

THE STARDUST MYSTERY



PETER SOLOMON

MISSION KT

(AS TOLD BY LIZZY)



On the Fourth of July we all went to the grandparents' house for a Cosmic Kids' meeting before heading to the park for the town fireworks. We were going to do a test run on the *Beamer*.

The first thing we did was to check the contest leaderboard. We'd moved up from last place to fifth. Yesssss. We got our 20 percent because we figured out about stardust being atoms and an extra twenty points for my *Beamer* dog hair trip.

"Progress," I said. And we did high-fives. "But we still aren't high enough to make the cut at the end of July." I saw a red line through one of the teams. "Look at this! The Wiz Kids were disqualified. I wonder why?"



LEADING TEAM: The Brooklyn Bunch



Brooklyn rocks

THE LEADERBOARD FOR JULY 4

TEAM	% COMPLETED	TEAM POINTS	BEAMEER HOURS LEFT
BROOKLYN BUNCH	40%	385	80%
GRAHAM JAM	35%	195	70%
WIZ KIDS	20%	180	90%
THE SMASH	25%	390	80%
COSMIC KIDS	20%	398	80%
EINSTEIN'S GIRLS	10%	400	90%
WOW	10%	395	80%

CONTEST NEWS: The Brooklyn Bunch take over the lead. The Wiz Kids have been eliminated from the contest because two of the team's avatars was killed during a *Beamer* session, resulting in zero points for both players.

"It looks like they were using the *Beamer*, and someone got eaten by a . . ." Neddy said as she opened the second page of the leaderboard.

"FLEA!" I finished. "Oh man, I didn't realize if you got killed in a simulation, you could get disqualified!"

"It looks like two of them died together." I said. They had been caught off guard by my flea-monster. So, they each lost 100 points, and neither one had scored any positive points, so their scores dropped to zero. Both of them disqualified their team. Only one of them had to lose all their points to be disqualified, so they had two disqualification events. I felt badly for them having almost been a Flea appetizer myself.

"Why was there a flea in the simulation?" VC asked.

We all shrugged.

"So that puts us in fourth place!" Milo added like a genius who can subtract one from five. "We only have to move up one more place. Awesommmme!"

And we did more high-fives.

"The Obnoxious Bunch are in first," Neddy added. "Jackson and Johari have fallen a spot."

There was also a message on the leaderboard that said we needed to visit the last T-Rex and find out how much stardust we had inherited from it.

"Let's get started," said Milo. Getting stardust from the T-Rex is what the poem is about, and now finding out how much is part of the contest."

We all logged in, chose our avatars, chose the crew role that we wanted, and started making our way to the *Beamer*.

"Hey, guys," said Neddy, "I know when to go."

"You mean *where* to go," I jumped in.

"No, *when*," replied Neddy. "We need to go back to 66 million years ago. That was when the last T-Rex was on Earth." My cheeks reddened and Neddy gave me a smug smile. I guess I deserved it for entering this contest with my annoying family. "That was when an asteroid hit the Earth. And the crater that it made in the Earth is the kind of thing our dad is searching for, only bigger."

She paused to breathe so I took the opening.

"That asteroid hit is what wiped out all the land dinosaurs: the KT extinction." I smiled, feeling victorious again.

"I know something else," Neddy blurted. "We should go to South Dakota, since that is where one of the largest T-Rex fossils was found. And her name is Sue."

Apparently, my sister was an expert on dinosaurs as well as space.

When we got to the *Beamer* flight deck, VC went to the computer and entered the position, the date and time, and pushed GO. We called our trip Mission KT. The *Beamer* started to move.

