

A YOUNG
SPACE ODDITY
ADVENTURE

DEATH IN SPACE
or
How I Spent My Summer Vacation

written by
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By Gary Davidson

DEATH IN SPACE, or How I Spent My Summer Vacation

(A Young SPACE ODDITY Adventure)

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To Barry Saip.
My Best-Man & Best Friend*
You gave Bill Magellan his character
and made him come alive for me.
BWSO dude!

And to his sons,
Justin & Jesse.
Who inspired me to write this story
so they could know my vision of what
their dad was like
when he was young.

* WAP

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Editors Notes:

Notes between [brackets] in this text were put in place for historical and contextual purposes.

Definitions for words with ™ after them, and others, can be found in the final section of the book, marked LEXICON.

DEATH IN SPACE

Or, How I Spent My Summer Vacation

- GETTING THERE IS MOST OF THE FUN -

It was a dark and starry night. The kind of dark that nights get when the power goes out all over town, and the kind of starry that one can only see when they're in space. I'd been up well past my bedtime but that was okay, because my Mom and Dad were with me and they didn't want me to miss anything.

The turbo-thrusters on the final stage went off and we were thrown back in our seats as the spacecraft slipped beyond Earth's atmosphere and out into space. Space is a magical place. Once the last of the atmosphere passed, a clear darkness surrounded the craft and I was surprised to learn that except for the window there was nothing of substance between me and the stars I could see light years in the distance. It's hard to believe, but it's true!

I don't need it anymore but at the time I had to use my LINK™ to tell me that I was looking right at Sirius A, what ancient sailors called the Dog Star. I now know it as the brightest star in the Canis Majoris constellation. I'll get to why I know that soon enough, but now I do and then I didn't.

As the craft rolled – I could tell it was rolling because of how the stars moved past the window, not because of any sensation of movement – the whole of God's creation came into view. I don't even know how to explain what I was looking at really. We think the night sky has a lot of stars and whenever I've gone camping I've always been amazed by just how many there are up there, but when you get beyond the atmosphere its crazy. There are so many of them around that you almost can't imagine there's any space between each, and your mind wants to

understand why the whole sky isn't just bright white. It isn't, but man, there are an awful lot of stars out there!

I glanced at my parents, wondering why they weren't glued to the window with me but I didn't look back at them for long. Mom was reading from her Dar-Lyn™ and Dad was watching an old comedy movie through his V-C's [Video Contacts]. I knew it was an old comedy because of his laughter, my Dad has a very infectious laugh to begin with, but there's a certain chuckle he does when he's watching one of his favourite old comedies.

I strained to see up front, to get sight of what we were heading for, even though I already knew. There was a brightness that began to fill the cabin and I thought it was the Space Station, but as the spacecraft banked slowly and it came into view on the side window I realized it was Luna. Our moon was waxing gibbous, that's another new term I've learned that means the lit surface would look three quarters full from Earth's surface. Thankfully the window automatically darkened or I'd have been blinded by the reflected sunlight off the surface.

Unfortunately that also meant I couldn't see that many stars anymore. Until we rolled again, a manoeuvre needed to get us in line with the main bay of Station L5, I couldn't even see where we were going.

Normally you don't get to go directly from Earth to Lagrange Station 5. The average person typically has to travel from a ground based spaceport to a Low Earth Orbit (LEO) Station, then transfer to an 'Outbound' shuttle that takes you to the Lagrange Station 1 hub, from there you have to transfer either to a direct 'P-2-P Shuttle', or hop on 'the LOOP™ Transport' and wait until it docks at the station you want. Because we were coming up for my Dad's business we were lucky and the company shuttle took us directly from VSNA spaceport in Anaheim to Lagrange 5. It's three hours faster that way!

L5 isn't the largest station in space, that's some thing called Egrange 3, it isn't even the largest Lagrange station, but it's still huge! The rotating life wheel sits half way down the central core and it looks like a giant bicycle tire. There are two full-sized office pod complexes above it and two more below it. At the

bottom of the station, well, there really isn't an up or down in space but you know what I mean, at the bottom is a giant single hulled pod that sort of looks like a big metal hamburger and that's called the Main Bay. It's where the shuttles and ships dock.

The May Bay is the most bizarre part of the station. It's mostly hollow with giant doors that open and let spaceships pull inside and dock, safe from deep space radiation and such, but it also has docking ports on the outside for the ships too big to go inside. Those ships pull up to the station, lock on and then park beside it. How this whole thing works is beyond me but it sure looks cool when you're coming at it.

As our shuttle approached the station we had to slow and then ease in between this super long passenger ship that looked like a giant cruise liner from the ocean, and an even larger, darker and menacing looking Super-Carrier from the space fleet. Dad said their weapons were locked down and couldn't hurt us, but as our little ship glided past the giant turrets along the side of that big bruiser, I got chills. Each one of them was larger than our whole shuttle, I'm sure of it, and at this distance I doubt there'd even be debris left of us if something bad happened!

Fortunately it didn't, and we slowed some more, stopping and rotating so we could back into, sorry, I mean 'reverse' into the Main Bay. That's a really weird experience. You know there's movement because you can see it, but you never feel anything. There's no gravity up here. And because the ship isn't accelerating quickly you don't even feel it when you start moving forward. It's more like watching a video of a trip than actually being on one.

The inside of the Main Bay is really cool. The metal rafters and girders and supports are all over the place, mostly coming out from the center. The giant pistons that push the doors closed again could crush our ship if we got caught between them, but once inside its like being on a boat pulling into dock, or one of those locks they use when the sea level at one end is higher than the other, only the water is invisible.

Below us were two other ships, much larger passenger crafts, one of which was the Lagrange LOOP™ Commuter Shuttle. It took me a moment to realize that pretty much the

whole interior of the Main Bay was actually open space. There are six large doors at various points around the outside hull so that ships like ours can access this Bay regardless of what is docked outside and then, once inside, they can move to whatever docking bay they're supposed to. It's amazing and scary, and I told my Dad I'd never want to be the sort of pilot who has to get around in such a tight space.

I know it sounds goofy, but I was really excited about this trip. Not only was today the first official day that Station Lagrange 5 was going to be fully operational as a Space Colony, but it was also my birthday. The only thing better to celebrate turning 15 than to go into space for the first time, was moving onto a Space Station, and for the next few months this was going to be my home.

DEATH IN SPACE

Or, How I Spent My Summer Vacation

– OPENING CEREMONIES –

After we settled in our rooms Mom and Dad rushed me ‘topside’. There really isn’t a top in space either, but people like to have these reference points and so the observation deck at one end of the Station was called ‘topside’ [It is also called Deck One]. The opening celebration was scheduled up there and because of my Dad’s job we needed to be there before it began.

I didn’t understand why at first, we weren’t celebrities, neither of my parents were rich, but apparently my parent’s team had designed the elevator system so the cars could travel up and down like normal, but then also side to side, or around, or whatever. It made it possible to take a single car from anywhere on the station to anywhere else, even if you started somewhere up the center line that ran from the Observation deck at the top, all the way down to the Main Bay at the bottom, and wanted to go all the way to any access column on the Life Wheel without having to transfer. Transferring would’ve been a real hassle because the tubes heading down the Life Wheel were ninety degrees off the tubes going up and down the Station core. Don’t ask me how it pivots or whatever because my brain hurts just thinking about that part.

Funny thing is I didn’t know any of that when we got on the ‘Vator [Elevator car] and it slid sideways out from the exit alcove, then began to rise up the tube for a few moments, before sliding into a different track and rolling along the inside of a giant round globe called the ‘core hub’ while it made the 90 degree angled transition from the Life Wheel to the center line of the rest of the Station, and then, when the car had moved over the right

‘outward tube’ it slowed again and began to go up the center core. The whole way I was a little freaked out, ‘Vator’s aren’t supposed to go in those directions, and your body tenses when they do things they’re not supposed to do. That’s when Dad explained why we were attending the ceremony.

“Why don’t we feel the tilt?” I asked.

“Each car has its own gravity.” My Mom responded, smiling with pride, “Those were mine.” I didn’t know what that meant either. Not then anyway, but apparently my Mom designed the miniaturized grav-plates that were small enough to fit between decks on the space station. It meant they could install artificial gravity in places like the Vators without redesigning the whole station.

After a lot of slowing, twisting, tilting and turning, most of which I didn’t feel, but after looking at the map I know we had to have done, the doors opened to the Observation Deck. I knew the moment we stepped out of the Vator that this was going to be my favourite place to visit on the whole station, once they got all the celebratory junk out of the way, because beyond the bunting and streamers and banners were windows, great big windows, and beyond that was the whole of God’s creation.

Several hours later [22 minutes 42 seconds according to records] the opening ceremonies ended and the place became less formal. Most of the people immediately lined up for the refreshments but I started through the crowd, against the stream as they say, toward an area that was emptying of people and largely free of crass. I didn’t get far before my Dad’s hand came on my shoulder, a sure sign my fun was over before it began.

“I want you to meet someone.” He said as he gently guided me to the left. I didn’t want to go to the left but had promised to be on my ‘best behaviour’ and that meant being nice to people I’d never met so that I didn’t embarrass them [his parents, not strangers]. Almost instantly I realized Dad was taking me towards a child.

“Dad!” I groaned while trying to slow down, “I don’t want to babysit!”

He smiled at me, that warm smile that meant I was about to learn something, “Remember when we talked about ‘service’?” Service was part of our faith. Sacrificing for others, our time, our energy. They sometimes called the ‘social contract’ but for Christians it also meant suffering while helping others. Well, I suppose the suffering part was self-inflicted and my own problem, but the idea of getting stuck with some little kid wasn’t appealing to me. I’d already given up my summer vacation, now he wanted me to babysit some kid!

“Relax.” Dad said as we worked our way around a cluster of loud people who smelled like medicine, “He’s in your class.”

I stopped at that. I’d agreed to attend school during the summer because it was part of the coming into space deal, but I thought it was regular school, not some remedial multi-grade thing.

“No.” Dad said with a nod because he knew this would intrigue me, “He’s a Grade Eleven, just like you. In fact they almost put him in Grade Twelve.”

He looked twelve-years-old. A twelve-year-old in Grade Eleven? You had to be a genius for that, didn’t you? “He’s that smart?”

“In some ways, yeah. Academically he could teach some stuff. But he’s never spent any time around people his own age. He doesn’t know how to have... fun.”

I frowned in thought. It may have been more of a pout than a frown because I’m pretty sure my shoulder’s hunched and my body tensed in protest. This was a bad idea, I thought.

“This is a bad idea,” I said.

“Maybe.” Dad said as his hand came on my shoulder again and he started us moving. “But you won’t find anyone who knows this station better than he does and that’ll give you an edge on the other students.” When I looked dubious my Dad added, “You know, he *lives* here. *On* the station. Full time, year round.” Then he paused, hesitating to continue but after a deep breath he did anyway, “And I promised a friend you’d try to open him up.”

I hated being one of Dad's favours. Its one thing to try something yourself because if it's a really bad idea you can quit, but when your parent's commit you to something, then you have the whole 'disappointment' factor to deal with, not to mention status reports, and the guilt if you make them look bad. It's just so much pressure.

"You know, in some cultures, at my age I would be considered a 'man,'" I said. The last thing I wanted to do now was play, particularly with a twelve-year-old.

"Well, a man has responsibilities that children don't." Dad replied.

Ouch! Hoisted by my own thingy! What do they call them again, picards? [Petard – from Shakespeare]

"Robert?" My Dad said to the boy. He was staring out the window at the stars and half turned as though annoyed by the intrusion. "There's someone I want you to meet."

The kid sighed and his arms fell loose as he turned around to face my Dad. "I reiterate my earlier sentiment," he said.

"Yes, I know." My Dad replied with a wry grin and then glanced at me with his all knowing nod, "This is a bad idea."

"As long as we're clear on that." The kid said. I couldn't believe his cheek, speaking to my Dad like that. Then his manner changed, like someone who had been practicing being nice to people just for this purpose. His hand came out and a very fake, forced half-smile crossed his face, and when he spoke it was with too much emphasis. "Hello. I'm Robert MacManus. How are you?"

I glanced at my Dad not sure if this was a trick or something. He nodded at me to go ahead so I put my hand out and shook the kid's. It was a firm grip, two pumps and then a smooth release. He really had practiced it because it was exactly like an adult's hand shake, confident, intent and over quickly.

"He doesn't say much, does he, Len?"

My jaw dropped. None of my friends back home would call my Dad by his first name, certainly none with such an easy familiarity. I knew my Dad had been up here a lot over the last

few years but I glanced up at him quickly expecting him to scold this, this... child.

“Normally you can’t get him to shut up.” Dad looked at me expectantly. “Bill...?” Dad urged me, “Say something!”

I looked at ‘Robert’. “Hi,” I said. I’ve never felt so out of place in my life. It was like I was the only child present and not four years older than him.

“Wonderful.” Robert said sarcastically and then he started to turn around. “Okay, let’s run through it. What are your interests?”

I looked at Dad again and he shrugged back. He mouthed, “Do the best you can.” And then my Dad turned, leaving me alone with Robert.

I stood there a moment and then stepped forward. I’m used to making eye contact with people I’m speaking with but his gaze wouldn’t leave the windows. I glanced at them, he was mesmerized by the stars, just like me, and I’d wanted to get to a set of windows that had a good view of them, just like this. Then I stopped and glanced over to where I had originally been heading. Earth was visible on the far end and would’ve been in my field of view had I continued there. Robert had, in fact, found a better spot. I decided that I could enjoy the view with him, at least we had that in common.

“They’re amazing, aren’t they?” I said in appreciation.

“Who are?” He replied half listening.

“The stars.” Like what else could I be referring to?

“Ah.” He said. “So, you’re into astronomy then?”

“Not really.” I replied sheepishly, “I mean I don’t know their names or anything. I’ve just, never seen so many at any one time, that’s all.”

He stopped at that and looked at me, and for the first time it wasn’t dismissively. “Is this your first time in space?”

“Uh-huh.” I responded.

“What’s that like?” He asked.

I stopped and rethought the conversation to this point, and then gave up, “What’s what like?” I said, confused.

“Earth. Growing up down there? Coming here for the first time? Not growing up with this every day?”

I looked at him. This Robert kid is a pretty weird fella. “What are you talking about? Where are you from?”

“LEO 12.” He said.

I looked at him. Wasn’t Leo a constellation? Last I’d heard we hadn’t gone out into the deep space yet.

Robert’s hand came out deliberately and he triggered something at the bottom of the pane of glass, suddenly the window became a display. I’d seen them before but usually you can tell the glass that will do it, but this stuff had no frosting or embedded burr or anything, it was super high end window. In no time he’d brought up a graphic of Earth, which he shrunk until you could see the atmosphere and then he zoomed in and enlarged one portion of it. There were numerous icons, all labelled, above the troposphere and he pointed to one of the larger ones. “Low Earth Orbit, Platform number 12. LEO-12.”

“You were born in space?” I’d never met anyone actually born up here before. This kid suddenly became very interesting to me, it was almost like meeting an alien.

“Yes.” Robert said frankly, and his brow furrowed as though he expected I’d already know that. “Didn’t they tell you?”

I looked around flabbergasted that no one had mentioned something this big to me before dropping me off with this kid. “No.”

“Oh.” He said and tapped the glass display off before returning to the view. “Pity.” He added. “It seems like the sort of information that might’ve been handy.”

His expression was very odd. Usually people are at least somewhat offended or uncomfortable when their differences are pointed out, but for some reason he seemed pleasantly surprised.

“How old are you?” I asked.

“I’m only twelve.” He said, rather grimly I thought.
“How old are you?”

“Fifteen.” I said and then added sarcastically. “The normal age for an Eleventh grader.”

Nothing. Then, “I suppose.” It was all he said, and it came out as flatly as the rest. Like he was bored talking to someone his own age, well, his own age-ish. He didn’t react at all to the fact that I’d just called him a freak, which he was, but he wasn’t supposed to embrace that, even if it was obvious. And although I’m not suppose to say things like this, it’s true. I’ve come to like Robert MacManus but there’s no getting around it, he’s a freak.

DEATH IN SPACE

Or, How I Spent My Summer Vacation

- THE SPACE ODDITY -

One of the first things I learned about Robert MacManus is that he does not like nicknames. Actually that statement isn't strong enough, Robert MacManus hates nicknames, he loathes them, he despises them, and... okay, I can't remember all the other things he said that mean 'no nicknames, ever!' but whatever else you can think of that someone would say when they're angrily trying to get a point across, you know, when somebody really, really doesn't like something badly enough to go on and on about it for whole minutes, well, you'd have to go on for ten minutes longer than you'd think before you even came close to the length of time he spent explaining to me, repeating to me, and paraphrasing to me, how much he doesn't like nicknames.

How do I know this, you may ask? You did ask it that, right? No? Please ask it? I'll wait.

Thank you. I know Robert doesn't like nicknames because I made the mistake of calling him, 'Bob'.

Now where I come from it's generally understood that certain names have short forms. Robert is Rob or Bob. James is Jim or Jimmy. John is Jack for some reason that never made sense to me. So I didn't think I was seriously off base when I lopped up to him the next day and said, 'Hi, Bob.'

He cringed, tensed up and then, through gritted teeth said, "My name is Robert. Not, Bob, Bobby, Bobbo, Rob, Robbie, Obie or Bert. Is that understood, Magellan?"

I nodded, but then a moment later started asking why and that's when I got the ten minute lecture that started the same as I have above, and continued through variations of what I have above, with different words that I simply gave up trying to remember. The short of it is that Robert MacManus does not like nicknames.

When I got home that night and asked my Dad why Robert was so uptight about that sort of thing he explained. Robert's parents are very, very rich, which on its own doesn't necessarily mean a person won't like nicknames (I asked). His parents come from two families with lots of wealth and power, big players in the Aerospace game, and both of these families have, from time to time have been in the news.

Of great sport for the media are famous people's children, particularly when they turn out to be normal instead of super human like those that first made the family famous, but because these families are so famous, because they own big corporations and stuff, they and their spawn are what my Dad calls 'targets'. That apparently means that any headline with their name, or nickname in it, will sell more copies.

Robert's parents were heavily involved in the early days of construction of space stations in orbit, not just the big ones but the smaller ones that you stop at on the way here, and his mother, Pamela Newhaven put off returning to Earth until very late in her pregnancy because he was due around the same time an integral – intregrel – uh... a very important and critical moment in the assembly of this very station.

Unfortunately she went into labour early and was unable to get back to Earth before giving birth. The drama of her attempt to return made the 24 hour news pipeline and Robert's birth was seen on Vid-screens half way across the star system. Almost immediately someone dredged up an old expression to headline the story and Robert MacManus was saddled with the nickname 'The Space Oddity' before he'd screamed his first breath.

It wouldn't really have been that big a deal if they weren't famous, but because there weren't that many people living in space at the time, Robert was the first child in the 23rd century

born in space, and because the shipment of miniature gravity plates hadn't been installed on the station yet, he was also the last child born in zero gravity.

So every time he came to Earth his every move was reported on by the media, and they began every headline with, 'The Space Oddity...' So if being an awkward child wasn't bad enough, having half the world's News Reporters broadcasting the first time you saw a forest, had a bug land on you, got knocked over when an over excited dog leapt at you, or tripped because the surface of Earth isn't as smooth and even as the deck of a space station, well that meant the 'odd' part of the nickname was constantly being dredged up, repeated, and emphasized like he was some sort of freak. We're nothing alike, Robert and I, but even I can see that's a horrible thing to get burdened with.

I thought about this whole thing as I tried to go to sleep that night. I thought about what it would be like if everyone you ever met knew your nickname. I thought about how I'd feel if the nickname everyone knew me by was also insulting. There were some names, from elementary school, names that some bullies had given me, which I would be glad never to hear again. So I understood, at least I think I did.

When I saw him next I apologized. He shrugged, "It's not an issue as long as you don't use one."

"How about 'Mac'?"

He glared at me coldly.

"Really? That's so common with Scottish last names."

"I don't expect you to understand, just respect my wishes. Robert." He paused, "MacManus." He said with emphasis. "No short forms, abbreviations, nicknames, replacements, substitutes or commonalities, please. I'm not even fond of my initials."

"R. M.?"

He glared at me coldly.

"Okay. I get it." I shrugged. "I don't understand it, but I get it."

“That will suffice.” He said without emotion and then went back to what he was doing, as though nothing had happened.

I looked at him as he worked. “People call me ‘Bill’.”

“Good for people.” He said without looking up.

“It’s my name.”

“I presumed.” He said without looking up.

“I mean it’s really my name. I’m not William. The name on my birth registry is, ‘Bill’. B-I-L-L.”

“That’s how I’ve been spelling it.” He said. “Nice of you to confirm that though.”

I’m not sure, but I think that was sarcasm. He seemed to do that a lot. I shrugged and then looked at what he was working on, partly because he was very intent on it, and partly because a twelve-year-old doing what actually looked like work seemed pretty odd.

“What are you doing?” I said, after I failed to recognize anything descriptive, helpful or vaguely familiar.

“I’m plotting a course to the moon for a low powered space vehicle.” He said as though it should’ve been obvious. Well, once he said so, it sort of was obvious.

“A video game?” I jumped up, excited. My Dad has some pretty cool vintage games and the idea Robert might have some was awesome. It would make this whole experience of being away from my friends back home, and well, being away from home, at lot more fun, I thought.

Robert looked at me as if I’d just suggested we both dive into a pool of gelatine while wearing vinyl chicken suits. “No.” He said plainly, “This is a navigation board.”

“Wow.” I said and then looked at him as he worked. Navigation boards were adult things. “Are you allowed to use that?”

Robert looked up. “I hope so.” He said, “It’s mine.”

“Wow.” I said again. “Don’t you need a license for one of those?”

“Yes.” He said. “You do.”

Because I was sitting on the sofa near him and not really looking at him at the time I turned to him while he kept working. “No, I mean, like you’d have to be an actual pilot. You know... with certification.”

“Which I have.” He said, this time without looking up.

I brought my whole body up now. Up until that moment I was reclining on the sofa with my back to the table he was sitting at. “No. Really?”

He stopped and looked at me, his brow furrowed again. “Why do you question me on everything?”

“Because, you’re twelve! No offense, but twelve-year-olds don’t fly space ships! You’ve got to me at least sixteen for that.”

“You only have to be thirteen for a space ship.”

“Ah-ha!” I said pointing at him. “And you’re not thirteen, so...”

“I’m licensed for emergency craft, rescue pods and escape vehicles. In case we need to evacuate the station.”

I stopped and looked at him. He was dead serious. “You can do that?”

“Yes.” He said, deeply engrossed in his work again. “Anyone can. In case there’s an emergency.” He said, and then with emphasis on each word that stunk of sarcasm, he added, “And you need to evacuate the station.”

I eyed him suspiciously, “Are you trying to run away?”

He looked at me, the expression on his face wrinkled up with a mix of confusion and doubt. “Run away?” He repeated.

“Yeah.” I said, “Escape.”

“No.” He replied with a mix of confusion and annoyance, and then he paused, shrugged, paused again, and went back to work.

“I ran away to the circus once.” I said after a moment.

He looked at me for almost five seconds before speaking. Actually, he took a deep breath in and held it for five seconds before speaking. “Do you often talk in non sequiturs?”

I twisted around and looked at him again. Why did he always have to use big people words? “I don’t recommend it.” I said, ignoring his comment.

“Don’t recommend what?”

“Running away. You never get far and then you’ve got to explain what you were doing. It’s better to just confront the problem.”

“What problem?” His voice actually climbed a bit.

“Whatever it is that makes you want to run away.” I said. Man, he was dense sometimes!

