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# Editorial

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It is heartening to bring out a novel journal in the area of Indian Knowledge Systems. The journal is novel in several aspects.

- Firstly the journal is multi-lingual with a vision to publish articles from any vernacular languages along with English. However, currently the Editorial Board is ready only for Tamil, Kannada, Hindi, Sanskrit, Telugu and English, and hence are accepting only these languages. However in due course, as the Editorial Team is expanded, we would consider other vernacular languages.
- The Journal accepts hand written copies from those learned people who are really unable to put the articles in soft form.
- Further, the journal accepts hand written copies which are written close to format of the journal and publish the scanned copies of the same. This has its own impact. Imagine the difference in publishing a letter written Gandhi in his own handwriting, and publishing the typed contents of the letter.
- Furthermore, the journal provides free writing assistance to highly knowledgeable or experienced persons who do not know reading and writing. The idea behind this is bringing 'their' knowledge to limelight.
- The journal hardly has any financial transactions between authors, readers and publishers, and is published only with a motive of promoting Indian Knowledge System, of course, objectively. However, there is an idea to support research scholars through a 'token of appreciation'; for those who have carried out 'original research', and offered for publication here. Hard copies are priced only considering the production cost.
- The review is by two categories of reviewers, one is by a team of domain experts, and the other by non-domain enthusiasts. At this point, it is worth noting that, without prejudice to IKS, the journal also accepts non-positive research results. However, the results and methodology should be well discussed.
- Many researchers will have research ideas, but due to several constraints would not be able to carry out research, and would be enthusiastic that somebody does the research on these ideas.

In this context the journal also publishes "Research Questions". These research questions, to be published should provide explanation on the hypothesis and explanations on the possible way and facilities, methodology to carry out the research.

- Although journal reserves the copyright of the articles, it is only to avoid duplication of work in other media or a commercial publishing activity on the article. Authors are free to distribute 'in toto', the pdf of the articles which will be provided to the authors.
- The journal/articles can be downloaded free of cost from the journal website (purnam.vercel.app)

It is a nice experience in bringing out the journal, and a number of domain experts, the academicians from various premier institutes have joined hands for this socially relevant cause.

The journal solicits support of one and all for this cause by:

- providing service through identifying good researchers and motivating them to submit articles for the journal
- identifying 'unorganized' knowledgeable individuals whose knowledge is worth to be shared to the society
- providing paper writing assistance
- identifying team members for various vernacular languages in various domains
- introducing the journal to potential readers

and last but not the least.....

- giving frank suggestions and feedback about the journal

The journal is free for writers and for readers. Looking forward for your support. Any suggestions and intellectual contributions are welcome. The journal acknowledges one and all who have supported in bringing out the journal.

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In service of Profession, and Humanity at large.....

*Sarvae bhavantu sukhinaha*

(May all beings be happy)

**-Editor**

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|| ಪೂರ್ಣಸ್ಯ ಪೂರ್ಣಮಾದಾಯ ಪೂರ್ಣಮೇವಾವಶಿಷ್ಯತೇ ||

# Pūrṇam

## A Journal of Indian Knowledge Systems

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Portraying the attempts of scholars and scientists.....

..... to understand the contributions of Bharatiya Heritage and SAINTists

Pūrṇam

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The first paper.....

### Salutations to you! Oh Vakrathunda!!

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#### Abstract

This paper gives a scientific interpretation of the traditional shloka, "Vakrathunda Mahakaaya Kotisurya Samaprabha Nirvignam Kurumedeva Sarva Karyeshu Sarvada," transforming its philosophical essence into a framework of physical principles. The analysis identifies parallels between the imagery in the verse and key concepts in physics, particularly those related to light, energy, and the cosmos.

The paper further explains why Vakrathunda is invoked/remembered in the beginning of auspicious occasions, and thus why this journal also starts with salutations to Vakrathunda. Finally the paper concludes with a message highlighting the importance of learning shlokas.

**Keywords:** Shlokas, light, electromagnetic emissions, Vakrathunda, Pratah smaraniya

#### 1. Introduction

Today, education is largely through information which is majorly in prose form. However, in the past most information/explanations were passed on in poetic form. One of the poetic forms of passing on the information/explanations is through "shlokas". Almost all sciences and technologies, traditionally were explained in the form of shlokas; may it be

engineering, medical sciences, social sciences, chemical sciences, physical sciences etc.

This article is about the well-known shloka, which goes as follows:

"Vakrathunda mahakaaya kotisurya samaprabha |  
Nirvignam kurumedeva sarva karyeshu sarvada | |"

The above *shloka* is widely known for its devotional significance, often recited as an invocation for auspicious beginnings. However, beyond its spiritual connotations, this verse can be interpreted as a profound metaphor encapsulating fundamental principles of physics. This reinterpretation highlights how shlokas can align with modern scientific understanding.

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## 2. The Scientific Interpretation

An attempt for a scientific interpretation is given here.

### **Vakrathunda: Curved Motion of Particles**

The term '*Vakra*' translates to 'curved,' and '*Thunda*' (or its phonetic equivalent in Kannada, 'Thundu') refers to a 'piece' or 'particle.' Together, '*Vakrathunda*' can be interpreted as 'particles moving along a curved/wavy path.'

In physics, this description is same as the behaviour of light. Light, though described as traveling in straight lines, comprises photons that exhibit wave-particle duality. The wave nature of light involves oscillatory (curved) motion. Thus, '*Vakrathunda*' metaphorically describes the wavelike motion of light particles, encapsulating the duality of light as both particle and wave.

