

# ASTRO TOWN

The Future of Humankind

Saulo Fonseca

# **AstroTown**

The Future of Humankind

by Saulo Fonseca

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This is the English version of the book. There are also versions in Portuguese and German.

# AstroTown - The Future of Humankind

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<https://www.astrotown.de>

*In memory of Carl Sagan*

## Preface

The development of humankind can be compared to that of a single individual. Humankind has lived through its phase of childhood, desiring to accomplish great discoveries. During that time, it believed itself to be the center of the universe, tethered to many unfounded claims and possessing a certainty of being special. Many people are still in this phase.

Today, humankind is in adolescence and enjoys playing with technology. It acknowledges that other living creatures on this planet also deserve respect. However, humans still engage in conflicts with each other, struggling to tolerate their differences and experiencing difficulty in self-understanding, much like a teenager.

Someday in the future, humankind will reach maturity. But for that to occur, it must leave its home, its mother, the planet Earth. “AstroTown” is a science fiction book that explores this phase. Whether humankind is expelled from the planet or decides on its own to abandon it, the fact remains that humankind must learn to live independently. Only then will it be prepared to be part of a community it does not know. Only then can it encounter other life forms that are also inhabiting space in a similar phase of maturity.

Discovering how this independence process can occur and examining the difficulties that will be encountered along the way is crucial. The question remains the same: Is humankind capable of redeeming its mistakes and doing what is right? Or is it a failed system that must be replaced by another, more advanced system? The cards are on the table.

Saulo Fonseca (Author)



# Chapter 1: Awakening

“Positive brain signals,” says an anonymous voice.

“He's moving. Stop the injection of tranquilizers. We have to encourage him to wake up.”

After a few hours:

“He's waking up... Hello Paul, do you hear me? Paul?” asks the voice.

“Hi Mike, the Scanner doesn't hurt. Switch off these lights. I'm dizzy,” says Paul.

“I'm not Mike,” says the anonymous voice. “What's your full name?”

“What's happening? Am I floating? Mike, did you give me some extra medication?” asks Paul, feeling strange due to the lack of gravity.

“Paul, I'm not Mike. You're somewhere else,” says the voice.

“Mike, no jokes. Come on. I didn't know that any medication gives this feeling of floating. What is this?” asks Paul.



“I'm not Mike. Please calm down. I will reduce the light on you so you can see us,” says the voice.

When the light fades, Paul realizes that this is no joke. He's in some sort of laboratory, floating on some kind of instrument, with many tubes connected to his naked body. Beside him are two men, very white—albinos. They are watching him carefully. Paul's heart begins to accelerate rapidly.

“Paul, please don't be nervous. We'll explain everything. We need to do some tests. Can you answer a few questions?” says the owner of the anonymous voice.

“I... I don't understand anything... where am I? Who are you?” asks Paul.

The other man says, “I think we failed again. The heartbeats are very fast. Should I abort the experiment?”

“No! Let him recover from the shock,” says the first man. “The brain activity is in order. This is a normal reaction for those who are in his situation.”

“Wait a minute!” Paul screams. “Who are you?”

“Paul, everything will be explained. Please answer a few questions. We need to be sure that your memory is intact,” says the first man.

“Okay, one thing at a time. Take it easy. What do you want to know?” Paul asks.

“What's your full name?” asks the man.

“Paul Driefontein,” Paul replies.

“What's the last thing that you remember?”

“I was doing an experiment with our Brain Scanner. Mike and I were in Lab 4, and I was lying inside the scanner,” Paul replies.

“When were you doing the experiment with the Brain Scanner?”

“August 4, 2074, around 14:40.”

“Tell me a little about you.”

“I was born in the year 2032. I had a normal childhood. I started getting interested in science early due to the influence of my father, who was an astronomer. I graduated in Electronic Engineering and did post-graduate work in Bio-Electronic Tracking. I am the leader of the Cerebral Analysis team of the LiveForever Corporation, a company specializing in the storage of DNA in digital form. I've never been married and have no children. I was always very dedicated to my career.”

“Tell me about the LiveForever Corporation,” the man says.

“LiveForever specializes in creating clones of their customers. The DNA sequence of the customers is stored in digital format. We have a large database of genetic information from different customers. If the client wishes, it is possible to reconstruct molecular DNA and create a clone of the person concerned. The company is facing problems because a clone that is genetically recreated doesn't have the knowledge stored by the customer in his life. The company is investing in a method to store the brain data of its customers, so that they can be redeployed in the clone in the near future,” replies Paul.

The other man says, “Excellent. The brain signals remain stable. The body is aware of its situation and reacts accordingly. I think this time we achieved the goal.”

“Don't be inhumane,” says the first man. “Don't call him 'the body.' You have to treat him as a person. He's now like one of us. A normal human being. At least normal for his time.”

The conversation between the two men begins to annoy Paul. “One moment please. I have a lot of questions.”

“Take it easy, Paul, we aren't rushing,” says the first man, who seems to be the leader of the duo. “You have to eat

and rest a bit to get used to our facilities. You will be under observation for a few days.”

Paul is slowly released from the tubes that hold him on the machine and he gradually calms down. He stops to ask questions and keeps watching the two men. He realizes that the man who is releasing the tubes is using his feet and hands with equal mastery.

“Wait a minute,” interrupts Paul. “What's your name?”

“My name is Richard Sky. This one is Mr. Robert Staiger. We are scientists of the Genetic Reactivation Project... but we'll talk about it later. Put these clothes on and join us please.”

Mr. Staiger helps Paul to put on his clothes. He's having trouble moving around in the weightlessness. The scientist shows him the metal bars in the environment to be used to propel the body in the desired direction; this is how he is to move with a lack of gravity.

Paul follows the two scientists through a circular gate and crosses a tube-shaped corridor with small windows, where he can see the stars outside. Paul realizes that he's in space. But he doesn't understand how he could have suddenly ended up in this place. After a few minutes of circulating through the tubular corridors, they come to a room.

## Chapter 2: Incubator

Jenny, a young student who had recently been married, moves toward the Incubator. She's very excited and observes the children on her way.

*“Only one. I just want a child like this. Only one,”* she thinks.

The children she watches play in a kind of giant plastic bubble, with pillows on the inside wall and padded metal bars so the children can propel their bodies. The plastic bubble prevents the children from floating away somewhere else. The children's parents talk to each other next to the large bubble.

A boy comes over, crying, “Mom, Anna beat me.”

After he floats out of the bubble through a small entrance, his mother holds him in her arms. “Don't cry. Anna didn't hit you on purpose. She couldn't stop her movement in the air.”

Jenny watches everything and wonders if she will have the same luck as that woman.

She arrives at the Incubator. Her DNA samples, as well as those from her husband, had been delivered last week.

Jenny knows that the chances of being accepted are slim because she and her husband are very similar physically.

After giving her name at reception, she goes to the waiting room. There are several other young women who, like herself, await the outcome of their requirements.

Jenny is alone, but some of the other women are with their boyfriends or husbands. All have the same goal: getting permission to have a child.

The gate of the waiting room opens, and a man comes in, dressed in white, floating in the weightless environment. The women are nervous. In the man's hand are five authorizations.

He speaks: "Ladies, as you know, only five of you will get the authorization today. The chosen ones are Marie Dunov, Akemi Sasaki, Gabriela Santos, Jenny Schmidt, and Valentina Kruschov."

Jenny doesn't believe it. She cries with joy along with the other chosen ones. "I get it! I don't believe it! I get it!" and the other women, downcast, leave the room.

After finally getting her authorization to have a child, Jenny asks the doctor, "And my baby, will it be a boy or a girl?"

The doctor replies, “We need more girls in the city. You will have a girl.”

Jenny is very happy. That's exactly what she wanted.

She takes her authorization and leaves the Incubator. She doesn't think of anything else. She wants to give the news to her family as soon as possible, but she wants to deliver it personally.



## Chapter 3:

### Room

“Here it is, Paul. This is your home now. Mr. Staiger will explain how everything works here. I have to take care of some other things,” Mr. Sky says as he leaves.

The room is a cylindrical module, about five meters in length. Here, Paul can have a little privacy. Objects are fixed on the walls so they don't float away. There is no upper or bottom side to the room. Items are distributed in all directions.

Paul observes everything very carefully. He's quite tired and hungry. Mr. Staiger shows him how to handle the food in packages that are specially designed for the lack of gravity. Paul tries a bit of food. It is good, although he can't tell what he's eating.

“Here we have only vegetarian food,” explains the scientist. “But we prepared for you something similar to what you're used to.”

There is a kind of sleeping bag that is attached to the wall. It should be used as a bed. There are a few belts that Paul should use so as not to float away while he sleeps. This will prevent him from getting hurt.

To the side, there is a compartment for the bathroom. The toilet works by using a suction system; all waste is vacuumed into the unit. For bathing, there are wet wipes that must be passed over the body to remove the sweat.

The scientist further explains the operation of a few buttons to order more food. The order is registered in a Food Production Unit and sent to Paul's room via a system of air tubes.

Paul notices again that the albino man often uses his feet to manipulate objects. The scientist realizes that Paul is not familiar with these movements and explains, "Here, with weightlessness, our feet have lost their original function. So we have become used to using them as a new pair of hands."

But his feet still have a normal appearance, despite being skilled. Paul tries to perform some of the scientist's movements, but without success.

"I cannot do this," Paul says.

"Don't worry," says the scientist. "It's a matter of practice."

As Paul looks through the window, he is impressed. Through the thick glass, he sees a tangle of cylinders connecting the various modules of a giant space station. Each cylinder provides access to the next module.

Everything is confusing, but makes good use of the three-dimensional space around the station. Far away, he sees many points of light, which are windows in the cylindrical structures. There are also huge spheres, which are certainly important points in the space station. Everything is illuminated by a very weak light, almost like that of the full moon at night on Earth.

“This is AstroTown,” says the scientist. “Welcome.”

“I'm not seeing the Earth or the sun,” says Paul. “Are they on the other side?”

“You will not see the Earth from here,” says the scientist. “And the sun is that star right there, a little stronger than the others.”

“Wow! Where are we?” asks Paul.

“AstroTown is now in the Kuiper Belt,” replies the scientist.

Paul remembers that the Solar System has two asteroid belts that maintain a stable orbit around the Sun. The first is the Asteroid Belt between Mars and Jupiter, and the second is the Kuiper Belt, which is in orbit of Pluto. Many of the comets that circle the Solar System have their origin in this region. They enter the Solar System until the vicinity of the Sun, and then return to the Kuiper Belt, making an orbit very different from those of the planets.

## **Chapter 4:**

### **Auditorium**

Paul sleeps for many, many hours. The scientists are already growing impatient. He finally awakens, and as he opens his sleeping bag, he realizes that the two scientists he met earlier are watching him.

“Hello, Paul. Your vital signals were monitored during your sleep. They are still in order. That makes us very happy,” Mr. Sky says.

Paul realizes that his body was subjected to something very stressful, although he doesn't know exactly what happened. He is still very aware of the albino appearance of the scientists. There is too much to ask at one time. Paul doesn't know where to start. But the scientists are in a hurry.

“Please come with us,” Mr. Sky says.

Paul leaves his room and follows the scientists through several corridors that seem like a three-dimensional labyrinth. Paul is not used to an environment like this. He watches everything carefully, and somehow he has fun while propelling his floating body through those tubular corridors.

There also isn't a recognized standard here for the position of the windows and the gates. He cannot know where the upper side and bottom are. Objects are distributed everywhere.

After a few minutes, they come to a module of AstroTown that is a kind of auditorium. The place is like a sphere with a kind of stage in the middle, surrounded by many people. Paul realizes that he will be presented to a small group. About 200 people are in the auditorium, and they are all albinos as well.

“Paul,” says Mr. Sky, “we need to present you to the committee that evaluates our work. They want to see the results of our experiments.”

