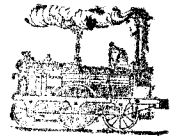


# TWO COSMOLOGIES - ASTRONOMY AND THE URANTIA BOOK



Irwin Ginsburgh, Newhall, CA

(This paper is a composite of two papers presented at the Fellowship's International Conference in Vancouver in August 1999. The portion dealing with current knowledge in the field of astronomy was presented by Dr. Douglas Scott of the University of British Columbia. *The Urantia Book* view of cosmology was presented by Dr. Irwin Ginsburgh.)

**Abstract:** Cosmology is that part of astronomy that deals with the history and large-scale structure of the universe. *The Urantia Book* deals with the same subjects. In 1955 when *The Urantia Book* was published, the two cosmologies seriously disagreed.

*The Urantia Book* discusses the center of the entire universe. The center has most of the mass (stuff) in the universe, and is therefore the gravity center of the universe. It is called Paradise and it does not exist in space or time, but the rest of the universe can locate itself with respect to it. The universe center is encircled by a central universe which has seven, coaxial planar rings of inhabited worlds. Beyond this is an elliptical planar ring of seven enormous superuniverses. This entire structure is mostly in a plane, where two dimensions are larger than the third. These seven superuniverses are the part of the Universe that is inhabited by humans. Our superuniverse, Orvonton, is the youngest, and has ten major sectors and 1,000 minor sectors; our Milky Way galaxy is one of these minor sectors. Our local universe, Nebadon, is one of 100 local universes in the disk of the Milky Way galaxy. Our world, Urantia, is one of almost four million inhabited worlds in the local universe.

In 1935, telescopes could not make measurements very far into the universe, and astronomy textbooks said that galaxies are uniformly distributed throughout the universe; there is no large-scale structure. Recently, astronomers with their new, larger, long-range, sophisticated telescopes, have found two massive gravitational centers which attract large parts of the universe. The second center was found after the first and

is much more massive than the first. The first is part of the structure of the second. This is starting to resemble the universe that *The Urantia Book* describes. The book implies that a planar array, with a massive center and a flat arrangement of astronomical bodies that are attracted by the center's gravity, applies not only to the solar system and the Milky Way, but also to larger cosmological structures.

Astronomy concerns itself with stars, galaxies and other energy sources. A star is like our sun, but it is so very far away that its visible size has shrunk to a point of light. A galaxy is an enormous collection of stars that are gravitationally bound to the massive center and travel together. Galaxies are the building blocks of the universe. Cosmology is that part of astronomy that deals with the history and the structure of the universe (all matter in existence). Astronomers generate theories that explain what we can see and measure today. Astronomy's telescopes can only see part of the universe, and this limits the theories.

*The Urantia Book*, on the other hand, is concerned with inhabited worlds (where human life exists), their history and administration. The organization of these worlds is not necessarily related to physical or astronomical systems; however two large parts of the organization seem to conform to major astronomical structures. Yet, the two cosmologies, that of astronomy and that of *The Urantia Book*, describe the same physical universe. I will attempt to identify the corresponding parts of each cosmology, and to point out agreements and differences between them. With information from *The Urantia Book* and from astronomy, I will guesstimate the size and location of Nebadon, our local universe, and Orvonton, our superuniverse. Cosmology is changing rapidly because of all the new telescope data, and some of my astronomical information may be obsolete in a few years.

One approach is to figure out the ratio of brilliant stars to inhabited worlds. For example, our star, the sun, has only one inhabited world, Urantia. There are many suns that have no inhabited worlds. This ratio will establish a relationship between the two cosmologies. For the purposes of this discussion, I assume that all inhabited worlds have temperature, gravity and air pressure conditions like those of the earth. *The Urantia Book* says that all mortals of will dignity (can choose between right and wrong) are erect bipeds (p. 564). Astronomy has not de-

tected any life elsewhere in our solar system or any other place in the universe, because present telescopes are not sensitive enough. In our solar system, there seems to be one inhabited world, Urantia; but what about other solar systems? *The Urantia Book* says that there are more than ten trillion blazing suns in our superuniverse (p. 172), and only one trillion inhabited worlds; or one inhabited world for more than ten blazing suns. Astronomers, however, have found that about ninety percent of all suns are red, brown or black dwarfs, and are too cool to support life. That means one inhabited world exists among ten blazing suns and ninety cool dwarf stars, or among one hundred stars of all types. This is a new number that has been derived by combining information from *The Urantia Book* (UB) and from astronomy. This number will probably change in the future because the first computed value of this type is usually wrong! For now, this number will be useful for guesstimating the size of the UB divisions of the grand universe.

