

Cataclysmic Symphony

15th May 2030 - around 10 o'clock at night, the air of Ushuaia was filled with soothing music. The glow of moonlight and artful decorative lights were illuminating the surroundings. The 10-year-old José, who was supposed to be at bed by 9:30, was still playing around, and his eyes, sparkling with excitement. It was indeed a special night—it was his beloved cousin's wedding reception. As all grown-ups were busy chit-chatting, José and his newly found friends didn't leave a chance to unleash their hidden mischievous pranks. From randomly imitating people to hiding someone's dessert bowl 😊, they were executing each task with great coordination.

In the midst of all this, José randomly happened to look up at the sky and he noticed something unusual—a big brightly shining yellow-color. "A yellow star 🌟?" José pondered. In a daze, José rubbed his eyes and glanced at it again and found out that it was huge and was moving downward, José's scream of "Meteor!" echoed through the air, catching the attention of almost everyone. Some even quickly made a wish as they thought it was some kind of special shooting star! Nevertheless, in the next minute people discovered that something was abnormal. With each blink, the size of the star was increasing. They finally realized that it wasn't a shooting star but a MASSIVE FIREBALL heading towards them! It was rather intimidating now. The atmosphere went mum and the air was now filled with fear and turmoil. Fear crept into the hearts of the people turning their fingers numb. Terrified, José and his little friends closed their eyes.

Within the next few moments, the fireball disappeared into the horizon. Fearful tension in the air was accompanied by Yiruma's 'Memories in My Eyes'. Everyone was trying to process the event that took place. Multiple space organizations had announced that a big asteroid named MeSh-1.0 (500m in diameter) would pass close by on 15th May. However, there was no warning or alert as to how close this asteroid would come. It was announced to be at max 1/3rd of the lunar distance. So, how could something like this happen? No one had imagined an asteroid's entry into Earth's atmosphere let alone its consequences. The world was in shock.

News channels and social media world wide were bombarded with breaking news of massive MeSh-1.0 crashing into our beloved Earth! Absurdly, they were just reaching out for scientists who could explain the phenomena and trying to capture people's reactions.

The moment José felt his mother's touch, he quickly hugged her. A collective sigh of relief swept through the people. As they just started to be at peace with it, the ground started rumbling. The fear wave rippled strongly among the people again. Ground shaking took place for nearly ten minutes making people feel anxious. Unfortunately, the nightmare that people never wished for was happening in their presence. Though there were

frightening chills through their spine, they stood helpless. Few even had a flash thought of us, humans being technologically very ahead, but at that very moment none came in for their rescue. They just had to face nature as unequipped humans. Argentina was hit by a Tsunami. The huge water waves filled the major parts of Argentina in no time. Several countries sent rescue operations to help them out with this. While few countries offered financial help.

15 days later....

Ross, known to be a genius mind of the current scientist generation, was on his 18th cup of tea for the day. Right after an asteroid gave a love bite to our beloved Earth somewhere in the South Atlantic ocean, he was continuously going through the fresh data from the satellite. Being one of the early distinguished scientists to have achieved many accolades at Society for Scientists, it was his day-to-day thing to go about analyzing the data received from satellites. Though the youngest in his department, he has been proficient in analyzing space debris, asteroids, comets, and meteorites passing through Earth, with his interdisciplinary approach has studied a lot about their chemical compositions, and consequences in different environments.

For Ross, it was just another asteroid, maybe a bit bigger than usual but not so terrible to destroy Earth as humans were still alive and were going about their daily chores and life rantings. But then, Ross felt something a bit off. The geological data seemed to be keeping him up for three days in a row now. Something unsettling. For the first time at work, he felt a bit challenged and skeptical about his own skill set. As per the computational analysis he had done, there was change in the proportion of fundamental elements, mainly Sulphur. He had taken into consideration the effects of the Tsunami, but still, something was off. Ross reported the data and made it publicly available, thinking someone might flag the problem in the computational model.

3 months after the great asteroid impact..just when it seemed everything went back to normal...

