COSMIC REFLECTIONS

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GRADUATION DAY

Most of us don't spend our days contemplating death, and it's probably just as well. To spend all of our time dwelling on death is to diminish life. Nevertheless, circumstances will sooner or later bring us face to face with our mortality.

Pat, one of our Urantia friends in FL, recently graduated to the mansion worlds. With our loss of her smile and enthusiastic personality, some of the sunshine has gone out of our lives. But as students of The Urantia Book, death isn't the feared enemy it is for some folks. We, more than almost any other group, should have not only a sense of where we're going, but also an unshakeable conviction that we are going. While most Christians leap into something almost unknown, students of The Urantia Book are speculating on which mansion world we will begin our studies. And we all look forward to meeting friends like Pat there.

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DOING COSMOLOGY

It's very hard to be impartial about our own beliefs, to step out of ourselves and honestly assess the validity of our most cherished beliefs. Difficult as this may be, it is necessary and healthy to re-examine our beliefs as we mature and hopefully grow in wisdom. Over the past several years, I've been struggling with mixed feelings about the science and cosmology of The Urantia Book. It seems likely that the struggle will continue and may even spread to other areas of the book.

On the one hand, it was the science and astronomy sections of the book that pulled me into it, but on the other hand I now find some non-trivial problems with that science and cosmology. I've come to understand that the real worth of the book isn't in its science and cosmology, but rather in its spiritual concepts, and it is the spiritual part of the book that has changed me and kept me reading the book. Nevertheless, despite the flaws in the cosmology and science of the book, there is too much that is right with it to dismiss it out of hand.

My changing perceptions of the cosmology and science of the book have forced me to alter the way I think and write about it. I started out seeking those findings of modern day science that seemed to support the

concepts in the book and supposing that findings that refuted the book were in error. I obviously wasn't an impartial observer. As a result of my own study of the book, I began to realize that there were some things with which I wasn't comfortable.

There are several categories of problems that I see in the science and cosmology. In the first category are things such as the rotation of Mercury and the distance to M31, the Andromeda galaxy. These can be verified as incorrect by modern astronomy with methods that astronomers agree are reliable. The other problem category is more difficult to deal with; it is information not verifiable by reliable findings of modern science. This would include things such as the nature of light, and the astronomical topology of the universe. For instance, one of the authors of the book seems to say that light is composed of high speed electrons. However, electrons have a known mass, photons of light have none. Perhaps electrons undergo some sort of metamorphosis when they are accelerated to some critical velocity. Nevertheless, the idea of light as a stream of electrons seems unlikely to me. Another problem for me is the astronomical configuration of the universe presented by the authors. A case can be made for the Milky Way Galaxy being either a superuniverse, a major sector or only a minor sector, depending on which author's information we use.

Astronomers are in the process of mapping the universe at the present time. Their pictures so far don't show anything like seven great conglomerations of stars and galaxies orbiting a central point. Their computer calculated and displayed distributions do show some structure: The universe is like a froth of bubbles. Galaxies form the surface of the bubbles; the centers of the bubbles are nearly free of galaxies. This hardly seems like the picture given by The Urantia Book. Of course, perhaps the book is correct, and we just haven't mapped the universe in fine enough detail yet, or perhaps the delineations between structures in the master universe are not well enough defined to discern the structures described in the book. If it's any consolation, the "frothy universe" theory creates as many problems for Big Bang cosmologists as it does for cosmologists in the Urantia movement. It's hard to imagine how such structures could have resulted from the Big Bang. On the plus side, the streaming motion of galaxies around the so-called "great attractor" is reminiscent of the motion of superuniverses around the Paradise center of the master universe.

