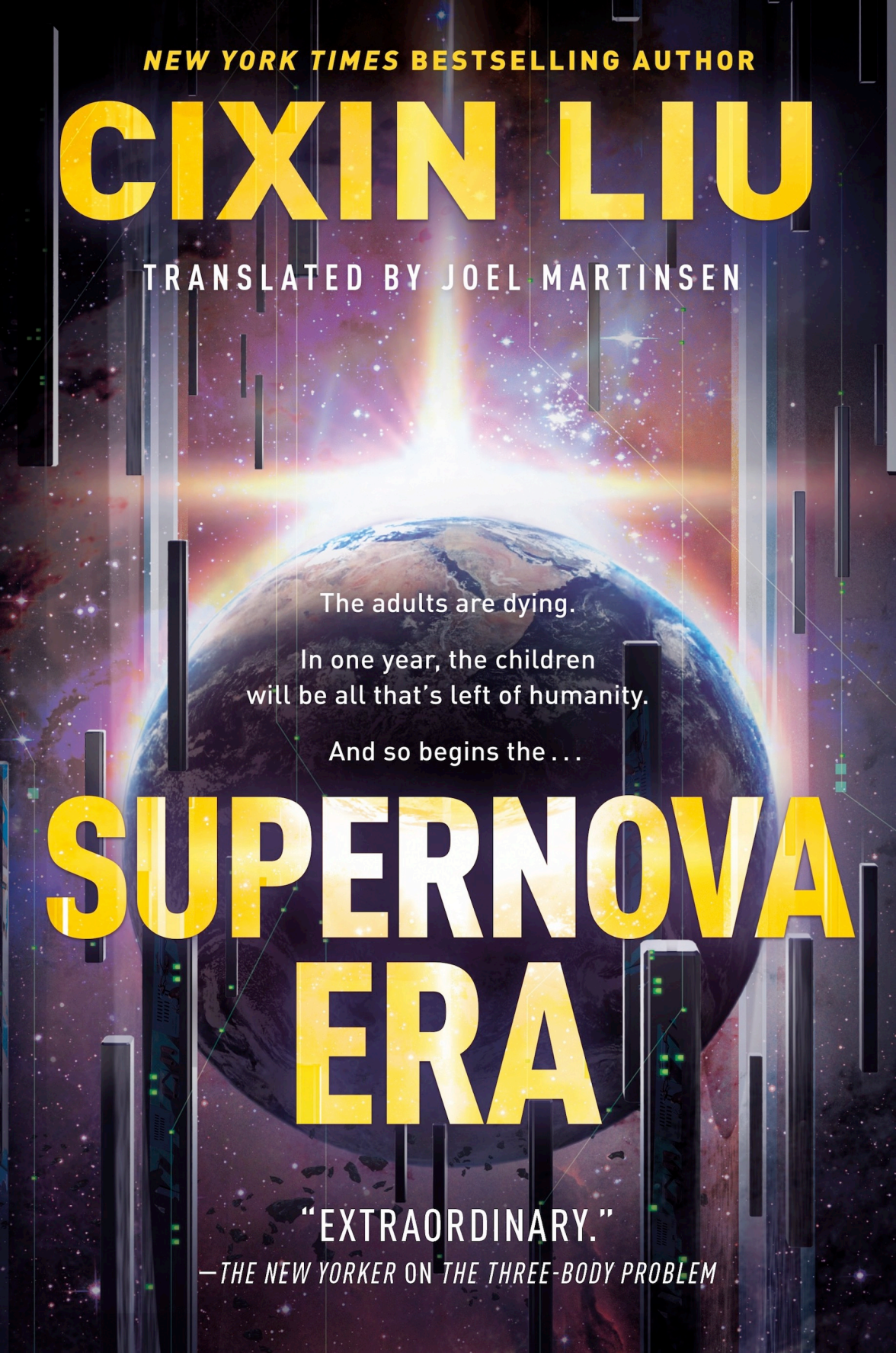
NEW YORK TIMES BESTSELLING AUTHOR
CIXIN LIU
TRANSLATED BY JOEL MARTINSEN
The adults are dying.
In one year, the children
will be all that's left of humanity.
And so begins the . . .
SUPERNOVA ERA
"EXTRAORDINARY."
—THE NEW YORKER ON THE THREE-BODY PROBLEM

SUPERNOVA ERA

TOR BOOKS BY CIXIN LIU

The Three-Body Problem

The Dark Forest

Death's End

Ball Lightning

Supernova Era

SUPERNOVA ERA

CIXIN LIU

TRANSLATED BY JOEL MARTINSEN

A TOM DOHERTY ASSOCIATES BOOK
NEW YORK

This is a work of fiction. All of the characters, organizations, and events portrayed in this novel are either products of the author's imagination or are used fictitiously.

SUPERNOVA ERA

Translation by Joel Martinsen

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For my daughter, Liu Jing.
May she live in a world of fun.

CAST OF CHARACTERS

ADULTS

Zheng Chen, homeroom teacher for a graduating middle-school class

Zhang Lin, agent with the Central Extraordinary Commission

The president of China

The premier of China

CHINESE CHILDREN

Huahua, a handsome, charismatic boy

Specs, an introverted boy with a keen mind

Xiaomeng, a quiet, respected girl mature beyond her years

The preceding three make up the central leadership

General Lü Gang, chief of general staff of the People's Liberation Army

Du Bin, ambassador to the United States

Lieutenant Wang Ran, tank driver

Second Lieutenant Wei Ming, armored infantry

Air Force Major Jin Yunhui, J-10 fighter pilot

Yao Rui, power station engineer

Feng Jing, Yao Pingping, nursery staff

Li Zhiping, letter carrier

Chang Huidong, barber

Zhang Xiaole, cook

OTHER CHILDREN

Secretary General Will Yagüe (UN)

President Herman Davey (USA)

Secretary of State Chester Vaughn (USA)

Chief of Staff Frances Benes (USA)

Major General Dowell (USA)

Vice President William Mitchell (USA)

General Harvey (USA)

Prime Minister Nelson Green (UK)

President Jean Pierre (FR)

Prime Minister Ōnishi Fumio (JP)

President Ilyukhin (RUS)

Marshal Zavyalova, chief of general staff (RUS)

Prime Minister Jairu (IND)

Prime Minister Lê Sâm Lâm (VIE)

CONTENTS

SUPERNOVA ERA

PROLOGUE

In those days, Earth was a planet in space.

In those days, Beijing was a city on Earth.

In the sea of lights of this city was a school, and in a classroom in that school, a class was holding a middle-school graduation party where, as in all such events, the children were talking about their aspirations.

"I want to be a general!" said Lü Gang, a skinny kid who gave the impression of power disproportionate to his size.

"Boring!" someone said. "There won't be any fighting, so all a general can do is lead troops in drills."

"I want to be a doctor," a girl named Lin Sha said in a quiet voice, to mocking laughter.

"Yeah, right. Last time we went to the countryside, even the sight of cocoons freaked you out. And you want to cut people open?"

"My mom's a doctor," she said, either as proof she wasn't frightened, or to explain her reason for wanting to be one.

Zheng Chen, their young homeroom teacher, had been staring out the window at the city lights, lost in thought, but now turned her attention back to the class.

"What about you, Xiaomeng. What do you want to do when you grow up?" she asked the girl next to her, who had also been staring out the window. The girl was plainly dressed, and her large, spirited eyes revealed a melancholy and maturity beyond her years.

"My family's not well-off. I'll only be able to go to a vocational high school," she said with a small sigh.

"What about you, Huahua?" Zheng Chen asked a good-looking boy whose large eyes were always lit up with delight, as if the world was perpetually a riot of newly exploded fireworks.

"The future's so cool I can't decide. But whatever I do, I want to be the best!"

Someone said they wanted to be an athlete, someone else a diplomat. When one girl said she wanted to be a teacher, Zheng Chen said gently, "It's not easy," and then turned back to stare out the window.

"Did you know Ms. Zheng's pregnant?" a girl whispered.

"That's right. And the school has cutback layoffs scheduled for right around the time she'll be giving birth next year, so things don't look good," said a boy.

At this, Zheng Chen laughed. "I'm not thinking about that right now. I'm wondering, what will the world be like when my kid is your age?"

"This is boring," said a small, scrawny kid. His name was Yan Jing, but everyone called him "Specs" because of the thick glasses he wore for nearsightedness. "No one knows what the future holds. It's unpredictable. Anything could happen."

"Science can make predictions," said Huahua. "Futurologists can."

Specs shook his head. "It's science that tells us that the future's unpredictable. Any predictions from those futurologists are imprecise, because the world is a chaotic system."

"I've heard about that. When a butterfly flaps its wings, there's a hurricane on the other side of the world."

"That's right," Specs said, nodding. "A chaotic system."

Huahua said, "My dream is to be that butterfly."

Specs shook his head again. "You don't understand at all. We're all but-

terflies, just like every butterfly. Every grain of sand and every drop of rain is a butterfly. That's why the world is unpredictable."

"You once talked about an uncertainty principle . . ."

"That's right. Microparticles can't be predicted. They only exist as a probability. So the whole world is unpredictable. And there's the theory of multiple worlds, where when you flip a coin the world splits in two, and the coin lands heads in one world and tails in the other . . ."

Zheng Chen laughed. "Specs, you yourself are proof enough. When I was your age, I'd never have imagined that one day a middle school student would know so much."

"Specs has read lots of books!" said another child, and others nodded.

"Ms. Zheng's baby is going to be even more amazing. Who knows—maybe genetic engineering will let him grow a real pair of wings!" Huahua said, and everyone laughed.

"Students," their teacher said as she stood up, "take a last look at your campus."

They left the classroom and strolled with their teacher through the grounds. Most of the lights were off, and the city lights that shone in the distance lent the campus an air of hazy calm. They passed two classroom buildings, administration, the library, and finally the row of Chinese parasol trees before reaching the athletic field. The forty-three children stood in the center surrounding their young teacher, who opened her arms to the sky, its stars dim under the lights of the city, and said, "Now, children, childhood is over."

In those days, Earth was a planet in space.

In those days, Beijing was a city on Earth.

It may seem like an insignificant story. Forty-three children leaving their peaceful school and continuing their respective life journeys.

It may seem like an ordinary night, a moment in the flow of time between the endless past and the limitless future. "One can't step twice in the same river" is nothing more than the babbling of an ancient Greek, for the river of

time is the river of life, and this river flows endlessly at the same unchanging speed, an eternal flow of life and history and time.

That's what the people of this city thought. That's what the people of the plains of northern China thought. That's what the people of Asia thought. And that's what the carbon-based life-forms called humans everywhere on the planet thought. On this hemisphere, they were being lulled to sleep by the flow of time, convinced that the sacred eternal was unbreakable by any force, and they would wake up to a dawn identical to that of countless previous mornings. That faith, lurking in the depths of their consciousness, granted them the same peaceful dreams woven for untold generations.

It was an ordinary school, in a peaceful corner of a brilliant night in the city.

Forty-three thirteen-year-olds and their homeroom teacher looked up at the stars.

The winter's constellations, Taurus, Orion, and Canis Major, were already below the western horizon, and the summer's, Lyra, Hercules, and Libra, had been up for a while. Each star was like a distant eye blinking at the human world from the depths of the universe. But on this night, the cosmic gaze was somewhat different.

On this night, history as known to humanity came to an end.

1
THE DEAD STAR

THE END

In the space within a ten-light-year radius of Earth, astronomers discovered eleven stars: the triple-star system formed from Proxima Centauri, Alpha Centauri A, and Alpha Centauri B; two binary-star systems, Sirius A and Sirius B, and Luyten 726-8 A and Luyten 726-8 B; and four single stars, Barnard's Star, Wolf 359, Lalande 21185, and Ross 154. Astronomers have not ruled out the possibility that other stars, either especially dim or obscured by interstellar dust, are waiting to be detected.*

Astronomers had noticed in this area the presence of a large amount of cosmic dust, like a dark cloud floating in the black night of space. When UV sensors on a satellite were trained on this distant cloud, a peak of 216 mm was found on the absorption spectrum, suggesting that the cloud was likely formed from carbon microparticles; the cloud's reflectivity suggested that these particles were covered in a thin layer of ice. The particles were in the 2–200 nm range, roughly the same as the wavelength of visible light, rendering it opaque.

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* Stars discovered after this book's original date of publication include the dwarf stars Luhman 16A and Luhman 16B (announced in 2013), and sub-dwarf WISE 0855–0714 (in 2014).

It was this cloud that blocked a star eight light-years from Earth. Twenty-three times the diameter of the sun and sixty-seven times its mass, the star was no longer main sequence but was in the final phase of its long evolution, its waning years. We'll call it the Dead Star.

Even if it had a memory, the Dead Star would not remember its childhood. It was born five hundred million years ago out of a mother nebula. Atomic motion and radiation from the galactic center disrupted the stillness of the nebula, whose particles congealed around a center under gravitational attraction. This stately dust storm endured for two million years, while in its center, hydrogen atoms began to fuse into helium. The Dead Star was born out of this atomic furnace.

After a dramatic childhood and rocky adolescence, fusion energy arrested the collapse of the stellar crust, and the Dead Star entered a lengthy middle age, an evolution that took place over hundreds of millions of years instead of the hours, minutes, and seconds of its childhood, bringing a new point of calm light to the galaxy's vast starry ocean. But a flyby of the Dead Star's surface would have revealed that this calm was illusory. It was an ocean of atomic fire, enormous waves of searing flames that churned red and flung high-energy particles out into space like a storm swell. Tremendous energy erupted from the star's depths and surged in blinding waves in that sea, over which an endless nuclear storm of constant hurricanes raged, and dark red plasma undulated under a strong magnetic field in million-kilometer tornadoes reaching into space like the tendrils of a red tide. . . . No human mind could grasp the sheer size of the Dead Star; against that sea of fire, Earth was like a basketball tossed into the Pacific Ocean.

The Dead Star ought to have been bright in the visible sky. With an apparent magnitude of –7.5, if not for the interstellar dust incubating another star that sat three light-years distant and blocked its light from reaching Earth, it would have shone on human history with a light more than five times brighter than Sirius, the brightest star in the heavens, bright enough to cast shadows on a moonless night, a dreamy blue adding a dose of sentimentality to human history.

The Dead Star burned a glorious existence without incident for 460 million

years, but the cold hand of the law of conservation of energy made certain internal changes unavoidable: the fusion fire depleted hydrogen, and the helium by-product sank to the star's center and accumulated over time. This change was an exceedingly slow process for such a giant object, one for whom the whole span of human history was the snap of a finger, but after 480 million years, the depletion had a tangible effect: enough of the more inert helium had accumulated that the source of the star's energy waned. It had grown old.