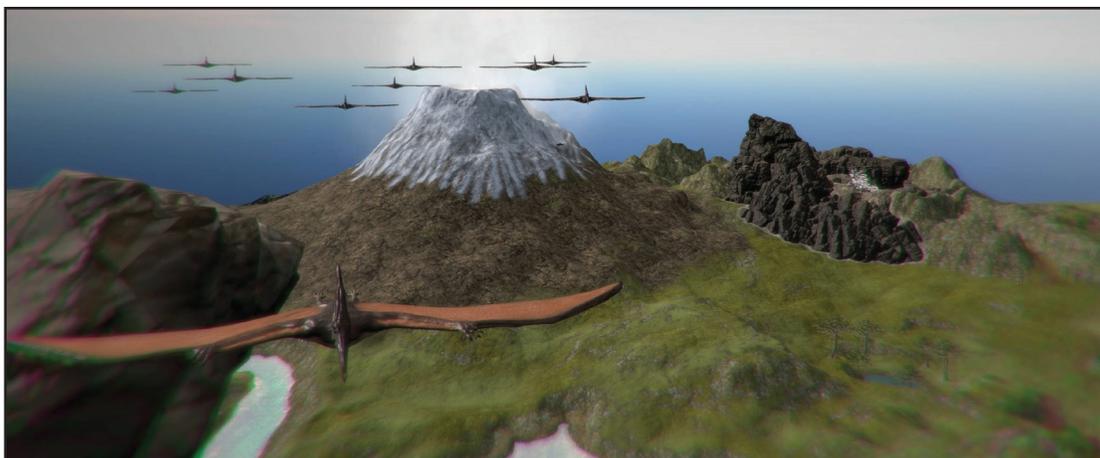
"Wow," Neddy cried, "look out the window. The Mystery Museum is disappearing."

Sure enough, the Mystery Museum began to fade around us as we started to move. The buildings stretched and streamed behind us as if the *Beamer* was moving forward at a fast speed. We zoomed high over the planet. I could see the hook of Cape Cod as we flew out toward the ocean then turned inland until we breezed over the red brown canyons of South Dakota's badlands.

When we slowed down, we saw some huge birds flying near our ship.

"Those are pterosaurs, which means winged lizard," said Neddy, always the nerd. "They're reptiles."

"Look at the huge wingspan!" added Milo. "That is some awesome bunch."



Scene from the 4-player video game "MissionKT." TheBeamer LLC

THE STARDUST MYSTERY

When we came to a stop, a waterfall cascaded spectacularly outside the window of the *Beamer*.

"I guess it's time to start Mission KT," I said. We assembled at the teleporter, and one by one, we teleported outside.

I gasped when we stood outside looking at the huge dinosaurs with the waterfall in the background. It was amazing to think we were standing someplace humans had never ever stood! This was definitely a photo op. I had chosen the *Explorer* crew role, so one of my tools was a camera. I took some shots.



Scene from the 4-player video game "MissionKT." TheBeamer LLC

"Let's climb to the top of the hill for a better view," VC said, already climbing.

When we reached the top of the nearest hill, the view was amazing. We could see a volcano, the ocean, and a beach. We lined up with the volcano in the background so I could take a picture of all of us with my camera propped on a rock.



Scene from the 4-player video game "MissionKT." TheBeamer LLC

All of a sudden, the flock of giant bird-like creatures flew above us. One of them swooped down right over my head. I thought I heard a female voice laughing. But when I looked around, I didn't see anything, and no one else seemed to have noticed. *Creepy*. I shivered.

"Let's get off the hill before they eat us for lunch," I suggested. And down we went.

We started to explore. Milo the Guide scared the breakfast sandwiches out of us when he suddenly appeared out of nowhere to tell us some of the things we could do. We had our choice of guides since all of us were here, but Milo of course, had selected Milo.

Milo the Guide explained that each of us had special tools like my camera that we could use to investigate objects in the world. We would use our tools to complete a series of quests. If something happened, like someone got injured or accidentally fell off a mountain, we lost twenty-five points for each accident. Four accidents for the same person would cost 100 points. And if anyone got killed by getting eaten or falling into the volcano that would cost 100 points. If that gave the person a zero score, the team would be disqualified and out of the Science and the Future contest. To be successful for this part of the contest we had to find out how much stardust we inherited from a T-Rex. and complete all of the quests. We would score positive points for completing quests.

We all agreed to be very careful.

Like I said, I was the team *Explorer* and could take pictures. Neddy served as the team *Scientist*, which is, I know, shocking. She had a drone with a 3-D scanner that could circle around a dinosaur to make a clone like the ones that we found on the *Beamer*. She could also do a remote chemical analysis of anything that she pointed at. VC was our *Navigator*, and Milo was our . . . ahem . . . team leader, the *Guardian*.

We could see some dinosaurs grazing nearby, and we started walking toward them. But before we got very far, a pterosaur came out of nowhere snatched Milo and carried him off.

"Help, help!" Milo screamed as he was carried toward the mountains in the distance.

