

ASTRO TOWN

The Future of Humankind



Saulo Fonseca

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by Saulo Fonseca

IPHONE EDITION

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

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(www.astrotown.de)

The figure used on the cover was designed by Linda Salzman Sagan for the Pioneer Project of NASA.

(en.wikipedia.org/wiki/Pioneer_plaque)

In memory of Carl Sagan

Preface

The development of humankind can be compared to that of a single individual. Humankind has lived its phase of childhood, wanting to accomplish great discoveries. At that time, it thought that it was the center of universe, tied to many claims without foundation and with a certainty to be special.

Many people are still in this phase.

Today, humankind is in adolescence and loves playing with technology. It realizes that others living creatures in this planet also deserve to be respected. But humans still fight each other without tolerating their differences and experience difficulty in self-

understanding, 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 about this phase. Whether humankind is expelled from the planet or whether it decides on its own to

abandon it, the fact is 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 find other life forms that are also living in space in a similar phase of maturity.

Find out how this independence process can occur and take a look at the

difficulties that will be encountered on the way. The question is always the same: Is humankind able to redeem its mistakes and do 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 been recently married, moves in the direction of 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 that 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 to 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 comes to 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 give 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 the 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 getting impatient. He finally awakens and, as he opens his sleeping bag, he realizes that the two scientists that 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 impelling 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 gentleman,” 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 crows, 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 to 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 give the news? Should I pretend that I don't get it, and then give a shout of joy? Or should I go straight to the point?

Her parents are waiting. They had come to Jenny's house because they knew that she would come in 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, not containing her anxiety.

Crying, Jenny says, “I got the authorization! You will be a grandma.”

Jenny's mother begins to cry and scream with joy. Her father also doesn'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. 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 doesn'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 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 module 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 have 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 something like Mars,” the scientist explains.

“And why you don’t 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 in 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 103 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.

“The 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 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 the success of Paul's reactivation spreads throughout the city, and along with it comes the following statement: All authorizations to have children are now suspended.

The administration of AstroTown wants to create clones with the brain data of

strategic persons in charge of the city. The scarce resources to create a new human being 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 give an authorization and then withdraw 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 in AstroTown there is 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 they are born. The people themselves like the system, especially women. Sex is only used for pleasure.

A couple that wants a child puts their genes in the Incubator, has their DNA

combined, and the child grows in a structure like an egg that simulates the mother's uterus. When the child is mature, the parents take it home. It is a dream to be able to have one's own child; it is a privilege for the few.

Authorization to have children is a topic that is quite disputed. Couples are selected to increase the

genetic diversity of
AstroTown. Genetic
diversity is an important
point when one population
declines in numbers. If the
differences between people
are very small, several
health problems occur. In
these cases, the survival of
the species becomes
threatened. This had
occurred on earth with
various animals, eventually
leading them to extinction.

Humanity had faced this problem in the early years of AstroTown. After the end of earth, there were only about 50 thousand survivors of humankind, so a strict population control was introduced. New children are always a combination of two very genetically different people, thus ensuring a growing diversity.

But the Administration is willing to put that system aside to preserve its strategic interests.

Jenny is angry. She leaves home feeling furious.

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

“Leave me alone,” Jenny says. “I need to think about

what I will do. I cannot stay here still, 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 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 the 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 get into 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 as an obligation, because he feels forced by the will of the lab staff. He takes every free moment to

go around the city and observe everyday life.

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

But 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. They 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 that is 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 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,
and 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 to 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 starts a large protest in the Central Square. She doesn't tacitly accept the fact that her authorization for a child was suspended, and was able to mobilize almost all of the students at her university. A huge crowd gathers. Many of them hold placards with slogans and drawings of a

DNA molecule with a red stripe across it, something like 'DNA forbidden'.

Everyone makes a lot of noise.

Jenny speaks through a megaphone. “It's absurd what is happening. The Mainbrain cannot remove the basic right to have children only to preserve its interests. The genetic diversity of AstroTown is

threatened. The clones have to be discontinued.” The crowd applauds.