But other, more complicated physical laws determined that the Dead Star would end its life in a blaze of glory. The density of the helium at its center increased, and the fusion that continued in the surrounding hydrogen produced temperatures high enough to initiate fusion in the helium, consuming nearly all of it at once in a nuclear inferno. The helium fusion caused the Dead Star to shine with a powerful light, but since its energy was only a tenth of that of hydrogen, the effort only further weakened the star. Termed a helium flash by astronomers, the phenomenon's light reached the patch of interstellar dust three years later, where the relatively long-wavelength red light penetrated the cosmic barrier. That light traveled for another five years before arriving at a far smaller, ordinary star, the Sun, as well as the handful of cosmic dust attracted by its gravitational pull, known to humans as Pluto, Neptune, Uranus, Saturn, Jupiter, Mars, Venus, Mercury, and of course Earth. This took place in 1775.

That evening, in Earth's northern hemisphere, in the English spa town of Bath, outside a high-end music hall, a German-born organist by the name of Frederick William Herschel was gazing hungrily into the universe through a telescope of his own design. The glittering Milky Way so called to him that he poured his entire life into telescopes, to the extent that his sister Caroline had to spoon him his meals while he continued observations. During the lifetime the most distinguished of eighteenth-century astronomers spent in front of the lens, he marked seventy thousand stars on the map, but he overlooked the one that became most significant to humanity.

That night a red body suddenly appeared in the western sky in the constellation Auriga, at the midpoint between Capella and Beta Aurigae. An apparent magnitude 4.5, it wasn't bright enough for a casual observer to pick out even if they knew its location, but to an astronomer, the red star was nothing less than an enormous lantern that Herschel might have discovered, were he viewing the heavens with the naked eye like pre-Galilean astronomers rather than being glued to the lens. And that discovery might have altered the course of human history some two centuries later. But his attention was entirely commanded by that telescope, just two inches in diameter, pointed in an entirely different direction, as, unfortunately, were telescopes at the observatories in Greenwich and Hven, and everywhere else in the world, for that matter. . . .

The red star in Auriga shone for the whole night, but the next night it had disappeared.

That same night in that same year, on the continent called North America, eight hundred British soldiers crept along a road to the west of Boston, their red uniforms giving them the look of a line of ghosts in the night. Clutching muskets in the chilly spring wind, they hoped to reach the town of Concord, twenty-seven kilometers from Boston, before daybreak, and were under orders from the Massachusetts governor Thomas Gage to wipe out the minutemen's arsenal and arrest their leadership. But when the sky turned gray and the woods, huts, and pasture fences took shape as silhouettes against the growing light, the soldiers looked about them and found they had only gotten as far as the town of Lexington. From a thicket ahead of them came a sudden flash, and an earsplitting crack broke the stillness of the North American dawn, closely followed by the whoosh of bullets: the quickening in the womb of the embryonic United States of America.

On the vast continent on the other side of the Pacific, a civilization had already endured for five thousand years. Now, in that ancient land, people

were heading day and night toward the capital of that age-old kingdom carrying huge quantities of ancient books collected from every corner of the land. The imperial edict to compile the *Sikuquanshu* had been issued two years ago, and books were still streaming endlessly toward the capital. In a massive wooden hall in the Forbidden City, the Qianlong Emperor was constantly making the rounds of the rows of bookcases holding the works amassed for the library project, now divided into four general categories, Classics, Histories, Masters, and Collections, and stored on these huge shelves.

Leaving his attendants outside the door, the emperor carefully entered the archives, three scholars wearing peacock feathers on their hats,* Dai Zhen, Yao Nai, and Ji Yun, leading the way carrying lanterns. It was they, not the titled imperial clansmen, who were the true compilers of the encyclopedia. The tall cases slipped slowly past the four men, like black city walls in the dim lantern light. They came to a pile of bamboo slips; the emperor picked up one bundle in trembling hands, the wavering yellow light making him feel as if he were at the dark floor of a book canyon, the canyon of time's mountain, and beneath the book cliff face, countless ghosts from across five thousand years took silently to the air.

"How time flows onward, Your Majesty,"† whispered one compiler.

Unimaginably far out in space, the Dead Star continued its march toward doomsday. There were more helium flashes, but smaller in scale than the first, and helium fusion produced a new core of carbon and oxygen. Then that core ignited, producing neon, sulfur, and silicon, and then a huge number of neutrinos appeared in the star, spooky particles that carried off the core's energy without interacting with any matter.

Over time, the center of the Dead Star grew unable to support its heavy crust, and the gravity that had given it life now worked the reverse. Under

* The peacock feather was an honor bestowed on high-ranking officials.
† Quotation from the *Analects,* 9.17.

gravity's pull, the Dead Star collapsed into a dense ball, its constituent atoms shattered under the impossibly huge stresses, neutron crushing into neutron. Now a teaspoon of matter from the Dead Star had a mass of a billion tons. First the core collapsed, and then the unsupported crust smashed into the tightly packed center, triggering a final fusion reaction.

An epic of gravity and fire spanning 500 million years came to an end in a cosmos-splitting snow-white blast, and the Dead Star shattered into trillions of fragments and a giant quantity of dust. Its enormous energy, converted into a torrent of EM radiation and high-energy particles, surged outward in all directions. Three years after the explosion, the tide of energy slipped easily through that cosmic dust cloud, heading for the sun.

When the Dead Star exploded, humanity was flourishing eight light-years away. Though they knew they were living on but a speck of dust in the cosmos, they had not truly come to accept this fact. In the millennium that had just ended, they had harnessed the immense power of nuclear fission and fusion and had created complex thinking machines using electrical impulses confined in silicon, imagining they had the power to conquer the universe. No one knew that the energy from the Dead Star was making its inexorable way toward their small blue planet at the speed of light.

After passing the three stars of Centaurus, the Dead Star's light spent another four years in vast, lonely outer space until at last it reached the outskirts of the solar system. In that region, inhabited only by tailless comets, the energy from the Dead Star had its first encounter with humanity: More than a billion kilometers away from Earth, a man-made body was making its lonely sojourn into the Milky Way—*Voyager,* an interstellar probe launched from Earth in the 1970s. It was shaped like a weird umbrella, its parabolic antenna opened toward the Earth. The probe carried humanity's calling card, a lead-alloy plate inscribed with two naked humans, a disc bearing the UN secretary general's greeting to alien civilization, recordings of Earth's oceans, birdcalls, and the traditional Chinese tune "Liu Shui."

Earth had its first taste of the grimness of the cosmos when its emissary to the galaxy passed into the light of the Dead Star and turned immediately into a hunk of blazing metal. Its umbrella antenna warped as its tempera-

ture suddenly shot up from near absolute zero. The intensity of the high-energy radiation overloaded a Geiger counter and caused it to read out only zeros. The UV probe and magnetic-field instruments remained operational, and in the just two seconds before the circuits were fried by radiation, *Voyager* sent back to its creators on Earth a stream of unbelievable data that, owing to the damage to its antenna, would never be received by the high-sensitivity arrays in Nevada and Australia. No matter; humanity would soon be able to measure the unbelievable for themselves.

The Dead Star's beam crossed the boundary of the solar system and kicked up steam on the blue crystalline solid-nitrogen ground of Pluto, and then met Neptune and Uranus, turning their rings crystal clear. The storm of high-energy particles passed Saturn and Jupiter, phosphorescing their liquid matter, just after the Beijing schoolchildren began their graduation party. The energy traveled for another half hour at light speed and reached the moon, shedding blinding light on Mare Imbrium and the crater of Copernicus. It lit up the set of footprints left behind by Neil Armstrong and Buzz Aldrin four decades earlier under the watchful eyes of hundreds of millions of television viewers on the nearby blue planet, who in that moment of excitement were convinced that the cosmos had been put there for them.

One second later, the Dead Star's light completed its eight-year journey across space to Earth.

THE MIDNIGHT SUN

It was midday!

That was the children's first reaction when their vision returned. The light had come so suddenly it was like the flip of some cosmic light switch, and they had been momentarily blinded.

It was 8:18 in the evening, but the children were standing in the blazing light of noon. They looked up into the blue and took in a cold breath. This was most definitely not the same blue as usual; the sky was a startling blue-black, like color recorded on ultrasensitive film. And it seemed unusually

clean, as if a grayish-white layer of skin had been peeled off and the sky's pure-blue flesh was liable to start bleeding at any moment. The city was lit bright by the light, and the sight of the sun made the children cry out in alarm.

This was not humanity's sun!

The light that had broken into the night sky was too powerful to look at directly, but through the gaps in their fingers they caught glimpses of a sun that wasn't round—it was a shapeless point like other visible stars, an intense white light emitting from some point in the universe, but it didn't seem small. It had an extremely high brightness of –51.23, almost an order of magnitude greater than the sun, and its light scattered in the atmosphere, turning it into an enormous, blinding poison spider hanging in the western sky.

The Dead Star appeared suddenly and reached peak brightness in a matter of seconds. Earth's eastern hemisphere was the first to see it, and the largest panic began almost immediately. Everyone lost all capacity for normal reason and action; the entire world was paralyzed. The spectacle was grandest for viewers in the Atlantic, and on the west coast of Europe and Africa. Here is an eyewitness account from an observer in the Atlantic:

> At daybreak we discovered an anomaly: after the sun rose above the ocean, light continued to pour over the eastern horizon, white light, radiating from some unknown source below the surface of the water, as if a huge lamp were hidden beneath the eastern ocean. The light intensified. It was so strange it unsettled everyone on board. There was nothing but static on the radio. The second daybreak grew brighter and brighter, and "dawn" clouds shone with a blinding light, like lightbulb filaments. . . . Our fear grew with the light. We all knew that the light source would rise at some point, but no one knew what we would see. At last, three hours after dawn, we saw a second sunrise. The captain later offered this apt description of the new sun:

> "It's like a giant cosmic welder!" Of the two suns in the sky, it was our old one that was the most frightening: it was so much dimmer than the new one that it looked black by comparison! Not everyone could handle the nightmare, and some people tore madly about the decks, or jumped overboard. . . .
>
> From Albert G. Harris,
> *A Witness to the Dead Star.* London, SE 6.

Before the children on the field had recovered their senses, lightning broke out as the atmosphere ionized under the Dead Star's radiation. Long purple arcs crossed the sky, and grew denser as earsplitting thunder rolled.

"Quick! Into the classroom!" Zheng shouted, and they all raced back, shielding their heads against the thunder that split the sky and threatened to split the world in two. Once inside, the trembling children clustered around their teacher. The Dead Star's light shone through the windows on one side casting clear rectangle patterns on the floor; lightning through the windows on the other side flashed that side of the classroom with purple electricity. Static filled the air, metal attachments on their clothing clicked with tiny sparks, their hair stood on end, and they could feel their skin tingling all over, as if their clothing had grown spikes.

Below is a transcript of transmissions between the Russian space station *Mir,* the Baikonur Cosmodrome in Kazakhstan, and the American space shuttle *Zeus,* by *Mir*'s final crew before its deorbiting:

Commander: D. A. Vortsev
Flight engineer: B. G. Tinovich
Mechanical engineer: Y. N. Bykovsky
Environmental engineer: F. Lefsen
Station doctor: Nikita Kasyanenko
Crew: Joe La Mure, solid state physicist; Alexander Andrev, astrophysicist

EM COMMUNICATIONS:

10:20′10″, MIR: Don calling Baikonur! Don calling Baikonur! Base, acknowledge. Base, acknowledge.

(No response. Static.)

10:21′30″, BASE: This is Baikonur base! Baikonur calling Don. Please respond.

(No response. Static.)

INFRARED COMMUNICATIONS:

10:23′20″, MIR: Base, this is *Mir*. Main system interference is too high, so we've initiated backup communications. Please respond.

10:23′25″, BASE: We hear you, but the signal isn't stable.

10:23′28″, MIR: Difficulty with orienting the transmission and reception units. Orientation control circuit chips have failed due to radiation, so we've resorted to manual optical orientation.

10:23′37″, BASE: Fix the transmission and reception units in place. We will take over control.

10:23′42″, MIR: Done.

10:23′43″, BASE: Signal normal!

10:23′46″, MIR: Base, can you tell us what happened? What should we call the thing that appeared all of a sudden?

10:23′46″, BASE: We know as much as you do. Call it "Star X" if you want. Please send us the data you've obtained.

10:24′01″, MIR: We will transmit observation data beginning at ten o'clock for the integrated radiometer, ultraviolet and gamma ray instruments, gravimeter, magnetometer, Geiger counter, solar wind meter, and neutrino detector, as well as 136 visual spectrum and infrared images. Prepare to receive.

10:24′30″, MIR: *(Data transmission)*

10:25′00″, MIR: Our space telescope has been tracking Star X since it first appeared. Given our level of sensitivity, we cannot estimate its angular diameter, nor have we found any clear parallax. Dr. Andrev believes that those two points together with the energy we've received mean that Star X is outside the solar system. This is just a hypothesis of course. Data is insufficient, and there's lots to be done by ground-based observatories.

10:25′30″, BASE: What have you seen on Earth?

10:25′36″, MIR: A large-scale hurricane in the equatorial region is moving northward with an estimated wind speed of 60 meters per second,

judging by our observations of the changes in clouds over the equator. This may be due to the unevenness of the sudden influx of heat on Earth from Star X. Oh, and a large amount of ultraviolet radiation and blue flashes, possibly lightning, in the polar regions and currently expanding to lower latitudes.

10:26′50″, BASE: Report on your own status.

10:27′05″, MIR: Not good. The onboard flight control computer has been entirely fried by the high-energy rays, backup systems too. Their lead shielding is inoperative. Monocrystalline silicon solar batteries are totally fried, and chemical batteries are severely damaged. We are now entirely reliant on in-cabin isotope batteries, which are woefully underpowered, so we've had to shut down life support in the main cabin. Life support is functioning abnormally in the living cabin. We're close to having to put on our space suits.

10:28′20″, BASE: The base feels that under the present circumstances it is inadvisable to remain in orbit, but also that a soft landing is impossible given the damage to the systems. The US space shuttle *Zeus* is in low orbit 3340; it was in Earth's shadow and suffered only light damage and is still capable of reentry. We have made contact with them, and the Americans have decided to carry out the provisions of the Outer Space Treaty concerning rescue of astronauts and take you on board. Parameters for speed reduction and engine operation to follow . . .

10:30′33″, MIR: Base, the station doctor wishes to speak with you.

10:30′40″, MIR: This is the station doctor. I believe there's no point to the transfer. Cancel it.

10:30′46″, BASE: Please explain.

10:30′48″, MIR: All astronauts aboard the station have received an ultralethal 5100 rad dose of radiation. We have only hours left to live, so even if we returned to Earth, the outcome would be the same.

10:31′22″, BASE: *(Silence)*

10:31′57″, MIR: This is the commander. Please allow us to remain on *Mir*. This station is humanity's farthest outpost for observing Star X. In our final few hours, we'll carry out our duties to the full. We will be the first astronauts to die in space; if the opportunity presents itself in the future, please return our remains to our homeland.

From Vladimir Konev, *A History of the Russian Space Program in the Common Era*, vol. 5. Moscow, SE 17.

The Dead Star lit up the cosmos for an hour and twenty-five minutes before it vanished abruptly. Only then were radio telescope arrays able to detect its remains: a swiftly revolving neutron star emitting a precisely separated EM pulse.