We will start by describing the structure of our solar system, and then go to larger and larger astronomical systems. Our solar system has the massive sun at its center. The sun has almost all (98%) of the mass (stuff) in the solar system. There are nine planets which rotate (spin) once on their axes during a planet day and revolve around the sun during a planetary year; all the planets revolve in the same direction (counterclockwise viewed from above) in a plane. The earth spins or rotates on its axis once each earth day and revolves around the sun in one earth year. The four inner planets are small and include Urantia, the third from the sun. After the fourth one, Mars, there is a band of small planetary fragments and smaller pieces of rock that are called the Asteroids. The next two

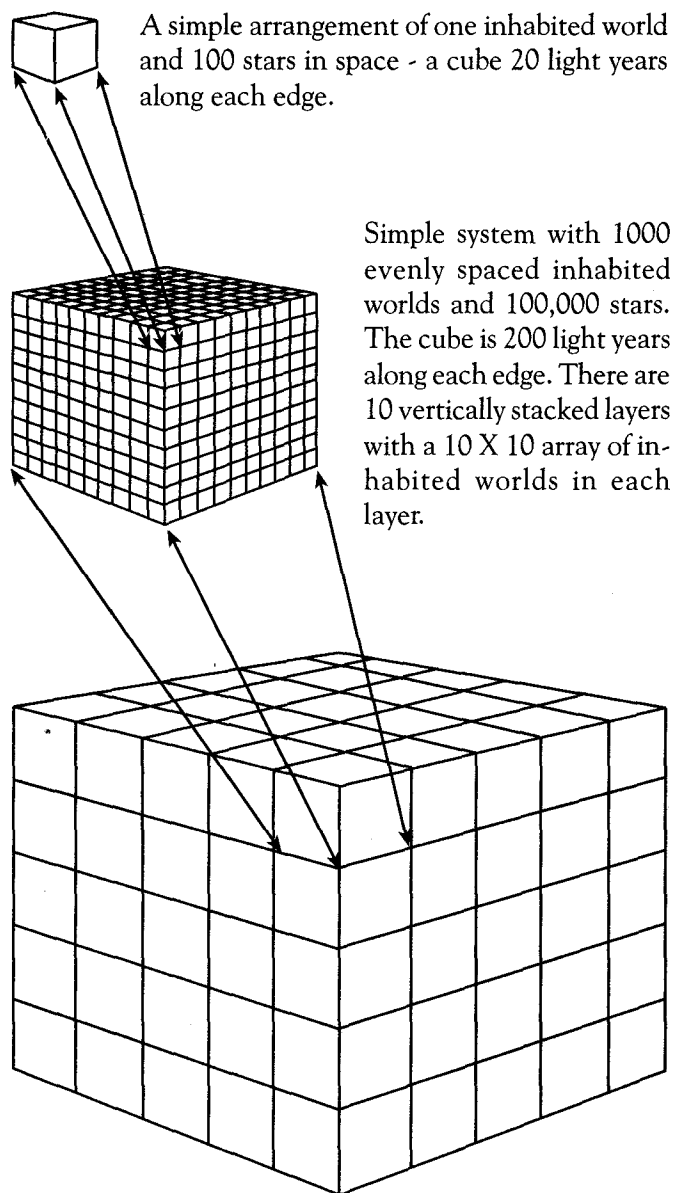
planets, Jupiter and Saturn, are the largest ones and each has many small satellites and rings of small space matter. Next are two medium sized planets, Uranus and Neptune. The last one is a very small planet called Pluto. Table 1 shows the major differences between the two cosmologies that describe our solar system. Otherwise, the two cosmologies agree (age of the sun, size of the planets, arrangement of planets around the sun, etc.). *The Urantia Book* speaks about five outer planets beyond Saturn, but astronomy has found only three. Are there two more planets that may yet be found? Is Nibiru, a planet described as having a very tilted orbit by Z. Sitchin in his *Earth Chronicles*, one of these planets? Sitchin claims his *Earth Chronicles* are a prehistory of the Earth translated from ancient texts. Academics strongly disagree with him.

Our sun does not appear to be closely associated with any nearby stars. But the sun and the nearby stars revolve about the center of the Milky Way in about 250 million years. These stars should move and stay together if the group or system is to have a long existence. The sun and the nearby stars appear to be in a spiral arm of the Milky Way galaxy, and about halfway to the outer edge of the galaxy. Since we have shown that there are about 100 stars for each inhabited world, there are about 100,000 (100 x 1,000) stars of all types in the Satania star system (Table 2). *The Urantia Book* (p. 655) says that the nebula which gave birth to our sun individually created more than 100,000 suns about 6 to 8 billion years ago. Perhaps most of these stars make up the Satania system and its 100,000 stars. Perhaps the aftereffects of the birth of these stars so long ago is, what modern astronomers call, the big bang — the timing may be right, but it was more like a local big bang.

TABLE 1. SOLAR SYSTEM COSMOLOGIES

PROPERTY	ASTRONOMY	THE URANTIA BOOK
Creation of the Sun	Condensed from huge cloud of gas	Condensed and spun off from hot spinning gas nebula along with 100,000 other suns
Origin of planets	Condensed from hot gases at same time as the sun	Condensed from hot gases pulled from sun by huge passing nebula
Number of planets	9 plus <sup>MALDEK</sup> asteroids = 10	11 plus asteriods (p. 656) = 12
Creation of asteriods	Material of unformed planet, fifth from the sun	<u>Breakup of fifth planet</u> , pulled too close to Jupiter (p. 658)
Planets okay for life like ours	2 ?	3 (p. 173)

FIGURE 1



A simple arrangement of one inhabited world and 100 stars in space - a cube 20 light years along each edge.

Simple system with 1000 evenly spaced inhabited worlds and 100,000 stars. The cube is 200 light years along each edge. There are 10 vertically stacked layers with a 10 X 10 array of inhabited worlds in each layer.

A constellation with 100 evenly spaced systems. The cube is 1,000 light years along each edge. There are 5 vertically stacked layers with a 5 X 5 array of systems in each layer.

