CHAPTER I
CONCEPT OF THE UNIVERSE
( Description, Composition and Structure of the Universe )
PART A
Scientific View

I.1.1 Geo-centric System of the World
I.1.2 Helio-centric System of the World
I.1.3 Hybrid System of the World
I.1.4 John Kepler's Helio-centric System of the World
I.1.5 Conclusion
I.1.6 Concept of Galacto-centrism
I.1.7 Composition of the Universe
I.1.8 Our Galaxy
I.1.9 Planetary Systems in the Universe
I.1.10 Motion of the celestial phenomena
I.1.11 Conclusion
I.1.12 Structure of the Universe

PART B
Metaphysical View
Vedic / Upanishadic View

I.2.1 Two-fold division of the Universe
I.2.2 Three-fold division of the Universe
I.2.3 Sub-divisions of three-fold Universe
I.2.4 Helio-centric system of the Universe
I.2.5 Planetary System
I.2.6 Motion of the celestial phenomena
I.2.7 Finite Universe
I.2.8 Position of Earth
I.2.9 Conclusion

**Biblical View**

I.3.1 Twofold division of the Universe
I.3.2 Three storey structure
I.3.3 Motion of celestial bodies
I.3.4 Finite Universe

**Quranic View**

I.4.1 Twofold division of the Universe
I.4.2 Planetary System
I.4.3 Motion of celestial bodies
I.4.4 Finite Universe

**Nanak Bani View**

I.5.1 Finite Universe
I.5.2 Infinite Universe
I.5.3 Conclusion
I.5.4 Description of the local Universe
I.5.5 Position of Earth
I.5.6 Motion of Celestial bodies

I.6 Scientific and Metaphysical View:
A synthesis.
The scientific research has put forward various theories about the concept of the universe since its origin. These are discussed below:

I.1.1 Geo-centric System of the World

In the history of science, the Greek astronomers were the first who studied the physical universe purely on scientific lines. The first of these was Thales (640-560 B.C.) and the last was Claudius Ptolemy who died in about 180 A.D. Besides them, Anaximander, Anaxinenes, Heraclitus, Anaxagoras, Democritus, Philolnus, Apollonices, Aristotle, Heraclides etc. also tried to seek rational explanation of the celestial phenomena. Leaving aside the differences, if any, in their scientific outlook on various issues, they were almost in general agreement on the following points:

i) that the earth in its fixed position lies at the centre of the universe; and

ii) that the celestial bodies such as planets, sun and stars revolve around the earth in concentric circular orbits once a day.

Thus the celestial bodies except the earth were believed to be in constant motion. The so-called earth centred system is known as the 'Geo-centric System'. Though

1. Discovery of the Universe: p. 22
this system bears the name of Claudius Ptolemy but it emerged from series of efforts on the part of earlier Greek astronomers.

The Greek astronomers were able to observe five planets which do find a place in the present day planetary system of ours. They placed the heavenly bodies in the following order of distance from the earth:

Earth : Moon---- Mercury---- Venus---- Sun----
Mars---- Jupiter---- Saturn---- Stars

Moon and sun were also considered planets at that time.

I.1.2

Helio-centric System of the World
According to the Helio-centric System of the world, the sun lies fixed at the centre of the universe and the earth alongwith the planets revolve around it.

Aristarchas, the Greek astronomer was the first who evolved the Sun-centred Theory of the world. According to him, the earth moves around the sun in the circumference of a circle, the sun lying at the centre of the orbit. The fixed stars and the sun remain unmoved.

1. Life in the Universe : p.2
2. Positive Sciences in the Vedas : p.23
Arya Bhatta the great Indian astronomer of the 5th century A.D. also thought of the Helio-centric System. In his 'Arya Siddhanta' he has stated that 'the stars are fixed but it is the earth which caused the daily rising and setting of the planets and nakshatras, by its motion around the sun.\(^1\)

Unfortunately, the supporters of Helio-centric System of the world found few followers. Indeed, it was not until the seventeenth century that the geo-centric hypothesis was finally discarded. After a reign of about 1300 years of the Ptolemaic System of the world, Nicholas Copernicus (1473-1543) boldly dethroned it from its proud position and instead evolved the 'Helio-centric System' known as 'Copernicus System'.\(^2\) No new planet was discovered by him except treating the earth as a planet. However, moon was no longer considered a planet but a satellite of the earth.\(^3\)

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1. Positive Sciences in the Vedas : p. 258
2. Discovery of the Universe : p. 22
3. ibid : p. 46
system, the planets revolve around the sun but the sun itself accompanied by its entire retinue of planets revolve around the earth. This system hardly survived.

