

## View from the Top

Mark called down from the observation deck. “Jason, did you see that one?”

“No, I can’t see anything from down here. What are you guys looking at?”

“I think you better get up here and take a look for yourself. You won’t believe it.”

Jason climbed out of the underbelly of the pod he’d been stuck in for the last half hour. He’d been attempting once again to fix the water reclamation system. He hated this contraption, mainly because the idea of drinking his own pee made him cringe every time he thought about it. Intellectually he knew it was purified and perfectly palatable but still...

“There goes another one,” Mark said. “I can’t believe how bright it was.”

“But not as large as the last one,” Greg said. They’d been watching from the observation deck for almost twenty minutes. “The explosions aren’t slowing down. In fact, they seem to be getting closer together.”

Mark turned to Jason. He saw the concern in his eyes. “At first they were green and yellow but now they’re dark red and blue, almost violet. They’re obviously huge if we can see them from 220 miles up.” Mark had a knack for stating the obvious.

Jason turned back to look in astonishment at the sight before him. Half the countryside of Russia was now dark. “Houston, are you catching this?”

“Won’t do any good,” Greg said. “We’ve been trying to raise them for the last ten minutes.” We thought maybe that’s what you were working on.

“What I can’t figure out is why they’re happening in waves,” Mark said. “It’s almost like there’s something rippling through the countryside, taking out power stations one by one.”

Jason tuned to look at him. For a scientist, Mark was observant but not as quick as he would have thought. They’d only been together a few weeks since the last transport left. But Jason could excuse his ignorance. After all, he was a biologist, not an astrophysicist. His experiments here on the ISS were all about growing plants in weightlessness.

“I told you, it’s an electromagnetic storm,” Greg said. “Just like the aurora borealis. See how vivid the reds and blues are? Normally the auroras are green. That’s caused by the oxygen. The blue comes from Nitrogen. There’s something strange about this storm.”

Mark looked at him in astonishment. “Ya think? I’d say the explosions we’re seeing qualify as a little strange. The Northern lights don’t take out power plants, do they?” He turned to look back down at the Earth just as another explosion ripped through the Eastern edge of the Trans-Siberian Railroad near Vladivostok. The whole string was dark now.

“Just like transformers popping in a tornado, only these explosions aren’t caused by any earthly wind. I never thought I’d see most of Russia go dark like that,” Greg said. The solar wind is normally very quiet but something had stirred it up yesterday.

“Maybe it’s related to that coronal mass ejection, Jason said.” Houston told us it was more powerful than that 1859 storm that fried the telegraph lines. We’ve got to get ahold of them.”

Jason left the observation deck and pulled himself through the tranquility and unity modules to get at the communications center. Everything looked normal but there was no response when he flipped the switch from open cabin microphones to single local mike.

“Try the messaging system,” Greg said. “That’s on a different link.” The ISS had three communications links, each using their own dish. The Russians at the other end of the station had their own connection but hadn’t used it in years. No money for ground stations.

“No dice. I think we’re on our own. Something must have fried the circuits.” Jason tried not to sound worried. They were all professionals onboard, including the two Russians and Yuki from Japan, but as the captain, he felt the need to keep morale up. They were usually too busy to think about just how precarious life really could be in the tin cans they inhabited in a vacuum.

Both Mark and Greg were at his side now. “Maybe Boris or Vladimir can get their connection going,” Mark said. “Their end of the station was facing away from the storm yesterday. I’ll bet it still works.”

Jason felt the growing sense of urgency he saw in their faces. “Let’s go ask them.”

The Russians didn’t mind having the Americans come visit them but they usually worked apart during most of their day, only seeing one or the other occasionally. Having all three of them come down for a visit would serve two purposes in demonstrating urgency and unity.

You can move surprisingly fast in the ISS. You just have to be careful to control your legs as you use the handhold straps to pull yourself along. Otherwise they tend to go flying off sideways and hit things that might not take well to being jostled, like power couplings and door hatches. Mark had triggered one of the emergency hatches closed his first day onboard.

Boris was sleeping but Vladimir looked up from his computer, surprised to see them. “Hey, what you do to the network? I was just about to come see you.” They used old laptops on the Russian side of the ISS, stuff the Americans had thrown out years ago for new tablets.

