

The Penetrators

THE PENETRATORS. -

Adventures in Space & Time.

by Michael Mathiesen Published By Lighthouse Productions. Copyright 1994

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INTRODUCTION

When Watson and Crick first deciphered the DNA code in 1953, this was hailed as one of the greatest scientific discoveries of all time. And justly so, because what they found is that all life on this planet, which is all life that we know of, is composed of a long 3 billion character program, just like a computer program, except that living code is composed of molecular structure instead of letters of the Alphabet.

Like any code, once you break the code, you can decipher all parts of it and re-construct it to build any other conceivable form of life. And in fact, there are thousands of corporations in the world, among them Genentech and Amgen, and other lesser players who have thousands of scientists doing this very thing. There have been news stories already of new life forms that farmers can use to eliminate the effect of frost on their fruit and vegetables, saving them billions of dollars. There have been many new life forms created and even patented which are used now in agriculture and soon in many other fields. You have probably heard some of the latest discoveries in this effort that hold great promise for lowering the cancer rate and the rate of many other diseases because we can now locate certain pieces of the genetic code that are responsible for cancer and other diseases and literally cut them out of the cells of your body. In the healing process, only cells that are free of the cancer genes are allowed to split and divide and reproduce themselves.

Its only a matter of time when the scientific community starts to play around with the Human Genome, as its called, in more significant ways. We can already genetically select for blue eyes, blond hair, long legs, large breasts. What should we tackle next in the Human Genome that we would all like to do without or have more of? This is the question that Science now presents us with today. It is obvious to most that there will be many moral, ethical, spiritual and even legal questions raised by such experimentation and alteration of our own Human Evolution.

It is no wonder then, that in the year, 1991 NASA would make plans, in secret, to launch in the next century a spaceship not only capable of reaching the nearest star with Human Beings on Board, but the mission would also have as a primary purpose the role of creating a New Human Being, completely reconstructed from the head to the toes in an environment of zero gravity that only a space ship of such long duration could provide.

This is the story of this mission, code named, -Penetrator - by NASA. How you are able to read this account now, which actually takes place in the future is explained by the sole person responsible for all the events chronicled in this, his personal log of the journey on board the Galactic Enterprise, by Captain, Jerry Blake, during the years, 2052 to 2099 AD.

CHAPTER ONE - The Mission

It would be the boldest experiment Mankind had ever known. We had the knowledge and the power to re-construct the Human Being from the ground up. The Human Genome project as it had been known in the final decade of the last century had given Science all the basic research it needed to begin to cut and snip at the code of Human genetics and re-do what God and Nature had taken millions of years to do on Earth. But the Earth, as it turns out, was not the right laboratory for such an endeavor. It wasn't the gravity, though gravity would have an effect on the outcome of the experiment. It wasn't the atmosphere or the air pressure that made the Earth a bad place to conduct such an experiment. It was the moral thinking of the times. There were still far too many religious folk out there who thought of such an experiment in tinkering with Genetics as the work of the devil.

My name is Dr. Jerald O' Blake. Everyone calls me Jerry. It was mainly because of my work, my reputation as a Geneticist that my identity was entirely altered by NASA. They put out a biography that stressed my Astronaut's background far more than my scientific one and they were able to hide nearly all of my previous publications from prying media for obvious reasons. So, it was decided by NASA that the experiment would be kept secret until after launch and would be held many billions of miles away from the Earth on a Space Mission to the nearest star that was suspected of having a livable planet nearby. My wife and I would be the guinea pigs. We volunteered because of many reasons really, but the main reason we volunteered was because we loved each other very much. We never had children because of our careers and all that career meant to each of us, and when word of the mission came to us, we only had to look at each other for confirmation of the gut reaction we both felt from the first moment. We would give birth to not only a new generation of Human, but a completely new species.

What the species would be, what it would look like, how it would behave, whether or not it would have lungs and a heart, whether it had two hands and two feet, whether it would have eyes like our eyes or perhaps eyes like an eagle were not being set down in concrete. We could decide all these issues as they came up during the long series of experiments that would take place over the course of our trip. Fifty years out and fifty years back. To us, it would seem like 25 years each way, but on Earth, nearly fifty years would tear themselves off the calendars like so much New Year's Eve confetti. We would have access to the complete Human Genome in the form of Genostasis, as it was now called, a prototypical string of DNA as Science had discovered it all stripped away from the physical constraints of cell walls and nuclei and exposed in a kind of jelly. There was enough spiraling molecules of this soupy syrupy strand to go around the world fifty times. There were enough duplication of the strand so that we could make, many mistakes and start all over if necessary. We could literally throw away our mishaps and start all over as many times as we chose, until we got it right.

What we would consider 'Mr. Right' was very much up in the air for discussion and had been our

most serious subject for 2 years before the launch. We were required to sit in on many hundreds of focus groups put together by NASA ostensibly to talk about the possibility of making serious changes in a hundred years, but my wife and I were one of the only ones who knew that the possibility of scrapping the old Human Being and starting anew was just a series of days and nights away. We were thoroughly aware that all the theory, all the talk, all the speculation, all the pontificating, all the moralizing and philosophizing would stop on launch day and then, when we were far enough away that no power on Earth could stop us, roughly 100 days into our mission, we would open the sealed instructions the government would give us and we would begin our most important set of tasks throughout the mission.

Being in Space is like having your head held under water by some monster force. You can't resist it. You know you're going to have to breathe in water soon, but you're ;holding your breath as long as you can. You have just a few seconds left where your brain will function normally. Panic is always just a thought away. You must always discipline your mind to not think about the fact that your ship's skin is the only thing standing between you and the absolute death of empty space. Light years from any planets where gravity and sunlight conspire to promote and benefit life forms, you are sailing silently in the forbidden corridors where nothing can grow, nothing can live. You and your kind have developed a way to cheat the cold and the airless depths of Space, but you know deep down, no matter how busy you keep yourself that many, many things can go wrong in this Rube Goldberg of a ship. One serious malfunction and your little Life Support Shield can disappear all around you and it will be your last breath, your last vision of anything living and warm.

Such were the thoughts going through my head as I worked on making myself some lunch aboard the 'Albert Einstein', the First Interplanetary Space Ship Mankind had ever known. The year we launched, 2095. was a year I'll never forget. It was probably the most exciting year of my life. Preparing for a trip of this kind made you really use your head, your mind, all your highest and best instincts as you worked with the Scientists and engineers in preparing for a trip that would last well beyond my own and my wife's lifetime. We would never come back to our home planet. The cost in material, fuel, food, life support systems, was far too great just to get two space scientists back to their home base. We were expendable on this trip, a factor that was left out of all press releases, and somehow the media seemed to respect our decision and they never asked a single question about that subject. I often thought that someone had spooked them or bought them off, or something. I couldn't put my finger on it, but it was strange to me because I thought they would crucify us for making such a decision, either that or canonize us and I didn't want either, and by some weird happenstance, I got my wish. I wanted merely to leave quietly with the best wishes of everyone so that I might have the best possible consciousness with which to being our very profound manipulation of the most incredible chemical compound ever created, us.

Not only a space scientist, a biologist, the Chairman of the Human Genetics Foundation, I was also a good pilot. I had earned my stars in the Chinese Action as a Reserve pilot in the Air Force. I think this is why they started to think about me as the captain on this mission. But I'm sure my wife had much to do with our selection.

She had always been special. Everyone loved her the minute she walked into a room. She had that thing, we call 'it'. Whatever 'it' is. She had it. Men would fall in love with her instantly

and the women in the room would turn green with envy. She never tried to gain any of this notoriety, which is the main ingredient in her charm. She just radiated a certain something. Without makeup, without fancy clothes, without even a fantastic set of curves. She was a woman, all right, and had all the necessary attachments, but none of them were out of proportion to anything else. She seemed to glide across the floor on legs that were far from perfect, yet designed to carry a woman across the floor better than any other you would ever hope to see. Her skin was white and flawless and glowing. She had hair that never seemed to be disheveled or even out of fashion. She never went to the beauty parlor. In all my days with her, I've only caught her cutting her nails once or twice. She just had that feminine thing that makes men out of boys, instantly. Even the students in her class, if they were male, would all fall apart when she came into the room.

I loved her from the first moment I laid eyes on her. And I like to believe she loved me also from that moment, although she says that it took her a little while longer, I know differently. There was something in her eyes that grabbed at my soul and it would never let go. I met her when I was invited as a guest lecturer at her College, MIT. She had already won the Nobel Prize and several lesser prizes of extreme esteem in the scientific community for her work in the Human Genome Project. She was thought to be the most knowledgeable woman on the planet on the subject, and I was thought to be the most knowledgeable man. It could only be a kind of genetic kismet, a Karma beyond Karma, that brought us together that day. And I remember, like it was yesterday, the wonderful little picnic lunch later on that she had put together so neatly and without any fanfare. It was all happening so naturally. We talked about my lecture and we agreed on a few things, disagreed on most, but at the same time, we were agreeing to disagree for a lifetime. I asked her to marry me, that same day. I had never done anything that compulsive in my life. She had never known anyone to do anything that compulsive. So she said yes, without hesitation. We both knew something was pushing us together for a reason we could not yet know. Years later, when we were picked for the mission to Sirius, we would just look at each other and smile with the final key to the puzzle. We never had to speak about it again. We just knew and felt it like we knew and felt our love for each other.

The ship that would carry us on our mission was truly a work of unprecedented power. It had been built by a consortium of nations and corporations who had signed a secret partnership agreement to share whatever came from the experiment. The knowledge that we would bring back, or actually our successors would bring back, would be the most important knowledge in all history, and there were many nations and organizations who wanted to share in that knowledge. I always thought that it should have been opened up to all nations, all corporations to participate in one big giant democratic act of global cooperation, but there were other political goals on the agenda that I could never understand, never wanted to understand, and so it went. Whatever we discovered up there, if it was useful, it would be the private property of several of the industrialized nations and a few of their closest business allies. I knew it would have to be something like this because the cost of building a ship like this and putting all the necessary scientific equipment on board for our pleasure was so astounding so astronomically huge that the price tag was never disclosed to the public. Someone would have to pay, and so why not let the investors reap the rewards, if any.

CHAPTER TWO - THE SHIP

The fastest ship we could build at the time would have the new Nuclear Ram Jet engines installed. The principle was simple, really. It had to be simple in order to be reliable over those many light years we would travel through Space. The engines, looking very much like the old jet engines on commercial airliners had a cowl on them for intake of all cosmic radiation. The smallest things in the universe, light, heat, radio signals, all electro-magnetic radiation would be taken into the engines and then sped up in the nuclear converter and shot out the other end giving us a velocity caused by the action and reaction physics that the old ramjets also used. The ship would not move as fast as an old sailboat for a couple of years due to the very low density of this material in the universe. But in Space, all acceleration is added to the acceleration already gained, and so the speed would gradually increase until, 2 and half years into the mission they would push the ship at an incredible 95% of the speed of light, or .95 Light as it has been officially dubbed.

In the beginning of the trip we will also use the Magnetic fields surrounding all the Solar systems planets. We would adjust our own magnetic polarity of the ship to the opposite polarity as the North Pole of each planet we passed on the way out of the Solar System one after another. Just after reaching the pole, we switch the ships polarity to like polarity and repel off the planet. If you remember your high school physics demonstrations with the magnets, like poles repel and unlike poles attract. With this basic principle of physics, starting with Mars, with a very weak Magnetic Field, alternatively switching from attracting to the planets and then when reaching maximum speed, repelling off of them, we would accelerate up to about 50,000 miles per hour, or .001 Lightspeed. Then, after attracting and repelling off of each planet in their turn, we would eventually leave the solar system traveling at about 1 million miles per hour, or .000000067 Light. Although faster than any man had ever traveled in history by this time, it would still take us the full use of our engines for another 40 years before we would achieve our maximum speed of .95 Light.

I remember those first few months as even more enjoyable than I thought they would be. My wife and I would be very busy taking readings of all the planets and sending them back to Earth for future missions. We were so busy just working on the engines. We had achieved our first stage of acceleration from the principle of magnetic propulsion that is common to all of us on Earth who ridden the MagLev trains. These were simple but beautiful samples of Man's engineering skills. We would take this simple principle and apply it to space travel and use the magnetic fields around the planets to propel us faster and faster, even though the problems associated with interplanetary magnetic fields were immense. Somehow, we would solve them. But now, out in interstellar space, far from the influences of any planets or suns, we would have to fire up the Nuclear Plasma Ramjets. These had never been tested before because they could only be tested in theory and in the computer modeling studies, but giving them a real trial run would require a real trial in distant space where gravitational pull and magnetic fields could have no effect on robbing us of the acceleration these same forces had given us.

Out here, far from the solar winds, the planetary pulls, the tidal ebb and flow of Newtonian

physics, we would have just enough acceleration and fuel from the Space detritus all around us that these engines theoretically could kick in the rest of the acceleration we would need to reach the closes stars. It was a gamble, but it looked good on paper. So, we would be the guinea pigs and this was probably the part of the mission that I feared the most. Because if these babies failed to start and/or fail to work properly, we would never reach any stars in our lifetimes, nor would we be able to turn back and return to Earth. At the time called for to start these engines we would necessarily be too far away from any planet to slow down and turn around and get back. There was simply not enough fuel for such a contingency. It would have made us too heavy to get anywhere, so all fuel tanks would be jettisoned far before this.

