



## Message #63A

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The year is 2069. The place is a Polytechnic University in North America.

John, not his real name, was not exactly as he appeared. His overall demeanor was that of a late twenties something laid-back grad student with a neatly trimmed beard, collection of island shirts and colorful stories to match. In reality, John was quite a bit older than people thought. At this particular place and time, John was a Resident Advisor at one of the coed dorms at the small State University. His job was part counselor, part cop, and full-time safety officer. Even in the late 21st Century, college students partied, played loud music and sometimes even went to class and studied. The RA was tasked to make sure that the dorm was a safe and fun place to live and study, but not too much fun.

During his time as a student, John had assumed several identities, earned degrees in engineering, mathematics, chemistry, and philosophy at several different Universities in North America, Europe and Asia. He had changed names, identities and locations several times during his long career as a student. All of this was just a cover, he was just waiting, waiting for the right moment in time. John had implemented his plan 62 times in the last five decades and it had always failed. This time, he was sure to succeed.

John waited for Andrea at her physics 455 class where he knew she would be in the middle row of the lecture hall. Andrea was a resident of his dorm, so she knew him on a casual basis. They had had a few typical RA to dormie conversations like: *"Hey, how's it going? and see ya' around, dude."*

The class they were attending was advanced modern physics and would include some of the newest concepts of quantum mechanics. She smiled at him from her usual seat and said. "Hi, you're John the RA from the second floor, right?"

"At your service."

"You are a physics major too?"

John smiled wryly. "Yes, as it turns out I am. However, I have changed majors a few times over the years."

That day's lecture was about Dark Energy. The Professor was chagrined to admit that even less was known about Dark Energy than its mysterious counterpart Dark Matter. Nonetheless, they were both real and were driving the acceleration and expansion of the Universe. John looked over to Andrea. "I read a theory, a speculation really, that if one could tap into just a small fraction of a percent of the vacuum energy the power generated over time would be almost infinite."

She looked at him and laughed. "Would be nice, it took forever to get commercial fusion power online and those plants are still very complicated to design, build and operate. However, there are some much smaller reactors with an order of magnitude higher power density in the works for the space program, or so I have heard."

"Indeed, that level of technology could lead to some interesting possibilities in the future."

About a year later, just before Andrea was going to graduate and receive her degree in physics. John offered to buy her a beer to celebrate. She met him in a booth at the back of the campus pub. He stood up as she came over. "Hi Andrea, it is good to see you. We always seem to be in the same class together this year and I hear through the grapevine that you are off to Cal Tech?"

The brilliant young woman smiled. "Yeah, I just found out that I was accepted to the physicist to astronaut program. It's funny, they really liked my Senior Thesis on Dark Energy as a power source, which put me over the top. Thousands of people applied you know."

He nodded in understanding.

Andrea paused a moment before continuing. "It's weird John, last year you made a couple of quite insightful and intriguing comments in class that put me on the track to write that paper. What you said just stuck with me, that's all."

John smiled mysteriously. "Well, maybe history will record that you invented the thing. Unlimited power from Dark Energy might save the world in some far distant future."

She blushed. "I don't know about that, but thanks anyway."

John nodded knowingly. "So, how does this whole physicist to astronaut program work anyway. Are they hiring grad students to crew our first starship?"

She nodded. "Yeah, that's exactly right."

"Yes, that's what I heard, I guess that I just didn't believe it. I understand that they just got funding for a mission to the Tau Ceti system 12 light-years away."

She smiled. "Yes, planet TC-2 appears to be an ideal Earth 2.0 analog. I intend to be on that ship."

"I have a hunch that you will be."

She went on. "So, the journey will take over 120 years of ship time. Each of us will pull two one-year duty periods and 118 years of cryo-sleep. The entire crew will be under 25 years of age and

unmarried. The return trip will be the same. When we get back after two years of exploring the Tau Ceti system, we will all be six years older and 224 years will have passed on Earth. Everyone we know will be long dead."

John nodded. "Wow, that's quite the commitment."

Andrea smiled. "Not that it will matter, but I will earn my master's degree operating and using the fusion power core and engines on the way out and back. Our goal is to achieve 10% of light speed."

John smiled. "Well, I'm sure that your return to Earth on May 22nd, 2297 will be one of the most celebrated events in human history. Imagine the idea of bringing back data and images of a pristine new planet full of life, and ready just in time for Earth's first interstellar colony."

Andrea looked puzzled. "That does seem like a very precise prediction John."

He nodded and reached into his pocket for a small item. "Yes, Andrea, just something I *read* once. I do have one small request of you as you go out on this grand adventure into the universe."

She looked at him and raised her brows. "What's that, John?"

He handed her a small metal plate the size of a standard high capacity data chip. It was engraved with several lines of hexadecimal code.

She turned the small extremely light and very hard metal object around in her hand and looked at it through several angles. "John, what is this and what is it made of? I did get A's in modern metallurgy you know."

"Well as to the second part, it is made of Titanium-50 alloyed with Beryllium-10. This material is very strong, durable and the engravings on it should, in theory, remain readable for centuries or millennia if necessary. As to the first part of your question, it is a code sequence of an address of sorts."

Andrea stared closely at the tiny, but deeply etched characters. She knew binary and hexadecimal, but this was new to her. "What kind of address, John?"

He smiled wryly. "It is a very precise set of space-time coordinates that take into account the orbit of the Earth, the rotation of the galaxy and many others. The most difficult coordinate to calculate properly is the exact time coordinate."

Andrea studied the plate closely again but still could only make out a few of its coded sequences. "Okay John, I give. What place and time does this depict?"

He handed the plate back to her and smiled. "These four-dimensional coordinates are for right here and about two minutes from now. When you get back to Earth after many years in Deep Space, please post this code to the worldwide data-sphere for me?"

Andrea stared at the strange metal plate. "That's a *very* odd request."

John smiled. "It is, but it's very important. Just promise me that you will enter the code when you get back to Earth, no matter what else happens between now and then!"

Andrea sighed in acquiescence. "Okay, I will. I promise."

John smiled. "Thank you Andrea, I can go home now."

As Andrea was looking at directly him, the lost time traveler shimmered and disappeared into the future.