VC teleported back on board the *Beamer* to use her *Navigator* tools to see where Milo was being taken.

"We have to save him!" screamed Neddy dramatically.

"We lost twenty-five points!" announced VC watching the leaderboard.

"We should just leave him," I grumbled. Of course, our moronic leader would be the one to get snatched.



"If he dies, we'll lose even more points!" Neddy reasoned. "And we'll be disqualified!" So, I rolled my eyes as we all started running in the direction he was taken. It was true. If Milo was killed by a dinosaur, we'd be out of the contest? We ran into a nearby canyon, the red rocks jutting upward all around us. Then, all of a sudden, we saw Milo running toward us.

"Wow," he cried, "that was really scary."

THE STARDUST MYSTERY

We were all about to comfort him as Milo leaned forward with his hands on his knees, panting. But then he looked up with his silly Milo-grin that would probably make the Brooklyn Bunch of Blonds swoon and exclaimed, "but it was an awesome ride!"

He told us how that crazy flying creature took him to its nest and left him there. "I think it likes collecting things, because there were all sorts of different-colored eggs in its nest. I didn't want to be part of its collection, so, I climbed out and ran down the mountain. And then I saw you guys. Thanks for coming after me."

After everyone calmed down, we went back to our mission which was to find out how much stardust we inherited from a T-Rex. Our first stop was a herd of dinosaurs. When I took a picture, a message on the screen said they were Saurolophus. None of us could pronounce it. They are dinosaurs with funny horn-like things on their heads. A counter in the upper left corner of the screen said that we had inherited 1,531 trillion carbon atoms from that dinosaur. Neddy launched her drone which scanned one of the Saurolophus to make a clone. A small red copy of the original appeared, and ten points were added to Neddy's score. The clone was very cute, and we went over to inspect it. I took the little guy's picture just as Milo tried to jump over it. He caught his foot and fell on his face. Oops. But I scored ten points for the picture.



Scenes from the 4-Player video game "MissionKT." TheBeamer LLC

VC, as the *Navigator*, which was basically the captain of our ship, was flying the *Beamer* far above us. "Our points are going back up," she informed us.

VC was searching for dinosaurs for us to study. She would put down beacons for us to follow as signposts to get to them. It was fun to explore and come around the corner to see all of these wonderful prehistoric creatures. Most of them, minus the hoarders flying around in the sky, were totally sweet and harmless.

VC finally found us some T-Rexes. We followed her beacons to a rushing river, then VC teleported back down to join us. Milo, as the team leader had very specific skills that Milo the Guide seemed all too happy to tell him about. Turns out Milo could communicate with the dinosaurs. He turned to a nearby Titanosaur and said, "Sir, if you would," sounding pretentious but funny enough to make VC laugh, "please make yourself into a bridge."



Scenes from the 4-Player video game "Mission: Impossible - The Game" TheBeamer LLC

Sure enough, the giant animal breathed a windy sigh, walked into the river, then it bent its long neck to rest on the other side so that all thirty meters of its body made a solid bridge. Then Milo used another one of his tools. He time-froze the Titanosaur in place for two minutes, so it would stay still while we crossed. Milo scored twenty-five points for his effort, so he was back above 100 points.

VC climbed onto Milo's bridge first, crossing carefully, moving up the animal's back and stopping at the top. Then Milo and Neddy started up, and I got a picture before I followed. As I inched my way along, I could feel the giant animal breathing in and out, so I had to walk carefully so I wouldn't fall off. I'd have to check that too. Would we be killed by falling off a dinosaur or was that just an accident, and we would lose only twenty-five points.

It didn't occur to me to be scared of what was about to come next, although it should have. We were about to come face to face with one of the greatest predators the world had ever known. I knew a few good kicks and could scare a schoolyard bully. But this was a T-Rex. If I'd been of sound mind, and not totally caught up in the beauty of the world we were in, I would have realized I should be very, very scared.

23

THE LAST T-REX

(AS TOLD BY NEDDY)



After we crossed the river, VC pointed us to where a T-Rex was chasing some Saurolophus dinosaurs. It finally gave up and stopped, so we got to work.



Scene from the science video "Our Cosmic Connection to the Universe," Stardust Mystery YouTube channel

Lizzy had to take its picture to score points. Lizzy put her hand on my shoulder. "I'm scared," she whispered.