Just getting them started properly would be a test of months of preparation and planning. Before they can even start, they have to be pre warmed up to a temperature of 1 million degrees F. The radiation being so fierce from these engines that no place on earth was fit to test them. And once started they cannot be turned off, therefore, the only way to test them would be to launch a ship with them installed and hope for the best. The simulators had used up all the best computers on Earth for years making all the tests that everyone thought was necessary to fully test the engines without lighting them up. All the experts ran all the possible contingencies that could possibly happen to us in Space and every problem was solved with a new design. The computers finally told us we were ready to launch after the most massive project in history was complete in 2095. We would be the guinea pigs. We the crew of 8 men and women would be the test pilots. We were expendable, but we knew that. We had all volunteered because we knew that this mission was every big as important as Christopher Columbus's journey some 600 years ago.

Little did we know that our trip would hold many more times the importance for Humanity than the discovery of the New World. Columbus discovered a New World which turned out to be only the other side of the same planet. Same life forms, same weather patterns, same problems, same pleasures, different languages, completely new customs and social patterns, but the same species, except for only a few minor exceptions. The vegetation would be similar. The animal life would be similar. The planet would be friendly enough for a few hundred men to subdue the New World completely. Once conquered in a few years it was wide open for the expansion of the European culture into that New World.

In our journey, things would be much different. None of the species we would encounter would be familiar. Nothing about the weather patterns, the vegetation, the landscape would be the same. Even the gravity of a new planet would likely be very different from that of Earth. We would all weigh a little more or a little less than what we would weigh on Earth. Quite possibly we would weigh much more or much less than on Earth. The odds of us discovering a Planet with the same size and mass of the Earth are one in Ten Billion Trillion by our team's calculations. This, among many other variables made our trip's preparation extremely arduous and detailed. We tried to think about everything that we might encounter. When we weren't rehearsing maintenance procedures on the ship in the Zero G' simulators, we would read Science Fiction novels and short stories so that our imaginations could let go and we might better think about potential problems out there.

And even more challenging was the research that Ellie and I would carry out on the jelly, as we liked to call it. We would be clipping and pasting genes back and forth on the DNA molecule in

some ordered way that we had devised prior to the trip. NASA liked our plan and had signed off on it because it was rational, it had a logic to it, there was a kind of symmetry too difficult to explain here, but our theories were all sound and based on the latest biological research as well as the latest tested knowledge of nuclear physics. You see, molecules are constructed of atoms. Atoms are composed of Protons and Neutrons and Electrons. All of these particles are composed of even smaller things, so small you can't even imagine how many it would take to put on the head of a pin. As far as we could see, all these particles were the captives of electrical forces, some small, some large, but all of them directing all the particles in Nature to obey a certain kind of symmetry.

The easiest way to explain it is to look at the Human body. There's a beautiful and obvious symmetrical pattern to it. Everyone has two arms, two legs, ten fingers, ten toes, one head sitting up on a trunk that straddles the legs. An oak leaf has the same features. If you look closely at a leaf of any tree, you see that one side of the leaf is a mirror image of the other side. And so it is with rabbits, ducks, geese, swans, horses, birds, fish, camels, cows, insects, parasites, bacteria, molecules, atoms, electrons, quarks, charms, left and right, over and under, above and beyond, everything we can observe in Science has this symmetry. Why? We don't know why. We just know. My theory and Ellie later added to it, was to take the left handed side of the gene we were interested in and cutting it away from the right hand component and then placing the left hand somewhere next to another left handed compound and placing the right hand of say the eye color gene next to the another right hand gene, say the one for size of fingers, and watch to see what happened.

In experiments were able to conduct on Earth, just prior to our departure, the left handed part of the gene we had cut away, grew a right handed component and right handed component, grew, a left-handed component and the chain was unbroken, although altered in some unique way because the ordering was all different. There was an effect on the Genome, but it was like a ripple effect in a pond. It was unpredictable and it was still symmetrical. We might end up with a blue eyed baby with a slightly elongated finger or a stubby fingered baby with brown eyes who most likely would have been the opposite before. It was a puzzle, but there was an order to it, a rationale to it. We were convinced we could solve the puzzle out in space, where every tiny movement of any piece of the puzzle would be observed and none of it could be ascribed to gravity or anything else Earthly in origin. Everything we did out there would be caused by what we did out there, there would be no other causality, and this is why it was decided that such an experiment was justified now.

We would play with the genetic models that we had thought would work best for hundreds, then thousands, then literally millions of times over the course of our trip. In one model, we would eliminate the need for lungs and without lungs, we would have no use for a huge Chest area. Without a huge solar plexus, we could redesign the legs which would have a much smaller load to carry. We could alter the size of the feet, the number of toes. Toenails and fingernails, we would eliminate early in stage one of our experimentation because nobody we could find on Earth could give us a reason for them. Fingernails and toenails are merely a vestigial leftover from the days when we needed to claw our way through the jungle, literally. They would not be necessary in any kind of advanced, machineassisted society we could conceive.

Then, when the lungs were removed, we could alter the size and even the function of the heart.

The heart and lungs we knew were designed together and were inextricably linked in the body because the heart would pump the blood through the lungs which were positioned close to the heart so that the heart could be bathed in oxygen rich blood pumped through the lungs by the heart. So, there is a symbiotic relationship between heart and lungs and it wasn't until the fifteenth year of our journey that we finally found a way to eliminate the lungs and replace them with a new kind of heart and lung machine that would both pump blood and oxygenate the blood in one step, eliminating hundreds of potential diseases all in one step. The Human animal would never inhale large gobs of air, transform the fresh air to carbon dioxide and carbon monoxide any more. The Human animal would absorb oxygen through the skin, much the same way as some salamanders.

Once we had achieved this major breakthrough, we next tackled the head and neck region. The head and the neck were big and heavily muscled because the head was big and heavy, full of a large brain mass, and the neck would need hundreds of muscles to keep the head in the correct position. By eliminating a large section of Torso, the head and neck would no longer rest on this part of the body, now a much smaller mass sitting on top of the hips. With no need for a neck, the skull and brain cavity itself was no longer necessary, and in fact, one of the major obstacles to an accelerated evolution, it had been postulated many times, was the fact that the Human Skull was now about as large as it could grow because of the limiting factor of the size of the Female Birth Canal. The Human head could not expand very much larger than at present in our evolution because females would no longer be able to bring a child to a normal birth. The exploding rate of Cesarean Sections in childbirth all around the world gave strong evidence to support this theory.

By placing the 'Head' which I'll describe later, or at least the brain in the new smaller 'Chest cavity' now the brain case, we had a way for the human brain to grow to twice its present size over time because the female would never again give birth to a creature with a skull of any size to get stuck in the birth canal. The brain would be further protected in this new location because head injuries would be almost impossible. The ribs were redesigned to ensure that a brain injury would have to be terminal in most cases because the amount of trauma required to break all the ribs and then injuring the brain, would have to be something very serious like falling from a 20 story building or more. Anything less, would probably just feel like a slap in the face would have before when there was a face. And now for the face. Without a head, we spent many, many more years trying to arrange for the sense organs that had been lost.

The eyes were the easy part. They were simply connected by the optic nerve to the brain and were literally sitting embedded in the eye sockets of the skull. If you removed the skull, the eyes merely floated around on their 6 inch long nerve casing. So, it was a simple matter getting the genetic code to accept the eyes in the middle of the Torso. The eye sockets were sculpted out of the nipples, giving an even greater stereoscopic vision. And the peripheral vision was improved by about 15 degrees. The difficult part was in redesigning the olfactory, or the sense of smell. This gave us many years of tormenting experiment after experiment. We found this one of the most challenging of subjects because the sense of smell really came from a combination of taste buds on the tongue. We had no more tongue to deal with and the nose, just a big opening in the skull. We had replaced the tongue with a new set of taste buds we placed into the lips. The tongue, the major muscle in creating speech would be replaced later on at the end of our experiments with a new voice box that would have a speech synthesizer implanted

after birth. It was not necessary at all to Human Evolution, although we knew that we would get a pretty big series of complaints from the singers of the world. Their art wouldn't be lost, just changed dramatically. A singer, instead of spending many years practicing how to maneuver their tongues for the most melodious sounds, would spend a few days, learning the programming techniques necessary to change their synthesized sound. Everyone would still have a unique voice. It would be electronic from now on and inter-changeable so that if you wanted to change careers you could do so far more easily. Of course you could also change your sex much more easily too, but that we'll leave for a later discussion.

Now, having solved the tongue, and nose and eyeball problem, we still had to consider the very substantial problem of the aesthetics of the 'Face' of Humanity. We didn't really have a Face in the old sense, because the skull was gone. We felt this was a very positive change because the 'Face' really presented far more problems for us in society than solutions. Men had to shave their faces. Women had to spend hours upon hours applying make-up to their faces. This is not to mention the hours of attention that would go into our hair-do's and don'ts. Then, there was the nose. Almost nobody liked their nose. Plastic surgeons in our century were the most respected and highest paid profession in the world because there were so many people changing the shape of their nose. So, we felt we were on safe ground in eliminating the nose. The mouth would present a bigger challenge.

The mouth had evolved for two basic reasons, for eating and vocalizing. The genetic code devoted to the mouth, the lips, the tongue, the jaws were involved in almost a fifth of the entire Genome. That's how powerful the mouth is. Only the eyes, would have more genetic coding, but as I have explained we didn't have to change any of the ocular genetic code except for the very limited coding related to the position of the eyes in their sockets, almost a no-brainer, and in fact, I had discovered all this coding in the final countdown days prior to our launch. I needed something to take away the nervousness and this was the project that did it for me and gave us a great headstart. I felt confident that if I could reposition the eyes without effecting any of the millions of other Human traits in the code, that we would most probably succeed in every other way on this mission.

This is to say that after many years of experimenting and many, many failures, we decided we had to leave mouth virtually unchanged, except for the lack of a tongue, the lack of a jaw to move the lips up and down and the lack of teeth. The teeth were easy. They were hardly present anymore in the code, leading us both to theorize that teeth would soon disappear in normal Human Evolution. If necessary there could be a transitional stage where people would go around with prosthetic devices that would chew better, last longer, require no dentistry and never need replacing but once or twice in a lifetime. Later on, there would be no need for teeth and the genetic coding we were doing would have that option in the plan for future development. The teeth were only there to chew up the food and bite off chunks of food. The cosmetic need for teeth was only a subjective thing that we would soon adapt to being without. We knew this from many, many studies we were able to perform on volunteers who would be shown various forms of new Human bodies and asked to comment. Almost all of the cosmetic changes we thought about at the time, were accepted once we made it clear to the volunteers how many advantages there would be from the changes.

So, the Human mouth, it seemed was destined to look somewhat the same as before, except that

it would be sitting just above the stomach, making it much easier to get the food down into the digestive tract. The lips would move by muscular contractions in the chest. We had to rewire several tendons to get this to work correctly without the arms jerking sympathetically every time we moved the lips, but after a relatively short period of time, we had accomplished this much. The action of chewing food was gone forever. We would be forced, by our new evolution to sip our food through a straw, never to have to chew again, because the jaws and jaw muscles were no longer there. The muscles that we could use to move the lips would not be sufficient for the many thousands of pounds of pressure required to smash the food particles of our present diet. In space, this was no problem. We already had made this jump psychologically because there was no solid food on board, just a green vegetable mash and a blue meat mash and a red sweet mash. We didn't need to masticate in space, we neither felt deprived nor undernourished, therefore, we reasoned all the rest of our species would find it just as easy to adapt, if not easier, since they would not be weighed down by memories.

Lastly, we would need to work for years positioning and making the arms work. And hearing was our last barrier. We decided to make arms our last item in the long list of changes we were making because we knew that if we could conquer all these other problems, hanging arms somewhere on this torso would be a 'piece of cake.'

So, the problem of hearing was our last real problem and it posed a much bigger problem than we had ever originally imagined. The elimination of the skull meant that there was no longer an inner ear, the cochlea, remember the little anvil and hammer from high school biology that re-created sounds in your head and then the tiny hairs that vibrate sympathetically to these outside stimuli and report back to the brain what these sounds sounded like, were no longer available.

Nothing even remotely close to this very complicated design could even be attempted with our present knowledge of Science. However, there was an easy, though not very aesthetic solution. Just as we had solved the vocal chord problem with an electronic chip that would emulate any sound we wanted, so too the new hearing aid would have a much wider range of sounds that it might hear. The only catch was that we still didn't have a connection from the ear to the brain. That feature had been performed nicely by the auditory nerve. But this nerve, unlike the optical nerve is far more complex in structure and it would therefore require far more lines of code changes. In fact, we would never finish this part of the job properly. It would be the one badge of a rushed job that Humans would wear for many years until another mission like ours could be re-convened again. Until that time, the Human animal would suffer from a very inadequate sense of hearing. The temporary fix of hearing devices attached to the side of the torso, would only be temporary because they would literally in the way of any real arm movement. To play sports, and do anything requiring strong physical movement would require the removal of all auditory prosthetics.

But this was a small price to pay for the completely re-designed Human Animal. We now looked quite different. The Human would no longer suffer from backpain, and even most headaches would be eliminated. The diseases associated with the heart and lungs would be almost completely eliminated. We would have a much easier time operating on the brain, since it now occupied the same space that the heart once occupied plus there was lots more room in the cavities that the lungs once filled for expansion of brain matter. We were confident that we would bring back to the Earth and possibly leave on a far distant planet a new species of

intelligent lifeform who would be far stronger and smarter than it's predecessor. We would come back some day, or perhaps the new Humans would come to visit us on Planet Earth and bring with the many, marvelous new wonders of scientific discovery from a brain that we, their ancestors had given them.