Soon, the alarms of the Security Forces sound. They are a military troop that emerges whenever there is a problem. They are trained to rescue, treat injuries, and maintain order. The demand for this type of activity is rare in the city, but the Mainbrain has to be

prepared in case an emergency arises. A protest is something that the troop doesn't expect, but they are the only ones who are able to deal with the problem.

The soldiers of the Security Forces arrive at the Central Square. The Mainbrain had ordered that the protest must be curtailed at all costs.

Jenny and the other members of the Student

Movement continue to incite the crowd, ignoring the soldiers.

Some students begin to react aggressively, provoking the soldiers. The latter, however, aren't about to allow this and advance on the students like a steamroller. Fights happen clumsily due to the gravity-free environment, and students are arrested. Smoke

bombs explode. Jenny runs away from the riot, hiding along with other students. She is particularly persecuted for having led the movement.

The press broadcasts the event live over the news. Despite the danger, many people go to the Central Square to see the protest with their own eyes, which creates even more havoc.

The transport system is crowded. Elderly people cry desperately. Nobody had ever seen anything like that in the typically quiet routine of AstroTown.

Gradually, the soldiers of the Security Forces take control of the situation.

Access to Central Square is temporarily blocked until the situation becomes stable again.

Several students are arrested and lined up on one side of the square, under the supervision of the soldiers. They are sent to the police. Their parents arrive, desperately trying to ease the situation.

Several hours go by until the Central Square returns to its normal routine. But most students don't get punished; they just have to

pay a small fee and go home. Only the leaders of the Student Movement are being sought 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 inconsequential. Would you agree?”

In reply, she says,
“Sometimes it's hard to believe that this all 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 theater.”

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

Chapter 13:

Freedom

Steve, a brave young man, is the leader of a secret organization called Freedom. The members of this organization try to resist the dictatorship imposed by the Mainbrain and seek a way to implement a democracy in AstroTown.

People have heard a lot about the old society, the democracy, and the freedom of ideas. This is explained by the Mainbrain as being 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 computers of the

Administration to obtain detailed maps of the entire city. The Intelligence Service knows of the organization's existence, but not who its members are.

The members of Freedom often meet in secret places. They are in an old ore shed which 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 to establish a 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 at the meeting, for she is also 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 will be.”

Chapter 14: In Love

The next day, as agreed, Paul goes to Sarah's concert. The theater is full. The performance of the orchestra is excellent; they play music by Handel and Tchaikovsky. They also play compositions from the members of the orchestra, in one piece of which Sarah has a major role with a

violin solo. She plays two violins at the same time, one with her hands and another with her feet. Paul is impressed. The audience is going into delirium. The deserved applause echoes throughout the acoustic shells of the theater.

After the concert, Paul finds Sarah in a dressing room behind the theater. “I’m really impressed,” he says.

“Who am I to judge your performance? You are an expert.”

Sarah humbly replies, “It's just years and years of dedication.”

“I'm sure you have a special passion for what you do.”

“You're right. I like what I do. I was not unhappy when I was chosen to be a

violinist. Many orchestra members would like to perform other activities, and they are making music just because of the obligation of the office,” Sarah says.

“You mean that people are chosen to be musicians? People don’t do this voluntarily?” asks Paul, shocked, inadvertently revealing his status as a foreign member of the

society. Paul realizes that he has said something he shouldn't have and becomes nervous.

Sarah doesn't understand Paul's comment and says, "Yeah, like all other professions, this one is also determined by demand. The Mainbrain often makes the wrong choices for people's professions."

Paul cannot continue pretending to be a normal member of that society. He resolves to tell Sarah the truth. “Sarah, I must tell you something. My name isn't Drummond. I'm the Paul Driefontein whom everyone is talking about.” As he says this, he takes off his white wig.

Sarah is surprised, and takes Paul's hand in hers. “How

interesting,” she says.

“Then everything here is new to you?”

Paul says, “I hope you aren't like some other people who hate me for what I represent. Because I'm an outsider in this society.”

