

Research Article

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Ancient Map of Universe and Modern Science

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Abstract

Though it has been proved earlier, on historical basis that the ancient Map of Loka (Universe) prepared by Risis is a statistical chart, scholars were still skeptical about its hypothesis. This has been blocking worthwhile progress in the field. As such it has become necessary to re-examine and test the map against the various criteria and scope of cartography. It is found that it cannot be a Geographical map. In the light of several new evidences, it has been conclusively proved that it is an enriched statistical chart only.

It has been then shown as to how this theory removes the present contradictions and mismatches of the map with the scientific findings. Interpretations of its several contents as per the new theory reveal wonderful specific data about hitherto unknown or speculative objects of living and non-living realms, like existence of aliens, underground world and invisible worlds. It also reveals not only its characteristics, but also specifies properties of some special types of body materials and existence of other types of living-beings. Attempt has been made to understand and clarify these features by answering several queries about them.

Keywords: Contents of visible; Underground and invisible Universes; Geographical maps; Lokākāś a pictograph; Cosmic unit; *Tripadi* principle; Aliens; Gross and protean bodies

Introduction

It had been tried, in various permutations and combinations, to match the different Geographical features like the continents, mountains and rivers of our Earth with similar features depicted in the middle loka [1] of the Universe, as depicted in the ancient map. Even by resorting to some speculations about the symmetry of the middle loka and also allowing some margins or lee way for an artist to make the map look ornamental, much headway could not be made to match or reconcile the modern knowledge with the given features of *Jambudwipa* and its surrounding land liquid pairs in middle loka.

Mahendra [2] has also done research and tried to assign a particular portion of Asia, stretching from India to middle Asia and slightly beyond it, as Bharat Kshetra (BK) of *Jambudwipa* (JD).

But matching of other continents of Earth with the other parts of *Jambudwipa*, still remained a puzzle only, attracting thereby several wild speculations.

Amit [3] has dwelt upon several strong reasons for the scholars to find a proper interpretation of the map urgently. He gives a novel method to speculate. He assigns different meaning to the terminology of geographical features like mountains, rivers and plains of *Jambudwipa*, in his effort to strike reconciliation. However, validity of such speculations is questionable and creates some other problems, because he remains silent on the underground world and invisible world of lower and upper Loka respectively. He also does not go beyond the 8th pair of land-liquid pairs of middle loka.

Kachhara [4] has implied the oceans to be the empty spaces and the lands of middle loka to be located in other galaxies, like *Jambudwipa* to be our Milkyway and *Dhatki Khanda* to be our neighboring galaxy *Androdroma*. It does not provide matching or acceptable results.

In his book, "Cosmos", Rudi Jansma [5] presents an idea that the loka diagrams are cosmographical presentations, containing a wealth of teachings, which will slowly be revealed or reveal itself over the period.

The parallel continents on *Jambudwipa* are pictures of continents,

depicted as iconograph. The oceans, surrounding the *Dwipas* are speculated to be Magnetic fields only. The assumptions made about the actual entities do not have direct resemblances with those of actual physical entities. The map is treated to be an arrangement or lay-out sketch of the required data only. It also creates problems, if we neglect the importance of symmetrical and systematically drawn Loka map, where the 7 continents may be like a miniscule spec in the whole Universe.

The above noted speculative attempts clearly point to the fact that the loka map is not a geographical map. Then what type of map it could be? A close look reveals that it is not a *panoramic view* or a *schematic diagram* or a *bottle view of the universe*.

As per Jain [6], it could be a statistical or mathematical Chart only. It depicts various features and forms to a scale, quantifying them as a collective, in form of rings or strips. One is however wonderstruck to note the method of classification, categorization and symmetrical arrangement of all the non-living matter and living- beings, presented in their different phases, modes and states in the Map of the Universe.

Importance of Fixing the Exact Nature of the Loka Map

Problem of mental blocks

Although the hypothesis that it cannot be a Geographical map, provides historical evidence [1], but it is noticed that people have mental blocks to accept the concept of statistical chart. The old concept of its being a Geographical map is so deep rooted in the minds that it is now not at all easy to get it erased out completely from one's mind. Moreover, one never faced any counter challenge over the last

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almost 2000 years, Even after one is convinced of its being a statistical chart only, he comes back on and off, on the track of the geographical concept, while interpreting it. It creates problems even for simple interpretations. Hence it is essential to bring more evidences to prove the theory to reach a common consensus about the nature of this map and to make it acceptable universally.

The suttas (verses) of scriptures cannot describe jumbled up contents of Loka in a systematic and comprehensive manner without resorting to some logical and well laid out rules. On the basis of the characteristics and data collected above, one must be convinced that it cannot be a Mercator map. The rich database and the variety of geographic information, the chart provides shows that it is certainly beyond the scope and realm of cartography. If someone still thinks otherwise, he must give some scientific reasons or proof for its being a geographical map.

Scholars have all along been considering the map to be a Geographical map and interpreting its features accordingly. But when its fallacy started giving them problems, they started speculating several things in ad hoc manner, without analyzing systematically its actual nature.

The Universe is so vast that to explain its contents to a layman in a comprehensible manner by suttas, Risis must have used a special technique. It is obvious that the cartographical method was out of question because of its very limited scope. It is too inadequate to handle it. They could neither resort to any jumbled and ad hoc method. The map, which emerges from the Suttas looks to be a very systematic presentation of the contents. What could it be?