Faces pressed to the classroom window glass, the children watched the sunset that wasn't, as the blue-black of night descended on this peculiar evening. The light of the Dead Star faded into a twilight that occupied half the sky before quickly shrinking down to a small outlining circle, its color transitioning to white. Most of the sky was dark now, and scattered stars were visible. The halo around the Dead Star continued to contract until it finally vanished, leaving just a point where there once had been a gleaming light source. Once the night sky returned to normal, it was the brightest of the stars, but continued to dim until it was just another star in the galaxy, and five minutes later, the Dead Star had completely vanished into the depths of the cosmos.

When the lightning had stopped, the children ran out of the classroom, where they found themselves in a phosphorescent world. Everything beneath the night sky, the trees, the buildings, the ground, all glowed blue-green, as if the ground and everything on it had been transformed into translucent jade and a green moonlike source deep beneath the ground was flooding light through everything. Green-lit clouds hung in the air as flocks of startled birds sped by like glowing fairies. Most frightening to the children was that they were phosphorescent, too, like images from a photo negative, or a group of ghosts.

"Like I said," said Specs, "anything can happen."

The classroom lights turned back on, as did the lights of the city, and the children realized that there had been a blackout. The glow faded as the lights came on, and they initially thought the world had returned to normal. But they soon found to their shock that the episode was not over.

A red light emerged in the northeast, and before long clouds glowing dark red rose in that part of the sky, as if heralding the dawn.

"It's daybreak for real this time!"

"Idiot! It's not even eleven!"

The red clouds marched across half the sky, at which point the children realized that they were glowing with their own light. When they were directly overhead, the children could see they were composed of huge bands of light, like strips of slowly twisting red drapes hanging from the sky itself.

"Northern lights!" someone shouted.

The aurora soon covered the whole sky, and for the next week, night skies across the whole world danced with red bands of light.

When the auroras disappeared for good a week later and the glittering stars returned, one final, glorious movement of the supernova's symphony was left: A shining nebula appeared at the very spot where the Dead Star had been just days before. The explosion's dust cloud was excited by the high-energy pulse of the star's remains and emitted synchronized radiation in the visible spectrum for humanity to see. The nebula grew until it was roughly the size of two full moons in the sky. This rosette-shaped radiant body, later given the name "Rose Nebula," emitted a strange, harsh blue light into the heavens that shone over the earth with a moonlight-like silver, illuminating every detail on the ground with the brightness of a full moon, washing out the glow of the cities below.

The Rose Nebula would shine over human history until the day the inheritors of the dinosaurs' rule over the planet were wiped out, or were reborn.

2
THE SELECTION

A WORLD IN A VALLEY

The Dead Star was unquestionably a major event in human history. The earliest recorded supernova was on an oracle bone inscription from 1300 BCE; the most recent from 1987, a supernova outside the galaxy in the direction of the Large Magellanic Cloud, at a distance of roughly 170,000 light-years from us. In astronomical terms, it was imprecise to call this latest supernova "neighboring"; it was practically on top of us.

Still, the world's fascination endured for just a fortnight. As science was just beginning its investigation, and with the worlds of philosophy and the arts well below a critical mass of inspiration, ordinary people had already turned back to their ordinary lives. Their interest in the supernova was limited to how large the Rose Nebula might grow and how its shape might change, but this attention was mostly casual in nature.

Two of the most important discoveries, as far as humanity was concerned, went practically unnoticed.

In an abandoned mine shaft in South America, an enormous cistern holding more than ten thousand tons of still water was monitored day and night

by a host of precise sensors, part of humanity's neutrino-detection effort. The neutrinos, after penetrating five hundred meters of rock, would cause minute flashes in the cistern water, detectable only by the most sensitive of instruments. On duty in the mine that day were Anderson, a physicist, and Nord, an engineer. Bored out of his mind, Nord was counting the water stains that glittered under the dim lights on the rock walls and breathing in the dank subterranean air, imagining he was in a tomb.

He took a bottle of whiskey out of a drawer as Anderson extended a glass. The physicist used to hate drinking on duty and had once fired an engineer for it, but now was past caring. During their five years half a kilometer beneath the surface, not a single flash had made itself known, and they had lost all faith. But now the flash buzzer went off, heavenly music to their ears after the five-year wait.

The whiskey bottle fell to the ground and shattered as they threw themselves over to the monitor. It was totally black. They gaped at it for several seconds, and then the engineer recovered enough to race out of the control room to the side of the cistern, which resembled a tall, windowless building. Peering through a small porthole, he saw with his own eyes the ghostly blue spark in the water, so powerful it had oversaturated the sensitive instruments, which was why nothing was visible onscreen. The two men returned to the control room, where Anderson bent over another instrument for a closer inspection.

"Neutrinos?" the engineer asked.

Anderson shook his head. "The particle's got obvious mass."

"There's no way it would make it here. It would stop after interacting with the rock."

"It did interact. We detected its secondary radiation."

"Are you insane?" Nord shouted straight at Anderson. "How powerful would it need to be to produce secondary radiation through five hundred meters of rock?"

At the Stanford University Medical Center, hematologist Grant arrived at the lab to pick up the test results for two hundred samples he had submitted the

previous day. Handing Grant a stack of forms, the lab chief said, "I didn't know you had so many beds."

"What do you mean?"

The chief pointed at the forms. "Where'd you come across all those poor bastards? Chernobyl?"

Grant inspected a few pages, and went into a rage. "Did you screw this up again! Aiming to get fired? These were control samples from normal people, for a statistical study!"

The chief stared at Grant for a moment, his eyes betraying a growing terror that made Grant's skin crawl. Then he seized Grant and dragged him back into the lab.

"What are you doing! You imbecile!" Grant protested.

"Draw blood! I'll do mine. And you all!" he shouted to the technicians. "Blood samples from everyone!"

Two days before school restarted after the summer holiday, halfway through a faculty meeting, the principal was summoned away for a phone call. He returned wearing a grave expression, motioned to Zheng Chen, and the two of them exited the conference room as the other faculty looked on in shock.

"Xiao Zheng," the principal said, "gather your class at once."

"Why? Classes haven't even started yet."

"Your graduating class, I mean."

"That's even harder. They're split up among five different high schools, and I don't know if they've even started class. Besides, how are we still involved with them?"

"The registration office will assist you. The director of education called in person."

"Did Director Feng say what to do after I've gotten them together?"

Realizing Zheng Chen hadn't fully understood, the principal added, "Not Director Feng. The director of the national Ministry of Education!"

Assembling the graduating class was not as hard as Zheng Chen imagined, and it wasn't long before the forty-three students returned to their school, spurred by an urgent notice when they arrived to register at their high schools. The children were overjoyed at this reunion of their disbanded class.

Zheng Chen and the children waited in their classroom for around half an hour, unsure of what was to happen. Eventually a coach and two cars pulled up outside and three people got out. The principal introduced their leader as Zhang Lin, and said they were from the Central Extraordinary Commission.

"Extraordinary Commission?" said Zheng Chen.

"It's a newly established agency," Zhang Lin said without elaborating. "The students in your class will be away from their families for a while. We'll assume responsibility for notifying their guardians. Since you know the class pretty well, you'll come along. There's no need to take anything. We'll leave at once."

"What's the hurry?" Zheng Chen asked in surprise.

"Time is of the essence."

Carrying the forty-three students, the coach left the city headed west. Zhang Lin sat next to Zheng Chen, began examining the student register as soon as he boarded, and stared straight ahead without speaking once he finished. The two other men did the same. Zheng Chen noticed their solemn expressions but felt awkward mentioning it. The atmosphere infected the children, who said little along the way. They passed the Summer Palace and continued westward toward the Western Hills, and then traveled a ways down a forested road farther into the mountains until they entered a large compound whose gate was guarded by three armed sentries. In the center of the compound was a cluster of buses identical to theirs, and groups of children disembarking. They looked roughly the same age as her class.

Zheng Chen had just stepped out of the bus when she heard someone call her name. It was a teacher from Shanghai she had met once at a conference. She took stock of his charges: clearly another class of middle school graduates.

"That's my class," the teacher said.

"You came from Shanghai?"

"Yes. We were notified late last night, and spent the night calling up every house to gather the children together."

"Last night? How'd you get here so fast? Even a plane would take longer."

"Charter plane."

They stared at each other silently for a moment, and then the Shanghai teacher said, "I don't know anything else."

"Neither do I," Zheng Chen said. She remembered that the Shanghai teacher was in charge of a pilot class in the Ministry of Education's character program. Four years ago, the ministry had launched Project Star, a large-scale education experiment for which classes were chosen in major cities across the country to adopt instructional methods well removed from the mainstream; the program was primarily intended to foster children's overall competence. Zheng Chen's class had been one of them.

She looked around her. "These all seem to be Star classes."

"That's right. Twenty-four in all. Around a thousand kids from five cities."

That afternoon, staffers gathered more information from the classes and drew up a detailed register for each student. The evening was mostly unplanned, so the children phoned home and told their families they were at summer camp, even though the summer was over.

Before daybreak the next morning, the children boarded the buses and set off again.

After a forty-minute drive through the mountains, they reached a valley ringed by gentle slopes. Come autumn the hills would be ablaze with red, but now they were still green. A stream ran down the valley floor, shallow enough to cross with trousers hiked up. The children exited their buses and gathered in an open area beside the road, a thousand of them in a big group. One of the leaders stood on a boulder and began to speak.

"Children, you've come here from all over the country. Now let me tell you the purpose of this journey: We're going to play a big game!"

He clearly was not someone who frequently interacted with kids. His

manner was severe, nothing of the feel of a game, but his words prompted rustles of excitement among the children anyway.

"Look," he said, pointing at the valley. "That's where we'll play. Each of your twenty-four classes will be given some land around three to four square kilometers. That's not a small plot! Every class will use that land—now listen—every class will establish a little country!"

That last line seized the children's attention. A thousand pairs of eyes focused on him.

"The game will last for fifteen days. For fifteen days you'll live off the territory you've been granted!"

The children cheered.

"Quiet down and listen. These twenty-four territories have been stocked with necessities like tents, camp cots, fuel, food, and drinking water, but these goods haven't been equally divided. One territory, for example, might have more tents but less food; another might be the opposite. But be certain of one thing: the total amount of provisions on these territories is insufficient for so many days. You have two avenues at your disposal to obtain provisions:

"First, trade. You can trade your own surplus materials for those in short supply. But even so, your little countries won't be able to last the full fifteen days, because the total quantity is insufficient. This means:

"Second, engage in production. This is your country's primary duty and chief activity. Production means opening up undeveloped land on your territory, and then planting seeds and irrigating them on the cleared land. It's not feasible to wait for grain to grow, of course, but based on your land clearing, sowing, and irrigation figures, you'll be able to obtain equivalent food from the game's directorate. The twenty-four countries are distributed along this stream, which will serve as your water source. You'll use that water to irrigate your cleared land.

"You'll choose your own national leaders, three paramount leaders to share power equally. They will jointly exercise the highest decision-making authority. You will set up your country's own administrative organs, and make all the decisions for your country, development plans, foreign policy,

and so forth. We will not interfere. Citizens have free mobility; you can choose to go to any country you think best.

"Now we'll divvy up territory for you. First thing, choose a name for your country and report it to the directorate. The rest is up to you. I'll only tell you that the game has very few rules. Children, the fate and future of these countries is in your hands. I hope that you'll make your little countries flourish and grow strong!"

It was the grandest game the children had ever seen, and they raced off toward their own territories.

Zheng Chen's class followed Zhang Lin to their territory, an area surrounded by a white fence straddling the riverside and a slope, with tents and various provisions neatly stacked where the two met. The children ran on ahead to tear through the supplies, and then Zheng Chen heard exclamations of surprise as they crowded round. She hurried over and made her way forward through the children, and what she saw left her momentarily stunned.

On a square of green canvas lay a neatly arranged row of machine guns.

Although she was unfamiliar with weapons, she was still certain they were not toys. She bent down and picked one up, felt its heft, caught a whiff of gun oil, saw the cold blue glint of its steel barrel. Three green metal boxes sat next to the canvas; a child had opened one to reveal gleaming golden bullets inside.

"Are the guns real, uncle?" a child said to Zhang Lin, who had just arrived.

"Of course. These submachine guns are the army's newest issue. They're small and lightweight. Their foldable stock makes them well-suited for children."

Children cooed with awe as they excitedly picked up the guns. But Zheng Chen shouted sharply, "Stop! No one is to touch those things." Then she turned to Zhang Lin. "What is the meaning of this?"

"Surely weapons are one of a country's essential supplies," he said lightly.

"You said they're well-suited for . . . use by children?"

"Oh, you needn't worry," he said with a chuckle, and bent down to lift a

string of shells from the ammo case. "These bullets are nonlethal. They're actually just two small balls of wire stuck to a piece of plastic, light enough that they lose velocity rapidly after firing and won't cause any bodily injuries. But the balls of wire carry a strong static charge and will release tens of thousands of volts into the target upon impact, enough to cause a fall and momentary loss of consciousness. The current is quite low, so the target will recover quickly and will suffer no lasting harm."

"Electrocution won't cause any harm?"

"This ammunition was first developed for police use and has undergone numerous animal and human tests. Police in the West were first equipped with it in the 1980s, and there have been no casualties in the many times it has been used."

"And if they strike an eye?"

"Eye protection."

"If the person hit falls from a high place?"

"We've chosen a relatively level geography precisely for that reason. . . . I have to admit of course that it's impossible to guarantee absolute safety, but there will be minimal chances for harm."

"Do you really intend to give these weapons to the children, and permit them to use them on other children?"

Zhang Lin nodded.

Zheng Chen blanched. "Can't they use toy guns?"

He shook his head. "War is an indispensable part of a country's history. We have to create as real an atmosphere as possible to obtain reliable results."

"Results? What results?" She stared at him with fear in her eyes, as if he were some kind of monster. "What are you all really after?"

"Calm down, Ms. Zheng. We're being pretty restrained already. Reliable intelligence says that some countries are allowing their children to use live ammo."

"Other countries? Is the whole world playing this game?"

She glanced absently around her, as if to ascertain whether or not she was

dreaming. Then, with effort, she calmed herself down, straightened her hair, and said, "Please send me and the children back home."

"I'm afraid that's impossible. This region is now under martial law. I told you that this is extremely important work . . ."

She lost control of her calm again. "I don't care about that. I will not permit you to do this. I am a teacher. I have my own duty and conscience."

"We have the same conscience, and an even greater duty. And those are the two things that force us to act." He turned his sincere face toward her. "Please trust us."

"Send the children home!" she shouted.

"Please trust us."

A quiet voice from behind her sounded familiar, although she couldn't immediately place it. The children were staring in shock at a spot behind her, so she turned around to discover a sizable crowd of people who, once she took them all in, only increased her sense of being outside of reality. Paradoxically, this calmed her again. She could identify a few in back as senior national leaders who often appeared on television, but the first two she recognized were standing right in front of her.

The president and the premier.

"It's like having a nightmare, right?" the president asked gently.