“How could I hate a sweet and nice person like you?” says Sarah. “I now understand your clumsy

way of dealing with our everyday life.”

The two laugh together and Paul decides to remove the makeup that gives him the appearance of being albino.

“You did a great job,” Sarah says. “Your appearance would really attract attention wherever you go.”

Sarah is starting to have feelings for Paul. He's like a child lost in the midst of this strange reality. They agree to meet more often, and Sarah promises to explain everything that Paul wants to know.

The days go by and Paul and Sarah meet each other with increasing frequency. This attracts the attention of the laboratory team that

supervises him. In a routine meeting with the Mainbrain, Mr. Sky says, “He’s getting more and more integrated with the routine of AstroTown. After satisfying his curiosity about everyday life, he now even has a girlfriend.”

The Mainbrain replies, “It is important that he feels full of his mental facilities. But keep him under observation.

He needs a routine so that he doesn't go crazy with the reality here. Keep this woman under observation as well. We must be sure of her intentions.”

Sarah and Paul always meet each other in public and talk quietly. Sarah explains everything about the routine of the residents of AstroTown and they laugh a

lot about how different it is from life on earth.

They are being observed by an agent of the Intelligence Service called Mr. Hawk, who records everything he can about Paul's friendship with Sarah.

Sarah wants to talk to Paul in a more private setting; she wants to see him as he is. She has a certain

admiration for his colored look, which is hidden in their public meetings. Paul also likes to see how the home of a normal person who lives in AstroTown looks. Sarah asks him to visit her apartment.

“I'd love to,” Paul replies. They go to Sarah's home. Her apartment is small, but comfortable, filled with

decorative touches that only a woman can add.

“Here you can feel comfortable,” Sarah says. She begins to help Paul take off his robes and his makeup. His colored skin and black hair awaken her deepest feelings. Paul also no longer contains himself and a passionate kiss soon takes hold of them both. They take off their clothes

and Paul experiences what sex is like when one is weightless.

Mr. Hawk, who had followed the couple to Sarah's home, sends a message to the Mainbrain: “We need to intercept the communications of this woman. That's going too far. We need to find out the truth about her intentions.”

Chapter 15:

Ambush

The next day, Sarah gets in touch with the members of Freedom to arrange another meeting. She doesn't know that Mr. Hawk is intercepting her messages. He makes contact with the Mainbrain, saying, "This woman is a member of Freedom. They are

organizing a meeting in the old ore shed.”

The Mainbrain replies,
“This is the opportunity we have been waiting for. Gather our best agents and catch them red-handed. We cannot let their ideas grow and contaminate Mr. Driefontein.”

Mr. Hawk summons the best agents in the

Intelligence Service of AstroTown. They are trained to fight organized crime. As Sarah goes to the old shed, she is quietly followed by the agents.

Arriving on site, the agents let the meeting go ahead and remain hidden while they observe. They have to film to provide evidence against the members of Freedom.

When she starts the meeting, Sarah is very happy. She doesn't want to reveal the level of intimacy she has reached with Paul, but says, "I have great news. I met Paul Driefontein. We talked a lot at the Central Square. He's a great person and personally lived in a democracy. I haven't talked to him about Freedom, but I'm sure he can help us."

Steve says, “This is really important. With him we can have a much greater sense of how to deploy the democratic system. Are you sure we can trust him? Bringing him to our meeting can be very risky.”

“I first want to make him familiar with our ideas,” Sarah says. “If I realize that he’s sympathizing with them, I will be able to tell

how much he's influenced by the Administration. All this has to be done to ensure our safety and his.”

Then, suddenly, agents led by Mr. Hawk invade the shed. They shout, “Keep quiet! You are arrested for conspiracy against the stability of AstroTown.”

But firearms do not exist in AstroTown, since a shot in

the pressurized environment of the city could generate an explosion. The agents have only electroshock weapons, which have a limited scope, allowing some members of Freedom to retaliate.

Steve fights the agents. But he realizes that the members of Freedom are fewer in number, and tells everyone to flee.