Exact nature of the loka map

This all important fundamental question has to be resolved first. We cannot go in the reverse direction that we would first test the nature of the map with the contents and then approve its nature. First, the method of representation is to be decided and then its contents would be scientifically deciphered or speculated (as per the limited knowledge of science) as per the scope and nature of the map.

Unless we proceed systematically, our research and discussion will not go much farther in resolving the various riddles. It is also obvious to the scientists that whenever their knowledge of contents expands, say by a factor of 100, the science can depict all the cosmological contents of the Universe only by resorting to a statistical method. It could be either a normal statistical chart or a modified and enriched chart only. The capability and limitation of charts have to be clear in mind.

We can also depict in a chart, the geographical features like mountains, rivers and plains of an entity, but it would be in form of a collective feature only (Figures 1-5). Individual entities of a Unit in a chart can remain identifiable in terms of its percentage value. It would be more clear, if one conceptualizes again a Bar or a Ring chart, depicting distribution of population density or distribution of expenditure on individual heads, as shown in the Book [1] (Table 1).

Scope of Chart: Actual physical Contours of an individual entity and its relative distance from other similar entities of a group cannot be depicted in a collective mode of statistical presentation. The collective entity or any of its members can be shown in a selected regular geometrical shape in a chart, which can be enriched by depiction of its specific features in a collective form on it. The sizes are shown to a scale.

Scope of Geo-Map: Actual physical features, as seen from above, i.e., an aerial projection is shown as a continuous unit in a physical



Figure 1: Geographical map.



Figure 2: Statistical chart.

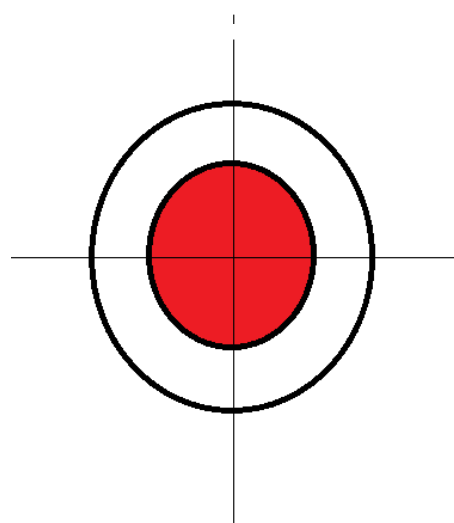


Figure 3: Statistical ring chart.

Geographical map. The sizes and shapes are shown to a scale. It can be enriched by drawing lines or coloring certain features to make it thematic.

Study of the above comparison, given in the Table 1, proves that only the chart has the capability to present the vast data of the Universe at a glance.

Conversion of a Geographical map into a Statistical chart

Continents and Oceans of the Earth are shown in Geographical map, Statistical chart, Statistical ring chart and Rivers and mountains

are shown in Geographical map and Statistical chart. Land Mass of a planet is shown in simple statistical chart and enriched statistical chart (Figures 6 and 7).

The above exercise reveals that the statistical charts, obtained by conversion of geographical features, match well with the ornamental looking map of the Universe.

Once the theory that the Loka Map is a Statistical Chart and not a Geographical map is accepted firmly, then only the contents of the chart can be interpreted and deciphered meaningfully in terms of modern known cosmic and geographical entities for comparison purpose.

Further Proof in Favor of a Statistical Chart

- Another important fact, which has emerged recently from

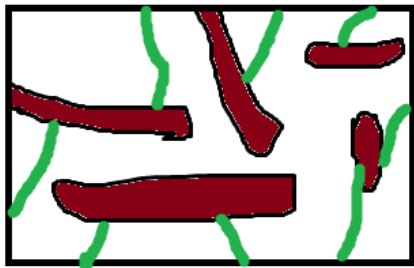


Figure 4: Mountains and Rivers Geo-Map.

Cassini-Huygens mission and Wide-field Infrared Explorer (WISE) of NASA, is the discovery of 1500 odd light reflecting earth-like planets in the so called *Jyotiṣka* Loka (In our Milky Way), in the last few years. They do not belong to the light radiating types of stellar celestial entities. Even liquids such as oil-like, juice-like or milk-like have been discovered by the scientists on them. This, in fact matches well with the description given in the Scriptures for types of Oceans of Middle Loka [1,2].

- It raises a pertinent question is, how come such land-liquid masses of Middle Loka are available in *Jyotiṣka* Loka, which is supposed to be made up of light emitting objects only? A scientific explanation for it is very simple. Various types of light emitting and light reflecting objects are scattered throughout the Universe. They can be segregated and clubbed together in these two types to get them exhibited at a glance in form of Statistical Bar chart. Because of the vastness of the Universe; they cannot be represented in any other type of Geographical or Cosmological map.

- A critical look by a mathematician at the symmetrical nature of the *Loka* map (Figures 8 and 9), considered to be “ornamental” in layman’s language, would instantly result in recognition of it as a Bar/ Ring chart by him! This, in fact is the only method to present such huge data about this vast Universe in a comprehensive manner.

- A student of Geography knows well that the contours of land and water masses can never be so symmetrical and ornamental-like, as the concentric and smooth rings are depicted in the middle division of the *Loka* map. The coastal areas are actually always serpentine, zig-zag and uneven. Hence this map cannot be accepted as Geographical map.