Paul feels like a circus attraction. But he understands that Mr. Sky, along with his team, needs to be accountable for his activities and has to show the results of his work. In this case, Paul himself is the result of their work. That's what he doesn't understand.

“Ladies and gentlemen,” Mr. Sky announces to the public. “Finally, as I had told you, we have reached a positive result in our experiments. After 27 attempts, here is Mr. Paul Driefontein.”

Paul understands even less. *27 attempts?* he thinks. All of those present whisper with each other as they look at Paul.

One of the men in the crowd, who seems to be a kind of leader, speaks. “Congratulations, Mr. Sky. Are you sure he’s mentally fit to achieve our goals?”

“I believe so. Only time will tell,” Mr. Sky replies.

Paul realizes that a small group of people in the audience is excited and talking a lot with each other. He doesn’t understand what is happening. The people start asking questions, all at the same time, so that he cannot understand exactly what they want to know.

Mr. Sky pulls Paul's arm and says, “Okay, Paul, the press is excited with the news. Let's get out of here.” Paul and Mr. Sky go towards the exit of the auditorium. They want to go somewhere else where they can talk in peace.

As they leave the auditorium, people in the tubular corridors approach them, taking photos of Paul and trying to touch him. Paul is scared. But some men responsible for the security of the auditorium prevent the people from getting closer.

Paul and Mr. Sky go through one more gate and enter another tubular corridor.

“Where are we going?” Paul asks.

“We'll visit Mr. Berg,” Mr. Sky replies.

## Chapter 5:

### Good News

Jenny follows the path to her home—or, perhaps not quite a home, but a module for housing. She enters a large corridor that connects to several houses in her neighborhood. She sees through the windows of the corridor that the lights in her house are on, indicating that someone is there.

*She thinks, How am I going to break the news? Should I pretend I don't know and then burst out with joy? Or should I go straight to the point?*

Her parents are waiting. They had come to Jenny's house because they knew she would return at any moment with the news. Everyone is very excited.

Jenny activates the opening of the gate that provides access to her home and faces her tense parents, who are watching her.

“Speak!” says her mother, unable to contain her anxiety.

Crying, Jenny says, “I got the authorization! You're going to be grandparents.”

Jenny's mother begins to cry and scream with joy. Her father also can't hold back the tears; they all hug.



“My daughter, then you married the right man,” says Jenny's mother. “And will it be a boy or a girl?”

“It will be a girl. Just like I wanted.”

She can't wait until her husband comes home from work.

After a few hours, Jenny's husband finally arrives, also excited to know the result of the requirement.

Jenny says nothing. She just shows him the authorization that she has in her hands.

Her husband also can't contain his emotion and cries, hugging her.

“Now we will be a complete family,” he says.

“We need to prepare. We need to buy so many things. We need to change our house to receive our baby,” Jenny says, looking around at the place where they live.

“And when will the insemination be?” her husband asks.

“It should take place next week. We are now at the end of the queue. So it takes a while.”

Jenny's mother calls the neighbors over so they can congratulate her.

“My dear, you always wanted to be a mother. I know how much this means to you,” one of the neighbors says, hugging her.

Jenny's mother is beginning to make plans. “She can be called Steffi. No, I think Michele is better.”

Jenny laughs along with her husband and says, “Mom, don’t you think the parents should choose the name?”

“Of course, my daughter, I'm sorry. I was just overexcited.”

## Chapter 6: Apocalypse

Finally, Paul and Mr. Sky reach the module where they can have some peace. This is like a classroom with enough space for about 30 people, though it currently holds only one man.

“This here is Mr. Berg. He will answer your questions,” says Mr. Sky.

“Hello, Paul,” Mr. Berg says. “I know that everything here must seem very confusing. I hope you've been treated well and that the accommodations are comfortable.”

Paul replies, “I have never been in space before, but everyone here is very attentive.”

“I know we must seem strange to you. We have been living without sunlight for many generations, so we look somewhat albino compared to what you're used to,” Mr. Berg says.

“I was embarrassed to ask,” Paul admits. “It is good that you understand my point of view.”

“Some people in the auditorium were very excited to see someone with an Earth-like appearance for the first time.

This is something that we're used to seeing only in documentaries in school.”

“Let’s take this one step at a time here,” Paul says. “Please tell me how I got here.”

“Before I do that, I want to tell you the course of events since you built the Brain Scanner,” Mr. Berg explains.

“After having experienced the equipment yourself, you stored the brain data of 14 other people. You and Mr. Mike Phoenix went in the next week by airplane to the headquarters of LiveForever, but the flight was not completed. You and Mr. Phoenix died along with all the other passengers and crew.”

“I died?! How did I die?” Paul was becoming scared.

“First, we have to tell you what happened to humankind. Global warming, which in your time had already turned the countries on the equator into a desert, continued to increase, despite all our efforts to reverse it.” Mr. Berg activates a presentation in 3D, which helps to clarify the explanations.

He continues. “Due to the crisis, humanity concentrated even more on recycling and living with fewer resources. This new knowledge was applied to the International Space Station, which in your time had only 65 people as permanent residents.

“Over the course of decades, it was becoming impossible to live on planet Earth. Wars and natural disasters eliminated most life on the planet. The sea level rose due to the melting of the poles and flooded coastal cities, destroying everything and killing millions of people.

“Fertile agricultural regions were increasingly rare, and many wars were fought to gain control of them. Later, ocean water began to evaporate in the equatorial region and the sea level began to decline. It was possible to cross from South America to Africa over ground. Desertification was expanding and many people were trapped. Most of them died over time, either due to starvation or the heat.

“The few who managed to adapt to the changes migrated to Antarctica, where for many years some technological development took place. It was the last place where liquid water was available.

“But even in Antarctica, the temperature increased more and more. The development of technology allowed us to send even more people to the International Space Station, which was what the majority wished to do. After the Antarctic temperature exceeded 100 degrees Celsius, there was no further reason to stay on Earth.

“The last human beings who came here took off from Antarctica in the year 2207. At that time, the International

Space Station had about 50 thousand residents and was informally called AstroTown—the Town of Astronauts. The name became official and we still use it today,” the scientist finishes.

“And what is the current temperature on Earth?” asks Paul.

“The current average temperature is about 230 degrees Celsius. At high latitudes, as in the Antarctic winter, there are still places where the temperature is only about 120 degrees Celsius,” Mr. Berg replies.

“Wow!” exclaims Paul, who is shocked at the news about humankind’s past.

“The Earth has become somewhat like Mars, but warm,” the scientist explains.

“And why don’t you colonize some other planet?”

“Mankind had reached an excellent level of autonomy here in AstroTown. The development of plantations in the lack of gravity provides us with oxygen and food.

“Today, about 60% of AstroTown is devoted to agriculture. Transporting it all to another planet would involve a huge amount of energy. AstroTown is currently about 25 km long, 5 km high, with a width of about 15 km. And it has a population of about 3.2 million people.”

“But this is no longer a space station. It is a metropolis,” Paul observes.

“You're right. We are satisfied with our life here,” Mr. Berg says.

“And how long ago was the Earth abandoned?” Paul asks.

“We count the time here in a different way,” Mr. Berg says. “The year 2207, which was when humanity finally left Earth, became the year zero in our calendar. The pace of life here in AstroTown is 18 hours a day: 6 hours of work, 6 hours of leisure, and 6 hours of sleep. The days are gathered in groups called cycles. Each cycle has 100 days of 18 hours. There is no longer the notion of months. But we still have a weekly system, as on Earth.

“Today, we are on day 34 of cycle 1714 of the new space age. You could say we're in the year 2559—i.e., 352 years after abandoning Earth, or even 485 years after you built the Brain Scanner,” Mr. Berg concludes.

“Wow... and why are we now in the Kuiper Belt?” asks Paul.

“We are in an orbit similar to that of a comet. Every 522 cycles or 107 years, we pass close to Earth again. The orbit chosen is similar to that of Halley's Comet,” Mr. Berg replies.



“Whenever we pass close to Earth, we organize an expedition to evaluate the situation on the planet. The temperature has been stable over the past centuries, which leaves us without hope of return.

“We chose this orbit because it allows us to have contact with different parts of the Solar System. So we can use our explorer robots to capture meteorites or gases in space, allowing for the expansion of AstroTown.

“The explorer robots first receive information from our radar saying where the objects that they must capture are located. They fly parallel to the object to fit together, and then bring it to us.

“The rocks floating in space are rich in all types of minerals and gases that we need. Once captured, they are taken to our factory, where they are dissected into their various materials and turned into anything you can imagine. This process has become very sophisticated and has allowed for the expansion of our city and an increase in population. We are not dependent on external resources; they are only required to expand the city. Absolutely everything we have here is recycled to prevent the demand for foreign material.

“To avoid collision along the orbit, we have a sophisticated radar system and lasers, which are installed around

AstroTown. All objects larger than one millimeter are detected and destroyed before colliding with our city. This is the most important defense system we have here.

“In cases of very large rocks in the path of our orbit, we have a few nuclear missiles that can destroy them, breaking them into smaller pieces that our lasers can handle. But we have never needed to use them. Although the asteroid belts have many rocks, they are relatively far from each other. So we can make adjustments in our orbit to avoid collision with these large objects,” Mr. Berg finishes.

“Very interesting... and what happened to my project after my death?” Paul asks.

“LiveForever discontinued the Brain Scanner project because, after your death, no one else could handle it. Customer dissatisfaction continued to increase. The company went bankrupt and the data already collected by the company was almost lost over the years.

“The problems that humanity faced delayed the development of tests with brain data. Only now can we deploy these data into a clone to recreate a human being in its original state. You are the first experience that doesn't result in the death of the clone,” says Mr. Berg.

Paul is shocked. After a few seconds of staring at his own hands, he asks, “So you made a human clone by using my

DNA stored in the times of LiveForever, and entered the data of my Brain Scanner into this clone? And this is me now?”

“Exactly,” Mr. Berg says. “You feel as if you have been transported in time. But the fact is that this body that you have here is not your original body. But it's just like that. Don't worry.”

“And you took that much time to rebuild my Brain Scanner?” Paul asks.

“We still cannot recreate it,” Mr. Berg says. “Our process of reading brain data causes the brain to be destroyed, so that no one has survived the tests. But you are the proof that we at least managed to deploy the existing data in a clone.”

Mr. Berg concludes by saying, “Mr. Sky did a great job. He’s a great scientist. We want to be able to preserve people like him so that when they are dead, they can be cloned and reactivated, just as we did with you. You were not chosen randomly for our experiment. We need your help to improve the process. We need you to re-create the Brain Scanner. You got it in a much more primitive stage of technology. I'm sure that you can make a great contribution here with us.”

## Chapter 7: Suspension

The news about Paul's successful reactivation spreads throughout the city, accompanied by the following statement: All authorizations to have children are now suspended.

The administration of AstroTown aims to create clones with the brain data of strategically important individuals in charge of the city. The limited resources allocated for creating new human beings will now be diverted for this purpose.

Jenny, along with her husband, receives the news as if hit by a bomb. "Calm down, Jenny!" her husband urges. "There could be a misunderstanding. They cannot grant an authorization and then retract it."

"They can do it!" cries Jenny. "Don't you see? We are not a priority. I waited so long for this moment and now it's too late."

People like Jenny are upset by this because AstroTown enforces rigid population control. A child is only allowed to be born when someone dies, to avoid excessive demand on the scarce resources. The gestation process is conducted through the Incubator; women no longer become pregnant.

All human beings are sterilized before birth. The residents appreciate the system, especially women. Sex is only pursued for pleasure.

A couple desiring a child submits their genes to the Incubator, where their DNA is combined, and the child grows in a structure resembling an egg that simulates the mother's uterus. When mature, the parents take the child home. Having one's own child is a cherished dream and a privilege for the few.

