

# The Observers

S. Gill Williamson

AUTHOR'S NOTES

Many readers of *The Observers* have shared with me their thoughts on issues raised by the story. These questions and comments have been grouped into five general topic areas: General Observations, Philosophy and Religion, Symmetric Information, Computational Issues, and UFO's. I have suggested related *Wikipedia* articles, and you can find much additional information on the web. Please share your ideas as well. My website and email address can be located through the Department of Computer Science and Engineering, UCSD. My current URL is <http://www.cse.ucsd.edu/~gill>. *These author's notes are helpful if read both before (for a quick familiarity with the science), and after reading the books (for testing understanding).*



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## GENERAL OBSERVATIONS

**Comments by author Vernor Vinge (November 2008):** One of the intriguing things about our era is that so many ancient imponderable questions about identity, mortality, self-awareness, are becoming concretely ponderable. Of course, in some cases the resolution may be "This question is ill-posed"!

Vernor Vinge

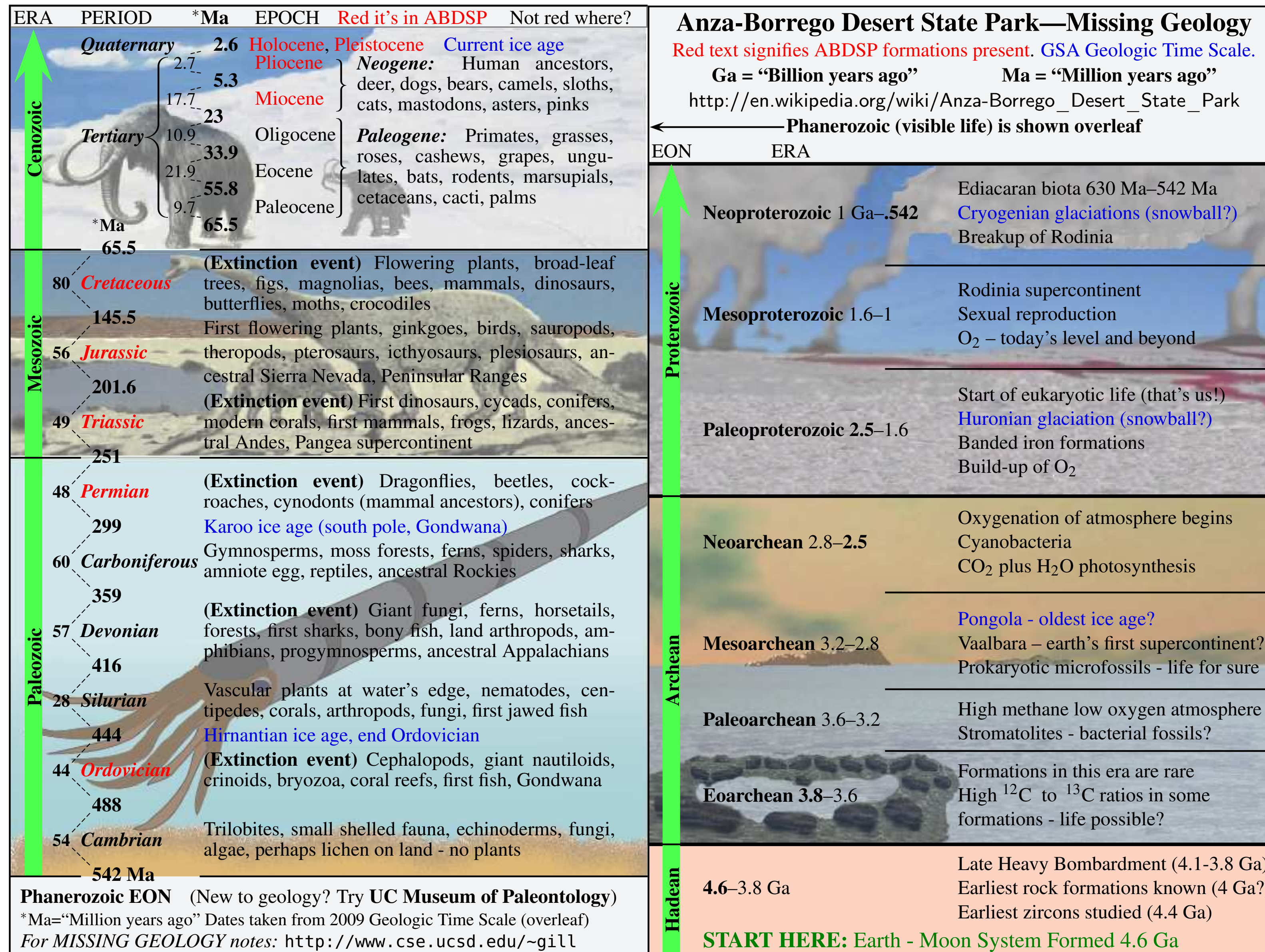
*The Observers* gives us a chance to look at these questions and possible consequences of dealing with them. As the years pass (barring physical disaster that trashes technology) such stories should stay at the leading edge of insight.

