

GENESIS OF THE UNIVERSE

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“A logical and consistent concept of the universo cannot be builtup on the postulation of either materialism or church, for both of these systems of thinking are compeled to view the cosmos in distortion. Never can either science or religion, in and of themselves, standing alone, hope to gain an adequate understanding of universal truths without the guidance of divine revelation”.

The Urantia Book, paper. 103-6 p.1136

The twentieth century was a crucial century for our planet. During these last hundred years, natural and physical sciences took a gigantic leap forward. This scientific breakthrough produced major progress in modern technology. A hundred years is a very short lapse of time, virtually a single lifetime, but during this short period of time science and technology has advanced significantly.

A hundred years ago, few people had electricity in their homes. It was the time of the beginning of car and train travel, flying, telephone systems, etc; but by the end of twentieth century, not only terrestrial flight but also space flight, satellite communications, organ transplant surgery, human genome studies, internet were developed. Thanks to modern technology, the standard of living in developed countries has been raised significantly.

With every scientific discovery, we take a step forward in understanding the workings of matter, but we must be aware that the more we learn, the more we have yet to discover. Science does not follow a straight path; what seems definite to us today, mathematically justified, tomorrow could be modified or changed by a new breakthrough in science.

Scientific achievements and technological breakthroughs have placed earth science in an unprecedented position of importance. The mind of the twentieth-century human being has the idea that what is not approved by science and by mathematical calculations is not true. Most of the contemporary scientists are quite dogmatic; they do not realize that exact sciences can describe only material processes on our planet. Neither can they describe the origin and functionality of the Universe.

At the new particle accelerator in southern France, physicists are trying experimentally to confirm the Big Bang theory calculations, apparently ignoring the fact that neither experiments nor more advanced mathematical calculations, can describe the emergence of the Universe. The Universe is not mechanical or made only of matter with which we are familiar; the universe is made up of energies and substances which are as yet unknown on our planet.

The Book of Urantia says: “The universe is neither mechanical nor magical; it is a creation of mind and a mechanism of law. The universe is mind planned, mind made, and mind administered. But the divine mechanism of the universe of universes is altogether too perfect for the scientific methods of the finite mind of man to discern even a trace of the dominance of the infinite mind. For this creating, controlling, and upholding mind is neither material mind nor creature mind; it is spirit-mind functioning on and from creator levels of divine reality”. [1]

The Book of Urantia records an account of the initial emergence of matter, an assertion that has no response in the calculations of the Big Bang theory. Likewise, the Book describes the construction of the Universe in stages, the transformation of Paradise energy into matter, and the making up of space bodies out of nebula.

1. THE CENTER OF THE UNIVERSE

The Book of Urantia describes the structure of the universe consisting of different cosmic levels. It's structure is much more complex than the theory of Big Bang can ever explain.

At the geographic center of the entire creation, we have the Eternal Isle of Paradise, the most gigantic cosmic body of the Master Universe. Paradise is not spherical; unlike any other cosmic body, it is a flat ellipsoid. Paradise is a stationary isle out of time and space; because of this, its areas are absolute and useful for manifold purposes beyond the conception of the mortal mind. [2]

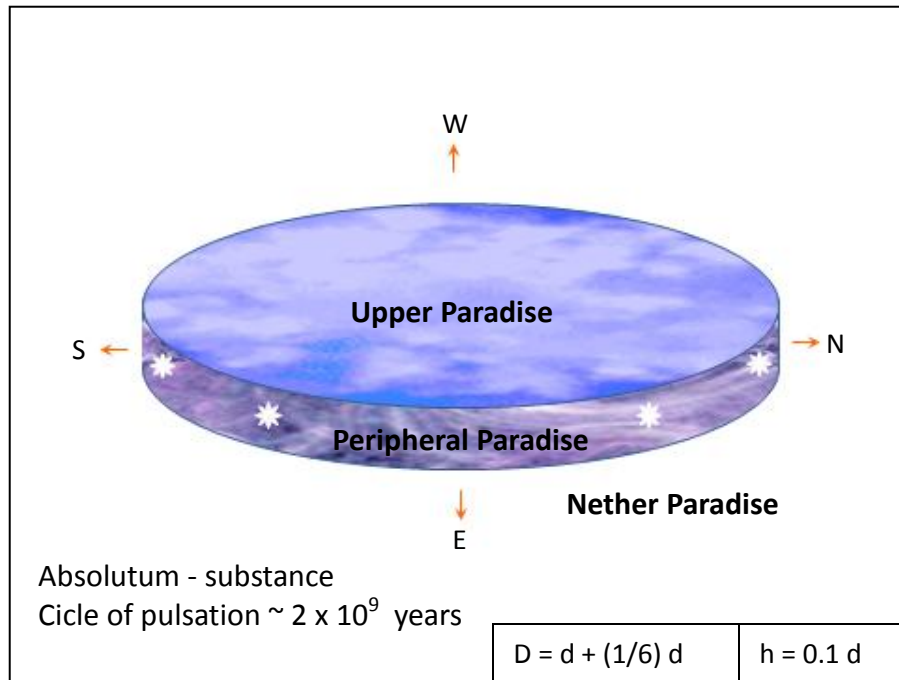


Fig. 1.

