SANTOS ROJAS

Prologue - Text Message (received within the last hour)
Age: 14

> TEXT FROM ANGEL HERNANDEZ: Santos - they've shut the school down "temporarily." I saw the soldiers come to take your father away, my brother, and several others from the village. They were packed into buses and some say they've been sent to Guantanamo Bay. There is a curfew every night, and I had to hide this phone to let you know. I do not know how much longer I will have it. Shit. Someone is pounding on the door. Vaya con Dios, my friend.

End of Prologue

Scene 1 - Charm School, and Up, Down, Top, Bottom, and Strange Quark School too…
Age: 14

Well, it works! Just like your theory said it should. You're not quite sure why some of the measurements are what they are - they don't quite match the math. They've *always* matched your math before. But, for now, you're moving in some direction, away from Earth, at about 1.1*c* - just faster than the speed of light. Take that, Alberto! There's a new master of physics, **Senor Einstein**, and it's me, Santos Rojas. A skinny 14 year old kid from Cuba, working for the important **Morgan Lee**, deeper in space than any astronaut has ever gone.

Deeper in space. Away from Earth. Away from Angel, your best friend, your confidant, your partner in all those things that a 14 year old would get in big trouble if Mama found out. Away from Mama, Papa, Tio Jorge, and all the cousins. Away from Earth. Cuba has been hard on people for a long time, since the Communists, but your family is a special thing - and you're flying away. On a ship with five other people, and one of them's a little kid.

The engines, they are yours. You try to keep **Sasha** from beating on them with a wrench trying to fix things. The engines, they are delicate. They need a careful touch.

They say you see math like Mozart heard music, touched by the hand of God, to see the beautiful infinities of the Universe. You were taking college level math courses at 8; you'd be almost done with your Master's program now, if you took the time to study something other than math. They've been talking about just awarding you a PhD., given that you already have a Fields Medal and Breakthrough Prize in Mathematics - two of the highest awards a mathematician can receive. All this was due to the generosity of **Morgan** and Rowan Lee, who discovered you at a lecture **Morgan** gave in Havana. (Mama and Papa were stunned at the UEC$3,000,000 from the Breakthrough Prize.)

Eight months ago, you realized how to break Einstein's speed of light barrier. **Morgan** was really excited, but asked you to keep the math quiet, for now, because there were factions on Earth that might use it to hurt people. Mama agreed, when you talked to her about it. So you spent your time translating the math into something that **Sasha** could build - **Sasha** is actually very good at converting **Santos**-speak into something that invokes your physics. You really like **Sasha**, except when they hit the equipment repeatedly with a wrench, swearing in Russian.

That's why you're here, in space, on *Alexandria*, the ship. Well, ***Alexandria*** is also the AI running the ship. The two of you had long conversations as you tuned and refined your engines. You'd been talking about a test flight, just to see if the engines worked. I mean, you'd tested everything except actually moving, and it was all good, and **Morgan** promised you'd be able to visit Angel…

Then there was the text from Angel, about how it was all going to shit. Then there were the klaxons, the alarms, the rush to slam the airlock closed, the frantic rush to an acceleration couch, and the crushing hand of gravity. ***Alexandria*** said it was evading nuclear missiles! Then someone flipped a switch, **Sasha**'s engine kicked your physics into action, and Senor Einstein was passed like he was standing still. ***Alexandria*** wants everyone to go to the bridge. You're running from the Earth, running from the UEC, and getting farther and farther from everyone and everything you've ever known.

End of Scene 1

SANTOS ROJAS

Scene 2 - The Warm Equations
Age: 24

Ten years. Your math has been working for ten years, pushing *Alexandria* ever further from Earth. Over the years, you've gotten the engines closer to the math, and you're regularly getting just over twice the speed of light out of them. The fourth target star is getting closer, and, hopefully, it will be a place you can live with. At the very least, you're going to have to do some maintenance when you stop.

You can solve those problems. It's the human equations you can't quite figure out. This isn't a normal life, in the depths of space with only five other humans and a very clever AI. You'd given up any hope of a normal family life years ago, although you are in a family.