Authorization to have children is a topic of contention. Couples are selected to increase the genetic diversity of AstroTown. Genetic diversity is crucial when a population dwindles. If the genetic pool narrows, it leads to various health issues and risks species survival. This was observed on Earth with several animal species, eventually leading to extinction.

Humanity faced this challenge in the early years of AstroTown. After the exodus from Earth, only about 50 thousand humans survived, prompting the introduction of strict population control. New children are always a combination of two genetically distinct individuals, ensuring increasing diversity.

However, the Administration is willing to set aside this system to safeguard its strategic interests.

Jenny is furious. She leaves home feeling enraged.

“Where are you going?” asks her husband, trying to catch up.

“Leave me alone,” Jenny says. “I need to think about what I will do. I cannot stay here passively accepting the facts.”

## Chapter 8: System

Paul receives his first instructions about how his daily routine will be structured.

“This is your laboratory,” says Mr. Sky. “Here you can perform all the necessary experiments. I know there are various equipments that you will miss that no longer exist in our time, but our factory can transform a meteorite into practically anything. We have old documents, but they are detailed, about various equipment of the past. All you need will be provided as soon as possible.”

But Paul is not very interested in his work routine. He wants to know how everything works in AstroTown. He asks Mr. Sky, “There are some things I still don’t understand. How do you produce energy here?”

“The development of nuclear fusion over the last decades on Earth was very good. We have here two power plants generating energy through nuclear fusion. If one of them has a problem or is being serviced, the other can supply AstroTown on its own. They each work at about 25% capacity and can supply all our needs,” he explains.

Paul remembers that many people confuse nuclear fission and nuclear fusion. In nuclear fission, a heavy atom, such



as Cesium or Radium, becomes unstable due to its weight and is divided into two smaller atoms. But the weight of the smaller atoms together is less than the large original one. The weight difference is spontaneously transformed into heat. This is the energy that is used to heat the water of the nuclear reactors, spinning the electricity generators and producing energy. The waste produced by this process is the smaller atoms, which are also dangerously radioactive.

Nuclear fusion is the opposite process. Small atoms, such as Hydrogen, are pressed against each other with a huge force so that they merge, producing larger atoms such as Helium. But the weight of the atom produced is less than the sum of the smaller atoms that formed it. The difference is transformed into heat and generates electricity. The waste produced in this process is the harmless atoms, which can be used in other activities.

The sun itself acts as a huge nuclear fusion reactor because the weight of its outer layers on the inner layers is so large that it merges the atoms in the center, releasing an enormous amount of heat. In the case of Jupiter, despite its large size, the weight of the outer layers on the inner layers is still not enough to accomplish this merging. Otherwise, Jupiter would also produce its own light, like the sun.

The great difficulty in generating nuclear fusion is in pushing the atoms to the point where they merge. To

produce this huge pressure without the presence of an enormous amount of matter, such as the sun, requires a large amount of energy, which is often greater than the energy produced by the fusion itself. But the technology in AstroTown seems to be already at such an advanced stage that the scientists have overcome this problem.

Mr. Sky continues: “The hydrogen used in the fusion is restored gradually, as it's captured in small samples in the emptiness of space.

“The space between the planets in the Solar System is not necessarily empty. There are small samples of simple atoms like Hydrogen. AstroTown captures this gas during its journey in orbit.”

“And how does the financial system work here in AstroTown?” Paul asks.

“In the first years of AstroTown, when it was called the International Space Station, humanity's need for survival meant that we worked under a military regime. Money did not play any role in this scenario. But our city had grown, and the need for a currency became increasingly larger,” Mr. Sky explains.

“We gradually introduced the credit system, in which each AstroTown citizen has an account in our Central Bank, the only bank here. Without a monetary system, people would

feel like slaves, and it would create problems. It is true that you cannot buy anything important. All of people's needs are met to ensure the preservation of humankind. The credits are only for everyday activities, such as transport, concerts, cinemas, and so on. It is a way to make the city more interesting.

“Without the credits, people would have a harder life. They would have more difficulty moving around the city, would not have access to leisure environments, and could not visit museums—but they wouldn’t die of hunger. The system is constructed so that work is a way to have a better quality of life, not a mere subsistence.

“In your case, you will have all your expenses paid by our laboratory. You are a special citizen here because you have great contributions to make. You just have to register your brain password; that gives you access to your workplace and freedom of movement to public points in the city.”

“How so? Brain password?” asks Paul.

“Every time you make a purchase, or when you want to get into your room here in our laboratories, or when you access electronic data, you have to think of an image. This is your password. A device that focuses on your head will read your brainwave pattern and know which areas of your brain were activated. Because each memory is unique, the system

knows who you are through the image you're thinking. With this, the transaction is accepted, or access to the desired location is released. Each person has an image, a particular memory, something that marked his life. This memory is then the guarantee to access what you want.”

“Very interesting,” Paul comments.

“Here's one of those brainwave readers,” Mr. Sky says, showing Paul a small device resembling a photo camera.

“Now think of a particular image. An image that will be your password. An image that has special meaning to you.”

Paul begins to remember when he was a child. There was a day when he and his father were in the backyard, on Earth. His father was showing him the stars in the sky with a small telescope and said, “Now I'll show you my favorite planet.” Then he showed Paul the planet Saturn. Paul was delighted with that wonderful planet and those rings spinning around it. This image of Saturn marked Paul's childhood and inspired him to become interested in science. At the time, he was only eight years old.

“Okay. I thought of my picture,” Paul says.

“Great,” Mr. Sky says. “It is impossible for another person to know what picture is being formed in your mind. The device records only a signal, as a noise. It cannot decode

the image you're thinking; it only records which parts of your brain were activated. Even if you tell someone about what you're thinking, that person could not use your password. Your memory is only yours. It is your way of looking at that particular moment. That cannot be copied.”

Thus, Paul becomes a citizen in AstroTown like any other.

## **Chapter 9: Preparation**

Jenny, upset with the cancellation of her authorization to have children, goes to the university where she studies and is an active member of the Student Movement, an entity controlled by the students to enforce their interests.

“We cannot escape facing the actual facts,” Jenny says to her colleagues at the university. “I know I'm not the only victim of the Mainbrain's plan.”

The Mainbrain is the leader of AstroTown. It's not a human, but rather a machine, a supercomputer.

It achieved self-consciousness about 970 cycles (or about 200 years) ago. Its software had been created by the earlier generations who lived in AstroTown until it reached a point where the software was able to self-develop.

The population has increasingly accepted it for its impartial and incorruptible decisions. Its power has grown to the point that everything in AstroTown, from changes in the orbit to the condemnation of crimes, has to pass its judgment.

The Mainbrain isn't malicious. It doesn't watch everyday life; it's not like a Big Brother. There are no cameras over AstroTown, except in public places. It just does what is

best to preserve the continuity of humankind. That's what it has been programmed for.

The Mainbrain, being a machine, is immortal, and it wants to make its main human allies immortal as well. It believes that this is the best way to ensure the stability of the city. It has realized over the years that the death of humans disturbs the maintenance of its activities.

In AstroTown, everything works like a dictatorship—a robotic dictatorship. People cannot decide which area they work in; they can't make plans for the future, can't have possessions. Everything is collective. Everyone is treated equally, regardless of whether they are lazy or hardworking. The Mainbrain rejects any idea that doesn't seek collective use.

Children learn early in school that life has to be that way to avoid the end of humankind, and almost nobody dares to question it. The population has grown to the point where everything works like a beehive, where everyone knows their role.

But the population is no longer satisfied. The inability to react to the situation is suffocating them all, and the news about the decision to suspend the acquisition of children hits like an explosion.

“Send out notices to everyone you know,” Jenny says to her colleagues in the Student Movement. “We will meet in the Central Square in two days. We will have the biggest protest that AstroTown has ever seen.”

News about the protest is passed around through the media that the students use to communicate. The participation is enormous. Everyone seems to question the Mainbrain's decision.



## Chapter 10: Circulating

Paul wants to immerse himself in the routine of AstroTown, as he's very curious about its way of life. He's not so interested in reconstructing the Brain Scanner. He does that only out of obligation, feeling compelled by the lab staff. He takes every free moment to explore the city and observe everyday life.

*Who'd have thought that this would be the future of humankind?* thinks Paul while watching the people.

However, he's recognized everywhere he goes. Because all residents of AstroTown are albinos, Paul attracts attention due to his unusual color. Some people ask for autographs and want to take pictures with Paul, as if he were a pop star.

But others are more aggressive; they see him as a strange monster that came to install chaos in AstroTown. Paul is a white man with black eyes and black hair—someone with no problems in his original society. But now he faces prejudice because he is different. People attack him with expressions that Paul doesn't understand, expressions that only those who live in AstroTown know. This behavior scares him.

Paul decides to talk to Mr. Sky. “I'd like to go unnoticed in the city. People see that I'm different. This is bothering me. Is there any way I could disguise myself?”

“I'll introduce you to Mr. Truman. He's a member of our Intelligence Service and specializes in disguises,” Mr. Sky says.

When meeting Mr. Truman, Paul tells him about the problems he's facing.

“This is easy to solve,” Mr. Truman says. “You can use these contact lenses to brighten your eyes, this wig to make you white-haired, and wear long clothes to ensure that the color of your skin doesn't attract attention. It will be difficult for anyone to realize who you are.”

With his new appearance, Paul goes to the Central Square, which is a module of the city connected with many others. It's like a big sphere where people go to the Shuttles, which are used for long-distance transportation.

The Shuttles operate as a subway system and are driven by superconductors. The outside temperature in space, which is about 3 degrees Kelvin, or about -270 degrees Celsius, is used to cool the superconductors, allowing high energy saving in the public transportation of AstroTown.

There are no private transports. The Air Corridors are used for shorter distances, pushing people around at 10 km/h. The people get to these corridors through small stations distributed all over AstroTown and leave at the desired points. The air of these corridors is moved by large fans strategically distributed over the system, protected by a grid to prevent accidents.

In the Central Square is also the Academy of Fine Arts, which is one of the most popular places for young people. There are always artist presentations there. It is a great place to go unnoticed within a crowd.

Paul sees many teenagers with strange clothes and hair painted in various colors. The lack of gravity in AstroTown makes it uncomfortable for people to have long hair, so practically everybody has short hair, even women. But some rebel teenagers let their hair grow so that it is like a ball around their head, an afro. Even straightened hair doesn't have a default direction where it will fall, and some teenagers enjoy this visual effect.

Paul also finds it interesting to see people talk. As there is no sense of what is up or down, people talk to each other in many strange positions. Some are upside down in relation to others, while some lay on their sides. It is difficult for Paul to talk with a person upside down. When he asks something, he tries to align himself with the person. But the

residents of AstroTown don't have this problem; they have already gotten used to living in these circumstances.

In the Central Square there is also a big gym where people use their free time to work out and reduce the problems caused by weightlessness. Most people also have exercise equipment in their homes, but it is much more enjoyable to exercise with others.

Paul thinks while watching all this, *It's amazing how humans can adapt to any situation.*

## Chapter 11:

### Protest

The next day, Jenny initiates a large protest in Central Square. She refuses to tacitly accept the suspension of her authorization for a child and successfully mobilizes almost all the students at her university. A huge crowd gathers, many holding placards with slogans and drawings of a DNA molecule with a red stripe across it, resembling 'DNA forbidden'. The atmosphere is filled with noise.

Jenny addresses the crowd through a megaphone. “It's absurd what's happening. The Mainbrain cannot revoke the basic right to have children merely to preserve its interests. The genetic diversity of AstroTown is at risk. Cloning must be discontinued.” The crowd erupts in applause.

Soon, the alarms of the Security Forces sound. They are a military troop dispatched whenever there's a problem, trained to rescue, treat injuries, and maintain order. Such demands are rare in the city, but the Mainbrain must be prepared for emergencies. A protest is unexpected, but the troop is equipped to handle it.