S. no.	Features	Presentation in Geographical map	Depiction in statistical chart
1.	Any Land Mass (Figure 1)	In Cartography, any land area is shown in its actual shape, as seen in in aerial view, called Mercator projection	Only its total surface area is shown in a geometric shape, which may not correspond to actual shape
2.	Contour of land mass	Land and Ocean are shown, as seen from the satellites, i.e. neighborhood and contours maintained as seen.	Various Land Ocean masses are clubbed together in 2 groups - Land and Liquid. Their total quantity (area) s shown in two geometrical shapes.
3.	Their location and shape	(Figure 1) Location and shape of land and liquid are shown	(Figures 2 and 3) Location and shape
4.	Features, mountains and rivers	These features are shown with their contours and relative locations. (Figures 4 and 6) The shape and contour of mountains, their mutual distances can be shown as per the actual projection. All individual rivers are shown as per their locations. Actual zigzag paths are shown with their tributaries. Each perennial river has its relative location and the path it traverses is shown.	Their contours and actual locations are not shown. (Figures 5 and 7) Only the total mountain areas and river masses can be represented symbolically. All mountains are clubbed together and are collectively shown as one or two entities in a regular geometric shape at any convenient location as percentage of total land mass; All rivers are, similarly clubbed together and are shown in one or two river masses, connecting mountain to ocean by regular geometric river lines.
5.	Plants in a small system	Can be shown as individual planet. Their mutual distances, relative sizes can also be shown. Sketch Planets with their average mutual distance and relative sizes. The intervening empty space may have different scale from the planet size scale.	All planet masses will be clubbed together and shown together as a collective mass. Water and land can also be shown as two separate units in a regular geometric shape. E.g., all planets are shown as round units in true shape and at actual relative distances in geographical map. In statistic all planets are shown together as one unit of total surface area. Here empty space between the planets is not shown.
6.	A Galaxy in the Universe	It may be possible to show stars as separate points They may be accommodated and shown as a galaxy in a cosmic 2-D diagram of galaxies and stars (as a night view diagram)	The total light emitting plasma area of all the stars of all the galaxies is shown as a strip or ring. The identity of individual stars in it is normally not feasible. They may be Compared with a big glass jar containing innumerable small glass balls.

Table 1: The comparison of methods of presentation can be summarized as follows.

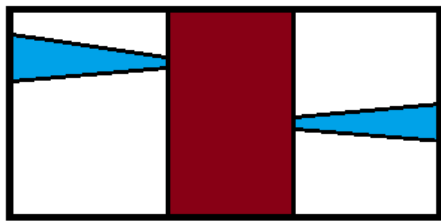


Figure 5: Mountains and Rivers Statisticalchart.

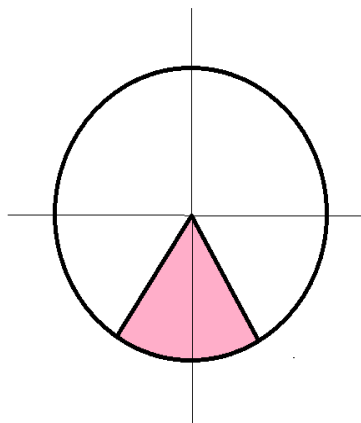


Figure 6: Area of 1 lakh density of population (Simple Statisticalchart).

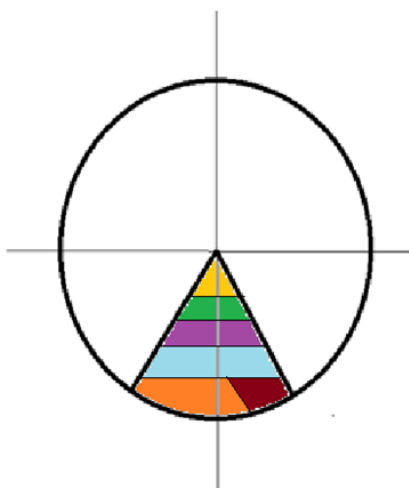


Figure 7: Enrich the pie chart by depicting importancities.

• It is proved beyond doubt by science that MV-Kshetra is not on our Earth, though it is shown as an extension of Bharat Kshetra of Middle Loka. No gap or empty space is shown in between these two Kshetra! Then what is the scientific method to depict such disconnected areas as connected areas? Geographical map, which in principle is an aerial projection, cannot depict them in such a manner. Such principle and capability is available only in statistical presentation method!

The above additional four important factors are considered to be proof enough to treat the Loka map as a pictogram.

Total Contents of the Universe as per the Chart

Research has proved that the Map is a statistical chart, prepared to depict the contents of the Universe at a glance. It means, various entities of the Universe have been clubbed together as per their important characteristics and every group is presented in form of a ring of the pictograph. The individual units or entities lose their identity in it. A collective statistical pictograph depicts the biological communities of various types, in relation to its abiotic environment i.e., classes of beings and the types of their bodies under different phases and states of non-living substances.

In the following, the contents of the map would be deciphered in the light of this new concept.

