Bhārata*, the region of karma, of days of humans and gods, of number and the passage of the *yugas* beheld by the “lotus-eyed” Viṣṇu arguably from the vantage point at the South celestial pole. The smallest unit of time is a *nimeṣa*, the twinkling of an eye.

The Three and the Fourteen Planetary Systems in the Stem of the Lotus Flower which Sprouts from the Navel of Garbhodaka-śāyī Viṣṇu

Friedrich Silvia, MS (Geology and Natural Sciences), ISKCON, Germany

Vedic cosmology is centered on a personal material creation of the cosmos. From Śrī Kṛṣṇa comes Garbhodaka-śāyī Viṣṇu, who enters into each *brahmāṇḍa* (universal globe), and after His *virāṭ-rūpa* (universal form) appears, a lotus stem springs up from His navel in which the three and the fourteen planetary system are placed in subtle form. On top of the lotus stem, a lotus flower sprouts and Lord Brahmā, born on top, creates the gross forms of all planets, stars, and living entities. During Brahmā's days, creation takes place in the planetary systems, and during his night the lotus, Brahmā, the three planetary systems, and their living entities suffer dissolution by merging into the navel of Garbhodaka-śāyī Viṣṇu until the next creation takes place.

It is in the first created three planetary systems of *Bhūloka*, *Bhuvanloka*, and *Svargaloka*, which hold within the three modes of material nature, that the planets and constellations have been established, moving along the with *kāla-cakra* (wheel of time) as it rotates around the pivot planet, *Dhruvaloka*. The different speeds of the sun, moon, and constellations are arranged in such a way that days, nights, and seasons can materialize on a scheduled time. Upon *Dhruvaloka* resides *Kṣīrodaka-śāyī Viṣṇu*, the third *avatāra*.

Research on this personal creation of the material world suggested the conclusion that the lotus flower coming out of Garbhodaka-śāyī Viṣṇu during creation is the total material energy (gross universal form) containing all the planetary systems of the universe. These systems have their origin in the subtle universal

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form that appears from this second *puruṣa avatāra*; and the cyclic creation and dissolution of the total material cosmos is rooted in the breathing process of Kāraṇodakaśāyī Viṣṇu's exhaling and inhaling, the integrating and disintegrating principle which is inherent to material energy (temporary substance).

The Purāṇic Solar Calendar Wheel Derived from the Text of *Śrīmad-Bhāgavatam*

Christopher J. Hayton, PhD (Social Work), Bhaktivedanta Institute for Higher Studies

Chapter 21 of the Fifth Canto of *Śrīmad-Bhāgavatam*, which describes “The Movements of the Sun,” is a rich source of calendrical information. Verses 13 and 14 particularly, describe the *Samvatsara*, or year, in terms of a wheel, the Sun-god's chariot wheel, with the hub, spokes, and rim corresponding to different divisions of the year. In combination with verses from various other parts of the *Bhāgavatam* text, Chapter 21 yields sufficient information to construct a solar calendar wheel of 360 days, with months, seasons, the northern and southern paths (*ayanas*) of the sun, the winter and summer solstices (*saṅkrāntis*), spring and autumn equinoxes, and the correspondence of all of these to the twelve solar signs of the zodiac. The *Bhāgavatam* refers to signs of the zodiac with Sanskrit names that are reflected in modern Western symbols: Scorpio being Vṛścika (scorpion), Pisces being Mīna (fish), and Virgo being Kanyā (unmarried girl), for example.

The *Bhāgavatam* gives indications of some uses of this calendar – determining the appropriate time for performing rituals and sacrifices, and for astrological purposes, for example – and indicates that the brahminical section of society was the primary repository of the knowledge and skills necessary to use it. The *Bhāgavatam* descriptions of the sun's “movements” constitute relatively easily understandable and observable material facts. Thompson (*Mysteries of the Sacred Universe*, 2000, p.243) suggests that the *Bhāgavatam*'s cosmology was developed in ancient times and in a forgotten context, rendering some components of it very difficult to decipher using current worldview perspectives. The complete *Bhāgavatam* cosmology, therefore, presents a challenge to modern thinkers in this regard.