I.1.4 John Kepler’s Helio-centric System of the World

It was John Kepler (1571-1630) who declared himself a partisan of the Copernicus system and established the Helio-centric System of the World.

I.1.5 Conclusion

From the above analysis, we find that conflicting views about the concept of the universe were put forward by the scientists from time to time till the beginning of the classical astronomy in the 16th/17th centuries. The ideas inherited from the Greek astronomers were successfully rejected. The new observations and theories had decisively established the fact that:

1) the sun lies at the centre of the universe in a fixed position; and
2) the earth along with other planets revolves around the sun.

The hypotheses about the concept of the universe put forward by the Greek astronomers, Aryabhata, Nicholas Copernicus, Tycho Brahe, John Kepler and their contemporary scientists give us the impression that they were talking about the universe.

1. Discovery of the Universe: p. 50
2. ibid: p. 52
'as a whole'. If that is so, the concept of the universe put forward by them was far from the true picture of the universe. In fact, due to their insignificant knowledge in the field of astronomy, they could observe only a tiny part of the universe. This part of the universe is one of the million galaxies scattered throughout the space to which the present day scientists have given the name of 'Milky Way—our galaxy'. A galaxy is a large gravitationally bound cluster of stars. However, a galaxy is by no means the universe.

The tool with which these scientists observed the celestial phenomena was the naked eye as no telescopes and such other devices had yet come into existence. The objects which the naked eye without the use of large telescopes could see in the sky are: stars and the inter-stellar clouds that comprise the Milky Way. Therefore, they could not observe what was there beyond the Milky Way. That is why their research work mainly remained centred around the planetary system of our galaxy. The conclusions drawn by them with regard to the position of the earth and the sun in the universe could only be relevant so far as Milky Way is concerned but if examined at the level of macrocosm, they would seem to be hardly relevant. The result is that more than two thousand years of scientific research could
only observe a tiny part of macrocosm—our galaxy. Astonishingly, the scientists of this period could not find a consentaneous hypothesis about the concept of even the local universe. This shows that they had not the correct knowledge of the microcosm.

I.1.6 Concept of Galacto-centrism

With the invention of instruments of observation such as telescopes, photographic plates, photo-electric cells, radio-telescopes etc., during the period from the middle of the seventeenth century to-date, the scientists have been able to minutely examine the Milky Way and look deep into the vast space. On the basis of new observations, the scientists have evolved new theories about the concept of the universe and replaced the earlier obscure theories. With the thrust into the stellar depths, it has been found that the sun does not lie at the centre of the universe but it is at an edge of our galaxy in the north side. With this discovery, the Helio-centric Theory of the universe struggled briefly and died in the early twentieth century. This changed the concept of the universe from Helio-centric to Galacto-centrism.
I.1.7 Composition of the Universe

According to the present scientific research, the observed universe is basically composed of galaxies, vast star systems and solar systems. There are about $1 \times 10^{11}$ galaxies in the universe and about $1 \times 10^{11}$ stars in each galaxy. The most distant galaxy so far measured with a 100" telescope lies at a distance of about 5000 million light years (the distance that a light ray travels in one year, equal to 9,4605 million million kilometers is called a light year). Of course, many more galaxies must exist beyond the observable range.

Beyond the galaxies we find quasars the star like objects whose natures are far from understood.

I.1.8 Our Galaxy

The Milky Way is about 100,000 light years in diameter. It rotates slowly around its axis. It has a total population of $1 \times 10^{11}$ stars many of which are solar in type. The sun in the Milky Way is a medium sized star. It is not centrally situated but lies well out toward one edge and is thought to

1. The Human Mystery : p. 44
2. Life in the Universe : p. 6
3. ibid : p. 8
be between 25000 and 30000 light years from the centre of our galaxy. It has a family of nine planets. In order of distance from the sun, they are placed as below:

Sun : Mercury----- Venus----- Earth-----
Mars ----- Jupiter--- Saturn----
Uranus ----- Neptune--- Pluto ----

The planets revolve in almost circular orbits around the sun. Besides, there are satellites of planets (moon is a satellite of earth), asteroids, comets, meteorites in the Milky Way. All revolve around the sun in smaller circles. Sun keeps all of them under strict control. The planets are held near the sun by the pull of gravity and kept from being drawn into it by the speed with which they move through space. The closer they are to the sun, the faster they move.