She nodded, unable to speak.

The premier said, "That's nothing unusual. That was our feeling at first, too. But we adjusted quickly."

"Your work is very important, and involves the fate of the country and its people," the president said. "Later, we'll explain everything, and at that time, comrade teacher, you'll feel pride in the work you've done and are doing." His words eased her mind to an extent.

When the group started off toward a neighboring territory, the premier took a step back and said to Zheng Chen, "All you need to understand right now is this: The world isn't what it used to be."

"Let's give our little country a name, everyone," Specs said.

The morning sun was peeking over the ridge, painting the valley in gold.

"Let's call it Sunland!" Huahua said, and after unanimous approval, added, "We need to paint a flag."

So the children found a piece of white canvas among the supplies, and Huahua took a thick marker from his schoolbag and drew a circle with it. "That's a sun. Who's got a red one, so we can fill it in."

"Won't that be the Japanese flag?" a child asked.

Xiaomeng took the marker and drew a pair of large eyes and a laughing mouth on the sun, and added radiating lines for rays of light. The children approved of this flag. In the Supernova Era, this clumsily artful flag was preserved in the National History Museum as a priceless historic artifact.

"And a national anthem?"

"Let's use the song of the Young Pioneers."

When the sun had fully cleared the mountains, the children held a flag-raising ceremony in the center of their land.

After the ceremony, Zhang Lin asked Huahua, "Why did you first think of setting out a flag and anthem?"

"A country needs them as . . . a symbol. The students have to be able to see the country in order for us to cohere."

Zhang Lin made a few notes in his notebook.

"Did we do something wrong?" a child asked.

"Like I said before, you will be making all the decisions. You do things as you see fit. My duty is to observe, but never to interfere." Then to Zheng Chen, he said, "That goes for you, too, Ms. Zheng."

Next, the children elected national leaders, choosing Huahua, Specs, and Xiaomeng in a painless process. Huahua had Lü Gang form a military, for which twenty-five children volunteered. Twenty of them received submachine guns, and Lü Gang consoled the five who were furious at not getting any that the guns would be rotated over the next few days. Xiaomeng

appointed Lin Sha as health minister and put her in charge of all medication in their provisions, and of treating any patients. The children decided that other state institutions would be set up as needed.

Then they started to settle into their new territory. They cleared some space and went to work on the tents, but when a few kids entered the first one they set up, it collapsed on top of them and they had a tough time digging their way out of the canvas. But they were enjoying it. By noontime, they had managed to erect a few tents and move the cots inside, basically settling the lodging issue.

Before they started making lunch, Xiaomeng suggested that they ought to take an inventory of all food and water and come up with a detailed plan for its daily use: conserve on food the first two days, since once land clearing began, their workload would increase and they would need to eat more. And they had to keep in mind that if agriculture ran into problems, there would be delays in getting food from the directorate. The children had worked up a considerable appetite over the course of the morning and were quite upset that they couldn't dig in immediately, but Xiaomeng patiently explained the situation to them as best she could.

Zhang Lin stood quietly off to the side watching all of this, making more notes in his notebook.

After lunch, the children visited their neighbors to barter a few excess tents and tools to bolster their limited food supply, and took stock of their surroundings. Upstream from them was the Galactic Republic, downstream was Giant Country. Opposite them was Emailand, bordered upstream by Caterpillaria, and downstream by Blue Flower Land, both taking their names from local flora and fauna. There were eighteen other microcountries in the valley, but they were far enough away that the children weren't much interested in them.

The next day and two nights were the golden age for this valley world. The children overflowed with enthusiasm for the new life. On day two, all countries began clearing land on the hillside with simple tools—shovels and hoes—and carried water from the river in plastic buckets to irrigate the land. At night, campfires sprang up all along the riverbank, and the valley

echoed with the children's songs and laughter. It was a veritable pastoral wonderland out of a fairy tale.

But the fairy tale soon evaporated as gray reality returned to the valley.

As the novelty wore off, the pace of land-clearing declined. Children returned from work utterly exhausted and collapsed into their cots as soon as they were back in their tents. No longer were there nighttime fires and singing in the valley. Silence reigned.

The resource gap between the countries was becoming apparent. Though they weren't far apart, some countries had rich, soft land that was easy to cultivate, while in others, the rocky ground refused to give up much usable land even after strenuous effort. Sunland was among the most barren, but even worse than the extremely poor quality of the hillside soil was the fact that their riverbank was incredibly broad. The directorate had stipulated that the level floodplain could only be used as residential land, and all cultivation had to be done on the hillside. Any cultivation on the floodplain would be excluded from the count. In some countries, the hillside was so close to the river that a chain of children could pass water buckets up for irrigation, a great labor-saving strategy. But Sunland's wide floodplain meant a huge distance between the river and the hillside, so individuals had to tire themselves out carrying buckets up on their own.

Then Specs made a proposal: Dam the river with large stones. The water could still flow over or between the stones, but the water level would be raised. Then a pit could be dug at the base of the hillside, and a small channel cut to bring in river water. So Sunland transferred ten hard workers to undertake the project. No sooner had it started, however, than it met with fierce protests from Giantland and Blue Flower Land downstream, and despite Specs's repeated explanations that the dam would raise the river level without blocking its flow, thus posing no threat to the downstream flow rate or water level, the two countries were staunch in their opposition. Huahua maintained that they should ignore the protests and proceed with the project. But Xiaomeng, after careful consideration, decided that they ought to work on improving relations with their neighbors, taking the long view so as not to lose out on bigger things for short-term gains. The river was

a shared resource for all countries in the valley, so anything involving it was a sensitive matter. Sunland ought to work on establishing a favorable reputation.

Specs approached the issue from a strength standpoint, and although Lü Gang insisted that the army could guarantee national security in the case of a conflict with their downstream neighbors, he noted that it was irrational to recklessly provoke conflict with two countries at once. And so Sunland abandoned its original plan. Without building a dam, a channel twice as deep was dug, bringing far less water to the pit at the foot of the hill than originally intended. But it substantially increased the efficiency of cultivation nonetheless.

Sunland seemed to have caught the directorate's eye; another observer was now stationed next to Zhang Lin.

All manner of conflicts and disputes increased dramatically in the valley on the fourth day, mostly sparked by resource allocation and bartering. The children had little facility or patience for conflict resolution, and so shots began to ring out. Still, the conflicts remained limited in scale and had not spread to the entire valley. The situation remained relatively stable in Sunland's vicinity, but a conflict sparked by drinking water on the seventh day would completely upset this stability.

River water was stale and undrinkable, and although a quantity of drinking water had been included among the provisions, it was unevenly distributed, leaving some countries with ten or more times as much water as others, a difference far greater than any of the other provisions and clearly done by design. Cultivation figures could only be redeemed for food, not water, so by the fifth day, water had become a critical question for national survival, and hence a focal point for conflict.

Among the five countries in Sunland's region, the Galactic Republic had the largest share of water, nearly ten times the others. Caterpillaria, across the river, was the first to run out. Its children were wasteful and shortsighted, and even used drinking water to wash up when they were too lazy to fetch water from the river, eventually landing themselves in this predicament. Their only option was to hold talks with their opposite neighbor and

propose bartering for water, but the Galactic Republic countered with an unacceptable solution: Caterpillaria had to trade its land for water.

That night, Sunland was informed by a child from Emailand that Caterpillaria had demanded a loan of guns, ten of them, as well as ammunition, threatening to attack if the loan was denied. Caterpillaria reckoned that with thirty-seven soldiers, its military was strong enough to take on Emailand, which had few military-minded children and wouldn't put up much of a fight. Not wanting trouble, Emailand reached a favorable agreement with Caterpillaria and lent them the weapons. Shots rang out at midday in Caterpillaria as its soldiers practiced shooting.

Sunland called an emergency State Council meeting where Huahua laid out the situation: "Caterpillaria is certain to start a war against the Galactic Republic. Looking at military power alone, the Galactic Republic is bound to lose, and will be taken over by Caterpillaria. Caterpillaria has a large expanse of fertile hillside, and it will be especially powerful with the Galactic Republic's drinking water and weapons. That means trouble for us, sooner or later. We should prepare for sooner."

Xiaomeng said, "We should form an alliance with Emailand, Giant Country, and Blue Flower Land."

Huahua said, "If that's our approach, then we should include the Galactic Republic in the alliance before war breaks out. That way Caterpillaria won't risk starting a war."

Specs shook his head. "Balance of power is a basic principle of the world order. You're violating that principle."

"Would you mind explaining that, professor?"

"An alliance is only stable when facing a threat comparable in strength. It will dissolve when faced with a threat that's too big or too small. The countries farther upstream are too far away, so the six of us form a relatively independent system. If the Galactic Republic joins the alliance, Caterpillaria has no one to ally with and is the absolute weakest power, posing no threat to the alliance. So the alliance will dissolve. Besides, the Galactic Republic has so much drinking water of its own it will arrogantly believe we're after its water, and won't join an alliance in earnest."

Everyone agreed with this assessment. Xiaomeng asked, "So will the other three countries be willing to ally with us?"

Huahua said, "Emailand's not a problem. They've already felt Caterpillaria's threat. As for the other two, let me persuade them. An alliance is to their benefit, and we left a good impression after the dam conflict, so I think it won't be a problem."

That afternoon, Huahua visited three neighboring countries where, with superlative eloquence, he quickly convinced the leadership. On the riverside at their common border, they held a meeting formally establishing the Four Country Alliance.

Another member joined the observers stationed in Sunland.

The directorate established itself inside a TV repeater station at the top of the hill, where it had a bird's-eye view of the entire valley. That evening, after the founding of the Four Country Alliance, Zheng Chen arrived at the repeater compound and looked out at the nighttime valley for a long while, as she had done on previous evenings. The children were asleep after an exhausting day of work, so a few scattered lanterns were all that was visible.

By this point she had thrown herself fully into the project and no longer asked what it all was for. Not a single one of the countless answers she had dreamed up made sense, and the previous day she had heard a few kids in Sunland discussing the issue, too.

"It's a science experiment," Specs said to a few other children. "Our twenty-four little countries are a model of the world, and the adults want to see how this model develops. Then they'll know what our country should do in the future."

"Then why don't they run the experiment with adults?" someone asked.

"If the adults know it's a game, they won't play it seriously. We're the only ones who'll play a game seriously, and that's what makes the outcome real."

It was the most reasonable explanation Zheng Chen had heard. But the premier's words still echoed in her brain: "The world isn't what it used to be."

Now Zhang Lin walked out of the door to the cabin that once had served

as the lodgings for repeater station workers and came over next to Zheng Chen to survey the valley. He said, "Ms. Zheng, your class has been the most successful of all of them. Those children are made of good stuff."

"What do you mean by success? As I hear it, at the western end of the valley there's a country that has absorbed its five neighbors and now has six times its original land area and population, and it's still expanding."

"No, Ms. Zheng. That's not important to us. What we're looking at is a country's success in building itself, in cohesion, and in its judgment of the makeup of the world it inhabits, as well as the long-term decisions those lead to."

The game in the valley allowed free exit, and over the past couple of days children from practically every country had come to the directorate to say they were finished playing, that the game was getting boring, that the work was too tiring, and that the gun fighting was too scary. The directors said the same thing to each of them: "That's okay. Go home." And they were returned home at once. When they later found out what they had missed, some of them stayed angry the rest of their lives, while others were secretly glad. Sunland was the only country that didn't lose any children, a key data point for the directors.

Zhang Lin said, "Ms. Zheng, I'd like to learn more about those three young leaders."

Zheng Chen said, "They're from ordinary families. But if you look more closely, their families really are a little different."

"Start with Huahua."

"His father is an engineer with an architecture institute, and his mother's a dance instructor. He takes after his father, who also comes across as open-minded, taking the long view toward things with little regard for the details of his own life. When I went to their home, he held forth on global affairs and the strategy China ought to adopt in the future, but didn't ask any questions about his son's performance at school."

"He's aloof."

"No, not aloof. He wasn't discussing those things for disinterested amusement. He talked about national and world affairs with a powerful sense of

participation. He had a strong initiative, and that excessive broad-mindedness and disregard for his immediate surroundings might be why he's been unsuccessful in his career. Huahua does take after him, but one major difference is that the kid has charisma and an inclination to action, enough to bring together other children to accomplish unbelievable things. For example, he's gotten the class to set up a street stall, to build and fly a hot-air balloon, and to take a boating trip on a river in the distant suburbs. He's got motivation and resourcefulness far beyond his years. His weakness is a tendency toward fantasy and impulsiveness."

"You know your students very well."

"They think of me as a friend. Yan Jing—that's Specs—comes from a typical family of intellectuals. His parents are college professors, his father in the humanities and his mother in science."

"He seems to me to be very knowledgeable."

"That's right. But his greatest strength is how thoroughly he considers a problem, far more carefully than other children. He can pick up things from all angles that no one else notices. You might not believe it, but when I'm preparing my lessons I'll often seek his feedback. His weakness is obvious: He's introverted and isn't good at social interaction."

"The other students in your class don't seem to mind that."

"True. His erudition appeals to them and wins him their respect. Specs is always involved in discussions of major problems, and in any decision-making. That's why they elected him."

"And Xiaomeng?"

"Her background is unusual. Her family was a good one: her father was a reporter, and her mother a professional writer. When she was in the second grade, her father died in a car accident pursuing a story, and then her mother had kidney failure and needed dialysis. And she had a grandparent in bed at home. Both of them died last year, but for the past three years Xiaomeng basically has had to run the household. Still, she managed to get the best marks in class. She was right in the worst of it when I came on as homeroom teacher, and each morning when I came into class I'd look for signs of fatigue on her face, but there never were. Just . . ."

"Maturity."

"Right. Maturity. You've seen her expression, mature beyond her years. One thing I remember most clearly was when I took the class on a tour of the Aerospace Command and Control Center in western Beijing last semester. The other kids immersed themselves in all the high-tech marvels, and during a forum with the center's engineers, they all said that we should put an astronaut in space, and then build a huge space station, and land on the moon, all at once. Xiaomeng was the only one who asked how much a space station would cost, and when she was given a rough estimate, said that the money could fund the education of every poor child in the country through middle school. Then she rattled off statistics for unschooled children, and how much it would cost to educate them through middle school, taking into account regional differences and price increases. All of the adults in the forum were stunned."

"Is there anything about her that makes her popular with the others?"

"Trustworthiness. She is the most trusted kid in class. She can sort out tons of problems the kids have, even complicated ones that have me stumped. She's got management talent. She's very methodical in carrying out her duties as the class's studies monitor."

"There's one more student I'd like to know a little more about: Lü Gang."

"I don't know him very well. He's a transfer from the second half of last semester. He comes from an unusual family, too. His father's a general. And under his father's influence, he likes weapons and the military. The one thing that impressed me most about him is that when he joined the sports committee after transferring to our class, in just one week he took our soccer squad from second-to-last to first. School rules prohibit adding extracurricular practices, but he didn't run any practices at all, he just made some adjustments to our strategy. The surprising thing is that his previous school lacked the facilities for him to have much exposure to soccer at all, and he doesn't really play. His indomitable spirit is another impressive characteristic. During a cross-country race, he twisted his ankle and his foot swelled up so big he couldn't put his shoe on, but he finished the race anyway, even though there

was no one left at the finish line when he came in. You don't see that kind of resolve in many children."

