

## Where Away You Fall

by Jason Sanford

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I was dozing in the aerostat's pilot chair, sleeping for the first time since entering near space two days before, when Bee whispered "weapons lock" in my ear. I woke confused — Was I back in my F-35? Had I blacked out from excessive g-forces? — so I yanked hard on the control stick before realizing my old fighter jet was long gone. Instead, I floated in a balloon just below the blockade line. Fortunately, Bee overrode my stick commands. The computer didn't need to remind me that aerostats couldn't do evasive maneuvers 60 km above the earth, not when the only thing holding us up was an envelope so thin I could literally see through it.

I cursed myself for falling asleep in the pilot chair as Bee repeated that a targeting laser had locked on us. I glanced out the pressurized cockpit's window. Below, earth's blue atmosphere curved serenely away. Above, the blackness of space. Only seven other balloons were in sight. None of the aerostats in this part of the mesosphere carried defensive systems, so Bee's warning meant someone manning the blockade had discovered our little ruse.

How long does it take a hypervelocity slug to find you? One second? Two? I breathed deep and muttered an awkward prayer, hoping Brother Donald Page would be proud at how I faced death. I remembered his beaming face from two decades ago as he'd affirmed my destiny with tears in his eyes — telling this short, skinny girl that if she worked hard, she'd reach outer space. Now I was the closest I'd ever get, and my heavenly reward was to be shot down.

But as the seconds and minutes ticked by without me actually dying, I realized someone up above was yanking my chain. A very unspiritual fury clenched my fists. I yelled at Bee to call up the blockade frequency so I could curse those fools out. But before Bee could do so, the computer intoned the best news I'd heard all day: "Dusty, the target lock has switched from weapons to tight beam. Do you wish to receive a NASA transmission from Major Johnie Acaba?"

"Patch him through, Bee," I said, angry at Acaba for rattling my cage. I forced a fake smile as his handsome, square-cut face floated before me.

"Hey wannabe, you're nearing no-go territory."

I bristled. Acaba knew how serious Seekers — even a not-very observant Seeker like myself — took our destinies. "The *Beatrice* couldn't reach 80 clicks if I wanted to," I said, which was the United States' definition of the edge of space and where the blockade officially began. "And where the hell you get off lighting me up with weapons?"

"Only a joke, Dusty," Johnie said with a grin. "I wanted to welcome you to near space. I know how much it means for you to be there."

I started to smart back to Johnie, but bit off my words. Johnie was so dense he'd never understood my sarcasm. "Gee Johnie, are we still on joking terms? Seems I remember a bit of awkwardness back at the Outpost?"

Johnie frowned. The Outpost Tavern was an astronaut bar in Houston which looked like a combination barn and old-time general store. Johnie and I had been best friends during our time in the Air Force and when I applied to NASA, I convinced him to go along with me. We spent two years training with the space agency, graduated at the top of our class, and were preparing for our first trip to man the blockade when someone — and my money was on Johnie — spilled the beans about me being a Seeker. Never mind that I'd lapsed so far from the faith that my parent's annual holiday card included a guilt-inducing "Are you still living in sin?" letter extolling my spiritual deficiencies.

But NASA wouldn't listen. Over the last few decades Seekers had carried out a number of high-profile bombings and attacks around the world. There were also rumors that the last cascade event — a chain-reaction debris sprawl caused by too-many satellites and too much junk in orbit — hadn't been an accident. That maybe a Seeker sent a satellite tumbling into another in an attempt to obtain the faith's goal of returning humanity to a simpler way of life.

As I'd packed my gear, Johnie said how sorry he was at me getting kicked out. I screamed at him, wanting to know if he'd told NASA my secret. He swore he hadn't, but I didn't believe him. A few months later, I showed up for his launch party at the Outpost Tavern, intending to let bygones be bygones. But my former colleagues protested my presence, causing Johnie to play peacemaker instead of sticking up for me. I stormed away cursing his name.

But I guess Johnie had forgotten all that. "Thanks for everything," I said. Johnie looked puzzled, then smiled. Like I said, he never understood sarcasm.

"So what are you up to down there?" he asked.

I glanced at Bee's telemetry. Johnie was orbiting a few hundred klicks above me in low earth orbit aboard the Freedom 2 space station. In a few minutes he'd be below the horizon and out of range. "Tell you what . . . you get me into the Outpost, I'll tell everything I know."