Planetary systems in the Universe

There is still not convincing evidence of another planetary system that is at all like ours in the universe. However, if we accept our own system as being of an average size, the number of suns which we know to exist works out at 100,000 millions multiplied by 1000 millions. These suns might have their own planetary systems.

1. Dynamic Inter:lay between Science and Religion : p.23
2. The Human Mystery : p.44
Shapley Harlow has assumed that there are at least 10 planets in the universe. (1)

I.1.10

Motion of the celestial phenomena

It has been found by the scientists that the celestial phenomena is in motion. Einstein says:

"the universe is a restless place. Stars, nebulae, galaxies and all the vast gravitational system of outer space are incessantly in motion." (2)

I.1.11

Conclusion

No doubt with the developed observable devices the scientists have been able to look deep into the space but they have not been able to measure the expanse of the universe to its finality. Rather, most of the scientists are of the view that man will never succeed to find out the boundaries of the universe and it will remain a mystery for him for all times to come. In his hypothesis of unlimited complexity, which the Swedish astronomer V.Charlier published as a result of his observation of galaxies, he suggested "that just as the multitude of stars surrounding our sun, belong to a single cloud as our galaxy, galaxies themselves form a much large cloud, only a small part of which falls within the range of our telescopes. This implies that if we

1. Dynamic Interplay between Science and Religion : p. 15
2. Positive Sciences in the Vedas : p. 36
go farther and farther into space, we would finally encounter a space beyond galaxies. However, this super giant galaxy of galaxies is not the only one in the universe and much farther in space, other similar systems can be found. Intriguing as it is, this picture of an increasing aggregation of matter is unfortunately outside the possibility of observational study."

In the view of Einstein, the universe is a mystery for a civilised man even in the twentieth century. We know nothing about it at all. Our knowledge is but the knowledge of a school children. Possibly we shall have a little more that we do have now. But the real nature of things that we shall never know never.'

In view of above facts, it may be concluded that though the scientists have been struggling hard to unfold the mystery of the universe for many centuries but they have been able to explore a fraction of it.

1. Positive Sciences in the Vedas : p. 30
2. Dynamic Interplay between Science and Religion : p. 26
I.1.12 Structure of the Universe

There is no general agreement among the scientists as to what type of universe we live in. They have put forward conflicting views which are enumerated below:

Aristotle thought that the physical universe must be finite.  

A finite universe is called spherical or closed and it is said to have a positive curvature. In such type of universe if I go on and on, eventually (admittedly after a very very long walk) I get back to the place from which I started.

Lucretius was of the view that the universe is infinite.

During the mediaeval period thinkers tended to follow Aristotle in regarding the universe as finite.

Heinrich Olbers in 1826 predicted the universe as infinite in time and space.

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2. Cosmological Theory : p. 68
3. The Universe at Large : p. 37
4. op. cit. 1 : p.210
5. The Structure and the Evolution of the Universe : p. 99
6. op. cit. 3 : p. 29
On the basis of his theory of universal gravity, Newton in 1862 pointed out to 'a finite material in an infinite space'.

In 1917 Einstein was able to specify a 'static condition of the universe' in which Newtonian attraction and cosmical repulsion remain in exact balance. The static steady-state universe shows no over-all change with the lapse of time.

In 1930 Eddington discovered that Einstein's universe was unstable. He was of the view that if something upsets the balance so that the attraction is weakened then cosmical repulsion has the upper hand and an expansion begins. As the material of the universe separates, the distance between the bodies becomes greater, the attraction still further weakens, the cosmical repulsion ever increases and the expansion becomes faster. On the other hand, if the equilibrium was upset in the other way so that the forces of attraction become superior, then the reverse would occur and the system would contract continuously.

8. The First Three Minutes: p. 32
10. The Individual and the Universe: p. 81
It was on this very basis, the Russian mathematician Alexandre Friedmann predicted either an expanding or contracting universe.