The average spacing between stars in our part of the Milky Way is four light years. (A light year is the distance that light travels in one year of Urantia time, or about 6 trillion miles.) If the sun has the only inhabited planet among 100 stars, this group of stars could be arranged simply in an imaginary cube with about five stars along each edge ( $5 \times 5 \times 5 = 125$ ), Fig. 1 top. Each edge is

about 20 light years long. In the case of a system, the simplest arrangement for the 100,000 stars or 1,000 worlds is to fill an equal sided box that has 50 stars along an edge ( $50 \times 50 \times 50 = 125,000$ ); or the edge is about 200 ( $4 \times 50$ ) light years long. And there could be ten inhabited worlds along each edge of this box for a total of 1,000 ( $10 \times 10 \times 10 = 1,000$ ) Fig. 1 (middle). These worlds could be arranged in ten stacked trays with 100 ( $10 \times 10$ ) worlds in each tray, Table 1. This could be the size and shape of the Satania system. The UB says that the headquarters of the Satania system, Jerusalem, is not a luminous world (p. 520) and cannot be seen from Urantia.

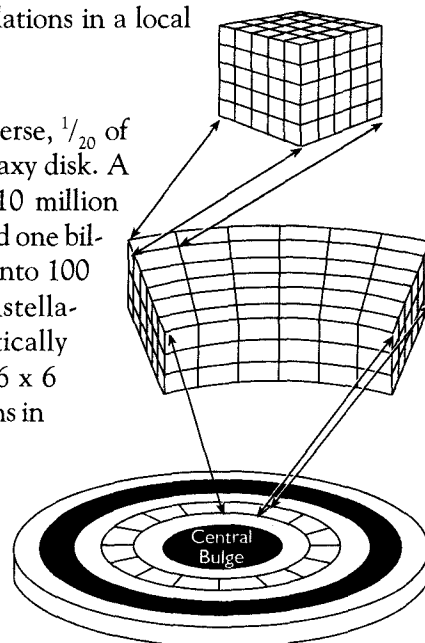
The next larger administrative division is called a constellation (Fig. 1, bottom). It consists of 100 systems (Table 2), and should be 100 times larger in volume, and four or five times longer on an edge ( $5 \times 5 \times 5 = 125$ ). A constellation in the UB is larger and different from an astronomical or visible constellation, which is a group of visible nearby stars outlining a pattern in the sky. In a simple case, a UB constellation could fill an equal sided box that is 1,000 light years on an edge ( $5 \times 200$ ); it has about five systems along an edge, (Fig. 1, bottom or Fig. 2, top).

FIGURE 2

One of 100 constellations in a local universe.

View of a local universe,  $\frac{1}{20}$  of a ring in a spiral galaxy disk. A local universe has 10 million inhabited worlds and one billion stars arranged into 100 constellations. constellations are in 3 vertically stacked layers in a 6 x 6 array of constellations in each layer.

Schematic of disk of the Milky Way galaxy. This is a minor sector. A simple arrangement is a disk divided into concentric rings. Each ring is divided into 15 to 20 sections, and each section is a local universe. 100 local universes are in the disk of a spiral galaxy. Only the second inner ring is shown divided since Urantia is probably in this ring.



The next larger administrative division is a local universe (Fig. 2, middle). This consists of 100 constellations and could be in an equal sided box that is about 5,000 light years on an edge. Since the disk of our Milky Way is only 3,000 light years thick, the other two dimensions of the local universe should be increased by about 20%; or the other two dimensions are about 6,000 light years long. The local universe of Nebadon could be 3,000 light years thick, 6,000 light years along a disk radius and 6,000 light years along an arc perpendicular to a disk radius. This could be the approximate size of the local universe of Nebadon (Fig. 2). Since Nebadon has 100 constellations, how might these be arranged? A simple way is a box with smaller equal sided boxes inside. A constellation inside a local universe box could have edges that are 1,000 light years long. The 100 constellations of Nebadon can be arranged in three layers atop one another, with a 6x6 arrangement of constellations in each layer. This fills the 6,000 by 6,000 by 3,000 light year size of a local universe. In a similar way, a constellation could have its 100 system boxes arranged in five layers with a 5x5 arrangement of systems in each layer. Each system box is 200 light years on an edge and can have 1,000 inhabited worlds in its box. These arrangements are highly simplified and are not necessarily the way things actually are. Table 2 shows the UB administrative arrangement of inhabited worlds (p. 167)

400 The next major structure we will consider is the Milky Way galaxy. This is a group of at least one hundred billion stars. It is a huge, flat circular disk about 100,000 light years in diameter. The disk, at its outer edge, is about

3,000 light years thick; this is small compared to the diameter of the disk, which is about 100,000 light years. There is a bright central bulge or ball that extends from the center of the disk to about one-fourth the radius. The bulge has a radius of 10,000 light years. Recent tests report a long bar or ellipsoid rather than a spherical ball.