"No can do," he said. "Astronauts only in there."

Astronauts only my ass, I thought as I disconnected the tight beam, popping Johnie's holographic face like a soap bubble. I'm better than any damn astronaut. Even if I'll never get to space like I'm supposed to.

#

My parents joined the Seekers before I was born, drawn to the religious movement by the teaching that salvation lay in living simply and reaching one's God-given destiny. Each Seeker's destiny was secret, decreed by your preacher on behalf of God and not revealed to the world until you achieved it.

Even though I grew up in a staunch Seeker community, I never was very devout. While all my friends wore brown chastity dresses or refused to use cells and net access, I obsessed on science fiction novels. I sat through church services reading old Heinlein and Clarke stories. I couldn't recite the hundred and one supreme destinies, but I knew Asimov's three laws of robotics by heart. My parents were embarrassed; the elders

appalled. However, our preacher Brother Page encouraged my science fiction habit, telling my parents God moved in mysterious ways and had grand things in mind for me.

When I turned 18 and went to Brother Page for my destiny, to my total shock the preacher said to reach out into space. "I thought we were supposed to live simply?" I asked. "Forsake the distractions of the material world?"

"God's will can be difficult to understand," Brother Page said with a secretive wink. "But I'm sure you'll manage."

I hugged Brother Page, excited by his encouragement to follow my dreams. When my parents questioned my Seeker commitment after I joined the Air Force, I merely told them I was following my destiny, to which Brother Page nodded knowingly. For two decades I screamed F-35s across the Middle East and Asia, studied aerospace engineering, worked toward being the ideal astronaut. And then NASA kicked me out.

To say I was devastated would be an understatement. Even though I hadn't been to church in years, I looked up Brother Page, who now ran a large Seeker congregation outside Houston. We met in his church's main worship hall, which was shaped like a massive planetarium. I entered to find the lights out and a projected replica of the night sky slowly spinning above me.

"Where away, Sister Dusty?" Brother Page hailed from the front pew, using the ancient mariners' term for direction which Seekers had adopted as a greeting.

"Where I must go." I motioned at the ceiling. "I'm impressed by the setup."

"Helps the congregation put the world into its proper perspective — something I'm afraid too many Seekers fail to do these days."

I didn't need Brother Page to tell me about the trouble caused by misguided Seekers. Every week brought a new divinely ordained attack or explosion. The greatest strength and weakness of the Seeker movement was that each congregation was independent. Unfortunately, too many extremist preachers exploited this with an overly strict view of how simply humans should live. I wished more of them were like Brother Page.

As the stars slowly orbited our bodies, Brother Page and I talked about my destiny. I asked him why God let me be kicked out of NASA when my destiny was to reach space. Instead of explaining that contradiction, Brother Page merely said my ultimate fate was extremely complex.

By the end of our talk, the big dipper was rising behind the altar. I smiled as I glanced at Brother Page brown robes, which meant he had yet to achieve his own destiny. He then asked if I remembered Sister Tess Harqo.

"She was a few years older than me," I said, remembering the girl with stern, fanatical eyes from our congregation. Tess once told me I was going to hell for reading a science fiction book during choir practice. "I didn't know her too well."

"Well, she now runs her own aerospace company. Needs a pilot for a special job, and specifically wants a Seeker."

I was stunned. Only a few Seekers sought out high-tech work, let alone fanatics like Tess. However, getting canned by NASA had made me *persona non-grata* with every private space company, so I eagerly accepted Brother Page's offer to recommend me to Tess. He then leaned in close. "Sister Harqo has been presented with an amazing opportunity to meet her destiny," he whispered. "But she needs the help of a Seeker with your skills. Doing so may guide you both to your ultimate goals."

I thanked him. As I left, I asked Brother Page a question which had nagged me for years: Does our focus on destiny keep Seekers from understanding the true world around us? Brother Page paused for a moment before shaking his head. "That's not simply a Seeker problem," he said. "Most people spend so much time looking at the future that they fail to live in the present. Unless we focus on this world and what we have here, everything is lost."

As always, I was amazed at Brother Page's insight.