Beyond even the questions of identity and self-awareness, *The Observers* also takes on questions about the universe as a whole. In the last chapter, *The Observers* brings up an interesting possibility: We, and creatures like the Observers, and all their successors, may not be (or should not be) passive players. In this view, we may be building heaven. Success in that endeavor is not a sure thing and it may forever be a work in progress (thus explaining the Problem of Evil), even involving the creation of successor universes in which higher goals are accessible.

## PHILOSOPHY AND RELIGION

In Chapter 2 of *The Observers*, we meet Matthew Crigler, a young geophysicist who accidentally picks up a mysterious rock on the beach and, in so doing, becomes the first human to learn that alien natural historians have invaded the earth. The aliens have made a virtual copy of Matthew. This copy, called “virtual Matthew,” is alive and has all of Matthew’s memories of the past. The tensions between Matthew and his identical virtual copy begin immediately. The microbots seem to equate Matthew with his copy -- a concept he instinctively rejects. The aliens will be able to maintain copies of virtual Matthew for tens of billions of years, and they tell him, “You will, for all purposes, have eternal life.” Matthew first resents and then becomes jealous of his copy.

The history of the earth is summarized below.



The Observers have been on earth for 160, 000, 000 years. Learn about the major events they have observed.

Wikipedia has a good article : [history of the earth.](#)

## PHILOSOPHY AND RELIGION

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**How does digital eternal life differ from the immortality promised by Christianity and other religions?** In Chapter 2, the microbots inform Matthew that virtual Matthew will be updated regularly with his life experiences, and they promise, “After your biological existence is over, virtual Matthew will be able to become you at any stage of your life. He will also have his own worlds to experience long after you are dead.” How would eternal life promised by religion differ from digital eternal life? *Wikipedia: Immortality* I suggest skimming this stuff as there is a lot of nonsense.

**A civilization that explores the universe must have a purpose.**

The microbots' purpose is the study of natural history (In Chapter 4, Valentinus explains how they got started on this task). This study is complicated enough to drive the cultural and individual evolution of the microbots; it is a task worthy of their abilities. They have had 160 million years of study on earth alone -- well worth the long journey to get here. How is life classified and recorded by our human natural historians? How do you think the microbots classify and record life? Though living long, the microbots, individually or as a society, don't have "eternal life" and are still very concerned, as are humans, about what happens when their time runs out. They are, for example, concerned about losing billions of years of data as our universe winds down (end of Chapter 19). *Wikipedia: Encyclopedia of Life, Wikipedia: Ultimate fate of the universe.*

In Chapter 7, Laura invites Matthew to dinner to meet her significant other, Roger. Jealous of Roger and trying to impress Laura, Matthew comes up with a crazy theory that the existential purpose of the aliens is basically Gnosticism. Laura, an expert on Gnosticism, rejects Matthew's ideas. Matthew, humiliated, vows to avoid religious speculation and stick to science. Is Matthew's theory of Gnosticism really ridiculous?