• Since the modern cosmic knowledge is extremely scanty as yet, (as compared to the vastness of the contents of the chart), any comparison of the deciphered entity with it would fall into the category

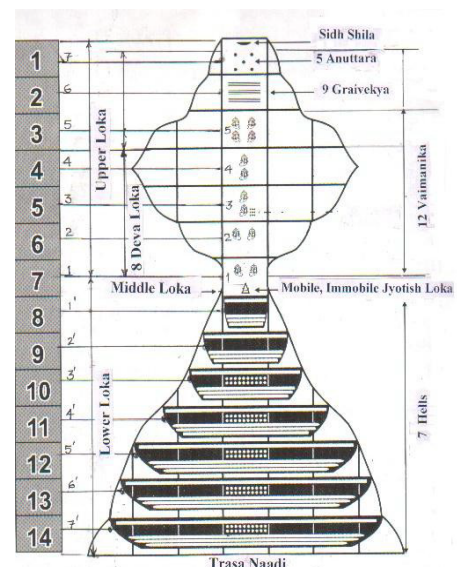


Figure 8: Statistical chart of the non-living matter (of 4 types) of the whole Universe (Triloka).

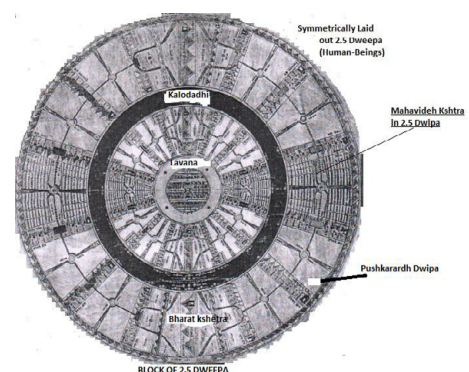


Figure 9: First 2.5 Dwipas of Middle Loka.

of “speculation” only in the realm of modern Science, because it is still unknown to Science. As such the deciphering of the contents of the chart in terms of individual cosmic units is really a speculative activity for modern science. A specific Cosmic Unit of the chart, like *Jambudwipa* (JD) is now known to be only a collective representation of similar entities of that Unit. The determination of the size of the cosmic unit, as argued by Lepekhin [7] is still at a very initial stage. It may take some more time to be developed and defined fully.

As per Jain [6], the Loka Map depicts statistically all types of living and non-living materials, available in their different phases and modes in the whole Universe. The visible Universe, termed as Middle Loka is divided in two parts. The first part containing all the visible light- reflecting cosmic units comprised of matter in its first 3 phases. It is depicted as pairs of land-liquid mass. The second part, comprising of all the visible light- reflecting cosmic units, found in first 3 phases of matter, is depicted as pairs of land-liquid mass. The second part contains all the visible light emitting cosmic units, comprising of matter in its 4th phase (plasma). It is depicted as *Jyotishka* Loka (Starry world). The underground materials of all the cosmic bodies are depicted as Lower Loka in its various phases, which are dependent on its pressure and temperature. The Upper Loka comprises of all the invisible matter of the entire Loka, like EB, FD Condensates etc. They are inhabited by different types of protean-bodied living-beings [6].

It gives rise to following questions.

Q1: How are the existing Geographical Anomalies resolved by the novel method of Pictogram?

Q2: Why the material in the same first 3 phases is not shown as one pair of land-liquid mass? What is the logic behind showing it in innumerable pairs?

Q3: What is the invisible Upper Loka and where is it located?

Q4: Does the Loka Chart reveal existence of alien civilizations? These queries are being answered in the following.

How is the Geographical Anomalies Resolved by the Novel Method of Pictogram?

Since geographical traits, like “mutual distances”, location and “shapes” of any individual object like Earth do not fall within the Scope of the Loka pictograph, any attempt to compare geographical map with a pictograph would naturally yield wrong (*Mithya*) results, called „Contradictions, because it is wrong in principle.

Thus it is abundantly clear that the reasons for generation of contradictions are the misplaced attempts to treat Loka pictograph as Geographical map.