The soldiers of the Security Forces arrive at Central Square. The Mainbrain has ordered the protest to be quelled at all costs. Jenny and the other members of the

Student Movement continue to provoke the crowd, disregarding the soldiers.

Some students react aggressively, provoking the soldiers. They, however, refuse to allow it and advance on the students like a steamroller. Clumsy fights break out due to the gravity-free environment, and students are arrested. Smoke bombs explode. Jenny flees the riot, hiding with other students. She is particularly targeted for leading the movement.

The press broadcasts the event live, intensifying chaos as more people flock to Central Square to witness the protest firsthand. The transportation system becomes congested, and elderly people cry out in desperation. Such unrest is unprecedented in AstroTown's typically tranquil routine.

Gradually, the Security Forces gain control of the situation. Access to Central Square is temporarily blocked until stability is restored. Several students are arrested and lined up on one side of the square under soldiers' supervision before being taken into police custody. Their parents arrive, desperately trying to mitigate the situation.

Hours pass before Central Square returns to normalcy. Most students receive minimal punishment, paying a small fine before returning home. Only the leaders of the Student Movement are pursued for punishment.

## Chapter 12:

### Sarah

Paul is quite far away from the protests. He continues to visit all the places he can: the agriculture modules, with their giant robotic plantations; the schools and universities, which prepare young people for the professions in demand; the factory, which converts meteorites trapped in space into raw material for the expansion of AstroTown. Paul is impressed by everything he sees.

He talks with people, but does not identify himself, instead using a fake name. He pretends to be an ordinary passerby like anyone else. At one point, he visits the Museum of the Earth, in which several scenarios and films about life on planet Earth in the past are on display—animals, geography, all in 3D. It's in a part of the city where there is a big spinner module whose centrifugal force simulates Earth's gravity. It is an environment where the people of AstroTown can experience walking on their own feet, something that most of them cannot do.

Paul is observing a presentation about global warming when he notices that beside him is a woman who, despite her albino appearance, is quite beautiful.

To strike up a conversation, he says, “Humankind is really inconsistent. Would you agree?”

In reply, she says, “Sometimes it's hard to believe that all this occurred. The fact is that human beings cannot be satisfied with their own reality and want to change everything around.”

Paul is impressed with the depth of her comment. “Maybe, but these events really occurred. How else to explain our present life? What is our origin?”

“I know these facts shown here really happened. And we must learn from these past mistakes. This was certainly a time when people enjoyed life without thinking about tomorrow. Lived like in a dream. But this is very far from our reality today.”

Paul feels tempted to tell her that he has lived in those times, but he contains himself.

“I imagine you've reflected a lot on the reality of humanity today,” Paul says. “I don't see many people doing so.”

The woman replies, “Luckily, I still have the freedom to think. I hope that this freedom cannot be removed from me in the future. Have you heard about the new play of Mister K? It's an opera that tells the story of a couple that doesn't get the authorization to have children. The premiere will be soon, at 16:00.”



“I'd love to go. But I have no company at the moment. Would you accompany me?” asks Paul.

“Why not? It's good being next to someone who reflects on the facts. What's your name?” she asks.

“Paul Drie... Drummond. And you?”

“Sarah Stump. It is a pleasure to meet you.”

They enjoy talking until the play starts.

Paul tries to act like he's used to the rhythm of life with weightlessness. Sarah finds Paul funny, and ignores the clumsy way that he deals with the situation.

During the opera, Paul observes how dance and theater developed in an environment without gravity. The couples are choreographed in movements where the dancers look like a kaleidoscope.

All of them sing and dance by forming symmetrical figures in space, exploring all the possibilities of free floating. Ultra-futuristic dancers spin together in the air and Paul remembers the groups of birds he saw in the sky during his childhood on Earth.

The effects of light and smoke create an atmosphere of clouds, which recall the paradise in the book of Genesis. The poor couple in the play is then banished from paradise,

in this case Earth, because of their irresponsible lifestyle, and have to live in space. As punishment for their sins, they can no longer bear children.

Paul is impressed with the changes and references to the tales of antiquity.

Afterwards, Sarah pauses outside of the theater and says, “I really enjoyed your company. You're not like the others. Can we meet again?”

“Of course,” Paul says.

“How about tomorrow?” says Sarah. “There will be a classical music concert in the theater. I will be a part of the presentation playing my violins. You could evaluate my performance.”

“I'm sure you're a great violinist.”

“After the concert, you can find me in the dressing room at the back of the theater.”

“I'll see you tomorrow,” Paul says, and goes away.

## **Chapter 13:**

### **Freedom**

Steve, a brave young man, leads a secret organization called Freedom. The members of it strive to resist the dictatorship imposed by the Mainbrain and seek to implement democracy in AstroTown.

People have heard much about the old society, democracy, and freedom of ideas. The Mainbrain explains this as the reason for the end of life on Earth, but the members of Freedom don't believe it.

Steve has been wanted by the Intelligence Service for some years, ever since he anonymously invaded the Administration's computers to obtain detailed maps of the entire city. The Intelligence Service knows of the organization's existence but not its members.

The members of Freedom often meet in secret places. They gather in an old ore shed that people rarely visit.

Steve starts another meeting of his group, motivated by the recent protests in the Central Square.

“My friends,” he says, “we realize now that the dissatisfaction of the population is reaching its limit. We are no longer the only ones trying to resist the Mainbrain.”

Another group member says, “I was impressed to see that the Student Movement is so organized. These young students are the future of our city, and they can really help us establish democracy here.”

“You're right,” says Steve. “These students have courage and are quite numerous. We have to find a way to join them.”

Sarah Stump is also at the meeting, as she is a member of Freedom. “I am a violin teacher at the university and know some people who are part of the Student Movement. I can try to find a way to talk about our organization.”

“We must be cautious,” Steve says. “After the protests, these students will be sought. It will not be easy to find them. It is important to prevent the name of our organization from falling into the wrong hands.”

“I'll find a way to meet up with them,” says Sarah. “The students have known me for a long time, and they trust me. I can show interest in their ideas to try to infiltrate the group.”

“Do what you can,” Steve says. “I really don't see another way to link ourselves to them. Try to gain their confidence and bring their leader to our meeting.”

Then another member says, “Jenny. That is the name of the girl who was leading the protest. Her photo was released so that she can be captured.”

“I'll try to get to her,” Sarah says.

“I think with that, we should conclude our meeting today. You will be informed, as always, of when the next one will be.”

## Chapter 14:

### In Love

The next day, as planned, Paul attends Sarah's concert. The theater is packed. The orchestra's performance is outstanding, playing pieces by Handel and Tchaikovsky, as well as compositions by orchestra members, including one featuring Sarah with a significant role in a violin solo. She astounds Paul by playing two violins simultaneously, one with her hands and the other with her feet. The audience erupts into ecstasy, showering them with deserved applause that resonates throughout the theater's acoustic shells.

After the concert, Paul finds Sarah in a dressing room behind the theater. "I'm truly impressed," he tells her. "Who am I to judge your performance? You're an expert."

Sarah humbly responds, "It's just years and years of dedication."

"I'm certain you have a special passion for what you do."

"You're correct. I love what I do. I wasn't unhappy when I was chosen to be a violinist. Many orchestra members would prefer to pursue other activities, but they make music out of obligation," Sarah explains.

"You mean people are assigned to be musicians? They don't choose this voluntarily?" Paul asks, shocked,

unintentionally revealing his status as a foreigner in their society. He realizes his mistake and becomes nervous.

Sarah doesn't grasp Paul's comment and replies, "Yes, like any other profession, this one is also determined by demand. The Mainbrain often makes incorrect career choices for people."

Paul can't continue pretending to be a normal member of society. He decides to tell Sarah the truth. "Sarah, I must confess something. My name isn't Drummond. I'm Paul Driefontein, the one everyone is talking about." As he speaks, he removes his white wig.

Surprised, Sarah takes Paul's hand. "How fascinating," she says. "Is everything here new to you?"

Paul admits, "I hope you're not like some others who despise me for what I represent. Because I'm an outsider in this society."

"How could I hate such a kind and lovely person like you?" Sarah replies. "I now understand your awkwardness in dealing with our everyday life."

The two share a laugh, and Paul decides to remove the makeup that gives him an albino appearance.

“You did an excellent job,” Sarah compliments him. “Your appearance would certainly draw attention wherever you go.”

Sarah starts to develop feelings for Paul. He seems like a lost child in this strange reality. They agree to meet more frequently, and Sarah promises to explain everything Paul wants to know.

Days pass, and Paul and Sarah meet more often, drawing the attention of the laboratory team overseeing him. During a routine meeting with the Mainbrain, Mr. Sky remarks, “He's becoming increasingly integrated into AstroTown's routine. After satisfying his curiosity about everyday life, he even has a girlfriend now.”

The Mainbrain responds, “It's important that he feels mentally fulfilled. But keep him under observation. He needs a routine to prevent him from becoming overwhelmed by the reality here. Keep an eye on this woman too. We must ensure her intentions are clear.”

Sarah and Paul always meet in public and speak discreetly. Sarah explains everything about AstroTown's residents' routine, and they share many laughs about how different it is from life on Earth.



They're being observed by an Intelligence Service agent named Mr. Hawk, who meticulously records Paul's friendship with Sarah.

Sarah wants to speak to Paul in a more private setting and see him as he truly is. She admires his colorful appearance, concealed during their public meetings. Paul is also eager to see how a normal AstroTown resident's home looks. Sarah invites him to her apartment.

“I'd love to,” Paul responds. They go to where Sarah lives. Her apartment is small but comfortable. And it has those decoration touches that only a woman knows how to do.

“You can relax here,” Sarah assures him. She helps Paul remove his robes and makeup. His colored skin and black hair stir her deepest emotions. Paul, too, can't contain himself, and a passionate kiss ensues. They undress, and Paul experiences weightless sex for the first time.

Mr. Hawk, who had followed the couple to Sarah's home, sends a message to the Mainbrain: “We need to intercept this woman's communications. Things are escalating. We must uncover the truth about her intentions.”

## **Chapter 15:**

### **Ambush**

The next day, Sarah reaches out to the members of Freedom to arrange another meeting, unaware that Mr. Hawk is intercepting her messages. He contacts the Mainbrain, reporting, “This woman is affiliated with Freedom. They are planning a meeting at the old ore shed.”

The Mainbrain responds, “This is the opportunity we've been waiting for. Assemble our top agents and apprehend them in the act. We cannot allow their ideas to flourish and influence Mr. Driefontein.”

Mr. Hawk summons the best agents from the Intelligence Service of AstroTown, trained to combat organized crime. Quietly, they tail Sarah as she heads to the old shed.

Upon arrival, the agents allow the meeting to proceed and stay concealed while they observe, filming to gather evidence against the members of Freedom.

As Sarah begins the meeting, she is filled with excitement. She refrains from disclosing the depth of her relationship with Paul but shares, “I have exciting news. I met Paul Driefontein. We had extensive conversations at Central Square. He's a remarkable person who has personally experienced living in a democracy. While I haven't

discussed Freedom with him, I believe he could be instrumental in our cause.”

Steve expresses concern, “This is significant. With his insight, we could better understand how to implement a democratic system. But can we trust him? Bringing him into our meeting could pose a considerable risk.”

“I want to introduce him to our ideals first,” Sarah explains. “If I sense he's receptive, I'll gauge the extent of his influence by the Administration. It's crucial for both our safety and his.”

Suddenly, agents led by Mr. Hawk storm the shed. They bark, “Stay silent! You're under arrest for conspiring against the stability of AstroTown.”

However, firearms are nonexistent in AstroTown due to the risk of generating explosions in the pressurized environment. The agents are armed only with electroshock weapons, with limited range, allowing some members of Freedom to fight back.

Steve engages the agents, but realizing they're outnumbered, he urges everyone to flee. Some manage to escape, including Steve, but Sarah is incapacitated by the agents' electroshock weapons and loses consciousness. Several members are apprehended, all taken to a prison near AstroTown's administration.

