

Katerina Yerisivloskaya is chasing someone who leaves few impressions through the former Capital of Kazakhstan. Someone is buying Nuclear weapons. Should they have them? This leads Katerina beyond the Ata-Alma streets as the White Knights try to save the world.

White Knights Inc.

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White Knights

Inc.

A Novel

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A Novel

By

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Table of Contents

Chapter One: An Evening in Almaty	1
Chapter Two: Midnight on the Firing Line	14
Chapter Three: A Typical Day at School.....	24
Chapter Four: A Meeting of Cosmic Insignificance	31
Chapter Five: The Best Laid Plans of Mice and Missiles	52
Chapter Six: Coffee, Eggs Benedict and Particle Beam Weapons	71
Chapter Seven: A Brief Stop at The Hardware Store	92
Chapter Eight: The Bowels of Texas.....	99
Chapter Nine: The View From Baikonur.....	109
Chapter Ten: Blasting Out Of Texas.....	116
Chapter Eleven: A Long Cold Ride In The Dark	124
Chapter Twelve: A Little Light Housekeeping.....	136
Chapter Thirteen: A Crazy Time To Be In Space.....	150
Chapter Fourteen: Like Ducks in a Shooting Gallery.....	168
Chapter Fifteen: There Is A Reason Why They Call It Space..	181
Chapter Sixteen: We Have Twenty Cubic Miles of What?	189
Chapter Seventeen: Yes, It Is A Very Big Rock.....	199
Chapter Eighteen: It's a Blast Really	207
Chapter Nineteen: First Steps on a New World	218
Chapter Twenty: Old Gray Belial, Ain't What She Used To Be	226
Chapter Twenty-One: You Can't Just Toss Nuclear Weapons	233

Robert L. Barrow JD, MD

Chapter Twenty-Two: Lost on Belial.....	243
Chapter Twenty-Three: Sometimes the Big Stuff Doesn't Matter	252
Chapter Twenty-Four: Usually it is the Little Things that Matter Most.....	259
Chapter Twenty-five: A Little Bit of Miscalculation Goes a Long Way.....	273
Chapter Twenty-six: Things That Go Around	282
Chapter Twenty-seven: The Great Eye Opens	292
Chapter Twenty-eight: A Few Light Housekeeping Details...	305
Chapter Twenty-nine: News From The Old Country.....	316
Chapter Thirty: Heavy Weather	325
Chapter Thirty-one: Any Port in a Storm.....	336
Chapter Thirty-two: On a Clear Day We can See Everything	346
Chapter Thirty-three: B Day.....	354
Chapter Thirty-four: Welcome to Belial.....	368
Epilogue	379

Chapter One

An Evening in Almaty

T - minus 00:00:18:00

Katerina took cover in the ugly brick doorway when she heard the first shots ring out like firecrackers. The scant cover provided by the facade of the tenement was preferable to being on the open sidewalk three steps away. A few seconds later she heard the sharp report of another weapon and recognized that she was not the target this time. This was likely just an adjustment rendered by one of the street gangs upon another. She waited a full five minutes until she had heard the tired engine of an ancient truck drive away and no further gunplay before she continued toward her meeting. After a block or two of her brisk walk the entire incident receded into unimportance. Someone in Kazakhstan was buying nuclear bombs and she needed to know why.

Her career with the KGB had mutated into a part time job since the demise of the Soviet Union and her rank now meant very little. Now, the majority of her income came from commissions generated by the sale of the scrap remaining of the Soviet space program. Week by week she sold the shiny wreckage of her space faring dreams. Most of it could, if properly treated, still be used. In fact, some well-heeled western corporation had bought the last two of the Energiya boosters and had sent a load of water into low Earth orbit yesterday. They intended to actually launch a manned Soyuz capsule after it tomorrow along with some additional water. Some sort of private research into a missile defense system was what she had been told. Interesting, but not in the same league

Robert L. Barrow JD, MD

with her other business. She was also responsible for technological exports in general. What raised her concern was who was buying tactical nuclear warheads? This was a well-known ingredient for disaster on a global scale. The other thing that worried her was the fact that this man left so few recollections of his actions.

The first shots struck the cheap bricks of the alcove leaving the whine of ricochet and the unmistakable ratcheting of an AK-47 in the stinking air of Almaty. Katerina Yerisivloskaya was already on the way down to the ground behind the decrepit Russian made sedan parked at the curb with her machine pistol clenched in her diminutive grip before the chips struck the pavement. The first round from her weapon caught one of the assassins in the neck and he fell from the roof into the street. His accomplice ducked behind the parapet dodging her second round. Katerina rolled over in time to see the head of her third assailant clear the parapet. A heartbeat later, her third round entered his face just adjacent to the bridge of his nose and he ceased to be threat.

The living gunman on the other side of the street broke the sudden silence with a few automatic bursts through the windshield and windows of the sedan showering Katerina with glass. Another thrifty burst flattened the bald front tires of the sedan and sent a few metallic fragments whining through the air around Katerina.

“Merde!” Katerina said beneath her breath. “There is only so inept these assholes can be. Given enough opportunities, they could get lucky and I could get dead.” Her enemy shredded the rear tires of the sedan and one of the obligatory fragments of shrapnel tore a ragged hole in the lining of her long coat. A thin line of blood appeared along the smooth skin of her right calf about nine inches below the knee. Then came the welcome sound of an AK-47 hammer falling on an empty chamber.

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Katerina leapt forward and a couple of shots from her pistol taught her assailant to duck behind parapets. Unfortunately, for Katerina, he had another clip for his weapon. In a period best measured in heartbeats, a prolonged burst of automatic fire brought down some of the masonry blocks of the alcove adjacent to the narrow sidewalk. One of these interrupted its fall to earth glancing off the side of Katerina's head just behind her right ear and after stars came blackness.

Gunfire awoke him from idle speculation as he tailed the tall attractive woman agent as discretely as he could manage. He crouched in a doorway instinctively as the first shots rang out. He watched her take out the first two gunmen and the other people in the street fade from view. He was not in a good position to see the masonry hit the woman, but given the sounds and the sudden hush in the gunfire, he could tell that if he intended to have any impact on the outcome, it was time to act. He watched as the surviving gunman descended to the street and crossed to make sure of his victim. A single shot from his revolver lifted the assassin and flung him like a rag doll between two cars on the other side of the street. He rushed down the street to where the woman lay crumpled on the sidewalk.

He looked her over carefully before deciding whether she ought to be moved. She had a small laceration on one leg and had a bloody wound behind the right ear. Tall, at least five foot eight or nine, which was very unusual for someone from this region of the world. She also had dark red hair, marking her as a foreigner like himself. She was breathing evenly and as he watched, she began to stir. He knelt down next to her and was helping her to sit up when he heard the snick of a safety being taken off overhead. He turned and fired at the sound and managed to catch the man with the carbine in the neck with a

Robert L. Barrow JD, MD

single round from his revolver. As he was shooting a .357 magnum, the man's head almost left his shoulders.

Suddenly there was a hard object pressed into his right armpit.

"It is an interesting night in Almaty yes? It would be a good idea to place your firearm down at your feet." The words in French with a rich alto voice were in sharp contrast to the machine pistol aimed at his heart. "Perhaps you will be telling me who you are and why you have been following me."

"I am Jack Knight. You are Katerina Yerisivloskaya. I know who you are because we are engaged in some common business. We were supposed to meet about five minutes ago in a restaurant about a block and a half down the street to discuss an export permit. I think we just happened to be on the same street when I saw that you were being set upon by gunmen. Perhaps I should not have interfered?" The man's French was every bit as good as hers. She slowly removed her weapon from his armpit and gestured with it to the pistol lying on the ground.

"No, Thank you for your assistance. I am just becoming more careful with weapons since people began shooting at me. That is, other people's weapons. You are American." This last was spoken in delightfully accented English.

"Yes, I am. Is my French that bad?" Jack replied in English also and slowly retrieved his pistol from the ground and holstered it.

"No, your French is very good and until this moment I had thought from our telephone conversations that you were French."

"Is it my clothes? I am not wearing a sign on my back or anything like that am I?" He assisted the lady to her feet.

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“No, I can only tell you that from my experience that no Frenchman would carry a cowboy cannon like that. I have never seen any Frenchman that shot so well under pressure. If you had tried to convince me you were French in the face of this contrary evidence, I would have shot you.”

“It is good that I am a fundamentally honest person.”

“Yes, and also handy on the scene with large firearms. Shall we attempt to complete our appointment?”

“You know, you are still bleeding.”

“Not as much as some.”

“ We should see to your wounds. Perhaps we should try to avoid destroying this most becoming dress more than it is already. By the way, I don't recommend the local hospital.”

“Luckily, that will not be necessary. I was only stunned and you know how it is with scalp wounds. They look much worse than they really are. The leg wound is only a scratch.”

“The fact that you're still bleeding might interfere with some of the other patrons enjoying their meal.”

“Possibly.”

“And your preference would be?”

“Let's go see my Nina.”