S. no.	As per pictogram of ancient Indian Lo kā kā śa	Comparative status of modern scientific findings
1	Vā tavalaya and Vā tpindas	Such material Rings and materials are discovered on several space bodies like Planets and Comets. They have some types of air or ionic rings. Rings of planet Saturn are very famous. Vatvalayas correspond to such rings.
2	Non-living Materials in Middle Loka: i). Exotic Oceans, surrounding the dwipas (Oceans of Juice, Milk, Oil etc.)	Liquid material already discovered on several planets. (Juice-like, Milk-like, Oil-like materials already found.)
	ii) Earth Materials of Middle Loka	Already discovered more than 1500 planets of various types of earth materials, even in our Galaxy.
	iii) Non-living Materials in Jyotiśka Loka	Already Self-illuminating Plasma state of Material has been found on almost all the Stars
3	Non-living Materials of Upper Loka: 3 broad types of upper Loka.materials	Not much is known as yet. These may correspond to 3 higher phases of matter, developed in the Labs, viz. E-B, F-D condensates and the latest Transparent <i>Sphatik</i> state.
4	Non-living Materials of Lower Loka: 7 types of lower Loka materials	Not much is known as yet. These may correspond to the 7 types of States of matter, generated below the surface of heavy planets due to higher pressures and Temperatures of Earth over-burden.
5	Living-Beings in Middle Loka: i). Living-beings having Gross bodies (Human and sub human-beings)	No living-beings have yet been discovered outside our Earth. (Scientists are still at a nascent stage of exploration). However, about 500 planets, having earth like environment (Exo-planets have already been discovered even in our Galaxy. This gives a strong indication of existence of extra-terrestrial life, as depicted in Pictogram.
	ii) Human-civilizations in Middle Loka: Although they should be represented collectively in statistical pictogram by one Ring, yet they are depicted by separate rings.	Depiction by separate land-liquid ring pairs may denote different Lepekhin Units of Cause-effect limitations, for Gross-bodied living-beings. It needs further investigations.
	iii) Human-civilizations in Middle Loka only in first 2.5 dwipas	Although strong possibility exists for extra-terrestrial life, it is still to be discovered. Recent Kepler Mission and Drake Equation have indicated strong possibilities of existence of several alien civilizations even in our galaxy-cluster.
6	Living-beings in Jyotiśka Loka Special type of creatures, having bodies made of Protean matter, sustainable in plasma	No such material is known as yet in the Science. (Science even does not know, as yet about the Radiance-bodied living-beings)
7	Inhabitants of Upper Loka: Their bodies are also made of Special Protean material	Not much is known as yet about EB-condensates etc. or about any protean matter in space. Research on EB-material in outer space by NASA is underway. It may provide clues for such materials.
8	Inhabitants of Lower Loka: Their bodies are also made of Special Protean material	Not much is known as yet about internal structure of Celestial bodies and Earths etc. or about any such protean matter
9	Utpād-Vyaya-Dhrauvya in Lo kā kā śa . The shape, total substance, the structure and certain features of loka or dwipas may be invariant, but destruction and formation of their constituents, like living and non-living matter are ongoing processes.	As per science, the galaxies, stars and planets of the Universe are destroyed and new ones are formed. All species are supposed to exist since beginning less time in loka and dwipas, but not on a particular planet. On a new planet, life has to begin and evolve. Therefore, formation of Earth and the beginning and evolution of life on it, does not violate any Scriptural principle

Table 2: A Comparative status of modern Scientific Findings with the pictogram of ancient Indian Lokākāśa.

Hence one has to be very careful and restrain himself from indulging in one sided interpretation or justification, lest one falls prey to *mithya* prejudices (Tables 2 and 3).

Frequently Asked Four Questions by a student

Sir, Mismatches about Flat and stationary Earth, Location of *Mahāvideha Kṣetra* (MVK), Day and Night on Earth, distances of Moon and Stars etc. in *Lokākāśa* (Figures 8 and 9) with the modern scientific findings create utter confusion and embarrassment to me. My belief in ancient wisdom gets shattered, because I do not get any clarification or satisfactory answer for this contradiction.

Answer: The solution developed through this new concept could be summarized as below. Since the map is not the traditional Geographical map, it is improper and wrong in principle as mentioned above, to search answers to questions of geographical nature from this chart. It lowers its status and importance. Such attempts exhibit the ignorance and misunderstanding of the map by the reader.

After throwing off the yoke of traditional Geographical interpretation of Loka and then entrenching our foot firmly in the principles and rules of statistical presentation, we can humbly state the fact that it is entirely wrong, unethical and abnormal to postulate that our Earth is Flat, Stationary and does not rotate about its Axis, on the basis of the characteristics of the *Jambu Dwipa* of Pictogram, which itself is a collective aggregate or combined depiction of various Earths of a Cosmological Unit.

It is outside the purview of Loka Pictogram to address to above four Geographical queries and issues. It is just like asking an Economist to search solution for a cardio vascular ailment from the books on economics.

It is theoretically wrong to state that MV-Kshetra is a part of our Earth or is connected with Bharat Kshetra by a continuous indiscrete mass of land.

Similarly, based on the principle of statistical pictogram, it is also theoretically wrong to interpret that Day and Night happen on our Earth due to rotation of two Suns around mount Meru.

Once we have understood, in clear terms, the rules of pictorial charts, we will not create confusion with the modern scientific findings

by wrongly interpreting our treasure trove Pictogram of Loka.

Discussion

• Raising such queries is quite but natural, when we interpret the Loka Map as a conventional Geographical map. According to it, the Mahāvideh (MVK) and Bharat Kshetras (BK) are parts of Jambudwipa (JD). Their Geographical distance is around 50,000 Yojana (a unit of length). When scientists can have radio communication with Mars or much farther Stars, located at distances of Millions of Km, it should not have been a problem to establish regular radio link with MVK! But since it has not been possible to establish contact with them, there could not be any other reason for it, other than the fact that the JB is not a Geographical entity, but is a part of a Ring chart. As such it has to be interpreted as per the rules of the statistical pictograms. A student of mathematics knows that a chart depicts areas, places or population mathematically in collective aggregate form only. A particular area or place cannot be shown individually in a block chart.

• In terms of modern science, the Scope of this cosmological pictogram encompasses primarily the depiction of phase wise non-living substances (*Pudgalistikaya*) and the living substances (*Jivastikaya*) in their different types of Existence (*Gatis*). Since the survival of living- beings, in any Gati, is directly related to the type and nature of non-living substance surrounding it, both are depicted accordingly in comprehensible form and terms. The Ring charts go beyond the realm of Geography to present the huge data of living and non-living substances jointly in a systematic and symmetrical manner. The location and identification by shape of an individual entity in an aggregate is not possible. Similarly, the issue of locations of individual Earth bodies and their mutual distances are the subject matter of Geography and do not come under the purview of bar chart.