The Dutch astronomer De Sitter's world was static but it had the remarkable property of predicting a red-shift proportional to the distance. Red-shift always indicates velocity of recession. The total volume of this type of universe is infinite. He suggests that the universe contracts during an infinite time, reaches a minimum radius and then starts expanding.

G. Lemaitre and Eddington's model of the universe is finite but unbounded (in a finite unbounded universe there would be no outer boundary).

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11. The Individual and the Universe: p.81
12. The First Three Minutes: p.32
13. Cosmological Theory: p.67
14. The Universe at Large: p.36
PART B
Metaphysical View

Vedic/Upnishadic View

1.2.1

Twofold division of the Universe

The seers of Vedas and Upanishads have basically divided the universe into two parts i.e. earth and heaven. They are mentioned as two-halves:

"As the great world halves (earth and heaven) so are their son's praises, skilled as a man, to act is he the Herald" (1)  

"In the beginning, the Being developed and turned into egg. The egg lay for a year and then split apart. One portion of the egg shell was of silver and the other of gold. The silver one became the earth and the gold one heaven". (2)

"Heaven and earth are two halves of the shell of the universe". (3)

"By these two all that lives, moves on, whatever there is between the heaven and the earth— not a single one of them do I know". (4)

Sometimes earth and heaven have been spoken as the world-twains:

"For him the twain (earth and heaven) united pour their fulness the rain from heaven, he thrives most highly favoured". (5)

1. R. V. : 1.59.4
For further details:
R. V. : 1.160.2, 6.12.1
2. C. U. : III.19.1
3. T. Br. : III.8.9.1
4. B. U. : VI.2.2
5. R. V. : 2.27.15
For further details:
R. V. : 9.78.3, 10.8.4, 10.30.9
The heaven and earth have also been called as the two great bowls turned towards each other:

"The two great meeting bowls, hath he united each of the pair is laden with his treasure."  (1)

Once earth and heaven have been compared with the wheels at the two ends of an axle:

"Who to his car on both its sides securely hath fixed the earth and heaven as with an axle".  (2)

I.2.2  Threefold division of the Universe

We also find threefold division of the universe into earth, air or atmosphere and heaven in the Vedas and Upanishads. The region of air or atmosphere lies between the earth and the heaven. Heaven, air and earth form the favourite triad of the Rig Veda constantly spoken of explicitly or implicitly as:

"Three are the worlds (earth, middle air, heaven) and moving on above the sky ye guard the firm set vault of heaven through days and nights".  (3)

"Two perfect springs of heat pervade the threefold and come for their delight is Matarisvan".  (4)

1.  R.V. : 3.55.20
2.  R.V. : 10.89.4
3.  R.V. : 1.34.8 :For further details:
    R.V. : 1.6.10, 6.69.8, 8.10.6, 8.90.6
4.  R.V. : 10.64.1
"Now there are verily, three worlds, the world of men (earth), the world of the fathers (atmosphere) and the world of the gods (heaven)."

(1)

"These are three mystic utterances such as bhuh, bhuva, swaḥ—these are earth, atmosphere and heaven respectively".

(2)

The solar phenomena which appear to take place on the vault of the sky having therein moon, sun, planets, stars, nakṣatras are referred to heaven while those of lighting, rain and wind belong to the atmosphere.(3)

I.2.3 Sub-divisions of threefold Universe

Each of the three worlds have further been sub-divided into three parts, such as three earths, three atmospheres and three heavens:

"Streams, the wise gods have thrice three habitations (each of the three worlds having three sub-divisions) child of three mothers, he is lord in synods".

(4)

1. B.U. : 1. 5. 16
2. T.U. : 1. 5. 1
3. Vedic Mythology : p.9
4. R.V. : 3.56.3 : For further details:
   R.V. : 1.102.8, 1.164.10, 2.27.8
I.2.4 Helio-centric system of the Universe

The vedic view of the universe is 'helio-centric'. The sun is at the centre of the universe and the earth revolves around the sun:

"Expiring when he (sun) draws his breath she (earth) moves along the lucid spheres". (1)

"Two bowls (earth and heaven) of noble kind, between these goddesses the god, the fulgen sun travels by fixed decree". (2)

"The earth with all its waters revolves round the sun". (3)

"the earth moves round the sun". (4)

"the earth revolves in space, it revolves with its mother water in its orbit, it moves round its father, the sun". (5)

The sun-centred theory of the universe has outrightly been rejected by the modern scientific research.