It was with this intention that we toiled very hard day after day on board the Galactic Enterprise as our ship had been dubbed. We worked without rest and many times forgetting to eat because we were literally on a mad race with time. If we could conquer all the genetic coding problems before we got to the new Planet, we would be able to leave the seed of what we had created on it. If not, we would have to return to Earth on a mission weighed down with many moral dilemmas to solve. I never tired of pondering the irony of being totally free to leave a new genetic species on a foreign, alien planet, but bringing it back home would be so full many dangers presented by the religious fanatics still left on Earth to give voice to their superstitious hogwash. It was such a shame that the religious fanatics had gained so much power in the last century in a reaction to the senseless violence and crime all over the world. It seemed that one genetic quality we would never find was the very annoying limitation of being able to moralize only from a religious point of view. Why couldn't people just be good to each other without a reason? Why did they have to go through all the ritual dance of church preaching and pontificating before they would simply be respectful of other life forms. Difference of color, to a geneticist, was nothing to the innate similarities we all shared.

All races had hearts, brains, limbs, blood pumping through veins and arteries and it was all the same color inside. Why were there so many ignorant people who could only see skin deep? Why weren't they listening in schools, why weren't they reading about the miracle of life all around them? Why did they have to congregate in homogenous masses of people of their exact same kind, color and shape. We were more than sheep? Or were we? Most species of sheep and even cows and horses got along just fine with other animals of different colors. Why not Man? It was the most amazing and complicated riddle of our existence that I could not resolve. There was no genetic place on the Genome that could be removed. There was no chemical composition for racism and ignorance and intolerance, and yet this quality persevered from generation to generation. Why? I would continually search for evidence for social preferences in the Genome, but we were still very primitive in our understanding of the code.

Yes, we had known where every feature was in the code. We had learned in the last century how to clip out sections of the Genome that would lead to cancer or even tall children, children with blue eyes, and blond hair could be genetically engineered and this pioneering work lead to our present understanding where we had every possible feature of the living creature mapped out in one long piece of code. The computers could easily keep track of all the changes we made, so most of our work was done on the computer, then we would run a program that would project out the probability of certain changes being successful and what other side effects we might have missed. Then, after we were certain, we would place the new chemical compound that we had engineered into a special green jelly that would act as a kind of 'cell' except it was only a food source and not composed of any genetic material other than lower food molecules. Then, we would nurture the new genetic compound until it was ready to place into a Human egg. We would then take the egg, place it in the artificial womb and wait to see what would develop.

During the length of our entire journey to Sirius, we would have time to incubate some 100,000

artificial fetuses. None of them would be brought to full term. Nearly all would be jettisoned into Space when the computer had enough information to confirm or reject some of our theoretical models of how the new Human should be composed. Only the final generation of the New Man would survive. We would wait until the final few years of the journey and then we would allow a dozen or so of the New Humans, six of each sex to come into the world. Then, we would leave our children on a place where they could learn to live with each other in the harmony of a new ecology, an ecology that would nourish and support them, allow them to evolve into something that we were not wise enough to conceive. There, we would leave them for millions of years. The true nature of the mission would be secret and if the planet in this vicinity of space did indeed prove to be harmonious to the new life form, we would leave them there and destroy ourselves in space. Only a very privileged few in government and science would know the true nature of our journey.

If we were not successful in finding a planet that would be hospitable enough for our new creation, we would turn and move on to another target in space. But the odds of our having enough fuel and life support to reach another suitable destination was extremely limited, and if so, we might be forced to return to Earth with our new creation. I personally could not live with the idea of leaving all our work to die in space. I knew that God would not allow this to happen. I knew that our mission was a sacred one, the most important one of all history and somehow I just knew that we would find a safe harbor in and around the star Sirius.

CHAPTER 3 - THE JOURNEY

None of our readings, none of our imagination, none of our wildest dreams could prepare us for what we would eventually find on the Planet Darwin as we came to call it. We were more and more intrigued and curious as we watched it grow larger and larger in our scopes and later the view ports. There was evidence that this planet was not geologically the same as the others in the system. In fact, we found no evidence of normal geological activity on Darwin. It had a magnetic field larger than the Dog Star itself, which was unusual, but not unprecedented. This could have been caused by an intense core of magnetic iron or other elements. Our analysis had also told us that there had been a collision some millions of years ago and that the debris of this collision was still floating in orbit around Darwin as our own moon. The moon itself appeared to be the debris of a comet or something of that nature, although again, there was no geological evidence of any kind. It might be an old rubber ball bounced in from some gigantic golf game for all we could tell.

We measured it from Space at very nearly the size of Jupiter, about 100 times the size of the Earth. At first we thought it might be a failed sun, as Jupiter is. But as we got closer, we were reading measurements of a very temperate climate. It was heated by a Sun also much larger than our own. Measured at about 100 times the size of our own sun, the solar system was also looming up about 100 times the size of the system that cradled our own Earth. We counted more than two dozen planets in the system. Darwin was the fifth planet out from the star. The color spectrum analysis told us for many months in our journey that the planet was very likely inhabited with living things, but mostly only plants and a few small animals that were seen as grazers. Nothing showed up as living quarters or advanced technology anywhere in the system.

With every new day, the crew, basically my wife and I, woke up with more and more anticipation of what we would learn about the planet. We had been 'at sea' a long time and we were all looking forward to a safe landing, an hospitable harbor, a place where we could spend the rest of our days with the children. We only wanted to live peacefully and not have to worry about anything except how our experiment was adapting to life on this new planet. Other than this, there was very little excitement on board ship for years at a time. It might be days before Ellen and I even needed to speak to one another. These were difficult times in the respect that it is very lonely in Space and so you end up daydreaming so much of the time about the good times in your life, the friends you left behind, the things you could be doing if you weren't here.

Jim was probably the main thing that kept us sane. We were so alone those many years. Even though my wife and I were chosen for the mission mainly because of our compatibility and our commitment to one another, we still needed lots and lots of outside stimulation. We got some of it from video we could receive from Earth in the early years. Once we had reached a few light years away, the pictures from Earth were no longer available. Then we resorted to a few of our most precious video disks to keep us entertained. Then too, Jim was capable of calling up almost any of the books stored in the Library of Congress at the time of our leaving. So, there was plenty of reading we could do. But after a few years of that, one longs for the simple pleasures of Earth, the quiet walks along the beach. A trip to the mountains. Even a simple

picnic in the park. I missed meeting with friends over a beer at the local constabulary the most.

My wife missed the children, and I did too, of course, but not as much as her. We had sacrificed so much for this trip, and we knew we might regret it once we had gotten so far away. Not even the year and a half of therapy prior to the trip would help take away the pain of separation. We knew that and were as prepared as anyone could be. But it was still a terrible thing. We fought it mostly by keeping each other happy, talking as much as we could, remembering our favorite moments over and over. Even the nostalgia began to get nostalgic.

If it wasn't for Jim, we would probably have gone insane. He was so full of the most marvelous child-like wisdom, we would laugh some times for hours at some of the funny things he would ask in response to one of our questions. And the electronic games he could create to keep our minds sharp were a wonder to behold. No two of them were ever the same. He would design them in between the moves we would make. In that minuscule time slice, he would have another game ready for the next time we requested one. He probably had dozens ready that were similar, but we, with our serial brains could only sample one at a time. It was incredible at how talented this fellow had become.

He wasn't much to look at. Because of Space limitations on the ship, he had been reduced to the size and shape of a small crystal ball similar to what a Gypsy palm reader might use. He was linked to thousands of miles of electronic gizmos all throughout the ship and we were never really told just how much of the ship was part of his nervous system because that wasn't our specialty. But we had to learn the basics of course, in case any part of the ship was damaged. We had manuals that could be called up from any of his emergency ports that would tell us everything we needed to know about any area of the ship down to the last polymer cell.

The ship was made out of the new polymer cell technology. Invented in 2029 by Frederick Homer, the Polymer cell was a kind of 'living plastic' that could resist heat, light, any kind of radiation, and would even recoil and repair itself if a meteorite hit us. It was 1,000 times stronger than Ultra Plastics of the 40's and 50's and stronger than anything in Nature that we knew of. It was lightweight and could be constructed from materials found on Mars and several of the moons of Jupiter. So, it was ideal for making space ships like ours which could only be manufactured in Space. Too big to take off from a planet with any gravitational pull, the interplanetary ships would all be built in orbit that was known even in the last century. The Einstein was no exception. Constructed over a period of ten years in orbit around Mars, the Einstein was almost completely made from the new Polymer Cells.

The early press regarded Polymer Cells as living tissue, but that theory was finally put to rest when several experiments proved that Polymer Cells did not reproduce sexually and had no innate intelligence. The whole process was almost skunked by the Religious Right who looked at the early research like it was some kind of abortion issue. The darn stuff 'acted like' it was reproducing when stressed and it even showed signs of learning and memory by remembering how it was programmed to look or feel. It was really amazing, but later research done in the Bertoni Labs, showed that the appearance of learning and memory was due to sub-quark weak strong forces which was itself linked to the gravitational force. Polymer Cells, it was discovered at Bertoni were the building blocks of gravitational pull. And the memory and reproduction properties of the substance was due to the fact that every cell in the universe was linked to

another through this very elemental force. The molecular structure was as fundamental to the way the universe was constructed as DNA is to all living tissue. It was probably the most interesting discovery of our century, including the Nuclear Particle Engine. It was only because of these two major breakthroughs in our technology that Space trips of this distance could even be contemplated.

When the signals from Darwin first began to reach us, I immediately sat down with and asked him if he could interpret the messages we were receiving. We knew they were intelligent, but that's all we knew.

"Well, what do you make of the signals reaching us just now from Darwin?" I asked, Jim.

"I'm analyzing it now, Jerry," He replied. Jim is our onboard computer and faithful companion although the computer scientists had given him a face, always looked a bit stern and severe for me. Even when he made a joke, he never learned to smile. I had always made a mental note to tell them how to improve him in this small way.

Ellie and I worked at the radio controls to try to bring the signal in better, but there was so much interference from the millions of stars, supernova, dust between us and the source, we knew it would likely be a few more years of travel before we would get anything really clear. It was very exciting and very nervewracking to be on the verge of such a major discovery of life somewhere in the region just ahead and not be able to tell anything else for years. The size of the universe is still so overwhelming to tiny creatures like us. Nothing is more humbling to me than when I think of the immenseness of the universe compared to our own knowledge, now that I've made a major trek through it.

Jim was still silent and after an hour had gone by, I decided to try him again.

"Are you able to give me any time estimates when the signal will be discernible?" I asked.

"My best estimate is in 2.387 years. There is enough interference now that I am able to say with a 99.7 percent accuracy that this signal will not be readable or discernible until that time," he replied glumly.

"Great," I said. I was about to tell my wife, when she acknowledged having heard it straight from Jim.

"Well, I guess I'll get a message back to Earth to tell them about this. But they won't receive the news until we're half-way home,"

Ellie looked over her shoulder and then shrugged her shoulder, as if to say, 'Hey, that's the best we can do.' She walked away into the galley. It was dinner time and it was her turn to 'cook'.

I went back to the laboratory to begin some tests. Our main mission was to find out what the effect of space experimentation would be on the Human Genome. Both Ellie and I were skilled enough to find many genetic markers for many diseases and remove them from the DNA molecule. We'd both done it many times before in our careers. So, the agency wanted to give us a gravity free laboratory in which to continue our research. But they also wanted us to do

something else with the Human Genome, if we could. They knew it would be too controversial on Earth, but if we found it was feasible to change the Human Being in basic anatomical and morphological character and to improve on Evolution in any way we saw fit, we were instructed to do just that. They just didn't want to know too much. Our transmissions were supposed to be very light on this subject and encoded whenever possible, because of the negative reaction such news might have at home.

And if we reached the Dog Star with a viable species, and if there was a planet, as NASA suspected, that would sustain that new species we were ordered to maroon it there. That way, it could develop, un-obstructed by whatever negative publicity they might get on Earth, and in a few hundred years, perhaps, we could go back to see what we had accomplished. It was a wild, incredibly brave experiment, and Ellie and I were very proud to have been chosen to lead it. And we were perhaps the only two people fully qualified to do it. Both Ellen and I had been in Space for long periods of time working on related projects and we had both proven we could take longer and longer missions. Probably because we were married, our kids grown up and all of our future ambitions lay with the Genome Project, they figured if we couldn't do the job, no one could.

CHAPTER FOUR IMMACULATE CONCEPTION

Well, we started work as soon as we got out of the solar system. During the first few months of building up speed with the Magnetic Field drives, we were very busy acting as a kind of antenna for messages between the Mars colony and the outer colonies. We exchanged files and records and news and everyone we talked to was very excited and full of fine stories about their space adventures, but they all admired us for being able to really get out there, and head for a completely different solar system. It was a kind of freedom that no one had ever dreamed of before and we had many admirers. There were many who did not admire the long lonely hours of solitude they knew we were in for.

But all in all in was a good time to be able to visit with each of the colonies sort of closeup and take a look at all their accomplishments. On Mars, they were the most advanced because they had been the first, after the Moon colony. The Martians, as they loved to be called, had almost completely changed the weather so that it resembled something like being on a tropical island during the day, and the arctic at night. They hadn't solved the gigantic temperature swings, but at least both ends of the extreme were livable now without a space suit. In another couple of decades, they were sure that their climate would be better than the Earth's in general. The mining communities, the tourist colonies, were all extremely beautiful from the viewscreens up here as we flew past so fast, we could only take pictures and then view them off-line later on.