It would be gratifying if our 20th century science were advanced enough to give us accurate bench marks to measure the cosmology of the book against, but such is generally not the case. We have a dilemma when we try to measure the cosmology of The Urantia Book using a yard stick whose length may be in error. While we often don't have an reliable standard against which to measure its accuracy, nevertheless, some of it seems suspect. Yes, the book does say that some of the information will become outdated, but some of the problems are more serious than outdated concepts. Problems with the book such as the rotation of Mercury and similar perplexities had earlier led me to one hypothesis: The faulty information was deliberately planted there to show us that the book is fallible so we won't worship it. But another thought has entered my mind after reading some recent things about the origins of the book (such as Birth of A Revelation by Mark Kulieke.) The authors

of The Urantia Book tell us that many human thoughts are used in the book. Could it be that some parts that we think have extra-human authorship don't? Are all of the thoughts only from our unseen friends, or are they mixed with the thoughts of Dr. Sadler and others on the human contact commission? Even if we don't think so, we know that some critics of the book will pursue this thesis to discredit the book. We should certainly be open enough to consider the possibility and try to look at it objectively to see if there is some truth in it. If there is, then we might have to regard The Urantia Book as moderate and liberal Christians view the Bible. They don't accept all of it as divine revelation, but they don't reject it either. They study it and rely on critical scholarship and the Spirit of Truth to tell them what rings true, and what doesn't.

I am still interested in cosmology and I will keep writing about it, but now I feel I must not use The Urantia Book as a standard against which to judge human cosmology; rather, I must report those things that disagree as well as those things that agree with the book. In time, the truth will emerge.

The Urantia Book continues to be beneficial to my spiritual life, but I feel that I can no longer introduce the book to potential readers as the Fifth Epochal Revelation without adding a few caveats about the cosmology of the book. Life seems to be a process of re-discovering that there is nothing certain in this life. Questioning our cherished beliefs is usually a painful process but we have this consolation: It isn't our faith that is being challenged, only our beliefs.

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WHAT'S IN A NAME?

The immortal Bard once said that a rose by any other name would smell as sweet. That may be true, but would you want to give your significant other a bouquet called skunk cabbage even if it really were roses? The name we call ourselves sets up images in the mind of those who see the name before they meet us. There are those in the Urantia movement who cite The Urantia Book to support developing a new cult.

The word "cult" used to be a respected term that described most religions, including Christianity. But the English language is a living thing; many terms have disappeared or completely changed their meanings. There was a time when a peculiar group such as the Branch Davidians would have been called a "fanatic cult" but somewhere along the line, the adjective got dropped and "cult" now has a derogatory meaning when used by itself.

We would be wise to consider what The Urantia Book says about the martyrs in Rome. Had they avoided the terms "kingdom" and "king", fewer of them would have ended up with the beasts in the Roman arenas. So, what shall we call ourselves? Personally, I like the term "religious community." Others have already called our movement a cult; let's not encourage them!

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THE ENIGMA OF LIFE

First there was artificial intelligence, now there is artificial life. Perhaps when you hear such a term, you think of Dr. Frankenstein in his forbidding castle, patching together used body parts and charging them with electricity to bring a monster to life. Are those who speak of artificial life a 20th century version of Dr. Frankenstein? What makes them think they can fashion life?

To understand the vain attempts to create life in a test tube, we must understand the concept of the origin and nature of life held by many modern biologists. 20th century science has no room for gods and demons, having so recently been freed from them by the ascendency of science during the ferment of the renaissance. No more seven day creation stories. No more people molded from the clay of the earth. Life is no longer sacred; it is just another field of scientific study. Since science can no longer admit that an act of will may have been involved in the appearance of life, it must have had an accidental origin. We would seem to be a chemical accident. No divine intercession required. Take a mud puddle, add heat and electricity, and Presto! single celled creatures appear. And you thought that scientists don't believe in miracles.

The implication is clear: If Mother Nature can whip up life in a complex mud puddle, so can we. Take some carbon dioxide and water, heat it to simulate volcanic heat, and zap it with electricity to simulate lightning and what do we get? Amino acids, which are necessary parts of the cell structure, but which are elementary when compared to the complexity of DNA, the giant double helix gene-bearing molecules in the nucleus of the cell. "Yes, but nature had billions of years and trillions of tries to do the job; we haven't been able (so far) to duplicate that in the lab," the biologist tells us. OK, lets give the accidental origin theory the benefit of the doubt. If we assemble all of the chemicals in the proper sequence, would the conglomeration be alive? What the heck is life anyhow?

The astute Mr. Webster has 19 definitions of life in his dictionary. One of them is (in essence): It is that characteristic which distinguishes a living from a dead body. Not much help there. Another definition tells us: That which is alive has capacity for metabolism, growth, reaction to stimuli, and reproduction. Mr. Webster has told us what something alive <u>does</u>, but not what it <u>is</u>. But we shouldn't be too hard on him; it's a pretty tough question, and the biologists are probably the only ones who even dare tackle the answer.