I.2.5 Planetary System

Five planets were known to the vedic seers.

These are:

Mercury -- Venus -- Mars -- Jupiter -- Saturn

Moon was also considered as a planet. They observed 27 nakshatras in the universe. (6)

There is also a reference to comet. (7)

1. R. V. : 10. 189. 9
2. R. V. : 1. 160. 1
3. Satyarath Parkash : Chap. VIII
5. ibid : p. 235
6. ibid : p. 234
7. R. V. : 5. 11. 3
Motion of the celestial phenomena

The celestial bodies were observed as constantly in motion by the seers of Vedas and the Upanishads. They move in group fields as:

"Like birds of air they (celestial bodies) flew with might in lengthened lines from heaven's high ridges to the borders of the sky". (1)

"The solar system and the galaxies of stars move as if in a string, woven by this Vayu". (2)

"Aitareya Brahaman clearly held the view that the sun never sets nor rises and that the apparent motions of the sun are really due to the rotation of the earth". (3)

"The universe is continuously in motion". (4)

Finite Universe

The basic division of the universe into two halves and treating them as two great bowls refers to the spherical shape of the universe. The universe of spherical shape is considered as 'finite' or a closed one. Further, only a finite thing can be divided into parts. Similar is the case of the vedic/ upanishadic universe. The space between the two ends or boundaries of the universe may be of infinite size but the overall view of

1. R. V. : 5. 59. 7
2. Sat. Br. VIII.7.3.10
3. Positive Sciences in the Vedas : p.258
4. Yaj.V. : XL.1
finiteness of such a universe can in no way be denied. The finite nature of the universe has very well been described in the following Upanishadic hymn:

"Where one sees nothing else, hears nothing else, understands nothing else, that is the infinite; But where one sees something else, hears something else, understands something else, that is the small (the finite); Verily, the infinite is the same as the immortal, the finite is the same as the mortal". (1)

From this hymn, we find that the things which are established in others and are subject to the Law of Change, are 'finite'. The universe is established in the Absolute Lord and is subject to change is, therefore, 'finite'.

Besides twofold and threefold divisions of the universe, there is a hymn in the Paingala Upanishad which refers to the vastness of the universe. The hymn reads as under:

"He (Brahman) created many crores of brahmandas (macrocosms), fourteen worlds to each (of these macrocosms) and globular gross bodies appropriate to each (of these worlds)". (2)

This notion of the Upanishad did not become the over all basis of the concept of the Vedic / Upanishadic universe. It is treated like a passing reference in the voluminous vedic literature.

1. C. U.: VII.24.1
2. Paingala U.:1.7
The universe of the vedic / upanishdic seers having one sun, one earth, one moon, five planets and stars resembles to some extent with the Milky Way- our galaxy, a tiny part of the macrocosm.

I.2.8
Position of Earth

The division of the vedic universe into two parts i.e. earth and heaven shows that they are equal parts of the universe. But according to scientific conclusions, the earth is one of the nine planets of our solar system in the Milky Way. It is a normal planet much inferior in size to some of its companions such as Jupiter, Saturn and also the sun as is clear from the following table:

<table>
<thead>
<tr>
<th>Diameter of earth</th>
<th>7913 miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diameter of Jupiter</td>
<td>88390 &quot;</td>
</tr>
<tr>
<td>Diameter of Saturn</td>
<td>71900 &quot;</td>
</tr>
<tr>
<td>Diameter of Sun</td>
<td>8,60,000 &quot;</td>
</tr>
</tbody>
</table>

On the basis of these figures we may conclude that the earth occupies a very small place even in our home galaxy and it has no comparison with the macrocosm which has billions of galaxies like our home galaxy in its lap. Therefore, on astronomical grounds the earth can never be one of the two equal parts of the present universe.
I.2.9 Conclusion

In view of the above facts, it may be concluded that the concept of the universe presented by the Vedic/Upanishadic seers is neither based on correct astronomical calculations nor it seems to be the result of their intuitive knowledge as it is far away from reality. It seems to be based on casual observation of the sky by the seers standing on the earth. They imagined the star-studded place as heaven and the sun at the centre between the earth and the heaven (sky). Further divisions and sub-divisions of the universe also seem to be the result of such an observation. However, the seers were right in their outlook in finding out the motion of the celestial phenomena.
I.3.1  **Twofold division of the Universe**

The biblical concept of the universe is well founded in the first chapter of the Book of Genesis in the Old Testament. It explains that the universe is comprised of two distinct parts such as earth and heaven. They both denote the complete and organized universe. Earth and heaven, therefore, represent the boundaries of the biblical universe. The two great luminescent bodies such as sun and moon and the stars lie in between the earth and the heaven.