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Talking with Johnie left me in a sour mood. I was tempted to info dump Tess and let her know about Johnie's call. But I decided to keep quiet, not wanting Tess to panic and scrub the mission. Besides, I was nearing our target, the aerostat *Gossamer Angel*.

Like the *Beatrice*, the *Gossamer Angel* was a variation Roziere balloon, her stadium-size envelope supporting what most people believed to be a reinforced photo reconnaissance gondola. The aerostat's envelope was made of a one micro-meter thick hybrid polymer which, when charged with a weak electrical current, changed from transparent to reflective. Doing this enabled one to alternately heat and cool the envelope's different helium chambers using solar radiation, thereby maintaining altitude with minimal fuel use. One could also heat the helium using electric heaters, but that obviously used more energy.

High altitude balloons had become a viable alternative to satellites after the second ablation cascade event. While the chain-reaction sprawl from impacting satellites and debris didn't keep people from reaching space, it made the job even riskier. A hundred years after Sputnik, getting into orbit was still expensive and dangerous. Add in rogue satellites and a debris field in the millions, and the dangers and costs increased even more. Hence the blockade by the major space faring nations. They called it a safety issue, but over time it became more about keeping control than keeping everyone safe.

Without access to space, poor countries and companies without connections turned to high altitude balloons to replace expensive satellites. The ceiling for these balloons was between 50 and 65 km and they could stay there for up to a year. In fact, the biggest problem with the balloons was getting them to come down when you wanted. That's where Tess's company came in, repairing balloons in flight so they could be retrieved.

However, the *Gossamer Angel* problem wasn't that it wouldn't come down. Instead, it's payload wouldn't go up. I was supposed to fix that.

As I carefully edged the *Beatrice* closer to the *Angel*, Bee announced that Johnie was again calling on tight beam. "Dusty, I want to apologize," Johnie's voice whined.

I laughed and disconnected him again. While the most Seeker of virtues was forgiveness, I wasn't done letting Johnie stew in his own juices.

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I met Sister Tess Harqo at a retro coffee shop in Houston. After a perfunctory "Where away, Sister Dusty," she launched into a diatribe against the teenager behind the counter, who'd tried to mix gened milk in her old-fashioned double mocha latte. She was still a true believer who saw the world in frigid hues of right and wrong. She even wore

the brown robes indicating she'd yet to achieve her destiny — robes worn in public by only the most fundamentalist of Seekers. But since I was desperate for a shot at space, I kept my mouth shut.

Tess had made her fortune on high-altitude balloons. But instead of launching them, she maintained them, sending up a single repair balloon each year to fix or retrieve broken high fliers. From what I'd heard, her main problem was finding good pilots. Everyone with the needed qualifications preferred to work for NASA or the private space companies, which paid more and let people go all the way into space.

Tess got right to the point. There was a special balloon stuck in the mesosphere and she wanted me to fly the repair mission. When I asked why, she told me about the old Project Far Side rocket system of the 1950s. The project used balloons to carry rockets to 25 kilometers in altitude, where the rockets were launched through the balloon's envelope at 70 Gs. I was instantly intrigued.

"If someone launched from 60 kilometers," Tess said, "the blockade wouldn't have time to stop the rocket. The blockade succeeds because traditional rockets launch at slow speeds in the dense sea level air. In the mesosphere, a rocket could reach 5,600 kph in two seconds, and almost 30,000 kph not long after. The blockade systems wouldn't have time to react."

"It'd be expensive," I said. "Are you putting up the money?"

"Don't have to. A certain unnamed country already launched the balloon. But the rocket failed to fire and they've secretly contracted me to fix it. I need someone I can trust to fly the repair mission. Brother Page says you're the one."

I imagined how shocked Johnie and all those fools at NASA would be. Unless they shot down every high-altitude balloon, their blockade would cease to exist. While this wasn't the same as going into space, I grew excited at the plan.

"So are you in or out?"

I looked at Tess and wondered how much of a fanatic she was. Still, Brother Page had vouched for her. I was in.

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I piloted the *Beatrice* until we were thirty meters from the edge of the *Gossamer Angel's* envelope, and even further from the *Angel's* gondola. Fortunately there was no wind in the mesosphere — in fact, almost no atmosphere at all — to mess up our approach. I extended the thin support boom toward the *Angel's* gondola like an impossibly long finger. I snagged the repair hook on the second try, anchoring our two ships together.