• It becomes clear that the scope of Loka pictogram is quite different from that of Geography. Important geographical features, like mountain ranges, plains or rivers can be included only in block/ group form or collective aggregates (Figures 1-5) of similar characteristics. Individual entities cannot be identified in a statistical chart. If Scientists, the world over, can be explained properly the exact features of this ancient Pictogram of Loka, they would be able to divert their resources and develop appropriate technologies to search and locate some parts of MVK, with a view to communicate with their civilizations.

S. no.	Which Portion	Non-living matter	Supported living-beings	Remarks
1a	Middle Loka (In form of Ring-Chart)	All the Land and Water mass available in the Universe in the first 3 phases of the matter, up to Gas form have been clubbed together and presented here.	All the Human- beings and sub-humans of the Universe have been clubbed together	These materials are scattered throughout the Universe. Geographical data and features are presented in a collective form
2b	Jyotiṣka Loka (In the form of Ring-Chart)	All the matter in the 4th phase – Plasma phase of matter of the Universe	All the Jyotiṣka Lbs	These protean bodied Lbs are supported by plasma materials
3c	Lower Loka (In form of Strip-Charts)	All the matter in its 7 stages, (as found inside the Earth), according to its internal elevated pressure and temperature. Each state of matter represents one strip in the lower Lokakash map	Protean-bodied living- beings (Lb) Each strip supports one Type of protean	Each type of Lb is supported by that special Type of State of matter
4d	Upper Loka (In form of Strip-Charts)	All the matter in the last 3 phases of matter. 5 th phase-EB-Condensate Matter 6th phase- D-F-Condensate Matter	This vaimanik matter supports Kalpā Vaikriya bodied Lbs. Akalpā Vaikriya bodied Lbs (Graiveyaka and Anuttara Deva)	1st to 8th Deva Loka Also Supports Devas of 9 th to 12 th Loka

Table 3: Living and non-living Contents of the various portions of the Pictogram at a Glance.

The above Table summarizes the type and form of Non-living matter and its corresponding supported life-forms, found in different parts of Lokākāśa. Of course, the map is a collective statistical representation. In reality, they are heterogeneously distributed throughout the Loka.

• A historical note: Is this method a new discovery? The present knowledge of Scriptures has been derived from Guru to the follower system orally for almost 1000 years from the datum period (Period of Mahavira and Buddha). In the intervening period, before it was penned, there was a prolonged horrible draught of 12 years at a stretch and substantial wealth of knowledge was lost from the memory during this period. Due to such and other adverse conditions, during the last 2500 years, scholars might have probably forgotten the exact method to read and understand such map of Loka. This has only been rediscovered now [6].

Possible Solutions to a Few “Queries” Rose Recently

Q1: We tend to believe that the middle world, as depicted by Risis is the complete universe that we see, and lot more that we still need to discover.

Thus, the Loka-Map is not just a pictograph, but an actual shape of our multiverse

Ans: In a sense, the pictogram represents all the contents of the Universe, category wise in the form of individual strips. Hence, the combined chart shape of the total contents can be regarded, in a way as the shape of the Universe only.

Q2: Risis have given the *suttas* (descriptive verses), not the Map of the Universe. The map is drawn by later Acharyas on the basis of the Suttas. By changing the map, you are in a way discarding the Suttas also.

Ans: Yes, the map is a drawing made on the basis of Sutras by the Acharyas. It means, it is a graphical representation of Suttas only. If one accepts the drawing or the graph, it naturally means he accepts the Suttas. Both are acceptable in full. What is discovered now is that the nature of the graph is Statistical and not Geographical. Proofs for this claim have also been provided.

The *Suttas* have explained the data and features of the Loka in terms of statistics and not in Geographical language. Hence their graphical presentation has taken the shape of a Strip or Ring chart.

Q3: Shape of Loka

Scriptures mention a three-bowl shape of Loka (Figure 8). Kachhara [4] modifies it by rounding the corners to make it a stable structure. Further, the Universe may have rotation, say spin about a vertical axis passing through *Trasnadi* (though it is not explicitly mentioned by Risis) to give stability to shape. These geometries therefore need not be taken seriously.

Ans: Geometric Shape:

i) Mere rounding of corners may improve stability to some extent, but cannot bring about the possibility of making such a real cosmological structure stable. The stability depends mostly on the overall gross shape and spin of a solid/compact mass. But its special shape, even after rounding of the corners, does not correspond to a stable structure.

ii) To presume loka to have spin is purely our speculation, which does not match with any of the details given by the Risis.

iii) The suggestion to not to take the geometry of the structure seriously has been sounded several times in the past. But since there is no firm basis or reason for it, it has never been accepted. The geometric shape cannot be disregarded so lightly.

The problem is critical, if the map is considered to be a Geographical Map. Since it has been proved to be a statistical chart, hence the shape it has taken, while drawing the chart for exhibiting its classified living and non-living constituents, corresponds to the shape, which we observe now. As such the stability question automatically becomes redundant.

Q4: Why does the Lower Loka (underground universe) have separate strips of matter, which are interspersed with space vacuum in between them?

Ans: The 7 strips of lower loka represent the 7 states of matter [6]. Hence they are shown as separate earths, separated by space vacuum. However, it is to be noted that each strip represents not only one specific matter state, but represents the total amount of that matter in the Universe. That means, here all the matter of a phase has been clubbed together. This has been possible, because fluid-bodied living-beings can travel faster and do not have distance based Lepekhin's unit system of loka for them.