I.3.2  **Three storey structure**

Dr. Bultmann views the biblical universe as a 'three storey structure', with the earth in the centre, the heaven above and the underworld beneath. Heaven is the abode of God and of celestial beings- the angels. The underworld is hell, the place of torment.

According to this view, the biblical universe is 'geo-centric' in nature.
I.3.3 Motion of celestial bodies

The Holy Bible has predicted that the heavenly bodies are in motion. They rotate by the power of god.

I.3.4 Finite Universe

The biblical universe looks 'finite' having one sun, one moon and stars therein. It is in conformity with the vedic universe but inconsistent with the modern scientific view.

1. Christian Theology and Natural Science : p.30-31
1.4.1 Twofold division of the Universe

According to the Quran, earth and heaven are the basic units of the universe. The earth is like a bed and the heaven like a canopy in the universe. Every created thing lies in between them:

"To Him belongs the keys of the heavens and the earth" (1)

"Allah has spread out the earth like a bed for you and has made the heaven like a canopy" (2)

"We have made the heaven a guarded and protecting roof" (3)

1.4.2 Planetary System

There is a mention of seven heavens in the Quran:

"He arranged seven heavens in two periods" (4)

These are located above the spheres of earth, water, air and fire. These are:

Moon, Mercury, Venus, Sun, Mars, Jupiter and Saturn

Except moon and sun, the other five are referred to as planets of our solar system in the Milky Way.

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1. Quran : 39.64
2. ibid : 2.23
3. ibid : 21.33
4. ibid : 41.13; for further details: ibid ; 78.16, 71.16, 67.2
The seven heavens lie in order of one above the other. In order of distance from the earth, the position of heavens in the universe is as under:

Earth: Moon--Mercury--Venus--Sun--Mars--Jupiter--Saturn (1)

I.4.3 Motion of celestial bodies

The celestial bodies (heavens) and the earth are in constant motion. The Quran says:

"The sun and the moon each gliding freely in its orbits" (2)
"Earth revolves round its axis" (3)
"The sun is moving towards and appointed goal" (4)
"All (heavens) glide along in an orbit" (5)

I.4.4 Finite Universe

Like the Vedas/Upanishads and the Holy Bible, the Holy Quran does not give the true picture of the universe. Its universe also consists of one sun, one moon, five planets and stars lying in between the earth and the heaven.

The universe of the Holy Quran is, therefore, 'finite'.

2. The Quran: 21.34
3. Ibid: 27.89
4. Ibid: 36.39
5. Ibid: 36.41
The way in which Guru Nanak has presented the concept of the universe in his bani is a typical one. On examination of facts in his bani, it seems that he is speaking of the universe which is 'finite' as well as 'infinite' in nature.

I.5.1 Finite Universe

Guru Nanak has divided the universe into twofold and threefold. In twofold division, he has compared the universe with two mill-stones (earth and heaven). The sky is like a canopy over the earth:

1. Creating the two mill-stones of the earth and the sky, He has separated them. Without the Guru there is pitch dark."

2. "Separating the sky and the earth, He has spread the canopy of the firmament."

Guru Nanak has used the word 'tribhavun' a number of times in his bani which denotes the universe having three realms of sky, earth and under-world:

1. "God created the whole world with ease. In the three worlds is the one luminous Lord."

Twofold and threefold division of the universe suggest that it is 'finite'.

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1. G.G.S. : p. 580
2. ibid : p. 1276
3. ibid : p. 930 : For further details:
   ibid : p. 930, 943, 1021, 412, 474
I.5.2 Infinite Universe

Following verses of Nanak Bani present the universe as 'infinite' having in it countless microcosms, earths, skies, under-worlds, continents, solar systems etc.

"There are more worlds beyond this earth more and more." (1)

"Inumerable are thy names and inumerable thine abodes, O Lord. Inumerable are thine realms inaccessible and inscrutable." (2)

"The limit of His created creation is not discerned. The bound of His this and yonder end is not known. If there be any account of His, then alone man can write that the Lord's account finishes not and while describing the account man himself finishes.