Ekaterina Terescova Yerisivloskaya was the grandchild of a Russian soldier sent to Kazakhstan to assist in the purge of 1933. He had taken his pick among the Kazakh women dislocated by the purge and gotten her pregnant without benefit of marriage or for that matter her consent. He was young and impetuous and ruthless and the object of his “affections” was but fourteen. In Kazakhstan - of course, it was not called that then - this was a familiar pattern. The invaders moved through, leaving their bastard seed to sink or swim in the dry spaces of central Asia. When he also became a victim

Robert L. Barrow JD, MD

of the purge, he was not missed. Even Stalin did not kill everyone. He left the “camp followers” as Katerina’s grandmother became upon his “unfortunate” demise. She could not go back to her own people, as her rape by the invader made her an outcast in the Kazakh patriarchal society of near nomads. Katerina’s mother was born into a new world that the invaders brought seeking the few fertile areas to grow grain, mines for metals and coal and a new population to add to the burgeoning rough weave that made up the Soviet Union. Natasha, as her mother called her, grew up with the benefits of the new schools including indoctrination into the political correctness of Stalinist communism. When she was eighteen she went to one of the new cities to work in a factory where she caught the eye of a young German technician imported to run the factory and a match was made. Katerina was the fourth of their six children and came along in time to reap the benefits of his joining the party. She was sent to a special school reserved for party members and was allowed secondary education, as she was bright, ambitious and quick to take advantage of opportunities. She was trained in aerospace engineering. Because of her father’s position as a loyal party member, the KGB recruited her. She rose rapidly through the ranks and, after her training in the Cosmonaut corp., was a Major when perestroika became an international word. This led to freedoms, which resulted in the dissolution of the Soviet Union. At that time, she was back in the land of her Grandmother’s people stationed at the Baikonur Cosmodrome. Her grandmother was still alive and working in a menial capacity in one of the large government buildings in downtown Alma-Ata. It seems that Nina’s (Not her “real” name) pension was not sufficiently funded to survive the changes in the state. Her location did however make her an ideal contact and operative for her granddaughter. Their relationship was one of Katerina’s secrets and one of the things that her grandmother loved best. They were able to meet at her “Nina’s” apartment on a regular basis.

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Earlier in the day, she and her grandmother had discussed her coming meeting with Jack. She recalled that her Nina had asked her about who "this man" was.

"If I knew that, it might not be necessary for me to meet him! It is enough for me to know that he might be an enemy of the people."

"Which people is it that he may be the enemy of? If he intended on using these devices here, he would not be so stupid as to meet with the secret police. Why must you meet with him in the city at night - especially in this place where infidels drink?" Whatever else could be said of my Nina, she is not foolish and in her seventies is not so old. Although she had long since lost much of her faith in the Prophet, she referred to anyone who used alcohol as infidels. I did not enlighten her to the fact that I occasionally had wine or vodka when it suited me. Her aversion probably resulted from her short acquaintance with my grandfather.

"It goes without saying that owners of nuclear weapons are the enemies of the people as thermonuclear devices are of no use in hunting. This man is very intelligent and educated, which does not fit a religious or nationalist fanatic profile, so I have no insight into what he intends to do with these bombs. He could not have gotten the bombs elsewhere. I am most interested to meet this man because his motives are so difficult to understand and predict. Would you rather I brought this stranger home to know where I live!" I must occasionally present my grandmother with an opportunity to push her nose against reality.

"No. " Nina said slyly. "I would rather that he be taken far into the desert, questioned with hot iron, and left for the carrion birds." She was not fond of having her nose rubbed into it.

"Old-fashioned and unnecessarily messy, Nina. I will use more efficient and convenient means should they be

Robert L. Barrow JD, MD

required. He may be so egotistical that in the proper situation and with the proper inducements he will tell me without me having to ask questions.”

“I won’t have my granddaughter play the whore!”

“Nina, I will do what is necessary as I always have but I appreciate your concern and will not compromise my own security.”

T minus – 00:00:16:45:30

So much for my attempts to not compromise my own security. Here I was bringing the man I was most concerned about into my secret place - my grandmother’s apartment. There were a number of things on my mind. Why this man, who had saved my life, was also trying to acquire tactical nukes was at the top of the list, of course. Also of interest was who was trying to kill me and why. It was possible that my injuries were more severe than I thought. I really had no clear idea why I was bringing this stranger into this concealed part of my life. I pride myself that I am a good judge of character, but to walk into my grandmother’s house, bleeding about the face and head with a stranger might not have demonstrated my best judgment. The bleeding had almost stopped and I was beginning to second-guess myself, when we arrived at my grandmother’s apartment. It was one of many in the six-story block of dirty grey-brown concrete pseudo stone on the northeastern edge of the questionable district. Nina lived in the middle of the third floor on a corridor, which ran around the circumference of the building. Her apartment was reached via a dark stairwell at the corner of the ugly block. I was still a little light headed from the concrete hitting my head and the cut was oozing fitfully yet. The cut on my leg was clotted. Two of the four fluorescent fixtures set into the ceiling were pulsing ineffectually as we walked past the first four apartments. Three of the peepholes set into the metal doors gazed balefully into the dingy passage. The fourth was dark. I knocked on the door.

It was not immediately clear whether anyone was at home but I heard a rustling that usually meant that Nina was getting out of bed and preparing herself to come to the door. All the small subliminal clues seemed to be present and accounted for. Eventually, the door opened and Nina was standing in the doorway and what appeared to be a small cannon was trained on my rescuer's forehead. " You will be taking off your overcoat now. You will be doing it very slowly and in most obvious manner but without delay of needful time." My grandmother's Russian was, after almost sixty years of nearly daily use, still on a rudimentary level. Her meaning however, was clear enough and without turning, I heard my companion reach for his lapels and begin to pull them back from where they met in the middle of his chest. I walked into the apartment. It would not hurt to have my companion of the last few minutes disarmed. As it was not my idea, I had no reason to apologize. I really did not think Nina would kill him after she had rendered him harmless. I walked into the bathroom and began to clean my wounds. As I had suspected the still bleeding head wound was only a scrape. I cleansed it and applied a stinging styptic. It took somewhat longer to get the dried blood from my hair. It left my hair wet and whatever style it had had washed down the sink - so much for glamour. The wound on my leg was not, however, as superficial as I had originally supposed. There was in fact a small chunk of metal just visible at the rearmost edge of the wound. I took as good a grip on it as I could manage with a pair of Nina's tweezers and managed to jerk it out. It hurt worse than the wound when I received it. I said a few irreligious words and made a few impossible suggestions in the process. The wound, which had stopped bleeding before my ministrations, began making up for lost time. I thoroughly cleaned it out and was careful to be as sure as I could be that there were no other obvious foreign bodies. I may have made other obvious use of my military vocabulary. The sounds present during the other more prominent sensory input were not sufficiently memorable. It

was after I finally finished with the peroxide and antiseptic and gotten the ugly thing to stop bleeding again that I noticed that my good satin shoes were ruined. After removing my ruined shoes, I then noted I had also ruined my dress and other accessories. Someone was going to have to pay. Oh, I had already decided to kill whoever had attacked me; I now intended to kill them slowly. It was going to have to be the whole job any way now. I got a tepid shower. I wondered how Nina stood it on a cold morning. I grabbed one of Nina's robes and made my way into the living room.

My American rescuer was down to his underwear, socks, and a gag and was hog-tied with an extension cord in the middle of the living room floor. Nina had removed an arsenal from his person and was going through his wallet and other effects, which she had placed, on the coffee table. Her shotgun was leaned against the wall. She seemed to be in an abnormally good humor as she counted his money and eyed the shiny credit cards. She looked up and smiled as I opened the door. "I have a large old trunk. Shall we strangle him, or bleed him into the sink?"

I laughed and tried to remove his gag. She had secured it to his ankles behind his head. "Nina! I thought it would be alright for you to get his weapons while we talked, but this is too much!"

"You don't intend to waste a bullet on this man who has injured you, do you?"

"I don't think this man has done anything but good for me at this point, Nina. The ones who attacked me no longer breathe." I began to untie his ankles and succeeded in getting his gag out. I did not think that he could speak Kazakh, as he might have been a little more agitated with all this talk of strangling and bleeding.

"If this is the way you treat the people who save your life, I never want to see how you deal with the ones on the

other side!” The American was somewhat out of breath. I do not think he could breath too well in his previous position. I finished untying his hands. He sat in the floor rubbing his wrists and ankles glaring at my grandmother who had retrieved her shotgun and again, had it aimed at his face.

“Calm yourself my friend. No lasting harm has been done and I am sure my grandmother was only trying to protect herself and me.” I gave my grandmother a hard look over my shoulder. “ I will return your clothes, and after you dress, we will have our delayed discussion.” I handed him his clothes and gestured toward the small bathroom that I had just vacated.

I personally went to Nina’s bedroom and dressed myself from some of the older outfits I kept there for emergencies. I tied my wet hair back with a brown leather clasp, provided myself with some sensible shoes, and returned to the living room.

Jack Knight was just coming out of the bathroom. He was dressed in an expensive if nondescript manner and had an angry look that seemed to reach only his eyes. He was relatively tall for this part of the world - about six feet. He had short dark brown hair with gray-blue eyes. Looking closer, there were a few single gray hairs mixed in with the brown which, given his unlined features, must have been premature. Having seen him with a lot fewer clothes, I knew that he was built like a martial artist. “Would you like some tea?” I continued in English.

“Please, that would be nice. May I sit down?” I gestured toward the ancient stuffed chair beside the floor lamp and set some water to boil. I noticed that Nina still had a gun on him.

“Nina! It is all right! It will no longer be necessary for you to point that ancient shotgun at him. I don’t think you have any ammunition in it anyway!”

Robert L. Barrow JD, MD

“And that is another thing that he didn’t have to know! How do you know he does not speak Kazakh? He has a very tricky look to him!”

“Nina, make tea! I will handle the negotiations from this point.” She gave me a hard look but walked into the kitchen area to finish the preparations for tea.

“I apologize for my grandmother. She has had a very interesting life and occasionally it shows in how she treats strangers. Having been around her for so long, I forget how little she trusts people from outside.”

Finally getting the circulation back into his hands and feet, he appeared to relax slightly. “I, on the other hand, am still a little too trusting it seems.” His eyes flickered to his weapons still on the coffee table - out of reach.

“I think it best that we keep things as they are for the present - now that we are more comfortable. I am still concerned that I might have to disagree with your business ventures here in Almaty.” I brought my own machine pistol from at my side where he could see it. He looked uncomfortable again.

“I understood that the main reason we had to meet was to get my exportation permit signed so that I could take delivery of my goods and leave your country.” He appeared as if he were asking for more sugar.

“Some concerned persons don’t consider tactical nuclear weapons “goods” in any sense of that word. The fact that some of the breakaway republics of the former Soviet Union appear to think so, is just some individual’s greed for hard currency. I must personally decide whether the users of these “goods” fall within my definition of enemies of the people. I take this responsibility most seriously. You have been released from your bindings as a courtesy due to the fact that you saved my life earlier this evening. For all I know you set

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that up to get into my good graces. You may not be a decent person at all, just ruthless enough to sever all loose ends. If I decide that you are such a one, you will not leave this apartment alive.”