Biological experimenters have been able to assemble complex molecules into objects that had a few of the characteristics of life, but never all of them. They have not produced life, and <u>The Urantia Book</u> authors say they will never be able to do so. The Life Carriers can fabricate life forms in their laboratories, but even these life forms have one significant limitation; they cannot reproduce. (Pg. 404A) The authors inform us that it is the Mother Spirit who endows life with the ability to reproduce. There is no fully functional life without the action of the Mother Spirit.

No life in a test tube, but what about in a silicon chip? The latest attempt to create life is in a computer program. There is now a field of investigation within artificial life research known as computer simulated life. Experimental programs are being written that try to simulate the actions of social insects, such as ants. Other programs try to use information to "understand" the world in the same way that a person uses such information. While such efforts are having some success, the philosopher in me asks whether simulating the actions of life constitutes life itself. Does being able to explain the relationships between people and their world constitute consciousness? Does life exist without consciousness? What is it exactly that is experiencing the consciousness? And if consciousness is a tough nut to crack, then self-consciousness must be the Gordian knot of mind research. Since self-awareness is a consequence of personality, and personality is from the Father, I am sure that attempts to endow a machine with self-consciousness are doomed to failure, but that doesn't mean that such efforts are without merit.

I have no doubt that the artificial life and intelligence researchers will provide some amazing simulations of life and perhaps machines that are truly intelligent and self-directed, but I am also sure that their machines and programs will never exhibit true consciousness or be alive in the fullest sense of that word. But it's certainly a worthwhile effort to pursue such ideas. You never can tell what we might learn about ourselves along the way, or how much more in awe of God's handiwork we'll stand after we have uncovered more of his genius and creativity in the creation of personality and self-consciousness.

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STAR DUST

The Urantia Book tells us that there are over 600 inhabited planets in our system and over 6,000,000 inhabited planets in our local universe at the present time. It is ironic that our astronomers have optical and radio telescopes that can apparently see galaxies at the edge of the master universe, but the only planets they can see are those orbiting our sun. But as the old saying goes, there's more than one way to skin a cat (sorry cat lovers.)

Like detectives gathering circumstantial evidence, the astronomers have collected convincing evidence that planets are forming around many new stars. The first effort to detect planets around nearby stars was a study of Barnard's star to detect any wobble in its position. A large planet in orbit around a star should cause some perturbation of its position, just as a person swinging a heavy bucket will sway as he swings the bucket back and forth. The study went on for many years but failed to yield convincing evidence of a satellite for this star. More indirect methods are now being used to find evidence for planetary systems.

The first breakthrough for the new star seekers was the excess radiation discovered some years ago by the RORSAT satellite when observing the star Beta Pictorus. The astronomers surmised that the

excess infrared radiation was caused by a large ring of dust around the star. It is believed by astronomers that planets form from such dust rings, so Beta Pictorus should one day have a planetary system. But was this an isolated incident, a freak of nature? No. Earth based infrared telescopes and satellites have located many stars with apparent dust rings in so called "stellar nurseries."

Stars being born in the stellar nurseries cannot be seen with an ordinary optical telescope because they are buried in huge dust clouds that visible light cannot penetrate. But infrared light can penetrate through the dust clouds. Infrared light is light with a longer wavelength or lower frequency than visible light. Its wavelength is just outside of our visual range. The heat that you feel from a stove or electric heater is due mostly to infrared radiation striking your skin. Because of this light, we know that numerous stars in our galaxy have dust rings around them and consequently will form a planetary system. By extension, there are doubtless many stars whose dust rings have already coalesced into planets. Therefore, astronomers are now willing to accept that there are many planets around the stars in our galaxy. Next step: Something that will convince everyone that life is also common in our galaxy. Maybe in a millennium or two....

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LEAPING LIZARDS?

Areopteryx, the oldest known bird, has been a bone of contention between paleontologists and ornithologists for decades. When this creature was first discovered, there was controversy about whether it was a bird and if so, did it have feathers. Fortunately, a fossil of the bird was found that showed the distinct trace of feathers. But that didn't answer all the other questions.