A. C. Bhaktivedanta Swami Prabhupāda, who translated the *Śrīmad-Bhāgavatam* into English in the 1960s and 70s, was adamant that the text was written around 5000 years ago, and was previously existing in orally transmitted form. This conclusion is prompted and supported by the text itself. This solar calendar is also mentioned in the *Ṛg Veda* (Sidharth, 1998), demonstrating continuity between the Purāṇic texts and the *Vedas*.

Astronomy in the *Bhāgavatam* as ‘Normal’

Vic DiCara, Vic DiCara's Astrology

The cosmology described in the *Purāṇas* of Ancient India is usually seen as a mythological relic, radically irreconcilable with even very rudimentary empirical observation. This presentation – by simple, clean adherence to Sanskrit meanings and basic math – will demonstrate that the astronomy presented in Chapter 16 of *Śrīmad-Bhāgavatam*'s 5th Canto is rational and extremely “normal,” conforming in all ways to modern astronomical measurements and concepts, and to universally surviving astrological conceptions of the ecliptic.

Of particular interest: 1) Bhū is a globe at the *observational center* of a collection of disk-like orbits; 2) The core, mantle, and crust of this globe match their modern dimensions; 3) This globe is measured by a grid of latitudes and longitudes (“mountain ranges”), with accurate tropics and arctics; 4) The ecliptic is anchored to solstices and equinoxes, divided into 12 zones, grouped into quadruplicities and triplicities; 5) The rotations and revolutions of Earth produce the apparent motions of the Sun; 6) The sizes of the earth and the sun, and the distance between them, are accurate according to modern standards.

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An Examination of the Orbital Map in Richard L. Thompson's *Mysteries of the Sacred Universe*

Prishni Sutton (Mathematics), Bhaktivedanta Institute for Higher Studies

The cosmographical system presented in the Śrīmad-Bhāgavatam has provided for millenia a meaningful framework connecting the world of observable phenomena with a transcendent realm beyond ordinary sense perception. Yet within the Vedic tradition both *jyotiṣa paṇḍitas* and Vaiṣṇava ācāryas have commented on the apparent conflicts between Purāṇic cosmography and observable astronomy utilizing Sanskrit mathematics, while developing various models attempting to present a faithful reconciliation. Richard L. Thompson, as a founding member of the Bhaktivedanta Institute established in 1976, pioneered research on this topic within ISKCON, and in particular with the BBT publication, *Vedic Cosmography and Astronomy* (1989). One of his most significant and, perhaps for some, controversial contributions is found in *Mysteries of the Sacred Universe* (2000), Section 4.4: “The Orbital Map,” in which he explores correspondence between the rings of Bhūmaṇḍala and the orbits of the planets considered from a geocentric perspective. This presentation will examine Thompson's analysis with a focus on three aspects: 1) the methodology used in his analysis, 2) the accuracy of the correlations, and 3) the unique implications of these correspondences. Thompson claimed to discover a level of accuracy which in modern history has only been replicated with two major 17th and 18th century astronomical discoveries: knowledge of the elliptical orbits of planets (Kepler's Laws of planetary motion), and the measurement of planetary distances afforded by technologically sophisticated telescopes. This could suggest that the extant remnants of astronomical records identified with classical ancient culture might well prove to be a fragmentary legacy of advanced knowledge drawn from an even more distant past.

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Can Empirical Observation Influence Scriptural Testimony? An Exploration through Jīva Gosvāmī's *Sarva-saṁvādinī*

Ravi M. Gupta, PhD (Religious Studies), Utah State University

This presentation explores the question: What is the relationship between scriptural authority and empirical knowledge in Caitanya Vaiṣṇava theology? In particular, what happens if scriptural and empirical knowledge do not agree with each other?