“The links are all down,” Jason said. Can you still get a connection through your Luch system?” Luch used four old satellites to relay signals from orbiting Russian space vehicles.

“What, are you kidding? We haven’t used that since Mir.”

“I know, but you built it into your system with plans to reactivate it someday, right?”

“No money. Maybe we can use Lira to go direct on the VHF. What’s up?”

“Take a look out your window. Half your county is without power.” Boris woke up when Vladimir pushed him aside to get at the only small port in their module.

“Wow, look at that,” Boris said. “What happened?”

“We don’t know. All our comm links are down. Can you help?” Boris was the Russian commander. Jason knew he was asking a lot but they had worked well together for almost six months now. He had shared American delicacies from the supply ship when he needed favors.

“OK. I help you. But you have to get me something special for this.”

“Deal, whatever you want. Just ask.”

The small Russian control module was crowded now. Yuki came over when he heard the commotion. Six men in a small space makes for a tense environment when your lifeline has been severed. Jason never realized how much they relied on their communications system until now.

“See if you can get me the latest DVD of ‘Debbie does Dallas.’ I don’t know why your NASA blocks access to the porn sites from up here.” Boris had a sad puppy look on his face.

Jason stared at Boris for a moment then burst out laughing. So did everyone else. “I think it’s because they record everything that comes and goes on those links – audio and video. How would that look in the history books to have a porn video embedded in the record?”

“Move aside everybody,” Boris said with a smile on his face, spreading his arms in a swimming motion. He was a big man and it looked a little comical, as if he were trying to push away fish in an aquarium. “Vladi, did you try the VHF link?”

“Still working on it,” Vladimir called from the next module over. “Nothing yet.”

Boris reached down and lifted his mattress to reveal a plastic shelf with an old radio under it that looked like it was made back in the 80's. It had a microphone on a desk stand like old ham radio operators used. The lights in the module flickered when he hit the power switch and pushed the buttons.

“Haven't tried this in years. Hope it still works.”

After a moment the cabin filled with static and then a crackling sound from the speaker. It sounded like what you would hear on an old-time radio that had to be tuned with a dial.

“Is that normal?” Mark said.

Boris ignored him as he fiddled with the buttons and dials. After a moment, he keyed the microphone and announced, “Calling mission control, calling mission control. This is Boris Vasiliy on the International Space Station. Anybody there?” He looked at Vladimir to see if he had any success. Vladi shook his head.

After another try, the speakers crackled again. In between the static outbursts they heard a very faint, “Boris who? Did you hear that mother? He said he was on the space station.”

Jason grabbed the microphone. “This is Jason Conner, American commander of the International Space Station. Who is this and where are you?”

Another agonizing delay and more static, then a little stronger, “I think I've got you now. Jason, this is Mike Goodheart and I'm in Fargo, North Dakota. Are you really on the ISS?” The static grew for a moment but it seemed like they heard, “and why are you on this frequency?”

“Mike can you tell us what is happening down there? We haven't been able to get in touch with mission control.” Jason paused and looked at the other men. The intensity in their faces was unmistakable as they strained to hear. “We've been watching what look like electrical explosions for the last half hour all across the planet.”

“You’re right about that, only it’s been going on for several hours. The power’s gone out in most areas. We’re running on the generator.” Mike’s signal was stronger now. The ISS must be directly overhead now.

“Did you hear anything on the news before you lost power?” Did they say what’s causing the explosions?” The long pause was almost unbearable. Jason thought they had lost Mike.

They could barely make out the last words they heard, “Thought you would have known, you guys being on the space station and all.” Buzz, crackle, hiss... “Everybody here can see it.” Pop, hiss...more static. “Guess you need to turn around and look the other way.” Silence.

“What did he say?” Greg said. “Something about looking the other way?”

Yuki was the first to get to the port on the far side. “Oh, no...”

Blue streams of electrical current flowed from the sides of the ISS out towards space. One by one, the lights on each module flicked and went dark. Without power, it would be only a matter of days before their orbit decayed and they fell to the earth. During that long descent, they would be the closest observers and first casualties of the oncoming planet-sized devastation that was headed towards the earth.