The Isle of Paradise

Paradise serves as a fundamental reference to fix geographical directions in the Universe: north, south, east, and west. The Central Isle is basically flat in shape, and is divided in three areas of activity: Upper Paradise, Peripheral Paradise, Nether Paradise, Fig. 1.

Figure 1 depicts in a simplified form the Isle of Paradise; its dimensions remain unrevealed, so they are only indications of the real magnitude, the bigger diameter D of ellipsoid being a sixth part greater than the smaller diameter d thereof. The height of the ellipsoid is equal to one tenth of the smaller diameter d. The literal substance of Paradise is a homogeneous organization of “space potency” not to be found elsewhere in the entire universe. Such a substance is known as “absolutum”. “This Paradise source material is neither dead nor alive; it is the original nonspiritual expression of the First Source and center; it is Paradise, and Paradise is without duplicate.” [3]

Upper Paradise is the abode of the Universal Father, Eternal Son, and Infinite Spirit. Peripheral Paradise is used, in part, as a landing and dispatching field for the transport of supernaphins and other traversers. Also there are the seven transmission stations for certain Paradise energies to the seven superuniverses. [4]

Nether Paradise generates a pure substance which after many transformations becomes Universe Power, the foundation of all cosmic matter. The mid-zone of nether Paradise acts as a gigantic heart from whose beats cause space energy to flow toward the outer limits of physical space. All forms and phases of this energy travel throughout the universe along certain circuits, and return to Paradise through definite paths. Circulating period of this energy takes more than a two billion years (2×10^9 years) of Urantia time.

The Isle of Paradise has a central gravity known as *absolute gravity*. Each and every body in space and all energy in the universe is under its control. Absolute gravity operates in the elliptical circuits of diverse space levels of the universe. All cosmic realities and physical bodies move around Paradise, circulating along a big ellipse. *Absolute gravity*, or *Paradise gravity*, is unknown in our planet. Gravity as defined by earthly physics is called linear or local gravity. “Local or linear gravity pertains to the electrical stage of energy or matter; it operates within the central, super-, and outer universes, wherever suitable materialization has taken place.” [5]

The Isle is big enough to house Paradise activities that are incomprehensible to the human mind.

All around Paradise there are three rings of seven spheres each revolving clockwise. The first circuit of seven spheres belongs to the Universal Father, the second to the Eternal Son, and the third to the Infinite Spirit.

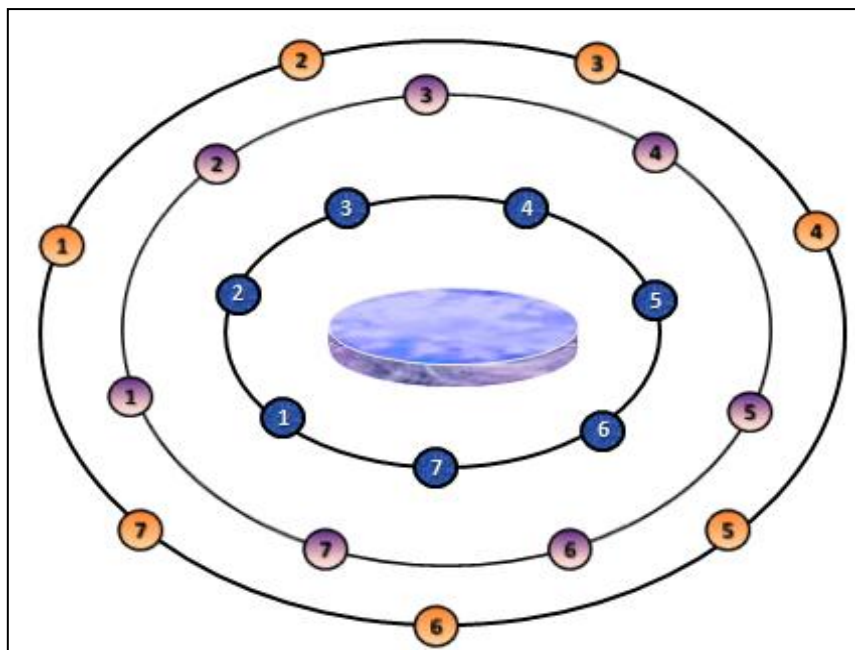


Fig. 2

Paradise Spheres

2. PERVADED AND UNPERVADED SPACE

Space that originated beyond Paradise is divided in two parts: pervaded space and unpervaded space, Fig. 3. Pervaded space extends from south to north horizontally in relation to Paradise, and embraces all material universes and space energies. Pervaded space includes the Central Universe of Havona, the Seven Superuniverses, and four outer space levels.

Unpervaded space extends from east to west vertically and is not pervaded by any force or energy nor by any matter, power or presence existing in pervaded space.