From the time of Śaṅkara onwards, Vedānta philosophers have agreed that the most reliable means of acquiring valid knowledge (i.e., *pramāṇa*) is *śabda*, namely, verbal testimony; and in particular, the scriptural authority of the *Veda*. Such testimony is eternally existent, divinely revealed, and not limited to matters that are perceivable by the senses. In the words of Jīva Gosvāmī, verbal testimony can overrule sensory perception (*pratyakṣa*) and logical inference (*anumāna*), since both of these are susceptible to misapprehension. Thus, Jīva concludes in his *Sarva-saṁvādinī*, “Śabda imparts the ultimate wisdom that purifies [corrects] sensory perception and the other means of knowing . . . [which] are thus reduced to shadowlike subordinates.”

At first glance, this can appear like a one-way street: *Śabda* can correct and overrule *pratyakṣa*, but *pratyakṣa* has no influence on our understanding of *śabda*, which is self-evident and divinely revealed. Thus, empirical observation is, at best, a means to confirm the claims of scripture, if it is not to be ignored altogether.

A closer study of Jīva Gosvāmī's *Sarva-saṁvādinī*, however, reveals a much more nuanced and dynamic relationship between *śabda* and *pratyakṣa*, where each actively influences the other. This paper will argue that

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Jiva Gosvāmī creates space for empirical knowledge to coexist with scriptural testimony, and, to a limited extent, influence how we interpret scripture. This paper will suggest a dialogical relationship between the different *pramāṇas*, even as *śabda* maintains the upper hand.

“The Map is Not the Territory”: Mapping Hermeneutic Approaches to the *Bhāgavatam*’s Cosmologies

Kenneth Valpey, PhD (Study of Religion), Oxford Centre for Hindu Studies

The Śrīmad Bhāgavata Purāṇa has intriguing descriptions of the cosmos, descriptions that include such statements as, “The mud on both banks of the river Jambū-nadī, being moistened by the flowing juice and then dried by the air and the sunshine, produces huge quantities of gold called Jāmbū-nada” (BhāgP 5.16.20). In his Purport to this verse, Bhaktivedānta Swami Prabhupāda writes, “[I]t is understood that in a higher planetary system in this material world, the mud on the banks of the Jambū-nadī mixes with jambū juice, reacts with the sunshine in the air, and automatically produces huge quantities of gold.” This latter statement, as an interpretation of the former, begs the question, “What means ‘it is understood?’” In this presentation I aim to suggest some beginnings of a mapping of possible hermeneutic approaches that could serve to bring the cosmological accounts in the *Bhāgavatam* into conversation with contemporary scientific cosmological accounts. Such mapping would serve as groundwork for developing dialogical hermeneutics that is cognizant of work in the fields of philosophy of religion and philosophy of science. One starting point for this exercise can be the ISKCON Hermeneutics process (recently developed by the GBC Śāstra Advisory Council). Then, Richard Thompson’s publication, *Mysteries of the Sacred Universe*, may serve as a sample attempt to open such dialogue through engagement with *Bhāgavata* cosmology in a comparative mode, a study that frequently discusses maps and mapping. From the perspective of contemporary (Western) philosophical hermeneutics discourse, I propose to consider work by one of its most prominent exponents, H. G. Gadamer (1900-2002), who specifically strove for a dialogical, inclusive approach to hermeneutics.

Bhaktisiddhanta and Modern Cosmology: Unveiling an Interdisciplinary Dialogue

Ferdinando Sardella, PhD (History of Religions), Uppsala University

This paper aims to unearth the profound congruences between the cosmological insights offered by Bhaktisiddhānta, an esoteric branch of Gaudiya Vaishnavism, and the theoretical underpinnings of modern cosmology. Informed by the rich cultural and spiritual backdrop of Calcutta, Bhaktisiddhānta presents an intricate vision of the cosmos marked by devotion and metaphysical depth.