Chapter Four

A Meeting of Cosmic Insignificance

T-Minus 00:09:06:11:07:00

It was a great time to be alive. I guess this all depends on who you ask and what is happening to them at the time, but for me and mine, things couldn't be better. Who am I kidding? Things can always be better but then we are not the kind of folks who like to waste time complaining.

People were not building as much as they had in the early 21st but I had managed to sock away most of my income from those years and now made a tidy sum as a consultant. My wife's medical practice still provided a bit more than we really needed to live on. Even though two of the kids were still in school, they had obtained full academic scholarships and worked in the summer and so had ceased to be any kind of burden. Then again, they never had been. There had been the usual power struggles before they learned to be reasonable. Once we had established communications, we never lost them. Consequently, the terrible twos were the last of the terrible times. I am not saying that there were never any arguments. On the contrary, our offspring were as opinionated as their mother and me. That is fine with me. I did not intend to raise a bunch of pushovers. From time to time, my children have convinced me to change my point of view but that goes both ways.

Yeah, things were going well. Madelyne and I were getting along as well as ever and that was well indeed. We had agreed about most things from the time when we met and then agreed to disagree about everything else. We talk about politics and religion, but we do not discuss the great pumpkin - whatever that might be at the time. I am the only person on the

planet who can get away with calling her Mad. When she uses my name, she calls me Jake or JK with a cheesy French accent, which always sounds wonderful to me. Hey you! Has always been specific enough from Mad. Twenty-five years can really whip by if you are having fun. And when you have someone that you care about and kids you're proud of - along with the spiritual ease that comes with enough and good health, it's generally pretty much fun. It just keeps getting better.

October is also my favorite time of the year. Not hot enough for short sleeves or cold enough for a jacket - except perhaps on one of those cool clear nights when the extra pockets can come in handy. October, the month when the mosquitoes die. It is probably a little thing but I hate mosquitoes with the same intensity that they seem to love me - to three significant figures. As I stepped out on my deck and surveyed the purplish western sky, it occurred to me that I had not seen a mosquito since the first real frost of fall last Wednesday morning. Yeah, I love October. Add to this a crystal clear Friday night, a nice fat consulting fee freshly deposited into the bank, a pair of thick filets on the grill, a glass of a good Cabernet in my hand and you may begin to get the big picture. Consider as well that neither Madelyne nor I were working the weekend and you can catch a glimpse of my mental state. Madelyne was in the kitchen cutting up a salad and baking some spuds to go with the fresh asparagus she had put on the stove top with some slivered almonds. I was thinking of building the first fire of the season after dinner. A bright planet had been visible low on the western horizon for some time while I was heating up the grill and now overhead I could see a few of the brighter stars. It looked like Jupiter coming up in the northeast. Madelyne and I had chosen this hilltop in the middle of nowhere just so I could have this magnificent view of the sky. I never got tired of it but sometimes the tiny vampires drove me indoors. I love October.

I checked the steaks. On a fire this slow, it would take a bit more before a thick filet would need to be turned but you

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have to check them anyway. It is part of the fun. About that time, I noticed a car coming up the hill. We were not recluses but we but also were not expecting anyone and we built the only house on this hill. I guessed that we would be having company. Damn. As the car got closer to the house, I recognized that my favorite daughter Margaret had come home from school. It could have been worse. It might have been one of our sons and neither of them were vegetarians.

I turned the steaks over and went to help her with her bag. My beautiful daughter was doing her second postgraduate year in a good physics program at a small but well endowed university about three and a half hours drive away. At least, it took me three and a half hours to drive the distance. The two women in my life have been frequently known to cut that figure down a bit - especially if I, or one of the boys was in the car. I think they just do it to see if they can make us squirm. I had not let it get to me in years. The girls have a bit of an advantage as long as the State Police remained predominately male. I figure that it will catch up with them eventually. I used to drive fast too but then there were many things that I used to do. Car Insurance was already expensive enough. I returned to the grill as soon as the bag and offspring were safely in the house with Madelyne. Yeah, the steaks were done. Hot through and still pink in the middle. I took one last look at the velvety dark sky. Saturn was up at the trailing edge of the constellation of Pisces and I could now tell that Jupiter was at the trailing edge of Aquarius. I already knew from the look on my daughter's face that this steak would not taste as wonderful as I had anticipated. My daughter looked scared.

I had designed our house to fit where it was. It nestled into the hill like an acorn in its cap although if you will forgive me for saying so, a bit more subtly. It was not even visible from the road as a substantial portion of it was built underground. In spite of my rather major delving, we had managed to save most of the large trees at the lower level of the house. Their tops screened what appeared to be a grassy mound with a deck on

Robert L. Barrow JD, MD

one side and a number of rather expensive multi-paned rounded and arched windows of various sizes sticking out at odd intervals and heights. The house itself was built of reinforced concrete but it was impossible to tell this from either the inside or the outside of the house. I have always had a fondness for wainscoting, hardwood floors and solid but somewhat ornate woodwork. I had designed those windows to provide light and selected views of the nice valleys that surrounded our hill. Just for fun, I had designed the family room at the center of the house to function as a solar calendar and in its floor were brass markers where the late afternoon or early morning sunlight would fall on the solstices - morning for the winter solstice and afternoon for the summer solstice. Of course, they only worked if the sky was clear but in the fifteen years we had lived here, it had occurred often enough that it was always fun to wait and see if the chancy weather would come through. The circular fireplace near the center of the room supplied most of the heating required as it had its own heat exchanger in the flue. All five bedrooms had their own windows looking out on a different part of the world. There were small connecting bathrooms between four of the bedrooms a monster with a two-person tub and separate shower enclosure off our bedroom. The lower level consisted of the garage, utility room, shop, storerooms, and pantry. It was such an unusual design that the bankers would have none of it. Because of that, it had always been paid for. The mortgage interest rates were so high when I built it that it would have been nuts to finance it anyway. I was especially proud of the kitchen/ dining room located across the fireplace from my study off the family room. Large with a central island cook top/counter, two of the three entrances to the house entered here. Large high semicircular window facing south acted almost like a skylight and made this the brightest room in the house in any season. This window was very dark when I entered from the deck with the steaks and joined my wife and daughter at the counter. They were finishing the preparation of our dinner and

talking quietly. I noticed that they had zapped another potato and had found some zucchini to augment the asparagus and salad upon which, my daughter would insist. I got another glass from the cabinet and filled it with wine for my daughter. After refreshing my wife's and my own glass, I pulled another bottle from the rack and opened it. I left it on the counter to breathe. We helped ourselves to food, grabbed the necessary utensils and sat down to dinner. My suspicions notwithstanding, the steak turned out great along with everything else. We made small talk about the cold snap a couple of days before and what we had or had not heard from my absent sons. By the time that the conversation took on any significance, it was necessary to clear the table for dessert and coffee. We settled into some of Madelyne's chocolate pie and I asked the obvious question. "OK Maggie, What's his name and why have you let him get to you like this?"

My daughter's face, much like my wife's is quite expressive and it instantaneously appeared as if she were attempting to avoid projectile vomiting. "Daddy! What in the world are you talking about?"

"Well, Let's analyze this together. It is Friday night. Fall is your favorite time of the year and don't think that I don't know that one of the reasons is that you get to wear those fuzzy sweaters that emphasize your petite but quite well proportioned figure. Never in your life have you had trouble maintaining your excellent GPA or arranging for one of your admirers to ask you out and spend all his money showing you the best time he could manage. You are not ill and considering the portions of asparagus and zucchini that you put away, it does not appear that you have been recently. We have not heard much from you lately and that is generally the case when things are going even better than usual and you do not really want to fill us in on the details. In addition to the stated observations, let me add the expression on your face when I met you at your car. I do not read minds but I do know when something has you upset. Considering my previous observations regarding your expertise

in dealing with your world, I can only conclude that you are up against something that you cannot control. In the light of these facts, I can only conclude that you have met someone that does not love you as much as you think he should. Now tell me his name so I can go beat the crap out of him.”

After the thunderous end to my little speech I waited calmly, to hear her refutation and was aghast to see my little girl burst into tears. “Oh, Daddy! It is not a boy or anything like that. I have found out that the world is coming to an end!”

I carefully looked at the bottle of wine that I had opened before dinner and noted that it was still about half full. I immediately poured myself another glass. Margaret had collapsed in tears following her solemn announcement. Madelyne put her arms around the girl and said soothingly, “Of course it is dear. Why don’t you tell us all about it.” Having determined that my daughter could not be drunk, I began to be concerned. My daughter was not a fool and not given to hysterical or premature conclusions. In the past, her predictions had been very accurate especially when the issue did not depend on the actions of strangers. I sipped my wine, coffee forgotten and waited for Margaret to calm herself.

“As you both know, with a program as small as the one at school, some responsibilities are dumped on the postgraduates. There are some ongoing projects and faculty research, which provide experience for those of us doomed to academia of PhD programs. In addition to my regular course work this year, it fell upon me to continue the deep sky survey they began back in the early nineties. Until the day before yesterday, it had been one of the most boring jobs that I had ever undertaken. The objective is to find and classify long period comets and uncharted asteroids. My job consisted of calling up one screen of CCD data from our automated scope and others around the country and comparing it to earlier screens of the same area of the sky to look for differences. The project was much bigger at one time as they intended to find all the Apollo and Amor class asteroids and map their orbits. My little school is the only one

still doing this research. Most of the instruments dedicated for this purpose have now been allocated to variable star observations. Our program is still doing the survey because none of our tenured faculty is into Astronomy and the money they get to continue the study can be diverted into other research. It does not cost them too much to maintain and the labor pays to do it. Our department is best known for work in high temperature semiconductors. As Dr. Taylor told me when he gave me the access codes for the project, "That's where the money is." The old fart has not had an original idea in his career. This morning, I was doing the work thinking about this weekend when I found it. I thought at first that it might be a long period comet but it was so dim at the 26th magnitude that I soon decided that it must be an asteroid. A check of the ephemeris demonstrated it to be uncharted. Apparently, its orbital axis is almost perpendicular to the ecliptic and as things happen, it had a near encounter with Jupiter on its last pass about forty years ago and its orbit has changed. When I calculated its orbit from the previous CCD data, it has become an Apollo. As nearly as I can determine it will hit the Earth about 2:00 PM on July 23 - a little over five and a half years from now. Life as we know it will end."