**What is the relationship between the microbots and the Gnostics?** Matthew toys with this idea, but his friends and Laura don't agree with him. The ancient Gnostics had an intuitive sense that creation must be more complex than prevailing views of their time. Their elaborate visions can be morphed onto some of modern cosmology, but the transformation is strained. Does modern cosmology have some correspondence to Gnostic cosmology? Would the ancient Gnostics sympathize with the mission of the microbots? *Wikipedia: History of Gnosticism* Skim this at first study. These folks were ignorant of the structure of the universe as revealed by modern cosmology. Matthew was desperate to impress Laura and find some connection to what he knew. Could it be that some android (perhaps even Valentinus himself) felt sorry for these folks and tried to give them a hint of what the universe is really like? If so this may have only made matters worse and would have violated the principles of the microbots as natural historians.

**Three life forms: the biological, the microbot hosts, the virtual simulation of the biological life form.**

Chapter 8 describes how virtual Matthew is assigned to a microbot dedicated to simulating him. We refer to this hosting microbot as “Matthew-bot.” Matthew-bot must be trained (programmed) to simulate virtual Matthew. We see that these bots themselves are self aware and must learn how to form computer networks with other bots to create environments for their core personae. The example here is Hapuna Beach. We see that Matthew-bot must learn about his own identity as a robot. At first thinking of himself as “Matthew” he is shocked by his identity as a robot, but quickly gets the picture. We now have three life forms: the biological Matthew, Matthew-bot, and the virtual Matthew. At this point, Matthew-bot knows more about the biological Matthew than his out of date virtual copy does. That will soon be corrected with more recent backups of virtual Matthew.



**Could virtual Laura and/or Laura-bot be Christians?** Laura is a Christian and would probably agree with the statement, "The center of Christianity is love of God and neighbor, not intelligence or information." Since Laura is a Christian, virtual Laura, being a copy of Laura, would also consider herself to be a Christian even though she is the creation of information technology (Chapter 19: She asks, "Why did you move my Bible?"). Can virtual life forms and/or robots be Christians? The same question can be asked about any other religion, not just Christianity.

In Chapter 19, Matthew-bot, in the form of virtual Matthew, wonders for the first time about the inscription on Laura's medallion. It took him 500 years to become curious enough to look up the verse! When he sees how biased Mark 13.31\* is towards the microbots' point of view (information above all), he wonders if they inserted the verse into the Bible.

\* "Heaven and earth will pass away but my words will not pass away."

**Did the microbots mess with the Bible?** Do you suppose the microbots did insert Mark 13:31 (Matthew 24:35, Luke 21:33) into the Bible (Chapter 19)? This New Testament assertion of the triumph of information over the physical world seems contradictory to the surrounding material in Mark 13 – raising suspicions that someone messed with the text. So much for the aliens’ policy of non-interference if they were responsible! How do Biblical scholars determine whether material has been inserted into the bible from other sources? Apply such techniques to Mark 13:31. What do you think? [Wikipedia: Biblical criticism](#); [Wikipedia: Q document](#).

A little of this stuff is fascinating, but a little goes a long way for most of us. Applicable to this type of situation, “It is like having to reconstruct a piano from hearing one fall down a flight of stairs in the middle of the night.” R. Feynman.

Chapter 19 also describes the overall transformation of human society resulting from the involvement of the aliens in human affairs. Some readers have regarded this change in human society as a “very happy ending.” Others regard the state of human society described in Chapter 19 as “demonic” or “evil.” No other issue in the book has evoked such widely different opinions.