As a researcher in the field, I will bring to light the complex, yet captivating, cosmological narratives of Bhaktisiddhānta and their potential intersections with contemporary scientific understanding of the universe. The exploration will revolve around central themes such as multi-dimensional reality, the concept of time-space continuum, and the philosophical implications of consciousness and divinity on the cosmological scale.

I will critically evaluate and contrast the cosmological models presented by Bhaktisiddhānta and modern science, aiming to identify elements of convergence and divergence. In particular, the presentation will highlight how Bhaktisiddhānta’s metaphysical ideas can enrich modern cosmology’s empirical framework, fostering a more holistic and nuanced understanding of the universe.

The purpose of this paper is not to amalgamate science and spirituality, but rather to stimulate a fruitful interdisciplinary dialogue that could contribute to the ongoing discourse on the nature of the universe. By delving into this intricate relationship between ancient wisdom and scientific advancements, we may pave the way for a more integrative cosmic perspective.

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Vedic or Scientific? Correlation of Worldviews in Bhaktivedanta Institute

Alexey Timoschuk, PhD (Culture Studies), RANEPa

The Bhaktivedanta Institute for Higher Studies in Florida continues to promote the work of Richard L. Thompson (Sadāpūta dāsa), who has been the most successful representative among scientific figures in ISKCON in the fields of non-mechanistic science and Vedic cosmology, and the inspiration for Vedic devolutionary theory.

These studies represented missionary expectations and satisfied at best a particular type of “Vedic rationality” However, Vedic cosmology and anthropology remain aloof from standard critical science as any hybrid religious science does. Sadāpūta provided the most scholarly commentary on Prabhupāda’s writings, since he was his dedicated disciple, had the necessary scholarly background, and possessed uncommon analytical talents. Vedic cosmology and anthropology have worked quite well as apologetics of the tradition, yet they are built on some implicit tenets: 1) belief in the golden age and devolutionary cyclical order of the universe (phase recurrence), 2) belief in the special epistemic status of the Indo-European civilization (Aryan messianism), 3) belief in the divine origin of Vedic knowledge (revelationism).

The ancient Indian civilization is indeed outstanding in the fields of mathematics, astronomy, philology, literature, and philosophy. Its geographical and economic peculiarities of development allowed it to achieve significant long-term results in a variety of fields, which other civilizations could not do.

The idealization of Indian thinking forces modern adherents of Hinduism to create science-like teachings that reconcile archaic intuitions and the findings of modern science. At the same time, the relationship between ISKCON and science is currently more mature than ever before. On the social sciences, the most balanced position is taken by Hṛdayānanda dāsa Gosvāmī, who argues for the need for the religious organization to rely on sociology, religious studies, and other social and human sciences. In the natural sciences, freedom from religious bias was demonstrated by Australian philosophers Oliver Zambon and Tom Aechtner, who criticized Vedic creationism, pointing out, on the basis of traditional texts, that Vedic evolutionism has no less right to exist; that anti-Darwinism was never part of the program of Swami Bhaktivedanta, who fought atheism.

Pūrva-pakṣa as a Contemporary Hermeneutical Exercise

S. E. Kreitzer, PhD (History of Science), Richard L. Thompson Archives

The Sanskrit term *pūrva-pakṣa* “literally” means taking “the opposing point of view,” as described by Edwin Bryant in his translation and commentary on *The Yoga Sūtras of Patañjali* (2009), along with a more expansive explanation of the term:

The standard technique for refuting rival views is for a commentator to introduce the view of the opposing school, called the *pūrvapakṣa*, critique it, and then establish the perspective of his own school, the *siddhānta*. Naturally, the representation of the *pūrvapakṣa*, the opponent’s view, was sometimes selective or partial, but the ensuing discussion will provide a flavor of the rich debate and keen dialectical interaction between schools that forced theologians to fine-tune their perspectives and kept the Indic intellectual traditions alive and fertile throughout the centuries. (122)

The traditional practice has even been described as “the central method of argumentation in the Indian intellectual traditions,” and that “actual instances of its operation in the philosophical (*darśana*) and knowledge systems (*śāstra*) illustrate what can be called the method of *dialectical hermeneutics*” (Rakesh Pandey, “The *Pūrva-Pakṣa* of Modern Indian Thought,” in *Thinking the Re-Thinking of the World* (2022), p. 197). This

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presentation will thus explore how intellectual activities identified with *pūrva-pakṣa* have been considered in a traditional context, as well as in recent examples of scholarly analysis and popular works, that can help illustrate how ideals associated with the Sanskrit term *pūrva-pakṣa* remain relevant in our own times.