“I’m not running away!” The word that best describes the way he said it is ‘exasperation’. I looked it up!

“Then what are you doing?”

“I’m plotting an adventure. You do have those on Earth, don’t you?”

I came around the sofa and looked at what he was working on, sure enough it was a full interface navigation board. “Wow!” I said looking at the display.

“So you keep saying.” He replied returning to his work.

His plans involved a small boxy container with a single window in it, it looked like an elevator. “Can you fly an ‘Vator to the moon?”

“It’s not an elevator.” He stressed. “It’s an escape pod.” Then a pause and with a more sheepish tone he added. “And I’m not sure yet. That’s what I’m trying to find out.”

I pulled up a chair and sat down beside him. I watched him work, the path he was working on looped way out into space and then curved back to the moon on a big wide arc. “Wouldn’t it be better to head directly there instead of way out from it?”

“No.” He said without stopping, his fingers were moving across the display deftly tapping in course corrections as the

plotting icon moved rapidly through his trajectory. “Escape pods do not have sufficient retro-thrusters for a direct lunar approach.” He paused. “Well, they do, but then the return trip is impossible.”

He paused and leaned back pointing out each step of his plan as he spoke. “I’m attempting to work out a low gain approach using the moon’s gravity to pull the craft where I want it. With the right angle and trajectory I may be able to keep the fuel expenditure down low enough for a return trip. If I can work that out, then I can go.”

“Where?” I said. On some level I knew the answer was ‘the moon’ but because that answer seemed so incredible for a child to even suggest, I wasn’t consciously grasping it as a real possibility.

He stopped and looked up at me with an exaggerated annoyance. I’d later learn that Robert hated repeating himself. I think it’s because his parents are just as focused as he is so getting their attention was difficult because they were never relaxing. Like him. So it probably meant that he had to repeat himself a lot with them. But of course he wouldn’t be aware that he was also just as focused, or that the reason he was having to repeat himself to me was because he was saying things that didn’t make sense to a normal person. Particularly coming from a twelve-year-old.

“The moon.” He said slowly, dripping in judgement.

I know when I’m being called stupid and even when it’s my own fault I don’t like it, so I tried to recover as best I could, “I know that!” I said emphatically. “Where on the moon?”

It was a good recovery I thought, mostly because he bought it.

“I’m looking to land just north, and east, of the west crater commonly known as Tranquility base.”

I paused, now it was my turn to furrow my brow. “Uh...” I stuttered, “Isn’t that restricted territory?”

“Tranquility base is. Yes.” He said, pleasantly surprised that I knew as much. “But the area 300 metres just north and east isn’t.”

I shrugged. “What’s so special about that spot?”

“It was the original target landing site for Apollo 11.” He stated with some pride. “I wish to succeed where they failed.” I considered that for a moment, it actually seemed sort of cool.

As he went back to work he added, “And I intend to set foot on the moon under my own power.”

“And return in this deck-aid.” I said, doing my best John F. Kennedy impression, which was actually a rather lame New Englander accent.

Robert stopped and looked at me. “Deck Aid?”

“That’s how President Kennedy pronounced the word ‘decade’ when he made his big Moon speech back in the 20th Century.” I looked at him. “Geez, for a guy who knows so much about Apollo you’d think you’d be familiar with the Kennedy Space speech that started it.”

His face scrunched up again, apparently it was his ‘thinking’ expression. “I’ve read the text. It did not convey the unfortunate pronunciation.”

I looked again at this kid, a little more than 3 years younger than me, I’m sorry, it’s not polite, or politically correct for me to say this, but Robert MacManus is a freak.

DEATH IN SPACE

Or, How I Spent My Summer Vacation

- BEAN THERE, DONE THAT -

“**I**’m hungry,” I said. It wouldn’t be the first time Robert would hear this from me. I’m hungry a lot. But my tummy was clearly telling me it was lunch time.

Robert stopped and leaned back in his chair, as though I was some sort of pest and he would have finished his task by now if I wasn’t here. “What do you intend to do about it?” he said, like it was my problem to solve.

I looked around. It wasn’t my place, it was his. Normal social convention would be to offer a guest food, or drink, or something, at least ‘to tide you over’. Normal social convention would’ve required this offer when I arrived, at least the beverage part. I’d been here for almost two hours now and so far no offers had been made.

“What do you have?” I said. If he wasn’t offering then presumption was my only option.

He looked around. “We don’t generally keep food here.” He looked at the Navigation board and then dropped his Stylus on it with a big sigh. “I suppose a break would recharge me as well.” He rose from his chair and stepped around it. For a moment I thought he was going to the Kitchen-matic™ but instead he went to the door and reached for a jacket he had hanging on the wall.

Despite the fact that the hook retracted into the wall the moment he took the jacket off it, which was pretty cool and begged the question of how to get the hook to re-appear when he wanted to hang it up again, I couldn’t figure out where he was

going. The food was, after all, in the Kitchen-matic, which was ‘over there’, on the wall, not at the door or outside the suite.

“Besides,” he said as he put his jacket on, “Maybe after you’ve eaten something you’ll drift off.”

I took offense to that. The idea that I would need a nap after a meal was bad enough, but it further reinforced the idea that I was an annoyance to this... this... kid.

“Where are you going?” I asked as he toggled the door open.

He looked at me with the same expression I’d been seeing all week from him. The ‘why do I have to explain everything’ look. “The Mall-way™.” He said, as though it should be obvious.

“Isn’t there something here?” I said, motioning to his kitchen-matic. “Snacks? Munchies? Carrots?”

He sighed. “I have no idea what the plan is for the food here. And I’m not going to bother my Mother to find out, when I can easily go to the Mall-way.”

“Ugh.” I said, “I’m not a big fan of junk food.” I added.

“Junk. Food?” He repeated. He said each word as though the expression was brand new to him.

“Yeah, you know. Fast food.” I said, then because he seemed to like restating the same thing over and over with bigger words I added, “Low nutritional, high cholesterol, greasy, garbage. The stuff you get out of a machine.”

“What do you think a Kitchen-matic is?” He replied sarcastically.

Touché, I thought. “The contents of a...” I stopped. “Look, why don’t we go to my place? I can make us bean salad.”

Robert looked at me suspiciously. “Bean. Salad?” He said that like it was two words as well, only with more emphasis that those particular two words did not belong together. “Those two words do not sound as though they belong together.” He added. See!

I got up and went to the door. I didn’t have a jacket because everything on the Space Station was indoors so there

didn't seem a point. The whole stinking place was air conditioned at a perfect temperature that somehow remained between 20 and 21 Celsius, everywhere! Being as I was the one visiting from Earth, while he grew up here, it seemed double odd that our habits were reversed on this point.

We got to my apartment and I went to the Kitchen-matic where I opened a few drawers and pulled out what I needed to make my famous Bean Salad. Actually it's my Dad's famous Bean Salad but Robert didn't know that so I was trying to impress him.

He wandered around our place while I emptied the ingredients into a bowl and began to mix them together. I glanced over from time to time, wanting to make sure he wasn't going to damage something. My Dad had a pretty cool collection of stuff, some of which he'd brought up, and I'd be responsible if anything happened to them. But Robert wasn't worth worrying about, he stopped, looked at everything keenly, like it was in a Museum or something, and while he sometimes leaned in close, he never reached up to touch anything.

"A Kepplar™ Solid-state pump?" He asked. "Why would your father have one of these?"

"It's a museum piece. At least it would be if Dad gave it to one. That's from the original production series."

"No kidding." Robert said, seemingly impressed. "How did your father come to possess it?"

I turned, holding two plates and began to serve the bean salad. "His grand mother, or my great-grand mother if you want, made them. She designed the original."

Robert's head tilted and something similar to his scowly face came over him, only it wasn't his scowly face because his bottom lip wasn't protruding. Then he spoke, "I believe my mother's... third... cousin was married to her. Susan Stewart, correct?" [Susan Stewart is Robert MacManus' maternal great-grand mother and Bill Magellan's paternal great-great-grand mother.]

"Yeah." I paused. "I think so. That sounds right. Doesn't it say on the base?"

Robert's eyebrows flared in surprise as he noticed that was in fact the case. His hand came up but stopped before touching it, "May I?" He asked.

"Yeah. So long as you're careful." I finished serving on the two plates and then joined him. Sure enough, the base had the words 'Susan Stewart – SpaceSleet Ent.' and then the patent number.

"Actually the last seven digits are the production number." Robert corrected me. That didn't make sense, the last seven digits were six zeros and a one. That would mean this was the first unit ever made. "So it would seem." He said as he turned, moved to the counter, and sat before one of the plates.

Before I took my gaze off the plaque that held the very first device of something used by nearly every spacecraft in existence Robert had taken a fork full of the bean salad and was spitting it back out.

"Ugh!" He protested loudly, "It's cold!"

"Of course it's cold!" I retorted (if that's the right word for 'shot back' then that's what I did), "It's... a... salad!"

He slowly, and overdramatically if you must know, spit out the rest of the semi-chewed mouthful. That was disgusting. Then he wiped his mouth. "I mean it's uncooked."

"Who cooks a salad?" I replied.

"One doesn't use raw potatoes in potato salad, nor would you use uncooked noodles in a pasta salad." He pushed the dish away with his scowly face back in place, bottom lip and all. "I cannot eat that."

I didn't know what to do. Bean salad is delicious and to be sure I tasted mine to confirm I hadn't botched the recipe. "There's nothing wrong with this!" I protested as I began to scoop another delicious mouthful in.

"I'm sure if you're used to eating raw, uncooked beans it's probably delicious." He shook his head, "But I cannot eat that."

"Cannot or will not?" I can't believe I said that. I've heard it so often from my parents that you'd think it was one of

those expressions my brain would've imploded on before letting me say, but I did. It came right out of my mouth before I even realized it. Wow.

"I stand corrected." He acknowledged with a nod, "While I physically could consume it, I will not." Then after a very brief pause he rapidly and emphatically added, "Actually, I doubt I physically could eat it either. The texture alone almost triggered my gag reflex which would make consumption impossible."

Who talks like that?! I looked at the plate. "I'm pretty sure they're cooked before they're packaged. I can't imagine they're in the same state as fresh beans."

Robert looked at the plate, the smell of it made his nose crinkle. "Either way. I'm off the beans now."

'Off' the beans, he said. Man, this kid is weird.

He rose. "You can continue with this experiment, but I need sustenance. I'm going to the Mall-way."

I let out a big sigh. Full on exasperation. Funny because he'd been doing the same thing to me every time I asked a simple question. "Give me a second to put this away then."

I'd never been to the Mall-way. We'd been on the station nearly ten days now but between school and family stuff, well, there hadn't been any time to go shopping.

"So, you hang out here a lot?" I asked him when we stepped out of the 'Vator on the Mall-way deck.

Robert stopped and looked at me. "I do not 'hang out'."

"Of course you don't..." I said sarcastically.

"One rule I've always had was that if I didn't have a purpose for being somewhere then I wasn't supposed to go there."

Okay, so it wasn't the Wild West for this kid. Well, in a way I sort of felt sorry for him on this point alone. One of the greatest things about growing up was exploring, getting someplace new and discovering it. Hanging out someplace no one else had ever been, at least you could pretend that no one else had ever been there. It seemed like he was denied all that.

“Not at all.” He replied when I mentioned it. “I regularly target a new area to explore. I’m encouraged to do that. But I also file flight plans, or at least provide an action plan so that I can be located if there’s an emergency. And I can justify why I went there.”

He took me to the Food-way. There were familiar enough names along the bank of portals. On Earth these would be actual restaurants, like John A’s™, Mindy’s™, Likes™ and that sort. I was a little surprised when he by-passed all the known food units and bee-lined for the Seventy-One™ portal. On Earth that’s a chain of corner stores, a place for fuel, a snack, maybe even a cold beverage. Not exactly the sort of place you go for a nutritious lunch. I was getting nervous.

Robert placed his thumb on the pay-tab and said, “Two usals.” It was presumptuous of him to assume I’d want to eat what he ate but seconds later a confirmation chime pinged and the slot opened revealing two containers of DP Plus™ and what looked surprisingly like burritos, hot burritos. He took them and led the way to a seating area.

The spot he found had the most amazing view of space. No moon, no Earth, no other stations, just a giant wall of oversized windows and billions of stars slowly drifting past. It took my breath away and I stopped while he continued to the seats.

When I broke from my reverie I caught up with him. He’d already peeled back the wrapper and was starting to eat. I looked at the burrito. “This is exactly the sort of stuff I’m probably not supposed to be eating.”

“Have you checked the label?” He said.

Reluctantly, because there’s never good news on a food label, I reached up and flipped the package over so I could see the label. It was straight ‘across the board’ perfect. Green dots in every category with protein, carb, dairy and veg at exactly the levels they were supposed to be for me. Not a boy my age, me personally, even down to my vitamin deficiency. “That’s crazy.” I said.

“What is?” He uttered between swallows.

I peeled back the wrapper and took the burrito in my hands bringing it up to my mouth. The scent was incredible and my mouth began salivating immediately. Even if the label had said this was awful for me I probably couldn't have resisted. I opened my mouth and took a bite. I'd eaten lots of things in my long life but this was one of the tastiest. The meat was tender and juicy, like the best steak. The green pepper tasted like it had just been plucked from the ground and yet it also tasted rich, like it had been steamed and stewed for hours. I don't even know how that's possible!

"This is how I prefer my beans." Robert said smugly.

I looked at him unhappily, but I couldn't argue. I'd never eaten better tasting beans.

The soda was another matter. DP™ particularly was not on my approved list and I'd never heard of DP Plus™, but in the spirit of discovery I looked at that label and realized it was better balanced in many areas of what I was supposed to have than most of the drinks on my approved list. I popped the tab and then took my first sip, sputtering a bit from the bubbles, which I wasn't used to. The flavours were intense but each seemed to trigger a different response as it slid across my tongue. It's funny because for generations now there'd been an Earthside ban on these things, only recently lifted. I think I knew why, but surely this was one of those areas where science earned an A+.

"So?" Robert asked with a twinkle in his eye. I could tell he already knew my response.

"How is this stuff so good?" Not my best sentence but I was nearly speechless, and my mouth was full.

"It identified us while we stood there and cross-referenced your nutri-scale. Then packed exactly what you were supposed to have. None of that 'guess my body needs' stuff your salad had. Finish this, and you're good to go for the next four point seven hours."

I looked at the kiosks. It was a little unnerving that a bunch of machines were checking me out when I came to buy something, although I think everybody uses that type of biometrics now, but then the meal before me *was* delicious and it

was perfectly balanced for me. But if that's the case then... "Wait a minute. What happens if we switched plates?"

"Huh?" That was Robert actually being surprised by a question I had. The best response he has is, 'huh'.

"This food is balanced for me, yours is balanced for you. What happens if we switched? It's otherwise the same, right?"

He looked at his food and thought about that a moment and then a different sounding, "Huh," was all he said before he started to eat again. "That would probably mess things up, wouldn't it?"

"Oh, no!" I suddenly realized I'd forgot to say grace. I quickly put the food down, wiped my fingers, and then bowed my head.

A moment later, while I was guiltily working my way through the prayer I'd almost forgot to say I heard Robert. Actually it was impossible not to hear him.

"Magellan?" He said. "Are you all right?" Then a pause. "Magellan!?" Then with some alarm in his voice. "Do you need assistance? Shall I call a Medico?"

I tried to shake my head without stopping. It seemed wrong to stop. I wrinkled my nose in an attempt to shoo him away and quickly shook my head again, then he got up and came over to my side. The final part of grace got way rushed. I looked up angrily as his hand came to my throat checking my pulse. "I'm fine!" I said with as much annoyance as I could muster.

"Why didn't you answer me?" He said with alarm.

"I was saying 'grace'." I've had friends who didn't go to church regularly so spending time with people who don't pray before their meals is nothing new, but he looked like someone who had no familiarity with giving thanks at all!

"There was a lot more than 'grace' said. That wouldn't have taken you nearly... twenty seconds. You looked like you were having a seizure. Was that a stroke?"

I looked at him. "It's called 'grace'. Giving thanks."

"For what?" He said.

“The meal.”

He looked at the meal. “It’s no big deal. I have an open account here.”

“Not to you!” I snapped at him, then paused, “Although, yeah, thank you for treating me to lunch...” Then I finished my original thought. “I was saying thanks to God.”

Robert MacManus stopped. I don’t mean he stopped talking, it actually looked like someone hit the freeze frame button on a Vid-playback. He literally stopped. No eyebrow twitching, blinking, there wasn’t even any sign he was breathing. Then he took a medium sized breath in before saying, like it was two separate sentences, “What... now?”

“What faith are you?” I asked him. It was a common enough question, I didn’t expect that he wouldn’t know the answer. Everyone knows what religion they are, even if they ‘more spiritual than religious’. His expression was blank, as though he didn’t have an answer. “I’m guessing by your reaction that you’re an atheist.”

He took a breath as though he was about to speak, then again as though he was about to make a speech, but then he stopped before talking, and his brow furrowed. “I don’t know.” He finally said.

“Don’t know what?” I said. At this point I still wasn’t catching on.

“My faith.” He said. “I don’t think I have one. Except in myself, and in science, of course.” He paused again and then added an earnestly as one could imagine, “Does that count?”

It never occurred to me that atheist didn’t practice being atheistic. I sort of presumed they spoke about there not being a God as much as we did about there being one.

We sat there in silence for a moment. “Does your...” he paused before saying it as though it might offend me, “...religion forbid you from spending time with me if I’m not... religious?”

“No.” At least I didn’t think so. I was pretty sure that my faith actually encouraged me to witness to those without faith. It was the evangelical part of it.

“Okay, then.” He said. “I have something to investigate, and until I do I suggest we table this topic for later follow-up.”

And with that the twelve-year-old wonder kid I’d been hanging around all week returned to his meal and continued eating as though nothing was wrong. I on the other hand had a bazillion questions, none of which I could form properly.

I’d never been without someone else to back me up on points of faith so I didn’t know how to proceed. I went back to my prayer without interruption and then finished my meal. But it was the first time we’d ever sat together for so long without anyone saying anything.

DEATH IN SPACE

Or, How I Spent My Summer Vacation

– MY PAPA DONE TOLD ME –

Later that night, after he got home from work, I asked my Dad about it, specifically why Robert didn't have a faith.

"Not everyone does." He said unhelpfully.

"Well, what am I supposed to do?" I exclaimed.

"Be yourself."

Really, that's the best parental advice I was going to get? I've never spent any time with someone who didn't believe, even the unreligious kids at school still identified themselves as 'Christian', even though they weren't really, but it kept things simple, and at least I didn't have to defend going to church.

"You don't have to defend anything, Bill." Dad said it like it was that simple. "If he asks you about the faith then answer, truthfully."

"But he almost called a Medico while I way praying!"

Dad started to chuckle.

"It's not funny!" Actually it was and I knew it because I started to chuckle too. I'm blaming my Dad for that, his laugh is infectious.

"You're not here to minister."

"But you said he was my 'service'!" I specifically recalled that. The whole guilt thing Dad put on me when he asked me to hang around Robert was centered on our faith.

"Yes." Dad said, "But I didn't ask you to convert him, just help him learn to socialize with someone his own age."

“I’m four years older than he is.” I said ruefully. Why did I have to keep reminding him of that?

“And yet you feel like you’re speaking with an adult half the time, don’t you?”

Was it that obvious? Dad chuckled again, “Relax, kiddo. He does that to everyone, me included. That boy has an ‘old soul’ in him.”

I had no idea what that meant so I let it slide. Besides, there were more important issues to address, “How do I keep him from hating me?”

“He won’t hate you.”

“How can you know that? He’s into science, I’m a Christian! Aren’t we...” I couldn’t find the words, “Automatically enemies?!”

“You’re into science!” Dad always cut right to it.

“You know what I mean!” Science and Religion had two camps that have been fighting with each other since the dawn of time, or so it seemed.

“Yeah.” Dad said sliding to the deck and sitting on the floor. He usually only did that if this was going to be a long conversation. He called it ‘getting comfortable’. “It’s not popular being Christian right now, particularly among the sciences. But it doesn’t mean you shouldn’t be you. You pray, and you like science.”

Sort of. I found science was pretty cool because it explained how a lot of things worked, but based on my grades it didn’t seem to like me very much.

“What if he points out all the badness religion has done?” It was a bad sentence. I was upset. I don’t normally speak that badly, unless I’m upset.

“Look, throughout human history there have been times when idiots have taken power by manipulating the populations into supporting them. Religion has been an easy tool for these creeps, so have politics, language, old grievances, flag colour, sporting teams, money, family values, whatever. But there’s just

as much evil that's been done by idiots twisting science as there is by idiots twisting religion. The problem, is with the idiots, and the ignorant people who follow them.

I knew that was true. I'm not sure if Dad was aware of this or not but the last Social Studies module I did before we came up here was about former East American President David Halley and how he perverted the Baptist faith to get control of the White House, and the American Nuclear Arsenal, and then pushed and pushed until he was able to start the 'Great Holy War'. Anyone identifying themselves as Baptists has been paying for his evil ever since, to the point where we've sometimes had to refer to ourselves by other names. But it was also the freshest example that anti-faith people threw at us, and it was hard to argue against.

I didn't want Robert to hate me. I didn't want to fight with him about it either. But most of all I didn't want to have to defend my beliefs. Is that so wrong?

DEATH IN SPACE

Or, How I Spent My Summer Vacation

- PEOPLE, LET ME TELL YOU - ABOUT MY BEST FRIEND

I was a billion kilometres away when something broke my daydream. It took a moment to realize it was a tap on my shoulder, and another moment to realize someone was speaking to me. Unfortunately, by the time I cleared enough of the fog to realize who it was, it was too late to avoid what I'd been trying to avoid for days.

“There you are.” Robert said. “I’ve been trying to locate you for days.”

“What for?” I said without emotion. I’d been dreading this. Did he want to mock me? Ridicule me? Or start a fight I still wasn’t prepared for?

“I’m sorry.” He said stepping back like someone who suddenly realized they were in your personal space. “I thought your faith didn’t restrict you from associating with me because I wasn’t... religious.”

I looked at him dumbfounded. “It doesn’t.” I restated.

Still confused, he sat down opposite me. “Then what’s the problem?”

“Who says there’s a problem?”

“You’ve been avoiding me.” He said plainly as he removed his Paper-WATE from a satchel.

“I have not been avoiding you.” I said. It was a lie. I’d been doing everything possible to avoid him, including using a Mobile-WATE to track his movements.

“I’ve noticed you duck behind obstacles three times in the last two days.” He said plainly, then held up a tiny device I didn’t recognize, “I too, have tracking abilities, you know. More sophisticated ones than your Mobile-WATE app.”

Okay, so I’m a bad liar.

“I didn’t want to start something.” I said plainly giving up. I shrugged, “I really don’t want to explain myself, right now.”

Robert looked at me. His head tilted fifteen degrees to the right and he thought for a moment, then his brow furrowed another second and a half before he spoke, “Why would you need to explain yourself?”

“Because I’m Christian and you’re a scientist.” I leaned forward, if we were going to end this then lets get it over with! “It’s worse than that, you know. I’m a Baptist Christian. Not the Halley type, but still.”

“Okay.” He said completely accepting my word without apparently understanding any of it. He leaned back and that was that. “Apparently I’m Anglican.” He said. Anglican was sort of Christian. One of the catholic faiths I think but not the one where the Pope was supreme authority. It was the English one that came out of some old King’s desire to divorce his wife or something. Actually, I didn’t really know, except that some people at our Church didn’t think Anglicans were real Christians either, although for the life of me I didn’t know why, I think it has to do with how they handled baptism.