There is a very large mass at the center of the bulge of the Milky Way. Since we are inside of it, we can see the Milky Way at night as a faint wide band of light across the sky. The position of the band changes during the year. The bulge can be seen in the southern-hemisphere sky as a large thickening of the Milky Way band. The center of the Milky Way galaxy is in this direction, but far beyond the visible constellation, Sagittarius. The sun is located about half way out to the edge of the disk. A small telescope or binoculars will show that the Milky Way's band of light consists of thousands of stars. If the disk could be seen from above, it would appear not uniformly illuminated; it consists of two interspersed bright spiral arms that go from the ends of the bulge to the outer edge of the disk. Astronomy calls this a spiral galaxy. Spiral galaxies are large galaxies. The closest spiral galaxy to us is the great nebula in the visible constellation of Andromeda. It is so dim that it is hard to see with the unaided eye. The Urantia Book says that this nebula is about one million light years away and is about the same size as the Milky Way. This agreed with astronomy's measurements in 1935, about the time that the UB manuscript became available. Astronomy has now doubled the value for both of these numbers. The UB says that the Andromeda nebula is evolving and is not inhabited (p. 170), but as-

TABLE 2. (p. 167) ADMINISTRATIVE STRUCTURE OF THE GRAND UNIVERSE

UNIVERSE STRUCTURE	CUMULATIVE NUMBER OF INHABITED WORLDS	NUMBER OF STRUCTURES IN NEXT LARGE STRUCTURE
Urantia	1	1,000 inhabited worlds in a system
System	1,000	100 systems in a constellation
Constellation	100,000	100 constellations in a local universe
Local Universe	10,000,000	100 local universes in a minor sector
Minor Sector	1,000,000,000	100 minor sectors in a major sector
Major Sector	100,000,000,000	10 major sectors in superuniverse
Superuniverse	1,000,000,000,000	7 superuniverses in the grand universe

tronomy has no information about this.

There are several statements in *The Urantia Book* about the Milky Way galaxy (p. 168, 455) and a few are not too clear. As best we can tell, the Milky Way is a minor sector (Ensa) of a supergalaxy (Orvonton). If it is, it contains 100 local universes (Table 2), including our local universe of Nebadon. Then Nebadon is about one hundredth of the Milky Way disk. These local universes are probably located between the central bulge and the outer edge of the Milky Way disk. There probably are no local universes in the central bulge, because astronomy finds that there are energy and gravity fields in the center of a galaxy that could be inhospitable to life as we know

it. The spiral part of a galaxy is a structure in the gas of a galaxy, and is not associated with the long-lived stars such as the sun. These long-lived stars move faster than the spiral pattern. The 100 local universes could be located in five or six approximately concentric rings that might be between the central bulge and the edge of the disk (Fig. 2, bottom). All stars in a ring travel at the same speed around the galactic center. Thus, these stars remain near each other for very long periods of time; and it is plausible that there are 15 or 20 local universes in the innermost ring and in the next outer ring. The local universe of Nebadon could be in this second ring, because the sun is located half way out in the disk. The length of Nebadon could be one twentieth of the ring circumference; this computes to be 7,500 light years — not a bad fit for the 6,000 light year dimension we found earlier from our fitting stars in boxes. There could be other arrangements with more but thinner rings, and with longer but fewer local universes per ring. The outer rings are in a part of the disk where the spacing between stars is longer, and the local universes are larger in size. On the first page of this paper, I estimated from *Urantia Book* data that the Milky Way has about one billion inhabited worlds. If this is divided among 100 local universes, there should be about ten million inhabited worlds per local universe. Nebadon has about four million inhabited worlds, but could hold ten million.

Forty to fifty years ago, astronomers thought that galaxies were uniformly distributed throughout the universe. Part of the problem was the difficulty in seeing far away galaxies and in measuring distances to these remote galaxies. Astronomers are just starting to find large-scale structure in the universe, but know little about this structure. Astronomers now say that galaxies are uniformly