DAY 2, SESSION 5

A Model of the Relationship Between Revelation and Science in Gauḍīya Vedānta

Dmitriy Popov, PhD (Philosophy), Financial University

This study reconstructs the position of the philosophical school of Gauḍīya Vedānta on the problem of the correlation of the knowledge of revelation and the knowledge of science. The philosophical foundations laid by Jiva Gosvāmī (16th century) and their development and application by Bhaktivinoda (19th century), Bhaktisiddhānta (19th–20th century) and Bhaktivedanta Swami (20th century) are considered. The non-binary logic and stratification of reality characteristic of Indian philosophy and especially Vedānta suggests the existence of a more complex position that goes beyond the dichotomy of the positions of modernism and traditionalism, that is, the rejection of the authority of knowledge of either science or revelation. The presence of a complex structure of knowledge associated with different sources, means of knowledge (*pramāṇa*), as well as the separation of the sacred and everyday levels of reality (*pāramārthika*, *vyāvahārika*) and knowledge (*pāra-* and *apāra-vidyā*) helps to stratify various models of the relationship of revelation and scientific knowledge. At the level of intersection of the meta-theoretical and theoretical level of knowledge, relations are manifested according to the model of independence or the model of conflict, depending on the philosophy of understanding science: transcendental or positivist, respectively. This level of revelation corresponds to the sphere of sacred reality and knowledge, the hard core (I. Lakatos) of the Gauḍīya Vedānta teaching: the personalism of God and His energies, the highest goal of serving God. At the level of the intersection of the theoretical and empirical levels of knowledge, relations are manifested according to the dialogue model: according to Gauḍīyas, the world can be described theoretically in different ways; various empirical interpretations are recognized to the extent that they correspond to revelation and level of manifestation of epistemological virtues of the interpreter. It corresponds to the everyday sphere of reality and knowledge: questions of the connection of sacred and empirical cosmology, history, biology, geography.

Challenges of Teaching Vedic Cosmology at the College Level

István Tasi, PhD (History), Bhaktivedanta College (Hungary)

I think it's important that ISKCON researchers list open questions about Vedic cosmology and outline possible answers – even if we don't currently know what the correct answer is. While teaching Vedic cosmology at the Bhaktivedanta College (Hungary), I collected the repeated questions of the students. In this presentation, I will cover three areas:

1. What does “higher dimensional” cosmology really mean?

One possible answer is that “other dimensions” means different compositions of matter and of fine physical elements, which are not perceptible from an earthly viewpoint. Another approach is that there are other spacial dimensions, or hidden pathways within our well-known three dimensions. Both approaches can be true at the same time.

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2. Positions on the moon landing within and outside of ISKCON

Śrīla Prabhupāda was skeptical about NASA's moon landings (1969–1972). Later conspiracy theories also suggested that the moon-trips were a hoax. NASA argues that the moon landings were real. In ISKCON two approaches are present: (1) The moon landings were deceptions; (2) The “dusty moon” is available for earthly humans, but the heavenly part of the moon – mentioned in the *Bhāgavatam* – is not available for us. This dilemma becomes current because NASA has a plan for new moon expeditions in 2024–2025. What will be our understanding once they implement moon-landing? According to the Vedic view, can human beings in principle touch the visible moon?