In attempting to imagine these space reservoirs and to outline their shapes, you might think of an hourglass or a maltese cross.

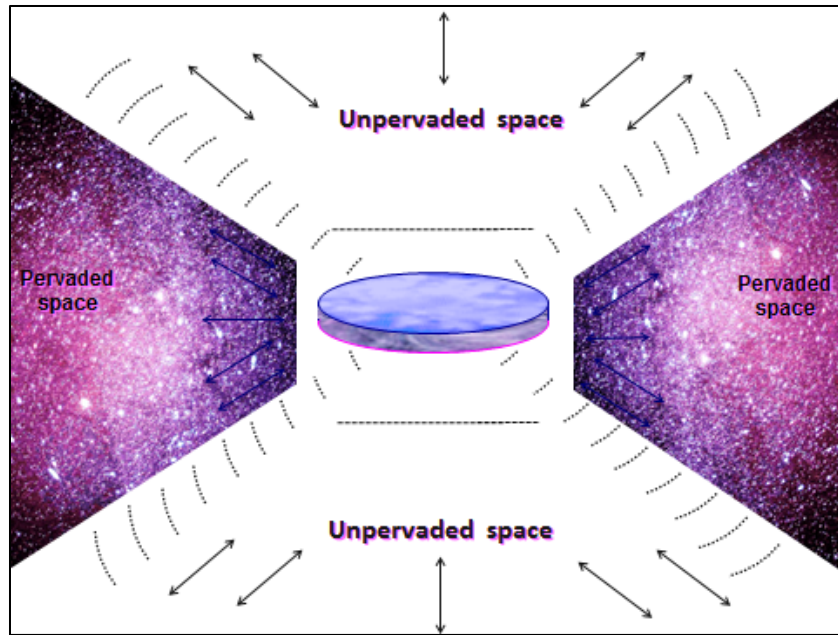


Fig.3

Pervaded and unpervaded space

Pervaded and unpervaded spaces are in a constant movement process. When universes in the horizontal extension expand, vertical unpervaded space contracts, and vice versa. Expansion-contraction cycles last about two billion years (2×10^9 years). This process is repeating since the creation of spaces. [6]

Figure 2 shows that there are other separating quiescent midspaces between pervaded and unpervaded space that are used for cushioning.

Pulsations in Nether Paradise, regulating space pre-energy output and input, are synchronized with space expansion-contraction cycles. At this moment in time, pervaded space is approaching the mid-point of the expansion phase. The outermost limits of both space extensions are now approximately equidistant from Paradise.

Measurements made by the physicist Edwin Hubble in the year 1929 on galaxy withdrawal could have been perhaps observations of the expansion of pervaded space.

3. OUTER SPACE LEVELS OF THE MASTER UNIVERSE

“The universe of universes is not an infinite plane, a boundless cube, nor a limitless circle; it has specific dimensions. The laws of physical organization and administration prove conclusively that the whole vast aggregation of force-energy and matter-power functions ultimately as a space unit, as an organized and co-ordinated whole. The final proof of both a circular and delimited universe is afforded by the well-known fact that all forms of basic energy orbit in a curved path around the space levels of the master universe in obedience to the incessant and absolute pull of Paradise gravity.” [7]

The successive space levels of the master universe constitute the major divisions of pervaded space –total creation, organized and partially inhabited, or yet to be organized and inhabited. The master Universe consists of a series of elliptical space levels, alternating with zones of relative quiescence. Matter and energy whirl constantly around The Paradise, always orbiting the track of the great space ellipticall circuits. Fig. 4.