On Titan, the moon of Jupiter, they were accomplishing so much more. There had been only a very thin atmosphere of poison gas out here, but the huge deposits of uranium made it a very important colony. They had built giant domes on the planet and made the internal area very livable with enclosed farms and ranches and even highways connecting the various cities and towns that had sprung up. The radiation from Jupiter, even though it had never quite made it to being a Sun, was enough to keep the plants growing under the protective filters of the domes. The Titanians were very glad to talk with us and very proud to show off these ultra-modern cities. There was no crime and no deviant behavior allowed because of the limited nature of their surroundings, everyone cooperated and worked hard to make enough money to get off the planet. Even though the domes were thousands of square miles, they still seemed to give people a sense of claustrophobia after a few years. But when almost everyone could return to Earth a millionaire after a few years, it seemed worthwhile to many millions of Earthers.

Then, finally, the Neptunians, actually colonists of Triton, one of the six moons of Neptune had to be the most amazing of all the colonists I had ever known. One year on Earth would equal only a few days on Triton since Neptune took about 168 Earth years to complete a revolution around the sun. There was very little change going on out there. Almost absolute zero for most of the time, there was very little time to be outside the cave dwellings they had blasted from the moon, in the first few days. The climate machines were totally useless here because there was nothing to work with and the temperatures were never high enough to stimulate any chain reactions. They had long ago given up and were forced to live in their underground caves all of their lives. They could make very brief trips up to the observation level of the caves only to look out at almost total darkness and cold. The Platinum and Titanium ore was profitable

enough to where they could trade for billions of barrels of fuel oils, by now almost nonexistent on Earth. But Platinum was so much more expensive, they were able to eke out a living for the time being. Being on the outer edge of the Solar System, no one knew how much longer they would be viable as a colony.

We were not able to talk to the Saturnian colonies because, due to the Rings of Saturn, this was one of the most dangerous maneuvers of the trip and so we kept our attention focused on the engines and the reaction of our magnetic field generators to the planet while filtering out the effects of the rings. It was not much fun. We had brief conversations with some of these colonists, but nothing that would amount to much more than an exchange of files, news, letters that kind of thing that was all automated.

But finally, one day, we had gathered enough momentum from the constant push and pull of the magnetic fields of the planets and it was time to break out of the gravitational pull of the solar system once and for all. It was a very eerie feeling to look back on the final orbits of Neptune and then Pluto and then a few days later to lose the sun against the background of stars. It would soon become just another point of light. The Earth could only be seen with our strongest telescopes a few days later and then finally, it would only look like a tiny spec of light at certain times when it was not eclipsed by dust and meteors and so forth.

The plasma engines came on when we reached the velocity of half light speed. They needed that much momentum before the tiny particles we encountered in outer space could be used as a kind of fuel. What amazed me most about these engines were their size. They were the most complicated technology in existence and yet they were no bigger than a bread box. They sat on the external pylons and looked more like radar dishes than engines. But when the slightest particle floating in space came within a few kilometer radius of these engines they would strip out every miniscule portion of energy within their particle being and thrust us along with just the tinniest addition of acceleration. Each particle we would encounter out here gave no discernible difference in speed, but after a few thousand million of them, we would see the difference in the instruments. Each and every day, we would go just a little bit faster. The engines were one of the most amazing things to me because my field being biology, I didn't have to know much about the theory of how it worked. I only needed to know how to replace any parts of it that failed. They were so reliable that we never did have to replace any component.

But, the day finally came when we could devote almost full time to our genetic research. We were so fortunate to have discovered the entire Genome by now. We had the most advanced computer systems, the most advanced molecular laboratory and the most advanced robotics systems. We could literally cut and paste whole molecules or just individual atoms along a molecular chain and place them somewhere else on the Genome and then run a study to see what the effect might be. It was just like programming had been in the former century. It was the age of programming pioneering and adventure. We could do whatever we wanted, especially in the zero gravity of space and immediately see the results. If something went wrong, the computers undid what we had done and put everything back together again. If we made irreparable damage to one Genome, we had backup copies, so many backup copies, we could have been a couple of monkeys working without a plan of any kind and we would have enough genetic material to more than last the full length of the trip.

Ellen would work on one end of the Genome and I would work on the other. Then, we would exchange ends. Then we would work on the same sections. We tried everything to see what we could do. We were out to completely change the Human Being and we hoped we knew enough about it to ensure that all changes were positive ones. But there were no guarantees because we were breaking new ground every day. Looking back on it now, we were just like two kids in a candy store, just taking the best parts of what we found and then going back for more and more.

Then, one day, with the help of lack of gravity and the molecular combine and the computer we realized that we were on the right track. The next generation of Humans, if we carried it to term, would be just a little bit smarter, or faster, or taller or with better heart valves, or improved vision. We were finding all the places on the Genome that were responsible for all these things. Ellen even thought she had found the center of the soul one day. It was a genetic marker that did not have anything to do with anything else and yet it seemed essential in all our experiments. If we cut it out, the next generation was puny or diseased or corrupted in some way. If we left it in, there was no genetic deterioration of any kind that we could see. It turned out, we hadn't found the soul, but the part of the Genome that determines whether or not you might develop a conscience. Without it, and the Human Animal would run amock, turn to crime, resort to violence to get its way.

We found the places on the Helix that were responsible for lying, cheating, stealing, hate, anger, greed, envy, all the good and evil things about the Human species were laid before us in a gigantic encyclopedia of molecular and atomic structure. These were all there in our code because of millions of years of living and evolving on a planet where survival of the fittest was the only law. The parts of the Human psyche that modern man found so hateful and costly were a part of each and every cell in the Human body. It was there so that each generation would be able to outfight, outrun, or outthink the other predatory animals and later on, predators of its own kind. We found places in the DNA molecule that would push a man to force himself on a woman instead of gently courting her toward the same results. Ellen was especially proud of this discovery because it meant that future generations of Humans could truly trust each other for perhaps the first time in history.

I was especially fond of finding the genetic code that made men and women, overly competitive. Competition was an important trait in any species because it could be the key factor in survival on any planet, but I found places in the genetic code that made competition overly important, it was a redundancy factor built into the Human Genome to ensure that only the fittest males would mate with the fittest females. In modern society, this was counter-productive because there were so many lonely people who didn't measure up to this artificially imposed value system and esthetic appreciation. Women were committing suicide every day if they didn't look thin enough to attract the men they thought were more attractive and these men were killing themselves to be more attractive to these women and when they united, neither sex was truly happy for they had achieved something very shallow and empty. By replacing some of these genes with genes that seemed to foster cooperation, gentleness, understanding, all the factors that we might call, a good-hearted person, we were able to solve this esthetic problem for all time. I was especially proud of this more than any of the other cures for disease I had won prizes for and achieved all that fame.

It was this line of work that led Ellen and I to start thinking about the ideal form of the Human Being. If all these emotions could be traced to genetic structure and atomic code, then the next threshold of our understanding and skill would come with the code that made us look Human. We had inherited this code mostly from Apes. There was much of what the Ape had acquired from lesser mammals, and there were qualities that the mammals had acquired from amphibians and some of this code all the way back to when all life came from the sea, was still part of our modern code. It was miniscule, very hard to decipher because it had become transformed, interlocked with more modern traits, but they were still there. And somewhere amidst all of the mists of time, the genetic factors that form us all the way cookie cutters, make cookies, they would be located sooner or later.

And that day did eventually come, about halfway through our trip. We had reached the level that God must have known when he created the life. Maybe not quite that high up, but it felt like it some days. We could actually make decisions about the next generation of Humans that would greatly effect the way they related to the universe. Humanity, for thousands of years looked up and out at the universe with eyes, because eyes were all we had. Later on we created machines that would enhance our senses so that we could see further and deeper into the mysteries of the universe, but it was always our senses that were necessary to gain the information. Then, people like Einstein and Fielding made such huge discoveries simply by using their imagination. No tools, no artificial sensory organs, just their imagination and their sense of logic to make discoveries about the universe and these discoveries were more important than any that had gone before. Had we reached a pinnacle in our evolution when our tools were no longer as valuable as our minds eye at piercing the mysteries of science?

I remember talking about this with Ellen for what must have amounted to years in space, a few minutes each day on the same subject because we were actually peeling away all of these genetic markers for tools and what was going to be left in the Human Genome would be some kind of creature with the ability to use it's mind, it's extra-sensory perceptions better than any creature before. By stripping away all the distractions in all of its cells, we would create a new kind of Human who could think clearly, completely free of all distortion of so-called morality and society. The new Human would be free of millions of years of clouded perceptions and accidental turns and twists of his natural self dictated by things like weather, geography, agriculture, even the new economy. We would create a creature who could think and act on the wisdom that pure thought could produce totally free and clear of any apprehensions, lack of confidence, fear of failure.

It was not an easy job, but the people of the Earth, without their knowledge had given us the tools to attempt such a lofty goal. We were living in the most advanced environment that Mankind could devise with all his wisdom and knowledge and we were travelling through God's open heavens where anything might happen, the future was limited only by forces that were completely unpredictable. We were the first completely unhindered scientists in the history of the civilization. We owed nobody. We were totally free to do as we pleased. Oh yes, they had given us guidelines and Ellen and I had agreed to every one of them while on Earth and under the influence of all Earthly morality. But out here, travelling faster and farther than any Human had ever gone before, we soon discovered that these guidelines were no longer of any importance or relevance to the mission.

CHAPTER FIVE - CHILDHOOD'S END

We could see it coming for literally billions of miles away. Our instruments were constantly aligned to it. It was the Dog Star Sirius. One of Earth's closest companions. The Hubble Array had spotted the evidence of planets orbiting it in the early 21st Century. There were 12 in all, very much like our own solar system. The star itself gave off just the same kind of radiation and at the same energy levels. The planets seemed to be spaced apart similarly to our own. There was no evidence of a Jupiter or Saturn sized planet in the system, however, which increased the odds that one of these planets could tolerate Human life. Then, when the Hubble II did a complete scan of all possible stars in the neighborhood, Sirius' planetary system came back as the ones most likely to have some kind of lifeforms in existence. This led them to re-examine several potential star systems for life and when they took a closer look at Sirius, Hubble's successor, Hubble II had discovered that the fifth planet from the star had every indication of life on it. Most important of all there was evidence of water all over it. There were frozen polar regions and tropical regions at the equator. The only thing left to find would be cities and towns and that was too much for any instrument up to that time.

That's how it was picked. Our destination, the fifth planet out from the Dog Star, Ellen and I called it the 'fifth puppy' for the longest time. We knew eventually we'd have to give it a real name. But it would be one of the children who would suggest the best candidate. We would call it Darwin, after possibly the greatest scientist of all time. And since we were involved in genetic research, it seemed even more appropriate to name it after one of the founding fathers of genetic research.

Ellie and I worked very hard the first few years in getting rid of what we thought was bad about the Human species and giving other things we thought were good a greater probability of being expressed. We found the center of art and music appreciation in a gene we called, AM 1505, because it was the 1,505th gene that we had isolated and found the purpose of. When we cut and paste it into our experimental Human Body in the computer, it made the test dummy, as we called him, very keen to music. In fact, he could write music as good as or better than Bach, Beethoven, even the Beatles. We used to love to listen to his recordings for hours at a time, still do. Ellen and I were often so overcome by the deepness and richness of his compositions that we would have to suspend our work for a while and just hug or make love, or just stare out into Space dreaming about the face of God while listening to all the magnificent themes and subthemes, the harmonies, the peaceful cadences. It was truly one of the best things about our journey.

We became intimately familiar with our Test Dummy. He was a living breathing model of what the Human life form could be. Every single one of our findings had to be rigorously tested before we went any further with our theories. If we could replicate a thousand generations which for the computer took only minutes, and find no harmful side-effects of what we had done, then we let our code change, our mutation become an integral part of the new Genome. If we found that anything we did produced any kind of physical or mental aberration that we could not cure with a band-aid, then, we went back to our previous copy of the code and started all over in our

theoretical as well as our practical approach.

After 15 years of working 7 days a week, 52 weeks a year in such an endeavor, we had decided, before we left on the mission, that we were bound to achieve some sort of completion and this was our approximate deadline. We had 15 years to accomplish something and then another 15 years to fine tune it. We could adjust that schedule if nothing came of the first 15 years, but this would cut down considerably on how much time we would have to live with our creation and get to know it better. If after living with it, we could find no major flaws, we would maroon it out there on the fifth planet of Sirius we had named Darwin.

That was the game plan. But after about 15 years. We were only half way toward reaching our goal. The test dummy was a good representation of what we hoped to achieve. There was very little in the way of animosity or aggression in him. We could find nothing basically wrong with him and we even used him as a butler for several months. We noticed from this relationship, however, that we could never get real close to his feelings, if indeed he had any. He was almost perfect, but he lacked any real personality. He would mimic back to us our own thoughts and feelings on any subject, except when he came to writing music. On this score, he was truly original. When he painted pictures, they were exquisite. When he critiqued a painting or read a book for us, his analysis was superb, but when you had him actually talk to you, he lacked a spark, an instigational thought. He could only respond to questions. He could joke with you. But never spontaneously. He had to see that you were in a jocular mood and then he might come up with a good joke he had remembered from some of the reading material previously.