“I’ve never been to a church or anything, at least not that I can recall, but I was supposedly ‘baptized’ I think you call it.”

“It doesn’t really count if you were a baby.” I said without thinking. I’d just flung my religion’s dogma at him like puppy poop. This was exactly the sort of thing that began arguments.

“Oh?” He said curiously. “Why is that?”

I froze. I didn’t want to answer, I didn’t want to start anything. I didn’t even want to be having this conversation! But the look on his face wasn’t judgemental, it was curiosity. Open curiosity.

“Is this making you uncomfortable?” He said after a moment.

“Yeah.” I replied with less confidence than it sounded.

He shook his head not understanding the context. I didn’t know that at the time but I’ve since learned to recognize that expression. Then he said, “Why?”

“Because I don’t want to get into a fight. I don’t want to have to defend my faith to someone who has...” I couldn’t think of the word.

“An Anti-religious bias?” He offered.

I shrugged. “Yeah. I guess. Bigotry. Ignorance. Disrespect.”

“Magellan.” He said, “I asked you not to call me nicknames for no reason other than because I don’t like them and you haven’t. Why wouldn’t I afford you the same respect?”

I looked at him. He really wasn’t looking for a fight, in fact he wasn’t looking for anything but answers to his questions.

“Because most people don’t!” I said. “Most people feel strongly about this stuff.”

“I’m not ‘most people.’” He replied plainly. While he kept saying it I was still worried it wasn’t true. “Not that I understand why someone who does not share your beliefs would attack you for them. You’re different. That’s all.”

I shrugged and offered, “I guess when someone meets another person who has beliefs that are different from their own maybe it feels sometimes like their own beliefs are being attacked. And if you reject what I believe in then in part you’re rejecting me too.”

He stopped and thought about that. “Interesting.” He paused, “Do you think I have to believe the same as you do?”

That was tricky. “My faith says that only those who do will enjoy the benefits of heaven and eternal life. Because I believe that, it is a little hard not to try and help someone who’s going to miss out on... eternity. I mean, if you like someone then you want to spend eternity with them. You know?”

He thought about that a moment. It wasn't his pouty face so it wasn't bothering him. "I can see the conundrum such beliefs would put you in." He took a breath, "Oddly Raeb didn't cover this part of it with me in as much as detail as I now wish he had."

Raeb? I stopped and thought a moment. Raeb wasn't one of the kids in our class, there were a few Muslim kids, and someone else from Asia that I couldn't place, but I was pretty sure none of them were named Raeb. "Who is Raeb?"

Robert looked at me while still deep in thought, and then shook off his reverie so he could quickly piece together my question, "He's not exactly a 'who', although I tend to refer to him... it, that way. Raeb is more of a... 'what'."

"What sort of 'what', exactly?" See, now I had to know!

"He's an Intuitive, Heuristic, Epi-System, Ballast-Base although Doctor Newville likes to refer to him as an Electro-Brain."

"Electro-Brain?" I repeated tripping over the words and a small slight smile came across my mouth. It sounded hokey.

"Yes." Robert said, acknowledging how it sounded with his own expression of disapproval. "He has a flair for the melodramatic and a propensity to watch terrible 20th Century horror Vids."

"He? The computer, or the Doctor guy?"

"I'm referring to Doctor Newville." Robert said with some annoyance. "He's what my mother calls... 'a character'. Oh," he added, "And Raeb is not a computer."

"Artificial intelligence system?" I offered.

"More of an artificial sentience, and a very sophisticated, and sometimes touchy one at that."

"Wait a minute." I said suddenly realizing something, "Did you say this Doctor guy likes Monster movies?" My Dad loves old monster movies and as I've said his laugh is infectious enough that I sort of enjoy them too.

“Well.” Robert started, “I suppose. His preference seems to be more of the early schlock, Science Fantasy, variety. Very early. The monochromatic ones that they called...”

“Black and White movies!?” I finished.

“Oh. You’re familiar with the format?” He said with some surprise.

“I love them! We’ll, maybe love is a strong word. My Dad loves them and we’ve watched hundreds of them.”

“There are hundreds?” He said with disappointment.

“Well, yeah.” I paused. “It was how they did things for the first thirty years or so. Although not everything we’ve watched was sci-fi or monsters, a lot of it was just comedies and stuff, a few dramas that I didn’t like so much, but all of it was black & white. It’s the greatest.”

“Really?” Robert said with more than a little scepticism. “I tend to think more modern fare, with full Rez-Nay clarity, is far superior in quality.”

“Image-wise, sure.” I said, happy to be speaking of something other than my faith, “But today’s stuff is so... formulaic... compared to the old stories.”

“The formula on modern storytelling doesn’t drag as much as the historical stuff appears to.”

He was not a convert. That’s fine. I knew how to get him there.

“Would you like to meet him?” Robert offered out of the blue.

“Are you kidding!?” I couldn’t wait to compare movie knowledge with someone else who was a fan. It would be interesting to see how this Doctor’s movie preference compared to my Dad’s.

He rose and I followed him to the ‘Vator, which took us up from the Life Wheel through the Hub to the Core and then started down. I’d never gone down the station, except when we first arrived at the giant Main Bay and came up. So I guess I was

right, the first time, I've never gone *down* the central core on a Space Station.

We came out on one of the Office decks, walked a cluster of semi-circular corridors that all looked the same but were differentiated by stripes of colour near the ceiling and some crazy numbering system I couldn't make sense of.

As we walked occasionally we'd pass someone, a lab technician or some huffy administrator, I'm only guessing because of their outfits, but each time they nodded and smiled. At first I thought one of them would stop us and ask what were doing here, seeing as this looked like a business area, or a lab, someplace that should be secure, and we were just kids, but they were nodding to Robert, some even greeting him. They knew him, and he them, and we continued as though we belonged.

Finally we got to the door he wanted and without pause or introduction, or warning, or preparation, or anything one would expect before being suddenly introduced to a scientist in his lab Robert entered. I hesitantly followed. There was no one inside.

"Oh." I said. My balloon of expectation deflating like a balloon someone was slowly letting the air out of.

Robert stopped suddenly and turned to me, expecting me to continue, or something. Then he turned back to the large cube in the middle of the room as he approached it. "Hello, Raeb." He said.

"Good morning, Robert." The voice came out of everywhere but wasn't loud, just well balanced and from all directions.

Robert walked to the cube and pulled out a chair. The seats were built into the cube so you wouldn't know they were there, unless you knew they were there, and then it was easy. Robert sat down and the black top of the large cube suddenly came to life.

"Is this William Magellan?" he said. The computer that is, not Robert.

“Bill.” I corrected him/it. Then stopped realizing maybe I shouldn’t be speaking directly to it/him.

“Oh.” The voice said. “Yes, I see that now. No contraction. Bill is your birth name.” The computer said again. “I apologize if I have offended you.”

“No problem.” I said, as I slowly followed Robert to the cube but then started to walk around the room which was lined on all sides with various displays and consoles and interfaces. All of which were active and working on different things.

“I’m not a computer.” The voice said.

I looked up, confused, then realized I must’ve just muttered the word. “I’m an artificially created sentience. The first production clone of the Core RAEB. I achieved self-awareness on 09-09-09, September 9th, 2209.”

“Huh?” I said.

“I think, therefore I am.” The voice replied.

I let that hang there a while, not knowing how else to respond to it. Having nothing else to say I finally said, “I didn’t mean to offend.”

“Robert?” Asked the voice again.

“Yes, Raeb.” Robert was already at work on something on the screen. This computer could apparently do many things at once, which I guess they all can, but usually something doesn’t work as well when you do. Unless that’s on a separate computer.

“Were you aware that Bill’s first name was not a contraction?”

Robert stopped and looked at me. “I recall him saying something like that, now that you mention it.” Then he went back to work. “I guess I wasn’t paying attention.”

I frowned at that. He always gave me a hard time when he caught me not paying attention. He had what my Mom called a ‘double standard’ going.

“What do I say to begin interface?” I asked.

Robert looked at me askew. “What?”

“You can start by speaking my name, Bill. Which is: Raeb.” The voice said, “Or you can just start speaking. I can normally extrapolate that you’re speaking to me from the context of what you say.”

“Well,” I said wryly, “At least I know where he gets it from.”

Robert stopped and looked at me for that. The voice added, “I believe that was a dig.”

“Yes.” Robert said. “I think I recognized it.”

“May I ask you a question, Bill?” The voice said.

“Shoot.” I replied without thinking that the voice may not understand that.

“Oh.” The voice replied with a lilt of excitement in it. “He’s prone to colloquialisms, is he?”

Robert didn’t look up, “Unfortunately. And slang.”

“Marvellous,” said the voice. “I’m sorry Bill, I’m not exposed to people who speak as casually as you do.”

“Oh. I apologize. I-I didn’t know.” I said.

“Do not apologize!” The voice quickly added. “I think it will be quite refreshing, and challenging, in a very positive way. I encourage you to continue.”

“Really?” Robert said, looking up at the ceiling with sarcasm and disappointment. I glanced up looking for any sign of a camera or focused interface he was directing his attention to. I couldn’t see it.

“The intention is for RAEBS to be incorporated in generalized settings, so the higher amount of ‘normal’ human interaction we experience, the better.”

“It’s overrated if you ask me.” Robert muttered as he went back to work.

“What’s wrong with normal human interaction?” I asked. “You’re... human.”

Robert sighed and then looked at me. “From what I’ve witnessed, ‘normal human’ interaction is filled, if not indeed built

upon, a foundation of mis-statements, inaccuracies, false assumptions and poorly structured utterances. It's imprecise and prone to misunderstanding." Then, as he turned back to the cube top interface, he added, "Communication errors are in fact the leading cause of mission failure."

"You can't do everything alone." I said as I approached him. He frowned at me. I could see that he wasn't buying it. "No matter what you want to do you're going to have to relate to people." I said, then paused. "What do you want to be when you grow up?"

He stopped and slowly turned to me. "I am what I want to be. A predominantly self-reliant human being, pursuing studies in space exploration. As far as what I want to *do* when I get older, there is no change. I intend to be the first human to set foot on an extra-solar planet."

"Extra-solar?" I repeated but then understood he meant an Alien world that wasn't orbiting our Sun. Before he corrected me I continued, "You'll need a crew!"

Robert looked around the room. "Raeb is currently studying every known discipline there is. By the time he's incorporated into the Rigel Three test vehicle he will have the equivalent of one hundred and seventy-two master degrees. He'll be fully integrated into the ship, and able to operate the craft without need for a crew."

"So you want to go into deep space and meet aliens, all by yourself?"

He stopped. "Wasn't I clear? Myself... and Raeb."

I snapped my fingers suddenly realizing the flaw in his argument, "Okay, but what if you get injured or sick? You'll need a Medico."

"Many remote communities on Earth already rely on non-invasive surgical robots guided by distant personnel. Raeb will have those robots, as well as other probes, and the skills to use them. Probably with more ability than most Medicos."

I had nothing to reply to that. It used to be a boy and his dog, now it was a boy and his... sentient electro-brain. But I

thought it was funny that the computer wanted to be more human than the kid did.

DEATH IN SPACE

Or, How I Spent My Summer Vacation

- THE CAT IN THE BOX -

Over the next several weeks we spent a lot of time in Raeb's room, that's what I called the RAEB Lab because lets face it, that's what it was. And even though Raeb couldn't leave the room, as it were, he was connected to everything, not just on the station, but it seemed throughout the world as well.

I say that because my grades improved while we were there. Not because Raeb did any of my homework or anything, although he could've. Whether he would've or not is anyone's guess because honestly I never asked, even on the crappy, hard stuff I didn't like.

But there's something amazing about being able to ask any question without having to worry about why you want to know something, and to get answers that are targeted to what you want to know because the person – I know Raeb is not a person but he talks like one and acts like one and well, after a very short period of time you can't help but see 'him' as one! – has been following along in your class and already understands the context.

I'm not saying parent's should be more this way, although if its possible it might not hurt, but its fantastic having access to something/someone that can answer those questions you have, but that you won't ask, because you don't need to hear, "That's a stupid question," for the billionth time!

So my grades improved and I really looked forward to going to Raeb's room, not just because of my grades but also because Raeb was able to engage me when Robert didn't want to. It was like having a third friend.

The downside of that is there were times when they gang up on me. And Robert can be snide. That's a word I learned from Raeb. It has a few meanings, most of which are out of use, but the one that applies is 'mocking in an indirect way'. They're rubbing off on me because even though I couldn't put it as cleanly as Raeb did, I understood from the context of the word, how it was used, and therefore what it basically meant.

I get that Robert doesn't mean to be mean, he just doesn't understand why other people don't think the same way he does, but since no one else thinks the way he does, except maybe Raeb, you'd think he'd be used to it by now.

Anyway, by ganging up on me I mean there are times they completely understand each other, and are in agreement, and therefore my input is rejected no matter how badly I think it's the right thing. It happens too much for my liking and I get upset. I know they've known each longer, and like I just said, they both sort of think alike, but once in a while it'd be nice to win an argument. Or a discussion as Robert calls them, just because he's always trying to avoid admitting that he 'did so' raise his voice, or that his point is just as stupid as I said it was.

The worst, most infuriating thing he does is start off on the wrong side of the argument and then somehow, and I haven't figured out how yet, but when I do I'm going to punch him for it, somehow he manages to take *my* original point and work it into *his* argument until I'm basically disagreeing with myself. And then, and this is the worst, he'll wrap up the discussion by saying, "Basically, we're saying the same thing."

By the time we're done, I'm upset, I have a headache, I'm exhausted, and even when we start doing what I originally wanted to, because that's what we were always apparently talking about, I don't enjoy it because he's just so... so... frustrating.

And later still, when I think about what happened, usually because I'm still pretty miffed, I'll realize that he came around to my original point and threw it back at me. At those moments I really want to climb out of bed, dress, go down to his suite, wake him up, and then punch him in the nose.

Raeb says I should take comfort in the fact that I've managed to change his mind even, if he won't admit it. "Robert can be very stubborn," Raeb has said, "And he doesn't like to be wrong."

Who does? I know I don't and I'm getting lots of practice! And I take no comfort in the fact that the guy rapidly becoming my best friend can be a real pain in the butt!

Still, for some strange reason I look forward to being around him, particularly when we're in Raeb's room.

So one time, when I didn't want to work on my quantum mechanics module, because I'm increasingly sure that I don't want to be a Quantum Mechanic, particularly if I have to understand...

$$\sigma_x \sigma_p \geq \frac{\hbar}{2}$$

I mean, who needs to know that? And they tell me that's the one of the easy ones. The only thing I get, is that at least one reason it has been called the 'Uncertainty Principle' is because no one is certain what it means.

"Are you familiar with Schrödinger's Cat paradox?" Raeb asked. I thought that was an odd leap and said so.

"Schrödinger had a cat?" I replied. Okay, maybe I didn't glom onto the most important question to his statement, that being who the blazes Schrödinger was, but I did ask something and that should count. For something...

"It is a thought exercise," Raeb began completely ignoring me. "Where one imagines a cat in a steel chamber, along with a Geiger counter, a tiny bit of some radioactive substance, a trigger that is connected to the Geiger counter and will trip if it detects a radioactive discharge, thus releasing a hammer, that is over a small flask of something poisonous. The modern example is hydrocyanic acid."

"For the radioactive discharge?" I said not following.

"No." Raeb responded flatly, "Hydrocyanic acid is the poison."

“The Einsteinian example uses explosives.” Robert added without any reason to join in. He had an odd and somewhat disturbing grin on his face as he said it.

“Which,” Countered Raeb, “Schrödinger didn’t use because most people fixated on the improbability of a box that could contain an explosion without external detection.”

“The explosion better illustrates the existence or non-existence of the cat.” Robert added with a disturbing sense of enjoyment.

“Good grief!” I exclaimed, “That’s awful! Why would anyone put a cat in a box with poison and radioactive stuff?” And then, when Robert looked at me, I added, “Or explosives!”

“As I said, it’s a thought exercise.” Raeb continued, “The trip relay and materials must be positioned in such a way that the cat can have no affect on them, and the radioactive substance must be of such an insignificant amount that it’s possible that, in the course of a hour, it may, or may not, decay enough to trip the Geiger counter.”

“The Schrödinger guy really hated cats, huh?” I said trying to lighten the mood.

Robert looked at me and opened his mouth and almost said something. From his expression I could tell he wasn’t fond of cats either but Raeb continued before I could ask him about it.

“The point of the exercise is this.” Raeb said and I tried intently to follow him because usually when someone refers to ‘the point’, all the previous stuff they said should start to make sense. “If one has left this entire system to itself for an hour, one would say that the cat still lives if no atoms have decayed during that time. Similarly, and at the same time, one would say that the cat is dead if an atom has decayed.”

“So when you open it up you’d know, right?” I thought that was pretty clear.

“Yes.” Raeb said, with sounded a little too much like the lecturing tone of a University professor, or my father, sometimes. “But until one does in fact open the steel box there is no way to know. The box is air tight so the poison will not seep out. And

the steel is thick enough to both prohibit one from testing for the radioactive discharge, or listen for signs of the cat.”

“Then how do you know the answer?” I hated not knowing the answer. I really hoped Raeb was going to tell me the answer.

“One doesn’t.” He said, not telling me the answer, and despite being an artificial sentience I’m positive I picked up smugness in his tone. “That’s the uncertainty.”

“Okay...” I said uncertain why I’d just gone through this, and even more convinced that I didn’t like Quantum Mechanics. “Why does it matter?”

“Because,” Robert chimed in. “Nearly every situation you’ll come across as a space explorer will contain uncertainty, typically applied to the space/time equations of faster-than-light navigation, but if you don’t understand the principle’s involved then you will be useless to me.”

That was the first indication I had that Robert had amended his solo space exploration plan to include a second member on his crew, and that I was that lucky second person. In typical fashion I missed it entirely at the time and focused on the wrong point, “There’s no such thing as faster-than-light travel!”

“Not yet.” Robert said with a wry grin, “But they’re working on it. And by the time I’m ready to go I expect to do so with a ship capable of it.” He paused and went back to what he was doing pausing just long enough to mumble. “It had better be ready then, I’m not keen on a ten year trip to Procyon.”

I thought about this a moment, all of it. The idea that Robert actually liked me enough to have me on his imaginary crew was there, but at the moment the headache I had over Quantum Mechanics was still pushing that aside. I was still bothered by the whole concept, “Without seeing inside the box,” I said, “aren’t we just making a presumption of what’s really happening?”

Silence shot into the room. Robert looked at me and the silence continued. I thought I may have actual said a curse word for a moment and re-traced my sentence looking for it, or

anything that might've sounded like one, so I could clarify, or apologize.

“You appear to understand this much better than you give off.” Raeb said.

I was floored. “I don’t understand anything!” I yelled. “I don’t understand why someone would come up with a formula to determine if a cat was dead or alive in a box, or why that will ever possible matter to me in the future!”

“The formula doesn’t address whether the cat is dead or alive. It’s there specifically to represent the fact that one doesn’t know either way.”

I stopped. “So it’s a variable? A placeholder for something that you can’t know?”

More silence shot in the room. Then Raeb said, “I thought you said he wouldn’t get it.”

A moment later, because I really didn’t know for a moment who Raeb was speaking to, Robert replied, “I thought he wouldn’t.”

“Don’t get too excited.” I quickly added, “I still don’t see how you can make an informed decision without knowing if a major piece of the equation is, or isn’t, something.”

“We’ll get you there.” Robert said and this time his expression had approval written all over it.

Mine probably gave away that I thought they were both insane.

DEATH IN SPACE

Or, How I Spent My Summer Vacation

– THE POINT –

By now I'm sure you're probably long past wondering how the title is connected to any of this. Certainly at this point there has been no death or even hint of it, or even the apparent threat of injury, or for that matter a Paper-WATE cut, if that's even possible [It is.]. Well, my most patient reader, we've come to the point in the story where the train finally gets back on the rails, or more accurately we've come off the feeder line and are now on the mains.

But I assure you, the previous excursions haven't been a waste, in fact, I can confidently predict that what you've read to this point was necessary and relevant to the rest of the story. In other words, I told you that story in order to tell you this one.

While a lot of our studies and homework was done under Raeb's watchful, and frequently supportive, gaze there was the occasional module, well, actually rather frequently there were modules, that required us to get out of our little cubicles and move about the space station with almost no supervision.

Apparently that was intentional. Most of the kids in my class were very new to the station and the teacher was trying to get us – through various class assignments – more familiar with our surroundings. It's easy to see a space station as just a place of work and in fact most of the previous stations were limited to just that, or for the transfer of people to other places where the work was being done, but Station 5, unlike all it's predecessors, was intended as a place to live, the first true space colony. This was evident by the very noticeable fact that it had children, teenagers, babies and a school.

And while Robert (and a few select others) had grown up here, they mostly did so in isolation of their peers (that means other students) without the benefit of ‘age appropriate’ activities (that means play). It’s one of the reasons some people tend to derisively call them ‘Spacers’, and by people, I mostly mean other students. But let’s face it, people can be cruel, particularly when they’re young, and particularly when they’re in unfamiliar territory, and most particularly when one of the group is 3 years younger but seems to know more than everyone else about everything.

I was taught that you don’t build yourself up by putting other people down, and while most kids who are being picked on tend to isolate themselves for safety, I learned early in my long life [15.275 years] that there was safety in numbers. I think my Dad knew it too, and I think it was one of the reasons he was so keen on getting me to link up with Robert even before classes began.

Growing up as he did, the Station had been Robert’s playground, and because his Father commanded one of the deep space Carriers, and his Mother was a senior executive with Rigel Aerospace, it was easy to think that poor Robert spent most of his time alone.

Well, folks, I’m here to report that’s not the case. Every adult on the station knew Robert and there weren’t many places he could go where he wasn’t under someone’s supervision, even if it was indirect. There used to be an expression that ‘it took a village to raise a child’, well, Robert’s village was nearly 385,000 kilometres above the Earth and moved over a thousand metres per second, but the sense of community there was probably greater than any place else any human ever lived.

Even now that thousands were coming up to join that community there was still a sense of what my Dad calls ‘the social contract’. No one walked past a fallen piece of paper or garbage, and left it there. They stopped, picked it up and disposed of it properly, even if it wasn’t theirs. No one shrugged when they passed a blown light fixture or a stained carpet either. Everyone acted as though the entire station was their own personal property and their life depended on it running perfectly. Which it turns out, it did, and it does.

Because Robert grew up here, everyone who was anywhere he went, took an interest in making sure he was safe, and knowledgeable about the space he was in, and what they did on the station, and how best to get around. And they all shared all the ‘little secrets’ they knew that no one else did. And because of that no one knew the station better than Robert did.

So I was his bud because it kept some of the bullies away, and he was mine because... because... well, I’m not exactly sure how to put it in words, we’re just like two peas in a pod really, except that we’re not the least bit alike. But we work well together.

One of the assignments we had involved measuring the cubic space of a large room and because it was new to him – having only just opened when I arrived – Robert wanted to measure the arboretum up in the new Communication array. Which you may recall was also the place where we’d first met.

“I like it here.” Robert said as we stepped off the ‘Vator. I liked it too. The rooms and halls on the space station were too closed in for me and after a few weeks on board I found that any time I was somewhere big and open, I felt better.

Since the opening ceremonies were over, most of the middle space in the arboretum had been reconfigured back to its intended layout. That means planters and walkways and an artificial park setting, made more impressive because there was a big mound of grass, or a grass substitute I guess, in the middle of the deck. Can they even grow grass on a space station? [Yes, they can and the arboretum had it].