You are a healthy 24 year old, closing in on 25, but you were always outside the norm. You never had a peer during your life on Earth. **Aria** is 18, and has always been like a younger sibling. You are peers on the ship, each with your own areas of expertise - **Aria** is studying navigation and piloting in the virtual reality systems, to replace Morgan's lost skills. This is a much healthier use of VR; **Aria** spent far too much time in VR after Morgan died. You got **Aria** through that, but **Aria** was just a grieving kid.

So, when **Justice** announced that they were dying, the question of a replacement started slipping into conversations. You just assumed that the child would be the result of a compatible match from the DNA samples in storage. That would assure the greatest genetic diversity. Alternatively, **Dr. Berg** and **Sasha** were a couple, and **Dr. Berg** always went on about how it would feel to have and raise their own child. That wasn't an optimal choice for genetic diversity, but if that's what **Dr. Berg** wanted, why argue?

Then **Justice** announced that you and **Aria** would be a better pair, being younger and healthier. (**Aria**? Really?) Sure, the DNA matrices could be used to knit your halves together, and do a lot of the other hard work. But does it really matter to have a child related to two parents aboard ***Alexandria***? (**Justice** says, "yes," of course. And maybe it's mystical stuff, but it's also a dying wish. It's also a LOT to ask of a person. But then again, what else are you doing?)

Whatever happens, this is going to change the equations between you and **Aria**. That's a kind of math that you'd never really tried to figure out. You hadn't thought about a relationship before this; now it's almost all you can think about. Is this a fleeting, momentary thing, or something that will last?

End of Scene 2

SANTOS ROJAS

Scene 3 - The Substitution Cipher
Age: 34

First Hope is a cruel joke, an inhabitable world destroyed by the civilization that lived there. That much is obvious just by visual observation. There is clear evidence that nuclear weapons splashed devastation across an idyllic world, probably extinguishing many species, including the idiots that created the weapons in the first place.

You wonder if this is what Earth looks like today. It's hard to even remember what Earth looked like when you were there. A lot like First Hope does from orbit, though - that much you remember.

This is not what you needed. You need a place where you and **Aria** can spend some private, quality time together, away from the confines of ***Alexandria***, and in something more real than virtual reality. It took a few years, and **Aria**'s insistence on your company on shuttle flights needed to find the necessary metals for engine maintenance, before you finally realized how much of a zero you'd been. What the two of you have now is a strong relationship, where the sum is definitely greater than each of you separately. You've been a couple for years now.

You need a world where **Tarachand** can feel the wind on their face. **Tarachand** is still too small for an environmental suit, and must remain aboard the ***Alexandria***, while the adults get to "go outside and play." You've taken the time to teach **Tarachand** about the engines, which lets you show off your little part of the ship. **Rowan** is older, but also needs to know what it's like to walk on a world without the need for an environmental suit.

You were arms deep inside the engine, trying to get at a troublesome valve, when word came in that there'd been an accident on the surface. You felt guilty when you learned that it was **Sasha** who was hurt, that **Aria** was fine.

You were going to leave the engine dismantled and see how **Aria** was doing when ***Alexandria*** told you that there were incoming missiles from some kind of planetary defense system. It was a good thing you hadn't started a major engine overhaul. (**Sasha** didn't like it if they weren't included in the "fun" of an extensive overhaul.) You restored the engine systems to operational status, leaving the troublesome valve in place. It should fire up correctly. You hope.

Now the puzzle is **Sasha**. What happened to **Sasha**? **Aria** said there was a glow around **Sasha** on the surface, but it's definitely gone now. Is **Sasha** contaminated by some lasting effect of the war that ravaged this world? Is that contamination now aboard ***Alexandria***? Is **Aria** affected?

Losing **Sasha** would be difficult. The two of you have spent far too much time together, more than with anyone else onboard the ship. The engine room will always echo with Russian curses.

But losing **Aria** would be worse. You don't think you could survive that.