Then, Ellen had a leap of understanding about the problem that is the entire reason for my telling you this story now. It was the reason I had fallen in love with her so many years ago at Harvard Medical School. She was always able to see problems in a way that no one else did, not even the teacher. She could sense a disease with just two or three very pointed questions. She had this hippocratic talent that very few of us have. When you asked her what it was, where it came from, she would just shrug her shoulders and say something like, "Hey, I'm a woman, I have woman's intuition.

But when she told me that she thought we ought to redesign the entire body to allow for more brain capacity so that it could learn to have things like personality, a conscience, a morality system. These were things that were learned, and learned from society. Out here in Space there was no society other than what the test dummy saw in us, and we were far too busy to show him any kind of deep-seated philosophy such as what he would pick up in minutes if he were home on Earth playing football and baseball with kids his own age. These were the parts of his genetic code that were missing and we could never give him except perhaps on a video. But not even the new Holographic videos could teach him what he really needed to know.

So, after all the time we put into designing the New Man, we started from scratch. We made no assumptions any longer about length or height or color or weight of any of the components. We wouldn't even make any decisions about bodily organs. These decisions should come from the natural extension of more important things like neural sensorial networks that would simulate the growth of the Human brain but on a much higher and faster level. We only had a few more years to accomplish something because, even in Space and travelling at nearly the speed of light we weren't getting any younger! And this new line of thinking would require every single neuron

we possessed, every computer synapse and every single atom in Space too. We would have to use everything that God might give us.

When the children were finally born, we were in our eighties, chronologically. Because of our speed in the universe, we imagined that we were really only in our forties, comparatively speaking. But time was always against us because we could not live forever. So, we came to a time in our research where we decided that we had improved the Genome enough. There would always be more we could do, but it would never stop improving and we realized that we had to stop at some point in time and see what we had in the flesh. The test dummy was OK to prove out theoretical cause and effect, but the real flesh and blood version that we kept carefully locked away in the freezer, would prove what we were doing once and for all time. If there were improvements to be made we had to trust that Nature could make them, here on board the ship and later on when we would land on Darwin. We could always go back to the drawing board if this experiment was a failure, but it would be harder and harder to do that at our advanced physical age.

So, there came a day, the 7,859th day into the mission when Ellen and I watched with baited breath as our new Genome was transplanted into the nucleus of Human Cells. It was just the first phase, but it would have to work at this level, and then later we could repeat the experiments with more cells, but we had a finite number of them, and there was no precedent, no textbook to tell us how many cells nuclei we would have to destroy until we found the right mix of DNA molecule and activating enzymes to make it all come together into a new life form. God worked with infinite amounts of time and materials. We were limited to only a small globs of them.

But on this day, it all seemed to work perfectly. The chromosomes split perfectly and recombined with new sets of them. The laws of genetics worked perfectly on our first try and soon the first cell we took from the freezer was two and then these two were four and the four became eight right on schedule. And so on and so on. It was growing. Soon there would be thousands of cells, some of them specializing in becoming fingers and toes and others becoming brain tissue. It would have to undergo a fetal stage. We knew that, or at least we guessed at that and so we had a fetal storage bottle for it, an artificial womb. Then, it would grow into a perfect baby in about nine months. At the end of that time, we would break open the bottle and raise it as we would any natural child. We would probably even come to love it, care for it, nurture it like real parents do their natural children.

We were never prepared for the fact that these children would do more in the way of nurturing us than we could ever do for them.

CHAPTER SIX - SOMETHING NEW IS HAPPENING.

We noticed early on that there was something special about the "children". They seemed to accept their new bodies just as easily as we had accepted ours. They never cried. They never bothered us in any way, except for the normal diaper changes. But even in the diaper changes, there was something unusual. They seemed particularly annoyed at the mess we had to clean off their bodies and all of them at about 6 months began to clean themselves and they even learned, shortly thereafter how to dispose of the mess in the incinerator. A few weeks later still, and they were pinning their clean diapers on themselves. Ellen and I were amazed at this, but it would be only the first in a long list of amazing discoveries we made about them.

They learned how to speak at about 1 year old. And there was very little baby talk. They seemed to watch our lips very carefully for the first year of their lives and then one day, they would just begin asking for their meals or their toys. Then, they would tell stories about their meals or their toys and it was amazing just how much information they could bring to a story.

On one such occasion, Jason, the first male child, began telling us the story of his bottle of milk. He knew it came from cows, that cows were animals with fur and big funny looking faces who grew on the Earth in great numbers, and that after they had lived a long life and given enough milk, they would be turned into hamburger meat. He had never heard either of us talk about cows, or hamburgers or even the Earth for that matter. We intentionally talked in front of the children only about matters that pertained to the ship or the journey in front of us, or the children themselves. We didn't want them to ask about the Earth or where we came from or anything about their origins because we knew the inevitable day would come when they would notice that they looked very different from us and they would have to be told something. We had never thought of how we would approach this subject, because we were so busy with so many details of the research. The social implications of what we were doing were very much in the backs of our minds.

We could only surmise that these incidents of pre-knowledge of things that they could only know from some deep racial memory were evidence of a new part of the brain being stimulated. It was a part of the brain that we all had even in our present forms and sometimes people would give loud expression to memories of past lives or to knowledge of things in the past that they could not know any other way. These paranormal events had always seemed like the tide of racial memories coming in. There was more and more of this kind of thing toward the later 20th century. People were seeing UFO's in record numbers all over the world. They were experiencing past life regressions in record numbers. People would tell more and more of incredible stories of being picked up by flying saucers and then operated on, then released. This in greater and greater numbers. But, to my mind, these were unproven and imaginary events. What they really meant, I would come to find out from the children.

Then, the inevitable day did come when we had to tell them about their origins. The first female child Rebecca, asked me one day at breakfast, when she was three.

"Daddy," she said, "Why do I and the others look the same, but none of us look like you or Mom?"

It was the first time, she had used the terms 'Daddy' and 'Mommy'. They would all refer to us as 'Man' and 'Lady' from the first time they spoke in sentences. It was a bit shocking when we first heard these words coming from such small children, but we accepted it right away, because we had to. We both knew that we had to accept whatever they said to us because we could never show surprise or shock in our faces. They were so intelligent that they would read things into our every expression. It was almost as if they could tell what we were thinking. It was a very demanding and yet exciting time to be alive and to be working with them. And of course, as we would find out later, they did know what we were thinking. At first, before the age of three, they could tell very little about our thoughts, although they still seemed to sense much of what we wanted to convey. But after they were three years of age, they began to babble and mimic things that were floating around in our brains.

The day I first knew about this marvelous new ability of theirs, I was thinking about playing a game of baseball with them, wishing is a more accurate term, since we didn't have any hope of playing baseball in the real sense of the word until we found a planet large enough and hospitable enough to place a baseball diamond on it. I was fiddling with some calibration equipment in the forward telescope and thinking about how nice it would be to set up a baseball diamond somewhere and teach the children about baseball and just relax with them and have the kind of fun you have with your children on a baseball type of day.

"Baseball, nice game, a diamond with four bases, hit the ball and run to bases, score by reaching home plate before the ball gets there from fielders."

I turned my head so fast, I had a neckache for days. It was Ernie, the third male. He had been standing behind me and listening to every thought in my head. I knew it and I just sat there stunned.

Then, he seemed to realize that my astonishment was due to the fact that I didn't know he could read my mind. He became embarrassed and ran away.

I was both very worried at that moment and very excited at the same time. They would be able to read our every thought so we would have to be careful what we were thinking. We would have to find a way to shield some of our most adult and innermost thoughts from them, and yet, we should be very grateful that this new talent of the brain was showing forth.

Indeed, the next few weeks were very difficult for Ellen and myself. We would have practice sessions in which we would bring one of the children into our room and we would practice disguising our thoughts. We started out with Ernie because I believed he was the most advanced in this regard. I would think about baseball and Ellen would think about soda pop and we would just continue to think about these two things, blocking out all other thoughts. Ernie would talk to us and carry out 2 separate conversations with us on each subject.

"What happens if you get 4 foul balls?" he would ask.

I would reply by thinking of the answer, nothing aloud.

"So, you keep hitting foul balls until you either strike out or walk?" He would ask.

'Yes, that's right,' I would think the answer and keep repeating it so that he could not read any other thoughts deeper inside, such as the wonder and the questions I was having about this ability. The scientific curiosity, the theorizing, the mind games, I would save for when we were alone.

"Is soda pop made on the ship?" He asked Ellen.

'Yes, we have a soda pop machine on board. It's made with purified water and carbon dioxide that is recycled from the ship

But then he said something that made us realize that nothing we could do would block our thoughts for much longer.

Ernie said, "Have to hide from the kids where they came from especially how we're going to maroon them on that planet out there."

Then, he started to cry. Apparently, it would only be a matter of time when they would be able to read all our thoughts even the deepest most subconscious ones.

CHAPTER SEVEN - HELIX

Little did we know that word of the nature of our mission had leaked out to the press, just days after we had lifted off. One of the technicians, a born again Christian, had put two and two together. He had tried to tell the media days before we lifted off, but by some good fortune, they didn't believe him at first. Then, he showed them pictures of the equipment we would use to do our experiments. When a couple reporters were able to confirm what this equipment could only be used for by showing it around to several genetic research companies without telling them where the pictures came from, then all Hell broke loose.

No one bothered to inform us on board the Galactic Enterprise because no one knew what the outcome would be from the global debates now taking place everywhere. Talk shows were inviting all the Religious fanatics to give their viewpoint on 'Tampering with God's Supreme Creation' as they put it. Newspapers were running entire serializations of how the missions was put together in secrecy, who was responsible for the cover story, etc., etc.,. The United States Senate was holding hearings on whether or not to recall the mission. Even the United Nations has deliberating whether or not to build a space ship with the sole purpose of coming after us and bringing us back dead or alive.

Looking back on the whole thing now, I'm glad we were not told until the end. Knowing that the Earth's morality system was coming to bear on my work would have altered it in ways I cannot even imagine. I would have been more aggressive. I would have worked harder to complete the experiments. I would have foregone all sleep and all food and that might have led to disaster. It was only the most noble of causes that led me to work as hard as I was working. Ellen and I both felt that Mankind was flawed in so many ways. We had evolved from animals that had to survive under the most difficult of conditions. We had to fight off predators. We had to suffer diseases, wars, famines, petty jealousies, the pecking order, territoriality, greed, the lust for power, the sins of money. We had come through all that because we had a brain, but the brain stem and all the earlier parts of our evolution were still there in the Human Animal controlling our emotions, telling us to kill or be killed, eat or be eaten, run or fight. Our entire culture was based on these primitive mechanisms. Oh yes, we tried to pretty it all up with our table manners and the way we dressed, with suits and ties and high heels and nylon stockings, but it was all just a wicked deception. We would deceive ourselves for a awhile, but then the true nature of who we were, where we had come from and where we were going would strike out at us.

We would go to war on the slightest of provocations. We would shoot, stab, insult kidnap each other with such regularity that we were all afraid to go out alone into the streets of all our major cities. The police were fighting a losing battle. The Street Patrols were set up, by local communities to arrest the criminals and then we found ourselves at the mercy of these armed gangs of thugs whom we had hired. Then, they were even so bold as to try to takeover the Pentagon. That was the final straw for me and Ellen and it was the final straw for many fellow scientists. The next time, the hoodlums might be successful. They might topple a major government somewhere, get hold of atomic weapons and that would be the end of civilization as

we knew it. Some of us banded together secretly and we convinced NASA of the urgency of this mission. We had the knowledge to do it. Why not give it a try. It seemed at the time that there was nothing to lose.

"Order, Order. If I hear another outburst like that from any spectators again, I'll clear this room and these hearings will be held in secret," the Senator from Missouri was a tall man with wild speckled brown hair. He had on a blue suit with red tie. He banged the gavel viciously. He sat in the middle of the table and the word Chairman was affixed to a placard in front of him. The Senate Hearings had just begun to call witnesses from NASA. The first one had just admitted that the Space Mission, Galactic Enterprise had a secret mission to rebuild the genetic structure of the Human Being. The court had erupted into a furious mix of applause and uncontrolled anger. There were those who were in agreement with the articles that had been written in defense of the project, if it proved to be real, and there were the members of the other side, who thought it an abomination. Somehow both sides were presented in equal number in the hearing room.

"We believed then, and we still believe now, that this mission should be kept secret from the American public because of the reaction you are seeing here now," The NASA spokesman was also tall, with blonde hair, blue suit and red tie.

"If you knew you would have a reaction like this from the public, why didn't you err on the side of caution and consult with members of Congress on this issue?" Senator Rothman, asked, with pure contempt in his voice.

"We considered it. Indeed, we agonized over that very thought, Senator, but in the end of much deliberation and discussion with several dozen noted scientists and researchers that we couldn't take the risk that there would be a leak from one of the Senators and this might delay or even scuttle the mission. We all decided that this was an issue that transcended politics," He said. He had more, but the Senator cut him off.

"So, you took it upon yourselves to not only spend trillions of dollars of the taxpayers money on this mission, you also made yourselves the final arbiters as to whether or not this would be good for the country or humanity, for that matter? You never once considered that you had a duty to get clearance from a higher authority?" he bellowed, looking out of one eye for the TV camera, quietly recording the proceedings for billions of people around the world. It had been reported in the papers, the night before, that these Senate Hearings were getting the highest ratings in the history of TV.

"It's funny, you should use those words, 'higher authority', Senator. We did consider getting the permission from a higher authority and the highest authority we could think of, God, would have to call this one. I have no doubt that God is looking on now and helping us all to realize the truth about this whole situation,"

"If I were you I wouldn't bring God into this, Mr. Dakins," boomed the Senator. 'For God so loved the world that he sent his son Created in his own image.'