Emma, a grad student at Balseiro Institute studying the microbial world, found something weird in the lab. The culture she was growing in a petri dish got contaminated. In the bio lab, contamination is a common thing, but this time sulphuric acid was the surprising element. She carefully analyzed the petri dish and found something that left her eyes wide open. She had found a strain of *Acidithiobacillus* spp. that was never reported before to her knowledge. *Acidithiobacillus* spp. are the bacteria that can oxidize inorganic sulphur compounds and produce sulphuric acid. But the major question was, from where this strain came from and how was it even existing in her petri dish? Emma knew that *Acidithiobacillus* can survive only in a low PH environment i.e. acidic environment, and she was working on bacteria that survive in a neutral medium.

To solve the puzzle, Emma started looking around the lab carefully. She spotted a crack (near the base of the wall) that she hadn't noticed before. She scratched that part and collected the sample. Astonishingly, the tested sample had the same strain of *Acidithiobacillus* spp. that she had found in the petri dish. It was a Mixotrophic. This strain was capable of using a mix of different energy sources in such a way that it could survive even in a neutral medium. She thought, in that case, these bacteria can be found easily. Emma quickly looked up online if anyone had reported a bacterial strain which resembles the one she has found. After burning midnight's oil, she found a link. Just a week ago someone had reported about it. Thus, she started digging deeper into the matter and found the data that Ross had published. It was a big shock for her. She immediately wrote an email to Ross to verify if it was really him who had uploaded the article.

The next morning, Ross while checking his emails, saw an email from Argentina. He quickly reverted, confirming that the data was indeed published by him. The moment Emma received Ross's email, she emailed him what she had found. The trail of email started. As the discussion of Emma and Ross was unfolding, the seriousness in their tone was escalating. They had uncovered something that the world wasn't prepared for. Emma and Ross decide that they need to confirm their highly intimidating speculations immediately.

Within a few days of this email exchange, many cases of wall cracks and small buildings and sheds were being continuously reported throughout South America, New Zealand and the Southern part of Africa. This left the locals perplexed and fearful of their immediate future. People were going homeless. The concrete world seemed to be collapsing and none could get hang of the nightmare. To escalate their collaborative work as well as safety measures for Emma's group, Ross made arrangements for her team at Minneapolis Research Center.

With widespread disaster advisories, airlifts and other rescue missions to help people get on to safer locations, there were highly tense parents standing near school buildings to escort their kids. There were even scenarios where school structures had already collapsed but due to right action taken by school management at the right time, there weren't any serious casualties reported yet. As the situation worsened and became more and more chaotic, people just wanted to be with all their loved ones and prayed for their well being. People panicking – fear-mongering – not knowing whether the place they are at present was even safe. No more people cared for money. All they needed was a safe place, clean air and water along with some edible food. None had a clue of this being a consequence of a three month old asteroid hitting the Earth's surface. Not even in their weirdest possible hallucination could they guess about the darkest bitter truth-the right environment being set for growth of strain of concrete eating bacteria, *Acidithiobacillus* spp. causing all this crumble. Secretly, slowly yet steadily, this bacteria was taking over and eating up the human imprints.

José's life in the last 4 months had turned upside down. He was fortunate enough to survive safely after witnessing a traumatizing event. But the degree of horror that unfolded in front of his eyes, still wakes him up at night. People nearly drowning in the water screaming for help, spending sleepless nights in the dark without food with just a small ray of hope for better life, siren buzzing now and then had just left a scar on his memory.

Daily newspapers and media were flooded with news about collapsing buildings, people dying, miraculous survival stories, and, of course, numerous conspiracy theories. Now, José was sitting in a corner of the rehabilitation camp. His intense concentration was evident. His unwavering attention was all on the TV. Yes! Television at the camp was telecasting a program where a news anchor had invited Ms. Sofia who had mapped a peculiar pattern in concrete eating *Acidithiobacillus* spp. to musical biota beats. When they played the music on broadcast, José was thunderstruck. This music had a huge resemblance to Yiruma's 'Memories in My Eyes'. This emotionally triggered him as he was taken back to the day of his cousin's reception. This cataclysmic symphony was too surreal. It looked as if Nature was tuning in for another dreadful symphony.

Meanwhile, Ross and Emma, together with their team, were on their toes to find out ways to stop these bacterias. At this point, they just wanted to give it all in and fight it out. It all seemed like a chain reaction game where mother nature had truly defeated the humans. Though the situation was worsening and things were going out of control, none had a clue if humankind even had a chance to exist. Would we together overcome this? Would we even have a possibility of curbing this chain of collapsing even if we could find the solution at the very moment?