"Do we have any Scotch left Mad?"

"How should I know, Jake? You are the only one around here who drinks it when Jack is not home. Why don't you go look? While you are there, bring some brandy back with you and a couple of glasses"

I returned shortly with a glass of Scotch, the brandy decanter and two snifters. Margaret was explaining Apollo asteroids to Mad. "You see Mom, an asteroid isn't generally that big a deal. Most of them orbit between Mars and Jupiter and do not cause a bit of trouble. There are some however, which have caused a great deal of trouble from time to time. These Apollo asteroids have eccentric orbits and get closer than an astronomical unit to the sun. Even these usually do not cause much trouble. When they pass through the orbit of Earth, the

Earth isn't here."

"Of course the Earth is here, where else could it be?" Mad was getting a little tired and Astronomy was something in which her husband and daughter were interested. She occasionally liked to look at Saturn through the telescope but that was about the extent of it.

"Right Mom, I spoke imprecisely. When the Apollo asteroids pass through the orbit of Earth, generally the Earth is in another part of its orbit. Every hour the Earth travels about sixty-seven thousand miles around the sun. It is extremely unlikely that an Apollo asteroid would happen to pass through the orbit of earth at the same time the earth is also present but given enough time a chimp can strictly at random type the Declaration of Independence. The last time this happened there were dinosaurs living around here. It is a bull's-eye of cosmic proportions. This time the monkey has got our number."

"Did you happen to bring any of this stuff home with you?"

"Still don't trust my arithmetic, do you Daddy? I counted on that so I brought the disks with the CCD data and the one with my calculations."

"Your math has been as good as mine for years Margie, I've just always wanted to look the devil in the eye".

"Well, lets set it up in your study and have a peek at the old boy."

My study is as you might guess my favorite room in the house. It is my professional library, home to my hobbies and a great place to read. I also keep the fastest computer in the house there. There is a small sofa in front of the window, which faces the northeast, and the morning light is good much of the year. I keep a couple of office type chairs at the computer and a venerable leather chair in the corner with a good light and side table. The rest of the room is shelves for books, musical instruments and other things, which change over time. Madelyne got to the couch first and curled up on it so that she

had a good view of her daughter and me. I woke up the computer and Maggie appeared with a short stack of DVD's. I got out of the way and let her call up the observational data. "This is the first observation that I could find. It was not actually from our instrument but from one whose funding died before it was reallocated to variable star observations. The CCD imager is actually a high-speed video sampler, which is sensitive enough to detect single photons. This data is great because I can print out composite images but I can also address any point in time during the observation although the image quality suffers and the smaller magnitude stars drop out." She addressed a gadget with the mouse and a small area of the image was enlarged to fill the screen. "You wanted to see the devil, here it is."

Madelyne spoke from the couch to no one in particular, "The dark adapted human eye can detect a single photon." True enough perhaps, but all human eyes in that study were focused on the video display of my computer.

Centered in the screen was a small line. It was not nearly as bright as the stars that surrounded it. "From this you calculated its orbit?"

"Of course not Daddy, I had to use other observations as well."

"Let's see some of the others."

What followed was a series of similar images that demonstrated the motion of the asteroid, as it appeared a small line on the CCD composite images. "Wait, go back one! Can you adjust the interval of the composite?"

She addressed a drop down menu with the mouse and a slider bar allowed her to adjust the length of the time interval of the composite image. The little trace disappeared and some of the dimmer stars disappeared. "I can adjust the sample length like this."

She returned to the previous image and by addressing a gadget with the mouse enlarged the tiny line against a field of stars. "I see what you mean Dad, let's see if we can get a time

off this!” She again enlarged the image.

Madelyne came off the couch like a striking snake. “What are you two up to here? That little streak looks like all the others!” She peered into the video screen as if she could require the tiny blip to answer.

“Not quite, Mom. What Dad noticed was that in this image the asteroid appears to pass in front of a star from the perspective of the CCD camera. By analyzing the time the star was covered up we can get a fair idea of how large that rock is!” She enlarged the image once again and now it was clear that a sixteenth magnitude star was behind the trace for a short period of its track. She plotted the entire length of the trace and then adjusted the image once again and measured the tiny spot when the asteroid covered up the star. She then used the numeric entry pad to do some calculations. “Based on the length of the observation, the sampling frequency of the CCD, the length of the track when the star was covered and what I know of the asteroid’s orbital velocity, the thing’s at least ten kilometers across!”

“Show me your orbital calculations.”

Margaret placed another disk in the drive and brought up a graphic program. “This is an ephemeris program. I hook up to the old NASA database every month or so and the positions of the minor planets, comets and artificial satellites are updated. The program itself is close enough for the major planets and their moons.” She called up a graphic that showed the solar system from above the plane of the ecliptic and about seven astronomical units out. It denoted the planets with their alchemical symbols and the bright stars and galactic features with numbers and Greek letters. The planetary orbits were pictured as colored ellipses. “This is the system as it appears tonight. I will add the new asteroid as a red five pointed star.” She used the mouse to open a menu and the asteroid was visible as a small red star just in front of the imaginary point of view. “Now, I’ll project its orbit back as far as I have been able to extrapolate and add the observation points as blue dots. The

earliest is five years ago.” A dozen or more blue dots appeared above the plane of the ecliptic and were joined by a red line originating with the red star. The red line sloped sharply upward away from the plane of the ecliptic. “Now, I’ll extrapolate its path into the future.” She pulled down another menu with the mouse and the red line extended down beneath the plane of the ecliptic at a point near the orbit of Jupiter. It came back toward the ecliptic and intersected the green line that represented the orbit of Earth. “Now, I’ll show the position of the planets when the asteroid passes through the orbit of the Earth.” She addressed another menu and the lines disappeared. The system was then displayed as seemingly unrelated colored points. She then used the mouse to change the perspective and we were treated to views from all sides. It was apparent that the red star and the green dot were superimposed. “Checkmate.”

“How accurate is this program Maggie?” This was not my first rodeo and I had seen a few very pretty programs in the past.

“It’s as accurate as there is, Dad. I used this program to guide a laser satellite communications project I worked on last semester and at terrestrial distances, it was accurate to within a small fraction of a meter. Over the distances, we are talking about here maybe hundred and fifty kilometers one way or another. The Earth is almost thirteen thousand kilometers across. Even if it is three hundred miles of a six to ten mile chunk of stony iron asteroid will not miss.” She altered the display to enlarge the earth and showed the likely area of impact at the South Pole with a ring around it for the expected error.

Madelyne had been quiet during this last bit of explanation but now she spoke up. “OK, so we have a big hole punched in Antarctica. So what! It is going to make a whole lot of crushed ice and might kill a few penguins. It does not look like it gets within thousands of miles of any inhabited areas. Why are you so concerned?”

Margaret got that look on her face that told me that I had

the ball. Madelyne was very intelligent and an excellent physician but her training had not left time for a truly broad exposure. Her main hobbies besides raising our children, keeping me alive and the little bit of cooking that we did together were gardening and reading the occasional romance or mystery. The problem was to give her the necessary information without talking over her head or sounding condescending. It was a familiar high wire act for me and I only fell off from time to time.

“Madelyne, do you remember when Margaret was talking earlier about how the last time this sort of thing happened there were dinosaurs living around here?”

“Of course I remember. It cannot have been more than an hour and a half ago. Do you think I have Alzheimer’s or something?” This was not going well.

“No, No, of course not Sweetie, I just thought it might have slipped by in the heat of the discussion.”

“I am not stupid, nor am I inattentive! Jake Knight!” This was not going well at all.

”Let me explain, Daddy.” There are many reasons why she is my favorite daughter.

“Mom, around sixty-five million years ago this area was very different from the way it is now. Most of the dominant creatures of that era were lizard-like animals that we lump together and call the dinosaurs. One of the big mysteries that puzzled scientist for many years is why after being dominant for hundreds of millions of years did they suddenly disappear. Many ideas were proposed from a change in climate like an ice age, diseases in the dinosaurs or the creatures or plants that they fed upon - the works. Then a scientist discovered that the cretaceous-tertiary boundary - the thin layer of clay above which no dinosaur remains are found - was richer in Iridium than the surrounding soils. He traveled all around the world and found that this was true everywhere. The most likely explanation for this even distribution of a rare element is an even layer of dust containing Iridium over the entire Earth

coinciding with the demise of the dinosaurs is that an asteroid several miles across slammed into the Earth about where the Yucatan peninsula is now. There were of course local problems where the impact occurred because these things are traveling about twenty-three thousand miles an hour with respect to the Earth and the kinetic energy released was greater than all the nukes in all the worlds arsenal being detonated at the same time and place. The asteroid and the area where it struck were vaporized and a huge molten hole was opened in the Earth's crust leading to increased volcanic activity over the entire planet. Additionally the dust kicked up high into the atmosphere obscured the sun for years. This killed most of the plant life and the food chains it supported. Because not as much sun reached the Earth's, surface it cooled off quite a bit with glaciers reaching as far south as Louisiana. At least seventy-five percent of all species alive at the time of this disaster became extinct. This included the dinosaurs." Margaret poured herself a sizable glass of brandy and sat down.

Madelyne took her glasses off and cleaned them with a clean white handkerchief she kept for this purpose. "I see." She poured herself some more brandy and faced me from the couch to which she had returned. "Well Jake, How do you intend to deal with this?"

