COSMIC REFLECTIONS

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WINTER/SPRING 1991 VOLUME 4, NO. 1

SWORDS AND PLOWSHARES

Peace on earth-so close and yet so far. Just when events in the U.S.S.R. encouraged us to begin beating our swords into plowshares, events in the Near East reminded us that it still isn't safe for the lamb to lie down with the lion. Nevertheless, events in the U.S.S.R. do seem to indicate that we live in a pivotal time, a time when rapid change is possible.

The Urantia Book tells us war was once an effective agent for the spread of culture but it no longer benefits our planet. Instead, it consumes resources and people and produces only a transient peace. The authors tell us that our only hope for permanent peace is a world government with the power to force nations to settle disputes through negotiation. The effectiveness of such an arrangement can be seen in the almost universal condemnation of Iraq and the alignment of virtually all the world's nations against them.

We need world government, and soon. What a blessing it will be using our resources to eliminate the real enemies such as disease, pollution, etc, rather than using them to destroy each other.

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Human Origins

Anthropologists today theorize that human beings originated in Africa and spread to the rest of the world. The work at Olduvai Gorge by the Leakys has been very influential in forming this theory. The Urantia Book however, does not support this theory.

On page 878A we are informed, "Asia is the homeland of the human race. It was on a southern peninsula of this continent that Andon and Fonta were born." On page 703C, referring to the migrating lemurs the author tells us, "These migrating tribes finally reached the salubrious region lying between the then expanded Mediterranean Sea and the elevating mountainous regions of the Indian peninsula. In these lands, they united with other favorable strains, thus establishing

the ancestry of the human race." But what archeological evidence is there to support the contention in The Urantia Book that Homo sapiens originated in India? Until recently, there was virtually no evidence.

A recent article[1] told of a portion of an ancient skull and stone implements found in central India. The tools are similar to those found in Africa that date to between 150,000 and 250,000 years ago. This finding supports a theory that the ancestors of early Homo sapiens evolved in India at the same time as in Africa. While this shows that early Homo sapiens was present in India 250,000 years ago, this number is far short of the million year age for the origin of mortals given in The Urantia Book. Apparently, we have yet to find the fossils of the actual precursors of Homo sapiens. But, we are told where to look.

The book tells us that we can find the fossils of the transition creatures "..in the Siwalik Hills of northern India...",(720B.) If this is so, then what are paleontologists like George Leaky finding in Africa? In a recent article[2] , Dr. Ken Galsziou supports the theory that the precursors to human beings developed simultaneously in both Africa and Asia, but that the African hominids failed to develop into Homo sapiens or "will creatures" as The Urantia Book calls us. But there may be another way to explain the African fossils, namely devolution or degeneration.

On page 718, The Urantia Book mentions the degenerate stocks of the primates who lived to the south of the Andites. Mentioned on page 719 is the later intermixing of the eastern Andonites with very inferior "mongrel" groups. Also on page 719 we read, "These tribes were so largely mixed with the forest apelike creatures that they were scarcely human." It seems possible that some of the "forest apelike creatures" as well as the so called "mongrels" might have migrated to Africa over the Sicilian land bridge mentioned in the book (826D,891A.) The only problem with this theory is the time factor. The bones of hominids have been dated to an age of several million years, but Andon and Fonta appeared about a million years ago. Is it possible that both theories, degeneration and parallel evolution, are correct?

Perhaps the remains of hominids older than one million years represent an evolutionary path that occurred several million years ago in Africa, but which did not result in human beings. Remains of hominids younger than a million years old in Africa may be there as a result of the migration of the degenerated stocks that originated in Asia. If this is the case, then paleontologists and anthropologists will have a hard time finding the origins of Homo sapiens in the hills

of Africa. Now if someone could just persuade them to scratch around a bit in the hills of northern India...

1. "Human Roots in India", Science News, April 21,1990.
2. Dr. Ken Glasziou, "Evolution of Man: The Urantia Book Account in Light of Modern Anthropology", Pursuit of Wisdom, Vol. 3 No. 3, 1989.

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HOW MANY STARS IN THE MASTER UNIVERSE?

by Paul Herrick and Dick Bain

The author of Paper 15 informs us, "But in the master universe, there are as many stars as there as glasses of water in the oceans of your world."(173A) On page 660A we are told, "By the end of this period the ocean was world-wide, covering the entire planet to an average depth of over one mile." Paul Herrick used these two pieces of information to calculate the number of stars in the master universe.