FIGURE 3

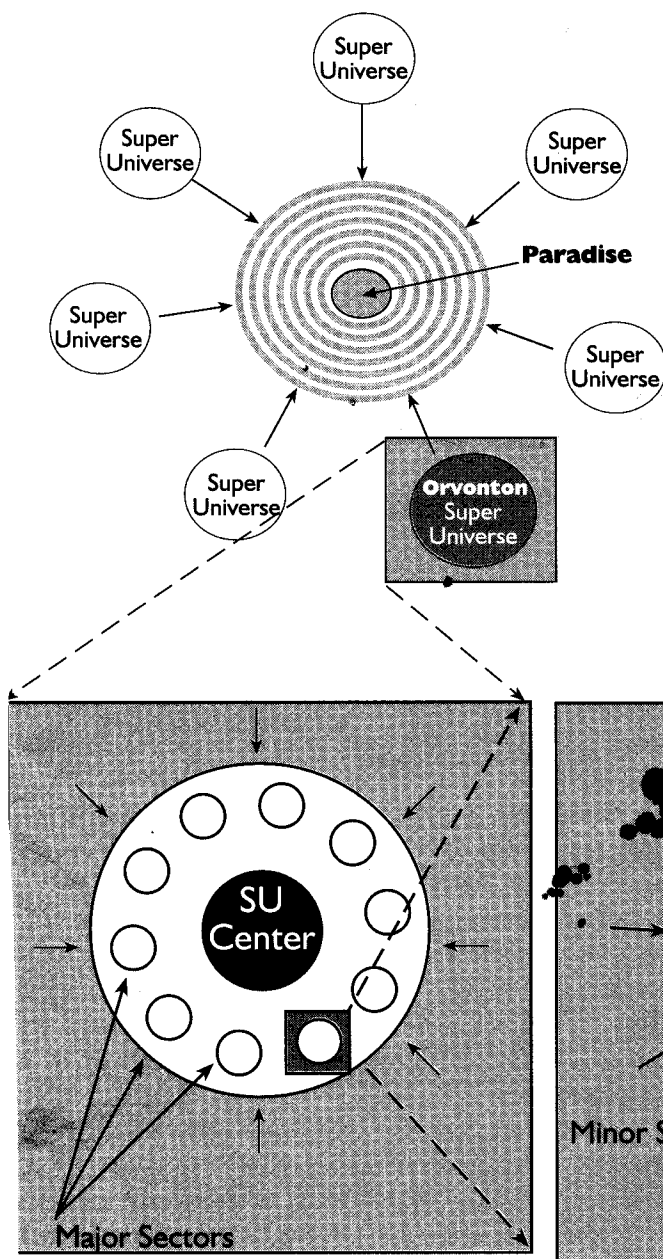


TABLE 3. PROPOSED SIMPLE SIZE & STRUCTURE OF THE COMPONENTS OF THE GRAND

CATAGORY	SIZE AND SHAPE OF VOLUME	REMARKS
Inhabited World	A cubic box 20 to 30 light years on an edge	Distance to nearest inhabited world is 10 to 40 light years. About 100 nearby stars in box.
System	A cubic box 200 light years on an edge	
Constellation	A cubic box 1,000 light years per edge	Size of box enclosing a system having 1,000 inhabited worlds and 100,000 stars.
Local Universe	Galactic disk cut into 5 or 6 concentric rings. Local universe is $\frac{1}{20}$ of a ring	Size of box holding 100 systems. Systems are in 5 stacked layers with a 5 x 5 array per layer.
Minor Sector		
Major	Spiral galaxy disk 100,000 light years in diameter	Ring section has 3 stacked layers has a 6 x 6 of constellations
Superuniverse	<u>Disk with diameter of 120 million light years</u>	<u>Milky Way disk has 5 or 6 concentric rings of local universes with 15 to 20 local universes per ring</u>
	Disk with diameter of 500 million light years	Supercluster of galaxies with cluster of massive galaxies at center. Has 100 minor sectors.
		Flattened superclusters of galaxies. Has 10 major sectors.

distributed beyond these structures. Many of the distant galaxies seem to be in a flattened structure; this agrees with *The Urantia Book*. Although the Milky Way and its nearby galaxies are moving away from all the other distant galaxies as part of the expansion of the universe, there is another smaller motion. The Milky Way shares this motion with about twenty nearby galaxies. There are two large spiral galaxies (Milky Way and Andromeda), and the rest are small, or dwarf, galaxies. Most of the small galaxies cluster around the two large spirals. The two spirals are now thought to be about 2.5 million light years apart. These twenty galaxies are called the local group. The local group is in a planar array, and is part of a larger flattened supercluster of galaxies which is under the gravity (mass) pull of a large central group or cluster of galaxies located far beyond the visible constellation of Virgo. Nevertheless, it is called the Virgo supercluster. The local galaxies are moving toward the Virgo cluster; the distance to the Virgo cluster is about 50 to 60 million light years. This flattened structure with a massive gravity center is a larger version of the solar system or the Milky Way. Astronomy is not sure if we are orbiting the Virgo cluster, and has not yet measured this motion. But *The Urantia Book* seems to have an explanation. Since the

Milky Way is a minor sector, it and 99 other minor sectors make up a major sector of the Orvonton superuniverse. Thus they orbit the massive center of the major sector. The Virgo cluster would then be the center of the major sector of Splandon (Fig. 3, lower right). This structure was discovered in the seventies. During the eighties, astronomers found an additional common motion for all the galaxies in the Virgo supercluster. They appear to be moving toward a larger gravity center that is about 200 million light years away from us (Fig. 3, lower left). This is in the southern hemisphere beyond the visible constellation of Centaurus. There are other superclusters that also appear to be moving toward this same massive center. Astronomers call it "the great attractor", because it appears to attract so much of the known universe. Astronomers have not yet measured galactic rotation around the great attractor. If the Virgo cluster is the center of a major sector, then it and all its associated supercluster are in motion around the center of a superuniverse.

*The Urantia Book* implies that astronomy's great attractor is the center of the superuniverse of Orvonton. However, astronomers are having trouble seeing the center of the great attractor. Orvonton is the seventh and

youngest superuniverse of the grand universe. The shape of Orvonton is a "watchlike, elongated, circular grouping that is one seventh of the inhabited universe" (p. 167), perhaps with a diameter of 500 million light years. The spheres of Orvonton are traveling in a vast elongated plane (p. 167) Our local universe, Nebadon, is on the outer edge of Orvonton (p. 359) The seven superuniverses are in one plane and circuit the gravitational center of all things, the central universe (Fig. 3, top).