I quickly dressed in my pressure suit — essentially a space suit combined with a high-altitude parachute system — then walked into the cabin's small airlock. The air up here had less than 1/1000th the pressure at sea level and depressurization would kill me as fast as if in deep space. As I opened the outer airlock door, I ordered Bee to begin continuous communications. If I fell, I wanted Tess to know where to look for me.

The world turned slowly beneath me while Bee maneuvered the *Beatrice* so the support boom angled down. Aside from not feeling the weightlessness of freefall, I could have been in orbit. I wondered if God gave credit for being close to your destiny?

Once the *Beatrice* was higher than the *Angel*, I hooked the slider to my support harness and the slider to the boom, ignoring how the boom shivered as it arched between the two balloons. The boom's weight limit wasn't much more than what I weighed in my pressure suit. I pushed off from the *Beatrice*, keeping my eyes on the gondola rushing toward me. If the boom or slider broke, it would take me less than 30 seconds to reach the speed of sound. From what others had told me I'd feel like I was standing still. If my drogue chute tangled, the flat spin would knock me unconscious. By the time I hit the cloud deck fifty clicks below, I'd be the fastest free-falling human in the world.

Not that I had any indication of falling. Even though Joe Kittinger proved a century ago that you could parachute from this height, and a few rich fools did so every year, I had no desire to take the chance.

A dozen meters from the *Angel* I hit the slider's brakes and eased up to the gondola's maintenance ledge. This was the most dangerous part of the mission. Inside the gondola was a small rocket, carrying an even smaller satellite. If the rocket launched while I was on the gondola, I'd die instantly.

I plugged a direct line from Bee into the gondola's system and the computer transmitted the security code to open the access panel. The gondola bumped and shook to the panel's movement and I prayed the vibrations wouldn't trigger the rocket as I carefully disconnected the primary and secondary launch initiators. Once completed, I breathed a sigh of relief and plugged Bee into the repair jack. The computer verified several problems, including a faulty router for the launch initiators and some type of programming block in the system.

To transport a new router I had to return to the *Beatrice*. I slid back down the boom after Bee lowered the *Beatrice*'s height.

After I took off my pressure suit, Johnie again tight beamed me. I considered bragging to him about what I'd just done — after all, sliding between balloons at 60 km was more exciting than anything he'd ever do in space. But in the end, I decided his stew wasn't done cooking, so I didn't answer his call.

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When the *Beatrice* launched, I'd been prepared for everything except silence. Where moments before the hiss of gas and the clanks of access tubes and restraints had echoed through the pressurized cabin, the moment I was cut free silence overwhelmed me.

*Beatrice* rose through an overcast sky, the wind blowing slightly, the mists beading on the windows. Then the ship cleared the clouds in an explosion of sun light. I continued to climb and within minutes the blue of earth's atmosphere hung below me.

While I stared in awe at the sight before me, Brother Page tight beamed me. "How is it?" he asked. "I mean, the mesosphere's not your destiny, but it's close."

I thanked him again for recommending me to Tess, and asked if he'd ever had the urge to go into space.

"Once. Back in graduate school, before I found my true calling, I studied noctilucent clouds. Those are thin clouds of water ice up above 85 km. Very rare and hard to find because they're extremely faint. We still don't fully understand how they occur."

I tried to imagine how clouds could exist at such a height, but my mind couldn't wrap around the idea.

"Anyway," Brother Page continued, "after graduation NASA offered me a research position, which would have eventually let me visit a space station to study the clouds. But by then I'd joined the Seekers and my destiny wasn't in space. Still, I've always wondered what I'd have found up there."

I smiled and said if I saw any of the clouds I'd send him a recording.

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By the second day of repairs, I'd made two more trips to the *Gossamer Angel* and replaced the launch initiator router, along with another faulty system. However, the software block was still holding us up. Tess contacted the rocket's host country and recommended reloading the programming system from scratch. However, her contacts were reluctant to tight beam the new programming for fear a snoop would intercept the transmission. They were also hesitant to trust us with their main security codes, even though Bee carried everything needed to directly reload their programming. Eventually, though, the host country people realized they had too much invested in the project to back down, so they gave us the codes and the go ahead.