Similar is the situation for Upper Loka. In these worlds, the strips are spaced or separated by space vacuum. Since information exchange by protean bodied living-beings can take place in a blink of an eye from one end to the other end of the Universe, the barrier of units does not exist for them.

Q5: Why the Middle Loka rings (Figure 9) are continuous and not separated by Space rings, as shown in the Upper and Lower Loka? Why the solid-liquid paired rings are shown connected with each other without having the interspace ring in between them?

Ans: i) Once we understand the logic behind showing several rings of pairs of solid-liquid phases of non-living matter, instead of a single pair, we may try to find out the reasons of not having “spaces” between the pairs.

Mathematically all the similar matter of the universe, in solid or liquid phase should have been clubbed together and depicted as two consecutive rings of solid and liquid matter.

ii) Lepekhin's Unity [7] in world

The gross-bodied living-beings have speed limitation to exchange cause-effect information between them. As compared to vast distances of billions of light-years between galaxies or systems of galaxies, called clusters, the possible distance to exchange information is very small. As such, the cause-effect events have no relevance at large distances.

Lepekhin has put up a hypothesis that a galaxy or a cluster of galaxies behave as a unit within itself. It will work as an independent and exclusive unit for other systems. Its information exchange system will not have any effect on the other systems. It is possible that every pair of solid-liquid pair in the Middle loka represents a separate unit system.

iii) These rings, though represent different unit systems, but are made up of the same type of phases of matter. Only the matter having special life-supportive ambience, have been segregated and placed at the center of the Middle loka. As such they do not require interspace vacuum to be provided to separate them.

Concept of Cosmic Units

• Lepekhin [7], a leading Researcher of Petersburg Nuclear Physic Institute, Russia proposed a hypothesis that the New data on the structure of the Universe is consistent with the fact that its visible part consists of separate isolated systems of stars scale. Cause-effect relation

between all phenomena in our world diminishes with increasing distance. At a distance of hundreds of light-years it almost becomes zero. Unity of the world exists only in the close range when the time of information exchange is small. At large distances it doesn't exist.

The Universe, as such splits into areas completely isolated from each other.

Each pair of land-liquid mass of middle Loka, in our opinion, represents such Lepekkin's cosmic unit. Since the gross bodies of its inhabitants impose restrictions on their travel speeds (speed of light), they are logically separated in these units of land-liquid masses.

- The other world is the Einstein-Gliner vacuum, in which there is no frame of reference. A spontaneous appearance and annihilation of particles takes place.

i) This, in our opinion, may be the Upper Loka, which remains invisible part of the Universe.

Its contents correspond to material states at deep cryogenic temperatures, like EB and FD condensates [1]. It is scattered randomly throughout the Universe.

Its inhabitants have their bodies made of Protean-like matter. It is explained by the Risis that they have capability to change their shape, size and material phase according to their will. They may even come out of invisibility and become visible to us.

Since the protean bodies of its inhabitants do not impose any restrictions on their travel speeds (speed of light), they are not depicted as separate cosmic units. Logically they are separated only in units of different quality or phases of the material masses.

ii) In modern terms this phenomenon is explained in the following manner.

If spontaneous appearance and annihilation of particles takes place, near the interface with our visible world, spontaneous glow of the stars and the Sun appears [7]. It was suggested that neutrinos may be a disturbance of the vacuum-like environment. Under certain conditions the law of conservation of energy is violated,

iii) It is possible that the humans have a chance to ascend to a higher stage of development and acquire properties of protean bodies. This could enable them to enter into another world, the Einstein-Gliner vacuum.

This invisible world is existing uniformly with the visible world throughout the Universe. It contains dark energy, which may have relationship with the EB and FD condensates. The properties of condensates are being studied in space by astronauts [Ms. Sen of NASA]. We shall then know more about the properties and its relationship with the Einstein-Gliner vacuum.

iv) Nothing is yet known of science about the protean matter or protean-bodied living-beings. In such extreme conditions, how such living-beings can exist with their special body materials needs further scientific studies

Do Alien Civilizations Exist Elsewhere in the Universe?

- Recent Kepler Mission and Drake Equation have indicated strong possibilities of existence of several alien civilizations. Scientists could not make any contact with them as yet.

But the Human-civilizations, scattered throughout the universe, have been grouped together and depicted in the chart [6]. Since the

exo-planets are very few and far apart, they could be accommodated and presented in the first 2.5 units (called dwīpas) of habitable area. This clubbing may need modification in the criteria of Lepekkin's cosmic unit.

- In Solar systems

The number of Suns, attached with every pair of Land-Liquid mass may probably give some important clues about extra-terrestrial human-beings. The 2 Suns of Jambu-dwīpa and 4 Suns of Lavaña Ocean probably indicate that this collective Unit has Human civilizations in only 6 Solar systems of our Galaxy. The next Units of Dhātiki-khanda etc. are bigger units [2,4]. It is revealed that human-civilizations are available in 132 solar-systems!

It is noted that some civilizations are spiritually far more advanced (*Mahavideha*), i.e, far more concerned to not to hurt others, where as some others are still in primitive state.

The rest of the innumerable units are capable of supporting only sub-human (*Tiryancā*) types of inhabitants. All the living-beings of this part of Universe are made up of Gross-Bodies, called *Audārika* bodies. They can aptly be supported for survival under certain environmental conditions by its three phases of the non-living matter.