I could tell she was. She handed me her camera. I climbed carefully over a tiny hill covered in little red rocks. At one point my foot slipped and the rocks made a loud noise. I froze exactly where I was. I could hear VC's voice in my earpiece: "It's looking around. OK, now it's eating again."

I let out my breath, not realizing I'd been holding it, then I snuck up real close to the giant animal and snapped a picture. Ten points were immediately added to Lizzy's score since it was her camera. When I snapped the picture, the counter showed that the number of carbon atoms that we inherited from that particular T-Rex was 5,390 trillion! Wow!

Then I did my thing where I was able to do a chemical analysis of the T-Rex to get more points.

I should have probably made a better choice and done my analysis from further away, but we were racking up so many points, I guess I was just feeling Milo-level confident. That's when Lizzy's worst

fears came true. The T-Rex saw us and decided we might be tasty. It started coming toward us. We began to run to escape it, but the T-Rex was gaining fast.

"We are not going to escape it by running," yelled Milo. "I have a better idea." He stopped, switched on his time-freeze tool, turned around and zapped the T-Rex. It stopped dead in its tracks. There it stood, frozen in time like our Titanosaur bridge.

"I got a great idea," said VC. "As long as it's frozen, let's get a group photo. I can post it on our blog. It'll be spectacular."



Scene from the 4-player video game, "Mission KT." TheBeamer LLC

"I am not going near that thing," yelled my brave sister, Lizzy. "You guys pose. I'll take the picture." And that is what we did, except . . . the T-Rex unfroze and let out a huge roar, scaring the daylight out of all of us. Milo tried for a refreeze, but it didn't work. So, it was back to running.

But Milo the Guide caught up to us and made a pretty solid suggestion. "One of the things the *Guardian* can do is change some of the carbon atoms in his body to the size of grains of sand, which are 6 million times bigger than normal carbon atoms."

Milo loved the idea of growing enormous, which is unsurprising, and he changed 1 million of his carbon atoms. I tried to hide my laughter because 1 million grains of sand are about a cupful. So, he tried changing 25 billion sand grains, which is a dump-truck full, and suddenly he grew bigger and bigger, and then he was bigger than the T-Rex! He also had a big voice to go with his big size, and when he yelled at the T-Rex, it turned around and ran away. Good thing too, because it was just about to get Lizzy who had fallen and was literally in a quivering heap. For a martial arts black belt, that T-Rex sure turned her to jelly.

The weirdest moment of the day was after Milo shrunk back to Milo size and Lizzy actually hugged him, she was so grateful.

Once that was over, I had an idea. "How about seeing how big you'd get if you change all your carbon atoms to the size of sand grains!"

"Awesome idea, Neddy," said Milo, and he clicked the last box to change all 8 billion billion billion of his carbon atoms to sand-grain size.

Milo began growing until he was so big, we had to move back from his shoes which grew bigger than a house. Then the shoe tips were moving toward us very fast and we had to jump on to the front to avoid getting run over. When we climbed onto the shoe tip, it was like we were on a growing mountain. We rose higher and higher. The *Beamer*, with VC looking out the window, also became a victim of Mount Stinky Sneaker, landing next to us. We all looked nervously at each other. Meanwhile, Milo's head disappeared through the clouds. We really couldn't even see how big he was. But we could feel it. The air became freezing cold and thin—we could hardly breathe we were so high up. We were about to take refuge inside the *Beamer* with VC, when suddenly Milo began to shrink back to his normal size.

"Wow," he said, when we were all standing back on the wonderful Earth, except VC who had piloted the *Beamer* back into the sky, "I got so big I was almost the same size as planet Earth."

"Thanks for the news flash, Captain Obvious," said Lizzy icily. I was in total agreement. We were both jumping up and down with our arms hugging ourselves, trying to warm up from the freezing high altitude.

Milo the Guide jumped in with something actually interesting, "If all of Milo's carbon atoms were actually the size of sand grains it would be enough sand to cover the whole Earth in a giant beach."