I slid back to the *Angel* while Bee uploaded the new software. Out above the horizon, the reflected star of Freedom 2 moved toward me. I wondered if Johnie was watching me through one of the station's cameras or if he'd lost interest. Either way, he'd get a shock when the *Gossamer Angel* launched the first unauthorized satellite in a decade.

"Upload complete," Bee whispered in my ear. "Reactivate launch initiators." I did, and verified everything was go. Now that I again stood beside a live rocket, I was anxious to return to the *Beatrice* and put some distance between us. "What's the launch window?" I asked Bee as the access hatch closed automatically.

"Next window is ten minutes. After that, windows repeats every hour and a half."

I nodded absently and prepared to slide back to the *Beatrice*. Just then I caught sight of the Freedom 2 station moving through the black sky above my position. I wondered if Johnie would try to tight beam me again or if he'd finally realized I was still pissed and ...

I paused. "Bee, what's the rocket's target altitude?" I asked.

"360 km."

That wasn't right. The rocket was supposed to place the satellite in high earth orbit, not low orbit. And why would the launch window so closely mimic the appearance of Freedom 2, which orbited the earth almost 16 times a day. I told Bee to reaccess the *Angel's* system. This time, access was denied.

"Bee, why don't we have access? Didn't we override the old security codes?"

"Access denied."

I tried the earlier access codes, but nothing worked. I was locked out of the entire system, unable to even reopen the *Angel's* access panel. I asked Bee to prepare a tight beam to Tess at headquarters, but Bee said communications access was denied. When I ordered the computer to lower *Beatrice* so I could slide back, it again said access was denied.

Right then the gondola pinged from thermal expansion and my heart jumped at the thought of the rocket igniting. Only Tess could override my access with Bee. Her fanatical eyes burned in my memory as I realized she'd hijacked the rocket. I also remembered the rumor blaming a Seeker for the last cascade event. As I watched the bright star of Freedom 2 cross the sky above me, I knew what the rocket's target was.

Only when the station arched away from me did I finally relax. But relief was temporary. I had no doubt the rocket would fire in an hour and a half when Freedom 2 came back around. I was still trying to figure out what to do when Tess tight beamed an encrypted info dump. "Show me the dump," I ordered Bee, even though I no longer trusted the computer.

A simile of Tess appeared on my suit's visor, looking to my eyes like she was standing in the air before me. She now wore the pure white robes of a Seeker celebrating attainment of her destiny. "I see you've discovered my little trick," she said with a serene smile.

I asked the simile what the hell it was up to, but the simile wasn't programmed for that question. I rephrased. "What are you doing?"

"I'm launching the rocket at the biggest target in the sky. All the previous debris sprawls have been too small to achieve a significant cascade. But a major space station exploding? That'll block access to space for decades. Maybe longer."

I stared at Tess, wanting to punch the image floating before my eyes. "You used me," I muttered.

To my surprise, the simile was programmed for that comment. "I deeply apologize for that. But my destiny is to stop humans from reaching space. Unless we focus on this world and what we have here, everything is lost."

A sudden razor-thought edged through my stomach. I'd heard those words before. "Who gave you your destiny?" I asked.

The simile smiled. "Why Sister Dusty, I thought you'd never ask. Brother Page gave it to me."

As the gondola pinged again, I suddenly knew that my destiny no longer lay in space.

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Since Bee wouldn't lower the aerostat, I couldn't slide back and override her controls. I considered climbing hand over hand along the boom, but that was well over a hundred meters and I couldn't do that in my pressure suit. Besides, Tess had only given me until the next launch window to jump from the *Gossamer Angel*. She'd sworn she'd pick me up, even tell the authorities I was an unwitting pawn in her scheme. Not that anything would reverse the damage she was about to do.

I considered smashing the *Angel's* access panel, but without heavy tools I couldn't accomplish anything. I might also cause the rocket to launch prematurely, and I refused to let Tess and Brother Page be the death of me.

The only option was the balloon's envelope.

Releasing my safety harness, I threw the hook end toward the guide lines at the top of the gondola. On the third try, the hook snagged. I tugged hard, guessed it would hold, then climbed up.