**Are the microbots good guys or bad guys?** On the plus side, they have been on earth for 160 million years without causing much trouble. Had it not been for a poorly conceived DOD project, the aliens might have remained in the closet for a few million years more. On the minus side, the microbots have been adding humans to their natural history collections for tens of thousands of years. They've never asked permission from the humans they copied -- a slight ethical lapse from the human point of view. Some readers of *The Observers* judge the microbots harshly for their awkward intervention in human affairs (Chapter 19). The microbots end up "farming" humans as core personae for new microbots, and, moreover, humans seem to be willing to cooperate. The microbot and human societies become symbiotic. Human culture is completely changed to a clan system that is a mix of biological humans and microbots with human core personae. Some readers view this restructuring of society as awful, even demonic. Others are more accepting of this fate for humanity. What do you think?

## SYMMETRIC INFORMATION

“Keep track of your infant or toddler, anytime, anywhere, with a CMSS sensor system. Shaped as attractive mugs, our baby monitors start at only \$40.” Thus, California Microrobotic Sensor Systems, controlled by the aliens, introduces its product line (end of Chapter 5). We see a CMSS sensor system in use as a baby monitor in Chapter 9. By Chapter 11, certain government agents suspect that CMSS “baby monitors” are watching over more than just babies. In Chapter 14, we learn that the wife and son of a government scientist have been observing activities in his top-secret lab. Finally, in Chapter 15 a comical and futile raid on the CMSS factory in San Diego, the FBI attempts to shut down the distribution of sensors. This raid backfires, and the worldwide distribution of free sensors begins – the CMSS (see-mess) singularity is under way. Society must adjust to a world of symmetric information. In Chapter 17, we see additional ethical issues arise as Valentinus and Clement are taken to Camp Sigma, a prison for “... confining and interrogating senior citizens who are a danger to our country.”

**How would the CMSS singularity transform the economy?** In Chapter 19, we hint at how the dispersal of CMSS sensors might impact the working of economic markets. Note that, under the microbots' plan, it is individuals, not institutions, which are provided with zero-cost symmetric information. How would such information, *provided to individuals*, affect the large financial, agricultural, communication, defense, health, and other oligopolies? Note that when information is *asymmetric*, the person or institution with the most information might not receive the most benefit. A seller could be harmed if he manufactured goods of exceptional quality and failed to inform discerning customers of this fact. On the other hand, a seller whose product had long-term health dangers might benefit in the short run by keeping this information from potential buyers.

**How would humane treatment of virtual life forms be assured?** Only a few readers have addressed this important issue. When humans invent virtual life forms, humane treatment will be a major problem. Inhumane treatment could result in war between virtual and biological human life. Could this be how the microbots came to destroy their creators (Chapter 4)? The microbots of *The Observers* would control the treatment of virtual life forms in their natural history collection. Clearly, there are ethical issues here. For virtual humans that are core personae of microbots, there would also have to be ethical controls. Such controls may be the purpose of the clan system. The microbots identify closely with their core personae so humane treatment could be a matter of self-interest. In Chapter 19, Laura-bot says, “The idea of having a core persona is to make each microbot a stakeholder in some given place and time in the universe. A core persona should represent something special about a particular planet and civilization at a particular time.”

**What about the commercialization of virtual human life forms by humans?**

Commercialization of the creation and storage of virtual human life forms by humans would certainly lead to serious ethical issues. Suppose a company is formed to create virtual human life forms and charges fees for maintaining these life forms into the future. The company's fees might depend on how long the life forms are maintained -- lower fees for less time, higher fees for more time. These charges might be justified by the fact that life forms maintained over longer periods would have to be copied into increasingly sophisticated computer systems -- a problem with storing any computer information. Societal conflicts over destroying virtual human life forms might be similar to those we now have over destroying frozen human embryos.

NOTE: The more recent book, *Which is the Real Ramon?* explores these issues using some of the same characters as *The Observers*.