There are nether worlds below nether worlds and lacs of skies over skies." (3)

"Numberless are the Indras, the moons, the suns, numberless universes and numberless countries." (4)

"In that realm, there are continents, worlds, solar systems. If some one tries to describe them, then know that there is no limit or bound of them.

There are universes over universes and creations over creations there." (5)

1. G.G.S. : p. 3
2. ibid : p. 4
3. ibid : p. 5
4. ibid : p. 7
5. ibid : p. 8
"Millions are the countries, earths and spheres. Millions are the suns, moons and stars."

(1)

"Millions are the skies and the universes."

(2)

According to Guru Nanak, the expanse of the universe is so vast that it is beyond mind's conception. Many persons tried to find out the limits of the universe but failed in their endeavour:

"Many bewail for knowing the bounds of the universe but its limits are not found and beyond mind's conception. The more we describe, the more obscure it becomes."

(3)

Guru Nanak further says that even the Brahman, granter of boons could not find the extent of the universe:

"Brahman the granter of boons with his progeny went to the lotus tube to ascertain the worlds extent. Proceeding further he could not find the limit thereof."

(4)

Guru Nanak is also of the view that a person having the wealth of divine knowledge; who is Gurūward; who always abides in the true name of God and is awakened to higher consciousness attains

1. G.G.S. : p. 276
2. ibid : p. 276
3. ibid : p. 5
4. ibid : p. 350
the knowledge of the islands, the spheres and the under-worids:

"By reflecting on the name of God, the knowledge of all the spheres of the universe is acquired." (1)

"By obtaining the wealth of divine knowledge, the insight into the three worlds is acquired." (2)

"By means of the Guru it comes to possess the knowledge of the three worlds." (3)

It may be pointed out that even such an exalted one does not know the limits of the universe. Guru Nanak was such a blessed soul but he himself showed his helplessness to describe the expanse of the universe. He says:

"Countless are the continents and the underworlds, I can reckon them not." (4)

Guru Nanak seems to have once for all settled the issue that never never a man can find the limit of the universe:

"As a fish living in the river can never know its limits, similarly the earthly man can never, find the limits of the universe." (5)

Guru Nanak has said that it is only the Creator, the Absolute Lord who knows the secret and expanse of his creation:

"O Nanak, call Him Great. He Himself knows His Oneself." (6)

1. G.G.S. : p. 3
2. ibid : p. 60
3. ibid : p. 415
4. ibid : p. 1283
5. ibid : p. 25
6. ibid : p. 5
1.5.3 Conclusion

No doubt, the above facts of Nanak Bani give us the impression that the universe (macrocosm) is 'finite' as well as 'infinite'. It would mean that Nanak Bani contains contradictory statements in it. But this is not true. The fault lies with our limited knowledge due to which we are unable to understand the true nature of Nanak Bani. In fact, Nanak Bani is of the sole view that the universe (macrocosm) is 'infinite' and nobody knows how vast is its expanse. The universe (microcosm) in which we live is one of the countless universes (microcosms) in the macrocosm. It would mean that every microcosm is 'finite' in size in an infinite macrocosm. In order to make this point clearer, we may take an example of a house in a city having a very large number of houses. We will find that every house in the city is built-up on a finite space of finite size. Similar is the position of our universe (microcosm) in which we live. Thus the verses of Nanak Bani which suggest that the universe is of finite size relate to our own universe and not to the macrocosm which is infinite.

Description of the local Universe

1.5.4 Guru Nanak has depicted our home universe (Milky Way) in a splended way. According to him,
the earth and sky are like two mill-stones. The sky is like a canopy. Sun and moon are like two lamps and stars in the sky look like studded pearls:

"In the sky's salver, the sun and the moon are the lamps and stars with their orbs are the studded pearls." (1)

Guru Nanak further says that there are nine divisions of the earth, seven islands, fourteen regions of the universe (probably it refers to seven upper and seven under-worlds), the three worlds (earth, sky and underworld) and the four ages. They all abide in the mansions of the Lord:

"The sun and the moon are two lamps which light the fourteen worlds or bazars." (2)

"Though He be known in the nine continents and all were to (follow in his train) or (walk with him)." (3)