“I wonder what they did to the deck?” Robert said as he looked down. I looked down. It was a brick walkway, and grass, and park like.

“I guess they brought this stuff in after the party.” I suggested.

Robert looked at me with his scowly face again. “We’re nearly half a level below that now.” He said.

I looked around and realized he was right. During the opening ceremonies the floor had been the same height as the ‘Vator door, which was up with the balcony now. It was also at

the same level as the big wide windows all around the room. The grass and shrubs and walkway we were on now was nearly a metre lower than the balcony circling it along the windows.

The railing on the balcony hadn't been there during the party and the whole deck had been at the same height then. Presuming all this grass and stuff was always here it begged the question where the flooring from the opening was now. I couldn't see any sign of it.

"I can't see any sign of it." I offered.

Robert shot his annoyed scowly face at me. It's slightly more dismissive than his normal scowly face. Then he walked to the far steps and began up them to the balcony. "Yuck." He said as he looked around the room.

I looked around the room too. I didn't say, "Yuck," or anything because I think I liked it this way more than I liked the party lay-out. It was darker for one, more atmospheric, and yet, more alive and warmer. Then I noticed an old couple [they were in their mid-20's] laying on the grassy knoll and getting all kissy between looking out at the stars. I turned and looked out at the stars, too. Yeah, it was a romantic space and if I ever had a girlfriend I'd probably bring her here. She's probably like that. And if she liked that then I'd get more of the kissy stuff.

"They're just in love." I said, figuring that's what he was commenting on. "You don't have to look at them but I wouldn't say 'Yuck'."

Robert looked at me with a deeper frown. It wasn't scowly so much as annoyed, and much more annoyed than his normal annoyed scowly face. I didn't have a name for it yet but if I'd just announced that I wanted to be a turtle when I grew up, and then fight crime using archaic Japanese combat techniques, well, it was the sort of expression I'd expect from him then.

"This is going to be more difficult than I anticipated." He said as he reached the top step and turned around to survey the room. "The previous configuration had a flat deck, it was more... uniform. This layout, with the numerous recesses and alcoves... it complicates things."

Again, who talks like that?

The assignment was to measure the interior cubic space of a large room. We'd certainly found that. Probably the largest room on the space station, at least the largest we could get at. The Main Bay below where all the shuttles docked would be larger, but it had a lot more alcoves and recesses and whatever else he didn't like so that wouldn't work even if we could get at it, which because it was in the vacuum of space, we couldn't.

The best part of this room was that it fell into one of the basic geometric shapes we'd been studying, it was a cone. I couldn't remember the formula for that but I recalled there was one and it was relatively simple. Of course, if he wanted to include the recessed spaces and irregular floor and everything, well, it wasn't going to be the 'easy formula'. In fact, I didn't know where we'd begin with that one so I figured, we wouldn't.

"Whoever makes the most mistakes learns the most!" I said with false optimism.

Robert looked at me again with a refreshed scowly face and then it softened as he nodded in understanding. "If we're correct it will be a major achievement, and if we're not then the learning curve provided by our Instructor as she explains our errors will be far greater than had we taken an easier path."

He paused. Thankfully it was long enough for me to try and make sense out of what he just said. Long enough for me to realize he had just re-stated what I'd said about learning the most, but in the most boring way possible.

"Let's get to work, then." He said and began to move around the balcony with his measuring kit. I watched him a moment trying to figure out why he was measuring the width of the balcony at various points.

"Do we have to be that precise?" I said. "I mean, it's just a basic shape, right? A cone?"

He looked at me and then blinked a couple of times really fast and then looked around the room. "The vagaries of the support structures greatly affect the overall interior volume of the space. I'm not sanguine about calculating an *approximate* volume." He looked at me and saw my bewildered expression.

"However, you may measure the space any way you choose while I work."

I looked at him blankly. I didn't understand half of what he'd just said but I understood he wanted details so I nodded and pulled out my micro-WATE so I could start measuring because I wasn't going to be upstaged by a twelve-year-old. "No. Let's go for precision. At least we won't have to return later for additional measurements. I'll start up here."

I began to measure the width of the balcony at various points, from the glass to the railing, and from the support columns to the banister, then using the laser pointer I got a balcony level reading on the diameter of the room. I stopped to see that Robert was staring at me, and then, without explaining himself, he nodded.

"I'll start down there then," he said pointing to the lower level where the park was and down he went. I continued taking various angled measurements, the grade of the glass wall, which after the first metre at 90 degrees, continued upward at exactly 60 degrees for 18.257 metres before curving to the center.

The 'dome' – because I didn't know what else to call it – was uniformly round and curved upward, with a 3.175 metre radius and 1.554 metres higher than the angled wall. I didn't know how we were going to turn this into a single number but as I looked down at Robert, in the pit where the grass and trees were, working feverishly in the various nooks and crannies, it didn't appear that any of that was bothering him.

I shrugged, presuming all would work out as planned, and then smiled at the idea we were definitely going to learn a lot because this was way more complicated than anyone would else in class would have bothered with, and then I turned and walked right into someone who was standing there looking out and minding his own business, or so it seemed.

The man had been peering out the window with a pair of binoculars, I think. Startled, he looked down at me and then smiled before saying, "Easy there, sport."

I stepped back. I'm not sure what my expression was but it must've been alarm because the man's expression softened and

his hand came out as though to steady me, or clutch me and kidnap me. At that moment I wasn't sure.

"You okay there, bud?" He said.

I sort of nodded. It tried for half a head shake and half a nod, but it probably just looked like my head was lolling about trying to figure out whether to say 'yes' or 'no'. I turned and then started to move away quickly, glancing back to make sure he wasn't following me, and for some reason saying, "See you," to him.

I don't know how, I might've jumped down the stairs, because I quickly caught up with Robert. "We've got to leave!" I whispered urgently with half a choked scream embedded in it.

He looked at me. It wasn't with the scowly face but it still looked perplexed. "Magellan?" He said as though I'd been somewhere else only a moment earlier and had just suddenly popped in existence beside him. He glanced around to where I'd been so maybe I had jumped. "What's going on?" He asked with some concern.

I looked around quickly, urgently, wondering where the man had gone and was only a little alarmed that he had indeed gone. "There's a spy on board." I said urgently, "We have to tell someone."

Now I've been told I'm prone to hy-per-bow-ly or whatever it's called, but I know for a fact that the man was a spy. Not because I have some secret subscription to 'Spy Master Weekly' or anything, I don't even if there is such a thing [Not any more there isn't], but because the man spoke with an accent I was very familiar with, and its not an accent that people friendly to the Network have, therefore its not an accent someone walking around freely on a Network Space Station should be using.

We got back to Raeb's room as quickly as we could, well, as quickly as I could get Robert to get off the top deck and down to some place where no one would see us, so we could talk. Why he picked the Raeb room rather than a Security Office, or something official and helpful probably has to do with the fact that I was making a claim that didn't make sense, as he kept telling me.

“It doesn’t make sense.” He said again, as the door closed behind us and I finally relaxed, then stopped relaxing while I tried to figure out how to lock the door. I mean, what if he followed us, like Spies do, and he was waiting for the best moment to come in and kill us, or something?

“Fine.” Robert said. “Raeb, please secure the door against unauthorized people.”

Raeb confirmed that he had. I didn’t find out until much later that it’s always secured against unauthorized people. It had never occurred to me that I was authorized so it never occurred to me that it was secured.

While Robert input the measurements we took above onto his workspace, I detailed my reasoning. “He’s from Chicago.” I started with.

“That is not a crime.” Robert said, then added, “How do you know?”

“My uncle Davis is from Chicago. Every time we visit them, everyone around has that same accent. I’m very familiar with it, and the thing he said to me. I can do it if you want?”

“I’m good.” Robert said calmly. Then he added, “So?”

“Chicago is in East America! East America is hostile to the Network. Security at my Dad’s company caught four spies from East America in the last year alone.” That’s all true. My Dad works for Magellan Shipyards near San Diego and they’re constantly finding people engaged in industrial espionage, which my Dad says is spying. Many of the Spies are from either Australia or East America. Australia is neutral so it’s not as bad, but East America has a habit of starting wars that quickly go nuclear, and they’re outside the technology curve right now, so they’re eager for secrets.

“Is you Uncle Davis a spy?” Robert said.

“No!” I replied angrily.

“Would he be a threat to this station if he were here?” Robert added.

“Of course not. He’s a plumber.” Then I paused. “Although he’s not a very good one according to my Dad. So maybe he would be a threat...”

“May I interject?” Raeb said. I actually forgot he was here, even though it’s his room and he can’t move.

“Please do.” Robert said with some exasperation.

“This man you met,” Raeb began. “Was he on Deck 1 when you were doing your measurements?”

“Yes!” I said confidently.

“And you had your WATE with you?” Raeb added.

I held it up. It was still in my hands because I hadn’t put it down. “Yes, I was using it to measure the room when I bumped into the spy!” I couldn’t believe my luck even though I didn’t know why I was lucky.

One of the side displays lit up and quickly much of the data, and a whole lot of video, began to upload through the system. I didn’t know before that when its active the WATE pretty much records everything I did. I’d have to remember that if I ever did anything I didn’t want anyone to know about.

In mere seconds the images suddenly stopped on a really bad one. It was grainy, and at an angle, and in mid-motion so it had a bit of a blur to it, but a second later another screen came on and I suddenly realized Raeb was using the time code on my image, and the station security cameras, to quickly find the Guy with better cameras. The station security cameras used Rez-Nay tech™, which has incredibly high resolution, so in no time Raeb had isolated and found a cross-match, which he displayed on a third screen showing the Guy’s Ident™.

“His name is Upton Charles.” Raeb began.

My eyes went wide. “Wow!” I couldn’t believe it was that easy to figure out who someone was these days. I finally got what my Dad meant when he said privacy was an illusion.

Raeb continued, “He is a Reporter with the Chicago based Aerospace Industry Journal.”

“Obviously a front.” I said, not really know what that meant but I’d heard it in some old movie and it sure sounded good.

“The Aerospace Industry Journal?” Raeb asked.

“Yes!” I said confidently.

Raeb hesitated as he spoke, I had him on the ropes. “Do you know this for a fact? Because it is accredited with the United Network as a legitimate industry news organization. And the Reporter was vetted before coming here.”

Well, maybe not. “I’m telling you, this guy had... a vibe.”

“A vibe?” Said Robert slowly as though he’d never heard the word before. “A... *vibe*?” He repeated. I think he was trying to figure out the meaning of the word from the context I was using it. “What in the Solar System does that mean?”

I looked at him. Do you know how you feel when you know something but you can’t put it into words, or convince anyone else of it, and yet it just seems so obvious to you? That’s how I felt. How do you prove something that your gut just knows is the truth?

“Comparatively.” Raeb responded, and it was my turn to say ‘What?’

“What?” I said.

The cool thing with a super-super computer, an artificial intelligence, or sentient thingy, is that they almost understand you the same way a real person would, at least once they’ve been around real people for a while and get exposed to things that you say. And certainly after they’ve been around you for a while and pick up on who you really are and how you talk. Either that or he was humouring me hoping that once he provided enough evidence that I was bonkers I’d stop worrying about it.

“By back tracing him I’m able to confirm he did indeed fly here through Toronto, from a flight originating in Chicago that was properly cleared through Network Security.” Raeb was heading to a dead end, I could tell.

"However," Raeb paused, "I am picking up on some unusual anomalies in his news stories."

Robert looked up from the workspace. He'd nearly worked out the cubic dimensions of the Communication Pod arboretum but had also been following along while I spoke. "He's a journalist," Robert said with heavy sarcasm, "Inconsistencies are hardly surprising with them." Then he added more quietly, "In fact, it appears to be the basis of their craft."

"That is not what I'm referring to," Raeb replied. "The Upton Charles by-line appears on several thousand articles and columns filed exclusively with the Aerospace Industry Journal over the last few decades."

"He's a hack who found his hole, so what?" Robert snorted derisively. I can't explain it better than that, but if you ever hear someone snort derisively you'll know exactly what I mean.

"Yes," Raeb added with a tone dripping with exasperation. That made me chuckle because it's the same tone Robert has made to things I've said. It was somehow heart-warming to know that Robert gets it too. Raeb continued, "The anomaly is that there is no consistent style to the writing. At times the articles are letter perfect and devoid of the 'writer's voice' as they call it. Other times it appears written by someone who barely graduated high school."

Robert was looking up at this point. Not direct up, just not down at the work space. Sort of out, but not out at anything, just sort of out. Flat. Like Raeb was physically there, sitting across the table from him. If you'd taken a picture of it you'd wonder what he was looking at. It was eerie, really. "What would explain that?" He said.

"One moment." Raeb said, and then he said nothing. I'd eventually learn that he did that when he had to think really hard, or search a lot of information, or work out a whole series of things, all at once. I imagined him sticking the tip of his tongue out through his pursed lips. I do that sometimes when I'm deep in thought but without a face to put to Raeb it was difficult to visualize.

“Odd.” Raeb added after a moment.

The two of us stood there [Robert was actually sitting at the cube working] waiting for Raeb to say something more. It was an unusually long silence. Then he finally said, “I believe Bill is correct.”

“HA!” I shouted. I danced around the room a bit enjoying my triumph and then I finally stopped and added, “About what?”

“Upton Charles is not a real person. It’s a persona. A cover. What they call in the spy trade, a legend.”

Robert stood now, “Whoal?” He turned to the display where Raeb was streaming through details and said, “Run me through this, please. Are you saying this guy doesn’t exist?”

“He exists. You saw him.” Raeb said. “The man on board was not an illusion. And he is from Chicago, at least that is this person’s most recent point of origin. However, he cannot be Upton Charles.”

“Why?” Robert said slowly and intently.

“Because the by-lines for Upton Charles began appearing in the Aerospace Industry Journal 47 point 925 years ago. The man onboard this Station pretending to be him has identification listing his age as 42.”

Robert looked directly at me. It was weird because my head turned to look directly at him at the same time. It was like we were synchronized or something.

“How did you know this?” He said to me.

“I got a vibe.” I said. It hadn’t changed. That’s what it was.

“Interesting.” Robert said with his scowly face as he quietly turned back to the cube and his workstation.

“So,” I said following him, “What are we going to do about it?”

Robert looked at me. “I’m not sure what we can do about it. I suppose we could pass on Raeb’s findings to Station Security. They could begin an investigation...”

I cut him off, “Raeb. Can you tell what he was doing at the time I bumped into him?”

“Sorry?” Said Raeb, I didn’t know what he was sorry about but it was obvious that he’d spent too much time around Canadians, they seem to apologize a lot for nothing.

“He was looking out the window with binoculars or something,” I said. “But it didn’t seem like there was anything to look at. It was just open space.”

Robert looked at me. “Weren’t you just looking at open space when we met?”

I looked at him with my own version of the scowly face, only it ended up being more a half face version mocking his, and not the least bit effective, “I wasn’t using binoculars, was I?” I added, sarcastically.

On the display Raeb had brought up all the security cameras he could from Deck One. They kept replicating until they filled the wall of displays and then shrunk as more and more appeared. Several dozen included the romantic couple who were engaged in things I’d never want caught on camera and frankly wasn’t very pleased seeing here from so many angles.

Finally Raeb isolated only the ones that provided information on the guy from East America and the others started to disappear. But the ones left didn’t take up the space they vacated. Instead a map of local space appeared, then another in cross-section. I didn’t know why until Raeb started shading an area that I eventually realized was the probable sightline of the guy’s binoculars.

Then other images began to appear. These were from cameras on orbital stations around Earth that were looking toward the Arboretum/Comm Pod from outside the station. It took a while for the images to zoom in and focus. I couldn’t get over the fact that so much of the space between Earth and the Moon was being recorded. In the span of a few seconds, shorter than it took for me to describe this, Raeb had found a nearly head on view of the spot where the guy was, as though we had a camera, looking at someone with a camera, looking back at us.

Then the picture went wonky, fuzzy, and the colour went all crazy, it was like we lost reception on an old analog television. I know this because we built one in Grade 6 science so our Teacher could demonstrate atmospheric interference with frequency based signals. That seemed so long ago now [It was the previous year].

At one point while the colours were doing all these funky things there were flashes coming from the binoculars.

“Hrmmm.” Said Raeb. I thought that was weird. If you ask me, an artificial sentience vocalizing confusion was taking the whole human interface thingy a bit too far.

“Binary signal?” Robert suggested.

“Not exactly.” Raeb responded as he reversed the recording and then quickly ran through it from the first flash to the last. “Laser Optical. And he’s not transmitting.”

“Then how are we seeing this?” Robert asked.

“The beam is directed right at him,” Raeb said, “We are picking up the flash as reflection on the anti-glare coating of the binoculars.”

“Can you decode it?” Robert said, moving around the room in thought.

I looked around, wondering yet again if there should be some point that one should be looking at when addressing Raeb. I still saw nothing.

“Negative.” Raeb responded. “Whatever it is requires a code key. Something probably built into the binoculars.”

“So we need to get our hands on those binoculars!” I added.

Robert stopped and stared at me. “Unless they’re re-transmitting the message I doubt that would help.”

“We could look through them at the image here while Raeb replays the recording.” I replied, “If the display is translating then we’d see it.”

Robert nodded on the realization it might work. Raeb burst my bubble. “How do you plan to steal the binoculars, Bill?”

My mouth opened. It was always something simple and obvious that seemed to derail my brilliant ideas. “Hrmmm.” I said.

“Where is he now?” Robert finally asked. That seemed like a good question.

“Good question.” Raeb confirmed and then after a short pause he added, “I have no idea.”

“Hrmmm.” Robert said with annoyance. Actually it was somehow odder coming from him than it was coming from Raeb.

“He entered the Elevator and somewhere after Deck 5 the track ceased to register him. However the Elevator records indicate the car didn’t stop again until Level 2.” Level 2 was the lower Mall-Way on the Life Wheel. Levels went around the diameter of the Life Wheel while Decks went from the top to the bottom of the core station.

“Did he get off on Level 2?” Robert asked smartly enough.

“The cluster it ended at is in the thick of the industrial section and does not have the best cameras.” Raeb replied.

“Meaning?” I’m glad Robert said it because I didn’t understand what Raeb meant either.

“I do not have any clear images, and cannot determine if he was still on the car at that point. He may have exited, or remained, but if he remained I’m not picking up any other stops.”

“So he’s still on the ‘Vator?” I asked.

“Aside from the fact I do not know where he left there is no evidence of that.” Raeb added.

“I doubt that.” Robert said, returning to his workstation.

“So that’s it?” I said as Robert returned to work like nothing had happened. We’d just confirmed a spy was on-board who was communicating with someone outside the station and then he disappeared, all things that shouldn’t be possible, and Robert was already moving on, like he was done with it, and nothing serious was happening, or worth worrying about.

Robert looked up at me and chewed on his lower lip for a moment, then he shrugged. “Let’s go see Raymond.” He said as he rose and grabbed his jacket, putting it on as though we were going outside.

I won’t go into details about the visit to Raymond. Constable Raymond Sterling was this guy in security that Robert knew and despite that and all the details that Raeb could provide he was just like every adult I’ve ever met when you tried to explain something urgent and important that was also way above your age. He smiled, he jotted down the details, he transferred over the information, he nodded and was polite and ultimately dismissive.

“So that’s it?” I was dejected, despondent, and disgusted. And I only understood two of those words at the time!

“Hardly.” Robert said as he strode confidentially ahead of me toward the ‘Vator. We got inside and he selected the deck that Raeb was on, “Every time I try to play by the rules I’m reminded of one thing,” he added.

“What’s that?” I said taking the bait.

“The rules only favour authority.” He said grimly, “If they want hard core proof then we’ll get it. If they don’t act on the evidence, then we will.”

“How?” I said bewildered.

“I’m working on it.” He said with a completely different type of scowly face. I made a note right then that I never wanted to be on the receiving end of that one.

DEATH IN SPACE

Or, How I Spent My Summer Vacation

- TIME -

The next several days were unproductive. I mean, we completed our home work, and got an 'A' for it although much of that had to do with how Robret handled it, but we had no luck finding that Reporter/Spy Guy even with Raeb's help.

Turns out that Raeb's still in the proto-type development phase and he only has access to things we'd normally have access to. Like the Public Eye Network. All this time I thought he was like some all knowing, all seeing super genius system, but like anyone on the station he was just using the internal monitor network that had cameras on all the public areas.

The big difference is that he could monitor all of them at once and had, over the last several months, been cataloguing faces based on his own interactions with various personnel on board. Okay, in that regard it was pretty cool and he was really handy, but no where in all the time that had passed since my encounter with that Reporter/Spy Guy had Raeb seen him, not even once.

And because I had only just turned 15, and despite my attempts to remain focused on finding Mister Spy Guy, we ended up doing school work, and eating and playing, although I'll admit, most of the time I kept turning my head suddenly expecting to catch Mister Spy Guy just out of the corner of my eye.

Frustratingly that never seemed to happen and eventually I started to forget about him. Robert forgot about him much quicker.

"I thought you said you were working on it?" I asked when nothing seemed to be happening.

"Raeb?" Robert asked the walls.

"Nothing yet." Came Raeb's reply.

"It's not time yet." Robert said with finality.

"How can you say that?" I asked with frustration and exasperation and a few other words that mean impatient. "He could be out there doing all sorts of evil."

Robert's right eyebrow went up in an arch. "What is it with you American's that always simplify things like that?"

I was taken aback, like a slap in the face. "You American's?" I said with indignation. Full indignation thank you! "There's a guy running around this station who isn't who he said he was, who's communicating with people off this station by covert means, who is from a territory openly hostile to our side." I said quickly, I may have been hysterical at this point, "And you don't think that's something to get worked up about?"

Robert looked at me. "There's something hinkey for sure about this guy, but until we have evidence he's doing something wrong there's no way we can leap to the conclusion that he's evil."

"Bah!" I said dismissively waiving my hand at him.

"Magellan, as a person from an enemy state he may indeed be communicating covertly, but to what end?" Robert looked at me while I tried to decipher what he just said. "He's here from an Aerospace News Agency, most likely he's trying to learn what he can about our latest advances. The most probable scenario is that he's trying to steal industrial secrets."

"And you don't think that's a big deal?!" I exclaimed.

"Of course it is." Robert agreed, "But it's not a dangerous threat to humanity. It's not going to result in wide scale death and destruction. It's a crime, but not an act of war."

I looked at him. This was the same kid who only two hours earlier nearly started a riot in class when the teacher

corrected him on our calculations for the cubic volume of a large room.

You should've seen it. We made our presentation, showed the space and then he proceeded to run through the calculations that rapidly caused the interior space to appear on the classroom wall display. The various curves and expanded in wire frame appeared as he ran through each, and rotated, and it looked very slick, then he presented the number.

The teacher stood up as we finished and proceeded to show the class the simplified formula that I'd suggested when we first started measuring, whereby we needed only take the radius of the circular floor space and multiply it by the height of the cone. Robert sat in his chair with his scowly face until she was finished and then his hand came up. Unfortunately she called on him.

"Your calculation fails to accurately represent the volume of space involved." He said.

She looked at him with a slightly more mature version of his scowly face. "Robert." She started. "The purpose of the exercise was to get everyone familiar with basic geometric calculations and the formulas required for them. You two did amazing work but the differences between the general formula and the level of precision you and Bill provided hardly matter."

"With all due respect, Miss Kimmel." Robert began. "If the simplified calculations were correct and *that* room suddenly ruptured into space the effect would be minimal. But if it actually happened to the room we measured and Station Control relied on your calculations they'd fail to prevent half the occupants of this station from getting a concussion. With my... our calculation, their response would avoid many injuries and probably a few deaths."