Some can escape, among them Steve, but Sarah is immobilized by the electroshock weapons of the agents and becomes unconscious. Several members are arrested. All of them are 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 follow the corridors in the laboratory until they reach Mr. Berg's room, where Paul had heard the explanations about the fate of humankind. Mr. Berg receives them and tells 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 the involvement of Sarah.

“As you can see,” Mr. Berg says, “this woman was using you. She just 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 thinks of a way to find Sarah. He will not just accept the facts; he has to

do something, 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,
how would he get there? He
has to find a way.

Chapter 17: Hidden

Jenny, who is now a fugitive, talks with other members of the Student Movement to find a way to change the Mainbrain's plans.

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

“What are you talking about?” Jenny says.

“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 loose,” says the young man.

“I did not know there was such an organization. Where did you see this news?”
Jenny asks.

“A photo of people who have not been arrested is being released. They are asking for the cooperation of the population. They are saying these people are 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 had escaped
being arrested during the
tragic meeting, thinks
exactly the same, *I need to
join these students. They are
quite numerous.*

He goes to the place where Jenny's university is. Using disguises to avoid being recognized, he asks people he meets about the members of the Student Movement. The people give no information, but warn Jenny that this 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 that he's not armed and doesn't have a tracker.”

Some students intercept the strange man who runs around the university. “Hey, are you the guy who is wanting to talk to Jenny? If so, you will have to follow our rules.”

“No problem,” says Steve. He allows himself to be searched and blindfolded. He’s then taken to Jenny’s secret location, at which point he removes his disguise so that people can see who he really is.

“Are you Jenny?” asks Steve.

“Yes, I am,” she replies.

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

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

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 calls the members of Freedom who have not been arrested.

“My friends,” Steve says at the meeting. “During the past few centuries we have 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 of 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 have to 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 his mind's eye.

“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 the city. We can establish a democratic system that shows all the other people that we can live otherwise.”

Jenny asks, “But how so? 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 in order 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 make everyone speechless. It's very ambitious. No one has ever done anything like that before.

“One of our members met recently with Mr. Driefontein and told us that he can help us by using 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 has a high-ranking post in AstroTown and access to almost every module in the city. Paul wants to use him to meet Sarah.

Paul is a brain expert. He 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 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. Such a device would surely be cause for rioting among the people, but Paul has only one goal in mind: Sarah.

After completing the device, Paul approaches Mr. Sky unperceived 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 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 first must 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'm 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 then 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, making sure 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 look at the

best way to isolate one part of the city.”

He shows them a holographic map of AstroTown, which he acquired by invading 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, 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 on 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 bigger modules have become public facilities such as the university. It is the most rebellious part of

AstroTown, where new ideas always arise. Sector 2 is equivalent to 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.

“By 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, so that it can only be handled 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, they must do so now. We will probably be isolated here for a long time until we can force the Mainbrain to let us take 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. Certainly there will be problems which we have not been counting on,” Steve says. “We must be prepared for everything.”

Paul decides to wait until the isolation process of

sector 2 has concluded before trying 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 together 34 members of the Resistance and shows them how the gates' pressure sensors work.

“I got this sensor here with a friend who works for the maintenance system. All sensors in the city are like this one. They are linked to the Administration by this red wire. We simply have to open the panel where the sensor is located and cut this wire,” he says.

Everyone is watching closely.

“Then, at the appointed time, you cut this green wire. It’s sending a signal to the emergency gate saying that the pressure is in order. 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 in the vicinity of where her husband works. She is well disguised so as not to be recognized on the streets.

Her husband was sought out by the Intelligence Service after the protest in the 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 use media that cannot be traced, such as handwritten notes, hidden in places that only they both know. But it's now been a few days since he's had news 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 watched,” Jenny warns.

She tells him briefly about the plans of the Resistance.

“Tomorrow you must miss work. Stay home. We live already in sector 2 and don't have to worry about it. If

you are at work, you would be isolated outside of sector 2,” Jenny says.

“But are you all really sure of this plan? Have you thought about all the details?” he asks.

“Steve, the new leader of our group is a man with considerable experience, who has already been fighting the Mainbrain for a

long time. I trust him. He's our only hope to reverse this situation.”