"One last question, Ms. Zheng. . . . Ah, you go first."

"What I'd like to say is that if you think their little country is the most successful, then it's due to collective effort. There may be a few standout kids in the class, but their biggest advantage is their collective strength. They might not amount to anything if you divide them up."

"That's just the question I wanted to ask. I've gotten the same feeling, and it's a very important point. My greatest regret, Ms. Zheng, is that my son was never your student."

"How old is he?"

"Twelve. One of the lucky ones."

It was several days later that she found out what his words meant. The Rose Nebula was now rising over the eastern horizon, its blue light rendering the valley in sharp relief.

"It's gotten bigger. And the floral shape has changed," she said.

"It'll continue to grow for the next few decades. Astronomers predict that at its largest it will occupy a fifth of the sky, and will be as bright as an overcast day. Night will disappear."

"My god. What will that be like?"

"I'd really like to know, too. Take a look at this," Zhang Lin said, pointing to a nearby scholar tree whose flower-laden branches were visible in the nebula light.

"It shouldn't be blooming this time of year. The past few days I've seen a lot of weird stuff with the hillside vegetation. Lots of blooming flowers, in all sorts of strange shapes."

"We're sequestered from the outside world here so we haven't seen the news for a few days, but I've heard that bizarre fruits and vegetables have been turning up in the marketplace, like grapes as big as apples."

From the valley came a burst of gunfire.

"It's from Sunland!" Zheng Chen shouted in alarm.

"No," Zhang Lin said after a moment, "it's farther upstream. Caterpillaria is attacking the Galactic Republic."

The gunshots grew thicker, and they could see muzzle flashes in an area of the valley.

"Do you really intend to let things go on like this? I don't think I can take it," Zheng Chen said in a trembling voice.

"The entirety of human history is war. There are figures showing that in five thousand years of civilization, there's been a total of just one hundred and seven years of genuine peacetime. Even as we speak humanity is at war. But doesn't life still go on?"

"But they're only children!"

"Not for long."

That afternoon, Caterpillaria agreed to the Galactic Republic's demand to exchange the best parcel of its untilled land for drinking water, but proposed holding a land-handover ceremony to which each side would dispatch an honor guard of twenty children. The Galactic Republic agreed. As leaders for both sides and their honor guards were carrying out the ceremony, a dozen Caterpillaria soldiers lying in ambush staged a surprise attack on the Galactic Republic honor guard, and at the same time the Caterpillaria honor guard also opened fire, taking out all twenty guard members with their electric charges. They came to ten minutes later and discovered they were prisoners and their territory had fallen into enemy hands, for while they were unconscious, the Caterpillaria army had assaulted the Galactic Republic. Their guns had all been sent off with the honor guard, and their remaining six boys and twenty-odd girls were ill-equipped for even an unarmed fight.

As soon as Caterpillaria merged with the Galactic Republic, it demanded land from the Four Country Alliance. Unprepared to launch a military attack, it played the water card. The downstream countries didn't have much left, and Caterpillaria planned to squeeze the Four Country Alliance until they ran out of water.

Now Specs's vast store of knowledge found an application in a method he proposed. Tiny holes were punctured all across the bottom of five washbasins,

which were then filled with layers of stones, decreasing in diameter top to bottom, to form a water filter. Lü Gang suggested a second method: Smashing grasses and leaves into a paste and stirring it into the water would leave the water clean once it settled. He said he'd learned the technique from his father during outdoor training. Water subjected to these two methods was sent to the directorate for testing, and it turned out to be drinkable. The Four Country Alliance now had access to so much water it could even export its surplus to Caterpillaria.

And so Caterpillaria started planning an attack on the alliance. Its children had no interest in agriculture and cared only for territorial expansion. But they soon discovered there was no need for this, either.

From upstream came the news that the Nebula Empire, at the westernmost edge of the valley, had absorbed thirteen other countries to form a superstate with an army four hundred strong that was now marching downstream on a mission to unite the valley. In the face of such a powerful enemy, the resolve Caterpillaria's leaders had shown toward the conquest of the Galactic Republic evaporated. They panicked, and without a plan their country collapsed into chaos and ultimately disbanded. Some of the children fled upstream to the Nebula Empire, but most went to the directorate to be sent home. In the Four Country Alliance, Giant Land, Blue Flower Land, and Emailand dissolved, and most of their children also exited the game apart from a minority that joined their ally, leaving Sunland to face a powerful enemy alone.

All citizens of Sunland were determined to defend it to the end. Over the past two weeks they had grown fond of the tiny country into which they'd poured their sweat, and this emotion gave them spiritual strength that amazed the adults in the directorate.

Lü Gang drew up a battle plan: Sunland's children would knock down all the tents on the broad floodplain and put in two defensive lines on the eastern and western sides, formed from various materials. On the western side, the first front the enemy troops would reach, only ten children would be stationed. Lü Gang instructed them, "When you've finished the first volley, shout 'We're out of ammo!' and then run back."

The defensive lines had just been completed when the army of the Nebula Empire came surging along the valley floor, and soon it covered the entire territory of the former Galactic Republic and Caterpillaria. A boy shouted through a loudspeaker, "Hey, Sunland kids! The Nebula Empire has united the valley. Do you losers still want to play? Surrender! Have some dignity!"

The challenge was met with silence. And so the Nebula Empire began its assault. The children on Sunland's front defense line opened fire, and the invading army hit the ground immediately and returned fire. Shots from Sunland's side petered out, and then a kid shouted, "We're out of ammo! Run!," and all the kids on the line beat a fast retreat.

"They're out of ammo! Charge!" The Nebula Empire army surged forward with a roar, but when they were halfway across the floodplain, the guns of Sunland's second defensive line let loose. The invaders were caught totally unaware and huge numbers fell. Those behind them turned and ran. The first assault was beaten back.

When the shocks wore off and the kids crawled to their feet, the Nebula Empire organized a second attack. This time, Sunland was actually running low on ammo. As they watched an imperial force ten times their size advance carefully along the river toward them, a kid exclaimed, "God, they've even got helicopters!"

A helicopter was approaching over the hill, and when it stopped and hovered over the battlefield, an adult's voice over a loudspeaker said, "Children! Hold your fire! The game is over!"

THE STATE

It had just turned dark when three helicopters carrying fifty-four children took flight toward the city. Eight of the children on board, including Huahua, Specs, Xiaomeng, and Lü Gang, were from Zheng Chen's class, and they were accompanied by Zheng Chen and four other teachers.

They landed in front of a plain 1950s-style building whose lights were blazing. Zhang Lin and the leader of the valley-game directorate led the

fifty-four children through the main gate and down a long corridor, at the end of which stood a large leather-covered door with a gleaming brass handle. When the children neared, two guards eased it open and they entered a huge hall, one that had witnessed so many historic events whose shadows even now seemed to dance between the columns.

There were three people in the hall: the president of the country, premier of the State Council, and chief of staff of the army. They seemed to have been there a while, and were talking in low voices when the door opened and they turned to look at the children.

The two leaders went on ahead to make a brief, whispered report to the president and premier.

"Hello, children!" the president said. "This is the last time I'll treat you as children. History requires that you grow from thirteen to thirty over the next ten minutes. The premier will outline the situation for you now."

The premier said, "As you're all aware, a month ago there was a supernova in the vicinity of Earth. You're all familiar with the details so I won't go into them. Instead, I'll tell you some things you don't know. After the supernova, health agencies the world over studied its effects on humans. We've received reports from authoritative medical institutions on all continents that match the conclusions of our own domestic institutions: namely, the supernova's high-energy radiation destroys chromosomes in human cells. This radiation has a penetrative power never seen before. No one was unaffected, even if they were indoors or down a mine shaft. But in one population group, chromosomes have the ability to repair themselves when damaged, ninety-seven percent in thirteen-year-olds, and one hundred percent in those aged twelve and under. Damage suffered by everyone else is irreversible. They'll survive only for another ten months to a year at most. Visible light from the supernova lasted for a little over an hour, but the invisible radiation continued for an entire week—that's when the sky was filled with aurora borealis. The Earth completed seven revolutions during that time, so the whole world was affected identically."

The premier spoke with a calm solemnity, as if discussing something more

ordinary. The children listened numbly for a while as his words sank into their minds. For a long time it didn't make sense, and then all of a sudden it did.

Decades later, when the second generation of the Supernova Era was growing up, they were curious about how their parents' generation felt when they first heard the news, since after all it was the most shocking piece of information in human history. Historians and astronomers had made countless attempts to re-create that scene, none of them accurate. The following conversation between a young reporter and an elder took place forty-five years after the incident:

REPORTER: Can you describe how you felt when you first heard the news?

ELDER: I didn't feel anything, because I still didn't understand.

REPORTER: How long did it take for you to understand?

ELDER: It depended on the person. No one got it immediately. Some people took half a minute, others several minutes, and others a few days. Some kids stayed in a trance all the way up until the Supernova Era actually began. It's weird thinking back on it. Why was such a simple piece of information so hard to digest?

REPORTER: And yourself?

ELDER: I was lucky. I got it in three minutes.

REPORTER: Can you describe the shock?

ELDER: It wasn't a shock.

REPORTER: Then . . . was it fear?

ELDER: No, not fear.

REPORTER: *(laughs)* That's what they all say. I do understand, of course, how it might be hard to put that degree of fear and shock into words.

ELDER: There were no feelings like shock and fear back then. Please believe me, even if it might be hard for you to understand now.

REPORTER: Then what did you feel?

ELDER: Unfamiliarity.

REPORTER: . . .

ELDER: Back in our day, we had this story: A man blind from birth accidentally fell down the stairs one day, and the impact somehow jostled the nerves in his brain enough to restore his sight. He looked at the world around him brimming with curiosity. . . . That's how we felt. The world was going to turn strange for us, as if we'd never seen it before.

From Ya Ke, *Born in the Common Era*. Beijing, SE 46.

In the huge hall, the beating heart of the country, fifty-four children shared the experience of this powerful unfamiliarity, as if an invisible razor had dropped, severing the past from the future, and they were staring into a strange new world. Through the wide window they could see the newly risen Rose Nebula, which projected its blue radiance on the floor like an enormous cosmic eye staring into this inexplicable world.

For an entire week high-energy rays had traversed every part of the solar system, and high-energy particles battered the Earth like a rainstorm pouring down on land and sea, tearing through human bodies at unimaginably high velocity, penetrating every cell. And the tiny chromosomes in each of those cells were buffeted like fragile crystalline threads by those high-energy particles, which unraveled the DNA double helix and sent nucleotides spinning away. Damaged genes continued to operate, but the precise chain that had evolved through hundreds of millions of years of copying life had been snapped, and the mutated genes now spread death. Earth revolved humanity through a deadly shower, winding up the death clock in billions of bodies that now ticked slowly away. . . .

Everyone above the age of thirteen would die, and Earth would become a children's world.

The fifty-four children were different from the rest. A second piece of information would take the world that had just been made unfamiliar and shatter it into pieces, leaving them hanging in a bewildered void.

Zheng Chen came round first. "These children, Premier, if I'm not mistaken . . ."

The premier nodded, and said calmly, "You're not mistaken."

"That's impossible," she cried out in alarm.

The state leaders looked at her in silence.

"They're just kids. How can they . . ."

"What do you think we ought to do, young lady?" the premier asked.

". . . You at least ought to have held a nationwide search for candidates."

"Do you really think that's possible? How would we select them? Kids aren't adults. They don't belong to a hierarchical national social structure, so in such a short time frame it's frankly impossible to choose the most talented and best suited from among four hundred million children to take on this responsibility. Ten months is just an estimate; we might actually have far less time than that. The adult world could become inoperative at any moment. This is humanity's darkest hour. We must not leave our country headless at a time like this. Did we have any other choice? Like every other country in the world, we adopted exceptional methods to make the selection."

"My god. . . ." She was close to fainting.

The president came up to her and said, "Your students may not agree with you. You only know them in ordinary times, but not in extreme situations. In times of crisis, people, children included, can become superhuman."

The president turned to address the children, who had not yet entirely grasped the situation. "Yes, children. You're going to lead this country."

3
THE GREAT LEARNING

THE WORLD CLASSROOM

On the day the Great Learning started, Zheng Chen left the school to check in on her students. Out of her class of forty-three, eight had qualified in the valley for the central government; the remainder, distributed throughout the city, were now embarking on the toughest curriculum in history under their parents' tutelage.

Yao Rui was the first student Zheng Chen thought of. Out of her thirty-five remaining students, he had the toughest course of study. She took a quick subway trip to the thermal power station, shut down on environmental grounds prior to the supernova but now saved from dismantling and returned to operation as a classroom.

She saw her student outside the gate. He was with his father, the station's chief engineer. Chief Yao greeted her, and she replied out of a jumble of feelings, "It's like you're me teaching my first class six years ago."

Chief Yao smiled and nodded. "Ms. Zheng, I'm probably even less confident than you were."

"Back in parent-teacher conferences, you never were pleased with my teaching methods. Today we're going to see how you go about it."

They went through the gate alongside a host of other groups of parents and children.

"What a tall, thick smokestack!" Yao Rui shouted, pointing excitedly ahead of them.

"Silly boy. I've told you before, that's not a smokestack. It's a cooling tower. Over there, behind the plant, is a smokestack."

Chief Yao led his son and Zheng Chen up into the cooling tower, where water rained down into a circular pool. Pointing at it, Chief Yao said, "That's the cooled water that circulates in the generator. It's pretty warm. When I first came to the plant fifteen years ago, I used to swim in it." He sighed at the memory of his youth.

Then they came to several small mountains of black coal. "This is the coal yard. A thermal power plant produces electricity by burning coal. At full capacity, our plant will consume twelve thousand tons per day. I bet you have no idea how much that is. See that coal train with forty railcars? You'd need about six of those trains full of coal."

Yao Rui stuck out his tongue. He said, "That's scary, Ms. Zheng. I never used to think that Dad's job could be so awesome."

Chief Yao let out a long sigh. "Kiddo, this is all a dream for your dad, too."

They followed the long coal belt for a while until they reached a huge machine dominated by a large, rotating drum whose thunderous rumble set Yao Rui's and Zheng Chen's skin crawling. Chief Yao shouted, close beside their ears, "That's the pulverizer. The belt brings coal here where it's milled to a powder as fine as flour."

Then they came to the base of another tall steel building. There were four of them, all visible from a distance, just like the cooling towers and smokestacks. Chief Yao said, "This is the furnace. The coal dust milled by the pulverizer is sprayed by four nozzles into its belly where it burns in a fireball. The coal gets almost completely burned up; only a tiny amount is left behind. Look, here's what's left." He extended a palm and showed his son a smattering

of objects that looked like translucent glass beads, which he had scooped up from a square pond along their path. Then they came to a small window through which they could see the blazing furnace fire. "The wall of this giant boiler is lined with an enormous number of long pipes. Water flowing through the pipes absorbs the fire's heat and turns to high-pressure steam."