"Excuse me?" She said with, what I thought was a completely appropriate amount of irritation.

"Your simplified calculation would kill people." Robert stated plainly.

Apparently Robert got detention a lot. But when I asked Raeb about it later he showed me that Robert was right. The actual volume of atmosphere in the topside Communication

Array arboretum, if suddenly blown out into space, would cause the station to lurch downward by almost a full metre instantly, throwing anyone standing upright violently into the ceiling, or if they were on the Life Wheel, forcefully into the side wall.

Considering how many thousands were on the station it meant that statistically there would be hundreds of injuries and dozens of deaths. But as Robert said earlier, “The rules only favour authority.”

I took that to mean that even if they were wrong sometimes you had to defer to the people in charge, like Security Guards and Teachers. I don’t think Robert understood that, even though it was his phrase.

DEATH IN SPACE

Or, How I Spent My Summer Vacation

- CURIOSITY KILLED THE CAT -

Most of Station 5 looks like the interior of an office complex, or an apartment building, or a mall, so it's really easy to forget that you're on a space station. I mean it's just so incredibly big that a lot of the time your brain just shuts off the bit of knowledge that remembers you're inside a giant chunk of metal and glass, floating behind the moon, and around the Earth, at a distance of nearly a third of a million kilometres from where you were born. Unless you're Robert, in which case it's slightly less because he was born in space, but then he was born in Earth orbit which is almost Earth, so it's still nearly a third of a million klicks out.

Even when you go to the window, a lot of time you're just looking out into darkness, with stars sure, but unless you're facing Earth, and sixty percent of the time you're not, it's just space, which means it looks a lot like night does on Earth, provided the city outside your window is really big and uniformly far away.

That is until you look down. Most of the station is 'above' the Life Wheel, which, until you look at it carefully, sort of looks like a giant plaza at the base of a tower. But the moment you look carefully that illusion is shattered. For one, the plaza below you is moving, rotating beneath you. Actually it's rotating around you but because you don't 'perceive' your motion it really looks like the ground is shifting beneath you. Sometimes, if you stare too intently it can make you sick. Or at least dizzy.

I'm not sure what I've told you about the Life Wheel and I'm too lazy to go back and check [Inappropriate, but refreshingly honest], but the diameter of the thing is something like 209

metres. If you've ever been to Toronto it would take up the same space as the SkyDome ruins, if it were laid down on top of them.

At its widest point, the center of the wheel, it's almost 50 meters tall, but near the outer rings just above where the Mall-Way is, it narrows down to just under 30 metres wide. I say wide rather than tall because you need to remember that the Life Wheel is at a right angle to the rest of the station. Or as I like to say, the thing's on its side.

When you're looking out a window on a Level of the Life Wheel – all floors on the center core of the Station are called 'Decks', all floors around the Life Wheel are called 'Levels' – you're not looking out, you don't see the same view you would from the core of the Station, because you're on a right angle to the rest of the Station. In fact, when you look out a window there and look toward the ceiling you see the station above you, only from that angle it looks like the core of the station is rotating. It isn't, but it looks like it, and that's because you don't feel your movement while on the Life Wheel.

Also, on the Life Wheel, the floor is the outer part and the furthest bit from the center of the Wheel, while the ceiling is two meters closer. You may ask why this is the case. I know I did. The answer is because of artificial gravity.

When the Station was first designed, and through most of the building process, there weren't Grav-Plates, so the only way to get artificial gravity was either through forward momentum (also known as Acceleration), or through Centrifugal force. Centrifugal force is when something spins fast enough that anything placed on the inside of it is held in place, just like gravity.

Think of a bucket on a rope. You put marbles in the bucket and if you turn the bucket over the marbles spill out, but if you put the bucket on a rope and spin the bucket fast enough around, in a circle, then the marbles stay in the bucket. That's Centrifugal force. You don't have to go very fast if the circle is big enough, which is why the Life Wheel is so big.

The original plan was that people would work in the weightless core of the station for no more than eight hours at a time, spend half an hour in a special room that spun them at twice

the force of Gravity, that was some kind of therapy or something, and then they'd live on the Life Wheel, which spins just over two revolutions per minute to create almost 2/3rd the Gravity of Earth, apparently that's enough to avoid serious bone loss and stuff over long periods of time.

But when my Mom's company began producing Grav-Plates small enough to fit under the floor and cheap enough to install throughout something as large as this Station, then people could live anywhere. So you could stay in the Core longer than 8 hours, and you didn't need Gravity therapy. And while they didn't slow down the rotation of the Life Wheel by much, they did put in lower powered grav-plates that helped bring the gravity on each level up so it exactly matched what you had on Earth.

The exception to all this was Level 14. There weren't any grav-plates on Level 14 and as this was the highest level of the Life Wheel – meaning it was the nearest to the center of the wheel, or hub – it also meant it had the lowest gravity on the station. Don't ask me to explain the math but the smaller the wheel, or distance from the hub, the faster the spin has to be to get the same gravity, and because the Life Wheel wasn't even going as fast as it was originally designed for, Level 14 had a fraction of the gravity that the rest of the station had.

The ceiling on Level 14 also went as far up to the center as it possible could, which in some parts was pretty far, almost 50 metres! That's because no one was ever intended to live here, instead this space, almost 45 meters thick on the outside with a nearly 40 meter wide open space inside, that ran all the way around the interior of the Life Wheel, was used as a combination park and garden. And because it doesn't have any grav-plates the gravity here is only around half of that of Earth. One quarter Gravity from the rotation of the Life Wheel, with the quarter being residual pull from the deck below.

These are all reasons why I think Level 14 is the coolest part of the Space Station. The path weaves back and forth through a variety of eco-systems, some forested, some grassy parkland, most of it is farm land and agricultural, and it does this for the full 395 metres diameter of this Level (that's 1,296 feet in American!).

The weirdest thing is that when you'd finished walking all around it you're right back where you started from so you could keep going indefinitely, although the background would repeat like one of those really old cartoons.

Occasionally along the way there are large viewports, so you can sit on a park bench or right on the real grass, and stare out at the stars as they drifted past. The rest of the time the only sign that you're on a Space Station is when you pass one of the ten columns that take the 'Vators up to the core hub and the rest of the station, or down to the Mall-Way, shops and luxury suites.

I didn't know it at the time but half way between each 'Vator column is a gangway, which is what they call a steep stairwell that's really more like a ladder. Those go down one deck to the Emergency Escape Pods.

My first time on this deck, I mean Level, was because our latest school assignment required us to collect bio-samples from seven different eco-systems. At first I thought they were joking. We were on a space station! The only eco-systems I'd seen before coming to Level 14 was 'office', 'home' and the new arboretum in the Communication pod on top. The first two didn't have much in the way of organic samples to collect, although Robert pointed out that we ourselves qualified, at least for the 'home' environment.

When I stepped off the 'Vator and walked into this forest for the first time my mind tried to reconcile what I was seeing with where I knew I was seeing it. I couldn't figure out how I could've spent nearly a month on a space station without anyone mentioning it had a forest on board.

"You didn't ask." Robert replied with a completely straight face. He denied he was being snarky and insisted he had made the statement without inflection, whatever that means, but it sounded snarky to me.

I don't know how to describe Level 14. Imagine being on a football field, through the middle of which is a winding path, and everywhere else is trees. Real trees, somehow trimmed to make sure they don't grow too big and cause structural problems, but large, wood, evergreen and deciduous trees. I mean, when

you're in the thick of the dense forested part and you look around you can't even see the bulkheads. Literally, you can't see the station for the trees.

"Wow." I said for the thirteenth time. Robert was counting, and provided an update each time I said it.

We'd come here with a proto-type Scanner. A Link-WATE that Dr. Katryna Kane had been encouraging Robert to 'field test' on one of his 'jaunts'. I wasn't sure what a jaunt was but Robert said they were adventures for timid people. One day I need to sit down with Raeb and gets these phrases translated!

Anyway, we went out with this thing that looked a bit like a square water can with a display on it, and Robert took me to Level 14 and blew my mind away with one unexpected ecosystem after another. He'd also brought a thin case that had lots of little squares in it and self-sealing bags. I asked him what that was.

"Evidence kit." He said. I think he was serious too. I mean it really looked like the sort of thing that police would use to collect evidence. I couldn't figure out how a twelve-year-old got one but at this point I was tired of looking like an idiot every time I asked about these things so I just shrugged and took him at his word.

Ten minutes in, a gaggle of physicists jogging through the park, who were so caught up in their debate on hyper-channel sub-ether transmissions, or something, and weren't paying attention to where they were going, ploughed right into me. Admittedly one of them was very cute, and she smelled really nice, and she even helped me back up, and her top was, well, snug in certain parts, and if I'd been a few years older I probably would have tried to ask her out. Although Robert insisted I didn't know how, even though I did too, because I got Becky Claudemeyer to go cycling with me just before we came up here, and almost kissed her during a rest break, and would've too if I wasn't trying to be polite. Argh, I hate being nice sometimes!

Then we came across a pond. Yeah, I said a pond. On a space station! But there were three women in it who weren't doing much to hide themselves and either they were wearing

bathing suits with a poorly chosen tan colouring, or they weren't wearing anything at all, I don't know, and I never want to know the answer to that, because they were old and yuck!

But all that went away when I saw that reporter guy.

"His name is Upton Charles." Added Robert when I pointed him out.

"Not the point!" I added with emphasis. "He's a phony and a spy!" Then I stopped and turned back whispering even more intently, "And I really think we've already established that isn't his real name anyway."

Robert of course, just stared at me. "Magellan, you need to get over this paranoid fixation." He turned to continued on our quest, "Not everyone from foreign lands is nefarious."

"Quit using big words!" I yelled, finally having had enough.

Robert looked at me with his scowly face again, "Nine letters is big for you?"

I growled in frustration. "It's not the size. It's the... the..." I couldn't think of the word and then, with a bright realization, I smiled the sort of grin you get when you're finally being too smart, "Obscurity of them!" I said. "Don't you know any common words? Why do you always have to try and make me look stupid?"

Robert looked at me, dumbfounded for a change. "It has never occurred to me that you don't know these words." He almost looked like he was going to cry but then his face went back to the scowly look again, "I'll try to keep that in mind, but I'd rather be precise, than..." He stopped looking for the right word and then shrugged as he turned. "I'll try to keep that in mind." He said finally.

I felt really bad. It wasn't his fault that he knew those words and it was probably a good idea for me to learn them. It certainly couldn't hurt. But no matter what I said he simply continued wandering around the glen looking for samples.

Then I saw the East American again. I stopped and while Robert was engaged in his latest pursuit of northern face fern

gathering, or mould collection, or whatever it was that he was fixated on, I hunched down and stepped quietly over to the side so I could partially hide behind a bush and keep an eye on this guy who my gut screamed was up to no good.

But he had disappeared.

My head rose up trying to see where he was. It was a long path and I knew the space wasn't that wide. Where could he have gone? Into the bush? But none of the bushes were very tall, they barely hid me. Then, suddenly, he stood up and walked back to the path, and continued his walk as though nothing was up.

He glanced around though, suspiciously I thought, and I ducked so he wouldn't see me, as he continued on the path, going past the nearest Vator column and then off to the side again, disappearing down what I later learned was a gangway (see earlier).

“Come on!” I said, taking the lead and starting for the space where the guy had ducked down before I lost track of where it was. Robert rose from the sample he was collecting and looked at me with annoyance.

“What are you doing?” He said.

I stopped and twirled, “Will you just trust me on this!”

I didn't bother to check if he was following me or not. I was too concerned that the spy was going to double back and catch me going to where he had been.

When I got to the spot the bramble was denser than I expected, and I picked up burrs as I tried to wade into it. But sure enough, when I got nearly right where he had been when he ducked I saw, at the base of a tree, well off the beaten path, a suitcase.

“Odd.” Robert said. He wasn't beside me or behind me, but he'd found a spot not too far off that didn't require getting pierced by various flora.

I reached down and tried to pick up the suitcase but it was too heavy. That was odd too because it didn't look big enough to be too heavy to pick up but I was able to tilt it so we could see the other side.

Suitcases don't normally have panels built into their sides, and anything small with displays and lights but really, really heavy can't be good.

"Don't move!" Robert said. I froze.

Robert was holding the Link-WATE out, aiming it right at the suitcase and whatever he saw on the display had alarmed him. He reached around with his other hand and tapped a button on the cuff of his jacket. "Raeb?"

A moment later Raeb's voice came from a badge on his jacket. Okay, now I understood the whole jacket fixation. Instead of carrying a Micro-LINK he had the communication parts in his jacket. I'd read about clothes like that but they were too expensive for us to buy.

"Raeb, analyze the readings I'm getting on the Link-WATE, please. Is that what I think that is?" He said. I could hear some panic in his voice.

"One moment." Said the voice over his badge. It was pretty clear sounding even though it was such a tiny little speaker.

A moment later, a moment that seemed to take a lot longer than previous moments had with Raeb he spoke again. "It would appear to be a fairly complicated explosive compound."

I didn't move because he wasn't moving. It was intense. Then I realized someone had just said the word 'explosive'. "Huh?" I finally said in alarm. It wasn't one of my better sentences. Carefully I set the suitcase down and let go of it.

Robert looked at me with alarm. "I told you not to move!" He said.

"That was before he said 'explosive compound'." I replied, pointing at Robert's comm-badge.

Raeb's voice came through again. "That doesn't make sense."

"And yet, here we are." Robert replied.

"You've found explosives?" Raeb asked. You could clearly hear disbelief in his voice.

"It would appear so. Yes." Said Robert.

“Where are you?” Raeb immediately added. It actually sounded like he was confused. “My readings say you’re on Level 14 – Brown.”

“Correct.” Robert said without moving.

“Robert,” Raeb started. “If these readings are accurate then what you’re scanning has a significantly powerful amount of explosive potential.”

“Huh?” I said again. It seemed to be an involuntary reaction to the word explosive.

“Enough to destroy the station?” Robert asked, again without moving.

“Enough to seriously damage the structure.” Raeb responded. I wasn’t sure if he was trying to cushion the reality with a white lie or if he was accurately reporting the most likely effect of the suitcase bomb going off. “Certainly more than enough to cause a large scale evacuation.”

“Casualties?” Robert asked.

“Based on where it now, and the volume of space involved should this area rupture suddenly, I would estimate several thousand. Oddly if it were further out, say on the Mall-way, then the casualty rate would be much higher.”

“Torque?” Robert said.

“Yes.” Raeb agreed.

I had no idea who torque was. Robert looked at me while Raeb continued. He had a grim look, intense, determined. I didn’t like it.

“Is it safe to move?” he said suddenly interrupting Raeb.

“One moment.” Raeb replied and suddenly Robert shuddered as the Link-WATE he was holding seemed to go into overdrive. Raeb had taken it over and once Robert realized that he calmed down.

Grand-pa Bill, for whom I’m named, used to say that because we live in a ‘Nanny-State’ all the good pieces of information aren’t available. Until Raeb responded I didn’t know what that meant. “There isn’t much information on explosive

devices that's publically available, however, based on what I'm scanning and what I'm able to piece together, that device is a solid state unit. If it's consistent with similar designs then it does not have motion detectors."

"Can we open it?" Robert asked, still without moving.

"That is not recommended." Raeb replied immediately. "There is a high probability that the unit contains what are called, 'trip wires'."

"Booby traps." I said. I'd been reading some spy fiction lately, trying to research my enemy. It seemed helpful even though most of them were ridiculously unbelievable fantasies.

"Correct, Bill." Raeb added to my surprise, and delight.

"Is there any way of telling how long we have until it explodes?" Robert said.

"Is there an external display on the device?" Raeb asked.

Robert looked at me and I looked down. The display did not have a counter, clock, or timer. I looked up and shook my head, slowly in case my presence set it off.

We stood there a moment without moving or speaking, but I could see Robert's eyes dart back and forth and I frowned because somewhere in that little head of his were a billion thoughts racing around like a high speed metal ball in a nearly empty spray can.

Robert turned his head and then his upper body and he looked around, then he turned back to me. "I'll need your help." He said with determination.

I gulped. "To do what, exactly?"

"We need to move this. Get it off the station."

I gulped again, "We need to call security. Get a trained team down here!"

"I doubt we have time." Robert took a step forward and then put the Link-WATE down as he stepped carefully into the bramble until he was also standing over the suitcase. "We have no way of known how long until this thing detonates. I've seen

the Security teams practice for this and they'll take at least half an hour analyzing it before getting this far.”

“But Raeb’s already identified it.” I said. We already had the evidence this was an explosive.

“Raeb is still considered unproven technology.” Robert said. That sort of explained the look we got from the Constable when we showed them Raeb’s proof about Upton Charles. They dismissed Raeb as easily as they dismissed us. In his own way Raeb was just a kid, like us. “Station security won’t act until they independently verify things. By then it could be too late.”

I wanted to cry. Not because I was sad, or because I was worried, or anything, just because there were so many feelings going on inside me at that moment that I could barely contain or figure any of them out. It was intense!

Robert stepped in closer, he was intense too, calmly intense. “I need your help getting this off the station, and we need to do this now.” Then somehow closer still, and somehow more intense. He spoke in a husky voice someone only twelve shouldn’t have. “Are you with me?”

I don’t know why I nodded. The smart thing to do at that moment was run away, call for help, let the adults deal with it. But sometimes someone looks at you and even though you know everything isn’t all right you just believe them. So I nodded.

Robert reached down and took the handle and tried to pull it up. Even in the reduced gravity of Level 14 he couldn’t lift it but he could budge it and once he got it over the thicket it was wedged in he started to drag it. I suddenly woke up from my stupor and reached down picking up the other end of the case. It was heavy but between us we were able to carry it.

The question was carry it where? I looked around. There wasn’t a disposal chute that we could just dump it in that would jettison it out into space. I suppose that was by design, space garbage was already a big problem. Exploding space garbage would be very bad.

Between huffs Robert nodded toward a side of the grove where there were windows. I didn’t think bringing this to windows was a good idea, it seemed to me that the weaker the

structure was around it when it exploded the more damage it would do, but I wasn't going to argue with him. At least not too much. He knew this station better than nearly anyone could, so I simply tried to keep up between grumbles.

"We." He said between gasps of air. "Have. To. Get. This. Down. A. Level."

The 'Vators were the other direction and because I didn't know the Station very well I argued with him on that point. The easiest way down was by 'Vator, right?

"Wrong." He said and then stopped and nodded to one side.

I looked where he nodded and that's when I saw the gangway. It was, as I mentioned earlier, near the windows and went almost vertically down. That didn't make it easier than the elevator but it was easier than stairs, and closer than either. I led the way so the bulk of the case was above me and he was helping to keep it from falling on top of me. It was heavier than he was so he wasn't doing a very good job of that.

"Cripes!" I said as we finally got down one floor, to Level 13. "This thing is getting heavier by the minute."

"Higher gravity down here." Robert said as he struggled, and then tugged us to the right. I followed because I didn't know any better.

I wondered why we were brought it down here. There were suites on this level and it was closer to the Mall-Way which Raeb already identified as a place where there would be more casualties when it exploded, but before he could respond, or instead of responding, Robert led me to the answer.

He started to lower the case and I followed suit and then he stood and tapped a button, then entered a code on a pad that appeared, and then pushed another button that caused an alarm to sound. Then a door opened to a little room that had its own window onto space.

"Go!" Robert said pointing down to hall as he reached down and grabbed the handle struggling to pull the suitcase inside

the little room. “Get as far away from here as you can. Grab an elevator and head for the core, that’ll be the safest place.”

“What are you talking about?” I said, reaching down and picking up the same end I had before. I could clearly see his arms were like limp spaghetti and he was getting nowhere on his own.

“Magellan.” He said, looking at me intently. “You don’t understand. I can’t just send this out. I have to take it and most likely it will go off before I can escape. There’s no point in both of us dying for this!”

“Whoa!” I said. “What?” I picked up the case and continued to help him put it in the little room. “I don’t know what you’ve got planned but it’ll go faster with me than without me. That’s obvious!”

Together we got the suitcase in the little room and put it down.

“Fine.” He said. “It’s in. There’s nothing more I need your help with. Please go. Sound the alarm.”

“I’m not going anywhere until everyone is safe.” I said. It was stupid. He was right, and I sort of knew it. I’m not sure if I was sticking around because I wanted to be a hero like him, or if it was pride, or if I was just caught up in the whole thing.

Robert’s hands came up in a frustrated shrug and his jaw hung slack (I’ve always wanted to write that!). His body language was expecting me to see reason and I thought I’d already established that I was blind to reason.

“Argh!” He said. “Fine. Be an idiot.” And then Robert closed the door, and then a second door just inside the first one, and then popped another little panel that he started to tap buttons on. “There is no reason for this to involve both of us anymore.”

A voice came over the speakers in this little room. It was a pre-recorded voice, and what it said startled me.

“Warning.” It began, “Unauthorized activation of the Emergency Escape Pod launch system in effect. Please disarm and leave this Pod as no emergency has been declared. Violation of this is a Network offense. Unauthorized launching of an Escape Pod is a Network offense.”

Robert flipped another panel and tapped two more buttons, suddenly the voice went silent. He looked at me, “Sit down, it’s going to be a rough ride.”

I didn’t know what he meant by that but I sat anyway, and then he clutched the side bar and tapped a button, and then everything exploded.

DEATH IN SPACE

Or, How I Spent My Summer Vacation

- CERTAIN DEATH -

The force of the blast, well, launch is more accurate because the bomb hadn't exploded yet, threw me against the wall.

This too isn't entirely accurate because the Escape Pod wasn't much larger than a tiny bathroom, but I fell to the deck when Robert launched the pod, and the G-Forces pulled me into that bulkhead very hard.

When I caught my breath I reached up for a hand-hold and tried to pick myself up. The pod was still accelerating but because it wasn't at the same rate as before I was able to rise. I panicked a moment when I saw where my hand was because my fingers were over something called the 'Safety' beside another button labelled 'Jettison'. I didn't have to read a manual to know I'd been touching parts that could've blown us out into space!

Robert was pressed against the far wall, his arm threaded through a vertical steel handhold for support, he was aggressively pushing buttons on a recessed panel he'd found. That really didn't make sense to me and I said so. We'd already launched.

"I'm trying to make sure we stay clear of any other stations or ships." He said tersely (terse means 'sparing in the use of words, or abruptly'. Ha! And people say I don't pay attention in languages!! Take that, Miss Kimmel!).

I realized then that he was jabbing at thruster controls trying to direct the pod out into open space so that when we exploded no one would be hurt, well, no one except us of course.

Having nothing better to do I grabbed the same handhold on the opposite side from him and looked at where we were going. There was nothing but stars visible.

I didn't know what else to do. Chances were there'd be nothing left of us after the bomb went off so I pulled out my Micro-WATE and updated my statuses.

"Really?" He said, looking at me. "Is that the best use of your time right now?"

I glanced up and made a face at him. I'd already hit SEND so I put the WATE away and stood there. I really didn't have anything better to do, but rather than pull the WATE back out I looked out the only viewport the Pod had and stared at the stars some more.

"Hey!" I yelled, "Look at that! Is that Sagittarius?"

"Very good." He said as he continued to push buttons to stabilize our flight plan. "And the one to it's left is?"

I looked at him. "Let's just enjoy the fact I got one and not show off, okay?" Like this was the best time for an astronomy lesson, we're about to die, here!

Robert remained intent on guiding us out of Earth orbit and once the rocketing had settled down I let go of the handhold and stepped forward, looking out the front viewport glass. It wasn't a very big window, but it was large enough that if I strained I could almost make out the dark side of the Moon disappearing on the left.