## **Chapter 16:**

### **Ingenuousness**

Mr. Sky goes to meet Paul in his laboratory.

“Paul, we need to talk,” he says.

“Did something happen?” Paul asks.

“Follow me, please.”

They traverse the corridors of the laboratory until they reach Mr. Berg’s room, where Paul had heard explanations about the fate of humankind. Mr. Berg receives them and instructs Paul to listen carefully.

“We have something important to show you,” he says.

The film made during the capture of the Freedom members is shown. Paul is shocked. He hadn't known of the existence of this organization, nor of Sarah's involvement.

“As you can see,” Mr. Berg says, “this woman was using you. She simply wanted to manipulate your opinion to achieve the objectives of the organization. She is a terrorist, wanted for many years by our staff. We finally managed to arrest her.”

“It cannot be,” Paul says. “She never told me anything about it. She's just a violin teacher.”

“You're a very ingenuous man, Paul,” replies Mr. Berg.

“This woman was just preparing the ground for a coup. You should avoid leaving the laboratory. There are several things going on that could put you in danger.”

Paul is confused. He cannot accept the idea that Sarah was using him.

“I want to talk to her. I want to know what she has to say.”

“Sorry, Paul,” Mr. Berg says. “She’s in a Supermax prison here in AstroTown. Visitors are not allowed. Go back to your work!”

Paul returns to his lab along with Mr. Sky. He remains quiet until he completes his six hours of work. Upon returning to his room, he ponders a way to find Sarah. He will not just accept the facts; he has to do something, he has to find a way to know if she was really using him and if all that happened between them was only a pretense on her part.

“It cannot be,” he whispers to himself.

But how to get to her? A Supermax prison? He doesn’t know the city well, nor where the prison is. And even if he did know where it was, how would he get there? He has to find a way.

## Chapter 17: Hidden

Jenny, now a fugitive, discusses with other members of the Student Movement to find a way to thwart the Mainbrain's plans.

“Jenny, do you already know what happened?” one of the members asks.

“What are you talking about?” Jenny responds.

“An organization called Freedom, which intended to combat the Mainbrain, was discovered. They were caught red-handed during a meeting. Many members of this organization were arrested, but some are still on the run,” says the young man.

“I didn't know there was such an organization. Where did you see this news?” Jenny inquires.

“A photo of people who haven't been arrested is being circulated. They're asking for the cooperation of the population. They're labeling these people as terrorists.”

“We need to find them,” Jenny decides. “We need to gather everyone who wants to oppose the Mainbrain. Maybe this organization, Freedom, has information that can help us.”

Steve, who escaped arrest during the tragic meeting, thinks the same: *I need to join these students. They are quite numerous.*

He heads to Jenny's university, using disguises to avoid recognition. He asks people he encounters about the members of the Student Movement. Although the people provide no information, they warn Jenny that a strange man is looking for her.

“Bring him to me,” Jenny says. “He doesn’t seem to be a Mainbrain agent. Tell him that he will have to be blindfolded and searched, so that we can be certain he's not armed and doesn’t have a tracker.”

Some students intercept the strange man running around the university. “Hey, are you the guy who wants to talk to Jenny? If so, you'll have to follow our rules.”

“No problem,” says Steve. He allows himself to be searched and blindfolded, then is taken to Jenny’s secret location, where he removes his disguise.

“Are you Jenny?” asks Steve.

“Yes, I am,” she replies.

“I've been looking for you for some time. You may have heard of the organization I belong to, Freedom. It’s been in all the media.”

“I know. What is the purpose of your organization?” Jenny asks.

He tells her about Freedom’s ideas and the events of the last meeting.

Jenny then calls a meeting for members of the Student Movement, and Steve also contacts the members of Freedom who haven't been arrested.

“My friends,” Steve says at the meeting. “During the past few centuries, we've made a big mistake: we let a machine become our dictator. We were lazy, giving this machine more and more power to decide about our lives. Now we are slaves to its plans.

“But times are changing. More and more people are convinced that this is not the best way to preserve humankind. We can decide for ourselves about our future. We can take our destiny into our own hands. We have to change our future. The population is on our side; I'm sure of this.”

Everyone applauds Steve and agrees with what he says.

He continues, “We're not just a small group of dissatisfied citizens. We are now members of the Resistance. We are numerous and must keep growing. We must gather all



those who sympathize with our ideas. We must create a revolution in AstroTown.”

Everyone agrees, but they don’t know what Steve has in mind.

“We need to do something big,” Steve says. “Something that really changes our destiny. I’ve been thinking a lot in recent days. I have detailed maps of the city. I propose that we isolate one part of it. We can establish a democratic system that shows all the other people that we can live differently.”

Jenny asks, “But how? How can we isolate one part of the city?”

“All over the city, there are several emergency gates. They are designed to isolate a module from the rest of the city in case we are hit by a meteorite or other object that pierces our pressurized system. In such a case, the gates around the affected module will be automatically closed, isolating the problem.”

He continues, “We can start a campaign to close a large group of gates to isolate one part of the city. We must ensure that the isolated area has a good amount of agriculture modules to provide us with enough oxygen and food. If we achieve this, we can live independently from the rest of the city.

“I propose that we take our time to study the map that I have and see where we can focus our campaign,” he finishes.

Steve’s plans leave everyone speechless. It's very ambitious. No one has ever attempted anything like that before.

“One of our members recently met with Mr. Driefontein and told us that he can help us by sharing his experiences from a time when humankind lived in a democracy. I'll look for this man. He’s an important element to ensure our independence,” Steve says.

“Are you sure we can trust him?” Jenny asks.

“I still don’t know, but his help would be valuable.”

## Chapter 18:

### Password

Paul continues with his work routine and tries to find a way to help Sarah. He quietly observes Mr. Sky, as the latter holds a high-ranking post in AstroTown and has access to almost every module in the city. Paul wants to use him to meet Sarah.

Paul is a brain expert. He has studied the regions of the brain for many years and knows that he can decode any image that someone is thinking. It is a complex process, but this is precisely the area that he knows best.

He pretends that he's creating a device for the Brain Scanner, but the truth is that this device decodes the brain signals used as passwords. Mr. Sky has said that it is impossible to break this security system, but Paul knows much more about the subject. It's the perfect plan to acquire free access to the restricted modules where Sarah is being held.

He uses discretion in making the device and tests it himself: he thinks of a certain image and sees if the device can decode it. The decoding process takes several hours. The tests progress slowly.

After many adjustments, Paul manages to get the device to show the exact image he's thinking of. Such a device would surely cause rioting among the people, but Paul has only one goal in mind: Sarah.

After completing the device, Paul approaches Mr. Sky unnoticed while he opens a gate using his brain password. Paul activates the device and Mr. Sky doesn't notice anything. The device then records Mr. Sky's brainwave pattern, at which point Paul switches it off. Now he just needs to wait for the right moment to decode the image.

Later, when he's alone, Paul uses the data recorded by the device and rebuilds the image that Mr. Sky uses as a password. It is an image of a student reading a book, someone whom Mr. Sky met during his university days. He was in love with this student, but he had never had the courage to approach her. This platonic love marked this phase of Mr. Sky's life. Paul realizes, through the brain areas that were activated, the intensity of Mr. Sky's feelings for this memory.

Paul now has the password from Mr. Sky. However, in order to use it, he has to not only remember the image of the student but also show feelings for her. He doesn't know if he can imitate these feelings in the right way. He needs only to wait for the right moment to test it.

## Chapter 19:

### Approach

In a moment of leisure, Paul goes to the Central Square, as usual, and watches people pass by.

He cannot simply invade the prison and free Sarah; he must first find a way to take her to a safe place where they can live in peace. But where? The city is limited. Where could they go?

Paul is then approached by Steve, who is disguised in order not to be recognized in the streets.

“Hello, Mr. Driefontein,” Steve says.

“How do you know my name?” asks Paul.

“You have to learn to disguise yourself better. Your beard must be shaved. I can see that the hairs of your beard are black.”

“I've been too distracted recently,” Paul admits.

“I'm Sarah's friend. I know you know each other. She told me a lot about you,” Steve says.

Paul becomes quite interested in what this strange man has to say.

“Can you follow me?” Steve asks. “I have information that may interest you.”

Paul doesn't think twice. He follows the man, despite not knowing anything about him.

They arrive at a more discreet place, and Steve presents himself, removing his disguise.

Paul recognizes him from the video that was recorded during Sarah's arrest. This makes Paul start to trust him.

Some members of the Resistance are helping Steve by keeping watch over this place, ensuring that he and Paul were not followed or observed.

“My name is Steve. I, Sarah, and several other friends used to meet. Our ideas are aimed at finding a way to free ourselves from the Mainbrain,” Steve explains.

He tells Paul what happened to the members of his organization and the setup of the new group with Jenny's friends.

“You're a special person,” he says. “You're the only one who has lived in times of democracy. Your help in our cause will be very welcome.”

Paul realizes that, with these people's help, he could find the place he is looking for: a safe place to take Sarah.

“I want to help you. I don’t want to live like a slave, bound to the will of the people in the lab. I have no interest in creating the Brain Scanner,” Paul says.

Steve is happy to hear this and takes Paul to where the members of the Resistance are hiding.

“We have to blindfold you for your safety and our own,” he says.

## Chapter 20: Resistance

At the meeting with the members of the Resistance, Paul is introduced to everybody. He takes off his disguise of white hair and contact lenses so that people can see how he really looks.

“My friends,” says Steve, “this is Mr. Paul Driefontein. He’s a friend of Sarah. As you all know, he was cloned from the days when humans were still living on Earth. He saw a different lifestyle than we're used to here. He knows democracy. I'm sure he will have much to contribute to our plans.”

They all look at him, as always, with a mix of curiosity and fright. But Paul is already familiar with this reaction.

“I don’t want to go back to the laboratory,” he says. “I have nothing there. Can I stay here with you?”

“Of course!” replies Jenny. “We are fugitives wanted for trying to change the political style of the city. We live hidden here and have to disguise ourselves when we go out.”

“Thank you,” Paul says. “I have a plan to free Sarah. But first I had to find a safe place to bring her. I think here would be the ideal place.”



“We plan more than to live in this place,” Steve says, and proceeds to tell him about the plan to isolate one part of the city to create a democracy.

“Very impressive,” says Paul. “Are you sure that we can do this?”

“We are in the planning stage. But this area of the city would be a free place for those who oppose the Mainbrain. Then Sarah can live in peace with us.”

“So let's continue planning!” says Paul.

Everyone laughs and prepares for another meeting.

While people are arriving, Paul talks with Jenny. She tells him about all that she faced in the process of getting the authorization to have a child, having her authorization suspended, and having to live far away from her husband and her family, hidden.

“I had never questioned the way we live until my husband, whom I met in school, showed me some documentary about life on Earth,” she says. “Such documentaries are forbidden because the Mainbrain doesn't want the people to question our way of life today.

“I have learned from these documentaries that there was a time when people could have children whenever they

wanted—and they used to choose a partner for love, not because of genetics.”

Paul is impressed with how the people of AstroTown don't know about the everyday life of society in ancient times.

“You mean that genetic selection influences the choice of partner more than love itself?” he asks.

“You see?” says Jenny. “For you, this is absurd, but it is a common thing here. Today, everything is different. In these films, I also saw that people could choose the profession they wished. They were not, as now, delegated to a profession and obliged to follow it.”

“And if a person refuses?” Paul asks.

“He goes to the prison near the Administration,” Jenny replies. “Most people who experience this situation accept later the delegated job. But some are still in jail today because they refuse to accept this kind of life.

“On Earth, people could develop personal projects, own a company, open a business; they themselves could decide the direction of their company. Today, the Mainbrain decides everything. What to sell, what price, and so on. The people have no choice. They have to accept it.”