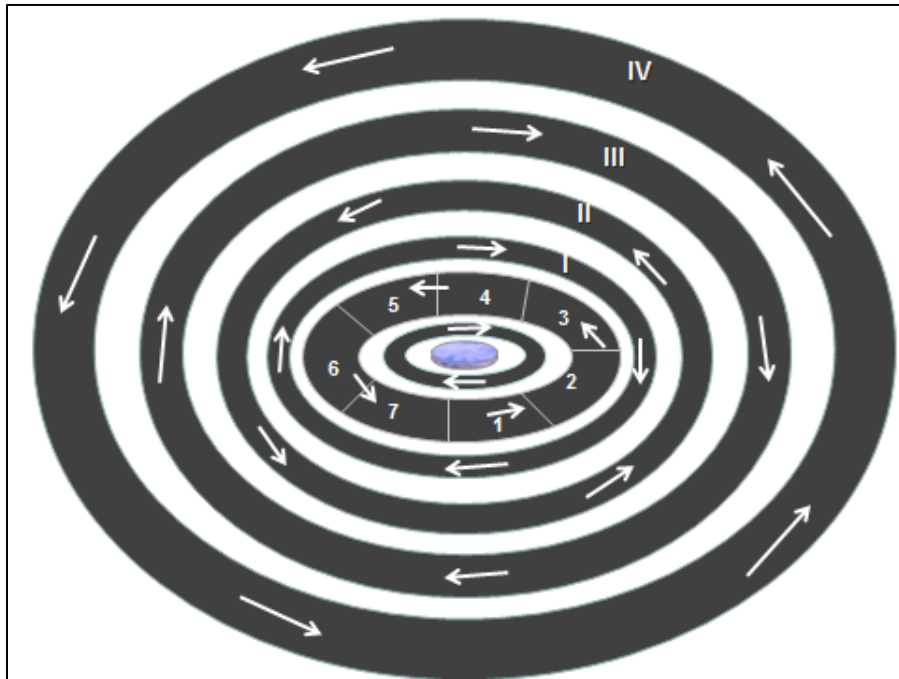


Fig. 4

Six space levels of Master Universe

Proceeding outward from Paradise - center of Master Universe there are six cosmic levels, that contain galaxies, stars, solar systems and other universal objects. These six Levels are divided into the following:

1. The Central Universe –Havona
2. The Seven Superuniverses
3. The First Outer Space Level I
4. The Second Outer Space Level II
5. The Third Outer Space Level III
6. The Fourth Outer Space Level IV

All six space levels with their energies organized into the matter of cosmic bodies, or yet unorganized, move in a circular motion around Paradise. Motion at each level is opposite to that of the adjoining level. Havona, the Central Universe, rotates clockwise; the seven superuniverses- counterclockwise; first outer space level, clockwise, and second level counterclockwise, and so on. Between the space levels there is a space free of matter and cosmic dust, which is in the state of relative stillness. Fig.4

The Universe is planned by Paradise Architects. It is constantly built by the celestial beings totally unknown to us. The construction of space objects is carried out from the centre of the Universe outwards.

4. CENTRAL UNIVERSE HAVONA

The Central Universe, Havona, was created directly by the Universal Father and the Eternal Son; there is no record of its creation, [8]. This universe is perfect both in its physical construction and in the creation of its spirit beings --perfect beings, who do not need to evolve. Havona forms a vast plane and has a billion (10^9) inhabited planets, which do not require any sun for their heating, Fig. 5.

The one billion worlds in Havona are arranged in seven concentric circles, which immediately surround the three rings of the twenty one satellites of Paradise. There are upwards of thirty-five million worlds ($35 \cdot 10^6$) in the innermost Havona circuit, the first circuit, and over two hundred and forty-five million ($245 \cdot 10^6$) in the outermost, the seventh circuit.

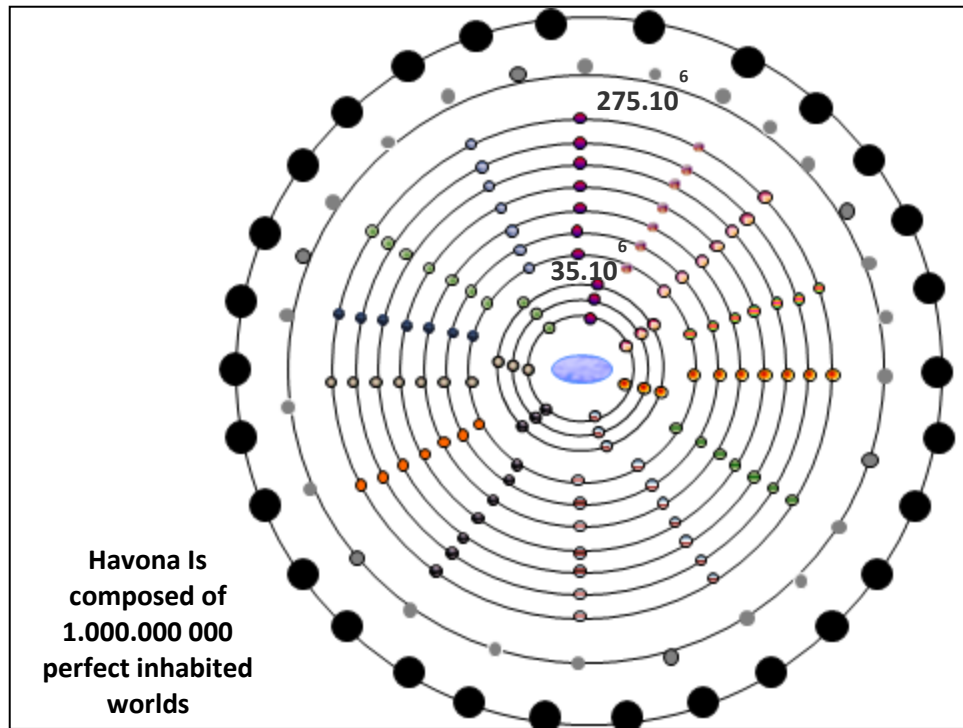


Fig. 5

Havona, the Central Universe

The number of worlds increase proportionately from innermost to outermost circuit, each containing thirty-five million worlds ($35 \cdot 10^6$) more than the previous one. The Havona planetary rings are not superimposed. Havona whirls clockwise around the stationary Isle of Paradise in one vast plane. [8]

From a physical point of view, the Havona and the Paradise circuits are all one and the same system; their separation is due to different functions and administrative structure.