"If that passage is true, Senator, then God as the Creator, would be proud that Mankind his creation is using every God-given gift to Create something better than himself. This is all we

were trying to do!" Dakins slammed his fist on the table, knocking a glass of water to the ground. It crashed and added a rather dramatic touch to his statement.

"I'm sorry, I didn't mean to get carried away," he said, sponging some of the water off the table.

"But you have already gotten quite carried away with yourselves, haven't you? Now, you're trying to tell this committee that you know more about what God wants than we do," the Senator smiled with venom drooling from his teeth.

"Senator, the Human Being is descended from Apes. Even this committee cannot effectively argue that fact of Science. I have heard your speeches to the National Religious Council where you agree that Creationism is more of a truth than Darwinism, but Darwinism, Evolution has so much evidence on its side that we could bury the entire capital building with bones and fossils and records made by natural forces. While all you religious fanatics can come up with to support Creationism is a bunch of children's stories written down over thousands of years ago before anyone ever knew of the word, 'Fossil'. That makes you and people who think like you as much a fossil as the ones we find in stones," Dakin stood up in preparation of walking out, but then sat down as the room burst into a wild applause that seemed to last forever and drowned out the boos and hollering from the religious side of the room.

"All right, clear this room," I said I would clear this room at the next outburst and I meant it. Sergeant-at-Arms, clear this meeting room, immediately!" The Senator rose from his chair and watched and banged the gavel for several tense minutes while the wild scene of people yelling and screaming at one another, cheering Dakins and damning him as they were led from the room by the Security suits.

When the room was empty save for Dakins, his counsel and his assistant, John Patterson, the Senator composed himself, strode behind the chair of every committee member and whispered something in their ears. It was obviously something the Chairman did not want the TV cameras to pick up. Then, he sat back down in his chair in the center of the room and slowly composed a smiling if not patronizing smile on his face. The color began to change from bright red to a more subdued flesh tone.

"Mr. Dakins, now that we're alone and we have only the TV audience here in the room with us, I would like to say that I am extremely disturbed that someone would take on a mission like this without consulting with members of Congress. It has always been the pleasure of the Senate to have good relationships with our fellow colleagues over at NASA, and all other government offices. It is therefore, deeply annoying and sorrowful to me that you have set an ugly and damnable precedent in going off into space with a secret agenda all your own over there at NASA.

"Senator, I..."

"Don't interrupt me please, Mr. Dakins, or I shall have you placed under arrest for high crimes and misdemeanors and you'll have to watch the rest of these hearings on TV too," He said.

Dakins looked shattered, stunned, shocked.

There was nothing he could do or say that would extricate him from this situation because all the cards were in the hands of the Senator now.

"We are going to suspend these hearings, Mr. Dakins and we will decide amongst ourselves if your punishment will be consist only of your resignation or whether or not there will be a jail sentence imposed besides. Then, we will dispense with this matter and we will open up hearings here in this same room with other members of the Scientific community, indeed, even some of your colleagues at NASA and we're going to try to come up with the best way to abort this mission. The American people will not tolerate a unilateral decision of this magnitude being made by a petty bureaucrat like you. We have heard entirely enough from you and we are unanimous on this issue that you acted in a treasonous and criminal manner when you launched a space ship into space with the hidden agenda of tampering the Human Genome to the extent that you would alter it in every major respect, thus creating a new kind of Human Being. We are not going to hear any more testimony on this subject, because quite frankly, it's a waste of time. You admitted doing what you did right here on Global television and you have many reasons, at least in your own mind, they're reasons for doing this, but to us these are just a batch of illconceived excuses for taking on a task that you thought would bring you personal fame and fortune. Unfortunately for you, your career is over. Now, we must put ourselves to the task of finding the best way to undo the damage that you may have already caused. Good day, Mr. Dakins. These proceedings are closed!" The Senator slammed down the gavel and let it bounce back onto the table. He and the other Senators got up to file out of the hearing room.

"I'm afraid there's nothing you can do. The engines on the Galactic Enterprise are one of a kind. They cannot be fabricated that quickly. The ship is beyond any recall point where you could catch up with it, no matter what you did, even if you travelled at the speed of light, by the time you get there, they will have reached the Dog Star. There's nothing any of you can do. Nothing at all. Go ahead and try. You can contact the Ship and order Clean to abort mission and return, but we made sure we had the right man for the job. Cleavon is committed to this. He won't turn back. He won't turn back. Not him. No way. It's over your heads now. There's nothing you can do. There will be a new species of Human kind to rule over at least one other world. Maybe someday, he'll come back and bring sanity and order to this one too!" Dakins was done. The Security suits had him in toe. He was being led from the Hearing room while the TV cameras caught every last word. It was only to them that he was directing his words and most of the rest of what he said was garbled by a bad transmitter somewhere down the line.

When you see what we can become, He was yelling now, hysterical, nearly in tears.

When you see what we can become, your minds will open. Youll be forced to see things differently. We were descended from Apes, you stupid ape. Youre all a bunch of stupid apes. Thats the real problem. How do you get an ape to see himself for what he is, an ape?

Dakins found himself thrust out of the Hearing room and ignominioulsy deposited on the steps of the Congress building. Several of his friends picked him up and dusted him off. They walked away and got into their cars. The battle would move to outer space now. The Earthmen would have to conquer the space men, just like in all those horrible science fiction movies, except this time it would be for real and it would be for all the marbles.

CHAPTER EIGHT - NO RETURN

Well, of course I had received the orders to halt all experimentation and turn the ship back toward Earth on the 137th day of our mission. But we were well beyond the gravitational pull of Pluto or any other planets now. So, I just ignored their orders. We would be responsible to a higher authority now. Funny, I had never been a rebel or even someone who disliked orders from my superiors. But when we left the influence of the planets of my home solar system, somehow, something changed inside of me and I knew that I must make decisions now, all of them, that would effect the outcome, not only of this mission, but perhaps the fate of all Mankind. I couldn't be swayed by hysteria, ignorance and superstition. I had to clear myself of all that, just as we were clearing the Human Genome of all that crap.

I knew that it would take several years for anyone to put together another ship with the speed and power of this one, and even if they did muster all the resources required to do so, the ship no faster than this would always be years behind me. There was no way they could ever catch us. So, after speaking with Ellen about it for several days, or was it weeks. I can't remember now, we both decided that it was our duty to continue our work and carry on without the support of the authorities on Earth.

We had both been part of several discussions before we left about all the 'What if's' and this was the 'What if' that came up the most. We had all known that there was the possibility of a leak right up until the day of the launch. But we also knew that if the leaks were held off until after the launch, there would be nothing anyone could do. The engines for the Galactic Enterprise had taken 5 years to put together. It wasn't that the engines were so complicated, but the fuel was. The fuel was extracted from the waste plutonium from all the Earth's Nuclear Reactors and by the laws of physics, you could only get one particle in a thousand million from the waste, and it had to come from the waste particles, there simply was no other process known to Mankind that could produce the fuel we would need to accelerate away from the solar system at nearly the speed of light.

Therefore, we were all reasonably assured that no other ship would ever have enough fuel to catch us because it simply takes 3 solid years of production of all the combined nuclear furnaces on Earth to make enough fuel for the journey. And they simply cannot build any more nuclear furnaces fast enough to make a difference, nor could they speed up the process of gleaning Tritium 17 from waste plutonium. The laws of Physics forced you to wait for the half life effect the radiation and this was the most accurate clock in the universe. The most they could do would be to wait a year and a half, and get half the fuel they needed which meant they could launch a ship to catch us, but it could never take us back. So it would be a suicide mission at best. They still couldn't catch us because they couldn't go any faster than us, but they could dawdle along behind us a couple of years and do whatever they were ordered to do, destroy us all, or board our ship to come back home with us or without us.

There would only be one ship that could return us, that was assured, if they got to us in any kind of time factor. So, in this scenario we decided that we would destroy the ship. They would not be able to take us back, but that still left us with the possibility of them destroying us all and then killing themselves in the attempt in a giant Kamikaze raid across Space and Time. We could not prepare ourselves for that possibility because no matter how we armed the ship, they would know about the weapons and in such a mission would simply have bigger guns than us, no matter what. So, the Galactic Enterprise went out into the vastness of Space completely unarmed. We had small laser cannons to destroy meteors that might find themselves in our trajectory, but that was all. These would be no good in any real Star Wars. But we didn't want to give the impression to anyone that we were anything more than a peaceful expedition. We had no idea what other civilizations we might encounter, but we sure did not want to be noticed as a potential threat to any of them, either.

And so, the fate of the expedition would be in the hands of God. God would be the ultimate arbiter of what would happen anyway. So, obviously we prayed alot on this journey in our spare time.

We were getting closer and closer now with each passing year. We were now about six months from coming within orbit of the Dog Star Sirius. There had been increasing signs that the fifth planet away from the star would be habitable for all of us. There was a certain level of oxygen, nitrogen, hydrogen, some methane, but not enough to worry about. There seemed to be some kind of life inhabiting the planet because there were seasonal color changes we had noticed from about 1 year away. Now, in what would be the Spring of the year along their equator, everything looked very greenish and bluish. The spectrometer came back with information that many organic chemicals were present. And the most important ingredient for life, water, was also present in abundance. The Hubbell II was right on the money.

So, we had our hopes very much in readiness for the orbital and perhaps even a landing phase, via the small shuttle ship we carried in the cargo bay. The children seemed almost bored by all the good news. As we got closer and closer to the Star, they seemed to be more interested in talking amongst themselves rather than looking at the planet in the scopes or via the instruments. And then, they developed a very curious habit of meditating amongst themselves in the middle of their lab room. Ellen and I repeatedly asked them about the nature of their meditations and they wouldn't even respond to the question. Then, as we got closer to the planet that would be our home for the rest of our lives, they seemed to be meditating more and more.

I pressed them one day at lunch. I wasn't going to let them get away with some kind of ritual that I knew nothing about. What if they were trying to summon the devil or some such a thing?

"I want to know about your meditations," I asked quietly, eyeballing all of them.

They ignored me for a few moments, and then finally, Simon, the spokesman, said, "We're talking with Darwin."

That's all. No more. They all went back to their lunch, amicably and decisively thinking that would be the end of my questions.

I looked at Ellen and then the kids again. "Talking with Darwin? You all know full well that Darwin is dead," I said, showing more than a little concern for their sanity.

"Not him," Simon said, "The Planet, Darwin. You know, the one out there."

He pointed in the direction of the forward cabins.

CHAPTER NINE - A RESTING PLACE

We spotted our landing place from several months away in Space. We could see all the major features, mountains, rivers, lakes, oceans from this distance using our infra-red and optical telescopes. They were actually quite small, only about 10 inches across, buried in the nose of the ship, but the computer geniuses, in the early days of NASA had figured out many, many ways of enhancing a photograph so that the actual resolution would be similar to using the old Hubble Telescope that still orbited the Earth. It was the Hubble that had picked this star as the most likely place to find a planet with a hospitable atmosphere. I remember the news stories reverberating all around the globe when it was announced that the Hubble had detected life on a far distant solar system. It rocked the entire planet and put a big dent in the proclamations of the religious fanatics who claimed that Humans were all alone in the universe.

In reality, of course, the Hubble had never really spotted any life forms at all. But it had detected enough trace elements of hydrogen, carbon dioxide, oxygen in the extremely thin veneer that covered a glob that was in orbit around Sirius. It was the only evidence we had that there might be life anywhere in the universe other than our own, but it was just a wild speculation. We hoped beyond hope that the evidence of these chemicals in the vicinity of this glob of dust so far away that not even the Hubble could see it directly, would mean that there was life there. We had no better indications anywhere in Space. The Hubble spent many, many months tracking the Star and the four globs of dust that orbited it and gradually more and more evidence piled up that gave us a 99% chance that there was life on one of these globs if not all four. The globs would change chemical composition and the heat they gave off changed radically during the course of their orbits. It was computed that only atmospheric and climatic changes could be causing these chemical reports that said there was more oxygen in the atmosphere in what would have to be their summer solstice. On Earth green plants gave off far more oxygen in summer because they were full of leaves in the summer.

Soon after this discovery, the Hubble was directed to spend more and more time mapping these promising little places in Space. A closer examination showed evidence of different heat patches all over the specs of dust in much the same way we would expect oceans of Earth to appear to a far distant planet. The oceans would always be cooler in some places than the ground and in other places it would be much warmer, and this proved to be the case on these four globs, soon to be named dS1, dS2, dS3 and dS4, in the order to which they were distant from Sirius.

I remember the day that it was all confirmed that this would be our destination. We had been reading the reports in great detail coming from the Hubble astronomers. They were all convinced that the possibility of life was large enough to risk a mission. It was not thought that any more information would ever be discovered about the region to make the determination any more secure, but as luck would have it, Mother Nature had one more surprise for the scientists. Hubble had detected flashes of energy that were later calculated to have come from lightning bolts in the atmosphere. On earth lightning is caused by electrons building up in the atmosphere within a cloud with a highly negative charge. Then, there this charge builds up and builds up until it must become grounded. When it does, the charge dissipates into the ground and that's what gives lightning. In these incredible bursts of energy, minute amounts of Hydrogen and Oxygen combine to produce water molecules. This is a distinct chemical process that can only

happen naturally during a lightning strike. If there isn't a sufficient number of Oxygen and Hydrogen molecules present in the atmosphere, then these water droplets inside the lightning bolt would not be created. Hubbell had just found some in the remains of the lightning strikes. It was the final piece of evidence we needed and when this was announced to us, we just had to yell and scream and celebrate. We had our destination. We now knew that the odds were very good that we would find a home on one of these four planets.