Areopteryx is the most primitive bird ever discovered and biologists feel that it is the "missing link" between reptiles and modern birds. But paleontologists and ornithologists do not agree about the precursors to this ancient bird. Paleontologists feel the evidence shows that modern birds are the descendants of the dinosaurs. They think Areopteryx was a flightless bird and spent a great deal of time hopping on the ground and perhaps climbed trees with the claws located on its wings.

The paleontologists have been preaching the gospel that birds descended from small hopping dinosaurs and cited Areopteryx as proof of their theory. Some recent pop-science shows have parroted this fowl dogma, referring to birds as flying dinosaurs. The ornithologists however, have contended that Areopteryx was a true bird and that it could fly a significant distance. A recent article (Science News, Feb 6, 1993) informs us that an ornithologist named Fedducia, having studied the foot claws of Areopteryx, concluded that they are more like those of perching birds than those of ground dwelling birds. The article goes on to say, "Feduccia and many other ornithologists subscribe to the long standing theory that birds evolved from primitive tree dwelling reptiles..."

It appears that the authors of The Urantia Book agree with the paleontologists. On page 733D we read, "The bird types of today...-all descended from the enormous reptiles of long, long ago." Whatever it was, leaping lizards or flying dinosaurs, where would our omelettes be without the ancient Areopteryx?

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FALLING OFF THE EDGE

Is there an edge to the Universe? Some astronomers once believed that the cosmos was infinite, without boundaries. Most would now agree that the Universe is bounded in so far as matter such as stars, and clouds of dust and gas are concerned. But what of time and space? Are they also bounded?

The authors of The Urantia Book state that pervaded space is not infinite, but rather extends an unknown distance beyond the edge of the Master Universe. Encapsulating all of both pervaded and unpervaded space are the midspace zones. Beyond this perhaps lies only the Unqualified Absolute, a realm of unactualized potentials. This means that finite creatures like us cannot go there because it doesn't exist for us except as a theoretical concept. One simplistic way I have expressed this in the past is that we exist as a local condition within the being of God, and outside of the time-space universe there is only God.

In an article in Sky and Telescope (Feb 1993, "Galaxy Redshifts Reconsidered"), the two astronomers Sten Odenwald and Richard Tresch Fienberg state that other astronomers and non-astronomers alike do not properly picture the nature of the universe. Many of these people believe that the matter in the universe is expanding through time and space, thanks to the Big Bang. The Big Bang, as you may recall from innumerable PBS specials, is the concept that the Universe started from the explosion of some cosmic egg or some discontinuity in the fabric of reality. The protesting astronomers say that the real picture is that time and space themselves are expanding, and carrying along all the matter and energy with them. Moving in space might be compared to swimming against the river; moving with space might be compared to drifting with the river. The second view, that time and space themselves are expanding, should be familiar since that is the concept put forth by the authors of The Urantia Book. See Pgs 123B and 133D regarding space respiration. Odenwald and Feinberg go on to say that the age of the universe depends on two constants, neither one of which is known very accurately. Unfortunately, even when using the extremes of the values the two astronomers specify in the article, the age of the universe falls far short of the figure given in The Urantia Book for just the Andronover nebula, but at least the idea of time/space expansion agrees. So when you hear someone quote the age of the universe as 15 billion years, take it with a grain of salt.

Odenwald and Feinberg end their article with a most interesting observation. Comparing the expanding time/space continuum to a soap bubble they write, "This bubble represents the totality of space and

matter in our universe, and it expands into a mysterious primordial dimension that is itself empty of space, time, or matter." I wonder if they've ever heard of the Unqualified Absolute?

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COMING ATTRACTIONS

What the heck is dark matter? Does it matter? Can you use it for compost?

Look for me at IC93 in Quebec. Hope you can make it.

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LAST RITES

Except as noted, writing in this journal is by Dick Bain. Quotes not otherwise credited are from The Urantia Book, copyright 1955 by Urantia Foundation, all rights reserved and are used by permission. If you wish to send a donation to help with expenses, please make the check out to Richard Bain to make my life less complicated at the bank.

Short articles (especially on science and cosmology) are welcome and will be used on a space available basis. Suggestions of ideas or subjects for articles in future issues are also welcome.

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