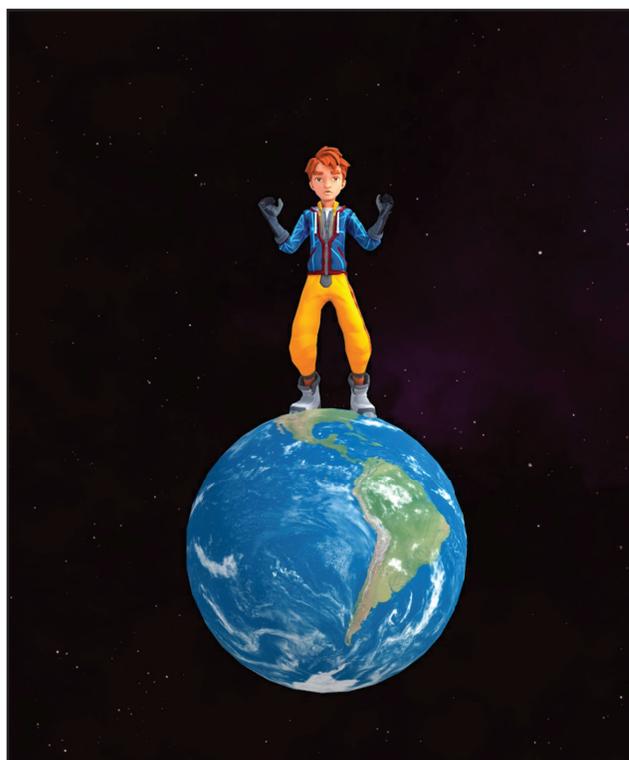
"That is so cool," I said. "It's hard to imagine that we have so many atoms."

We started to finish our Mission KT by Lizzy taking pictures, and me analyzing and making clones of two more dinosaurs. When we took their pictures, we found out that they were Ankylosaurus and Triceratops dinosaurs. We found out we could score a huge number of points if we all used our tools on the same object at the same time.

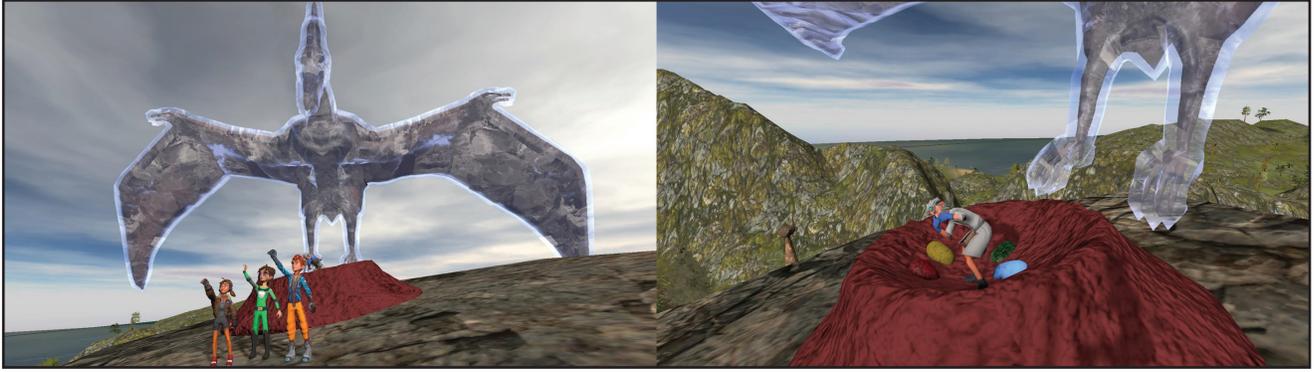
"Hey, Milo", I asked. "Can you show us your nest?" Lizzy and I both laughed at my joke.

Milo sneered, but he agreed to do it. VC teleported down and we climbed to the top of one of the mountains where we found the Pterosaur nest. But the Pterosaur had now snatched someone else. In the nest was Grandpa, one of the supervisors for the simulation.

Milo came to the rescue again. He froze the Pterosaur, allowing Grandpa to teleport to safety. And just like Milo said, the nest was filled with eggs of different colors.