Then they entered a cavernous building holding four huge machines, half cylinders lying on the ground. "These are the turbine generator assemblies. Steam from the boiler is piped here to turn the turbines, which drive the generators to produce electricity."

Finally they reached the main control room. It was clean and well-lit, with signal lights twinkling like stars on a tall instrument panel and a row of computer screens displaying complex images. In addition to the duty operator, a number of other parent-child pairs were in the room. Chief Yao said to his son, "We had only a drive-by look just now. A power plant is actually a highly sophisticated system that involves a host of separate disciplines, and requires the work of lots of people to operate. Dad's field is electrics. Electrics is divided into high and low voltage; I work in high voltage." He paused and looked quietly at his son for several seconds. "It's a dangerous field, involving currents that can fry a person in a tenth of a second. To keep that from happening, you've got to fully understand the structure and principles of the entire system. That begins now."

Chief Yao took out a roll of charts and peeled off one. "Let's start with the main wiring diagram. It's fairly simple."

"I don't think it's simple at all," Yao Rui said, staring in obvious disbelief at all of the lines and symbols crisscrossing on the chart.

"Those are generators," his father said, pointing at a diagram made up of four circles. "Do you know the principles of an electric generator?" Yao Rui shook his head. "Well, this is the bus bar. The generated electricity is sent out here. It's three-phase, you see. Do you know what three-phase is?" Yao Rui shook his head again, and his father pointed to four pairs of concentric circles. "Okay. These are the four MTs."

"MTs?" Yao Rui asked.

"Er, the main transformers. And these two are the auxes."

"Auxes?"

"Auxiliary transformers. . . . You know the principles of transformers?"

Yao Rui shook his head.

"What about the basics? The principle of electromagnetic induction?"

Another head shake.

"You've got to know Ohm's law, at least?"

Another head shake. Chief Yao let the charts drop. "Then what the hell *do* you know? Did you eat your lessons?"

His son started to cry. "I've never studied any of this."

Chief Yao turned to Zheng Chen. "Then what have you been teaching him for six years?"

"Your son's just out of middle school, remember. He's not going to learn anything with teaching methods like yours!"

"I've got ten months to take this kid through a complete course of study in electrics, and to hand over my own twenty years' work experience." He sighed and tossed the charts aside. "It seems like an impossible task, Ms. Zheng."

"But you've got to do it, Chief Yao."

He stared at her for a long while, and at last sighed, picked up the charts, and turned to his son. "Okay, okay. So you know about electric current and electric potential, right?" Yao Rui nodded. "Then what are the units for current?"

"It's a certain number of volts."

"Oh for the love of—"

"No! Right, that's the unit for potential. For current, it's . . . it's . . ."

"Amps! Very well, we'll start from there, my boy."

Just then Zheng Chen's mobile rang. It was the mother of another student, Lin Sha. The two families were neighbors, so she knew them quite well. Lin Sha's mother told her that she was having trouble teaching her daughter, and asked Zheng Chen to give her a hand. And so after bidding a hasty farewell to Yao Rui and his father, she hurried back into the city.

At the major hospital where Lin Sha's mother worked, the two of them were heatedly discussing something outside a room with a large red sign over the door reading AUTOPSY.

"I can't stand that smell," Lin Sha said, screwing up her eyebrows.

"It's formalin, a kind of preservative. For soaking the bodies used in dissection."

"I'm not going to watch a body get dissected, Mom. I've seen so many livers and lungs and stuff already."

"But you've got to learn where the organs are situated in the body."

"When I'm a doctor, can't I just give the patients whatever medicine they're supposed to get for whatever illness they have?"

"You're a surgeon, Shasha. You've got to perform surgery."

"Let the boys be surgeons."

"Cut that out. Your mom's a surgeon. There are lots of excellent women surgeons."

Now clear about the situation, Zheng Chen said she would go into the room with Lin Sha, who then grudgingly agreed to the autopsy lesson. The girl's hand, tightly clasping hers, trembled noticeably as they walked through the door, and Zheng Chen wasn't doing much better herself, although she fought to keep her fear from showing. She felt a chill wind across her face. The walls and floors were white, and the fluorescent lights overhead cast a pale glow on the autopsy table ringed by a group of children and two adults all dressed in white lab coats; the only bit of color in this world of gloomy white was the dark red object on the table.

Lin Sha's mother led her daughter by the hand to the autopsy table, and pointing at the object, said, "For the convenience of our autopsy, the body needs to be pretreated by removing a layer of skin."

Lin Sha tore out of the autopsy room and began to retch, Zheng Chen close on her heels. She clapped her on the back, keeping a lid on her own nausea, but grateful for the excuse to leave the room and for the sunlight outside.

Lin Sha's mother followed them, and bent down to tell her daughter, "Stop it, Shasha. Observing an autopsy is a valuable opportunity for an intern. You'll get used to it over time. Think of the body as a stopped machine, where you can look at its parts. You'll feel better that way."

"You're a machine too, Mom! A machine I hate!" she shouted, and turned to run off. But Zheng Chen held her back.

"Listen to me, Lin Sha. All jobs, not just being a doctor, require bravery. Some might be even tougher. You've got to grow up."

It took some doing but eventually they convinced Lin Sha to return to the autopsy. Zheng Chen stood with her and they watched the sharp lancet separate soft tissue with a low scratching sound, and white ribs pushed aside to expose mulberry organs. . . . Afterward, she wondered what it was that had supported her through it, not to mention what had supported the girl who used to be afraid of bugs.

Zheng Chen spent all of the next day with Li Zhiping, a boy whose father was a letter carrier. Over and over, father and son traced the route he had walked for more than a decade, and then as evening fell, the boy walked it by himself for the first time. Before setting out, Li Zhiping tried to attach the huge mailbag onto his beloved mountain bike, but it didn't fit, and so he had to return it to his father's trusty old Flying Pigeon and drop the saddle to its lowest position before riding it out into the lanes and alleys of the city. Though the boy had committed all the roads and delivery points to memory, his father was still uneasy, and so he and Zheng Chen biked after him at a distance. When the boy reached the final stop on the road, the gate to a government building, his father caught up with him and clapped him on the shoulder.

"That's good, son. It's not that tough. I've done it for more than ten years, and I was set to do it my entire life. Now it's in your hands. Dad's got just one thing to tell you: I've never misdelivered a single letter the whole time. It might not be a big deal for other people, but it's something I'm secretly proud of. Remember, son, no matter how ordinary the job, you'll do well if you put your heart into it."

The third day Zheng Chen visited three students, Chang Huidong, Zhang Xiaole, and Wang Ran. Like Li Zhiping, the first two were from ordinary families, but Wang Ran's father was a well-known go player.

Chang Huidong's parents ran their own barbershop. When Zheng Chen arrived, he was giving his third haircut of the day. It was even worse than the first two, but the customer merely laughed at the patchy result he saw in the mirror and said it was fine. Chang Huidong's father apologized and refused payment, but the customer insisted. The fourth customer demanded a haircut from the boy, too, and when Chang Huidong draped a sheet over him, he said, "Practice your heart out on me, kiddo. I only have a few haircuts left, but you young people need barbers. They can't all turn into long-haired wild children."

Zheng Chen let him cut her hair, too, turning it into a tangled mess that his mother had to trim into a short cut that ended up looking not bad at all. When she left the shop, she felt much younger. It was a feeling she'd had since the supernova. On the brink of a strange new world, people reacted in two opposite ways: they grew younger or got older, and she fortunately fell into the former camp.

Zhang Xiaole's father was a cook at a work unit cafeteria. When Zheng Chen saw her student, he and his companions were, under the adults' direction, almost finished preparing rice and a large cauldron of food. For a few nervous minutes, several children stood shaking in front of the canteen window watching their efforts sell out bit by bit to a main dining hall packed with people, but it looked like nothing was amiss. Then Zhang Xiaole's father rapped a ladle against the window frame and announced, "Listen up. Today's meal was prepared by our children."

After a few seconds of silence, the hall erupted into applause.

But it was Wang Ran and his father who most impressed Zheng Chen. The boy was about to head off to driving class when she got to their house, and his father walked with him a fair distance to see him off. He said to Zheng Chen with a sigh, "I'm useless. At my age, I can't even teach my son any actual skill."

Wang Ran reassured his father that he would learn how to drive and then become a good chauffeur.

His father handed him a small bag. "Carry this with you. Read and practice when you've got spare time. Just don't throw it away, since it'll come in useful some day."

He didn't open the bag until he and Zheng Chen had walked for a while. It held a container of go pieces and a few manuals. He looked back at his father, the ninth-dan go master, still there watching after him.

As it did for many children, a dramatic change lay in the future for Wang Ran. When Zheng Chen visited him again a month later, his plan to become a chauffeur had somehow landed him in a bulldozer, where he proved a quick study. She found him at a large building site in the inner suburbs, where he was working on his own in the huge machine. He was visibly pleased to see his teacher, and invited her into the cabin to watch him work. As he piloted the bulldozer back and forth to flatten the ground, she noticed two men watching them closely from not far off. To her surprise, they were soldiers. Three bulldozers were at work, all driven by children, but the two soldiers paid particular attention to Wang Ran's, and occasionally pointed in his direction. At last they waved for him to stop, and a lieutenant colonel looked up at the cabin and called to him, "You're not a bad driver, kid. Want to come with us and drive something even more fun?"

"A bigger bulldozer?" he asked, poking his head out of the cabin.

"No. A tank."

Wang Ran was silent for a few seconds before throwing open the door and bounding to the ground.

"Here's the thing," the lieutenant colonel said. "Our branch has, for various reasons, only just now considered bringing children in to take over. Time is tight, and we're looking for people with some driving fundamentals so we can get started quicker."

"Is driving a tank like driving a bulldozer?"

"In some ways. They're both caterpillar-track vehicles."

"But a tank is harder to drive, right?"

"Not necessarily. For one thing, a tank doesn't have that big blade, so you don't have to worry about frontward force when you're driving."

And just like that, Wang Ran the son of a ninth-dan go master became a tank driver in an armored division.

On the fourth day, Zheng Chen visited Feng Jing and Yao Pingping, who had been assigned to work in a nursery. In the upcoming children's world, the family unit would vanish and the nursery would be a key institution for a fairly long period. Lots of children would spend their remaining childhood years there bringing up infants even younger than themselves.

When Zheng Chen found her students, their mothers were instructing them in baby care, but like all the rest of the older children in the nursery, they were helpless in the face of wailing babies.

"I can't stand it!" Yao Pingping said as she stared at the baby crying incessantly on the bed.

"You need to be patient," her mother said. "Babies can't use words. Crying is how they talk, so you have to figure out what they mean."

"Then what's he saying now? I've given him milk, but he won't eat."

"He wants to sleep."

"He should just go to sleep, then! What's he crying for? He's so annoying."

"Most children are like that. You've got to pick him up and walk with him, and he'll stop crying."

And that's all it took.

Pingping asked her mom, "Was I like that when I was little?"

Her mother laughed. "You were hardly that compliant. You'd usually fuss for an hour before you fell asleep."

"What a chore it must have been, bringing me up."

"You'll have it even harder," her mother said sadly. "Babies in day care all have parents, but in the future it'll be up to you all to raise them."

Zheng Chen kept silent during her time at the nursery, to the point that Feng Jing and Yao Pingping asked her if she was feeling well. Her thoughts were on her own unborn child.

The nations of the world had all banned further procreation in what for many of them was their final legislation of the Common Era. But laws and

ordinances were ineffective; half of pregnant women, Zheng Chen among them, chose to carry their babies to term.

On the fifth day she returned to school, where lower grades were still attending classes taught by upperclassmen training to become teachers. She entered her classroom and found Su Lin and her mother, also a teacher at the school, working on teacher training.

"These kids are idiots. I've told them over and over but they still don't get how to add and subtract two-digit numbers!" Su Lin angrily pushed aside a stack of workbooks.

Her mother said, "Every student understands things at a different pace." She flipped through the papers. "See, this one doesn't know how to carry. And this one, no concept of places. You've got to address them independently. Take a look at this one. . . ." She handed Su Lin a workbook.

"Idiots! Plain idiots. They don't even know simple arithmetic." She glanced at the workbook but tossed it aside. Shakily scrawled numbers formed lines of two-digit addition and subtraction problems, all of them making the same stupid mistakes she had grown tired of over the past two days.

"It's your own workbook from five years ago. I saved it for you."

Surprised, Su Lin picked up the workbook, but could hardly recognize the clumsy script as her own handwriting.

Her mother said, "A teacher has to have patience for hard work." She sighed. "But your students are the fortunate ones. What about you? Who's going to teach you?"

"I'll teach myself. Mom, didn't you tell me that the first college teacher had never been to college?"

"But you've never even been to middle school!" Her mother sighed again.

On the sixth day, Zheng Chen sent off three of her students at the West Railway Station. Wei Ming, whose father was a lieutenant colonel, and Jin Yunhui, whose father was an air force pilot, were headed to the military. Zhao

Yuzhong's parents were migrant workers, and they were taking their son back home to a village in Hebei. Zheng Chen promised to visit Jin Yunhui and Zhao Yuzhong, but Wei Ming would be stationed in Tibet on the Indian border, and she knew that she would never make it there in the ten months she had remaining.

"Ms. Zheng, when your baby is born you've got to write to tell us where he ends up, so we can take care of him," Wei Ming said, and then shook her hand forcefully before boarding the train without looking back, resolute in his final farewell.

As she watched the train depart, she again broke down and had to cover her face to hide her tears. She had now become a child, but her students had grown into adults overnight.

The Great Learning was the most rational and orderly period in history, all things proceeding on an urgent, organized schedule. But before it began, the world very nearly succumbed to madness and despair.

After a brief moment of calm, various portents of doom began to make themselves known. First was the mutation of plants, and then mass die-offs of animals: bodies of birds and insects littered the ground, and the ocean surface was awash in dead fish. A great number of species vanished within the space of days. The rays' effects on humans became apparent. People exhibited identical symptoms: low fever, full body fatigue, inexplicable bleeding. The regenerative ability of children had been discovered but was not definitively proven, and although national governments made plans for a world of children (the Valley World was in session during this time, so the children were unaware of the chaos outside), a few medical institutions concluded that everyone would eventually die of radiation sickness. The terrifying news quickly spread round the globe despite government efforts to suppress it.

Society's initial reaction was to count on luck, to place their hope in the god of medical science. Rumors occasionally circulated saying that such-and-such an organization or research facility had developed a lifesaving drug. Meanwhile, leukemia drugs like cyclophosphamide, methotrexate,

doxorubicin, and prednisone were worth more than gold, even though doctors explained time and again that what people were suffering was not leukemia. A significant number of people did place their hope on the possible existence of a real god, and for a while, cults of all kinds spread like wildfire, the huge-scale or peculiar forms of their devotion returning certain countries and regions to a picture of the Middle Ages.