The *Gossamer Angel's* helium tanks were arrayed along the outside edge of the gondola, so the rocket could shoot up the middle without hitting them. There was no way I could reach the rocket, but fortunately for me balloon designers were descended from a long line of redundant-loving engineers. The *Gossamer Angel's* designer had placed the back-up valves for the helium lines along the gondola's top edge so someone like me could access them if needed. While I couldn't release the helium inside the envelope, I could open the valves and pump all the remaining helium into the envelope.

As soon as I opened the first valve, the *Gossamer Angel* began to rise. The *Beatrice's* access boom strained, pulling the aerostat along with us. The boom finally released as Bee's safety protocols kicked in.

I crawled across the gondola, opening valve after valve as the *Beatrice* disappeared below me. Without Bee's telemetry, I wasn't sure of my altitude or how fast I climbed. High altitude balloons didn't have a solid upper ceiling; a few had made it to 75 km but those had been small experimental models. The problem was that as the pressure outside decreased to an almost literal nothing, the gases inside the balloon expanded until the envelope ruptured. Because large balloons like the *Gossamer Angel* cost so much, no one ever attempted to find their maximum limit.

I couldn't see the *Beatrice* below me and hoped I didn't hit the ship when I jumped. Having nothing else to do, I stared down at the earth as the sun sank below the horizon. Suddenly, faint lines of electric blue erupted in the blackness before me, as if a giant had thrown wispy neon string into orbit. The noctilucent clouds Brother Page had mentioned. The *Gossamer Angel* appeared to float parallel to the glowing clouds, even though they were probably dozens of kilometers away. I watched them in silence, happy for the first time since getting kicked out of NASA.

I woke from my daze as something pinged beneath me in the gondola. Even though the time Tess had given me wasn't up, I threw myself over the edge of the gondola. I'd fallen several hundred meters when the *Gossamer Angel* exploded and the rocket climbed like a tracer away from me.

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Two months later, Johnie met me outside the Outpost Tavern. Despite my protests, he'd insisted on bringing me here. As we entered, Johnie waved to his fellow astronauts before leading me to the wall of honor, where two thousand photos showed every person who'd made it to space. There, surrounded by red ribbon, rested my old NASA mug shot. Johnie told me with pride that he'd estimated I'd ridden the *Gossamer Angel* to well above 80 km. While most of the world didn't consider that space, the U.S. did and that was good enough for Johnie to place my photo here.

I smiled as the weight of my destiny lifted from my shoulders. I laughed at why some silly thing like this had ever mattered in the first place.

When Tess realized what I'd done to the *Gossamer Angel*, she'd reprogrammed the rocket and launched it at a large orbiting telescope. The resulting impact created the third major cascade event, but because the satellite was so much smaller than the space station, the cascade wasn't anywhere near what it'd been if Freedom 2 had been hit.

Of course, I didn't know that at the time. I fell for more than ten minutes, feeling like I merely floated above an unchanging earth. Less than 30 seconds to reach the speed

of sound. The fastest human in the world. But still floating. Watching. An eternity before the cloud deck rushed up to greet me and I again heard air whistling by and my parachute deployed and I was home.

NASA eventually admitted I was a hero, with one administrator confiding that Brother Page had been the one who'd outed me as a Seeker. The next time I saw Tess and Brother Page was at their arraignment. Both wore white robes signifying achievement of their destinies, although Tess's was stained brown on the sleeves, meaning she'd only reached part of her goal. I stood outside the courtroom and glared at Brother Page, wanting to know what had been so important about his destiny that he'd been willing to sacrifice my life.

As if knowing my question, he'd shouted a question — "Haven't you ever wanted to know what happens when two destinies collide?" — before his lawyer shut him up.

Damn them, I thought as Johnie led me to a table, where a pitcher of beer waited for us. I hugged Johnie and thanked him for being a true friend. Embarrassed, Johnie muttered about a new joint project of the Air Force and NASA. They wanted to set up manned aerostats to patrol the mesosphere.

"Know anyone who might be interested in that?" he asked with a smirk.

I eyed my picture on the wall. I thought about Brother Page and how he'd almost killed me over an inane philosophical question. About Tess's fanatical obsession with keeping humans on earth. About my once-burning obsession with reaching space.

I picked up my beer and chugged it.

"Screw destiny," I told Johnie. "It's not up there and it's not down here. Destiny's just something to mess with people, and I want no part of it."

For once, Johnie understood exactly what I meant.

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