First, he calculated the volume of a layer of water one mile thick on the earth. A formula for doing this is:

$$4 \times PI \times (r_1^3 - r_2^3) = 1.45\times10^{19} \text{ cubic feet,}$$

Where r_2 is the radius of the earth, and r_1 is r_2 plus 1 mile.

This gives 1.74×10^{21} glasses of water in the ocean, and this is the number of stars in the master universe. When written out, this number is: 1,740,000,000,000,000,000,000. Since there are ten trillion stars in the superuniverse of Orvonton (174D), the master universe has 17.4 million times the number of stars in Orvonton.

THE CITRUS CONNECTION

Regarding the stars of space we are informed, "They have just as much comparative elbow room in space as one dozen oranges would have if they were circulating about throughout the interior of Urantia, and were the planet a hollow globe."(458C) Using this information and the number of stars in the master universe, Paul Herrick derived the volume of space.

Stated mathematically, the orange comparison is:

$$\frac{\text{Volume of Space}}{\text{Volume of Stars}} = \frac{\text{Volume of Earth}}{\text{Volume of 12 Oranges}}$$

Assuming a three inch diameter orange, a 4000 mile radius for the earth, and an average star radius of 500,000 miles, Paul found the volume of space to be 7.37×10^{62} cubic miles (737 followed by 60 zeros!) This is 3.65×10^{24} cubic light years, which is 3.65 septillion cubic light years. There are about six trillion miles in a light year.

It is possible to check the star density with that calculated by astronomers. In the last issue of <u>Cosmic Reflections</u>, the figure of 12 stars in a sphere of 10.5 light years was used in some calculations. This is about 2.47 stars per thousand cubic light years. Using Paul's figures of 1.74×10^{21} stars in the universe, and a volume of 3.65×10^{24} cubic light years, a figure of 2.62 stars per thousand cubic light years is obtained. The answers are within 6% of each other. That's pretty close considering we don't know whether the oranges are Navels or Valentias!

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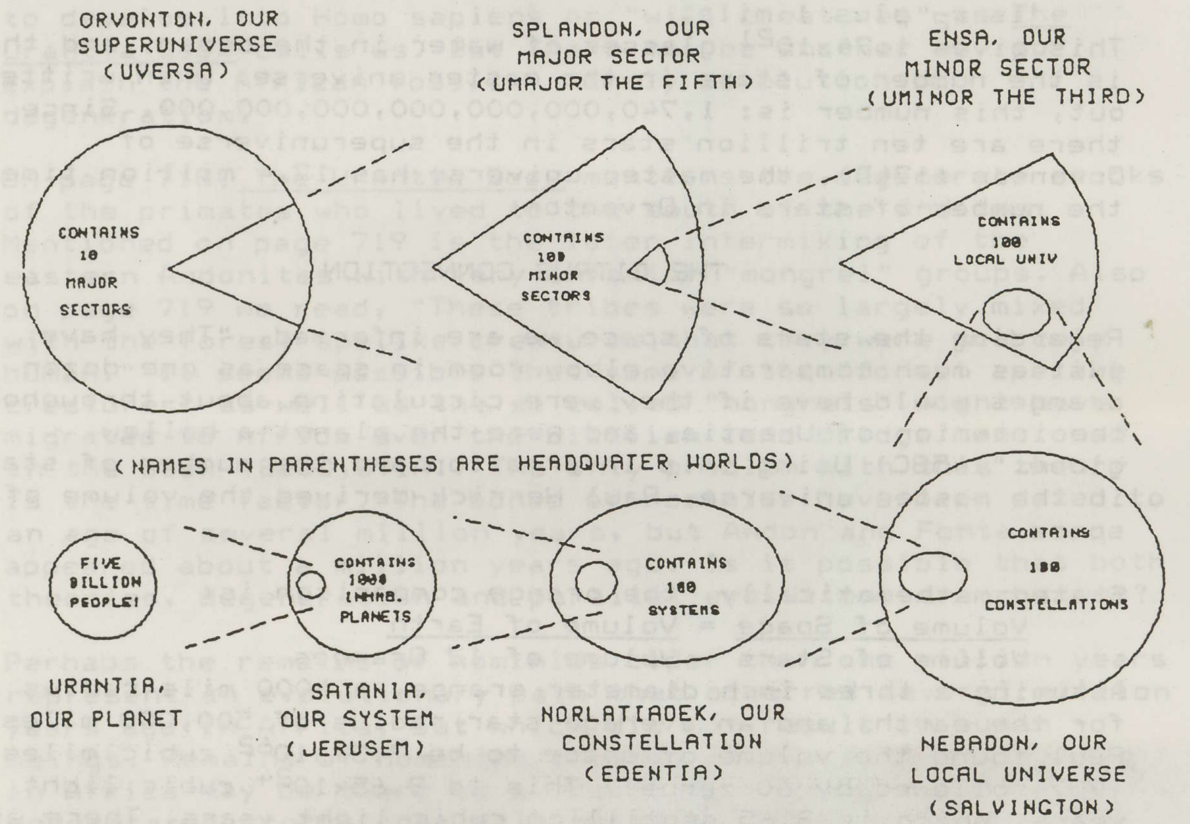
THE HITCHHIKERS GUIDE TO THE SUPERUNIVERSE