- In *Jyotiṣka* (celestial) Loka

It contains celestial structures made of plasma state of matter. As per science, this phase is available in the atomic furnaces of all the stars. Hence, it is understood that only the self-illuminating objects are represented here.

The bodies of inhabitants of the above noted special vehicles are made up of special type of fluidic-matter (protean), which is still unknown to science. These can understandably be supported by plasma matter of the vehicles. Science does not know about the existence of such living-beings.

Similarly the bodies of the inhabitants of Invisible and Under-ground worlds are supposed to be also made of different types of fluidic matter [6]. Recent research has also proved the existence of inorganic form of life [8].

- Limit as *Trasa-Nādi*.

It is found from the pictogram that the total area, covered by mobile species of the Universe on their respective Earths do not exceed 1 *Rajju* diameter (a unit of length, which is equal to about one light year). These can be arranged in a cylindrical structure of 1 *Rajju* diameter, called *Trasa-Nādi* [2,4].

Ans. This data may be very useful for modern scientists for their cosmological research and establishing contact with them.

Discoveries by Recent Space Missions

- We may mention some results obtained by space missions sent to explore our solar system. Cassini-Huygens mission of NASA was an important mission which explored Saturn and its satellite Titan. It found that Titan has lakes of hydrocarbons i.e., liquid ethane, methane, and propane and possibly alcohol.

Callisto, Ganymede and Europa the satellites of Jupiter have been found to have under surface oceans of saline water. Cassini spacecraft also made several flyby's of Enceladus, the large icy moon of Saturn, and found evidence for Under-surface Ocean and water geysers activity. Various types of sugars have been found in space. Organic

matter, found on the outer planets and satellites synthesize sugars and give rise to sweet oceans.

NASA's Wide-field Infrared Explorer (WISE) found glycoldehyde molecules around a sun-like star in Rho Ophiuchi, a star-forming region. It is a young star, called IRAS 16293-2422, and is part of a binary (or two-star) system. It has a similar mass to the sun and is located about 400 light-years away in the constellation of Ophiuchus.

- It appears to be futile to rationalise some of the numbers mentioned on these diagrams. However, it may be noted that the ratio of area of the Jambudvīpa land to the area of the salty ocean (1:2) seemingly agrees with the earth where land area is roughly $1/3^{\text{rd}}$ and ocean is $2/3^{\text{rd}}$ of the total area of the earth and the land to seawater area is 1:2. It is not within the scope of the present discussion to interpret every observation and make an attempt to reconcile them with modern observations; many of these have been interpreted by Jeoraj Jain [1]. It suffices to say here that some features of these diagrams, like composition of various habitable planets etc. also seem to be in qualitative agreement with the recent observations.

Evolutionary Nature of Earth

Principle of *Utpad-vyaya-dhrauvya* in Loka

As per above principle of annihilation, generation and invariance, Loka is eternal in respect of its substance contents, but is constantly undergoing changes in its mode and form according to the rule of *utpad-vyaya-dhrauvya*. There is nothing permanent in loka [4]. From this point of view, although the shape, the structure of loka or dwipas may be invariant, but destruction and origin of their constituents, like galaxies or their parts are ongoing processes. The dwipas represent the total Area of habitable or non-habitable substance of a galaxy or cluster of galaxies, in its first three phases. The total substance of such a group remains invariant.

Thus stars and planets are destroyed and new ones are formed. All species are supposed to exist since the beginning less time in loka and dwipa, but not on a particular planet. On a new planet, life has to begin and evolve. Therefore formation of Earth and the beginning and evolution of life on it does not violate the above principle, keeping the collective form unchanged. This can be accounted for by the above *Tripadi* Principle, meaning thereby that matter in the Universe is in a dynamic flux.

A section of the Scientists claim that the Galaxies are moving apart at increasing acceleration, i.e. the Universe is expanding at an ever increasing rate. However, it might represent this status, prevalent before a few million or billion light years. We even cannot know the quantum status, because of the division of the Universe in several independent and isolated cause-effect communication "Units", as proposed by Lepekhin.

As such the whole concept of Red-shift and Blue-shift, dark matter and their various explanations need to be reviewed in the light of Lepekhin's "Unit" level Universe.

Conclusion

A number of queries relating to several aspects of the ancient cosmology, astronomy and geography have been discussed and tried to iron out the prevalent serious discrepancies between our current understanding and the scriptures by suggesting proper method of interpretation of Scriptures. It is essential and important to first understand this style of representation prevalent at that time, before interpreting the chart. Otherwise, searching for location and size of traditional or individual land or continent in such a quantitative chart would be an exercise in futile and would reflect ignorance about the understanding of the nature of these charts.

The charts can be so powerful, so as to give at a glance, important quantitative information about the totality of various types of features and formations of an entire celestial unit.

It also suggests the existence of some other forms of physical bodies of living-beings. Recent research on water has, at least, proved the existence of inorganic form of life [8]. Contact with protean-bodied creatures is possible, only if we can investigate and understand the properties of this special material.

It reveals several hitherto unknown features. Some of the concepts of cosmology and astronomy are logical and appealing and are worth pursuing further. In spite of various difficulties, a comparison made between modern and ancient concepts should be useful in furthering our understanding of the cosmos.

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