3. Earth's place in Bhāgavatam cosmology

Where are we in the Vedic universe? *Bhāgavatam* does not mention the earth globe. One existing approach is that in the *Bhāgavatam's* cosmology, the earth is also a globe, near to the Jambūdvīpa island, in a salt water ocean. Another existing approach in ISKCON is that the earth is known to us is a section of the plain Bhārata-varṣa, which is part of Jambūdvīpa. Can this question be decided based on *sastric* information?

Understanding the Ontological Position and Purpose of the Virāṭ-rūpa: Meditation and Implications

Gergő Péter Rátkai PhD (Historiography), Bhaktivedanta College (Hungary)

The Virāṭ-rūpa, commonly known as the Universal Form, holds profound significance in Vedic cosmology. This presentation aims to explore the ontological position, purpose, and meditative aspects associated with the Virāṭ-rūpa as described in the *Śrīmad-Bhāgavatam* and other relevant sources. By delving into the traditional Caitanya-vaiṣṇava texts and commentaries, we seek to shed light on the diverse facets of this cosmic form and its implications for personal and universal transformation.

Our methodological approach involves a comprehensive study of the Virāṭ-rūpa, examining its synonyms, contexts, and significance in various Vedic sources. We also investigate Śukadeva Gosvāmī's rationale for discussing the Virāṭ-rūpa, based on his interactions with Parīkṣit Mahārāja and the *Bhagavad-gītā* verses (8.6–7), which emphasize meditating on the Supreme in His personal form. The exploration of meditation techniques related to the Virāṭ-rūpa reveals the conference's interest in understanding cosmological concepts beyond mere theoretical discussions.

Central to this exploration is the initial step of meditation on Kṛṣṇa, seeking a conscious connection with Him. We analyze the different ways this connection manifests in various states of consciousness, goals, and forms. The *Bhagavad-gītā's* concept of Kṛṣṇa reciprocating with individuals based on their level of surrender further deepens our understanding of the Virāṭ-rūpa's significance. This interconnectedness aligns with the conference's theme of exploring cosmological issues located in Sanskrit texts and their relevance to broader human experiences.

In conclusion, we affirm that the Universal Form, or Virāṭ-rūpa, is indeed universal in its scope and implications. Its multifaceted nature makes it relevant for diverse applications, transcending the cosmic realm. By understanding the Virāṭ-rūpa's ontology, purpose, and meditative significance, we can deepen our connection with the Supreme and gain insights into our place in the universe.

This exploration opens doors for transformative dialogues, leading to a holistic comprehension of Vedic cosmology's timeless wisdom.

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The *Virōdha* Problem in Purānic Cosmology

Ganesh Swaminathan, MBA (Engineering), Institute for Vaishnava Studies

Even though the *Purānas* as a genre of literature cover a variety of topics, cosmology has been an integral part of the worldview of these ancient Indian texts. In recent times, the cosmology of the *Purānas* has become an important aspect of understanding this ancient literature, and many recent publications have attempted to study, for instance, the Fifth Canto of the *Bhāgavata Purāna* and its correspondence with the discoveries of modern cosmologies. A gap, however, remains when it comes to the versions of cosmologies in the ancient Indian texts themselves, especially when it comes to the *Purānas* and the *Siddhāntas*.

A disagreement between the Paurānikas and the Siddhāntins was first highlighted to Western scholarship in an article by David Pingree. Christopher Minkowski followed this up with an extensive survey of the writings from that time and dubbed their disagreement as the “*virōdha* problem.” The dispute is in five areas: three relate to the earth – its shape, size, and support; two relate to the moon – its height and its role in eclipses.

I argue that the apparent disagreements are due to an incorrect reading of the *Purānas* in their broader context. This presentation focuses on the first two *virōdhas*, relating to the earth’s shape and size. It draws from a wide range of *Purānas* to make the case that the Purānic view is no different from that of the *Siddhāntas*. The two sets of texts are in, therefore, *avirōdha*. The presentation further suggests why the often unintuitive, Purānic descriptions of the earth differ from those in the *Surya-siddhānta*.