The multitudinous dark masses surrounding Havona, the Central Universe, in two elliptical rings are quite unlike black holes. These gravity bodies neither reflect nor absorb light; they are nonreactive to physical-energy light, and they completely encircle and

enshroud Havona as to hide it from the view of even near-by inhabited universes in next space level.

The inner belt of dark bodies revolves counterclockwise; the outer revolves clockwise. These alternate directions of motion, coupled with the extraordinary mass of dark bodies, so effectively equalize the lines of Havona's gravity as to render the central universe a physically balanced and perfectly stabilized creation, Fig. 6.



Fig. 6

Dark bodies of Havona

The inner belt of dark gravity bodies is tubular in arrangement. The outer circuit of dark bodies with tremendous gravity is arranged perpendicularly. It resembles a round wall which is a lot taller than the inner tubular belt, making therefore Havona invisible from outside. Our planet is located way too far from the centre of the Universe hence it is impossible for us to see the dark bodies surrounding Havona with our telescopes.

The life and activities of perfect beings in Paradise and the Central Universe are beyond human comprehension. [9]

5. THE SEVEN SUPERUNIVERSES

Outside the Central Universe, in the first post-Havona space level, there are the Seven Superuniverses of time and space, Fig. 7. Early in the materialization of the creation of the universe, the sevenfold scheme of the superuniverse organization and government was formulated. The first post-Havona creation was divided into seven stupendous segments, which were called superuniverses.

The Superuniverse's headquarters, architectural worlds, were designed and constructed first. Paradise, the central universe of Havona, and the seven superuniverses make up the **Grand Universe**. The Grand Universe together with the four outer space levels are designed as the **Master Universe**, Fig. 4. The present scheme of administration has existed almost from eternity, and the rulers of these seven superuniverses are rightly called the Ancients of Days.

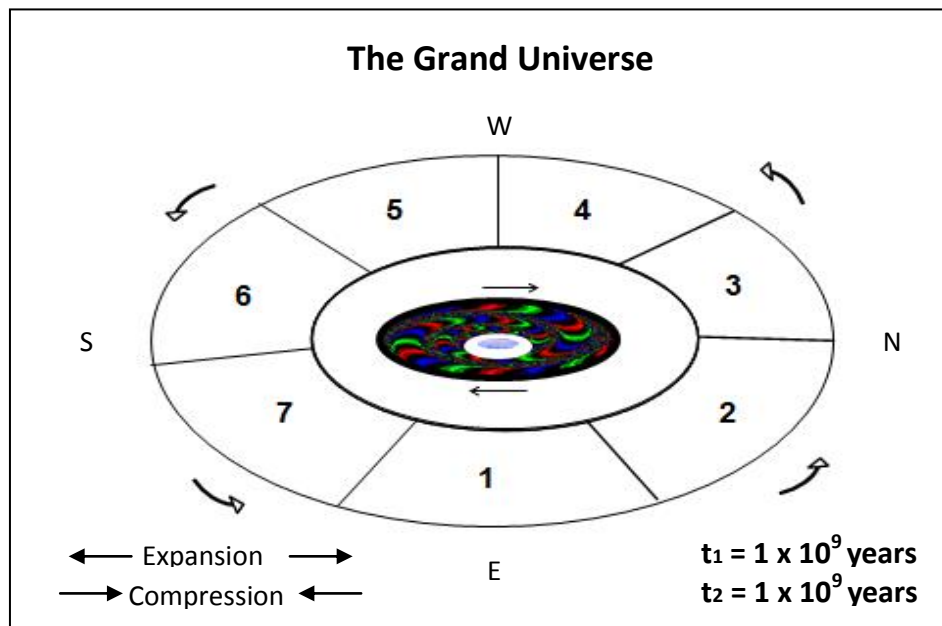


Fig. 7

Havona and Seven Superuniverses

The seven superuniverses traverse a great ellipse, a gigantic and elongated circle, pursuing a counterclockwise course under Paradise's absolute gravity. At the same time the Seven Superuniverses expand and contract each 2 billion years.

The seven superuniverses' present location in relation to the Paradise is shown in figure 7.

Our planet, Earth-Urantia, is in the seventh superuniverse, called Orvonton. Each superuniverse is administratively divided into one hundred thousand local universes. Our local universe is called Nebadon from our Creator Son of the Universal Father, Michael of Nebadon, who created our local universe. Physical construction of this universe was performed by special Absonite beings according to the plans set forth by the Architects of Paradise ordered by the Universal Father. [10]

The administrative division of our Superuniverse Orvonton and position of our planet Earth-Urantia are presented in table 1 and the name of division present in table 2.