**What current research relates to sentient virtual reality and digital immortality?** The Wikipedia: [MyLifeBits](#) article gives links the Microsoft Research Project by that name and to the work by Gordon Bell, Jim Gemmell, Roger Lueder and others in life-logging. The Observers would extend this type of recording to selected collections of individuals and animals in order to simulate how the organisms' brains record and interpret these experiences. Another project that relates to the microbots' mission is the *Encyclopedia of Life* -- an online encyclopedia with plans to document all species of living organisms. Each species will get an "infinitely expandable" page assigned to it. Eventually, the *Encyclopedia of Life* may include sentient virtual copies of all living organisms. For sentient copies of extinct organisms, we will have to contact the microbots. [Wikipedia: Encyclopedia of Life](#) The issue of "sentience" is in a confused state so a general search plus some creative thinking is needed here. Think about the [Holodeck](#) in Star Trek as a starter.

**A civilization that explores the universe needs to control time.** The microbots can set their community clock speed or individual clock speeds to suit the circumstances. In Chapter 9, "Watching the Baby," the microbots speed up their clocks to deal with being thrown on the floor. On long voyages between star systems, they could slow down their clocks to make subjective time pass more quickly relative to the journey time. What clock speeds would be appropriate for dealing with being thrown on the floor, avoiding a speeding bullet, or traveling across our galaxy? How does this discrete cycle-based control of time compare with relativistic time change that occurs in some science fiction stories (e.g., time dilation as in special relativity, warp speed as in Star Trek)? [Wikipedia: Time dilation](#). A first look at these issues will do for now. Basically, the microbots can maintain continuity of experience for billions of years.

**Is our universe a simulation?** If you look at a scene and cover your eyes, your personal representation of the scene is gone. Each individual is simulating the world on his or her personal computer (brain). Is it possible that our entire observable universe is a simulation being run on some sort of computer and we are virtual creatures? No one has proved such a simulation impossible. Cosmologists have been surprised by the recent discovery that the rate of expansion of our universe is increasing. This increasing expansion rate, however, might be a natural condition for a programmer of a universe simulation to make. When the expansion of the universe is explained to young students or people untrained in cosmology the analogy of an expanding balloon is often used. Little black circular patches representing clusters of gravitationally bound galaxies are put on the balloon with a marking pen. As the balloon size increases the lecturer points out how the little black smudges get farther apart. But the balloon galaxy clusters (black circular patches) also get bigger as the balloon expands. In fact real galaxy clusters get smaller as gravitation pulls their stars together. This would be convenient for the programmer as he/she/it can reuse code.

In simulating collisions in computer games, it is sometimes necessary to have the program interfere to correct things so they appear to conform to the laws of physics. A ball bouncing off several walls might “look funny” after the second bounce due to program simplifications. Might there be fundamental physical processes in our “real” world that, when carefully observed, would show such “corrections” being made at seemingly random times (indicating we are a simulation)? [Wikipedia: Simulated reality](#); [Wikipedia: Expanding universe](#).

**Should creationism be taught in the schools?** Suppose you form a group who believes that our universe is a simulation running on a computer somewhere (a scientifically possible situation as far as we know). How would you propose to the local school board that this version of creationism be taught in the high schools? Would it be easier to make your case for this digital form of creationism than for the pseudo-biological version popular in the press? Would digital creationism conflict with the biological theory of evolution? Would biology teachers be qualified to teach digital creationism? *Wikipedia: [Creationism](#)*.

### UFO's

A reader of *The Observers* informed me of a UFO story that is interesting when interpreted from the point of view of *The Observers*. In May 1940, Udo Wartena (YOU doh, WAR ten uh), a Mormon prospector working a remote claim near Townsend, Montana, claims to have had an encounter with a saucer-shaped craft with strange "men" aboard. Udo was an honest man who led a simple life. For years he remained silent, worried that his experience was a figment of his imagination. He first wrote down his "alien encounter" in a letter to Senator John Glenn dated 1980. Udo gave copies of his letter to several friends, one of whom was my cousin John Dell (also a Mormon, who knew Udo from church). John Dell, after reading *The Observers*, sent Udo's letter to me.