And why not? They were all just the right distance from the star, about 60 million miles away from the star to about 100 million miles. If the star had about the same heat energy as the Earth's sun, this would presume a temperature on each planet within the range of temperatures on Earth. Combine the temperature with the now conclusive evidence that there was a breathable atmosphere and you had an almost sure thing. There had to be life on these planets, or else they were uninhabited by beings as intelligent as us, but inhabited by lower forms of life as the Earth had been so inhabited for hundreds of millions of years. So, we made the commitment to ourselves that this would be the planet that we would go for. It was relatively close, only about 50 light years away. And though there were a handful of stars that were closer, none of them produced any evidence of a lively planet in their orbits. In fact, most stars we could see gave up only evidence that there was no life anywhere within a billion miles of the place. We were not interested in these places. We were outfitting the ship for a trip to last a minimum of 100 years and another 50 years of supplies was placed in cargo holds deep inside and hidden from casual viewers, just in case we had to make it to another star. We were committing to a very long trip. We didn't know what we would find out there.

I remembered how fast they had grown up. Ordinarily they would just be old enough to be studying Algebra and maybe a little Trigonometry, the smarter ones would be getting a little Calculus. But these kids had all surpassed these very advanced math studies when they were about 4 - 5 years old. The girls seemed more adept at math, at first, while the boys preferred learning the Chemistry and Physics side of things. Then, at about age 7 or 8 this reversed itself and the boys seemed more interested in the Math and the girls in the hard sciences. We exhausted all of the ship's computer library on all scientific subjects, which was extensive enough to support my wife and my research. Then, at age 10 or so, they all began to write original works on Chemistry and Physics and do some pretty amazing experiments in our lab. They discovered several amazing new chemicals. The first one that I was very impressed with was the cure for the common cold. My wife and I had been inoculated against all major diseases, but somehow a cold virus had snuck on board hiding deep within our tissues. So, it was no big surprise when the children came down with their first symptoms. Since we had ruled out the possibility of a nose for them, this virus created havoc for their brain cavities. There was simply no where else for it to go. So, it couldn't fill up the sinuses. There weren't any. It couldn't get into the lungs, they didn't have any. It couldn't get into the lymphatic system. We had altered so much of their physical make-up that we found the lymph nodes to be totally wasteful of space. Therefore, there was only one place for the virus to spread and that was the space around their brains where there had once been lungs. It nearly killed them all.

They were miserable for weeks. They couldn't think or reason. Speech was slurred. Motor skills almost zero. They just wailed in pain. Then, one of them, David, hops up on the lab bench and begins to ask me questions about the virus. I tapped into the computer database and showed him every thing we had on it, including all our research into their own genetic makeup. The problem in killing this virus was not simple and had lasted as the number one problem in Science because the damn thing mutated so fast that no matter what you found to kill it, there

was always some genetic information left over that could replicate itself and then it would grow an entirely resistant brand of the virus, resistant to whatever had nearly killed it off. Then, you had hell to pay in starting all over, but this time, the virus would be even tougher to kill. But David had the answer. Instead of killing the virus itself, he decided that you treat it like you would any invader with such cunning and wit, by outwitting it. He came up with a chemical compound that I've since sent back to Earth for dissemination to the National Health, that takes the genetic material inside the virus and forces it to replicate in such a manner that the second generation will be sterile. No further growth can occur, so it is rendered harmless, the immune system soon eats the dead and dying viruses and it finally dies off.

It worked aboard the ship. Since we did not have the luxury of testing these things in laboratory animals, Ellen and I decided to go ahead and give the compound to David. He insisted on being the Guinea Pig and he seemed absolutely assured that he would not be harmed by this and that it would in fact allow his immune system to deal with the remaining viruses.

So, with great trepidation, I gave David the shot of his own medicine and after a couple hours, you could see that it was working. Then, a day later, he was completely cured. We waited one more day and when we saw that there were no side effects at all, we injected the other 15 children. They all recovered and we didn't lose a one of them. But the cost had been a hidden one. David now had complete knowledge of all our genetic research. Ellen and I sensed something different about David because he looked at us the way a farm animal looks at the farmer. We had husbanded him and the others and there was a reason that he did not understand right away. He was only ten years old when he discovered the cure for the common cold. I wondered how many more wondrous scientific achievements lay ahead for the rest of them before they were in their twenties, then what would they be able to do with all that accumulated knowledge and wisdom, so far advanced from our own.

It was apparent to Ellen and I that the size of their brains, not even at 75% of capacity, were already at about ten times the intelligence levels of ordinary Human children. Leaving out the telepathic skills we had observed all along, the psycho-kinetic skills that I'll tell you about later, leaving all these other para-normal skills out, their IQ's already surpassed that of Einstein and they showed every bit of increasing at a doubling of that IQ every 2 years! Where they would go, what they would do that intelligence, we could only imagine, but we had already had one excellent example. All the diseases of Mankind, cured. All the scientific problems in developing the ecological balance of the planet, solved. All the technical problems of feeding billions of people, solved, all the problems of making cities, governments, buildings work more efficiently, solved. All the scientific challenges to Space Travel, Economics, Geology, Anthropology, etc. solved. We could take such a huge leap forward in our understanding of the universe if it weren't for the fact that we were still having troubles understanding and accepting the basic leap itself.

One day, David sat down at the breakfast table, and half-laughing, said, "Einstein was right. There really is only one Force, but his life was too short. He lost his imagination and half his intelligence by the time, he figured it out instinctively, but he just didn't have the brains to do the math."

"How do you know this, David?" I asked, struggling to understand more of these implications.

"Because I just did the Math. It's all true. There's only one Force. We're all penetrators throughout the Force. The Force is really not even a Force in the way we, or you perceive a Force in Physics. In your books, you say that a Force is something that does work. But there is no work involved in creating the Universe because there is no distance. So, the Force doesn't

have to move anything. It just is everything. It's more of a field with the origination point and the termination point being the same. Life forms like ours Penetrate the field by using the Atomic particles that are also part of the field in a way that 'makes sense' to our senses. But living creatures are no more singular creatures than the stars or the dirt of the Earth. The atomic structure of all these things moves from one form to the other. Life is created in this manner. Life is DNA, you proved that already and now we find that all of Physics is programmed in the same way. Atoms, quarks, mesons, charms, there all programmed by DNA-like structure. There are even smaller particles yet to be discovered and they all be programmed by the same structure. They are smaller than quarks and then there is another level beyond this, and another still. And all of this interaction of the infinitely small to the infinitely large is the Field. Its one long string of instructions, the instructions of how to bond to the next higher level. Gravity, light, heat, electricity are all part of the bonding process, and you have experienced all of these. But what are these things except more of the same process holding everything in the universe together. Cant you see it? Its all the same process of bonding that makes up the Field. He rested for a moment to take our reactions. Ellie and I were silent, motionless. I think we were stunned, looking back, our mouths wide open in a kind of stupor. Oh, how foolish we must have seemed to our own children.

Look at it this way. Just because you manipulate Electric Forces and Atomic Forces with your science, doesnt mean these are the only ones in the universe, right? It means that they are the only ones that Mankind is smart enough to understand, today. But a few hundred years ago, it would have been impossible. So, the Field produced these things for Man, when Man was smart enough to understand them, no sooner, no later. The future, holds more power over the forces in the universe, but only when were ready to understand them and control them. But it doesnt mean that they dont already exist, does it? Of course they exist, but all forces must exist as one force, each part penetrated by our knowledge of them. And as we penetrate them, we penetrate the meaning of the universe as a whole, always getting closer to the one force, the one answer. Dont you see that? He paused again, and I noticed they were all holding their breath waiting for us to catch on to this line of reasoning. There were brief flashes, when I could see exactly what he meant, but then they went away as other questions of science rose up in my poor excuse for a brain.

He went on.

Electric Generators and Atomic Reactors. What are these? Just machines for manipulating part of the Field energy. Electricity is just a part of it all, just the energy contained in the electron alone. You take your knowledge of this energy and you amplify it and generate it and use it in TVs and computers and light and transportation. But its just a part of the field, moving you around. When you move around in the Field, you are part of the Field. You are merely penetrating it more and more with your knowledge, right? Think about it, Father, Mother. Even the brain works on the same principles of electricity as the rest of the universe. You both know that. The brain is electricity being perceived and used as thought. So, even our thoughts are part of the Field, correct? Our minds and our own energy patterns, even our machines are projections of the same thing. We can't see it until we get to a certain level of understanding. I don't expect you and Mom to understand it all. But it's true. I can almost see it in the First Dimension. It helps if you think of it all in One Dimension. There really is only one. The others are constructs of the senses. The depth and width of the universe is really not there. But it seems like there is depth because of the other things that the Force has created all in the same space. But Space being empty of all things, does not exist. Can you see that?" He stopped

again and just stared blankly at Ellie and I.

"You mean then, that life is only a compilation of all its parts?" I asked with profound ignorance.

"Precisely," He said. The others were watching us with an eagerness, I had only seen a few times. It was as if they all shared these thoughts and principles with their brother at the same time, they all understood them on the same level and they were all wanting us, Ellie and I, to understand too. And there was a curiosity as to why we had not figured it all out, being older and wiser.

That's exactly right, Father, He went on. You are no more than the sum of your parts all of which are programming you to penetrate the Field. That's the purpose of all the bonding, all the energy from small to big and beyond everything you know or feel. You Penetrate the Field because something, somewhere, some basic programming that has grown and grown and evolved, wants there to be a Penetration. What you call life-force is the Field being penetrated by itself. You are so lucky to have developed eyes and ears and a brain to perceive the penetration. Your perceptions of it are the purpose of Life being what it is. Your perceptions are something that Life gives back. That's the real meaning of ecology. It's the cycle that matters. You get something from the field and are allowed, or programmed to move through it, the distinction doesn't matter, but you move through it and your perceptions, your knowledge, your awareness is what you must give back, because that's all you have that is different, He said. "What about the soul?" Ellie asked.

"The soul is the soul of the Field. It's all the same spirit. That's why anyone who feels as though they have found their souls feels so close to anyone else who also has found soul. There is only one Soul. Each individual perceives it differently due to the influences of experience and memory, but there can only be one soul. Otherwise, what would be the point, other than bringing a person closer to the center of all Creation? Can you see that?" He asked. They all leaned forward just slightly in anticipation of what we were thinking.

"I think I do, David," Ellie replied. "I think I do."

I wasn't sure. So, I just said something like it was an interesting theory and I would think about it some more. I felt as though I understood him completely, but I didn't want to let them think I would just accept something as dramatic as this without careful consideration of all the facts. It was the scientist in me speaking to my soul. Had I listened more carefully to my soul, I wonder to this day, what the next conversation would have been like. It was a moment, I'll never forget and one that I wish I could repeat once again.

But it had passed and soon we all went about our normal chores. But all that day, and throughout many more days, Ellie and I would just stare at each other and smile in mutual appreciation of the intelligence that we had created. Even if David was completely wrong, it gave us both an overwhelming sensation that it was right. It was a 'gut feeling' in us. Though David said he had the math to prove it all, to us it would always be a 'gut feeling'. But sometimes you just have to trust your gut.

To have such a theory about the universe at 7 years old, was, to say the least, unprecedented. I knew that they had read the entire ship's library before they were three, but I didn't realize how much comprehension they had until now. They must have regarded most of our greatest literature as just kid's stuff, children's fairy tales. I often wondered if we would just grow further and further apart in our understanding of it all. And of course, the Mission would have to change. These developments in their perceptions and their level of understanding meant that the entire reason for being out here had changed from one of experimenting with genetics to

experimentation with Cosmology. It seemed to me that this over-rode any instructions we had from Earth. I could only hope they would understand someday.

I had received more and more strongly worded orders to abandon the mission, to turn back. The radio chatter was so constant, I decided to destroy the radio. If I ever tried to communicate with Earth, they would just jam my signal and feed me with all their propaganda about why I should turn back. They even told me to destroy any creatures that we had created out here, if any. That was the final straw. I shudder to think what I would say if one of the children had stumbled into the radio room while that garbage was coming in. So, it was at this point and for this reason that I decided to cut all communications with the Earth. We had nothing to gain, except for the very considerable comfort it gave us. But we had so much to lose if the children found out how their ancestors felt about them. I didn't realize it at the time, because they were so quiet on these subjects, but they already knew.

I know that because the next day, Jonathan asked me, "Dad, why did you destroy the radio, yesterday?"

"There was nothing interesting coming from there any more, son," I replied. "And besides we only have the future to look forward to."

It was the best I could do. I was rather surprised that Jonathan knew anything about the radio being destroyed. Then, he said.

"It wasn't because they kept telling you to return home, was it?" He asked with huge eyes. I was quite surprised I nearly spilled my water. My breakfast seemed far away and unimportant at the moment.

"How did you know they were telling me to return home, son?" I asked.

"I could hear the radio if I wanted to," He said, eating his breakfast.

It may seem strange to hear me say this, but as I watched him spoon his breakfast cereal into his mouth in the middle of his chest, the way I had planned it for him, I couldn't help being both very proud and very worried about my creation at the same time. I was discovering things about the children at their own rate at which they wanted me to know things. They never allowed me to experiment with them except to give them IQ tests. They thought of these as games, puzzles that were fun and amusing. They used to spend hours thinking up their own questions for the IQ tests that were so tough,

I doubt anyone on Earth could have resolved the answers on most of them. I know I was having a more and more difficult time of it, until I had to give up and ask them to tell me the answers.