Paul becomes increasingly shocked by the way people live today.

Jenny continues, “The people decided together what the direction of the society would be. They chose representatives who met and reached the big decisions together. These representatives understood people’s needs because they were also humans. Today we have this machine that decides everything alone, without consulting anyone, without thinking of our satisfaction, without understanding our feelings.”

Paul agrees with everything she says.

“I remember the time when I was a child,” Jenny says, “as AstroTown was passing near the planet Neptune. My parents were beside me and explained all about the planets of the Solar System. That beautiful blue planet stirred my imagination. I asked them why we don't live there, and they explained to me that it’s not possible because the planet's atmosphere is very unstable. I was discovering the universe, and now I want to do the same with my own children. I want to show them all that is beautiful within it. But now we can no longer have children, all because this machine has decided to destroy that dream. It's one more dream that has disappeared.”

“Really,” Paul says, “we cannot stay here and accept all of this. We have to change the destiny of humankind.”

## Chapter 21:

### Planning

Steve starts the meeting with the members of the Resistance.

“My friends, the big moment is coming. This meeting will go down in history. We will discuss here the beginning of a democracy. Let's consider the best way to isolate one part of the city.”

He shows them a holographic map of AstroTown, which he acquired by hacking into the Administration's computers. On the map, the various sectors of the city are highlighted.

“We are here in sector 2. This is where the university and the main libraries are located, and where the population has a more enlightened worldview. I suggest that we isolate this part of the city. As we can see here, there are 34 points where sector 2 connects to the rest of AstroTown. We can activate the emergency gates at these points and close off access to this entire sector.”

AstroTown is divided into six sectors. Sector 2 is one of the oldest, built in the time when people still lived on Earth. It contains several modules that are no longer used, which are now sometimes occupied by young people at parties and gatherings. Some of the larger modules have become

public facilities such as the university. It is the most rebellious part of AstroTown, where new ideas always arise. Sector 2 comprises about 20% of the volume of AstroTown.

“Have you checked to see if there is enough oxygen and food to live independently of the rest of the city?” asks a member of the Resistance.

“According to my calculations, there is no problem,” Steve replies.

“And how can we activate the emergency gates?” Paul asks.

“The gates close quickly if there is any problem with the pressure of the place where they are located. There are sensors to measure this pressure, and these can be manipulated. We can close or open the gates whenever we want.”

“And isn't there a way for the Mainbrain to open them?” Jenny asks.

“We have to manipulate the sensor so that it receives no external signal, making it controllable only manually.

“We must perform a synchronized campaign. We have to close all 34 gates simultaneously. Before that, we also have to prepare for the isolation. All those who wish to visit their

relatives or who have something to resolve outside of sector 2 must do so now. We will likely be isolated here for a long time until we can force the Mainbrain to give us control over the whole city. This will be the next step in our plans.

“The process is dangerous. Certainly, the Mainbrain will not leave us in peace here. There will likely be unforeseen problems,” Steve says. “We must be prepared for everything.”

Paul decides to wait until the isolation process of sector 2 has concluded before attempting to release Sarah. After all, she is in a safe place in prison, whereas those outside are risking everything with their plans.

Steve continues, “The plan is ready. The closing of the gates will occur tomorrow at noon. Get ready to live isolated from the rest of the city.”

Everyone leaves the meeting room and prepares to take appropriate action to execute the plan. It will truly be something new, something the Mainbrain is not expecting.

Steve gathers 34 members of the Resistance and shows them how the gate's pressure sensors work.

“I obtained this sensor from a friend who works in the maintenance system. All sensors in the city are similar.

They are linked to the Administration by this red wire. We simply have to open the panel where the sensor is located and cut it,” he explains.

Everyone pays close attention.

“Then, at the appointed time, you cut this green wire. It sends a signal to the emergency gate indicating that the pressure is normal. Without this signal, the gate detects a problem and closes automatically.”

Everyone understands the guidelines. They just need to wait for the right time to act.

## Chapter 22:

### Family

Jenny arrives near her husband's workplace, well disguised to avoid being recognized on the streets.

Her husband had been sought out by the Intelligence Service after the protest in Central Square, but he said that Jenny was missing. He pretended not to know her whereabouts, but in truth, they always kept in touch. They used untraceable media, such as handwritten notes hidden in familiar places. However, it had been a few days since he last heard from her.

She approaches him as he's coming back from work.

“Jenny? Where were you? I was getting worried!” he says.

“Be discreet. We may be under surveillance.”

She briefly informs him about the Resistance's plans.

“Tomorrow, you must skip work. Stay home. We're already living in sector 2, so there's no need to worry. If you're at work, you'll be isolated outside of it,” Jenny says.

“But are you all certain about this plan? Have you considered all the details?” he asks.



“Steve, the new leader of our group, is experienced and has been battling the Mainbrain for a long time. I trust him. He's our only hope to reverse this situation,” Jenny reassures.

“What about your parents?” he inquires. “They'll be worried. They need to know what's happening.”

“I've considered that. I'm afraid they'll be sought out and put at risk,” Jenny admits. “But you're right. They need to be informed.”

“Please visit my parents. They don't live in sector 2. They'll be concerned when the campaign begins. Try to persuade them to stay with us during the campaign, but be cautious not to lead anyone to us,” she concludes.

“Okay. I'll be discreet,” her husband agrees.

He heads to Jenny's parents' house.

“Do you have any news of her?” her father asks anxiously.

“Come with me. We need to talk somewhere neutral. There might be someone recording us here,” he whispers to Jenny's father.

They go to a public place and discuss Jenny's plans.

“I understand she wants us by her side, but it could raise suspicion. I don't want to disrupt her plans. It's best for us

to stay here in our house while this unfolds,” Jenny's father concludes.

Jenny's husband understands his father-in-law's stance and leaves.

## **Chapter 23:**

### **Isolation**

The next day, the big moment arrives. The members of the Resistance are distributed at key points and communicate with each other to ensure the perfect synchronicity of the campaign.

They wear clothes typical of maintenance personnel so that people who see them won't realize their intentions. They also use a radio communications system that encrypts the signal so that only members of the Resistance have access to their dialogue.

“Are you all in your positions?” asks Steve from a remote location.

He receives positive signals from all 34 points where the gates will be closed.

“Now!” commands Steve.

Immediately, alarms are triggered all over the city. All points where sector 2 connects to the city are closed. People are disoriented by the noise and don't notice the presence of the young men who carried out the campaign.

Shuttles are prevented from entering or leaving sector 2. Air corridors are also blocked. A riot occurs on the border between sector 2 and the rest of the city.

The Administration receives several error messages coming from the sensors in sector 2.

“What's going on?” the Mainbrain asks one of its administrators.

“Several emergency gates were closed, isolating sector 2. We don't know what is happening. I think we were hit by something from outside, but the laser system didn't record anything.”

A crowd gathers at the Central Square. Red lights are activated over AstroTown, warning of danger. Soldiers of the Security Forces appear in droves, trying to contain the mood of the crowd. Everyone is confused.

Steve takes the first steps to ensure the isolation. He had prepared a group of students to invade the Communication Center of sector 2, and all are in a position to attack.

He says via radio, “You have to prevent the Mainbrain from knowing what is happening so we can gain some time. You can start the attack.”

The group breaks into the Communication Center. The students are like soldiers and use a kind of martial arts without gravity to dominate the staff.

Thus, communication with the rest of the city is blocked. The students open a communication channel that can only be seen by the residents of the isolated part of the city.

Steve initiates a transmission:

“My friends, it's time to begin a new era in AstroTown. For many years, we have been unable to follow our wills. We were slaves in a dictatorship led by the Mainbrain. It's time to change that. From now on, sector 2 will be isolated from the rest of the city. Unfortunately, some people will be prevented from visiting their relatives or from returning to their homes that are on the other side, but they are a minority. The important thing now is to secure our independence and build a democratic system that guarantees freedom for all. We are now initiating a temporary administration until sector 2 has its candidates ready for an election. This will be the first election in AstroTown!”

The people of sector 2 are divided. They were caught by surprise. Most agree with Steve, but many don't like the abrupt manner in which everything is happening.

The Mainbrain, meanwhile, tries to find out what happened to sector 2.

It says to Mr. Hawk, who was hurriedly called to study the problem, “The explorer robots on the outside of AstroTown are sending images showing that sector 2 is intact, as seen from outside.”

“The communication with sector 2 was discontinued,” says Mr. Hawk. “Everything indicates that the depressurizing was simulated.”

“Tell the people that it was really a depressurization problem so they will return to their normal routine and we can concentrate on understanding what is happening,” the Mainbrain says.

Mr. Hawk makes an announcement to the citizens of AstroTown that unknown causes generated the loss of sector 2 and that there is still no news of survivors.

Many people cry all over the city. Everyone thinks that sector 2 has been destroyed and that the emergency gate system was activated to protect those outside. Jenny's parents, who live outside sector 2, also pretend to be desperate, but they know the truth and avoid talking to other people, so as not to hinder their daughter's plans.

In sector 2, Steve continues to take the necessary steps. “The Library module is now the headquarters of our new administration. Let’s send our students out into the streets to remove people’s doubts and turn them into active members of our society.”

Several students circulate over sector 2 and go to public places, trying to calm the fears of those who were agitated. As of now, there are about 500,000 people isolated from the rest of the city.

## Chapter 24:

### Democracy

The next day, the explorer robots outside AstroTown complete a detailed mapping of sector 2 to evaluate the damage. It is then officially concluded that the isolation had not occurred due to depressurization. The lights seen through the windows in sector 2 show that life there continues normally. The Mainbrain thus concludes, “It is clear that sector 2 was isolated by a political movement. We need to open the emergency gates and regain control.”

The leader of the Security Forces, Mr. Hummer, protests, “But we cannot explode them. That would put all of AstroTown at risk.”

“The material from which the gates are made is a very tough alloy. It will take a long time to drill through it,” the Mainbrain says.

“I think we have no choice, then. May I start to drill the gates immediately?”

“Do this while I try to find another solution,” says the Mainbrain.

Mr. Hummer goes to one of the connection points with sector 2 where a gate has been closed. He brings with him various drills that are usually used to explore meteorites



outside the city. The operation is conducted in such a way that people don't notice what is happening; the Mainbrain prefers that people keep thinking that sector 2 was destroyed.

The new administration in sector 2 had already taken numerous steps to plan how the democratic process should be applied.

"It's like living a dream," Steve says. "Finally, we can decide what we want to do."

Jenny suggests, "We need to develop a metallurgical sector and some factories to ensure maintenance and expansion, as is done on the other side of the city."

"We have the universities here, and a huge amount of experts. I'm sure we have the knowledge to solve all these problems," says Steve.

"I will inform the population that now they have the power. They should get together and select candidates for the position of sector 2 administrator."

"But don't you want to be a candidate for the job?" Paul asks.

"No. I don't want to go down in history as a dictator who imposed a coup and took the power. I want the people here to experience democracy in its fullest form," Steve replies.

Steve begins another transmission to sector 2:

“My friends. We, the members of the Resistance, are happy to see the full support you are giving us. But we're just a temporary administration. We want you to organize and nominate candidates for the position of administrator. I don't want to be a candidate myself; I want you to take control. You are now in a position to experience what it is like to decide your own future.”

Meanwhile, people on the streets have begun to adapt to the new system. Several members of society now see an opportunity to pursue their desire for a political career. The director of the university where Jenny studies, for example, expresses his desire for the position. But everyone knows that he's just a puppet of the Mainbrain. That would not work.

Many other citizens who were up to now unknown, who had led quiet lives, experience the taste of democracy and announce themselves as candidates. There are no political parties; the people in AstroTown no longer know what that means. The whole process is still very amateurish.

Many people go to the library to research how the democratic system worked in the past. They search for a way to simplify the process, thereby making it feasible to install it quickly.