"We're out farther than the Moon now?" I asked.

Robert nodded without taking his eyes of the tiny panel. "As the Station was trailing Luna in Lagrange orbit I'd say we've been further out almost from launch."

'Yes' would've done.

"I've never been this far out before." I said, realizing my first time completely free of Earth's pull would also be my last. That thought didn't frighten me, like it should've. I know I didn't have to be here, but looking at the case with the bomb in it I was pretty sure Robert couldn't have done all that on his own. We'd

probably saved hundreds, if not thousands of lives doing this, certainly that was worth it.

I slid down, kneeling, and then I began to pray. Not for my own survival because I pretty much figured there wasn't any point in that, but I prayed that my Mom and Dad would be safe, and that they'd understand why I did what I did and maybe be proud of me for it. I prayed that Robert's parents would too. I prayed that the other kids in my class would be safe and maybe this could be some lesson in civics and why it's important sometimes to step up and do the right thing.

I prayed for all the people on the station. I hoped they caught the awful man who did this. Maybe Raeb could help find him, so he couldn't do this again.

I prayed for my Aunt Millie and my Uncle Mike, Grandpa Joe (Grandpa Bill had died a few years ago), and Great-Grandma Elba. And I prayed for Dad's friend who we called 'Uncle' even though we weren't related to him or anything.

And then I prayed for Robert. He was this crazy brave little guy and an inspiration to me. He didn't hesitate and even if I hadn't been around I knew he would've found some way to move that case, some way to get it away from everyone, some way to save everyone. It was a shame he wasn't going to grow up because the galaxy needed him. He would've been the sort of person who saved Earth one day.

"Do you want to pray with me?" I said, forgetting he didn't do that sort of thing.

"I'm a little busy right now." Robert replied, the intensity of what he was trying to do still very evident. Then he surprised me by adding, "But, put in good word for me, if you will?" Then after a pause he added quietly, "If you can, that is."

By the teachings of my faith he wasn't going to make it to heaven and that was a shame. I knew why, we believed you had to accept Jesus into your heart as your personal saviour to get saved and I certainly wasn't going to question God's plan, but I hoped that maybe in Robert's heart he had accepted Jesus, quietly, on his own, and that he would be saved. He certainly seemed to be doing more Christian things right now than half the people

who went to my church. I prayed that if he hadn't done what was needed for eternal salvation that maybe, somehow, he could survive this so he had the time to do the right thing by God.

"Are you through?" Robert said. Not in a snarky way, quietly, like he was bothered to have to bother me.

I looked up at him, paused, closed my eyes and tried to wish a billion more thoughts through my head to God. He'd know. Then I said, "Amen," and rose.

"Yeah." I said, dusting my pant legs off. "Why?"

Robert held up a giant vinyl bag. "I need you to get in this bag."

I looked at him. Was this a joke?

"I don't have time to explain." Robert said, then emphasized, "WE don't have time. Just get in."

I took hold of the bag. It wasn't like any bag you've ever seen before. It wasn't flimsy, it seemed like a thick vinyl material, with some nozzles and two sets of zippers and callipers and a piece of tiny flexi-glass. I put it on like I would a pair over very oversized pants.

"I don't get it." I said as I started to pull it up and he began zipping up the outside. "Is this going to shield me from the blast?"

"Not likely." He said. "I'm going to blow us out into space. Hopefully this has enough oxygen to sustain you until help arrives."

I stopped and looked at him. "How many of these are there?"

"Two." Robert said.

"Oh. Okay." I replied and went back to getting inside mine. "Why aren't you climbing in the other one?"

He didn't stop as he worked feverishly to zip me up. The first layer went easily. The second one not as much.

"Two reasons." He started. "The first being that I need the other kit to keep the bomb from blowing out with us."

My jaw dropped at that. He was using the other kit to do what, now?

Robert continued without acknowledging my reaction, “The second, and most important, being that I can’t trigger the airlock to blow us out if I’m inside one of these.”

“Wait a minute!” I began to protest. “I didn’t come along on this just so you could die a martyr!”

He looked at me. “The word you want, I believe, is ‘martyr’.”

“Whatever!” I said in annoyance.

The zippers were now near my neck but Robert couldn’t seal me in because I was taller than him and flailing in protest. He stopped and looked at me. “Magellan, this bomb could go off any second! We don’t have time for this!”

“We’re in this together!” I said starting to pull the kit off, or more accurately climb out of it. “I’m not going if you’re not coming.”

Frantically he motioned me to wait. “Look! Look!” He said and then he pulled out two gloves from his sleeves. “See?” He said as he reached up and pulled a thin, grey, sheer hoodie from his neck.

I looked at him. My eyebrows went up in confusion. “What?” It was winter wear. Why was he showing me built in mitts and a hood?

Robert pulled the hoodie down, all the way down, covering his face and then ran his finger across the neck. It sealed! I couldn’t believe it. The hoodie sealed and then a thin thread around the collar began to glow and fill the hoodie with air. I could barely hear him now, and it was hard to see him but it was obvious he had more than a few tricks up his sleeves, along with those mitts.

“My jacket is part of a survival suit!” He yelled carefully, over enunciating so I could hear him. “I’ll be fine,” he added. “Now, get in the kit!” He pointed at the baggie he’d been trying to shove me in for the last several moments.

Realizing I could get us both quickly killed in a fiery blast if I didn't start cooperating I rushed to climb back in and then ducked down so he could seal both layers of zippers.

Through the flexi-glass I saw him pull the other kit out, struggle to get it over the case and sealed up, then watched him clip it to the handhold furthest from the hatch. He cinched it, probably spending more time than we had to make sure it was snug and secure and then he grabbed my cord.

The straps on the survival bag were like seatbelts or cargo straps. He threaded it around his waist, then clipped it to his belt before turning and clipping it to the door. I panicked at that. Wasn't the point of securing the bomb to put distance between us and it?

But he couldn't hear me yell that question from within the bag, or he was completely ignoring me as he twisted the safety seal from the arming mechanism, pulled the pin and then started by-passing the safeties. He stopped long enough to pull me closer, cinching the strap securely, and then he grabbed two small canisters from the emergency cabinet, which he slid inside some outer pouch on my survival bag.

Then, without any warning to me, he pushed a button on the door and the explosion occurred. I lost my breath as the force of the blast jerked me really hard and I closed my eyes thinking we were dead as I felt myself bang into him, the deck, the hatch, and thirty other things really hard and really fast.

The kit had some unit in it and for the longest time there was no sound or light except for the humming and pumping of that thingy and it's tiny, blinking diodes. Then I felt a tug and I twisted in free, open, space – weightless. I shifted in the bag realizing for the first time that I wasn't dead, or blown to bits, and I found something to grab onto just below the flexi-glass so I could pull myself closer to it.

The survival bag was designed for a full sized adult. I had lots of room and it was big enough that quite possibly both Robert and I could've been in it. But as he explained there was no way to trigger the hatch to blow from inside one of these, and after spending a few moments inside one I could see that being a

problem. Except for the flexi-glass it was like being a single tiny package in a big canvas bag.

Looking out the flexi-glass wasn't particularly helpful at this point. There was nothing but stars, swirling about as I kept shifting and pivoting in the vacuum. Occasionally something really, really bright would pass by and I'd wince in pain before realizing that was probably the Sun.

Then I felt Robert grabbing onto the sides of the kit. And finally, after a bit of struggling that felt like wrestling someone in a mail sack, I saw his face. Well, his head. The hoodie was bulging, from the air pressure within, and he was struggling to hold me and bring his face right up to the flexi-glass.

I couldn't figure out why until, after he pressed it really hard for a moment I could faintly hear him. But I couldn't make out what he was saying. It was something like, "Bush." And "Cream." And "Putting."

He leaned back and motioned down. I couldn't see down. The flexi-glass wasn't that big. Then he mimed pushing something with one finger before he stopped and looked around himself for something. Finally he reached up to his collar and motioned to the epaulet on his shoulder. Epaulet's as I learned later, are the strap on the shoulder of a jacket that look kind of militaristic. They were originally used to secure things on cords by undoing and then fastening the button at the top. He was fingering the button on his.

I looked down inside the pseudo-canvas sack that was keeping me alive. The unit at the bottom had some buttons. Some where lit, some were flashing. One in particular was a green one that was bright enough I could barely see the word 'COMM' beside it. Then I realized what he was trying to tell me. Not BUSH-CREAM-PUTTING, he wanted me to PUSH-GREEN-BUTTON!

I did and his voice came through. It wasn't very clear. It sounded like one of those old radios they had in the black & white movies my Dad liked.

"Can you hear me now?"

I brought my thumb into view of the flexi-glass and gave him the ‘thumbs up’ sign.

“Finally.” He said.

“Did it blow up?” I asked, pretty sure that’s what I felt but not fully sure because we weren’t dead.

“Not yet.” He said through the Comm. Then he reached down and manhandled me. My view changed, more stars, then the Sun again. Ow! Then I was looking through a tiny circular window. On the other side was nothing. I couldn’t figure it out but then remembered the tiny porthole was in the airlock door.

Robert’s voice came over the Comm again, “Based on the rate of decay I saw on the scanner it should be any minute.”

“How did we get behind the door?” I got that we wanted to use it as a shield but how does one steer a door?

“The emergency kit had cleaning supplies in it. Compressed gas cleaners.” Robert said. I could hear him stop talking and in that break he was breathing hard. I didn’t know why that would be. He continued, “I think the maintenance people have been sloppy in leaving them there because they’re only used for clearing the UCG ports.”

“UCG Ports?” I said. UCG Ports were the things on my Uncle Mike’s balcony grill. They powered the grill and he used them because other types of grills weren’t allowed in his condo. I guess UCG Ports were safer to use.

“Yeah.” Robert said. “They have.” He continued, then took some breaths, “To be tested.” Another pause, “But the testing.” Another pause, “Clogs up the.” Another pause. “Lines. So...”

“Stop talking!” I yelled. “You must be running out of air!”

“Maybe.” He said.

“Robert. Just stop talking. Save what you have. If anyone comes close I’ll guide them in.”

“Probably. Not. Sure. Who. Knew.”

We drifted. He was very quiet for a long while and I didn't want to disturb him or make him use more oxygen by asking anything. "Look. I'll just talk. Every once in a while you can nudge me or something so I know you're still there. Okay?"

I felt him tug twice on the strap.

"Got it. Two tugs mean you're okay. I'm..." I stopped. I didn't know what to say. Of all the times in my life to run out of things to say this had to happen now!

Suddenly we jerked to the left a midge and I saw why. Robert was using one of the canister's jet sprays to adjust our angle. Our drift had started to pivot as we moved through space on the momentum of the blown hatch. We were still moving away from the pod, but he wanted to make sure the hatch was between us and the pod.

It worked too! I could sort of make out the increasingly distant pod through the tiny viewport of the hatch, which I could see through the flexi-glass of my environmental sack that is.

"My favourite black & white video is an old comedy routine." I started. "It's a bit between two guys named Abbott & Costello." Nothing. "You with me?"

I felt two tugs, weaker than before but he was still with me. I tried not to get frantic because I knew that would slip into my voice, but I was worried about him and yeah, to some degree, my eyes started to water because of it. "The concept of the bit is that one of them, the silly one, is wanting to try out for a baseball team where all the players have crazy nicknames. The other one, the serious one, is running down the nicknames of the players to the silly one. But because all the nicknames are also pronouns the silly guy gets confused."

Nothing. My voice broke but I continued. "The more the Serious guy tries to explain without understanding the Silly guy's confusion, the more confused the Silly guy gets. It's hilarious." I stopped, wanting to go on but worried. Then I felt two tugs.

"Okay, the bit goes like this. Who is on first base. What is on second, and I don't know is on third. You with me?"

Two tugs. “The pitcher shoots the ball to the catcher who tosses it to first base where Who catches it. The Silly guy says, ‘Who?’ and the Serious guy says, ‘Right’. The Silly guy says, ‘Who catches it?’ The Serious guy says, ‘Yes’. Not understanding the guy’s name is Who, the Silly guy says, ‘What’s the name of guy on first base?’ The Serious guy says, ‘No. What’s on second.’ ‘I’m not asking you Who’s on second!’ ‘Who is on first?’ ‘I don’t know!?’ ‘Oh,’ says the Serious guy, ‘That’s third base!”’

Thankfully at this point the bomb inside the pod exploded. I saw the flash and from that distance it looked like nothing. I almost said so but then the hatch slammed into me hard as the shockwave struck us. It was really hard because I saw stars and not the tiny, light in the sky variety but the big, active in your head variety. The belt securing Robert and I held, but for sixty-seconds it felt like we were inside one of those hot air dryers they used to use for cleaning clothes.

Somewhere in all that I lost consciousness.

DEATH IN SPACE

Or, How I Spent My Summer Vacation

- LIFE AFTER DEATH -

I came to on a hospital bed in a recovery room. For a moment I thought they'd taken me to Earth for treatment but somehow I was still feeling the spin of the station. Huh, I thought, I finally have my 'space legs'.

I glanced around the room. I actually tried to get up but for some reason my body wasn't cooperating. It wasn't that they'd sedated me, just for some reason I had no strength.

Next to me was another bed and on it lay Robert. The displays indicated he was okay, at least everything seemed to be in the green zone which I assumed was normal, but he wasn't awake. Seeing as I'd just come to myself I decided not to bother him.

I found the media controls on the bed railing and triggered them, then began scrolling through the various portals until I found the news. We were the top story, well, one of us was. 'Space Oddity saves Station 5', it read.

Heh, heh, I thought. Robert wasn't going to like that when he woke up, but I smiled because I also thought it was pretty cool. He was still the 'Space Oddity', and I was his best friend.

Then I saw the sub-line: 'Saves Younger Classmate/Side kick.' "Younger?!" I croaked. "What the?!" For some reason my mouth was really dry and my voice was really hoarse.

"Welcome to my world." Robert said, quite awake and already up on the news feeds. At least he was alright. I smiled at that and quietly thanked Jesus for all miracles, big and small.

DEATH IN SPACE

Or, How I Spent My Summer Vacation

— AFTER LIFE —

As you can guess we were both grounded. Or ‘spaced’ is maybe the better term considering the nearest ground was hundreds of thousands of kilometres below us. But either way it was school, home, and study and that was it for rest of my stay on Station 5. Robert was suspended from school, which seemed really odd considering he hadn’t done anything wrong *at* school, except mouth off to the teacher because she was wrong, but he was already on detention for that so it didn’t make sense either way.

It really wasn’t fair. Even the news was saying that if we hadn’t done what we did Station 5 would’ve been seriously damaged with thousands of deaths. We were heroes. But our parents and teachers couldn’t stop repeating how we shouldn’t have been there, shouldn’t have done what we did, and how they wished we had more sense and went to Security, or at least to one of the adults.

My favourite is the guilt trip Dad gave me when he said, “Do you know how we’d feel if something had happened to you?” Boy if that doesn’t make you start to cry then you better get to a hospital because you may already be dead.

In the few times I was allowed down to the Raeb room, always under supervision, I’d meet up with Robert. After glancing at each other we’d share a smile because we both knew everyone was scared of leaving us alone together. It was crazy, but it was also sort of cool.

And Robert had a new nickname to rail against. The media had finally corrected their story about us, specifically the

part where I was supposedly younger than Robert (although I was still listed as the ‘sidekick’, go figure), and because of our last names they’d started referring to us as ‘M and M’. I’m not sure which of us got top billing, but I loved it, and Robert hated it.

I started to get notes from kids back on Earth that I’d gone to school with the previous year. Some of the bullies suddenly thought I didn’t suck anymore, which was weird. And Becky Claudemeyer actually used the word ‘date’ when she suggested we go out after I got back. That was weird too.

As time wore on though more people in authority wanted to cash in our fame and heroics and eventually that meant our parents had to start treating us differently. It didn’t stop mine from being more protective, but I get that. The worst thing any parent can go through is losing a kid, even if he does save hundreds of thousands of people [interestingly this number seems to exponentially increase each time its mentioned].

Mom still gets all weepy when she thinks about what might’ve happened and that means every time I get near her she gets all clingy. Dad just looks at me with a slight grin across his face. You can tell he’s proud of me but he doesn’t want to say so in case it encourages me. At least, that’s what Raeb thinks.

It’s pretty obvious they never want me to do anything like that again. But at night, before I go to sleep, I’d think about it, all that happened, and I think ‘wow’. If that wasn’t the greatest adventure ever then I don’t know what is.

DEATH IN SPACE

Or, How I Spent My Summer Vacation

- THE FIRST SMALL STEPS -

As the end of September approached I realized I'd be leaving soon. My classes on Earth had started up just after Labour Day but because I'd been going to school up here the whole time I was actually seven modules ahead of everyone below.

I'd retake them of course, mostly just to get back into the pace of things and partly because it would be nice to understand what the teacher's were saying before they taught it. That wouldn't last. By December we'd be on new stuff I knew nothing about and I'd be a lost as I normally was.

The heat was finally off Robert and I, and with a little help from my Dad, and Raeb, and, without Robert knowing it, his parents too, I had a little surprise for my new best friend. We'd been getting around without supervision for a couple of weeks so he didn't get suspicious when I brought up what had happened and suggested we go through the sequence. I told him I was writing it all down.

"You're not becoming a journalist, are you?" He said with heightened suspicion.

"Naw!" I said, waiving his concerns aside, "but I've got one of those 'What I did on my summer vacation' thingys to do for class back home."

It struck him as odd to hear me refer to Earth as home but lets face it, that's what it was for me. And he knew I was leaving soon. I tried to keep from giggling, which is something that comes over me when I'm really excited about a secret I'm

trying to keep, as we retraced our steps. When we got to the door where the escape pod was I told him to open it.

He hesitated. “You know,” He said, “they’ve added additional securities to this process now.”

“It’s okay, son.”

Robert turned and his dad was standing there.

“Father!” he exclaimed as he ran to him and they embraced. I couldn’t imagine calling my dad, ‘father’ but from Robert that sort of stuff just seemed natural. I suppose I would’ve been surprised if he’d said anything else.

Robert’s dad was Commander on one of the Network Fleet’s Super Carriers and they hadn’t seen each other in almost a year. But the fact his dad suddenly showed up wasn’t the surprise I’d planned.

After the shock of seeing his dad passed Robert eyed me suspiciously. “What’s going on, Magellan?” he said.

I pushed the button and the door to the Escape Pod opened. Inside, secured to the vertical hand-holds along either side of the hatch, were canisters, all of them feeding to the UCG connectors. Robert stepped into the Pod, aware that the alarm hadn’t sounded but more interested in the other differences.

“What’s this?” He said to me.

I pointed to the canisters and the UCG connectors. “These are spare fuel containers. They’ll feed through the UCG connectors, directly to the reaction control thrusters.”

“I don’t get it.” Robert said glancing up at his dad.

“Bill said you’d like to head down to the Moon.” Commander MacManus said to his son. “There’s enough fuel here for both of you to go, and return.”

“On my own?” Robert said. He was tearing up even though he’d deny it.

“On *our* own.” I corrected him. “If you don’t mind a crew member.”

Robert looked at me. His eyes got all squinty as he tried to keep from crying. His jaw got tight too. “You arranged this?” he said through his tightened jaw.

“For my bud!” I said beaming.

“You’re all clear.” Robert’s dad said, “We even filed your flight plan.”

Robert looked at his dad. “I don’t have a flight plan.” He said.

“Yes you do.” I added, “You were working it out with Raeb. He made a few minor corrections, accounting for me being on board and… ta-da!”

Robert looked at the pod. “We’ll need suits.” He said, looking around with growing excitement. “I want to walk the surface of the moon.”

“No worries!” I said as I stepped inside the pod and picked up the two kits that were there. One had his name on it, the other had mine. “The evac company that made that baggie you stuck me in when we blew the pod made these for us.” I pulled out the silvery vinyl-like suits that sort of looked like something from an old space movie. “They’re custom fit and good for several hours on the moon. They even have pee bags, in case, well, you know…”

Robert stood there and then straightened up. He turned to his dad in a way that made me think he was a robot or something and he looked his father directly in the face before saluting, “Permission to embark, sir!”

Commander MacManus allowed a slight grin in the corner of his mouth, it was the same one as my dad. He saluted back, “Permission granted.”

Robert then pivoted and I realized he was moving in the way Troopers do when marching. He then stepped onto the Pod, turned and saluted again.

“We’ll be back for dinner, sir.”

Commander MacManus' smile broadened. "Understood." He said saluting back again, then added, "Godspeed, Master MacManus."

The hatch closed but I still had my confused face on. "Master MacManus?" I asked.

"It's an archaic nautical term for the unranked commander of a craft." He said smugly, then took a deep breath and let it out slowly. "My first command." He added while allowing that thought to sink in.

I turned and handed Robert his evac suit. He looked at me with some puzzlement, but mostly annoyance. "We won't be down for at least an hour." He said.

"Regulations stipulate that evac gear should be worn at all times." I said. "Sir." I added.

Robert's shoulders slumped and then he took the suit. "Fine." He said as he started to climb into it. "But I'm not wearing the helmet until we touch down."

"Okay." I said with a big smile. "Understood."

He moved to the controls and brought up the display. I didn't even know there was a full display up front because we hadn't used it last time, but apparently in addition to being an Escape Pod these could also be used as inspection pods and when one wasn't trying to rocket away from the Station with a bomb on board as quickly as possible you could gently fly them away from the station. It made sense, and would be a lot more fuel efficient.

After going through the pre-flight checklist with Raeb, Robert got on the line with Flight Control and confirmed our departure track. Then, at their 'go' we decoupled from the station and began to float free under our own power.

An hour later, well, specifically fifty-seven minutes and thirty two seconds later, we touched down, 300 metres, just north and east of Tranquility base.

With the helmets in place he depressurized the pod and opened the door and we stepped out onto the lunar surface. It was my first time on an alien world.

“It’s not an alien world.” Robert began correcting me. “For one, Luna is made up of exactly the same materials as Earth. And it’s a satellite, not a world...”

“Fine.” I said, cutting him off. “My first time on a... non-terrestrial... body, then.”

He sighed. “Fine.”

He started walking, bouncing may be more accurate, toward a nearby ridge. I followed, well, tried to follow may be more accurate, it was a lot like being in a bouncy castle, only in slow motion.

“Would it kill you to call me ‘Bill?’” I said, trailing after him. I don’t know why but he seemed to bound about on the moon’s surface like it was second nature to him, maybe it had something to do with being a ‘Spacer’.

“Magellan is more... military.” He said.

“We’re not military.” I replied.

“If you keep following me, you will be. Eventually.”

“Fine.” I added while almost stumbling and tumbling across the lunar surface. This place was like a giant underwater sponge, “But until then can you call me, ‘Bill?’”

“What difference does it make?” He said.

Considering all his name quirks that was pretty funny. So I threw it back at him, “I don’t expect you to understand, just respect my wishes.”

“Fine.” He said

We bounced a bit more, he: like a gazelle on the open plain, me: like a drunken lemur through a thicket of breaking twigs. When we finally got to the ridge he stopped.

I looked around. I looked at the Moon, and then up at Earth, hanging in space like the blue-green gem that it was. And then I looked around at all the stars. I stood there, witness to the glory of all of God’s creation.

“All I see are destinations.” Robert said quietly. I hadn’t even realized I’d spoken aloud.

I looked down again. Ahead of us sat the base of the Apollo 11 LEM, a little dusty from the exhaust kick-up when the top part Neil Armstrong and Buzz Aldrin were in returned to orbit, but otherwise exactly as it had been for almost three centuries. And beside it was the flag of the United States of America, as it had been when the country went all the way from the Atlantic to the Pacific, from where I was born all the way to where I now lived.