But it wasn't long before the bubble of hope popped, spurring a chain reaction of despair in which increasing numbers of people lost their senses, culminating in mass hysteria that spared not even the most unflappable. The government's hold on the situation slipped away, since the police and military who ought to have maintained order were themselves in a highly unstable state. At times, the government was partially paralyzed under the most intense psychological pressure ever felt in human history. In the cities, car crashes piled up in the thousands, explosions and gunfire came in waves, and pillars of smoke rose from tall buildings burning out of control. Frenzied crowds were everywhere. Airports shut down due to the chaos, and air and surface links between Europe and the Americas were severed. The chaos and paralysis affected the news media, too. The universal mood of the time can be demonstrated by a headline that ran in *The New York Times* in scarily large type:

HEAVEN SEALS OFF ALL EXITS!!!

Religious adherents either grew more fervent, to bolster their spiritual strength in the face of death, or abandoned religion entirely in a torrent of verbal abuse. A newly invented tag, "GODOG," began popping up in urban graffiti as a contraction of "God is a dog."

However, once children's regenerative abilities were confirmed, the mad world calmed down at once, at a speed one journalist described as "flipping a switch." An entry in a woman's diary on that day reveals the prevailing attitude:

> My husband and I huddled together on the sofa. Our psyches really couldn't take it anymore. We were certain to die from the torment if

> our illness didn't finish us off first. The picture came back on the TV, and the bottom scroll had the government's announcement confirming children's regenerative abilities. When we read it, it was like we'd come to the end of a marathon, and we exhaled heavily, letting our weary bodies and minds relax. Amid the worry for ourselves these past few days, we were more concerned with little Jingjing. I prayed with all my might that Jingjing wouldn't get this fearsome illness! When I learned that children will live on, my heart could start beating again, and all of a sudden my own death turned less frightening. Now I'm extremely calm, and find it hard to believe I'm facing death so casually. But my husband hasn't changed. He's still trembling all over, practically fainting on top of me. He used to be so strong and confident. Maybe I'm calm because when I became a mother, I felt the power of life firsthand, and I know that there is nothing to fear from death! So long as boys and girls will live on, that resistance will continue, and soon there will be new mothers, and new children. Death doesn't scare me. "What should we prepare for Jingjing," I lean over and whisper to him, as if we're about to go away on business for a few days. But god that painful anxiety returns as soon as I say it, since isn't it an acknowledgment that the world will soon have no adults? What will the children do? Who will cook for Jingjing? Who will pat him to sleep? Who will help him across the road? What will he do in the summer? And in the winter? God, we can't even leave him with someone else, since there'll only be kids left. Just kids! It's unreal, unreal! But so what? It'll be winter soon. Winter! I'm only half-finished knitting Jingjing's sweater. I have to stop writing and go work on it . . .
>
> From *Last Words at Doomsday,* Sanlian Press, SE 8.

As soon as this news broke, the Great Learning commenced.

This was one of the most peculiar phases in human history, in which human society assumed a form it had never taken before and was unlikely to

take again. The world became an enormous school where children nervously studied all the skills necessary for humanity's survival, to acquire a basic ability to run the world in the space of just a few months.

In most professions, children of the world succeeded their parents and learned from them the required skills. The approach brought about a number of social ills, but it was the most workably efficient solution that anyone could come up with.

The particular duties of relatively senior leaders meant they were typically recruited internally and then given training in their posts; selection standards varied from country to country. This approach proved difficult owing to the special characteristics of child society, and future events suggested that most selections were unsuccessful, although they nevertheless preserved basic social structures.

Most difficult was the selection of national leaders, a practically impossible task to accomplish in such a short time. The world's countries independently arrived at the same unusual method: model countries. The scale of the simulations varied, but they all operated in a way almost cruelly similar to the way actual countries operate, in the hope that the hardships and extreme environment of blood and fire would reveal children with leadership ability. Later historians found this the most astonishing thing about the end of the Common Era, and the brief history of these simulated countries became rich fodder for the fantastic literature of the Supernova Era. The period gave birth to whole categories of novels and films, and these microhistories grew ever further disconnected from reality and gradually took on the color of myth. Opinions of that era varied, but most historians acknowledged that under the era's extreme conditions, the choice they made was a rational one.

Without question, agriculture was a key skill, and fortunately this was one that children found relatively easy to acquire. Unlike urban children, rural kids had to a greater or lesser extent taken part in their parents' labors; it was in the large-scale farms of more industrialized countries that they had a harder time of it. On a global scale, children could take advantage of existing agricultural equipment and irrigation systems to produce all the food they needed, which provided a cornerstone for the survival of humanity as a whole.

Children also proved relatively quick studies at other basic skills essential for a functioning society, such as commerce and the service sector. Finance was rather more complicated, but with enough effort they were able to make the sector partially operational. Besides, finance would operate far more simply in the children's world.

Skilled labor was also a fairly easy acquisition, which came as a great surprise to the adults. Children quickly became basically qualified if not especially proficient at driving, machining, welding, and, most surprisingly, piloting fighter planes. Children, they now realized, had an inborn aptitude for dexterous work that slipped away when they got older.

But technical work requiring background knowledge was far more difficult. Children could learn to drive quite quickly, but they had a harder time becoming qualified auto mechanics. The young pilots could fly planes, but it was practically impossible for ground personnel to correctly assess and handle aircraft failures. Engineer-level technicians were even hard to find among the children. And so one of the most formidable tasks of the Great Learning was getting the complicated technologies essential for society's operation, such as the power grid, up and running; this task was only partially completed. It was practically certain that technology would take a major step backward in the children's world—half a century in the rosiest predictions, with many people anticipating a return to a preindustrial age.

But the areas that children had the biggest difficulty mastering were scientific research and high-level leadership.

It was hard to imagine science in a world where children with only an elementary education would have to follow the long road to acquire the abstract thought necessary for cutting-edge scientific theory. And although fundamental scientific research was imperative for humanity's survival in the present circumstances, it faced a critical threat: Children were ill-equipped for theoretic thinking, meaning that scientific advancement would be suspended entirely for an indefinite period. Would scientific thinking ever return? If not, would the loss of science return humanity to the Dark Ages?

Senior leadership talent was a more practical, pressing problem. Maturity is hard to acquire, and top leaders need a broad knowledge of politics, economics,

and history, a keen understanding of society, experience in large-scale management, skill at interpersonal relations, correct situational judgment, and the stable character required to make major decisions under pressure, all of which children lack. Moreover, it was impossible to teach character and experience in such a short time—those were unteachable skills, only acquired in a lengthy process. So the young senior leaders might end up making bad decisions acting on impulse and naïveté, decisions that had the potential for terrible, even catastrophic consequences, and that might prove to be the biggest threat to the children's world. Future events would prove this fear correct.

For the next several months, Zheng Chen went about the city helping her students learn the adult world's necessary survival skills. They may have been distributed throughout the city, but she felt as if they were still a single class occupying a citywide classroom.

Her unborn child grew day by day, as did her body weight, not solely because of her pregnancy, but because, like everyone older than thirteen, the symptoms of the supernova sickness were becoming increasingly obvious. She had a perpetual low-grade fever, her temples throbbed, her body was soft as mud from head to toe, and it was getting harder to move. Even though her fetus was developing well as a healthy little being unaffected by supernova sickness, she still wondered whether her own worsening condition would allow her to carry him to term.

Before being admitted to the hospital, she visited her students Jin Yunhui and Zhao Yuzhong as she'd promised.

Jin Yunhui was now training to be a fighter pilot at an air base a hundred kilometers outside of the city. At the start of the runway, she found him among a group of flight-suited children next to a few air force officers, enveloped in an atmosphere of nervous fear. They were looking at the sky ahead of them, and with enormous effort she was able to make out a silvery dot in that direction. Yunhui told her it was a fighter jet that had stalled at five thousand meters. The J-8 interceptor in a tailspin plummeted like a stone. They watched it pass two thousand meters, the optimum altitude for a parachute, but the

expected chute didn't appear. Was it an ejector failure? Or did the pilot miss the button? Or was he still trying to rescue the plane? These questions would never be answered. The officers set down their binoculars and watched with naked eyes the falling plane glittering in the midday sun before it vanished behind a distant ridge. Then they saw the rising fireball wreathed in smoke over the hillside, and heard the heavy sound of an explosion.

The senior colonel commander stood off to one side looking mutely at the distant column of smoke, still as a stone carving, as if the air had frozen around him. Yunhui whispered to Zheng Chen that the jet's pilot had been his thirteen-year-old son.

After a long while, the political commissar broke the silence. Striving to keep his tears from flowing, he said, "I've said it before. Children can't pilot high-performance fighters! They don't measure up in any area: reaction time, bodily strength, or psychology. And letting them solo after just twenty hours in the air, and putting them in J-8s after thirty more? You're just toying with their lives!"

"We'd be toying with them if we didn't have them fly," the commander said as he rejoined the group. His voice remained heavy. "As you all know, the kids over there have put two thousand hours in F-15s and Mirages. If we keep tiptoeing around, my son's not the only one who's going to die."

"8311 on deck!" called another colonel. This was Jin Yunhui's father, and he was calling his son's number.

Yunhui picked up his helmet and flight bag. The pressurized suits had been hurriedly prepared for the children and fit them well, but the helmets were for adults and looked oversized. The handgun at his waist seemed too big and heavy, too. When he passed his father, the colonel saluted him.

"Weather conditions are poor today, so keep an eye out for crosscurrents. If you stall, first thing to do is to keep calm, and then determine the direction of your spin. Then extricate yourself using the steps we've been over again and again. Remember: above all else, keep calm!"

Yunhui nodded. Zheng Chen saw his father's grip relax, but he still held on, as if something about his son held him there. Yunhui gently shrugged his shoulders to ease off his father's hand, and then ran off to the J-10

multirole fighter. He didn't look back at his father before climbing into the cockpit, but flashed Zheng Chen a smile.

She stayed at the base for more than an hour, watching the tiny silver dot leave a snow-white trail across the blue sky, and listening to the dull thunder of the engines, until Yunhui's fighter had safely returned to earth. She was hardly able to believe that it was one of her students flying through the air.

She visited Zhao Yuzhong last, out in a field on the plains of Hebei. The winter wheat was planted, and the two of them sat in the warmth of the sun on warm, soft ground, like a mother's embrace. Then the sunlight was blocked, and they looked up into the face of the old farmer, Yuzhong's grandfather.

"Kid, the land's generous. You put in the effort, and it'll repay you. The land's the most honest thing I've met in all my years, and it's been worth every effort I've put into it."

Looking out over the sown field, Zheng Chen let out a sigh. She knew that her own life was nearing completion and she could depart without worries. She wanted to enjoy her final moments, but threads of attachment kept her tied up. At first, she thought the attachment was to the child inside her, but she soon realized that the threads led three hundred miles away to Beijing, where in the beating heart of the country, eight children were enrolled in the toughest course in human history, studying things they could not possibly hope to learn.

THE CHIEF OF GENERAL STAFF

"This is the territory you'll be defending," the chief of the general staff department said to Lü Gang, pointing to a map of the country. The map filled an entire wall of the room. It was the largest map Lü Gang had ever seen.

"And this is the world we're in." The chief pointed to a similarly sized world map.

"Sir, let me have a gun!"

The chief shook his head. "Kid, the day you have to fire on the enemy yourself is the day the country is lost. Let's get to class." As he spoke, he turned toward the map and passed a hand upward from Beijing. "In a moment we're going to fly this distance. When you look at the map, picture the vast terrain in your mind, and imagine its every detail. This is a military commander's basic skill. You're a senior commander directing the entire army, so when you look at this map, you need to have an overall feel for the country's entire territory."

The chief led Lü Gang out of the hall and, along with two other colonel staff officers, boarded a military helicopter standing in the yard. Engine whining, the helicopter took off and in a flash they were soaring over the city.

Pointing at the cluster of buildings below them, the chief said, "The country's got thirty-odd big cities like this. In a total war, they may become focal battlefields or launching points for campaigns."

"General, are we going to learn how to defend large cities?" Lü Gang asked.

Again, the chief shook his head. "Specific urban defense plans are for the army and front commanders. What you need to do is decide whether to defend or abandon a city."

"Can the capital be abandoned?"

The chief nodded. "For the sake of ultimate victory in the war, even the capital can be abandoned. The decision must be made according to the situation. Of course, there are many factors that have to be considered where the capital is concerned. But you can be certain of one thing: That is an extremely difficult decision to make. The easiest thing in war is desperate, death-defying use of effective force. However, the superior commander does not use death-defying measures, but arranges for the enemy to do so. Remember, child: War requires victory, not heroes."

Soon the helicopter was outside of the city and over rolling hills.

The chief said, "If war breaks out in the children's world, it's unlikely to be a high-tech war as we currently understand it. The shape of war may be more like the Second World War. But that is just a guess. Your minds are very different from adults'. Children's war may take a form completely

unlike anything we're capable of imagining. But adults' war is all that we can teach you right now."

The helicopter flew for around forty minutes. Beneath them the vast expanse of ground was dotted with hillocks, and a desertified stretch and the remains of ground cover, from which a few columns of sand and dust rose.

"Class starts now, kid," the chief announced. "The area beneath us was, back in the early eighties, the site of the largest land war games in military history.* Now we've turned it into a battlefield simulation. We've assembled five field armies to conduct exercises here."

Lü Gang looked down. "Five armies? Where?"

The helicopter dropped swiftly, and Lü Gang saw that the dust columns were rising from roadways bearing tanks and other military vehicles that crawled off like beetles toward somewhere indistinct on the horizon. Some of them, he noticed, weren't following the roads, nor were they trailing dust. They were moving far faster: he realized they were low-flying helicopters.

The chief said, "The Blue Army is assembling below us. Very soon it will launch an attack on the Red Army." He pointed southward and drew an invisible line across the rolling hills. "See, that's the Red Army's defensive line."

The helicopter headed toward that line and landed at the foot of a hill. Here, the ground was crisscrossed with tire ruts slicing through the red soil. They disembarked and got into green coms vehicles that took them into a cave in the hillside. Lü Gang noticed that the soldiers busy at work outside the vehicles, as well as the guards that saluted them at the cave entrance, included both children and adults.

A heavy iron door opened and they entered a spacious chamber with situation maps of the battlefield displayed on three large screens on the opposite wall, red and blue arrows tangled up like some grotesque creeping animal. In the center of the chamber was a large sand table surrounded by bright computer screens attended by camouflaged officers. Half of them, Lü Gang noticed, were children. They all stood at attention and saluted when the chief entered.

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* Over 100,000 soldiers participated in the Huabei Military Exercises, conducted in 1981.

"This is the Red Army battle display system?" the chief asked, pointing at the large screens.

"Yes, sir," replied a colonel.

"Do the children know how to use them?"

The colonel shook his head. "They're learning. But they still need adults' assistance."

"Hang up the combat map. It's the most reliable, at any rate."