Well, we really are hitchhikers for part of the time on our Paradise ascent. We depend on the services of the transport angels to move from one level to the next higher level. When we first read <u>The Urantia Book</u>, it is hard to picture all of the levels of the universe and their relationship to one another. To help us navigate, I prepared the illustration that follows. The shapes chosen for the various subdivisions of the superuniverse are arbitrary.



DIVISIONS OF THE SUPERUNIVERSE OF ORVONTON

P. BAIN 9-21-88

AGES OF ROCK

An article that appeared in The St. Petersburg Times in June, 1990 stated, "researchers have unearthed the oldest rocks ever discovered, chunks of granite in remote northern Canada that are nearly 4-billion years old..." On page 661D of The Urantia Book we read, "Nowhere on the surface of the world will there be found more of the modified remnants of these ancient preocean rocks than in northeastern Canada around Hudson Bay. This extensive granite elevation is composed of stone belonging to the preoceanic ages."

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Artificial Intelligence

Overwhelming, isn't it? Just when we became used to people in space and artificial hearts, we are catapulted into the computer revolution. Before some of us have even learned to cope with hard disks, floppy disks or kilobytes of memory we now must try to comprehend terms like artificial intelligence, fuzzy logic, neural networks, robotics, and finally, virtual reality. The terms sound obscure, exotic, perhaps even vaguely ominous. What will all this new technology do for us or to us? Will we be replaced by computers that can be taught to do our jobs? Does The Urantia Book say anything about artificial intelligence?

Perhaps the terms will seem less ominous if we know what they mean. Artificial intelligence is a broad term covering a number of areas. I would define artificial intelligence as computer programs that mimic human problem solving. One of the first such computer programs is known as the expert system. Expert systems attempt to build an accessible knowledge base from the input of experts. For instance, there is a program for physicians that has in its memory the symptoms of most known diseases. The physician can enter a patient's symptoms and get a list of the diseases that match the symptoms. This is especially helpful in diagnosing rare diseases that a doctor may never have seen before.

The neural network is a fairly new artificial intelligence category. Neural networks are not a type of program but a radically different type of computer. Computer scientists have used information discovered by brain researchers about the operation of synapses and neurons to build computer circuits. These electronic circuits attempt to emulate the way the brain processes information. Neural networks can "learn" to adapt to new inputs. Because of this learning ability, a computer composed of neural networks can solve complex problems involving many inputs. For instance, neural networks can be used to give a computer speech synthesis and recognition capabilities. We will not only listen to the computer, we will have a dialog with it!

Fuzzy logic is not Winnie the Pooh's arithmetic homework. Rather, it is an attempt to emulate human problem solving. The ordinary computer program tends to give on/off yes/no answers, but there are many things we do that require something in between. Consider throwing a ball into a basket. If you throw too hard, the ball overshoots the basket. If you throw with too little force, the ball won't reach the basket. Somewhere in-between the too hard and the too easy throw, there is an OK zone. Using fuzzy logic, the computer can keep a process in the OK zone. Such computer programs are now being used in some of the newest cars to control such things as braking.