And just like the sky around it, the dark field of blue on it was full of way more stars that I expected.

DEATH IN SPACE

Or, How I Spent My Summer Vacation

– THE RETURN OF ‘M and M’ –

The turbo-thrusters on the final stage went off and we were thrown back in our seats as the spacecraft slipped beyond Earth’s atmosphere and out into space. But I was an old hand at this now.

Once you’ve set foot on the moon, well, just reaching orbit isn’t that big a deal any more, although my jaded cynicism didn’t keep me from staring out the window as we left Earth’s atmosphere.

Actually, it was on this trip that I learned that the term ‘Earth’s atmosphere’ isn’t an accurate description because there isn’t actually a set point where the atmosphere ends and space begins. The reality is that the atmosphere just gets less and less dense until you’re in space.

But we’d passed what pilot’s called the Kármán line, a point low in the thermosphere, and the altitude where the required flying speed is equal to orbital velocity.

We were heading back to Station L5, only this time we weren’t special guests and we would have to go through a LEO station first (I hoped it would be Station LEO 12 just so I could say I’ve been there). From there we’d take an Outbound Shuttle to Station L1, the big transfer hub for Lagrange Space.

Whether we took a P2P direct shuttle to L5 or the ‘Loop’ depended on timing, but we weren’t coming up to visit. Both of my parent’s had secured permanent residence on Lagrange 5 and we were moving there.

I was a little nervous. Although Robert and I had remained in contact following my return to Earth, the classes up here were almost two full months ahead of me. Raeb promised to help me catch up but I wasn't so sure I could do it. Still, it would be great to hang around Robert again.

And by a stunning coincidence my face flashed on the vid-feed Mom was watching on her Dar-Lyn unit. That's because that Reporter Spy Guy pretending to be Upton Charles had been arrested by East American authorities and was being handed over to a group of Security Officials from the United Network under some obscure and ancient extradition treaty.

It was weird seeing the two sides cooperating, both had been pretty hostile to each other ever since the Great Holy War and the Short Bow Incident, both of which were events that happened before I was born but still seemed to be affecting everything.

There wasn't much to the feed, it was a typical short news blurb they'd be repeating several dozen times and the NewsNet Reporter spoke over most of what was going on as they led the Spy to the Network Security Shuttle for his trip to Crawford, Texas, but they let the source audio through at the end. Just before he entered the shuttle, as he turned and looked at the camera, he said something that made me smile.

“Those darn kids!”

THE BEGINNING

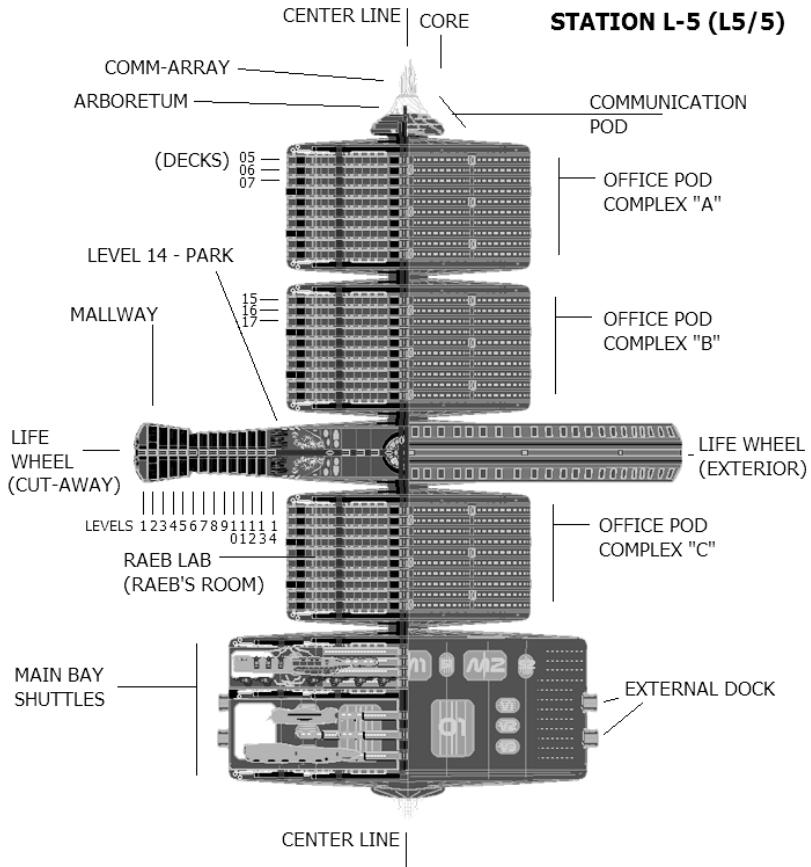
From the ROBERT MACMANUS LOGBOOK

- 22130806** - Final Grav-Plates installed. They'll let just anybody up here now
- 22130806** - Comm Array installed, forced to attend ceremonies. Met Magellan - hope for future fading
- 22130809** - 1st day school - w other students, yet! Simpletons. How does Kimmel [teacher] survive?
- 22130810** - Magellan won't leave. What's w 'hanging around' anyway? Find something to do, do it!
- 22130815** - Magellan still here. Will work on him, make of use
- 22130822** - Bean salad. Disgusting. 'nuff said
- 22130823** - What is religion? Faith? My faith? Akin to argument: magic vs science. Raeb points out all science would be considered magic w/o understanding. Interesting. Not convinced, but will withhold judgement. Further investigation req'd
- 22130825** - Magellan insists spy aboard. Apparently correct. Uncanny intuition vis a vis stranger in question. Intuition=useful? Further study req'd
- 22130828** - Nearly died in vacuum of space. Cool. Survived w technique that should NOT have worked. Reconsidering faith/religion etc. Won't share w Magellan as sure would never hear end of it, but given option btwn hope and despair will choose hope
- 22130830** - Given yet another nickname. Not amused. Magellan pleased as it appears to include him. Personally think 'm&m' are 2 adjectives for me I won't like.
- 22130901** - Grounded due to saving everyone's life w/o permission. Magellan insists on calling it 'spaced'. Not sure how he makes it out of room each morning w/o help. Restricted access to Raeb, not allowed in same room as Magellan w/o supervision. Catching up on reading/research.
- 22130922** - Landed on moon under own power and 1st command! Magellan proving worth. Figures, he's leaving soon.
- 22130928** - Magellan departs to resume life on that miserable ball. Next meeting?
- 22131208** - Magellan returns. Perm move to L5. What happens next? Can't be good. S/b exciting tho. Never been to Mars. Hmm...

LEXICON

The purpose of this lexicon is to provide some definitions for a few of the words in this book, at least as far as how they're used in this story.

To start with however let's show you Station 5 (L5/L-5/Lagrange 5):



1/3 G – one-third gravity. The unit of ‘gravity’ is based on Earth’s gravitational pull at sea level. The higher one goes the lower the gravitation pull is although the difference is nearly unnoticeable even at the top of Mount Everest. While the Moon is held in orbit by Earth’s gravitational pull at least $1/6^{\text{th}}$ of that is the gravity of the Moon pulling

back. Something much, much smaller would drift, never quite leaving Earth's orbit but taking hundreds of years to get back to it.

AMERICAN (unit of measurement) – At this point there are two systems of measurement in the world. Metric and whatever America is using. Rather than say 'Imperial' I prefer simply to refer to anything not Metric as 'American'.

ANALOG – A method of transmission and data storage that involves broadcasting or capturing the magnetic fluctuations of frequencies, rather than the decoding of patterned signals. The practical use of Analog is that it's lower tech and therefore somewhat more reliable over short distances at least as far as picking up 'a signal'. Digital has a minimum threshold where the signal, if too weak, is simply useless and in most systems will not register. If the rescuers had analog receivers then they would have an easier time of finding even a weak analog signal than a digital one. In the future this may be more useful since digital will be the only format used and the analog bands would therefore have less clutter/competition.

ANGLISH – A proposed futuristic version of English that uses more logical spelling. For example: Center is the middle of something, Centre is a place to go to for something. Meter is a device for measuring something. Metre is a unit of measure.

ANOMALY – Something unusual. Typically a physical item or event that does not fit with expectations or previous experience/knowledge.

APOLLO 11 LEM – LEM stands for Lunar Excursion Module (also known as LM for Lunar Module) and was the vehicle that actually landed on the surface of the Moon during the Apollo program. The vehicle was made up of two parts, the Ascent Stage and Descent Stage. The Descent stage was the base that was left behind on the Moon. The Ascent Stage took the Astronauts back to the Orbiter for the return to Earth.

ARBORETUM – A green house or artificial environment used to grow trees, shrubs and other plant life for scientific or educational purposes.

ARTIFICIAL GRAVITY – Gravity generated by means other than the natural by-product of a very large mass/object.

ARTIFICIAL INTELLIGENCE – A machine programmed to imitate the intelligence of human beings through programming. IBM's WATSON is an artificial intelligence of high complexity which has been programmed to adapt and develop based on pre-programmed interaction parameters.

ARTIFICIAL SENTIENCE – A device that becomes self-aware/actualized by emulating human thought but with significantly greater ability.

AUSTRALIA – In this future Australia is an independent state. A nation neither aligned with the United Network or its competitors. As a neutral state it is sometimes caught between the major political players and other times a safe place for them to exchange ideas.

BALLAST-BASE – A term created for this story that represents a large collection of information that is used as the foundation for knowledge. Sort of like the internet but without needing a connection.

BINARY SIGNAL – A signal based on either ON or OFF. While Morse Code uses DOTS and DASHES it also uses SPACES so is not a binary signal. In the HEXADECIMAL system sequences of 8 on/offs combine to represent letters, numbers or special characters and is one of the most streamlined coding methods around.

BLOGE-TEK – Although it's only used in this Lexicon (and later even), the phrase refers to compounds that imitate organic matter but are not made of traditional organic compounds. For example, human beings and most life on Earth are ‘carbon-based’, in that carbon is the primary bonding element in our bodies. If, for example, science can replace carbon with silicon and still get the compounds to ‘grow’ and reproduce like cells do, then it would be possible to grow some like trees but made of more durable materials. We sort of do this with crystals now but Bloge-Tek requires that the end product would function like a living creature even if not actually being a living creature. Specific to this book is the fact that the ‘brain cells’ of a RAEB system are a by-product of non-carbon organic material, and not actual brain cells. If you read a lot of my stuff the word Bloge keeps coming up.

BULKHEAD – A reinforced wall, typically made of some sort of metal, used in ships. Specifically to withstand pressure extremes. On a boat this would keep the largely open low-pressure Interior of a ship safe from the higher pressure Sea. On a space station, this would keep the relatively low-pressure Interior of a ship or station safe from the extremely low pressure vacuum of Space.

CARRIER – In the context of use in this book this is short for a Super-Carrier or Light-Carrier, any sort of large vehicle that travels throughout the solar system acting as a mobile base from which smaller craft (usually combat craft) launch from and land on.

CENTER – In the 23rd Century English language, CENTER means the exact middle of something and is not used for buildings or locations that people meet at.

CENTRE – In the 23rd Century English language, CENTRE means buildings or locations that people meet at and is not used for the exact middle of something.

CLONE – A nearly exact copy of something. With RAEB systems a Clone is bred off the original working version after the first one has fully developed. As RAEB systems are based on organic-mimic compounds called BLOGE-TEK, clones of RAEB systems are grown, like mould, rather than built or photocopied.

COLLOQUIALISMS – These are words and phrases unique and special to one area, culture or people. In the East Coast of Canada people will refer to ‘Buddy’ the same way someone else would say, ‘This Guy’. Another example is where Canadians and people from Detroit will call certain beverages ‘Pop’, while people in other parts of America call them ‘Soda’.

COLOUR – In the 23rd Century English language, COLOUR has reverted to its original spelling instead of the version currently used by Americans, which was forced on them by an Executive Order from failed Journalist and lazy writer Theodore Roosevelt.

COMM-BADGE – A badge worn on the chest that doubles as a communication device, or at least microphone/speaker to a communication system.

COMMUNICATION ARRAY – An array is a cluster, a tight network of something. In this case it’s a place to put a bunch of communication towers and transmitters/receivers. The reason you would do this is because most communication signals use electro-magnetic energy, which in very high concentrations can be dangerous over short-term exposure. Lower concentrations can also be dangerous with long-term exposure but that doesn’t stop companies from putting cell phone towers everywhere.

CORE – In this book the CORE refers to the center axis of the Space Station. Although there is no ‘up/down’ in space, the core is the up/down part when looking at it. Think of a skyscraper. Looking at it the tower-y part would be the core of the building.

CORE-RAEB – The first RAEB system to achieve sentience and the matrix from which all others were cloned. As the CORE RAEB is on Earth and connected to every possible channel of communication available to it, rather than being prepared for operating a space ship like

the cloned RAEB in this story is, the CORE-RAEB has become the central repository for all human knowledge.

COVER – In the spy trade the ‘cover’ is the story a spy uses to cover the fact they’re probably some place they don’t belong.

CRAWFORD, TEXAS – A prison in the UNITED NETWORK.

DAR-LYN – A popular brand of LINK or WATE unit specifically made for reading and viewing video. Keep in mind, this concept was developed by me 20 years before there were iPADS. Steve Jobs horked my idea!

DECK – Any floor on a space station that goes from what is considered the ‘bottom’ to the ‘top’. Different from Levels which are floors that go from the ‘out’ to the ‘in’.

DECOPLED – To couple in this context is to connect two things designed to come together through a connection. To decouple is to disconnect them.

DEJECTED, DESPONDENT, AND DISGUSTED – In order listed means depressed, discouraged or hopeless, and strongly disliking. A trio of words used in one line of the Odd Couple that I particularly enjoy.

DEPARTURE TRACK – The planned route a vessel takes when leaving something, ie: a boat from port going out to sea, or a spaceship from a base heading into deep space.

DEPRESSURIZED – To survive in space, humans need to be inside containers (space ships, space stations, space suits) that provide the required level of air pressure our bodies need. To lose that pressure, moving to a lower pressure or no pressure environment, is to depressurize. Where this becomes dangerous is that our bodies are like balloons and the interior pressure of our blood, etc is constantly pushing out. If the pressure outside our bodies gets too low then painful or life threatening damage will be caused by the pressure in our bodies expanding outward without anything to stop them. That should be avoided.

DERISIVELY – To mock with scorn or ridicule. To make fun of, or to respond with obvious disapproval.

DIGITAL – Any record or file reduced to, and retained as a series of coded signals, or sequence of codes typically represented by numbers. This method replaced analog which recorded the frequencies of either sound or light represented by electro-magnetic waves. The difference between the two is that digital records can be copied without loss of

quality but require the correct, matching decoder to view, while analog signals easily lose quality but are viewable or reproduced by any method that can display/transmit the electro-magnetic pattern.

DISPLAY – Before SmartPhones and iPads this word required the word VID ahead of it, ie: Vid-Display, because the word display could also mean diorama, table setting, or emotional outburst if used without it. Now the word almost singularly means the screen on which one watches something.

DOUBLE STANDARD – A double standard is any rule that applies to only a select group, without exception, but not to another group, without logic. If I tell you not to give me a nickname but I always call you by a nickname I create then I am using a double-standard.

DP-PLUS – Lets not kid ourselves. DP stands for Dr. Pepper, a brand of soft drink the writer loves. DP Plus would be a version of that drink that has the flavour of Dr. Pepper but is as healthy as green tea or orange juice. I've used the initials DP to make it seem more futuristic, but anyone who knows me will recognize it immediately.

EAST AMERICA – In the SPACE ODDITY Universe the United States have broken into two separate countries by the 23rd Century. The original 13 States and others that cover the eastern half of the continent, reject the world government known as the United Network and isolate themselves (won't trade with or participate in). The people of the United Network call this half of America, East America. The people in East America still refer to themselves as the United States of America because that's what they are.

EGRANGE – Lagrange Space is the name for what orbits Earth, along and inside the path the moon takes. Egrange space is the name I've given to anything that orbits the Sun, along the path the Earth takes. This means if a space station was put on the far side of the Sun it would be in Egrange space at the E3 position which is the Lagrange 3 point but in relation to Earth and the Sun.

EINSTEINIAN – 17th Century physicist Isaac Newton's theories replaced those of 16th Century physicist Johannes Keppler, and 20th Century physicist Albert Einstein's theories replaced Newton's. When a scientist or engineer refers to something that follows the theories of Newton but not the updated theories of Einstein they call it Newtonian, as in Newtonian physics. In the future it's probable that they will have updated theories to those of Albert Einstein and may refer to his physics as Einsteinian.

ELECTRO-BRAIN – A term created for Space Oddity to describe the type of Artificial Sentience named RAEB.

ELEVATOR – In this story a small room sized mode of transportation for people/small goods that is capable of going up/down, side to side, or pivot while moving through a tube/shaft. The short, common slang of which is ‘Vator.

EPAULET – A mini-belt on a tunic that goes from the collar to the shoulder. It is typically stitched at the shoulder along the flap and buttoned at the collar. It was a military invention that allowed soldiers to secure things on straps over their shoulder (like canteens of water, or gun power magazines) so they wouldn’t get lost during charges in battle. Now a days they’re largely found only on women’s coats where, despite the fact they could help secure their purses they go largely unused.

EPI-SYSTEM – Any system that has epic proportions in size and scope.

ESPIONAGE – Old term for the spy trade. Did I say old, I meant French.

EXTRADITION TREATY – A treaty is an agreement between countries that are supposed to keep them from going to war all the time by setting up the rules on how they behave toward each other. An extradition treaty is an agreement that if someone violates the law in place A but runs away to place B and is caught in B that B will hand them over to A for trial and/or punishment. Particularly if the crime in A was really big, like spying.

EXTRA-SOLAR – The area in space beyond where the Sun of a solar system is believed to have any effect. Open space. Current science terms the area where the last of the Sun’s solar radiation and gravity is a factor as the heliopause (helio is ancient Greek for sun). At the moment this book was written the Voyager 1 craft launched in 1977 was at the very limit of our solar system, and about to become the first human created object to reach extra-solar space.

FASTER-THAN-LIGHT TRAVEL – Various theories say that nothing can travel faster than light. Other theories say that most of the matter we know is out there but can’t find is travelling faster than light. My theory is that we can only observe things travelling slower than light so $E=MC^2$ is correct as a speed limit to our observations. All I know is, if we can’t break the light barrier then it’s going to be a very long way back to the drug store once we get out there.

FLEXI-GLASS – A type of glass that is sturdy and secure but also bendable. Strong enough to protect an individual from being blown out

into space, but flexible enough that it won't break if folded. It would have to be a form of polymer (plastic) but with enough tensile strength that the difference between the inside pressure we need to live and the vacuum of space wouldn't cause it to stretch or break seal.

FLIGHT PLAN – The route of an aircraft or space craft. In any place where there is a lot of traffic a flight plan must be filed so that traffic control can ensure no collisions occur. In areas with very little traffic a flight plan is filed to ensure search and rescue has an idea where to look if one is very, very overdue. Any adventure should have a flight plan given to someone for that second reason, even a long hike, camping trip, bike ride or other crazy undertaking teenagers are prone too without thinking ahead how the parents will react when two in the morning arrives but the kids aren't home yet. But hey, think about it, do you really want to finally get home after hours of walking because of a flat tire or dead car battery only to have to deal with a crying mother worried sick because she had no idea where you were? Just leave a note with a map for crying out loud, or call. After the thousands of dollars they've spent feeding and clothing you all these years, what's the big deal? [PS: I don't have children just because of this.]

FLORA – Scientific word for plants. Fauna being the one for animals.

FOOD-WAY – The part of the Mall-way on Station L5 specifically set aside for the sale of prepared food.

GAGGLE – A measurement of joggers where One is a straggler, Two is a quickie, Three is a few, Four is a group, Five is a bunch, Six is a hex, and Seven is a gaggle. A flotilla is eight but don't ask: "What's a henway?" (See: Henway if you really must know).

GANGWAY – The nautical term (meaning an old word from the Navy) for a fixed ladder specifically leading from one deck or level to another. To yell, "Gangway!" as a warning for people to get out of the way comes from the need for the gunners on ancient and crowded sailing vessels to get the crew to clear those ladders while they rushed to their guns so they could fire on the enemy.

GEIGER COUNTER – A device that measures for and reports on the presence (existence) of radioactive energy. Keep in mind that light also has radioactive energy so the setting has to be adjusted to fit the type of radiation one is looking for.

GLOM – In the context used in this book it's the same as grab, just more playful.

GRASSY KNOLL – A small rounded hill covered in grass. Not the sort of thing one would expect on a space station.

GRAV-PLATES/GRAVITY-PLATES/G-FORCES – Things that provide gravity, things in ships, things that keep people down, things that keep you from floating. Good answer, good answer!

GREAT HOLY WAR – A conflict from the late 22nd Century where, after securing complete control of all branches of Government, Baptist National party president of the United States of America, David Halley, ordered a nuclear first strike against enemy operations on the Moon as the first part of his war against the godless enemies of America. His extreme actions continue to haunt the American culture much as Hitler's did to Germany for generations after World War II.

HENWAY – What's a henway? Well, a plump one, about 9 pounds. A hen is a female chicken, see. I say it's a, I say it's a joke, son! Go ask your dad about Foghorn Leghorn and leave me alone!

HEURISTIC – A method of learning based on trial by error and accumulative experience. Computers tend to work algorithmically (try everything until something works), unless programmed otherwise. Heuristic computers would, with experience and exposure, limit their attempts to things that either worked before or were very similar to past success.

HINKEY – Means something isn't right. Something off, odd, unusual. Often used to describe something that one can't identify. A feeling of unease.

HYPER-CHANNEL SUB-ETHER TRANSMISSIONS – I like to think of all the dark matter that scientists keep going on about as ‘ether’. But then, I like old words. The phrase above is a ‘nothing phrase’ I made up, and from its context it refers to a type of space that allows communication at faster than normal speeds, or with denser than normal sized signals (high bandwidth). Either way, at some point in the future I'll decide what it is and then go on with the idea, for now it should be enough to say that there are a group of scientists working on it at Station L5, and one of them is a cute young woman who helped Bill Magellan up while jogging through the Level 14 habitat.

IDENT – A file with information that identifies a person, or the badge one wears that has an identification file on it. Like a driver's license or passport, but it also acts as a key that the locks on certain doors around the space station can read automatically permitting access to those who are authorized, or locking out those who should not be there. Presumably, unless one could disable the locks, the doors would also know and record where you have been so that your movement could be tracked, but then we'd really have no privacy at all, would we?

INDUSTRIAL ESPIONAGE – Generally this is a company spying on the new products that other company's are building with the idea of copying them, or beating them, to market. Sometimes, governments help.

INFLECTION – A change in pitch or tone of the voice. Sometimes as part of an extreme or intense emotional reaction.

INTERFACE – Any display, keyboard, mouse, console or buttons that the user will use to connect to a system, computer or device with or through.

INTERLINK – The future version of the internet. The short form is Link.

INTRA-SOLAR – Meaning anything that happens only within a solar system.

JAUNT – An excursion, adventure, trip, journey, although typically one would only refer to it as a jaunt if there was frivolity to it. Ie: without purpose, reason or need.

JETTISON – The act of rapidly launching something. Named after famed TV Dad, George Jettison who rapidly left work at the end of each shift. Wait a minute, I think I might have that last part wrong...