*Scene from the science video
"How Big Are My Atoms?"
Stardust Mystery YouTube Channel*



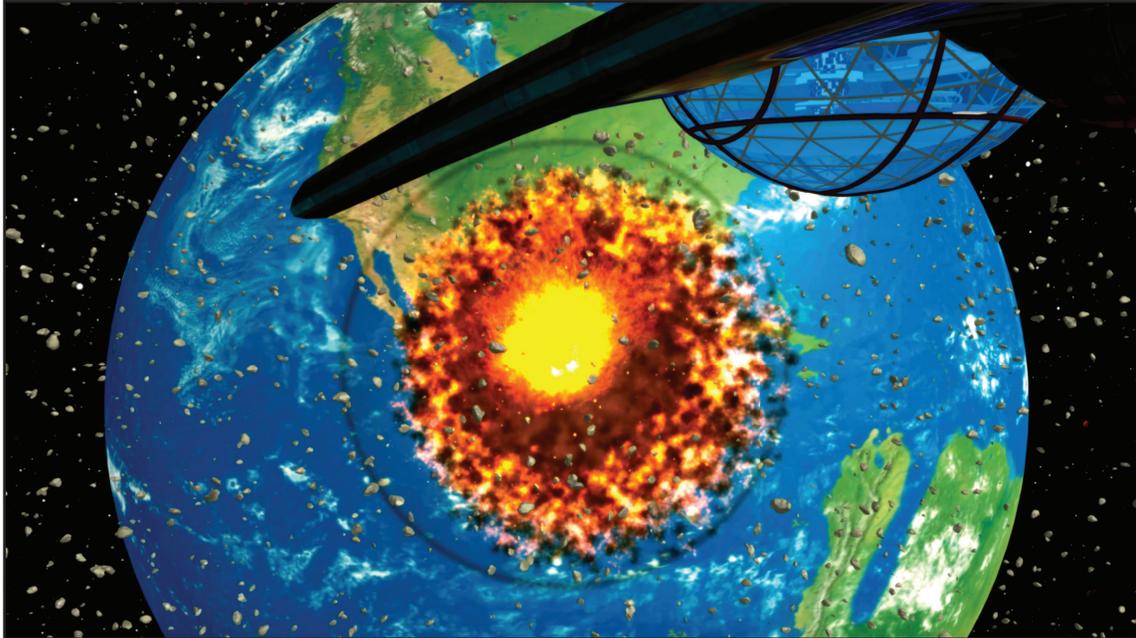
Scenes from the 4-player video game "MissionKT." TheBeamer LLC

"Those eggs probably belonged to different Pterosaurs." I suggested.

"Oh yeah," added Lizzy rolling her eyes. "That guy likes to steal stuff."

"Hey," yelled VC, "we better get out of here fast, you guys. The small asteroid that we saw in the sky when we first started our mission is getting very large." We looked up in the sky and sure enough, there it was, streaking across the horizon. "Remember, KT extinction?" she added. "We don't want to become extinct."

There was no argument. The asteroid was getting big, and it was approaching Earth fast. We teleported to the *Beamer*, took off, and moved far away from Earth, to watch the collision from a safe distance. We were all looking out the window when the asteroid hit.



Scene from the science video "What Killed the Land Dinosaurs?" Stardust Mystery YouTube channel

"Oh, wow," screamed VC and Lizzy together.

"That was terrible," I added quietly. I was thinking of all the animals we had just seen. They were certainly in terrible danger now.

"No, it was awesome!" shouted cowboy Milo.

THE STARDUST MYSTERY

"No," I said somberly. I didn't want to ruin Milo's fun. I mean, it was so long ago. But we had just been there. We had asked that Titanosaur to make us a bridge and it had let us use its body to walk across a river. Those animals were real to me right then.

We watched the plume of rocks and dust that the asteroid kicked up. Some of it went all the way to the moon. Then everything spread out and Earth's gravity started pulling it back to the surface. Each rock that had flown as far as 230,000 miles above the atmosphere fell back down, hitting the Earth's atmosphere like billions and billions of meteors all getting hot at the same time and heating up the sky.

"The ground and sky are both on fire," I said. "The animals on land can't survive that." No one was talking. Everyone looked serious. For a group like us, that was something.

We watched for a while then VC suggested we go back to Earth after the surface had cooled to see what happened.

We all agreed, so VC set the time for ten years later. We landed the *Beamer* and took a look around. There were lots of burned trees and dinosaur skeletons. But we couldn't find any live dinosaurs.

"I guess we really saw the last T-Rex," I sighed. We went down to the ocean, and we could see some fins of fish swimming in the water and some horseshoe crabs near the water's edge. But we couldn't see any land or flying animals. We looked and looked all over.