The latest whiz bang technology is called virtual reality. Virtual reality places you in a space that is totally computer created. You see a computer generated three dimensional picture in a helmet that has two small screens, one for each eye. You also wear a glove covered with sensors that sense the movement of your hand. You can move from room to room or outside in a computer generated house by pointing with your hand. You can pick up objects and move them to new locations or even throw them at the wall. There is even a program that allows two people to be in the same virtual reality and toss a virtual ball back and forth! The people who make electronic games are cooking up all sorts of expensive virtual reality toys in their top secret labs, but virtual reality has some much more serious uses. A home could be custom designed and shown to prospective buyers without ever being built. The buyers could tour the virtual reality home and suggest changes that could be incorporated in the virtual home as they watched. There is even speculation that a student doctor might be able to perform surgery on a virtual patient! The future promises to be a pretty interesting place. But how far can we go? Will we ever create a machine that has self-consciousness or even consciousness?

The Urantia Book indicates that we are self-conscious will creatures because the Father endows us with personality. Personality, the seat of human identity, cannot be bestowed on a machine. Yes, the brain is a biological mechanism, but it is the mind that does the thinking and it is the mind through which the personality expresses itself. Since the Mother Spirit is not likely to endow a computer with mind, computers can never achieve self-consciousness and probably not even consciousness.

Consciousness implies a mind of some sort. Some biologists, such as B. F. Skinner, believe that the mind is a consequence of the brain, that the mind arises because of the complexity of the brain. The Urantia Book informs us that mind is not a consequence of the brain, that it is a ministry of the seven adjutant mind spirits, who are

extensions of the local universe Mother Spirit. The mind occupies the brain, and uses it somewhat as a person uses a computer. The computer is only a mechanism, no matter how complex that computer is. A colleague of mine made this analogy: We could build a computer using only gears and levers. Can you conceive a collection of gears and levers, no matter how large, suddenly developing consciousness when a few more gears and levers were added? He claims that we ascribe almost mystical powers to computer chips because they are so small and yet so complex.

Surprisingly, there is something about artificial intelligence and computers in The Urantia Book. On page 328D/329A, we are told, "I recognize that the frandalanks are intelligent, but I cannot classify them as other than living machines. About the only way I can help you understand these living mechanisms is to compare them to your own mechanical contrivances which perform with almost intelligentlike precision and accuracy." This was written before the first electronic computer was built, although mechanical computers had been built much earlier. If the book were being written today, the author would no doubt refer to our most advanced computers for comparison.

Robots and computers have replaced humans in some tedious and repetitious jobs, but for many of us computers are marvelous new tools that free us from a good deal of mental drudgery. Some jobs have been eliminated by automation, robots or computers, but many new jobs have also been created by this new technology. But no matter how clever the program, or how much the response of a computer may be made to resemble that of a human, they will never marvel at a sunset, appreciate the beauty of a rose or know what it is to love someone. No matter how impressive they become, they remain simply machines.

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WONDERING

One thing we mortals seem to have in common with our celestial friends is that we love to speculate. Consider the following.

Pg 115C "We often conjecture..."
Pg 242: "...we all speculate much regarding these matters."
Pg 350B: "we of Uversa often conjecture..."
Pg 353B: "We venture the forecast..."
Pg 348B: "Aside from these bold conjectures..."
Pg 1025B: "...if our conjectures..."
Pg 1025C: "And all these speculations..."
Etc, etc, etc...
But wait, what is this on page 1121? "Religious speculation is inevitable but always detrimental; speculation invariably

falsifies its object." Well shucks, seems like there's always someone trying to spoil the fun.

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The AW SHUCKS! Department

The AW SHUCKS! award this month goes to Paul Herrick. Seems like he found a problem on page 5 of the last Cosmic Reflections. In the answer to the third question on the page, it should take 76,900 years for a planet to be inhabited, not 16,900. Thus, it will take 29,298,900 years to completely inhabit Satania. In the answer to the next question, Anova has been inhabited for 47,601,100 years.

Wouldn't you know an engineer would have to whip out his calculator to check all the figures. For his diligence, Paul will be rewarded with an all expense paid trip to Two Egg, Florida. Yes Virginia, there really is a Two Egg in Florida.

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LAST RITES

Cosmic Reflections is published twice a year. Writing is by Dick Bain except as noted.

MAY YOUR NEW YEAR BE FILLED WITH LOVE AND PEACE

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