Superuniverse

Unit	Number of units	Habitable World
Local system		1.000
Constellation	100 sistems	100.000
Local Universe	100 constellations	10'000.000
Minor sector	100 universes	1.000'000.000
Major sector	100 minor sectors	100.000'000.000
Superuniverse	10 major sectors	1.000.000'000.000

Table 1

Position of Urantia

Unit	Name	Capital
Local system	Satania	Jerusem
Constellation	Norlatiadek	Edentia
Local universe	Nebadon	Salvington
Minor sector	Ensa	Uminor the third
Major sector	Splandon	Umajor the fifth
Superuniverse	Orvonton	Uversa

Table 2

6. CREATION OF THE SEVEN SUPERUNIVERSES

The seven superuniverses were planned by the Architects of Paradise and built in stages from cosmic center outwards. The seven superuniverses occupy a significant amount of space and their construction is not yet completed.

The creation of the universes of time and space is so intricate that it cannot be calculated even using modern mathematics. Neither can contemporary physics account for the emergence of cosmic bodies, such as suns, planets, black bodies, etc, because it does not take into consideration universe energies through which primitive elementary particles materialize, which in turn lead to the formation of matter and celestial bodies. [11]

The celestial commission assigned to reveal the Urantia Book writings decided to use some terms from earthly physics in order for them to explain in general terms the formation of universe. This celestial commission uses these terms, such as force, energy and power since through them a certain comprehension of cosmic concepts arises in the human mind, enabling us to understand divine creation methods. The physical creation by celestial processes is extremely complex and remains unknown to current sciences, such as physics, astronomy, and cosmology; in spite of that, the Urantia Book says that it is possible to explain the creation of the universe to humans at a fairly sophisticated level of comprehension.

The Seven Superuniverses are designed as universes of time and space, for they were created by the so-called *space-time technique*. A *Mighty Messenger* explains to us the processes of this method, which are very intricate Paradise phenomena, and the comprehension of which requires introducing some cosmic concepts. The new concepts introduced by The Urantia Book in order to explain such a technique are:

1. **ABSOLUTA or Space Potency:** This is a cosmic prereality; it is the domain of the Unqualified Absolute. The phenomena springing out from Nether Paradise embrace three zones of “absolute or primordial force” presence and operation. These three zones appear as three concentric circles of cosmic reality. Space potency, *Absoluta*, is modified by special beings called Primary Force Organizers. In this area of the universe, and under the Paradise phenomena, there arises the *Space Potency* or *Absoluta*, which later becomes Universe Power. [12]

2. **SEGREGATA or Primordial Force:** This represents the first basic change in space potency, *Absoluta*. Primary Force Organizers activate *space potency* into *primordial force*, which in turn is able to react to the initial motion activated by the Universal Father.

3. **ULTIMATA or Emergent Energies:** Primordial force passes through two stages of transmutation before emerging as universe power. These two stages are designated as puissant energy and gravity energy.
 - a) **Puissant energy.** This is a powerful-directional, high-tension energy, which Primary Force Organizers set in forcible motion. This energy is not at first responsive to the pull of Paradise-gravity, but through the manipulations of Primary Force Organizers, this energy begins to transform itself, and the initial response to Paradise-gravity appears. From this moment on, energy manipulation is transferred to other special beings, the so-called Transcendental Force Organizers.
 - b) **Gravity energy.** This energy form is responsive to the Paradise absolute circular gravity pull, and holds the universe power potential, from which all cosmic matter arises. The Transcendental Force Organizers keep on changing the energy, and quickly transmute puissant energy into gravity energy, which begins rotating in a circular motion around Paradise. Moreover, at this stage energy begins to exhibit certain responsiveness to the linear gravity, characteristic of cosmic matter. These puissant and gravity phases of energy are called *Ultimata*.

4. **GRAVITA or Universe energy:** This is a stage of the energy transmutation in which the Universe Power Directors begin to act, and they manipulate *Ultimata* into another state called *Gravita* or Universe Power. This state of energy responds to both forms of Gravity: Paradise and Linear. Directors develop this power to that point at which Gravita can be directed into distributing channels. Gravita is existent in thirty “phases” of energy and all of them serve different purposes of Paradise Creators.

Apart from the Universe Power Directors, there are other living and semi-living entities, who manipulate different Gravita-energy phases; they are: Power Centers and Physical Controllers, the later know how to also handle antigravity. “Living entities are difficult-to-

understand beings; some of them do not have a will, do not choose, but their functions are highly intelligent though automatic. These Absonite creatures are highly specialized beings”. [13]

Universe energy serves the manifold Creator’s manifold purposes, and is used in the creation of the seven superuniverses and in the creation of the physical bodies of outer space. Space potency and primordial force metamorphoses are the secret of Force Organizers and Universe Power Directors, and such a secret is revealed to nobody, not even to Paradise-origin beings. Neither is the handling of Paradise energy comprehensible to high-order beings. The beings of the order of Melchisedek, from our local Universe denominated this phenomenon as the “**infinities of divinity**”. [14]

In order to create a local universe in a certain space physically, Primary Force Organizers begin the origination of the “cosmic nebulae”. The "nebulae" concept used in the Urantia Book has a meaning different to our astronomy. Such beings are able to stir up around them those primordial forces of huge cyclones, which once initiated, can never be halted or restricted. Inside nebulae these special beings carry out the following substance-energy transformations:

ABSOLUTA → SEGREGATA → ULTIMATA → GRAVITA

Out of the *Puissant energy*, *Ultimata*, materializes ultimaton, the first particle, which is the foundation of all elementary particles, and universe matter. This particle, the ultimátón, unknown on our earth physics; according to The Urantia Book, is an electron consists of a hundred ultimatons. [15]

Power Directors carry out Puissant energy materialization and matter emergence through the following process:

ULTIMATA → ULTIMATON → PARTICLES → ATOMS → MATTER

Every such process is carried out by Power Directors inside nebulae, which can exhibit diverse shapes. Nebulae undergo not only extremely high temperatures, high pressures, and very high energy revolution rates, but also expand and contract periodically. Force Organizers function inside nebulae, and Universe Power Directors catalyze this energy; that is, they carry out by their presence, segmentation, energy organization in phases, and subsequently its materialization. This process implies that there is something inherent in energy to function in this way in the presence of these power entities.

Apart from universal energy - Gravita, there are in the cosmos other orders of energy, which operate at diverse space levels. For example, Havona energy is totally different from space potency and primordial force its name is Triata. Havona is a material universe, but the matter of the central universe is totally different from the matter we know.

In Upper Paradise a transcendental energy denominated *Tranosta* operates. This energy is used solely by the Absonite beings. Divinity energy, a Paradise living energy, is denominated *Monota*.

On morontia worlds an entirely different energy called *Morontia Energy* exists, being so diverse that each sphere has its own class of energy. On architectural planets, plant and animal life, and the bodies of beings were created with this type of energy. [17]

Orvonton, the seventh superuniverse, has a hundred thousand local universes. Our local universe, Nebadon, is not yet completed; is still under construction. Eventually every local universe will have ten million inhabited planets; Nebadon now has three million eight hundred forty thousand inhabited planets, and the rest are now under construction or planning.

Creation of a local universe can be divided in two stages: the first stage is in connection to the physical creation of space bodies; and second, to the creation of living beings, who can be in existence in spirit, morontia and material status.

7. SPACE BODIES

Suns, planets, black holes, comets, and other space bodies originate in nebulae wheels. Nebulae pass through different stages of maturation, and alter their shape. Materialization of emergent energy, and the birth of space bodies occurs inside nebulae. [18]

At the first stage of development, a nebulae is circular, and it can be wider in its center, but the nebula forms a vast plane. As shown on Fig. 8. there is a nebulae captured by the Hubble which is on its primary stage of development. [19]

At the second stage, the nebula's shape becomes helical, as shown in Fig. 9. A nebulae captured by the Hubble telescope is located on Earth's orbit.



Fig. 8
First development stage

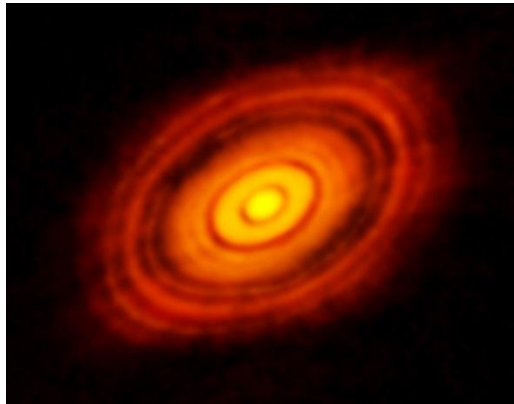


Fig. 9
Second development stage

At the third stage of development, nebulae begin to disgorge suns through its two tangential sides, as shown in Fig. 10. Such young suns quickly become spherical, and start out on their course as stars of space. Their orbits gradually become fixed, being determined by their path of escape, and by the linear gravity of nearby space bodies.

At the fourth stage, a nebula enters the last cycle of the dispersion of suns. The mother nucleus becoming either a globular cluster or a gigantic sun functioning as the center of a terminal solar system, Fig. 11. The Magellanic Cloud Fig. 12, which is near the outer margins of Orvonton is now at this phase of development. [20]



Fig. 10

Third development stage



Fig. 11

Fourth development stage



Fig. 12

Magellanic Cloud

Nebula development stages are about a billion years in length. Nebulae periodically expand and contract in million year periods. As they contract, revolution rates increase, and as they expand revolution rates decrease. Thanks to this the disputation of the space bodies occurs.

8. SOLAR SYSTEM

The Urantia Book describes the emergence of our solar system, called Monmatia. This system originated in the vast Andronover nebula, whose inception was 875.000.000.000 years ago. Our sun is a product of this nebula and has separated from it 6.000.000.000 years ago. [21]

4.500.000.000 years ago the enormous Angona system began its approach to the neighborhood of this solitary sun. The center of this great system was a dark cold giant of space, solid, highly charged, and possessing tremendous gravity pull. It was surrounded by a large number of planets.

At moments of the maximum expansion of our sun, under the strong gravity pull of Angona, streams of gaseous material shot out into space as gigantic solar tongues.