This question from anyone else would have seemed mocking or ridiculous but my wife honestly felt that I could do something to avert the end of the world. My quiet evening at home with my wife had turned into something else altogether. I was saved from making an immediate reply by lights in the drive. I went to the door and greeted my oldest son Jack.

I have never understood my son Jack. I have been told that he and I are just alike but I feel that the similarity people see is like that between a thorn bush and a cactus. We arrive at much the same external expression but we get there by very different routes. Like all my children, he is very comfortable with computers but unlike my daughter and I, he used them for things like spreadsheets, statistics and foreign languages. He

used them for other things that he could not discuss with me. We have a strong mutual respect and defer to each other in the areas of our expertise that are comfortably as different as daylight and dark. He had finished school several years ago and had been recruited to work for some obscure branch of the government service that required him to travel a lot - usually at night. His comings and goings were always without notice and I do not know when I had been this glad to see him. "Jack! What a wonderful surprise."

For a young man, my son has very serious eyes and he looked me over as he came in the door and shook my hand. "What's going on? I notice Sis is home."

"Oh, there are a few things that we have to discuss. Can I fix you a stiff Scotch?"

"Thanks, Dad. I will just throw my bag in my room and splash my face. I'll be a minute."

"Join us in my study when you're ready."

I rejoined the girls after I fixed him a drink. When he arrived, he had changed out of his suit into a sweatshirt and khaki pants. He hugged and kissed his mother and sister and then sat on the couch with his mother. "What are you doing here on a Friday night Sis? What's his name and why have you let him get to you like this?"

Rather than a tearful outburst, this question now generated wild hoots and snorts as three somewhat over wrought people allowed their nervous energy to dissipate in laughter. My son first looked confused but then caught the bug and laughed himself. "OK, OK. So what brings you home on a Friday night in sweater season?"

The laughter at this point took on a hysterical quality especially when Madelyne told him, "We are discussing the eminent destruction of life on Earth."

At his outraged expression, the laughter died and the discussion took on its earlier somber quality. "Maggie has discovered an asteroid which it appears will collide with the Earth in a few years. She came home to discuss it with her

Father and I.” It was just like Mad to cut to the chase especially when it appeared that our time was so limited.

“Show me what you’ve got.”

Margaret resumed her place at the computer and went back through the evening’s revelations. It did not take as long as there were no more discoveries. “We figured out this thing is between six and ten miles across a little earlier. That could be a minimum as we don’t have other occultations to determine the axis or orientation as it crossed in front of the star.” She then demonstrated the ephemeris program and its prediction of a collision.

“Who else knows about this?” My son’s question had occurred to me only minutes before during my daughter’s demonstration. He had known about the asteroid a half an hour. Cactus and Thorn bush.

The question took my daughter by surprise. “I don’t know, maybe the only people who know are in this room. I am the only student who has access to this data and none of the professors cares enough to look. This data is available only to programs working on the sky survey. I think that we are the last institution with funding.

My son visibly relaxed. “Good, I don’t want this information to leave this room.”

“What information?” said my youngest son as he entered the room with a glass of milk.

There is that short moment of silence that occurs after the flashbulb goes off. Everybody blinks and their cardiac rhythm resumes. “Where did you come from Bob?” I love my youngest son but I can never predict his actions. Robert and I had the toughest time arriving at an understanding of any of my children. He had left high school early and had taken an equivalency test to enter college. He was only nineteen but already in his junior year at the local university where he was wasting his time in studies of art, history, philosophy and music. He lived with some friends in town and they generally spent their weekends traveling around playing as a band. On

top of all of this, his sudden appearance had almost caused me to lose control of my bladder.

“The guys dropped me off at the bottom of the hill when I told them I felt like a little walk in the dark. I love it out here especially when the moon is not up. I came in through the garage door and stopped in the kitchen for a glass of milk. I did not think anyone else was up but with all the cars, when I saw your study light on I just came on in from the kitchen. I did not mean to scare anyone. What is going on?”

“Sorry I snapped at you son. You just scared the pants off me.”

Even though Jack wanted to restrict further dissemination of the news, there was never a question of not telling Bob the news. So the CCD data, the asteroid images and ephemeris program were all brought into play for the third time. My youngest son, though not much of a technical whiz, quickly caught on to the significance of the upcoming collision. By this time, it was past midnight and it had been a long time since dinner. For that matter, Bob and Jack had not had any dinner so we all pitched in, made a snack, and sat down at the table to eat. As we sat together and ate, each of us considered the news in silence.

I had my mouth around another piece of Madelyne’s chocolate pie and thought about where the water hits the wheel. I was practically certain that I would not be willing to just sit back and let this disaster happen. None of us are the kind of people who would tie one on or take sleeping pills to avoid the issue. For that matter if it could not be avoided, I wanted to be here to spit into the devil’s eye. Of course, what I really wanted was something a bit more effective and not some symbolic gesture. “Maybe the government could send a missile and blow it up.” It sounded lame to me. I was not alone in this opinion.

“Come on Daddy, If you could get a missile to it in time to do any good and had a nuke big enough to do anything, the best you could expect from a deal like that is to break it into pieces which would still be on a collision course with Earth. The

results would be the same.” My daughter is so practical sometimes it makes me crazy.

“I don’t know Sis, Dad may have something there. If you got the bomb to go off on the right side of the asteroid at the right time, maybe you could change its course - Like a cosmic game of pool!” My youngest son had some familiarity with the game at least - and the optimism and enthusiasm of youth.

“I don’t know of a government on Earth that has the type of precision firepower that little trick would require. On top of that is the problem of delivering the payload in time to do any good. From what I understand about orbital mechanics and I am not the guy to ask about that, in order to be effective, it would have to occur with the asteroid at the greatest possible distance from Earth.” Jack, as usual had some insight into the virtually insurmountable problems involved.

Madelyne was fingering the edge of the knife she had used to cut the pie, her unfocused gaze on the clock said to no one in particular. “If it were done, when ‘tis done, then ‘twere well it were done quickly.”

“One bomb probably won’t be enough. To be most effective the blasts would have to be perfectly placed and be separated in time. Lets get back to the computer.” Margaret had been doing some calculations on a scratch pad from a drug company. We went back into the study and she brought up the ephemeris program again.

“I didn’t know you knew any Shakespeare Mom!” Robert’s focus was fuzzy indeed if he thought that was important right now.

“As I see it the mechanics are moot. No government has the necessary will to accomplish this rescue. Since the collapse of the American Space program after the second shuttle disaster and the splintering of the USSR, the deep space capability of the Earth has been abandoned in the name of deficit reduction. The hardware is out there, but the ground support required to do the job is beyond contemporary budgetary restraints.” Although Jack was right, he was

occasionally too practical.

“Just because you work for the government Jack, it doesn’t mean that it is the source from which all good things flow. Dad is right. A proposal like this would not get out of the steering committee in time to be shot down by the budget nerds. This looks like a job for private enterprise.” Robert was obviously getting tired as his associations were becoming more tangential as the evening progressed.

“ I think that a manned mission would be necessary to properly place the charges and then double check the results and blast again and again after that if necessary.” Margaret was now doing her calculations with the numeric keypad in the ephemeris program.

“I guess with enough money in the right hands, no provision for a ground crew and a whole lot of luck, it might be possible for a private company to do this. The problem then becomes finding an economic incentive to risk capital and lives in what will likely be a one way trip.”

“That’s not a big problem. Asteroids are made of valuable stuff. The thinking is that there are probably three distinct types - Stony, stony-iron and carbonaceous. This is based on the types of meteorites found on earth. A typical one-kilometer stony iron asteroid contains billions of tons of high-grade steel as the iron contains about five percent nickel. There are also hundreds of tons of platinum, iridium and gold. Separating the materials out would require a few hundred dollars worth of aluminized Mylar to make a parabolic mirror to focus the sun and a good strong magnet. Just vaporize the sample of ore and let the magnet pull all the nickel and iron to one side. I guess you could use a centrifuge to separate the other metals. I haven’t thought much about it.” Margaret tended to sound like a college professor even when she mentioned things like hundreds of tons of platinum, iridium and gold.

“Hundreds of tons?” Jack was now apparently doing some calculations on his napkin.

“Sure.” Margaret had already started to think about something else.

“And you say that this asteroid that you discovered is at least six miles across?”

“Yeah, ten kilometers give or take a kilometer or two.”

“Can any of you geniuses think of a way to keep this thing in the neighborhood without it being a menace?” Jack had that glazed look in his eye that he got when he was about to double his stake in the commodities market.

“If we could delay the asteroid by as much as four and a half minutes, it would miss the Earth by a good thousand miles and if we could delay it by five and a half minutes it looks like it would also just miss the moon which would be going away from it in its orbit around the Earth. This would rob it of much of its angular momentum. I don’t have a good feel for the mathematics yet but it could be captured by the Earth moon system.”

“Maggie, aren’t you ignoring the angle of approach? Your first extrapolation of the thing’s trajectory has it approaching from the South. To get that lunar braking effect your angle will have to be a lot closer to the plane of the ecliptic.”

“No Daddy, that is part of my solution for the five and a half minute delay. If I change the orbit here, (She indicated a portion of the red curve at about the orbit of Jupiter with the cursor.) “I cannot really do much about the thing’s orbital velocity, so I have to make it travel a longer path. Another blast here (She indicated a spot just below the plane of the ecliptic just inside the orbit of Jupiter.) will also change the orbit to be more into the plane of the ecliptic although not quite. It will still come in from the South but now from the South west and it encounters the moon on the way out. As you know the moon’s inclination, is about five degrees and the near encounter with Earth will cause it to lose orbital velocity as well as flatten the angle of attack. If we work it right it will be captured into a resonant orbit in the Earth - Moon system.”

“So how do you propose to change the orbit of this thing?” By now all sense of reality had begun to recede. Some of the things the kids were saying almost sounded like they could work.

“It is possible that I might be able to obtain the required special explosives from former members of the Eastern Bloc and at a reasonable price-they’re still sucking for hard currency.” Jack could always surprise me but this is ridiculous.

“What about the problem of getting there Jack?” He still had not realized how impossible this thing was and I needed to bring him back down to Earth.