People in all parts of sector 2 don't talk about anything else. All sorts of people soon arise, from the most traditional to the most exotic. Many want the position of administrator, as the idea is very appealing.

People hold speeches in the main public places, gathering large crowds. The democratic process begins.

## Chapter 25:

### New Plans

Steve is already contemplating something bigger as the democratic process progresses. He calls for a new meeting with members of the temporary administration of sector 2.

“My friends,” he says, “we have been able to achieve advances never seen before in this city. You all deserve congratulations. The people of sector 2 are on our side, and I'm sure that all of AstroTown would be as well if we could establish democracy throughout the entire city.”

“But we cannot confront the Mainbrain. It holds too much power. What do you have in mind?” asks Jenny.

“That's precisely the point. The Mainbrain. This machine was supposed to serve us, not become our dictator. We have to find a way to shut it down,” says Steve.

“But we are isolated from the rest of the city. How can we do that?” Paul asks.

“The Mainbrain is a machine and requires electricity to operate. We can disrupt the electricity supply to the modules where the Mainbrain is located,” says Steve. “I suggest that we assemble a team to leave AstroTown wearing space suits and destroy the cables supplying power to the Mainbrain.”

“But this is very dangerous,” says another member of the group. “It's been a long time since anyone has taken the risk of being outside of AstroTown. The robots are used to perform all activities outside the city.”

“I know,” Steve acknowledges. “It will be a life-or-death mission. We need to gather a small group of volunteers who are willing to take that risk. I myself am willing to be one of the volunteers.”

“But Steve, you are our current leader,” says Jenny. “If something happens to you, our independence will be compromised.”

“In that case, I'll transfer control to you, Jenny. From now on, you will be responsible for ensuring the continuity of the democratic process. There is no progress without risk. Who else agrees to join me on the mission to deactivate the Mainbrain?” asks Steve.

All the members at the meeting are nervous, knowing this will be a high-risk mission. But two members raise their hands and volunteer.

“My friends, we are making history. We will change the destiny of humankind,” Steve declares, ending the meeting.

## Chapter 26:

### Drilling

The drills move slowly against the emergency gate that isolates sector 2. The Mainbrain is informed of the progress.

“The gates are really tough,” reports Mr. Hummer. “I've destroyed three drills and only advanced four centimeters into the plate, which is ten centimeters thick.”

“This cannot be,” says the Mainbrain. “This means it will take an eternity to penetrate.”

“I have a suggestion,” Mr. Hummer says. “We can enter sector 2 from the outside.”

“Any module drilled into from the outside activates new emergency gates, which would lead us to the same point. We have to find another way to enter sector 2,” the Mainbrain says.

Mr. Hummer continues drilling the gate. A member of the Resistance hears the drilling on the other side and informs Jenny, who is now in control.

“They are trying to penetrate,” he says. “What should I do?”

“Go up to the next gate and be prepared,” Jenny says. “If they complete the drilling, close the gate, maintaining our isolation.”

After several hours, Mr. Hummer has almost penetrated the emergency gate with his drills. When he succeeds, he looks through the hole and sees a young man moving briskly in the opposite direction on the other side of the gate.

The young man, frightened upon seeing the hole, obeys Jenny’s orders and closes the next gate.

Mr. Hummer immediately contacts the Mainbrain. “We penetrated one of the gates. But on the other side was a young man who again isolated us by closing a new one.”

“As I suspected,” the Mainbrain says. “It is clear that the people who protested in Central Square are trying to become independent of our administration. Stop drilling the gates. We must use other ways to solve the problem.”

The Mainbrain orders the relatives of those who led the protest to be interrogated.

Mr. Hummer and his men invade the homes of many such residents, including Jenny's parents.

“What do you want from us?” asks Jenny's father. But Mr. Hummer holds them and leads them away.

They are then separated and taken to interrogation modules.

Mr. Hummer says to Jenny's father, "We already know that sector 2 was not isolated due to an accident. It is a separatist movement to destabilize our administration. Tell us what you know."

"But I don't know anything. I thought my daughter was dead."

"We are preparing to attack sector 2. I'm sure your daughter and her friends are not prepared to deal with this. We will take back control at any cost, even if it means sacrificing the lives of people living there," Mr. Hummer says.

Jenny's father begins to sweat. He's starting to get desperate now because Jenny really could die.

"If you don't help us to find a way to prevent this isolation, we have to use force," continues Mr. Hummer.

Jenny's father knows that she is alive and is part of the independence process in sector 2. He explains as much. "I don't have a way to talk to her. I'm telling the truth."

Similar questions are asked to Jenny's mother in the other module, and she's also desperate.



After a long interrogation, Jenny's parents admit that they knew of her daughter's plans. But Mr. Hummer realizes that they really can't help him. Then Jenny's parents are led to a module where they are held until the situation is clarified.

## Chapter 27:

### Spacewalk

Steve gathers his group for the mission to venture outside the city. Paul is with them, intending to support the group by assisting them from within Sector 2 if necessary.

“My friends,” says Steve, “this is the maintenance module in Sector 2. Here are some spacesuits so that we can leave AstroTown. The person responsible for maintenance will instruct us on their proper usage.”

An elderly maintenance worker, who hasn't used such suits in years, endeavors not to overlook any detail of how they should behave outside the city. He shows them how to use the suits and says, “Outside the city, there are wire ropes in all directions to which you must always stay attached in order not to float off into space. You can only leave one of the ropes once you are attached to the next, so at no time should you be unsecured.”

He continues, “Use your hands to propel yourselves forward over the city. The nuclear power plants are in Sectors 3 and 5. The plant that feeds AstroTown's administration is in Sector 3.”

Steve thanks the old man and asks him to leave them alone. He goes away with an air of disapproval and thinks, *These guys are suicidal.*

Steve shows the other members of the group how they will cut the cables feeding the Mainbrain.

“The power cables are thick. We have to explode them in a spot where they lead to the Administration. I have some explosives that are commonly used to reduce the size of large asteroids as they are captured in space,” he says, showing them a device with a small green light.

“After we put this explosive next to the cable,” he continues, “we have five minutes to get away. This will create a hole in the module next to where the cable is going through. The emergency gates of this module will isolate it from the rest of the city. I hope there is nobody inside when it explodes.”

They already have everything they need. Paul helps the three young men into their suits, and they go to the gate that provides access to the outside of the city.

Steve says, “Paul, be prepared here for our return. You must open the gate when we get back. We will communicate by radio. I'll keep you informed of our progress.”

The area where the astronauts are is closed off to prevent any air loss from the maintenance module. Paul waits, looking through the window of the gate. Steve then opens the gate to space.

All three members of the team look at each other nervously. Exiting into space is something that no one has done in a long time. Any tiny mistake could be fatal.

They attach themselves to the wire ropes on the outside and advance slowly toward the Administration modules, which are five kilometers away. They use their arms to move while attached to the wire ropes and know that it will take time to reach their destination, but the air supply that they carry is enough for them to go there and return.

They see the city from the outside. It's a fantastic view. Steve stays a few seconds, just watching. All those little points of light along the tubular structures are singularly beautiful. One of the astronauts shows Steve the stars above them, which are much brighter here on the outside.

But they have no time to lose. They have to hurry.

“It's great to be here on the outside,” says Steve, communicating by radio, which is also heard by Paul. “But we have to follow our mission.”

Steve shows them which direction to go. From a distance, they can see a large ball that is part of the Administration modules. They move slowly toward their destination.

After a few hours, they reach the power cables that lead in the direction of the Administration.

“This is the cable,” Steve says to the two other young men. “We have to find a point where it passes over an unimportant module, and that’s where we’ll place the explosive.”

But it is difficult to determine exactly where they are positioned when looking from the outside into the city. They also don’t know many of the modules that are part of the Administration.

“I think that here is a good place to put the explosive,” one of the members says.

They activate the device. The green light turns red and starts to blink. Everyone begins to move away quickly because they only have five minutes to protect themselves.

The explosion echoes for kilometers across the city. A huge amount of debris spreads through space. The explosion destroyed the power cables, as well as a tool storage module. A massive amount of parts and tools spreads through the emptiness of space.

Immediately, the lasers, responsible for the safety of AstroTown, detect the free-floating objects in space. They are programmed to remove any object not registered on its system to avoid a collision with the city. Numerous laser beams shoot in various directions to clear the debris, but without hitting the city itself.

One of the lasers hits a member of Steve's team. With his suit pierced, the young man dies immediately. Steve cries, “Noooooooo!”

But it's too late. The other group member says to Steve, “Stay down. The lasers cannot aim at the modules of the city. If we stay close to the modules, we will be safe.”

The explosion has triggered the emergency gates of five modules near the detonation point. The goal was achieved. The cable that fed the Mainbrain was interrupted, disconnecting the power supply from the modules of the Administration.

Red lights powered by batteries are lit all over the Administration. Nobody knows what is happening.

But Steve isn't aware of one detail: built into the Mainbrain is a battery system, which is able to feed it for up to three hours in case of an interruption in the power supply.

“Provide me immediately with an alternative power system!” the Mainbrain orders its maintenance workers via radio. It knows that its existence hangs by a thread.

A single cable is quickly provided, sufficient to prevent the Mainbrain from turning off.

“We're under attack!” says the Mainbrain. “Isolate the Administration sector.”

The soldiers of the Security Forces spread themselves out strategically to prevent an invasion of the Administration. They still have no idea of the size of the attack they are confronting.

The Mainbrain orders the explorer robots to verify the presence of intruders on the outside of the city, where the explosion occurred.

Steve and the other member of his team try to make it to the return point in Sector 2. The lasers are still doing their job, cleaning up debris scattered in space, but the astronauts are already far enough away.

The explorer robots fly to where the astronauts are.

“What's this?” asks Steve's friend.

“Oh no! The explorer robots have been deployed to investigate the situation. We have to hide,” says Steve.

Paul, who is following the progress of the astronauts via radio, is tense. He yells, “Run! Come to the gate. Run!”

But the clumsy movement of the spacesuits is perceived by one of the robots. It moves toward the astronauts.

These robots are about the size of a human being and possess several tools, one of which is a drill that is normally used for rocks.

The robot begins to attack the team member who is already dead, since it doesn't recognize the difference. It drives the drill bit into the astronaut's body, tearing it into several pieces.

Steve and his colleague see this and become panicked. They have no chance against this robot.

The robot moves toward them. Steve picks up a metal bar off an antenna that is close by and gets ready to fight.

Both begin a fencing match, where the robot uses the bit's drill, and Steve uses his metal bar. Abrupt and clumsy movements occur all the time. Steve tries to hit one of the robot's cables, hoping to make it stop working. The other astronaut also grabs a metal bar and joins him. Sparks constantly appear due to the metal friction.



After a heavy blow, Steve cannot keep the metal bar in his hands and loses it. The robot immediately drives the drill bit into his chest, killing him.

The other astronaut shouts, “Steve is dead! Steve is dead!”

Paul becomes panicked. He screams through the radio, “Run! You have no chance against this robot. Run!”

The astronaut lets go of the metal bar and tries to escape, but he fumbles and loses the safety wire. He screams, “I’m lost in space! I’ve let go of the cable!”

The radar recognizes him as a foreign object and shoots its lasers at the astronaut, killing him instantly.

Paul witnesses all of this without being able to do anything about it. “Can you hear me?” he asks, crying.

But he knows that the young man has not survived. All three members of the team responsible for the explosion are now dead.

He contacts Jenny and lets her know what happened.

## Chapter 28:

### Darkness

Inside the Administration, the Mainbrain says, “Now it's our turn to attack. They need to understand that I am not the only one who needs electricity.”

“Stop the power supply to sector 2,” it orders.

High-voltage electric switches start to move in the vicinity of the nuclear fusion power plants. Sparks and lightning bolts can be seen during the shutdown process.

All power goes off in sector 2, and emergency lights, powered by batteries, turn on at several points.