The central universe (p. 118, 152) has more mass (stuff) than the rest of the grand universe, and should be the gravity center of the grand universe. And astronomers have also found a very massive attraction center that might be the center of the grand universe. It is almost in the same direction as the great attractor, but it is about three times as far; this does not seem far enough. Gravity data are very difficult at these long distances. Thus astronomy has found two major gravity attraction centers and possibly a third in the universe which *The Urania Book* described almost sixty years ago; a remarkable prediction! The central universe is encircled by two high, massive, cylindrical walls of dark matter (p. 153), and thus is not visible to us. The book says that it lies beyond the Sagittarius center of our minor sector, angularly not too far from Centaurus. The book "seems to hint" that the seven superuniverses circuit the central universe in 25 to 35 billion years (p. 165) This is much longer than the time of the big bang, and is a measurement that might be feasible in the future. It will be interesting to see if future astronomers will find this orbiting time. Table 3 summarizes our educated guesses of the simplest size and shape of various parts of the grand universe. The astronomical data discussed here is quite new, and the data could change soon with improved measurements.

Paradise is the center of the entire universe, and Havona is the central universe that surrounds Paradise.

followed by three more void rings (p. 130), and each of them is followed by another outer space level. There are four outer space levels in all, and together there will be about 70,000 new evolving superuniverses (p. 354) The entire creation is called the master universe (p. 129) and includes the grand universe, the inhabited part of the universe. The entire structure exists in a somewhat flat plane, the supergalactic plane, that thickens at the outer edges. The master universe is not static, but is evolving, especially in the outer space levels. There is no life yet in the outer space levels. Since Nebadon, our local universe, is on the far outskirts of Orvonton, and since the center of everything is in the direction of Sagittarius but far beyond it, the part of the first outer space level closest to us could be in the opposite direction from Sagittarius. The Andromeda nebula is in this general area; since it is in the first outer space level, it should be uninhabited. It is of interest to note that astronomy may have found a galaxy free space between the Milky Way and the Andromeda nebula. This could be the first void ring. When we consider the creation of the universe, the two cosmologies are different interpretations of the same data. *The Urania Book* talks about the universe existing for eternity, forever.

Matter and energy are continuously being created in the universe, and are being distributed by energy circuits. The created energy is very hot and has to cool before matter can exist. About six to eight billion years ago, there was an enormous energy disturbance in our part of the universe (p. 655) This resulted in the individual creation of over 100,000 suns, including ours, from an enormous nebula (a word used in 1935 to designate visible objects in the sky that were not stars). This number of suns is roughly the same as the number of suns in a system. One wonders if our Satania system was created at that time. Forty billion years earlier this same nebula pro-

## THERE ARE FOUR OUTER SPACE LEVELS IN ALL, AND TOGETHER THERE WILL BE ABOUT 70,000 NEW EVOLVING SUPERUNIVERSES.

Havona is surrounded by a flat, elliptical ring containing the seven superuniverses. This is the so called, grand universe. It is encircled by a void ring, 400,000 light years in width. Beyond this, is a ring of superuniverses that are now evolving. This ring extends out 25 million light years and is called the first outer space level (p. 129) This is

duced about 850,000 suns, and one wonders if these suns formed eight systems of our constellation.

Astronomy says that nothing existed before ten or twenty billion years ago. Nothing older than this has been found, but telescopes can barely see out this far (in light years) and cannot measure far distances accurately. Then,

ten or twenty billion years ago, an enormous injection of energy occurred at one place. All the energy in our universe appeared at that time. This energy was extremely hot; it cooled and matter formed. Science called this the "big bang". The UB energy disturbance of six to eight billion years ago could have been a sort of local big bang. Both of these explanations can account for the weak residual infrared (heat) radiation found all around Urantia; it is left over from the big bang or the local big bang. But there is another phenomenon that also must be explained. This is the measured expansion of the universe, so called because all the large scale matter in the uni-

fies much of the dark islands of space as dead suns (p. 173) Astronomers in 1997 have recently found that at least half the dark matter is composed of dead suns. This was done by observing millions of stars in the large Magellanic cloud and, in the course of such observation, occasionally seeing a sun's light briefly blocked, and surmising, therefore, that a dead, dark sun got in the way. Again the UB predicted correctly, and years ahead of its time. These dead suns are stars that have used up their lighter matter fuel, have cooled down and condensed into small bodies with enormous heavy masses. The atomic structure has disappeared, and the mass has compacted

## ONE WONDERS IF THE MASS ACCUMULATING BLACK HOLES AT THE CENTER OF SPIRAL GALAXIES COULD BE PART OF THE ENERGY RECIRCULATING SYSTEM.

verse is moving away from all the other large scale matter in the universe. The big bang accounts for this, the local big bang does not. However, the UB talks about the respiration of space (p. 123) Space is real (not empty) and undergoes an expansion for about one billion years; then space contracts for a billion years, but not to a very small diameter. Any matter embedded in space is carried along with it. This does explain the expansion of the universe since we are now supposedly in the middle of an expansion phase. The expansion of the universe was known in 1935, but the weak residual radiation was identified much later. It is interesting that the UB provided explanations for both phenomena in 1935. Also in 1935, science considered space to be a void (empty) between astronomical bodies. The big bang and the UB continuous energy creation both start with very hot energy. The major difference is the time scale. Big bang energy cools relatively quickly, and continuous creation energy cools slowly. Big bang theorists do not know where the energy came from and do not care. The UB teaches that it comes from God in Paradise, at the center of the master universe.