"He remains absorbed in the love of the Lord, who is pervading the fourteen worlds, nether land, continents and the solar systems." (4)

"Establishing the nine regions, seven continents, fourteen worlds, three worlds, four ages and the four sources of creation, the Lord has seated them all in His Mansions." (5)

1. G.G.S. : p. 663
2. ibid : p. 789
3. ibid : p. 2
4. ibid : p. 840
5. ibid : p. 1190
No doubt, this description of the local universe is not well within the framework of astronomical principles, particularly so far as position of earth is concerned but it has very well brought forward geographical /physical values of the local universe such as division of earth into nine parts, location of seven islands, division of atmospheric as well as underworld into parts (layers) etc.

Guru Nanak was inhabitant of this universe and his divine message was for his co-inhabitants, learned as well as illiterates. In order to localise his divine message and with a view to keep smooth rapport with the masses, he depicted the local universe in the manner as he observed while preaching his gospel here on the earth.

I.5.5  

**Position of Earth**

As the sky is a place for heavenly bodies, Guru Nanak says that the earth is a home for Lord's meditation. For him earth is 'the mother'. Guru Angad Dev considers the earth as 'great mother'. It is the abode of creatures of various types, colours and names. It is like 'karam-kashetra' for its
inhabitants. Nanak Bani says:

"God created nights, seasons, lunar days, weekdays, wind, water, fire, nether lands. In the midst of these, He established the earth as a home for the Lord's meditation. Therein He placed beings of various types and colours." (1)

"Air is Guru, water the father, earth the great mother." (2)

"Creating the earth, God has made it the place to practise faith." (3)

No doubt, the earth is a very small planet but according to above facts, it has a proud place in our universe.

I.5.6 Motion of celestial bodies

Nanak Bani is also of the view that the celestial bodies are ever in motion as:

"Were I to arrest both the moon and the sun, in their courses, and were my seat to become stable." (4)

They are under the strict control of the Absolute Lord and perform their allotted functions under His Will constantly:

"In Lord's fear wind and breeze ever blow; In Lord's fear flow lac's of rivers; In Lord's fear, fire performs the forced labour; In Lord's fear the earth is trampled under burden; In Lord's fear is the sun and in Lord's fear the months; They travel myriads of miles without an end." (5)
Scientific and Metaphysical View:
A Synthesis.

The concept of the universe of the Vedas/Upanishads, the Holy Bible and the Holy Quran is almost the same and it relates to the microcosm (our home universe—the Milky Way) and not to the macrocosm. Even the composition of the microcosm presented in them is inconsistent with the scientific view about the Milky Way. It seems that the concept of the universe of these scriptures is based on casual observation of the universe by their authors. Ordinarily, when a person sees the universe around him, it looks the same to him as is described in these scriptures. It may be pertinent here to add that the Vedas/Upanishads, the Holy Bible and the Holy Quran are neither treatises on cosmology nor primers on astronomy but these are religious scriptures. This is the reason the authors of these scriptures depicted the universe in such a way. However, the universe of the scriptures is fully adaptable for conveying their religious message to the masses. The concept of the local universe of Nanak Bani generally conforms with the concept of the universe of these scriptures. However, these scriptures have no comparison at all with Nanak Bani so far as the concept of 'macrocosm' is concerned.
Agreeing with Guru Nanak, the scientists at last have come to the conclusion that the vast universe having millions of galaxies, solar-systems, suns, stars etc. is beyond one's mind's conception as well as observable range and the human mind will never be able to find out the extent of the cosmos.

Guru Nanak has come to the conclusion that the universe is 'infinite'; whereas scientists have still to decide whether the universe is 'finite' or 'infinite'.

Thus in the midst of Vedic/Upanishadic seers, saints of the Holy Bible, Prophet of the Holy Quran, philosophers and scientists of all ages, Guru Nanak is the only one whose theory of the universe is more meaningful and believable. He did not acquire this knowledge by experimenting in a scientific observatory. Actually he imbued himself with the true word of the Lord and meditating upon it, he crossed over to the super-consciousness state where with the grace of the Almighty he was able to see the cosmos in its real perspective. He was thrilled to see the wonderous world wherein he observed countless earths, suns, moons, stars, spheres, solar systems etc. Like a 'superb scientist', Guru Nanak uncovered the scientific truths through his intuitive knowledge.

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