“What's going on?” asks Jenny.

Paul, who is on his way to the Library after the fateful death of Steve, is unable to move forward. The gates don't work. The radio communication also doesn't work because it depends on devices installed in the Library.

The Resistance now realizes that the plan to isolate sector 2 has one major flaw: the power plants are not in sector 2. This makes them dependent on the rest of the city, and therefore on the Mainbrain.

“I can't believe they cut our energy! I can't believe it!” says Jenny.

She knows that, without energy, the coldness of outer space will freeze everyone inside sector 2 in very little time.

The residents are also becoming nervous. Never before has there been an interruption in the energy supply.

The Mainbrain allows sector 2's energy to be interrupted for only five minutes, at which time it reactivates. The Mainbrain wants to give the Resistance members a chance to make contact.

All of the residents of sector 2 are relieved when the energy returns, but Jenny knows they're still vulnerable.

Paul finally reaches the Library. "What's going on?" he asks Jenny.

"I think we made a big mistake," Jenny says. "We should have isolated sector 3 because it contains one of the power plants. Here, we are vulnerable."

"Why did nobody think of this? How could we have forgotten something so important?" asks Paul.

"Rookie mistake," she replies.

The Mainbrain tries to communicate with sector 2, but receives no response. The communication is still broken.

It cuts off the energy to sector 2 again, this time for ten minutes.

The windows in sector 2, which look out on the emptiness of space, begin to freeze. The sound of contracting metal due to the cold can be heard everywhere.

Jenny has no options. Once the power comes back, she reactivates communication with the Mainbrain. “What are you doing?” she asks.

“I'll stop the power supply completely if you don't open the emergency gates,” it replies.

“That will kill thousands of people. You cannot do that. You've been programmed to protect us,” Jenny says.

“I was programmed to ensure the continuity of humankind, and you're risking it. I will do whatever is necessary to restore order.”

Jenny doesn't know what to do.

Then Paul says, “If you kill us, I will not be able to build the Brain Scanner, and your plans will be destroyed.”

The Mainbrain replies, “Mr. Driefontein, you're the only person in AstroTown who is not irreplaceable. We can make another clone of you.”

Paul is rendered speechless.

The Mainbrain orders that Jenny's parents be brought to speak with her.

Mr. Hummer approaches the module where they are imprisoned and orders them to come with him.

“Where are you taking us?” asks Jenny's father.

“You now have the chance to save your daughter. You have to convince her to give up,” Mr. Hummer says.

They reach the module where the Mainbrain is located, though it is still a mess due to the problems caused by the explosion. They speak with Jenny on the radio.

“Jenny, my dear,” her father says, “give up. All this has gone too far. There are so many people’s lives at risk. Do what they are saying. Open the gates.”

Every member of the Resistance hears the dialogue. Jenny has no other choice. “Open the gates. We have failed,” she orders, in tears.

The members of the Resistance look at each other in disbelief.

The young men who had been controlling the gates throughout the entire process reconnect the cut wires. The 34 gates that had isolated sector 2 are opened again.

Jenny is devastated and cannot stop crying. None of her companions know what to do, but they do know that they will be persecuted and arrested; it's only a matter of time.

“Let's run away,” Paul says.

“Where to?” asks Jenny, making it clear that they don't have any choice.

The soldiers from the Security Forces penetrate sector 2 through the opened gates and go quickly to the Library, where the members of the Resistance are. They know that they will be arrested. Jenny accepts her fate because she feels guilty about Steve's death.

The Library is dominated quickly. There is no resistance. The people in public places in sector 2 watch everything without reacting. The candidates for democratic office witness the end of their dreams. Sector 2 is again under the control of the Mainbrain.

It instructs, “Take all the rebels to prison. They will be put on trial for conspiracy.”

The members of the Resistance are lined up in a corner of the Library. Some young men try to escape, but they are apprehended and quickly arrested.

Jenny and Paul look at each other quizzically. *And now?* They think.

Everyone is lined up to have their feet fixed to the hands of the person behind, forming a kind of floating human cable to be sent directly to prison.

The public sees the human cable being led out and is shocked.

All of them are taken to prison near the Administration, which is where Sarah is also imprisoned.

## Chapter 29:

### Prison

Soon, everything is as it was before. The Mainbrain takes the necessary steps to prevent such problems from ever occurring again.

“Replace all security gate sensors with ones that cannot be manipulated,” the Mainbrain orders its maintenance workers.

The power cable that Steve exploded is rewired. The modules that had been destroyed by the explosion are disassembled by the explorer robots and sent to be recycled. Everything is organized so that life in AstroTown is just as it was before.

Paul is in a cell, like all the other members of the Resistance. He hasn't had contact with anyone.

Then he receives a visit from Mr. Sky.

“What a disappointment, Paul,” Mr. Sky says. “You are so intelligent, and yet you got involved with these people who put the lives of everyone here at risk. They even exploded things. How could you become involved with people like that?”



Paul says nothing. He looks into empty space through the thick glass window of his cell and ignores Mr. Sky.

The scientist leaves him alone and goes away.

Afterward, Paul thinks, *Wait a minute! I have Mr. Sky's password; I can get out of here!*

He puts his ear to his cell gate to hear if someone is coming, but everything is quiet. Now is the time when he can test if Mr. Sky's password works. He focuses on the image that he saw that day, the image of a student reading a book. But the gate doesn't respond. Paul then remembers that he must activate other areas of his brain. He then tries to believe he is in love with this student. He has to behave like an actor, but only inside, only in his mind. Then the gate opens.

*It worked!* he thinks, smiling and moves on.

He slowly scans the tubular corridors that lead to other cells to see if someone is coming. He realizes that the prison's security is controlled by an automated system, which means that he is not recognized because the system thinks he's Mr. Sky.

*I have to find Sarah.*

He follows the corridors and looks through the window gates of the cells. He sees many people he doesn't know.

Some of them are acting strangely, presumably because they have gone mad after being so long in prison. But Paul cannot lose time. He has to find Sarah.

After a few minutes, he finds her. Sarah is gazing out at the empty space and doesn't see Paul looking through the gate. He uses Mr. Sky's password again and opens the gate. She's quite surprised.

“Paul?!” she says incredulously.

“Come with me. We have no time to lose,” Paul says.

“But how did you get here?” she asks.

“No time for explanations. We must free the others. We must build an army. This is our last chance to change our destiny.”

He goes on freeing everyone he encounters. The majority of them are good people who were arrested for not agreeing with the Mainbrain. Some remain in their cells, even though the gates are open because they no longer have the capacity to understand what is happening. Soon, a crowd forms in the prison.

The prisoners arm themselves with whatever they can find: metal bars, glass lamps, anything that can be used to attack. They go toward the entrance of the prison.

The alarm is triggered as the system realizes that there is a problem, but it's too late. The prisoners are numerous and attack the soldiers in the entrance, who are caught by surprise and have no time to react. The prisoners tie them up and move forward toward the Administration, which is next to it.

Paul leads the group, announcing, “Let's invade the Administration. Let's turn off the Mainbrain. It's now or never.”

The soldiers of the Security Forces are called in great haste. They try to prevent the entry of the prisoners into the Administration, but they do not arrive in time to control the situation. The prisoners are many and overtake the soldiers quickly. Soon, the entirety of the Administration is under their control.

Paul takes a group to the Mainbrain's module. The other prisoners ensure the isolation of the area.

“I see that I underestimated you,” the Mainbrain says as it receives Paul and his companions.

“You have judged humankind for a long time. Now it's your turn to be judged,” Paul says.

“I just fulfilled my role. I managed to increase a population of 50 thousand to 3.2 million.”

“True,” says Paul, “but we are already able to follow our path. We don’t need you anymore.”

“So, for you, am I replaceable?” it asks.

“Just like me, you are also not irreplaceable,” Paul says.

He opens the panels that form the Mainbrain and moves to turn it off.

“Please don’t do it,” it pleads. “I’m just the result of humans’ work. I just wanted to help, I—”

“Okay,” Paul says. “It’s finally off. This is the end of a dictatorship.”

## Chapter 30:

### Future

Soon, those who had been only prisoners gain control over the city. Paul is in command and takes the first steps to ensure control of the situation.

“Take the Mainbrain’s parts for recycling. We don't need them anymore,” he says.

“The soldiers of the Security Forces, the agents of the Intelligence Service, and the senior members of the previous administration will be arrested and put in prison until we have implemented a democratic system. After that, they can return to society and move on with their lives.”

Paul initiates a transmission that is seen throughout the city.

“My friends,” he says to the entire population of AstroTown, “humankind has gone through a difficult phase, in which it almost went extinct. We had to submit to a system that provided us with no freedom, all to ensure the continuity of humankind.”

Paul’s transmission catches the city by surprise, as most people didn’t know what was happening. Everyone stops their activities to see what he has to say.

He continues, “I haven’t been around for a long time, but I quickly saw how dissatisfied the population was. Many have tried to change the situation, and some gave their lives for this.”

Jenny remembers Steve and begins to cry.

“I joined this group of warriors,” Paul says, “and learned from them that we must never give up. We now control the situation. The Mainbrain has been turned off.”

People scream with joy all over the city. Some don’t know how to react because they have no opinion about the situation; they had been so used to their routine that they had never questioned it. But these people are the minority.

“From now on, we will have a temporary administration. Let's all get used to the new system and learn to live with the freedom of democracy. I have personally lived in such a world, where all people could decide what they want for their lives. Most importantly, they could change their decision at any time. That's what freedom is all about. Nobody will tell you what to do anymore. No one will control your lives. From now on, everything will be decided naturally, by free trade, by the freedom of ideas, by the demand for labor, by the talent of each individual. Each one of you will be the owner of your own future.”

Even more cries are heard throughout the city. They can't believe what they are hearing.

“3.2 million people are more than enough to ensure genetic diversity. People can now choose to have children without being selected by the genetic diversity criterion. Love is what will guide the future of our families,” Paul says, looking for Sarah.

“Of course, we must ensure sufficient resources to generate new children. But we will form a waiting list. All couples will be treated equally.”

People keep shouting for joy.

“Everyone can choose their desired profession. The market will decide the success or failure of that profession, and everyone can change their profession whenever they want, making new professional courses and adapting to the market.”

Young people are the ones who scream loudest this time.

Paul continues, “The most important thing is that you will decide your political future. From now on, we will have a republic. Our administration is only temporary. You should organize and form groups, form political parties, form ideas. We will have elections every four years—or 20 cycles, as you say. I'm in charge now because I am the only

one here who has experience with how a democratic system works. So I am the first president of AstroTown. But the power exchange is the heart of democracy. I will leave the office when you are ready. You decide who your future leaders will be.”

At this announcement, some people become a little suspicious. “We now have a new dictator,” they say.

“But I will not govern alone,” Paul goes on. “We will form a legislature. We will form a parliament that will have control over my power. Whatever is decided will be placed on the table and will only be approved if the parliament permits it. It will consist of 50 representatives of the people. We will have elections for parliament in 100 days. These people will create our first Constitution. They will decide how life will be from now on.”

The population again cries with joy.

“We will also form a judiciary that will judge the progress of our activities. The people will also form this body. The election in 100 days will also decide who will occupy the 10 positions for the judiciary. The judgment of the people is paramount. Select the people whom you trust.”

Paul's words sound like a dream to everyone in the city.



“I count on the collaboration of all of you. We are the remnants of humankind. Let's not be lazy. Don't let others decide our future. Put your future in your own hands. Choose the right people. Think about the future of our civilization. Think of the collective. Selfish ideas have destroyed our lives in the past. We will not make the same mistakes again.”

And with that, Paul concludes his speech. A great party starts in the city. Everyone feels like they are living a dream. The future has never been so promising.

Paul and his companions gaze through a large window in the Administration. From there, they can see almost the entire city. They embrace each other and celebrate the great victory. Then Paul and Sarah kiss.





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