Astronomers have recently found that there must be at least ten times more matter than the visible matter in the universe. Otherwise, the large galaxies would tear themselves apart because of their relatively fast rotation speed. But astronomers have not identified the invisible matter. *The Urantia Book* was talking about dark matter in 1935, years before astronomers recognized the need. However in the thirties, the astronomer F. Zwicky proposed that some unidentified dark matter might exist, but no other astronomers believed him. The book identi-

as nuclear matter. But why would there be so many of these stars that their total mass is many times that of the visible matter? If one thinks in terms of eternity, it is easy to see that it could be so because average stars have life-times of tens of billions of years. This large number of dead suns could start to be another problem for the big bang theory. Has there been enough time to create all these dead suns?

Both cosmologies must deal with energy (fuel for the universe). There must be enough energy to supply the universe's needs. The big bang takes care of this by supplying all the energy at the instant of creation, but doesn't worry about where the energy comes from. It's strange that a science which considers the conservation of energy to be a major principle, ignores this at the instant of creation. *The Urantia Book* speaks of energy circuits that flow through the universe (p. 123, 175) and supply energy to matter. Such an energy distribution system is needed in a universe that lasts forever. The energy flow starts from the center of all things, Paradise, and encircuits the seven superuniverses. It reaches the center of each superuniverse, and is downgraded and encircuited to the major sectors, then the minor sectors, the local universes and on through the organized levels until it reaches the inhabited worlds. Any energy that is unused returns to Paradise almost a billion years later. This energy powers the superuniverses and all they contain. One wonders if the mass accumulating black holes at the center of spiral galaxies could be part of the energy recirculating system. But it is necessary to get the matter out of the black holes. Some black holes shoot beams of



particles from their poles far into space. However, we do not know what happens inside a black hole. It is conceivable that because of the extreme pressure, electrons, protons and neutrons could be deconstructed into ultimatons, their building blocks. But ultimatons are not affected by linear gravity, and they can readily escape from a black hole even though gravity holds the black hole together. Astronomy and physics have no concepts like these energy circuits or ultimatons. The book even claims that a dead sun that happens to be in an energy circuit, can be recharged slowly and shine again. A dwarf star that slowly brightens could be an indication of such a phenomenon. The energy flow path is not an open channel, but is tightly controlled. Although the book says that we do not know about the primary energy involved in the energy flow, it will be interesting to see if astronomers discover any of this in the future.

been confirmed, and the description may be on its way to agreeing with the book. 3) The existence of three major gravity centers that define our part of the universe — Havona, or the central universe, could be the most massive of these; the center of Orvonton and the center of our major sector could be the other two.

Astronomers have recently found two of these gravity centers, and are seeking the third. With time, astronomy has become more sophisticated at measurement and analysis. The very latest astronomical information about the large-scale structure of the universe is starting to look like that of the "source". If the two universe structures from astronomy and the UB agree or even mostly agree, this could be a remarkable prediction made by the "source" some forty five years ago. But cosmology is not the only subject in the book. It also contains information about other inhabited worlds, the after life of humans, an

## IF THE TWO UNIVERSE STRUCTURES FROM ASTRONOMY AND THE UB AGREE OR EVEN MOSTLY AGREE, THIS COULD BE A REMARKABLE PREDICTION MADE BY THE "SOURCE" SOME FORTY FIVE YEARS AGO.

The *Urantia Book* says that it cannot reveal to us any information which we do not know — so-called unearned knowledge. Knowledge that we will soon learn is apparently transferable. There is a question whether we really know a new concept that has just been conceived, but has not yet been proven scientifically. (See previous remark about the concept of dark matter.) The book also claims that the cosmology it describes is not revealed, and may have to be revised in the future. I suppose this means that the cosmology was not officially included in the revealed information, but is information known to the compilers. But some of the material might stand the test of time, and could contain some interesting clues about reality in the universe.

When the UB manuscript appeared in 1935, its cosmology about the large-scale structure of the universe was completely different from that of astronomy (galaxies were uniformly distributed in all directions). *The Urantia Book* makes three major predictions about cosmology: 1) Most matter in the universe is in a plane the thickness of which is small compared to the two other dimensions. The great wall of astronomy may turn out to be this intergalactic plane seen on edge. 2) The existence and description of dark matter — the existence has almost

entire theocracy of spirit beings and a reason for our existence. The book is very logical and self consistent; reading it is an enormous intellectual and spiritual challenge. And some of its concepts could be very intriguing. Of course, revelation may not be absolute truth, but it is matched to the needs of those who receive it.

### SUMMARY

Our world, Urantia, is one of the youngest worlds of the Satania system. One hundred systems make up a constellation, and 100 constellations are organized into a local universe. One hundred local universes are in a minor sector. (The Milky Way galaxy is a minor sector.) One thousand minor sectors make up a superuniverse, and ours, Orvonton, is the youngest of the seven superuniverses that travel in an elliptic path around the center of the universe of universes. Astronomers have recently found that the Milky Way is moving toward the Virgo cluster of galaxies. Is this the center of a major sector? Is the Virgo supercluster a major sector? In addition, the Virgo supercluster and much of the rest of the nearby universes are moving toward the great attractor. Is this the center of our superuniverse? There is an interesting possibility that a larger and still more massive structure

may also have been found beyond the great attractor. Is this the central universe? Because astronomers do find larger and more massive gravity centers, it is reasonable to expect to find an enormous gravity center at the heart of the entire universe.

Among future readers of *The Urantia Book*, there will be more and more skeptics. Predictions about the large-scale structure of the universe in *The Urantia Book* can be most helpful in answering questions from these readers.