### **Mahakaaya: Vast Volume of Light**

"Mahakaaya" translates to "huge body" or "large volume." This term can be associated with the vast spatial extent occupied by the sun's light in the solar system. The volume occupied by the sun's light is something which is the biggest volume in the entire solar system. Hence, the above shloka refers to "sun's light" which occupies huge volume, as Mahakaaya.

### **Kotisurya: Millions of Suns**

'*Koti*' refers to 'crores' (tens of millions), and '*Surya*' denotes 'sun.' Together, '*Kotisurya*' signifies 'millions of suns.' This phrase resonates with the astrophysical reality of our universe, where the Milky Way alone contains billions of stars. Each of these stars is akin to a sun, with many hosting their own planetary systems. The verse anticipates the vast scale and multitude of stellar systems in the cosmos.

### **Samaprabha: Similarity in Light Emissions of Stars**

'*Prabha*' means 'light' or 'radiance,' and '*Sama*' signifies 'similar.' 'Samaprabha' can be interpreted as 'light emitted in a similar manner.' This means that the electromagnetic, in particular, here, the photonic emission is a phenomenon common to all of the millions of suns (stars) in the universe.

### **Nirvignam: Continuous Emission**

The term '*Nirvignam*' means 'continuously,' 'without interruption.'" In the context of the sun, it symbolizes the continuous emission of energy. The sun's nuclear fusion processes ensure a steady output of light and heat, which sustains life on Earth. Even during the night, sunlight continues to illuminate the opposite hemisphere of the planet. This uninterrupted energy flow underscores the sun's pivotal role as the solar system's primary energy source.

### **Kurumedeva: Panchabhutas and Energy Flow**

'Deva' is often associated with the five classical elements (Panchabhutas): earth, water, fire, air, and ether. 'Kurumedeva' signifies the role of these elements in sustaining life and facilitating processes within the solar system.

### **Sarva Karyeshu Sarvada: Primary Energy Source for all works**

The phrase '*Sarva karyeshu sarvada*' translates to '*all works at all times.*' In a scientific context, it emphasizes that sunlight is the primary source of energy for all activities within the solar system. The energy from sunlight drives the dynamics of these elements, from photosynthesis in plants to the water cycle and atmospheric movements. Sunlight is thus the fundamental force orchestrating the balance of the *panchabhutas*. Further, from fuelling biological processes to driving climatic and geological phenomena, solar energy underpins every aspect of existence on Earth. This universality highlights the centrality of the sun in sustaining the intricate web of life and planetary systems. Thus, the energy required to do any work is directly or indirectly given by the sun, since, sun is the primordial source of energy for all activities of the solar system; virtually all work being done by the sun (using sun's energy)

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## 3. Summary

Overall, this *shloka* explains as follows: The sun's light which contains particles moving in the form of

wave is the primary source of energy of the solar system. The volume occupied by the sun's light is huge, and there being millions of stars, all of them give light to their solar system which is the primordial source of energy for all activities of the respective solar systems.

Thus this shloka serves as a poetic encapsulation of profound scientific truths. It describes light's wavelike nature, the vast influence of solar radiation, the multiplicity of stellar systems, and the sun's role as the ultimate energy source. By reinterpreting this ancient verse through the lens of modern physics, we uncover a harmonious convergence of traditional wisdom and scientific understanding.

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#### 4. Regards to you! Oh Vakrathunda!!

When individuals achieve extraordinary contributions to society, they are remembered and honoured. Even after their passing, their legacy often endures, and their birthdays serve as occasions for collective remembrance. On these days, people praise their achievements and express their gratitude for the impactful work they have accomplished. Further, some are regarded as *pratab smaraniya*; meaning the person is worth to be remember everyday upon wakeup. That would have been the footprints left by such a person in the society.

In similar lines, the sun, as the ultimate source of energy and an indispensable element of nature, deserves such honour (1. Although sun doesn't expect; and 2. It is with an attitude of expression our thankfulness). Acknowledging the sun's significance as an essential and inexhaustible source of energy, it is fitting to convey our respects to this vital aspect of nature. Among learned circles, it is customary to invoke this recognition at the outset of many programs, often symbolized through the invocation of "Vakrathunda." This practice underscores the universal importance of the sun as a life-giving force.

What is more to be understood is that this *shloka* is not about Hinduism as it is believed to be, but some

explanation of the phenomenon of the universe, and hence it is worth to be appreciated by one and all in the universe with no barricades of gender caste, creed, color, country, language or any other kind of discriminations, for that matter, and thus universal (*sarvadeshik*, *sarvakalik*, and *sarvatrik*) phenomenon.

Thus, in its first volume, Pūrṇam presents this as its first article, portraying the knowledge of an important phenomenon of the universe; and Indian Knowledge Systems is also to do something which is largely universal in nature and visualized by SAINTists.

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#### 5. Concluding with a message

*Shlokas* are not just words praising some deity. They could be praising too; but beyond that, traditionally, most information/knowledge were passed on through the poetic form. They are easy to be learnt by heart at young age; and as the intellect grows with the person, one day the science of the same could be understood which gives significant knowledge. Teaching children *shlokas* at very young age by making them learn by heart serves a greater purpose as against the current learning by heart of rhymes like that of "Pussy Cat Pussy Cat.....", "Jack and Jill went up to the hill" etc.

Further, like Vakrathunda, even deities or puranic characters are personifications/representations/explanations/allegory of some form of activity of universe or physiological activity or spiritual or principles of working of universe or some form of knowledge for that matter, which are scientific and universal in nature.

Attempts to understand *shlokas* or traditional texts keeping the above points in mind and conducting *shloka* learning classes are worth taking tasks to promote Indian Knowledge Systems.

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