When Angona reached closely to the sun a huge part of solar plasma has detached from it. This detachment had two sharp ends and was wide in the middle. Such gas emanations detached at certain points from the sun, forming independent bodies, which assumed a spherical shape, and immediately started to revolve about the sun in orbits. This is how the twelve planets of our solar system were formed.

Two huge planets: Jupiter and Saturn were formed from the middle section of this detachment and therefore are still in gas state and uncooled.

Moreover, another few planets were detached from the Angona system because of our sun's gravity pull penetrated our solar system. Some of them became satellites of Jupiter and Saturn. This is the reason why their orbits are in the opposite directions to that of the other satellites. [22]

The total number of suns dispersed by the Andronover nebula is 1.013.629. This nebula passed through same metamorphoses now seen by our astronomers as they turn their telescopes to observe gigantic nebulae in different shapes. Every space body, that our astronomers can observe have appeared as follows: first a cosmic nebulae was formed, from which the Suns were dispersed, later planets were dispersed from the suns. The creation of our solar system is unique, as it has separated from the sun under the gravity pull of a huge dark giant.

There are other cosmic bodies in the universe called *architectural spheres*, they are invisible to our earthly telescopes. These architectural spheres and their satellites have been built throughout the cosmos, using special techniques unknown on earth. Such planets are the superuniverse, major and minor sectors, local universes, constellations, and local system headquarters. Architectural headquarters regulate universe power into their respective sectors, balance and control universal energy Gravita circulating through organized space.

Some architectural spheres are lighted by a sun, emitting light without heat, and they are heated by certain energy currents near the surface of the sphere. Architectural headquarters are located near the astronomical center of their administrative divisions, and are surrounded by many satellites, which are also architectural spheres. In the seven superuniverses, the plan is to reach five hundred billion (500×10^9) such worlds. [23]

According to The Urantia Book, the Milky Way, our galaxy, is composed of vast numbers of former nebulae. Our neighboring galaxy, Andromeda is outside the Orvonton boundaries, and is now forming many suns, whose numbers can be as large as a hundred million, Fig. 13. Andromeda light, which we behold from earth, left those stars a million years ago; that is, when the first human being was born on our planet. [24]

Our Satania system's headquarters is Jerusem, which seems to be in the Orion cluster, Fig. 14. The star cloud of Sagittarius is the center of our minor sector Enza, Fig. 15. [25]

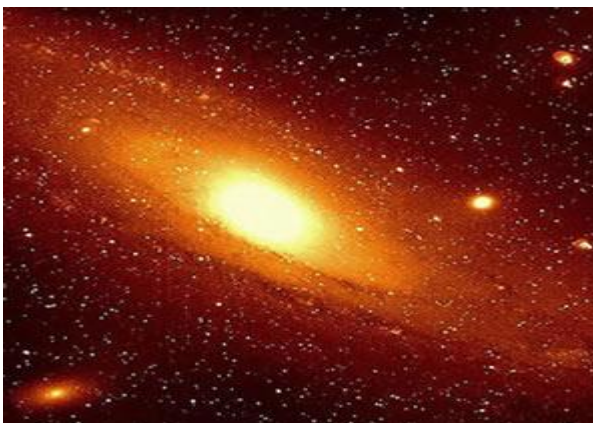


Fig. 13
Andromeda Galaxy



Fig. 14
Orion Cluster



Fig. 15

Cloud of Sagittarius

The Urantia Book is a path toward human evolution, and we are privileged to be able to learn from its teachings. The book's knowledge is so valuable as to afford progress to humans, and also, through a path of spiritual evolution, or the progress of the soul. The Urantia Book says: "The spiritually blind individual who logically follows scientific dictation, social usage, and religious dogma stands in grave danger of sacrificing his moral freedom and losing his spiritual liberty. Such a soul is destined to become an intellectual parrot, a social automaton, and a slave to religious authority." [26]

References

UB – The Urantia Book

- | | |
|----------------------------|----------------------------|
| [1] UB paper 42-11, p.481 | [8] UB paper 14-1, p.152 |
| [2] UB paper 11-1, p.118 | [9] UB paper 14-2, p. 154 |
| [3] UB paper 11-2, p.119 | [10] UB paper 15-2, p. 165 |
| [4] UB paper 11-3, p.120 | [11] UB paper 42-1, p. 467 |
| [5] UB paper 11-8, p. 125 | [12] UB paper 42, p. 469 |
| [6] UB paper 11-6 , p. 123 | [13] UB paper 29-5, p. 329 |
| [7] UB paper 12-1, p. 128 | [14] UB paper 42-2, p. 471 |

[15] UB paper 42-6, p. 476

[16] UB paper 29-1, p. 320

[17] UB paper 48-1, p. 541

[18] UB paper 15-4, p. 169

[19] UB paper 57-2, p. 652

[20] UB paper 57-4, p. 654

[21] UB paper 57-5, p. 656

[22] UB paper 57-5, p. 656

[23] UB paper 15-7, p. 174

[24] UB paper 15-4, p. 170

[25] UB paper 15-3, p. 168

[26] UB paper 132-2, p. 1458