Milo the Guide confirmed what we already knew, that the event we had just witnessed caused the KT extinction. He told us about some recent discoveries that were discussed on a science podcast called [Radiolab](#). First, the asteroid was about the size of Mount Everest. Second, it was traveling at about 20,000 miles per hour. And third, and most important, flying rocks and dust from the impact were ejected out of the atmosphere, some of it reaching the moon. Then that stuff spread out and started raining back onto the atmosphere like meteors because of the pull of gravity. That dust rain created so much heat that the Earth's atmosphere and surface reached 1,200 degrees Fahrenheit. And that killed off most of the land-based dinosaurs and most of the flying creatures soon after the impact. Only sea creatures and animals that lived deep underground could stay cool enough to survive. Some birds survived too. They might have stayed cool on water.



*From the Science Video "What Killed the Land Dinosaurs?"
Stardust Mystery YouTube channel*

We continued to explore. Then I saw something. "Hey, guys, come over here."

I pointed to a hole in the ground where a nose and a pair of eyes peeked out. A little mammal came out, stood up and looked at us, and then ran back into the hole.

"You know," I said, "I would like to see how that little guy managed to survive." I asked Milo the Guide if we could all make ourselves smaller or if that power was limited to our fearless *Guardian*.

He didn't say anything, but I could tell Milo was a little bit disappointed to hear that all of us could do it. Milo the Guide said that the *Guardian* could shrink some of our atoms to the size of protons, which

are 150 thousand times smaller than normal atoms, and that would allow us to shrink. We experimented with how many of our atoms to exchange. With 90 percent of our carbon atoms reduced to the size of protons we shrunk to 10 percent of our original size. We were about the size of the little critter that we saw.

"Let's go see where he lives," I said brightly. I have to admit, it was cheering me up to see some small amount of life left on Earth.

We set up some bait in the form of a fish Lizzy caught to lure the mammal out of its hole. It came out and started to eat the fish, and then we all crawled in. It was a tunnel that went deeper and deeper underground. Milo turned on the flashlight he had in his utility belt and handed a second one to VC so we all could see. It was a hot day on the surface, but the deeper we went into the mammal's warren (a fancy name for its home), the cooler it got. So that must be why some mammals survived. The small mammals that lived below the ground could stay cool, so they lived. It's a good thing they survived, because we humans evolved from those small mammals.

"Hey, guys," screamed VC, "I don't think we're alone." Sure enough, a gang of mammals, pretty huge compared to us, were charging in our direction. We ran for the surface. When we got there, Milo immediately changed us back to our original size, and we ran back to the *Beamer* with a small pack of not-so-adorable mammals on our heels. They followed us all the way up the gangway. Milo and Lizzy shooed them away so we could close the door.

"I have a super idea," shouted VC. "Let's take the *Beamer* on an ocean dive and see what sea creatures survived. They could have stayed cool too."

VC piloted the *Beamer* out over the ocean and then gently lowered us into the water. There were sharks and turtles and a strange fish that Milo the Guide called a coelacanth. Turns out coelacanths are still alive today.



Scene From the video game "MissionKT." TheBeamer LLC

THE STARDUST MYSTERY

After a really cool tour under the ocean, we came back to the surface. We drove the *Beamer* back through time and back to Connecticut. Then we logged off.

We were all so blown away, none of us talked very much on our walk with the grandparents to the park. I was glad the fireworks drowned out the thoughts in my head. It was a good distraction. Across the field I saw Milo sitting with Svetlana. They were holding hands and they both looked happy. I have to admit, I felt happy for him.

Afterwards, Grandpa bought us all ice cream, including the Brooklyn Bunch, even though the younger twins still wore their usual scowls.

I went up to Milo before we all went home and even though Svetlana was standing right there, I asked, "Don't we have to figure out how we got the atoms from the T-Rex?"

"Let's all take a few days to smarten up," he said. *Smarten up* was Milo's dumb expression for doing research.

I walked away from him, nodding. I didn't want to accidentally see them kiss. VC reminded me that her family was going away for a long weekend at a lake. So, when I got home, I sent our team an email. Our next meeting would be in two days, I told them, and we'd have it over video chat. But first, everyone had to figure out how we inherited our atoms from Albert Einstein and the last T-Rex.

One last thing that is kinda cool. VC had taken a screenshot of our Mission KT trip, and she put together a movie about the extinction event called "What Killed the Land Dinosaurs?" With Grandpa's help, she created a Stardust Mystery YouTube channel and posted the video there. We plan to make some more too.