JOHN-A's – A chain of restaurants specializing in burgers and fries that is extremely well known throughout the world and half the star system by its very recognizable single yellow 'A' arch. Named after the first Prime Minister of Canada, who possibly had the same last name as an existing restaurant chain but I'm not saying...

JOURNALIST – Someone with a journal. Uh, actually it's the industry term for a reporter, anchor or news person, particularly if they write in print.

KÁRMÁN LINE – A point low in the thermosphere, and the altitude where the required flying speed is equal to orbital velocity so it's the closest thing you can accurately come to the point where space begins.

KEPLAR SOLID STATE PUMP – This should be impossible. Solid state means no internal moving parts and the very nature of a pump requires movement, but I think a tube that uses an electrical spark to create a mini-lightning flash, which would vaporize the air instantly, thus creating a momentary vacuum, which would then suck something into that vacant space, and upon equalization of pressure immediately release it again, could mimic the action of a pump without any moving parts. However, why this would be needed or if it could be

cost-effectively created is beyond me, but if anyone ever does it then I'm taking credit as the inventor just like Da Vinci got the helicopter.

KITCHEN-MATIC – A brand of machine that's about the size of a fridge but does everything from storing to preparing and cooking the food within it.

KNOLL - A small rounded hill. Not the sort of thing one would expect on a space station. If it is covered in grass then it's either the sort of thing one will find on Deck One of Station L5 or in Deeley Plaza, Dallas, Texas near the Texas Book Depository and a whole lot of history.

L-5/L5 – The most stable points in Lagrange space. L4 is 60 degrees ahead of the moon in Earth orbit (along the lunar path) and L5 is 60 degrees behind the moon in Earth orbit (also along the lunar path). As such both points are the most gravitationally stable spaces to put large orbiting space station colonies.

LAGRANGE – Each of the Lagrange points is a place where the gravity of the primary large body (ie: Earth) provides a degree of equilibrium or stability. The L4 and L5 points are best for large constructions because the Moon's gravity helps make them more stable. L1 is very near the moon, between the moon and Earth because you need to be closer to the moon for its gravity to keep the Earth's gravity from pulling it to Earth. L2 is on the far side of the moon and we're actually going to putting a deep space satellite telescope in it (because the moon will block out radio interference from Earth). L3 is on the far side of the Earth, exactly opposite the Moon and also relatively stable. The other places along the lunar orbit get no benefit from the Earth/Moon gravity combination and anything placed there would require its own propulsion to keep it in place for any length of time. Although the Lagrange calculations also apply to the Sun/Earth combination, there's no way space going people will want to refer to both the space 60 degrees behind the Moon and the space 60 degrees behind the Earth orbit by the same name so I've created the term Egrange. L for luna, E for Earth. But this also means you could refer to the Lagrange point behind Mars as Mgrange, behind Jupiter as Jgrange, etc. That's why I think it'll catch on.

LASER OPTICAL – Somewhat redundant phrase indicating a laser signal sent without wires. It would have to be line-of-sight and therefore easy to back track.

LEGEND – In the spy trade the phony cover story one makes up, for a fake persona one uses, while being someplace one doesn't belong, doing things one really shouldn't be doing.

LEM/LM – The NASA code term for the Lunar Excursion Module. It was made of two stages, the Descent stage which was the metal spider looking base that remains on the Moon, and the round bug Ascent stage which blasted off from the Moon and took the two Astronauts on board back to Lunar orbit for rendezvous (docking) with the Command Module and the return to Earth orbit.

LEO/L-E-O/L.E.O – Abbreviation for Low Earth Orbit. The area at the edge of the Earth's atmosphere and space where a series of small stations are set up that allow people to transfer from the heavy and powerfully large space craft needed to leave the surface of Earth and transfer to smaller craft for the trip to either the moon or one of the space stations. The fuel use and rocket power of an Intra-Lagrange Shuttle is a fraction of what would be needed to get to LEO.

LEVEL – On a space station with a rotating Life Wheel or some other section that's 90 degrees right angle to the rest of the ship/vehicle/station DECKS go from top to bottom on the centre line of the station, and LEVELS go from furthest out to closest in on the Wheel.

LIFE WHEEL – A very large circular construction that rotates around the central axis on a space station providing artificial gravity by its spinning through centrifugal force.

LIKES – A chain of restaurants specializing in burgers, fries and shakes provided in a whimsical and fun atmosphere. Possibly a 23rd Century version of an existing chain in the Toronto area but I'm not saying...

LINK – The future version of the internet. Short for Interlink.

LINK-WATE – A device that connects a specialized piece of equipment to the Network through the Link.

LOOP – The brand name for the Shuttle service that goes from Station L1 to L5, then L3, L4, L2 and back to L1. If you're wondering why there isn't an L6, L7 or L8, I didn't invent Lagrange points, I just put space stations in the ones that are stable enough to park in.

LUNA – The name for the moon circling Earth. The more humans travel around our solar system the more important this name will be because it'll be necessary to distinguish between the moon around Earth and the ones around Mars, Jupiter, Saturn, Neptune, Uranus or even Pluto.

MAIN BAY – The cavernously large complex at the bottom of Station L5 where shuttles can come in (protected from cosmic energy) and dock [like a garage]. There are also spaces along the outside with docking hatches for larger craft (Super-Transports and Carriers) [like the connectors between airplanes and gates at the airport]. Most of the

interior space in the Main Bay is hallow and interconnected, so that if a larger craft outside is blocking one hatch, the smaller craft inside can shift and pivot and leave through another hatch, but there are exceptions. The Military Bays for one.

MALL-WAY – Every level on the Life Wheel of Station L5 is a big, long circle that comes back on itself like the inside of a bicycle tire. The Mall-Way is one that has all the shopping and social/recreational places for people to spend all the hours of their lives not used for work or sleep. Including pockets of food and beverage vendors. The first section (of ten) in the Mall-Way is two levels high and has shops with their own space doors. Originally these were the docking bays for the workers building the Mall-Way, but now they have the sales and repair shops for short-range shuttle craft and such.

MARTY – Bill Magellan’s malapropism of the word for someone who believes so strongly in something that they’re willing to suffer greatly rather than claim something they do not believe. The word he was trying to use was Martyr. The name Marty comes from a cartoon character in the Bear In Space series. Like Bill Magellan, Bear is also based on my friend.

MARTYR – The word for someone who believes so strongly in something that they’re willing to suffer greatly (even die) rather than claim something they do not believe. Bill Magellan’s malapropism for this was Marty.

MASTER – The commander of a boat or space ship that is not military might be called ‘Captain’ but that’s a courtesy, an honorific title without legality. The legal maritime (sea) term for someone in command of a non-military boat (and therefore also a space ship) is Master.

MEDICO – A general medical practitioner somewhere between nurse and doctor who can provide most basic immediate care and even give out prescriptions. Just as a doctor will refer a patient to a specialist if the condition is beyond General Practice, a Medico would be the first line of healthcare and refer a patient to a Doctor if further evaluation or greater knowledge was required. As it currently takes a lot of time and money to become a doctor, and most doctors spend the bulk of their time dealing with minor common health issues it seems that long-term our society will have to embrace a more functional middle ground for the every day ailments. Currently, Ontario has something similar to Medico’s but they’re called ‘Nurse Practitioner’.

METER – In the 23rd Century English language, METER means a device used to measure something rather than the unit of measure in the metric system.

METRE – In the 23rd Century English language, METRE means the unit of measure in the metric system and not a device used to measure something.

MICRO-WATE – Extremely small portable device used to connect to the future version of the internet called the Link. Popular for people who only want to hear music, makes calls, update their status on social networks but not see pictures, watch movies, etc. Often given to children by parents who worry.

MINDY'S - A chain of burger restaurants where the burgers are as square as the décor. Possibly a 23rd Century version of an existing chain but I'm not saying...

MONOCHROMATIC – Something of one colour. Black and White photography/movies are monochromatic because the images are created by the presence (or absence) of light and not by different coloured lights.

NANNY STATE – A term used when Governments pass so many laws and restrictions that free will is almost gone. Often used in political speeches to get people to vote for someone who has no intention of removing any of the rules and restrictions they mentioned but needs to get elected in order to remove enough of them to help the people who gave them money to get elected to do something they probably shouldn't be allowed to do. Something that the rule was put in place to stop because it hurt people, the environment, the planet or the future.

NAVIGATION BOARD – A display or console used to plan the route a vehicle would take on a journey. Used for ‘setting course’ when the route has numerous different types of conditions it must go through. For example: A plane will take off, fly through air and then land somewhere. If there are many physical barriers they must get around or through, jungle, storms, mountains, oceans, then the pilot may need to put extra effort into planning the trip to ensure they have sufficient fuel, time and the best route to navigate these conditions. In this story the unit retains previous plans and allows for multiple versions easily so that one can quickly experiment before travelling.

NEFARIOUS – Evil. Villainous. Republican. Oops (habit).

NETWORK – In this book this refers specifically to the United Network Command Authority, or United Network. The closest thing to a functioning world government, and an organization made up

equally of participating nations and trans-national corporations. It could also mean a connected group of anything.

NEWSNET – Literally, the networks of websites, print and video media that gather, digest, report on and deliver the news. Some elements in the NewsNet secretly work for a secret organization in the United Network in order to control the news too, but you didn't hear that from me...

NON-SEQUITUR(S) – A string of words or thoughts that don't make sense when put together. When someone is thinking about something other than what everyone else is talking about, and then suddenly shares one of their private thoughts without establishing their train of thought, the words they say would appear to be a non-sequitur to everyone else. Regis Philbin likes orange poopy heads, for example.

OLD SOUL – A term for someone whose personality and behavior seem much much older than their physical body. Someone who acts and seems like a 50 year old but who is only 10 years old for example. It comes from the ancient belief some cultures have in reincarnation whereby when we die we are quickly reborn into another body. The idea is that some people retain part of their previous memory/personality, although science finds that children who grow up with a lower than normal amount of same-age social interaction will frequently behave more like the group they're used to (ie: Adults) than what is age-appropriate (normal).

OUTBOUND SHUTTLE – Any shuttle craft (primary a space going bus) that is heading away from Earth. The same vehicle becomes an inbound shuttle for the people away from Earth wanting to come back.

PAPER-WATE – An iPad like device primarily for the managing, storage, recovery and creation of documents. Only without the cult like obligation to the corporate culture that today's devices require.

PERSONA – A created character. It may be based on a real character, like a profile on a social network, or a made up character, like a profile on a dating site.

POD – In nature a pod is a container of smaller things, like peas. In this story a pod is a container of smaller things. The pod in this story is roughly the size of an elevator and the smaller things are the characters. These pods have the ability to move independently for short distances for escape from the Space Station in an emergency, or to inspect the exterior of the station, and/or repair it as part of normal maintenance.

PROCYON – A first magnitude star in the Canis Minor (little dog) constellation. Procyon is the nearest, strong candidate for having a

world orbiting it that may have life although probably not intelligent life nor life that enjoys reality tv.

RAEB – The term given to the Rigel Aerospace Electro-Brain artificial sentience created and named by Dr. Michael Newville. It is also the name commonly given to the first production clone that Robert MacManus is friends with. The very first functioning Raeb is the CORE-RAEB which remains at Rigel Aerospace near Calgary, Alberta, and from which all other Raeb's will be cloned. The one in this book will become part of the RIGEL THREE experimental long range space vehicle. A craft Robert MacManus wants to command when he grows up. Will that happen? We don't know, dude. (Yes, we do. See any part of SPACE ODDITY at titanrainbow.com for more info).

RESIDUAL – Left over. Trace. Minimal trailing amounts of a once larger effect. With Grav-Plates the force of gravity decreases the further you get from it. As the 'ground' on Level 14 is nearly 4 metres above Level 13 it's safe to presume that G-Forces decrease 20% for every metre (Keep in mind that while 1 metre above is only 80% of the level at the floor, the next metre higher is 80% of that 80%, or 64% of the floor, and 3 metres is 80% of that 64% or 51% of the floor, so at the 4 metre height the effect of the lower level's Gravity Plate is still 40% of what it would be on Level 13, and while the Life Wheel is still spinning that means the 40% is added to the artificial gravity from the rotation).

RETRO-THRUSTERS – Thrusters specifically intended to slow down or brake a vehicle. Usually very powerful ones that slow the craft down on re-entry to Earth. Slow is good when entering an atmosphere because the faster a craft goes the more friction occurs between the outer hull of the ship and the atmosphere. Friction is heat, which is why space vehicles coming back to Earth have heat shields. Slow is difficult because the closer one gets to Earth (or any really large body) the greater the pull of Gravity is.

REZ-NAY – A special system of super high resolution video recording that allows play back by flat screen, 3D or holographic projector/displays. The 23rd Century's version of BluRay.

RIGEL AEROSPACE – The leading maker of space ships and aircraft in the 23rd century. A major supplier of parts for space stations as well. Robert MacManus is the fifth generation of the family that still controls most of Rigel Aerospace.

SAFETY – A term for a physical barrier or setting that keeps something from happening until its needed. Typically a switch that keeps something from happening that could injure or kill people if it occurs at the wrong moment. On an escape pod the safeties are not

active in normal use but only when it's possible a situation could happen where the door gets stuck and people need to get out in a hurry, like after a crash.

SAGITTARIUS – A constellation in the sky between Scorpius and Capricorn, important to this story because if you can find it then you're also looking at the center of the Milky Way galaxy.

SANGUINE – Hopeful or confident. If you're not sanguine then you're not very hopeful or confident. If you use sanguine in your speech then you really need to get out more often.

SCHLOCK – The textbook definition is something of cheap or inferior quality but it's commonly used for a type of entertainment that is both cheap, tacky, frivolous and a little weird.

SEVENTY-ONE – A chain of convenience stores that provide treats and fuel for people and vehicles. Possibly a 23rd Century version of an existing chain but I'm not saying...

SHORT BOW INCIDENT – Late 22nd Century conflict that happened in the orbital path between Earth and the Asteroid Belt that uses Mars for gravity assist slingshot from the outer system to the inner system. As is consistent throughout history, competing forces will often fight over critically important routes of trade and transport.

SMUGNESS – An annoying confidence intended to show off one's superiority. It's very entertaining if it happens just before they're proven wrong.

SNORT - To force the breath violently through the nostrils with a loud, harsh sound intended to express disgust, contempt or disapproval.

SOCIAL CONTRACT, The – An idea that everyone is responsible for the success of the community, province, state or country they live in and therefore shouldn't walk past garbage, damage, or suffering without doing something to fix it, or help. It also carries onto the idea that if one has 'more' and all that 'more' is put together than those who have less can at least get a minimum. This idea is corrupted by people who take advantage of the system for their own laziness or greed (both the poor and the rich are guilty here), and the people who think because everyone is taking advantage of it then it's okay for to cheat too. A great example of this is a study where students cleaned a subway station in New York, then timed how long it took for the first garbage to be left on the floor, then how long until the second, etc. The evidence shows that the time between none and the first piece was twice as long as the time to the second, and that was twice as long until the next, but once there was an accumulation the garbage grew very quickly. If

people want to keep something clean, and they help to do so, then it stays that way. Society is no different. It's hard to stick with because everyone around you has lost their sense of community but society only works when we help it to, and sometimes that has to start with one person who won't give up. The funny thing is that a person does so is more likely to be respected and become a leader rather than just another rat in the maze of life.

SPACE LEGS – Sea Legs are when you've been on a boat long enough that you can walk around even when it's pitching and swaying without feeling unsteady. In this use, Bill Magellan presumes that because he can finally tell that he's on a space station that he must have his Space Legs, in truth he's just dizzy from everything that happened.

SPACED – A pun. If you were ‘grounded’ for misbehaving on Earth then Bill Magellan presumes you'd be ‘spaced’ for misbehaving in space.

SPACERS – A negative nickname for people born in space. Like ‘Trekkies’ for Star Trek fans, but only if you like to beat them up.

SPY TRADE – The tricks a spy needs to know in order to be good at it.

STATION L-5/STATION 5/STATION L5 – Various words for the large space station colony that was built in the Lagrange 5 position. Lagrange 5 is a gravity neutral point 60 degrees behind the moon in Lunar orbit. This means that the pull of Earth and the pull of the Moon are about the same and so if you built something big and put it there the two gravities would help keep it there. Oddly there's another point called L4 that's 60 degrees AHEAD of the moon that does pretty much the same thing.

STATUSES – Facebook, Twitter, Tumblr, any posting on a social network that let's people know what you're doing – ie: “In a space pod with a bomb, about to die.”

STYLUS – Term for something like a pen or pencil but which is used to interface with a display.

SUPER-CARRIER – Term for really big spacecraft that can go very long distances without support, and launch smaller space craft from them. To be a ‘Carrier’ a military vehicle has to be able to hold at least 100 craft. Civilian (not military) versions of this are called Ferries, or Transports.

THOSE DARN KIDS! – Including this was a guilty pleasure. It was something the bad guys almost always said at the end of each Scooby Doo episode I saw growing up. The greatest thing about Scooby Doo was that the creepy ghost or goblin was never really magic and the

heroes always proved it through science. When I was young I found the idea I could learn why things worked and then use that knowledge to dispel my fears very helpful. Science beats fear.

THOUGHT EXERCISE – Something physicists use to try and explain very complex ideas to people, in order to help them visualize the concept better. You'll find a lot of them in this Lexicon.

THRUSTER CONTROLS – Buttons, knobs and dials on a space vehicle that allow for the operator/pilot to control the amount of thruster activity around the craft. If you put an aerosol nozzle at every corner of a box and can control when they spray, and then fill that box with enough helium balloons that it will float approximately 2 metres above the ground then you could 'fly' the box. This same theory goes behind how space craft in the vacuum of space turn, twist and change direction when not rocketing somewhere.

TORQUE – My favourite thing in physics. Go to an open door. Push it gently near the handle. Easy, huh? Open it again and push it close to the hinge. Hard, huh? The further away from the pivot you apply effort, the less effort is required, or the more power the same energy has. The closer to the pivot you are, the more effort is required. Knowing this, you can do amazing feats of strength, particularly if the people watching don't understand Torque. The reason the injuries on the Space Station would be worse if the explosion had happened further from the center is because the same explosion would cause the station to move a greater distance more violently than it would if the same explosive energy happened closer to the pivot.

TRANQUILITY BASE – The name that Astronaut Neil Armstrong suddenly gave to the landing spot of Apollo 11 on July 20, 1969 (I'm not kidding, it wasn't planned). Armstrong passed away just after this book was written, which frankly was eerie, but it gave me the opportunity to revisit that part of the book before publishing and add what may be the best line ever. Thank you, Neil Armstrong, for those first small steps, and for reminding us they could be the first of many destinations in our future.

TRANS-SOLAR – Used specifically to describe journeys outside the moon's orbit but within the outer boundary of the Solar System.

TROPOSPHERE – A layer of the atmosphere between 10km and 20km thick, where nearly all cloud formations occur and weather conditions begin. There is also a steady drop in temperature with increasing altitude in this layer. Once a spacecraft is past the Troposphere its journey to space becomes considerably easier because

the less dense the atmosphere is the less wind resistance/drag the craft experiences.

TURRETS - A heavily armored domelike weapon structure on a spacecraft that can rotate or revolve while it aims and fires.

UNCERTAINTY PRINCIPLE – In physics there are weird variables that you can't possibly know even at the time something is happening and its created a whole branch of physics known as Quantum Mechanics. Unfortunately, QM is providing some rather strong evidence and understanding on how the universe works despite the fact it's basically mathematical magic. I threw in the most basic QM formula for this story because I wanted you to know that kids in the future will have to understand way harder crap than you do.

UNITED NETWORK – A futuristic world government, half controlled by political entities (countries) and half controlled by corporations (business). Since our current governments are increasingly turning to the ‘private sector’ (business) to get things done, and as the American Republicans believe that ‘Corporations are People’ in that they pay taxes and should have a voice in government, it’s logical to see that eventually Corporations would run the world. Well, they would run the world in a more obvious way than they do now. Since no one in this story seems to have a problem with that system its safe to assume it won’t be an issue. See my book series ‘TALES OF BUFFALO COMMONS’ if you want to know otherwise.

UNRANKED – To be ‘ranked’ one would have to be in the military. The commander of a boat or space ship that is not military might be called ‘Captain’ but that’s a courtesy, an honorific title without legality. The legal maritime (sea) term for someone in command of a non-military boat (and therefore space ship) is Master.

UPTON CHARLES – Fake name used by a spy from East America. Many articles in an Aerospace Industry Journal have been written under this name, too many for someone as young as the spy that arrives on Station L5. The name comes from the 1980’s. When Prince Charles and Lady Diana first wed and had Prince William I suggested his name should be ‘Upton’ because his parent’s nickname was ‘Chuck and Di’, and Upton might shorten to ‘Up’, making them ‘Up, Chuck and Di’. Okay, I’m a sick puppy...

UWS - UNION OF WESTERN STATES - In the SPACE ODDITY Universe the United States have broken into two separate countries by the 23rd Century. The western half of the continent has become the Union of Western States (of America). This nation is a full participating member of the United Network and as the eastern half of

America has rejected the world government the two sides don't get along. The full tension is relatively recent which is why Bill Magellan was born in Chicago, East America, but has grown up in Santa Ana, California, UWS.

VATOR - In this story a small room sized mode of transportation for people/small goods that is capable of going up/down, side to side, or pivot while moving through a tube/shaft. The short, common slang word for Elevator.

V-C - VIDEO CONTACTS – Contact lenses that can also display images or computer interfaces which only the wearer can see.

VETTED – A process where a person's background and history is checked, typically with a higher than normal level of effort, in order to make sure they are 1) who they claim to be, and 2) not a risk.

VIDS – Short for videos. Any video or audio-video recording of any segment, scene, sketch or episode.

VSNA – This is the routing code for the Spaceport nearest Anaheim California, the city that Bill Magellan was raised in. It's based on the old style 3 letter airport code with the letter V in front of it. The 'V' is supposed to represent the vertical direction of the flight. If one was to fly right now to Disneyland California they could book through LAX (Los Angeles) or fly directly to SNA (Santa Ana). If they went by helicopter directly to the Disneyland Helipad the code is ANA (Anaheim). One day if space ships fly directly out of these locations they may need a different code but it would be most likely based on existing or historical codes.

WATE – Stands for Was Always This Easy. In order for any technology to qualify for this certification it would have to be as easy to use as what it replaces. For example, if iPads and Tablets could do EVERYTHING a pad of paper does then it would be WATE certified. But until all manufacturers find a single, common format for everything and remove their proprietary (single company owned) restrictions that make sharing everything nearly impossible this won't happen.

WRITER'S VOICE – When someone writes in such a way that the reader feels as though they are being told a story by a person rather than just reading proper English then that's the writer's voice coming through in the text. It's another word for style but specific to the written word.

WRYLY – The textbook definition is, "Dryly humorous, often with a touch of irony." Irony is when something happens that is opposite the intention. One example of irony is this: Someone tries to organize a

ban of a movie that has stuff in it they don't like. They hope to keep people from watching it and that the producers lose money on it. But the publicity of their ban brings more attention to the movie so more people end up viewing it than ever would've if the person trying to ban the movie hadn't said anything in the first place. They should've known that telling everyone to avoid the movie would get more people to watch it, but insisted for their own personal agenda. A wry expression would be the smile or grin one does when they recognize something completely stupid like that has happened, that it was probably predictable, and it was definitely the opposite of what would be preferred. So based on that, did I use it correctly in this book? You decide.

Believe it or not there's more information, but you'll have to go to:

<http://www.titanrainbow.com/fsq/techdirectory.html>

to view it. *

* **hint:** the little cat's eye symbol you see here and there is a link to spoilers in the Finnegan's Squad series, so be careful.