“Since the collapse of the American and Soviet space adventures there are a number of large rockets available on the market by the pound for scrap. Most of this equipment could be brought back into operating condition by a competent engineer.” Once he settled onto something, he was like a pit bull.

“OK, bombs and rockets. What about like support equipment? Living space! The orbit of Jupiter is not just down the street you know. For goodness sake, we would have to survive to get there to do this!” I was beginning to lose my composure in the face of this idiocy.

“Right! So, let me get this straight. We buy a bunch of second-hand nuclear weapons from the ex-Communists, use obsolete and also second hand scrap American and Russian rockets to hightail it out to the orbit of Jupiter where we land on a previously unknown asteroid, dig in and use the nukes to change its orbit and thereby save the Earth and make ourselves ridiculously wealthy in the process!”

“Yep, that about sums it up.” Jack had clearly lost his mind. It must have been the shock of learning about the end of the world.

“What do you think the likelihood of success of this stunt is Margie?” All this time she had been doodling with her calculations.

“Dad, if what Jack says is true about the hardware

requirements, I feel that with the right people on the job that there is at least a twenty percent chance of changing the orbit of the asteroid, but we need to get there in the next year and a half or so if the plan is going to work.” Margaret had always been inordinately fond of science fiction.

“Bob, would you be crazy enough to go on a stunt like this?” Bob had been taking it all in and in spite of the facts seemed to be taking this lunacy seriously.

“Dad, if you were the design engineer of the project and Sis was doing the numbers to drive the gizmo and Jack handled the acquisition and economics, I would come along if only to wash the dishes and dig ditches.” Bob was obviously too gullible. I appealed to the final authority for reason.

“ Well, Mad - what do you think?”

“Oh Jake! I knew that you would come up with something! And Robert, I’ll wash the dishes, you’ll have to hand your father his wrenches.”

The room seemed to spin and my eyes started to unfocus - and I really had not had that much scotch. The clear light of reason was revealed as a suicidal trap. All my skepticism had done was force my children into the type of hard precise thinking the situation required. “Well, Madelyne, I guess we better put the house on the market. I think we are moving away.” And that was that.

Chapter Five

The Best Laid Plans of Mice and Missiles

T-Minus 00:09:05:07:15

Well, the night was pretty much burned through by the time that discussion ended. It was somewhere on the far side of the wee hours of the morning when the kids finally went to their rooms with the earlier doom and gloom totally dissipated. I was almost totally exhausted, as Mad and I got ready to get into bed. It was all I could do to floss, brush my teeth and splash my face. The evening had turned out so differently than I had planned. It was like a new day in spite of all that. I had gone from despair to a keen edge of excitement all in the space of a few short hours. How odd that all of our children had picked tonight of all nights to come home for their various reasons. As in everything else, there was probably more here than met the eye. I mentioned it to Madelyne but she said nothing - she was brushing her teeth at the time. She was acting as excited as the kids and I had not seen her like this in years. She was not getting old but she was getting set in her ways and this news had busted the rust off the threads. As I reflected on it, my threads must have gotten rusty as well. I have always loved a new project and I was as excited as the kids myself. Too soon in the job to have made any mistakes and always the challenge of avoiding them. I had a few little tricks left up my sleeve and wanted to get up early for some “me time” to work out the jams. I loved my house but it was clearly time to be moving on.

“What in the world are you thinking about Jake?”

Madelyne was as usual curled up against my back.

“The end of the world, and the beginning of the new one. You know, there are many things about this world I would change but wiping out as much as seventy five percent of all life would not be how I started. I guess I would be more selective.”

“Yeah, me too. I can think of a few people I would wipe out but I guess I would rather have the option of them never being born.”

“You’re not talking about abortion are you?”

“Now Jake you know that I don’t agree with abortion being used as birth control but you know I also don’t think that the choice a woman makes regarding it is any of the government’s business. What I was really talking about was a little button that I could aim at someone and they never would have been conceived. That being the case, I of course would forget that I had pushed the button. Murder without personal guilt.”

“Wait Mad. If the button caused them never to have been born then you would not have forgotten pushing the button, you never would have pushed it. The reason for pushing the button would never have existed so you would never have to push it. No guilt because no murder.”

“That’s better than I thought Jake. Why don’t you figure out how to make me one of those?”

“Don’t be silly Mad. You are forgetting I know how unreasonable you are when you are angry; furthermore, I am not the least bit suicidal. Now go to sleep. We have lots to think about in the morning.”

“Now Jake, you know I never get that angry with you.” Things suddenly got very friendly and sleep was further delayed.

Saturday morning was one of those beautiful fall days that happen after the middle of October. There was a light frost in the early morning hours, which burned off by, nine-thirty or so. I confess this is only hearsay from my testimony as I slept right through it. Madelyne had already gotten up and around. I

was finally awakened by the smell of a coffee pot left on after most of the coffee is gone. It was unfortunate that instead of awakening to the wonderful smell of fresh coffee it was to the stench of that thick black sludge that I began my day. I got up, pulled on some sweat pants and a shirt, and went into the kitchen to keep my house from burning down. I managed to rinse the pot before it needed to be scrubbed and made a fresh pot. I ate a bowl of cereal and took my coffee into my study where I found my family freely associating around my computer. Displayed on the screen was what appeared to be a technical drawing of the Space Shuttle External Tank. "Where did this come from?"

Jack looked as fresh as if he had had a full night's sleep. "I accessed a secure database that I knew about." Secure database and Jack knew about it - big surprise.

"So how recent is this information?"

"This is from the last manufacturing run about four years ago.

"Are these specifications accurate?" A good stiff dose of doubt helps keep you alive longer.

"As far as my sources indicate, only the fact that there is probably even less thickness of aluminum - an artifact of the design." Jack seemed to have his feet on the ground this morning. I began to wonder if this idea might actually work.

"What about thrusters?" This was the aspect of the plan that worried me the most.

"I think that I can get the two remaining Energiya boosters for a few million Rubles and I think that I can get a few Solid Rocket Boosters for a few hundred thousand dollars each." Jack related these numbers with an absolutely straight face.

"A few million Rubles. A few hundred thousand dollars. Right! What are you thinking of Jack! I can't get that kind of money together in a lifetime much less a few months!" I also had to consider that those boosters would only get us the first couple of hundred miles certainly not all the way out to the

orbit of Jupiter.

“Well, that’s where I come in. In my capacity working for the department of the government that I do, I come across information that if generally known would change the face of international business. I have access to information that if powered by a relatively small chunk of hard capital could rapidly snowball into the kind of money that we need. How much do you think you could get your hands on in the next forty five days?”

“I had to think about that. I had a couple of hundred thousand stashed away in mutual funds. Additionally, I had about sixteen patents that I had licensed but which were still marketable to the right concerns. Then there was this house, a few good stocks and Madelyne’s parent’s farm which was currently leased. When Madelyne’s parents died a few months apart a few years back, we did not have the heart to sell the farm. That did not mean that we could not. For that matter, the man leasing it had been hinting around that he might be interested. “ I guess that if I could sell everything for the right price and soon, I might be able to get near two million dollars.”

“That’s just about what I figured. I feel that I can turn that into six million in the next four months - if I do not get caught. I feel like we can get most of the stuff we will have to have for about four and a half million which would leave a million and a half for bribes and emergencies. Now all you have to do is figure out how to get us there alive and keep us that way until we can set up housekeeping.” I guess the biggest thing about my son Jack is that having said this, I actually believed that he could turn a quarter into a dollar if given a little time and half a chance. The real issue to me at this point was whether we as a family had the true desire to take on this responsibility. It would mean many months of hardship and scarcity. Add to this incredible danger with death lurking behind every door and window - if we could have a window.

“Have you kids really given this whole idea enough thought?”

At this, my youngest son jumped off the couch. “What do you mean Dad? Didn’t we settle all this last night?”

“Sure, we said some things last night, but in the clear light of day do you still want to try to do this? Last night, it was two in the morning and everyone had been traumatized by the news. Now everyone has had a chance to sleep on it and I wonder if we are all thinking the same way.”

There was silence and everyone seemed to settle into their seats. Thoughtful expressions appeared on every face. After a moment, Jack was the first one to speak. “You’re right Dad. Let’s reexamine the issues and then decide if this is the best course.”

“As I see it, if we do nothing, the world will end in about five and a half years. Is there any discussion or differing opinions?” I did not want to get lost in extraneous details right now. If I had to save the world, I would steal the money or anything else I needed to do what must be done. I really needed to know how deep we were willing to dig.

“We pretty much decided that there was no government on the planet with the will or means to accomplish the deed. I think this is the primary reason we decided to take on the job ourselves.” Bob could hit the nail on the head from time to time.

“The Congress has been in gridlock for the better part of two decades. Even if the Executive branch and the ruling Legislative bodies are of the same political party they can’t seem to do anything except travel first class and eat well. From an analytical standpoint, this seems to be a result of the corruptibility of our elected officials in the face of unchecked lobbying by the myriad of special interests. From a rational standpoint, even the constituencies that those guys represent constitute special interest of a regional nature. They are so busy trying to maintain their own pork barrels that the overall needs of the nation go largely unaddressed. They are so intent on their reelection that none of them has the guts to make an unpopular decision even if that is what the country needs most. Most of

the electorate is thoroughly convinced that their politicians are corrupt but they just hope the old crooks are senior enough to keep the local Federal money dump working. The result of this unenlightened self-interest is uncontrolled deficit spending without any major initiatives and most revenue absorbed by the entitlement programs. Although a superpower by default, the United States has become almost a third world country by the continued deterioration of the educational system, the decay of moral values and the oppression of the productive part of society by a tax structure which punishes initiative and rewards inaction. Of course this is just one man's opinion."

"Well, Jack, I think that most of us can agree with you in principle, the point being that Congress can't seem to decide whether to tie its own shoes much less arrive at a plan during a crisis!" Madelyne had her own feelings about the state of the government having more to do with emotional distaste rather than analysis.