#### NOTES

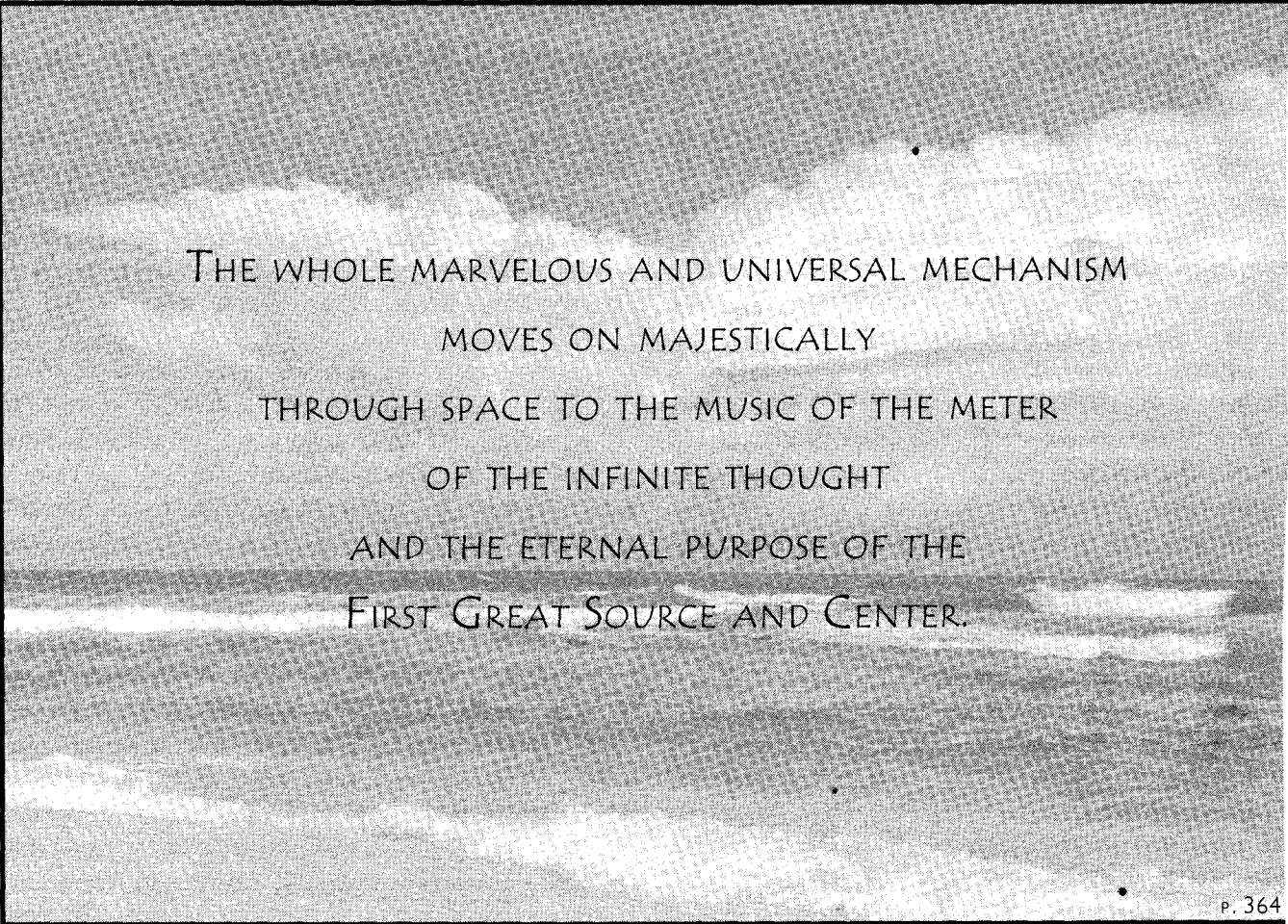
The drawings are by Irwin Ginsburgh and Fred Jackson.

On page 360, *The Urantia Book* says that the distance from the most remote system to the center of Orvonton is 250,000 light years. Yet the diameter of the Milky Way, a minor sector, one thousandth of Orvonton, is 100,000 light years. The 250,000 light year distance could be an error. It could be 250 million light years instead of 250 thousand light years. Astronomy says that the distance to the great attractor is 250 million light years. At this distance, the center of Orvonton at least fits with

Astronomy's great attractor.

The book claims that the outer space levels are 25 million light years wide. I estimate that a superuniverse is about 500 million light years in diameter. Obviously 70,000 superuniverses cannot fit into a space level that is 25 million light years wide. There must be an arithmetic error— an outer space level is more like 25 billion light years wide.

Irwin Ginsburgh is a Ph.D. physicist with more than fifty U.S. patents. His childhood studies of the Bible and his university studies of evolution had raised in his mind a concern about the obvious conflict in our society regarding the origin of mankind. He ultimately concluded that the two versions fit well together if one assumes that Adam and Eve were superhumans from some other world. His book on this subject, *First Man!* Then Adam, was published by Simon and Schuster. Among the letters he received from readers, there were several that suggested that he read *The Urantia Book*. This is how, he says, the book "found" him. He has been a reader for twenty years, and writes commentary on science and *The Urantia Book*.



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FIRST GREAT SOURCE AND CENTER.