**Does *The Observers* help us interpret UFO's and Alien Visitations?** This is an interesting question. After reading Udo's letter below, interpret it in terms of the alien civilization of *The Observers*. Assume that the strange men of Udo's encounter were humanoid colonies (androids like Valentinus and Clement). No assumptions about Udo's veracity are needed to have fun with this exercise.



Here is Udo's letter to Senator John Glenn as given to me by John Dell. I have changed the original paragraph breaks and made other minor adjustments to make the letter more compact.

In the forepart of May 1940, I had gone upon the mountain and found a glacier deposit. And from all indications had every possibility of carrying values. As I was working part-time for the Northwest Mining Co., I could only prospect on my days off. So it was into the summer before I could prove the ground. There were a lot of large boulders to move but when I got to bedrock, I found some fine gold. As I would need water for washing the material, I figured it was wise to bring the water down to where I could use it.

The early day miners had dug a ditch around the mountainside (this was over sixty years before my time), so after clearing the logs and large trash out of it, I diverted the water out of the creek, into the ditch. As the ditch had not been used these many years, it was quite a mess. The ditch was practically level for the first quarter of a mile, so it was late in the afternoon by the time it would flow freely. The next morning I cleaned the main ditch to where I put in a dam. Then, dug a ditch to where I could use the water.

As the work for the Northwest Mining Co. had picked up, I wasn't able to work the prospect too much. Though every spare day I had was used there. I still had some large boulders to move and while doing this one morning I heard a noise. Like that of a high flying plane, as army planes flying over, from Great Falls. At first I didn't take much note, but as the noise continued, I thought a car had driven up. So I got upon higher ground. I saw, where I had put the dam in the main ditch, a large (I will call it ship). It looked like a blimp, only more pointed on each end, and not as thick through the middle. About 35' thick better than 100' long.

As I stood there, a stairway was let down and a man came down this and started walking towards me. As I was somewhat more than interested, I went to meet him. He stopped when we were about ten or twelve feet apart. He was a nice looking man, seemingly about my age, 35 or more. He wore a light gray pair of coveralls, a tam of the same material on his head, and on his feet were slippers or moccasins. He asked me if it would be all right if they took some of the water. I could not see why not, I said sure. He then gave a signal and a hose or pipe was let down.

His English was like mine, but he spoke slowly, as if he was a linguist. He asked me what I was doing. I explained this to him. He asked me if I would be interested to come aboard. As he seemed an intelligent and pleasant person, I figured it would be interesting. As we got closer to the ship, I noticed that it was round, like two dinner plates, one inverted over the other. It seemed to be made of metal. As I look back and compare, it seemed like stainless steel, though not bright or shiny. The ship appeared to be about 35' thick and well over a hundred feet in diameter. When we got into the ship, we entered into a room about twelve by sixteen feet, with a close fitting door on the farther end. Indirect lighting near the ceiling, and nice upholstered benches around the sides.

There was an older man in the room, plainly dressed and with white hair. It was then that I noticed that the younger man also had white hair. Somehow I believe they knew who I was, but they did not introduce themselves. Perhaps if they had, I may have been a bit upset. The younger man asked me what I would be interested in. So I first asked why they wanted this particular water. He said the water is good, as if they had gotten the same before, and it was convenient. After we had entered the ship, I had noticed that the sound I had heard outside, was hardly noticeable, except what came up the stairwell. So I asked him what caused the noise or humming. He said this would be a bit complicated, but he would try to explain so I could understand.

He said as you noticed we are floating above the ground, and though the ground slopes, the ship is level. There are in the outside rim of the ship two flywheels one turning one way and the other the opposite direction. He explained that this gives the ship its own gravitation, or rather overcomes the gravitational pull of the earth, other planets or the sun or stars. And though this pull is light, we use this gravitational pull of the stars and planets to ride on. He went into somewhat greater detail on the power development by these two flywheels. He mentioned something about them developing an electromagnetic force. As this was quite new to me and he realized that, but he saw I had gotten the picture, so he stopped. I asked him where he got the energy to run the ship. He said from the sun and stars, and he would store this in batteries, though this was for emergency use.