Placing the Temple of the Vedic Planetarium (TOVP) in Gauḍīya Vaiṣṇava History

Krishna Abhishek Ghosh, PhD (South Asian Languages and Civilizations), The Institute for Vaishnava Studies

The genealogy of temple-crafting in Gauḍīya Vaiṣṇava history maps well with the strategic focus of certain key exemplars of the tradition as they navigated the realpolitik of their historical contexts. In particular, the Temple of the Vedic Planetarium currently emerging in Mayapur appears to suggest another recurrence of this historical pattern of Gauḍīya Vaiṣṇava leaders attempting to engage timeless ideas in a timely way.

At the turn of the twentieth century when Indo-European encounters were at a peak, a new style of hybrid architecture was brought into existence by Ṭhākura Bhaktivinoda with the construction of the “Yogapīṭha” featuring semblances of European church architecture while retaining aspects of Gauḍīya Vaiṣṇava architecture. However, his son, Bhaktisiddhānta Sarasvatī, built more traditional temples where the spires looked like *mṛdaṅgas* in line with the symbolism of the Vaishnava *mṛdaṅga* drum utilized as a broadcasting instrument.

The roots of the Temple of the Vedic Planetarium (TOVP) go back to the vision of Bhaktisiddhānta Sarasvatī who sought to represent the stories and ideas of the *Bhāgavata* and its commentaries using the latest technology in dioramas that would provide visual storytelling for pilgrims visiting Mayapur. In particular, the journey of Gopa-kumāra through the various planetary systems described in the *Bṛhad-bhāgavatāmṛta* arguably provides a root narrative for the TOVP. The historical context in which the TOVP was conceived by his disciple Bhaktivedānta Swami Prabhupāda led to the genesis of a “Vedic planetarium” rather than just a temple during a period of local Bengali communist governance. Also, given that Prabhupāda expressed the idea of a Vedic planetarium exactly a decade after the construction of India’s first modern planetarium reaffirms my working thesis: temples are created by leaders in conversation with their socio-cultural milieu. Thus a Temple of the Vedic Planetarium, unprecedented in the history of modern Hinduism, suggests that temple construction in Gauḍīya Vaiṣṇavism has historically repeatedly blended timeless aspects of the tradition with cultural idioms that they thought were timely and contemporary.

Similarity and Differences Between India and Europe in the Science and Religion Dialogue

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There are three arguments that I will address in this paper. The first is that Indian and European religions emerge out of a shared linguistic and conceptual history which is well documented by historians like M. L. West and which establishes a basic groundwork for any comparative analysis in terms of poetics, theology, philosophy, and cosmology. Nevertheless, there are some fundamental differences that challenge dialogue. The first is that of rebirth, an idea that has only had a marginal acceptance in Western religion and philosophy, but which has implications for cosmology more broadly. I argue that the vast time scales and the densely populated cosmos, as well as the organization and structure of the cosmos that are described in, for instance, the *Bhāgavata Purāṇa*, largely rests upon presuppositions related to rebirth, and this is true not just for Vaishnava religion, but all the major religions in India. Western philosophies and religions broadly rest on a one life picture, and this shapes the way time and space are construed. Thus, any dialogue on the topic of cosmology must address basic questions in metaphysics like the nature of the self and the afterlife. Third, I explore questions of the relations between scientific and religious knowledge. Polkinghorne (in Clayton and Simpson 2006: 57) interprets Augustine's Literal Interpretation of Genesis (early fifth century) as "not concerned with some kind of naïve biblicism; rather, he [Augustine] acknowledged that if well-established secular knowledge seemed to conflict with a costmary interpretation of Scripture, then the latter might need to be reconsidered." I argue that contemporary Christian thinkers have for the most part continued in this line of thinking, but that this kind of clear demarcation between secular and scriptural authority on matters of cosmology is less prominent in Vaishnava history. Thus, any possibility of dialogue must address basic assumptions in epistemology and hermeneutics

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