That's when I stopped giving them the tests and they started testing me more and more.

This question about the radio was one of their tests. They were all sitting around the table looking at me for my answer. I knew that they had formulated this question together. Each had their theories as to why I destroyed the radio and each knew more about the truth than I did.

"I destroyed the radio because there is no turning back, my children. We have come a long way together and we were sent on this mission to create you, all of you, and all of you deserve a chance to live your lives in as natural a set of possibilities as you can get. On Earth, you would be put into some kind of zoo or a circus or worse and they would experiment on you every day of your lives. You would never get out to see the sun, to play in the ocean or climb a mountain or do any of those things that we all have a right to do. On the planet ahead of us, we will all have a chance to grow up naturally as part of God's Plan," I said, knowing with each word, each sentence, that they were testing each part of my speech with a kind of psychic lie detector.

They could tell my rate of breathing, my galvanic skin response, blood pressure, etc. They knew

that each word would be bound up by certain parameters if true and other parameters if even slightly false. I don't know how I discovered this about them, I just knew it. And I was right. This seemed to satisfy them. There were no follow up questions, no expressions of concern or no vague questions of misunderstanding any of it. They knew somehow that the nature of the beast they had descended from allowed for all kinds of emotional instability, irrationality. They had studied all of Mankind's earlier deeds in the history records we had on board, and it was all there for them to see and read. The only time, I sensed any kind of moral indignation or shock in the children was when I found them reading about the events of the last several hundred years on Earth. When they first started reading the history, they would ask if the stories they read were real or fiction. I had to separate the real from the fiction books for them, and then they would always turn to the books about real events, very rarely to fiction. Science Fiction bored them no end, except for Jules Verne, oddly enough. They all went through a phase of idolizing Jules Verne. They would ask very pertinent questions about the politics of the times and why people didn't do what was written in these books to stop the horrors of slave trade and so forth. It was an experience being educated by them. I rarely had any answers that made any sense at all to them. The answers might make perfectly good sense to children of our own kind, but never once did I feel my answers adequate for them. They could always counter them with a better idea.

CHAPTER 10 - EVOLUTION

I knew that they had all discussed within themselves, the nature of how they had been engineered by Ellen and I earlier in the journey. They all knew it a few days after David discovered his cure for the Common Cold. I knew David knew and I knew that he would tell the others. I could sense it somehow. Oh, it was obvious really in the new way they looked at us, staring at us, carrying on little conversations within their own collective mind about us. They would sit there sometimes for hours and watch us working, and all the time, they were thinking aloud, but Ellen and I could hear none of it. We could surely sense it though. It was very eerie and unnerving. Helen was more concerned than I.

"Do you think they will ever harm us?" She asked me once in bed.

"There's no telling, my love. I doubt it. I don't sense any meanness or cruelty in them at all, and you remember when we removed all the genetic references to any kind of violent behavior or anger. They simply don't have it in them. Physically, they would be incapable of it. Even their bodies won't allow for violent attacks. They can't get enough oxygen to move that fast. So, I think we're safe enough," I replied, only half assuring her and myself. Their strength and power was not physical, true, but this said nothing about their mental powers which we were learning more about every day.

A couple days after the radio incident, Ernie asked, "So you believe in God, then?"

It was again in the middle of a meal, lunch I think, and they were all sitting at the table, arms out in front of them, watching my response to the question they must have conceived together. I didn't know how to answer that one. I felt that no matter I said, I would be ridiculed by them, that they would laugh at me amongst themselves. If I said yes, they would argue all the scientific reasons why it couldn't be possible for the universe to have a God above. If I said no, they would know I was lying and then they would wonder why I lied. I didn't feel comfortable at all. So I decided to turn the tables this time.

"Oh, it's not important what I think about God, is it. What's more important is, do you believe in God, Ernie?" I asked, and then I just sat and waited for his response. I tried my best to pretend that I could also sense his physiological responses.

"Of course there's a God," he said. "Otherwise how would we all have gotten here?"

As if to say, 'What a stupid question, Dad'.

I felt very much relieved. But I wanted to know more about his concept of Good and Evil.

"What is God, Ernie? Who or what do you think God is? Can you tell me that?" I asked, gently and with a great big smile on my face that I hoped would disarm him.

"God just is," he said. "There was no defining a concept like God. You either believe or you do not. Those that believe in a God are happier because they believe in something larger than themselves. Those who don't are doomed to great unhappiness because they can't believe in anything larger than themselves and this means they only have themselves to blame for all the good and evil in their world. If you believe in God, the good and evil is coming from God ultimately, so you have an escape clause. You have someone to talk to when you're down and someone to thank when things go well. That's all that matters about God. That you either believe or you don't. But people who don't believe in God, that doesn't mean there isn't one. It only means that God gives us the freedom to believe in Him or not. That's the other part about God that I like. So, you have to love people who don't believe in God too. Just because they

exercise their freedom not to believe is no reason to hate them or not be friends with them. But they have to respect your free choice to believe too. It works both ways. And that's what God wants. He wants for everyone and everything in His universe to have choices about everything even in whether or not to believe in Him. That's the only evidence I have that there is a God, the Freedom we have to choose. If it were forced on us somehow, then I wouldn't believe in God.

"You believe in God, then?" David asked me in a later conversation

"Yes, I do," I replied.

Ellen and I were in the middle of trying to fix a water recycling unit. We had plenty of extra units for the trip since water was so necessary for life, but I was always a bit nervous when one of them were down for repairs. I was just the worrying type, but we had backups to backups to last twice the length of the journey, but sometimes I would lie awake at night worrying about what would happen to us all if the life expectancies for some of life support units were off by even a small factor. It would be a horrible death. Then the thought of our bodies drifting in space for millions of years was very queasy-making to me.

So, I wasn't quite in the best frame of mind to answer this question. Looking back at it, I believe that David had timed his question for just such a moment, when he had me in a place of great doubt and worry.

"Then, why are you so worried about the instruments?" He returned immediately.

"I believe in God and I have total faith in God, but I also have to trust my instruments," I replied almost automatically.

"This is what I thought," David said, and he strolled off in the very peculiar way they had of swaying back and forth.

Their lack of a head and neck made it necessary for them to throw their shoulders forward further than we did with each step, and this caused them to appear to be waddling like a duck. Ellen always thought it was cute. I wondered about how effective their physical bodies might be in a place that required more athleticism. Without a pair of lungs and a heart to move the blood through their veins faster and faster for fight or flight kinds of events, they would be easy targets for mountain lions, or bears or even leopards. Indeed they wouldn't even be able to run out of the way of a falling tree. As I say, I worried a lot on this trip. I could only hope that the planet we were headed for did not have any predatory creatures.

Later I thought back to this peculiar question and the even more peculiar reaction to my answer about God. I don't think I would ever figure them out entirely. In their pre-teens, they were amazing us every day with their mental prowess. They would discover more and more exciting new principles of Science. Rhonda came up with a new theory of Relativity that made Einstein's seem like Child's Play. I still do not understand the implications of it all, and probably never will. It will be up to scholars of the future to prove whether or not her calculations were correct or not. They discovered many new chemical compounds and even created living tissue which we would use later all over the Earth as the Living Band-Aid. Kim would invent the best way I have ever seen of changing lead to gold. This was an age-old dream and it required so little in the way of electrical power, that we had plans of coming back in a solid gold space ship. Why not, it was the most durable of metals. I liked the reassuring nature of that.

Peter came to us one day with the entire energy crisis solved in a few days of analysis. He didn't eat or sleep until he had figured out a new way of capturing the energy from the sun and converting it to electricity. In his method, he would convert light energy to nuclear or fusion energy, the same energy the sun created by fusing Helium and Hydrogen Atoms, but it was a

controlled reaction that he housed in a kind of gravity bottle, then this fusion energy he converted into electricity in the same manner that nuclear plants now operate by using the power to turn turbines that spin generators, except in looking at this part of the process he made it more efficient by eliminating the turbines and created a gas turbine/generator all in one unit. The whole mechanism was about 1000 times more efficient than present electrical generation, but it had the added benefit of using Solar as the original energy source, thus eliminating all pollution and environmental concerns.

Then, Brian, hearing about Peter's success at dinner, casually informed us that he had found a way to turn, silicates, ordinary sand, and the most abundant element on Earth, into the toughest new building material we had ever known on Earth, at least one thousand times stronger than steel. He only mentioned it because he realized that it wouldn't work without an infinite source of electrical power because he bonded the Silicon atoms together electrically. He actually discovered a way to weave the individual atoms together with electrical and magnetic waves to create a bond between each atom, so strong that nothing except a reversal of electrical energy came into effect, or the power source failed. With Brian's new invention, you would simply pour tons of sand into specially designed copper grids inside a wooden mold, like a giant Jello mold, and then pour electricity through the contents. The magnetic effects of the high-tension electricity would cause the atom nuclei to mold magnetically. And you would end up with a building much stronger than any other conventional building technique. You then peel off the wooden molds and use them on the next project. So, all that was really used up was a little sand and copper grid.

The only problem would come if the power failed. The problem was that you had to keep the electrical energy flowing through the grid to keep everything intact. But Peter had solved this problem by creating a new kind of Solar Energy plant. It was astounding and highly practical on Earth because most of the wood had disappeared long ago, and housing was so expensive in most places, that more and more people were forced to live in their vehicles before they could find a real roof of any kind.

I was so amazed at the casual way that they introduced these concepts that I first went into their labs, converted storage rooms, I was forced to make for them. (We hadn't known how much room we would have to give our children before we left, but luckily the designers had made for plenty of storage rooms that we could convert at will.) When I saw the physical tests they had made, the mathematical proofs, they had written down almost like you or I would write down a phone number, I was truly amazed and filled with such pride you can't imagine.

Ellen asked me later that night, "Don't you think it's such a huge coincidence that Peter would be working on an energy problem and Brian on a Housing problem and they both worked out a perfect dual solution at the same time?"

I had never thought of it that way. But she definitely had a point. They must have been collaborating in their minds, without either of us knowing about it. I wondered how much the others were contributing. Sometimes, I would see Karen, who didn't really seem to care for Science all that much, looking off into Space. I always thought she was day-dreaming, but later on I found out that her daydreaming was part of the research the others did. Karen was performing calculations based on a new kind of Mathematics that she had discovered when only 7 years old. She shared it with the others, but they knew that she was better at it than they would be if they concentrated on their own interests. It seems as though they had an early understanding of some kind of psychic cooperation in order to achieve great things. Why they had such an urge, I do not know. These were the kinds of things we had no Genetic experience in

the way of pinpointing a gene for Intelligence or one for compassion, or one for wisdom. We only had enough genetic code that allowed us to create these super-intelligent beings by increasing the size of their brains. How exactly the brain became wiser, more intelligent, more logical, we still had no ideas.

But they did. They would do mind-experiments that gave them clues about all of this soon after they had discovered their true origins. It neither embarrassed nor annoyed them. They seemed incapable of any of these emotions beyond the 2nd year of life. They were all embarrassed that we had to change their diapers, I remembered that, but as soon as I did, I also could recall that this would be the last time they would ever disappoint Ellen or I in any way and the last time they would be embarrassed or caught short in any way. They were so damn superior, it was frightening in a way.

Soon, the clues they discovered would be compiled into a theory and then they would test their theories and realize a set of laws. Then, they would prove the laws by replicating them in their laboratories. This was a most difficult decision for Ellen and I, but when Jason asked if he could have some of the genetic jelly as we called the Genome, we had to allow it. He promised that he would inform us of any significant experimentation he was doing. We finally agreed, after a long discussion about the very nature of our mission. We were here to push the Human Genome as far as we dared. We had done everything in our power to create the children, now they were educated enough and intelligent enough to do some more research along the same lines. It was clear that our knowledge had reached its limit. It was clear to us now and it had long been clear to them. Their own research was about to reach a limit that we would never have dreamed possible.

The children were pursuing a scientific path that would lead them into whole new realms of understanding. They had discovered what would become known as the 'Field Theory of Evolution' on Earth many hundreds of years from now. They would receive no credit for this because it would actually need to be re-discovered by a man of 'normal' intelligence who could give the theory some proofs that would satisfy the rest of his contemporaries. But for the children, there was no need for these proofs that they had already seen in their mind-experiments. Mathematics and Geometry would give way to another science only they could understand with their advanced levels of thought. They pursued and pursued this 'Field Theory' of Einsteins until they were completely satisfied it was the correct way to perceive the universe. Then, they set out on a long period of discussions mainly amongst themselves that would change forever, how humans would think of themselves and their role and purpose in the universe. I would not even have a clue until those final days with them. They would save the best for last, when Ellie and I were so old and tired, we would be able to 'know' everything they knew, but on our own level of course. They were actually watching us grow as parents watched their children and they were spoon-feeding us concepts and ideas that would allow us to know the final truth about everything. But they would have to wait until their last day with us to reveal it all. It would take that long because we were all part of a plan. I don't honestly know if it was all their own plan or someone or something else's plan. But there was a plan, you see. Looking back now, I realize that their vision of the Universe allowed them to actually see or know the future. They knew there would come a day when they must leave in such a way that the event would provide all the proof we might need for all time, and that there would be no turning back, not for us, not for them, not for Humanity.

END OF PART ONE

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