“And your parents?” he asks. “They will be worried. They need to know what is happening.”

“I've thought about it. I'm afraid they are going to be sought out and run some risk,” Jenny says. “But

you're right. They have to be informed.

“Please visit my parents. They don’t live in sector 2. They will be worried when the campaign happens. Try to convince them to come to our house, to live with us while the campaign is occurring. But be careful not to be followed,” she finishes.

“Okay. I will be discreet,”
her husband says.

He goes to the house of
Jenny's parents.

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

“Please come with me. We
have to talk in a neutral
place. Maybe someone here
is recording our
conversation,” he says

quietly in Jenny's father's ear.

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

“I understand that she wants to have us at her side,” Jenny's father says. “But that may awaken suspicion. I don't want to disrupt her plans. It is better we stay here in our house while all this is happening.”

Jenny's husband
understands this attitude and
goes away.

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 thinking of something bigger while the democratic process progresses. He calls a new meeting with members of the temporary administration of sector 2.

“My friends,” he says, “we were able to generate advances never seen before

in this city. You are all to be congratulated. The people of sector 2 are on our side, and I'm sure that all of AstroTown would be as well if we could install a democracy in the whole city.”

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

“This is precisely the point. The Mainbrain. This machine that was supposed to serve us and not become our dictator. We have to find a way to turn it off,” 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 must be

supplied with electricity to operate. We can interrupt the electricity supply to the modules where the Mainbrain locates,” says Steve. “I suggest that we form a team that will leave AstroTown using space suits and destroy the cables that supply power to the Mainbrain.”

“But this is very dangerous,” says another

member of the group. “It has been a long time since anybody has taken the risk of being outside of AstroTown. The robots are being used to perform all activities outside the city.”

“I know,” Steve says. “It will be a life-or-death mission. We have 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 leader at the moment,” says Jenny. “If something happens to you, our independence will be impaired.”

“I then pass control on to you, Jenny. From now on, you will be responsible for 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 of the members at the meeting are nervous, as 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 says,
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 very hard,” Mr. Hummer reports. “I destroyed three drills and advanced just 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 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 the sector 2,” the Mainbrain says.

Mr. Hummer continues drilling the gate. A member of the Resistance hears the drilling on the other side and tells 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 that a young man is moving briskly in the opposite direction on the other side of the gate.

The young man, frightened as he looks back and sees 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 emergency gate.”

“As I suspected,” the Mainbrain says. “It is clear that the people who protested in the 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 that the relatives of those who led the protest must be interrogated.

Mr. Hummer and his men invade the home of many such residents, among whom are 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 from each other 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.”

The same phrases were spoken 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 go outside the city. Paul is with them, as he wants to support the group, helping them from within sector 2 if necessary.

“My friends,” says Steve, “this one is the maintenance module in sector 2. Here are some space suits so that we

can get out of AstroTown. The person responsible for maintenance will tell us how we shall use them.”

An old maintenance worker, who has not used such suits in years, strives not to miss any detail of how they should behave outside the city. He shows them how to dress and says, “Outside the city there are, in all directions, wire ropes 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 float 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 in this module 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 place where the astronauts are is closed off in order to not lose any air 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. Exit to 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 in order to avoid a collision with the city. Numerous laser beams shoot in various directions in order 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,
“Nooooooo!”

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.

A kind of sword fight ensues between the robot with its drill bit and Steve with his metal bar. Jerky and awkward movements can be seen when Steve tries to hit some of the cables of the robot in the hope of disabling it. The other astronaut also gets a metal bar and helps him. Sparks fly due to the friction of the metals.

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 that 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 to 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 companion knows 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 of 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.

Afterwards, 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 towards 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 own 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 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 the democracy. I will leave the office when you are ready.

You decide who your future leaders will be.”

At this announcement, some of 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 who 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.





This is the first book by Saulo Queiroz da Fonseca. He is a 35-year-old Brazilian and lives in Germany with his German wife and three daughters.

saulo@astrotown.de