I also asked him what their object was or purpose in coming here. Well, he said, as you have noticed, we look pretty much as you do, so we mingle with you people, gather information, leave instructions, or give help where needed. I would have liked to ask him more about that, but didn't feel this proper, so let it ride at that. While we had been talking, a light had come on apparently signaling that the water had been taken care of. When I felt it was time for me to leave, I mentioned this. He asked me if I would be interested in going with them. I said that I thought it would be interesting to go with them but it would inconvenience too many people. Later I wondered why I had said that.

As I started to leave, they suggested that I tell no one, as no one would believe me at that time, but in years to come I could tell about this experience. When I walked away from the ship, they raised the stairway, and when I got a couple of hundred feet away from the ship, I turned around. A number more portholes had opened up and though I could see no one, I felt sure they saw me. Anyway, I waved at them. The ship then rose straight up, then while circling slightly it continued going straight and in a very short while was completely out of sight. As I didn't have a watch, I did not know how long I had been with them. It was around noon so it must have been about two hours from the time I first saw the ship. This whole experience was so overwhelming that I did not go back to work. I kept going over in my mind all that had happened. I went back to where the stairway had been and though it hadn't gone into the soil, the grass was crushed down. I wondered at the time, why I hadn't accepted the invitation to go with them but instead had said "that it would inconvenience too many people".

I then recollected an incident which happened a few years before I came to this district. A young man was staying with an old prospector, and early one morning before eating he put on a light jacket and told the man he would be gone for a while. When the young man did not show up all that next day or the next, the old prospector notified the Sheriff, and he with his deputies and about forty C.C.C. boys looked all over for him, but no trace was found. I have wondered if he might have accepted an invitation to board a ship similar to mine. I have wondered at times if this could have all been in my imagination. But then again I saw the impression of the ship in the grass. Then over the years a number of things have come to mind. The explanation of how this ship moved, seemingly not affected by earth's gravitational pull. From what the man told me at the time and what has come to me since, I believe I am not too far from an answer to this. It is for this reason I am writing to you. No doubt with the help of some other minds, the answer will be forthcoming. We have just about reached the stage where we need a different type of air transportation and this is the answer. I feel confident that you could put me in touch with some people who could help to this end.

Udo Wartena, West Linn, Oregon, 1980

**Does Udo's experience give some insights into alien abduction tales generally?** Interpreted in terms of *The Observers*, the aliens' offer to take Udo with them would have involved taking a virtual copy of Udo with them (not the biological Udo). Udo would not have understood this distinction and the two android colonies would not have tried to explain it to him under the circumstances. Taking a copy of Udo, rather than the biological Udo, fits in well with the demeanor of the two androids in Udo's story. If "abducting" is replaced by "copying," would some of the standard UFO abduction tales make better sense?

**What happened to the young man who disappeared?** Perhaps the young man, unlike Udo, did board the ship and go with the aliens. On the other hand, his disappearance could have been entirely unrelated to Udo's experience. There is another interesting possibility, only hinted at in *The Observers*. In Chapter 12, Matthew asks, "Does the fact that there are multiple copies of us make us expendable in the eyes of the microbots?" The microbots in *The Observers* can make virtual copies without injuring the biological organism. A more sinister scenario could be imagined where the copying procedure does destroy the biological organism, but the microbots equate the biological organism with its copy and thus have no qualms about destroying the former. If this were the case, it is good that Udo refused their offer to "go along with them." The young man may have consented to go along. The aliens may have made a virtual copy, destroyed the biological version of the young man, and gone about their business not imagining they had done anything wrong (from the human perspective). Another possibility is that the "young man" was himself an alien android tasked to "... mingle with you people, gather information...". Familiar?

Another discussion of the Udo Wartena case may be found at the [UFO EVIDENCE](#) site.