"I think we would be foolish to count on the United States doing anything not so much because of the continued gridlock, but rather because of the lack of national will. During the development of jet aircraft, test pilots were killed left and right. I'm not saying that is anything to be proud of, it's just that after the moon missions and maybe this had something to do with losing the war in Vietnam, let something happen or someone get killed in space and the national reaction is to shut the whole thing down as if we can live in a risk free society. It got to the point that they would delay a shuttle launch for any reason whatsoever and those incredibly complicated machines had so many fail-safes that they would shut themselves down as often as not. After the second one blew up, the whole thing, shuttle, and space station - the works were just canceled. The USA just can't do the job." Margaret had wanted to be like Sally Ride when she was a little kid and she was still a bit bitter about not being able to.

"What do you think Bob?"

"Well, I agree with Jack and Sis, but I think some of

these things are symptoms rather than causes in themselves.”

“What do you mean?” I never knew where Bob was coming from - our educations and interests were so different.

“I think that the problem is much simpler than Jack and Sis say. Jack called it deterioration in the educational system and moral decay augmented by individual corruption in the congress. I think that the Senators and Representatives are in fact good representatives of the people that elected them. The problem is that they are just like them in terms of their strengths and weaknesses. They are so poorly educated for the most part as to be unable to understand that this danger exists much less arrive at a workable plan for averting it. They are so busy looking out for themselves in terms of getting reelected and staying out of jail that they do not have time to deal with other people’s problems anyway. They are just like the average person on the street. The difference is that the average person on the street would not be elected because his shortsightedness, venality and lack of care for his fellow man have not been carefully covered up by the political publicity machines that a true politician grows around him or herself. We would not vote for someone like us so we elect a fantasy image without the political problems that a genuine character would generate. People with real character do not want to be put through the scrutiny of which election campaign consists. This is where I think that Sis’s notion of a national will comes in. When all those test pilots were dying, it was classified. Therefore, not in the national news. When an Astronaut dies, it is instantaneously seen all over the world. It is a difficult thing to see men and women to die and the average person cannot do it even if it needs to be done. The fact remains that because of our obsession with publicity the United States is now paralyzed in the public arena. The only people in the government who can get things done are people like Jack and they do not talk about it. The Brits have some good stuff but no manned capability. This is also true of the Japanese and Indians. The French are as bad off as the United States and were not as well set up in the

first place. The Chinese will do it when they have the technology. They have the more casual regard for human life required for difficult choices as demonstrated by their draconian birth control program. They do not currently have the technology - thank goodness. This leaves the former members of the Soviet Union. They pretty much have the technology, casual regard for human life and a strong national will. The problem is of course that they have been killing each other for years and they no longer have the organization. For Gosh sakes, they let their space station burn up in the atmosphere just as the Americans did Skylab. I think we are pretty much on our own." I am going to have to stop underestimating my youngest son. That was the analysis that Jack had thought of but not spoken.

"OK, if we don't do it, it won't get done. Does everyone agree? Lets see a show of hands." I put my own hand up but there were already four hands in the air. "OK, I guess that settles that. Now what about the issue of secrecy?"

Jack was off the couch in an instant. I do not think that keeping this a secret is an issue! We decided last night not to let this information go any further!"

"We did not discuss it. You suggested that it remain our secret and no one said anything. I think that we should be more careful than that and I think that we need to talk about why. Why don't you share your reasons with us." Jack was accustomed to working in an environment where decisions about secrecy were automatic and I wondered if he had actually considered why it should be so in this instance.

"For one thing, if this information became public knowledge or even a state secret my name would be bound inextricably to it. If this happened, I would not have the freedom to use my classified information sources to make the money necessary to finance the project. The other thing that occurs to me is that if this were more generally known, the people who know the most about it would be silenced or discredited. The government has a big stake in maintaining

order. I think if people knew the world was about to end that civilization as we know it would end first.”

“Does anyone have anything else to add?” A cold silence filled the room as the reality of the need for absolute secrecy became almost palpable.

“OK, I think that Jack is right on the need for secrecy. We are going to be breaking all manner of international laws and until we are out of reach of the admittedly hamstrung governments of Earth, we could be stopped at any time. I felt that we should have this discussion now before we got into the design phase in order to insure that the need for secrecy was clearly understood by everyone involved. We will all have to make some sacrifices. For example, I would really like to discuss this with my brother Charles but that is clearly out of the question. In order to maintain the security of my design files I will now take my computer off line. Maggie, did you bring all the information regarding this with you from school?”

“I believe that I did. I also took steps to make sure that this is the only copy.”

“And you didn’t discuss this with anyone before you told us?”

“No. Not specifically.”

“Not specifically? What do you mean not specifically?”

“I discuss my work with Tom and he would figure out that something was up because I didn’t talk to him before I left yesterday. “

“Tom White?” Unfortunately, the name was too familiar.

“Yeah, Tom. He and I have been seeing one another again. I am sure he would know that I was upset. I was supposed to call him last night. With all the discussion, it slipped my mind.” There was something that my daughter was not telling me.

“Of all the people that you could have involved, Tom White! The man may be a pretty good chemist but anyone who leaves my daughter hasn’t got sense enough to know when to get on the bus!”

“I don’t think we would have broken up if you hadn’t thrown him out of the house last Christmas!” Was I never going to hear the end of that?

“I think that you overreacted then and I told you so at the time Jake. Margaret and Tom were just lying on the couch in front of the fire watching *Miracle on thirty-fourth Street* when you burst in as if you were insane, grabbed him by the scruff of his collar, and threw him out! You would think that you could trust your own daughter!” Madelyne had never objected to Tom and actually seemed to approve of the scumbag.

“It wasn’t my daughter I didn’t trust. Besides, I apologized to him.”

“Yeah, right, you apologized to him four months later when you saw him at his paper presentation!”

“He seemed to take it fine.”

“As a member of the associate faculty, you had just presented him with a fellowship grant to continue his work in colloidal dynamics of nanosystems. What was he going to do, punch you out?”

“Well, he would have had a tough time with that!”

“Lighten up Jake! He is not nearly as bad as you make him out to be. In many ways he reminds me of you at that age and my Dad couldn’t trust you either!”

“Must you also twist the knife, Madelyne?” At this, she giggled as I hoped she would. “It’s possible that I may have misjudged the boy but he let himself in for it. It may be he is the best guy in the world but Tom White is one of the last people I would like to have involved in this venture!”

“Did someone mention my name?” At this, Tom White strolled into my study as if he owned it. “I pulled into the drive a minute or two ago and when there was no answer to my knock, I came on in.”

“There is a doorbell you know!”

“Knock it off Jake! Tom, it is good to see you. I am glad that you could come. We were expecting you earlier this

morning.”

“We were?” You could have blown me over with a Japanese fan.

“You’re not still mad at me are you, Mr. Knight? Say, Isn’t that the Space Shuttle External Tank?” Of course, the top-secret display of the American Space hardware was still on the screen. Tom walked over and studied it more closely.

“Why Tom, of course he’s not. That is just the shape of his face. Bob, help Tom with his bags. I will get lunch ready. There are some things that we need to discuss.” Madelyne had a way of putting people at ease and taking charge in social situations. We had another houseguest and no one seemed to be surprised but me. Maybe there was more than the one program than the one that I knew about here at conspiracy central. Jack came over as everyone else left my study.

“Dad, I think that Tom would make a good addition to the crew.”

“Is everyone snowed by this guy but me?”

“Dad, you are the only one that can’t see the problem here. Margaret has been in love with that guy as you call him since her freshman year. Probably, the only reason why they have not married is that you seem so dead set against him and your daughter respects your opinion. In this matter, your opinion is a waste because no one is ever going to be good enough for your little girl. You have therefore never given the guy a chance. All that aside, Tom is a world-class industrial biotechnologist that even I know about professionally. I am not sure Sis would come along on this little trip without him. I have spent some real time with the guy, he checks out, and he is not afraid of a fight. That is why he is here today.”

“My little girl is in love?” Was it getting hot in here?

“Wake up Dad, and smell the roses or you’re going to end up with a snoot full of thorns. And Dad, I think he’s wise to the fact that something is going on.”

“OK, I’ll try to give him the benefit of the doubt.”

“He’ll meet you at least halfway. I like the guy and I

wouldn't settle for anyone not first rate for my little sister." Knowing as little as I did about what Jack did, if he did not like him, he might not be here.

"Well, let's go and get some lunch and I'll try not to count the spoons."

All things considered, it would have been difficult to keep our business a secret from Tom. While we were having lunch, Steve Griffin, the realtor that Madelyne had called before I got up as I remembered while in my sleeping stupor, came in to get our signatures on the listing contract for our house. Steve was a real go-getter.

"You're putting your house up for sale?" Tom had an instinctive grasp of the obvious.

"Yep." A difficult thing to deny when the man asking the question has just seen you sign the listing contract.

"Well, the world must be coming to an end!" When nobody laughed, I knew the jig was up. He looked uncomfortable and I could almost hear the wheels turning.

"Tom, after lunch, there are some things that we need to talk about." There was no sense in ruining the enjoyment of a perfectly good sandwich.

"Sure." He still looked uncomfortable and the normal mealtime conversation just was not happening. I washed down the last of my sandwich and stood up.

"Want to go for a walk Tom?"

"A walk sounds great."

"We will be back after a while." Tom and I walked out into the October sun.

There are few things as wonderful as a fall afternoon in the hills. The fall colors were at peak and the sun was warm with a cool breeze. A few white clouds scudded across an otherwise perfect sky. We headed down the path into the valley behind the house.

"Tom, I don't recall hearing much about your family."

"That's because there is not much to say. My parents were both only children who married late in life and so I never

had close relatives. When I was fifteen, they were both killed in a car accident. I finished high school the following year while the state was still arguing about who should have custody. When I went to college on scholarship after graduation, I was able to argue that I was an emancipated minor. The probate judge who heard the case took a liking to me and agreed that the only restriction was that I would not receive my full inheritance until I turned twenty-one. He personally held the estate in trust for me until I came of age. He would not take a fee and he made that money work hard. If you have heard me say anything about anyone, it was probably about the Judge. He turned everything over to me year before last when I couldn't get him to manage it anymore, but I still call him from time to time to talk and see how he is getting along. I still don't like to talk about my parents."