End of Scene 3

SANTOS ROJAS

Scene 4 - The Last Solution
Age: 44

It started so small, like any positive feedback system. Before you knew it, it had blown up into chaotic behavior, system instability, and system parameters reaching extreme values. It started about three months ago with a power drain, from some system deep in the seed vault. Normally, **Sasha** would have jumped at the chance to track it down, but **Sasha** was off for an extended stay in virtual reality with ***Alexandria***. (You couldn't figure out why.) So a week ago, you found some time to look for yourself.

The seed vault was in a bit of a mess. This had to be **Dr. Berg**'s doing, and that became obvious when you worked your way through the obstacles that were clearly deliberately moved into place to block access. Behind the barrier, there was a gestational unit plugged into the electrical system. Your power drain was holding a fetus, created from **Dr. Berg**'s DNA and a compatible match from within the stored samples.

How could **Dr. Berg** do this? How could **Dr. Berg** even think to bring a child into this fragile ecosystem without a long and hard discussion with the crew? **Dr. Berg** had to know that ***Alexandria*** couldn't support another person, even a child. The equations were clear. ***Alexandria*** could support six people, and no more, and even that was getting a little dicey after thirty years in space. **Sasha**'s alien entity had shown you a few new engineering tricks (and a few alien curse words), but the reality was that ***Alexandria*** needs to find a safe haven, even if it is only for extended maintenance. You might make it another ten years, but not with an extra person breathing and eating.

The truth is that you all need **Dr. Berg**. **Dr. Berg** hasn't been training a replacement, and you need a trained doctor on the ship. Sure, everyone has learned some medical skills; you can't spend decades on a starship without everyone learning to handle an immediate emergency. It's a mistake that all of you need to rectify. Morgan wouldn't have let this slide.

The next day, you went to the medbay and quietly told **Dr. Berg** you'd found the gestational pod. **Dr. Berg** was distraught, and got even worse as you reminded them again of the ecological balance that ***Alexandria*** had to maintain to keep the six of you alive. **Dr. Berg** was upset and unhappy at the news, insisting that there must be a way to keep a little baby alive, but you stood fast. In the end, **Dr. Berg** tearfully agreed to take care of the problem, appreciating your discretion.

Three days later, you started feeling weak. **Aria** helped get you to medbay, but **Dr. Berg** couldn't find anything wrong with you. ***Alexandria*** confirmed the results. You kept getting worse, and **Aria**, wonderful **Aria**, your partner, your love, the star that lights your path, grew distraught. You tried to console **Aria**, but **Aria** was convinced they were losing you, just as **Aria** had lost Morgan and Rowan too soon. There were more tests, but you were growing weaker and weaker, and there were no answers. It's not fair; you should be allowed to grow old with **Aria**.

At the last examination, **Dr. Berg** barely looked at the scanners, barely did any examination. You barely made it back to your cabin, as **Aria** was crying. That's when you knew. **Dr. Berg** wasn't looking because **Dr. Berg** KNEW what was happening to you. **Dr. Berg** had done this, in order to let the child in the gestational tank come to term. **Dr. Berg** could balance the ecological equations by killing you off. This was a cold-blooded murder.

With one last burst of strength, you asked **Aria** to take you to the bridge, and to gather the others. **Dr. Berg**'s treachery and cold blooded murder has to be exposed.

End of Scene 4

PHOENIX

Scene 5 - Rebirth
Age: 9

Your name is **Phoenix**, born from the ashes. You have never known anything but this ship, which doesn't make you that unique at this point in the journey of ***Alexandria***. **Tobie**, who is basically your big sibling, is considered to be young by everyone else on the crew.

Aria is the oldest normal human on the ship at 48. You gather that this wouldn't be particularly old on Earth as it used to be, but things have changed. **Sasha** and ***Alexandria***, who spend a considerable amount of time with you, are both technically older, but AIs and aliens in the consciousness of human bodies are hard to judge by normal standards.

Everyone else has waited at least a decade, many for several, to find a planet that might suit life. They're so excited. **Tobie** says normally the reaction is less enthusiastic, but the readings seem perfect. The Earth might be reborn here, with animals filling the air and land and sky. So many of you have never seen a real animal. You hear a lot of them are cute.

This is *SO* much better than VR. You can't wait to do all the crazy things you do in VR, but with real things.

End of Scene 5