"I'm sorry, Tom, I didn't know any of that. What are your intentions regarding my daughter?" We were making our way toward the little creek. He stopped and looked me right in the eye.

"There is no point in beating around the bush is there Mr. Knight. Maggie and I want to get married. The biggest reason that we have not already is that you have always been so negative. I do not know what the problem that you seem to have with me but frankly; I am getting real tired of maintaining a fiction that Maggie and I are just dating. Everyone else knows that she and I have been engaged for over two years. Your wife asked me here this weekend and got Bob and Jack to try to be here because she wanted to get this settled. I have wanted to talk this over with you and kept hoping your attitude would soften up - looking for a good time to do so. The last time Maggie invited me to your house, you threw me out!"

"Well, Tom, why haven't you gotten married as you both wished. Margaret is of age and you did not need my permission."

"Would you have wanted to start out a marriage like that? Knowing that your wife's father who she is crazy about

cannot stand you? I have tried to be patient but I was determined to talk to you soon. I appreciate your saving me the trouble. So, what's it going to be? Are you going to be a horse's ass or are you going to let your daughter know that it is all right to do what she wants to do?" He was a little overcome and I think a little surprised by his own outburst. He turned and we both continued toward the creek. We walked without speaking, only the rustling of the leaves breaking the peace of the little valley. It is always easy to see where the mistakes that you make are when you look at them through the rear view mirror. Tom was smart, direct and obviously in love with my daughter.

"Tom, I haven't been as intelligent about you and Margaret as I should have been. As you may someday know, there is not a man born that is good enough for your daughter. I hope that you can forgive me for the foolish way I have treated you in the past."

"Of Course, Dr. Knight. I think I can guess how you felt. I have always admired you and your work and thought that we could work this out sometime. So, It's OK with you if Maggie and I got married?" He stuck out his hand and I took it.

"I guess that you better call me Jake, Tom. As far as you and Margaret getting married is concerned - you need to discuss that with her." I looked at the red and gold maple leaves floating downstream in the creek. I turned away and we started back toward the house.

"What's all this about you selling your house? This is one of the neatest places that I have ever seen. You can't have found something better."

I looked around at the green valley gleaming in the fall sun and the colors of autumn afire on the hills around us. "After you talk to Maggie and that gets settled, we have a few more things that we need to discuss." We walked back up the hill to the house.

Soon there was cause for celebration. Even though it was before the usual cocktail hour, we broke out the Champaign that Madelyne had been saving for this occasion and when that

was gone, the boys started on beer. My soon to be son-in-law looked a whole lot better with a smile on this face. I shook his hand again. "Have you discussed when this wedding is going to take place?"

"Why don't we finish our discussion?"

He was right. "Let's go into the study." The party then moved into the study. The seating was beginning to get a little tight in there but Tom and Maggie insisted that one seat would do. "Margaret, why don't you start?"

My daughter told the whole story up to our late night meeting with her data disks and the ephemeris program. At that point, Jack began with our plan and reasoning about how we were going to save the world. He left off with his plan to boost our money supply with his secret sources of information and our decision that absolute secrecy would be required. "Of course, that doesn't apply to you Tom." It was my turn.

"As you all know, the biggest of the logistical problems we face is being at the right place at the right time. It is a long way out to the orbit of Jupiter and we do not have as much time as we might like to get there. The Voyager space probes required a minimum of two years to arrive at Jupiter's orbit and they did not have to slow down. They just flew past. We on the other hand have to rendezvous and dock with an asteroid. That means that we have to match its orbital velocity exactly as well as being there at the same time that it is. We could of course wait for it to match its velocity to ours but avoiding that is the point of this discussion. As we speak, the Earth and Jupiter are on the same side of the sun. This is totally beside the point as Jupiter will be nowhere near the asteroid when we get to it. The chemical rockets that we have talked about acquiring will only get us the first couple of hundred miles. They won't do much at all toward getting us out where we need to be."

"What do you mean Dad? I thought that the boosters we were talking about were the most powerful that currently exist." This was well beyond Jack's areas of expertise.

"Right you are Jack but they also burn enough fuel in

arriving at low Earth orbit they become only so much scrap metal when they arrive there. There is simply no way of getting enough fuel into orbit to fly one of those rockets to the orbit of Jupiter. What we need is a more subtle approach. Do any of you remember when you were kids when I worked for the government before I became an independent design consultant?"

"Sure Dad, we lived out west in the middle of the desert and you never talked about what you did for a living." Jack of course would remember the most.

"I was working on particle beam weapons for a big group of projects known as the Strategic Defense Initiative."

"Wow, you worked on Star Wars?" Bob of all people was the only one who seemed excited.

"It was a major waste of money for what I know about it which is more than most. But one of the things I worked on may be of some use here."

"Wait a minute Dad, I thought we were going to grab this thing, not blow it up!" Jack was clearly not pleased.

"Son, the things that I worked on wouldn't have blown your nose, much less an asteroid. At the most, it would have made it a little radioactive. It may have a bearing on our most serious problem - how to get there."

"Perhaps you had better explain what you're talking about Jake." Madelyne was becoming a little impatient.

"OK, what is a rocket?"

"It's a reaction engine. It pushes by expelling the mass of burning fuel out one side. The faster the fuel burns, the harder the rocket pushes." Jack had to prove that he knew something about it.

"Right, but your definition is a little too sharply limited. You can get the same effect by using compressed gas, firing a bullet or any number of ways. If we were ice skating together and I pushed you away, it would be much the same effect as a rocket."

"All right Jake, cut to the chase. What's all this about

rockets and particle beam weapons?” Madelyne was becoming more impatient.

“OK, the essence of rockets is reaction mass. In order to push something away you must first have it with you. You increase the efficiency of your reaction mass by pushing it away faster. Chemical rockets are good for short powerful bursts like those that you need to get into orbit. However, they are too inefficient to use in a long haul like that we are discussing. What I am thinking about is something brought home to me while I was working on particle beam weapons. If you accelerate a subatomic particle to some appreciable fraction of the speed of light, it acquires relativistic mass. Depending on how close to the speed of light that you push it, that can be quite a bit of mass. One of the things that we developed in the project was an assemblage of particle accelerators that could be put into a fairly small space that could accelerate protons to a good percentage of the speed of light.” I walked over to the computer and put one of my own disks in the drive. I then called up a graphic. The device looked like a pile of pancakes arranged in a doughnut shape. “Each of these sets of Ds is a separate proton accelerator. These are the injection ports on this side and on the opposite side are the ejection ports for all seven hundred accelerators. Over the years, I have been tinkering with this design. The original idea was separate pulses to be used as a weapon. With all the recent advances in high temperature super conductors, I think that I have worked out the bugs for making it capable of operating continuously.”

“You want to use a failed particle beam weapon as a rocket?” Jack was going to have to get the idea of not letting his mouth hang open. It was so unbecoming.

“It’s just a much more efficient ion rocket. These guys wanted to use the thing to punch hole in missiles or scramble their guidance systems with the secondary radiation it would cause when it hit the casing. In addition, they wanted to do it from the ground. All the protons tended to collide with air molecules going through the atmosphere and the kinetic energy

was lost like the cue ball hitting the racked balls in a game of pool. It was a dumb idea for a weapon but it would make a fine rocket if it operated continuously. Depending on how much stuff we can take with us, we might be able to accelerate a decent fraction of a gravity for months at a time. There are no moving parts!" I always wondered if this little doodle would be of any use.

"You can't get something for nothing Dad. This gizmo is going to use a lot of power." Margaret's practicality had its basis firmly in the laws of thermodynamics.

"Of course it will, Maggie, That is why we will need this nuclear reactor to make it go." At this point, I called up a small nuclear plant modeled on those used on submarines and aircraft carriers. "I'll have to make some changes so it could operate in micro gravity and I may have to change to liquid sodium for coolant - but it makes for a more efficient heat exchange."

Maggie was once again looking like she was just managing to avoid throwing up. "Dad! This thing is going to put out enough radiation to cook us all. I might want to keep my hair or intestinal lining or even have kids someday! We would have to take enough shielding to sink an aircraft carrier!"

"Maggie, you are not thinking three dimensionally. We only have to shield it on one side."

"A foot of lead is going to be mighty hard to get off the Earth even if you only have to shield one wall."

"That's the beauty of the whole plan! The rocket uses protons that we get from water which we will use for part of our shielding and which will also supply our oxygen and will be useful for other things."

She thought it over for a minute. "Dad, this might work!" At least I had won my daughter over.

Bob laughed. "OK, let's lay it out. We buy boosters for scrap and second hand nuclear weapons from the ex commies, outfit a space shuttle external tank and strap on a particle beam weapon to get to an asteroid so we can save the world and

become very wealthy!”

“Where do I sign up?” For a man about to be married and just learned about the impending end of the world Tom seemed to have things together.

“You just did.” He might work out after all.

“I do have a few things to contribute.” He said as he dumped Maggie into the chair and stood up. “One is Financial. My parent’s insurance policies were each a million dollars. The Judge was a financial wizard and while he had charge of it and I have not done too badly since. I can get my hands on about four million in the next forty-five days.”

“With that kind of money I could have thirty million in four months! We can go first class if Dad’s toys do not cost too much! Jack was clearly pleased with the news.

“I had no idea that my future son-in-law was so well heeled! You are going to be a major shareholder!”

“Well when we start this business we’ll have to put my name first.” He was laughing while he said this.

“Great idea!” Bob was suddenly enthusiastic. “We’ll call it White Knights Inc.” Which of course, is what we did.

Katerina Yerisivloskaya is chasing someone who leaves few impressions through the former Capital of Kazakhstan. Someone is buying Nuclear weapons. Should they have them? This leads Katerina beyond the Ata-Alma streets as the White Knights try to save the world.

White Knights Inc.

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