As several officers unrolled a large combat map, the chief said to Lü Gang, "This is Red Army Command. In this simulation, several hundred thousand children are learning warfare. Their course of study ranges from how to be a private to how to be a field army general. You, my boy, have the hardest course of any of them. We don't expect you to learn much in such a short time, but we've got to instill in you a correct, precise appreciation and instinct for warfare at a high level. And that's not an easy thing, either. In the past, progressing from a military academy cadet to your present position would take at least thirty years, and without those thirty years of bottom-to-top experience, you'll find it hard to understand some of the things I'm going to tell you. We'll just do our best. Fortunately, your future opponents aren't much better off than you are. Starting now, forget everything you've learned about war from the movies, as completely as you can. You'll find out very soon that movie warfare is totally different from the real thing. It's vastly different even from the battle you commanded in the valley. The battles you'll command might be ten thousand times that size."

The chief turned to a senior colonel: "Go ahead."

The senior colonel saluted and went out. He returned not long afterward. "Sir, the Blue Army has launched an all-out offensive on the Red Army's defensive line."

Lü Gang looked around him but didn't see any obvious changes. The tangle of arrows on the situation map were not moving. The sole difference was that the adults around the sand table and at the combat map had stopped their urgent explanations; the children had put in earpieces and microphones and were standing in wait.

The chief said to him, "We'll get started, too. Kid, you've received a report on the enemy's movements. What's the first thing you need to do?"

"Order the defensive line to block the enemy!"

"That's not an order."

Lü Gang looked blankly at the chief. Another three generals came over from the exercise directorate. Then they felt muted tremors from outside.

The chief prompted him: "What does your order consist of? What are you basing your order on?"

He thought a moment. "Oh, right. Determine the main direction of the enemy's attack."

The chief nodded. "Correct. But how do you make that determination?"

"The place where the enemy has put the most troops and is attacking the fiercest is its main direction."

"Basically correct. But how do you know where it's putting most of its troops, and where it's attacking the fiercest?"

"I'll go observe from the highest hill on the front lines!"

The chief's expression did not change, but the other three generals sighed softly. One seemed about to say something to Lü Gang but was stopped by the chief, who said, "Very well. Let's go have a look."

A captain handed helmets to Lü Gang and the chief, and handed binoculars to Lü Gang, and then opened the iron door for them. Explosions rolled in along with gusts of wind that smelled faintly of smoke, and the sound grew more deafening as they crossed the long passage to the outside. The ground vibrated under their feet, and the smoke grew thicker in the air. Squinting against the bright sunlight, Lü Gang looked about him, but the scene before him was little different from when he had arrived: the green coms vehicles, the rut-crossed ground, and a few placid-looking nearby hills. He couldn't locate the shells' impact points; the explosions sounded like they were coming from a different world, but somehow seemed right beside him. A few armored helicopters flew low over the opposite hilltop.

The waiting Jeep sped them along a winding mountain road, and in just a few minutes they reached the top of the hill, which held the command post and a radar station, an enormous, silently spinning antenna. A kid

stuck his head out the half-open door of a radar control vehicle, his too-large helmet wobbling, and quickly drew back and shut the door.

They exited the car, and the chief swept a hand about him. "This high ground is an excellent vantage point. Make your observations."

Lü Gang looked around. Visibility of the uneven, rolling terrain spread out before him was indeed excellent. He located the blast points, all of them far off, the newer ones still smoking. Some hills were shrouded in a thicker smoke and dust and seemed to have been under assault for quite some time, and all he could see were sporadic flashes of explosions.

The targets were visible in all directions, sparsely but evenly distributed throughout his field of vision rather than in a line like he had imagined. Picking up the binoculars, he scanned the scene with no particular target in mind. His viewfinder raced across the meager ground cover, exposed rock, and sand, but he saw nothing else.

When he trained the binoculars on a far-off hill currently under attack, all he could see was a haze of smoke blurring out the scene itself, which nevertheless remained ground cover, rock, and sand. He held his breath and looked more carefully, and at last in a dry streambed at the foot of the hill he found two armored vehicles, but in the blink of an eye they vanished into a valley. On another roadway between two hills he found a tank, but before long it turned and headed back the way it came. He set down the binoculars and watched the battlefield in a stupor.

Where was the defensive line, and where was the Blue Army's attack? The Red Army's position? He couldn't even be certain of the existence of two huge armies, since all he could see was distant bomb targets and a few smoky mountains, which looked less like a pitched battle than a few lonely signal fires. Was this really a fierce engagement of five field armies?

Next to him, the chief laughed. "I know the kind of war you're thinking of: a broad, flat plain, the attacking enemy force lined up in an orderly formation, charging over like they're on an inspection parade, and your defensive line is like a Great Wall crossing the entire battlefield; as supreme commander, you stand on high ground beside the front lines, taking in the whole battlefield like it's on a sand table, mobilizing units like pushing

pieces on a chessboard. . . . Perhaps such a war existed in the age of cold weapons, but even then, it would have been limited to small conflicts. Genghis Khan or Napoleon would only have personally witnessed a small part of the battles they fought. In modern warfare, battlefield terrain is far more complicated, and highly mobile, long-rage heavy firepower further separates the opposing fighting forces, who conceal their movements. That means the modern battlefield is practically invisible to a distant observer. The approach you've taken may be suitable for a captain commanding a company. But like I said before, forget war movies. Let's go back, back to the high commander's spot."

When they rejoined the command center, things had substantially changed. Its former calm had disappeared, and groups of adult and child officers were shouting into phones and radios; beside the sand table and maps, children, aided by adult officers, were urgently positioning markers according to the information transmitted through their earpieces; the situation maps on the big screens were in constant flux.

Motioning to all the activity, the chief said to Lü Gang, "Do you see it now? This is your battlefield. As high commander, you have a more limited range of motion than a lowly private, but from here, your eyes and ears can encompass the whole battlefield. You've got to adapt to your new senses and learn how to use them. To be a good commander, you've got to be able to create a realistic combat map in your mind, with every detail true to life. That's not easy."

Lü Gang scratched his head. "It's still weird, thinking about issuing directives from here in this cave, based on intelligence from these computers and radios."

"If you understand the nature of the intelligence reports, you won't find it weird," the chief said as he led him to one of the big screens. He picked up a laser pointer and, drawing a small circle, said to the child captain operating the computer next to them, "Blow up this section, fella."

The little captain dragged a box around the designated area and enlarged it to the size of the screen. "This is a situation chart for hills 305, 322, and 374," the chief said. Pointing to the two neighboring screens, he said to the captain, "Display charts for the same region but from two different intelligence

reports." The kid struggled for a while, and eventually an adult major took the mouse from him and flipped two situation charts up onto the screens. Lü Gang noticed that the three images showed identical geography, contour lines around three elevated points in an equilateral triangle, but there were significant differences in the number, direction, and thickness of the moving red and blue arrows.

The major described the charts to the chief. "Chart one is based on intelligence from D Army, Division 115, Third Regiment, which is defending hill 305. The report says two Blue Army platoons are attacking that region, focusing on hill 322. Chart two is based on aerial surveillance from D Army's aviation regiment, and says the Blue Army has dispatched one platoon to this region in an assault focusing on hill 374. Chart three comes from F Army, Division 21, Second Regiment, which is defending hill 322. They say the Blue Army has put an entire division to attack the three hills, with a focus on hill 305, and is attempting to flank hills 322 and 374."

Lü Gang asked, "These reports were sent at the same time?"

The major nodded. "Yes, half an hour ago, from the same region."

Lü Gang looked at the three screens in confusion. "How can they be so different?"

The chief said to the major, "Bring out all of the reports on those three hills from that same time." The major took out a stack of paper as thick as a copy of *Romance of the Three Kingdoms*.

"Wow. That's a lot!" Lu Gang exclaimed.

"There is an overabundance of intelligence from the battlefield in modern warfare. From a comprehensive analysis of all of the information, you need to find some direction that will allow you to judge correctly. What you've seen in the movies, where a hero infiltrates the enemy and then the commander uses the one intelligence report he sends back to decide strategy for the entire battle, is frankly ridiculous. Of course, it's not like you have to read every single report. That's a task for your advisors, and for taking advantage of the C3I system to process the enormous amount of information generated during battle. But the ultimate decision is still in your hands."

"It's really complicated. . . ."

"It's even more complicated than that. The trend you identify in that ocean of information might not even be real. It might be strategic deception on the part of the enemy."

"Like when they had Patton command the Bodyguard deception during Normandy?"

"That's right. Next, let's see you determine the primary direction of the Blue Army's attack from these reports."

MSG AND SALT

A small motorcade heading northward from Beijing arrived at a quiet spot ringed by low hills. The cars stopped, and the president and premier got out, along with three children: Huahua, Specs, and Xiaomeng.

"Look, children," the president said, pointing ahead to a railway, where a long freight train was stopped on a single track, a line of cars stretching off in an enormous arc that bent round the foot of a hill with no end in sight.

"Wow, that's a long train!" Huahua exclaimed.

The premier said, "Eleven trains in all, each with twenty cars."

The president said, "This is a test-loop track. It's a big circle where new locomotives were sent from the factory to test their functions." Turning to a staffer, he said, "It's out of use now, isn't it?"

The staffer nodded. "That's right. For quite some time. It was built in the seventies, and isn't suited to high-speed-rail cars."

"So you'll have to build another one," the premier said to the children.

"We might not need to test high-speed-rail cars," Huahua said. When the president asked why, he pointed up at the sky, and said, "I'm envisioning a sky train, with a powerful nuclear airplane for a locomotive, pulling a chain of unpowered gliders. Much faster than a regular train."

The premier said, "Fascinating. But how will your sky train take off and land?"

"It'll be able to," Specs said. "Precisely how, I don't know. But there's a

historical precedent for it. In World War Two the Allies used a transport plane to tow a chain of gliders carrying paratroopers."

The president said, "I remember that. It was to seize a Rhine bridge behind enemy lines. Operation Varsity. The largest airborne operation in history."

The premier said, "If conventional-powered transport planes can be towed too, the thing might have real-world significance. It has the potential to cut air transport costs by ninety percent."

The president asked, "Has anyone in the country suggested an idea like this before?"

The premier shook his head. "Never. Children clearly aren't at a disadvantage on every front."

The president looked up at the sky and said with feeling, "Yes. Sky trains, and maybe gardens in the sky as well. What a wonderful future. Still, first we've got to help the children overcome their disadvantages. After all, we didn't come here to discuss trains." He pointed at the train. "Children, go have a look at what's on board."

The three children ran off to the train. Huahua clambered up the ladder of one car, followed by Specs and Xiaomeng. They stood atop the big white plastic sacks that filled the car; from this vantage point, similar sacks were visible in cars farther down the train, gleaming in the sunlight. Squatting down, Specs poked a small hole in one, and translucent white needle-shaped grains spilled out. Huahua picked one up and licked it.

"Careful. It may be poisonous," Specs said.

"It looks like MSG," Xiaomeng said, and then licked a grain for herself. "Yep, it's MSG."

"You can pick out the taste of MSG?" Huahua asked, eyeing her suspiciously.

"It's MSG, all right. Look!" Specs pointed to the row of sacks ahead of them, on which, written in large letters, was a logo familiar to them from TV ads. But they found it hard to reconcile the chef on TV in his large white hat tossing a sprinkle of white powder into a pot with this huge dragonload. They walked across the bags to the other end of the car and gingerly

stepped over the coupling into the next, which was filled with the same white sacks of MSG. They went another three cars farther, all of them chock-full of MSG sacks; clearly the rest of the train would be the same. Even one train car seemed enormous to children used to passenger cars; they counted, and like the premier had said, there were twenty cars in this train, all of them full of MSG.

"Geez that's a lot. All the MSG in the country must be here."

As they descended the ladder they saw the president and premier approaching on the trackside path, and as they were about to run over and ask questions, the premier stopped them with a wave of his hand, and called, "Take a look at what's in the other trains."

And so the three of them ran along the path past a dozen cars, and then the locomotive, and then after a gap of ten meters they reached the tail of the second train and climbed up to the top of the car. This one was also brimming with white bags, but they were woven, not slick plastic, and they were labeled EDIBLE SALT. These bags were hard to puncture, but a small amount of dust had leaked and they dabbed their fingers and had a taste: indeed it was salt. Another huge white dragon stretched out ahead of them; all twenty cars in this train were carrying salt.

They returned to the trackside path, ran the length of the train, and climbed up onto the top of a car in the third train. Like the second, it was full of salt. They climbed down and ran to the fourth train. Also salt. Then Xiaomeng said she couldn't run anymore, so they walked. It took quite a while to go past twenty cars to the fifth train. Salt again.

They were a little demoralized by what they saw from the top of the car. There was no end to the line of train cars, which curved and disappeared behind a hillside in the distance. They got down and passed another two trains filled with salt. The head of the second train was beyond the hill and from their vantage point on top of it they could see the end of the line of trains—another four ahead of them, they counted.

They sat down on the top of the car to catch a breath. Specs said, "I'm tired out. Let's go back. There's nothing but salt in the rest of them anyway."

Huahua stood up and took another look. "Hmm. It's like a world tour.

We've traveled half of the big circle, so it's the same distance whether we go ahead or turn back."

And so they pressed onward, car after car, along uneven ground, like they were circumnavigating the globe. Now they didn't need to climb up to know it was salt in the cars, since they could smell it. Specs said it was the smell of the sea. At last the three of them passed the final train and emerged from its long shadow into bright sunlight. Before them was a stretch of empty track, at the end of which stood the MSG-laden train they'd left at the start of their circuit. They walked toward it along the empty tracks.

"Hey, there's a little lake over there," Xiaomeng exclaimed delightedly. The pond in the center of the circular track reflected the light of the sun, now descending in the west, a sheet of gold.

"I saw that before, but you two were focused on salt and MSG," Huahua said, walking atop a rail with both arms outstretched. "You get on that one and we'll see who can walk the fastest."

Specs said, "I'm sweating and my glasses keep slipping down, but I'll beat you for sure. Stability over speed on the high wire—it's all over if you fall off."

Huahua took a few more quick steps. "See. Fast and stable. I can walk all the way to the end without falling off."

Specs looked at him thoughtfully. "That may be true right now, but what if it was like a tightrope, and the rail was hanging in midair with a thousand-meter drop below you? Could you still make it to the end?"

Xiaomeng looked off at the golden water and said softly, "Yeah. Our rail is hanging in midair."

Three thirteen-year-olds, who in nine months would be supreme leaders of the largest country in the world, fell silent.

Huahua jumped off the rail, stared at Specs and Xiaomeng for a bit, and then, with a shake of his head, declared, "I'm not keen on your lack of confidence. Still, it's not like there will be much playtime in the future." Then he hopped back up on the rail and teetered off.

Xiaomeng laughed. It was a laugh perhaps a little more mature than for a girl of thirteen, but Huahua found it touching. "I never had much playtime

before. Specs, nerd as he is, doesn't play much. You're going to lose biggest out of the three of us."

"Leading the country is fun enough in itself. Today was pretty fun. All of that salt and MSG, those long trains. Pretty impressive."

"We were leading the country today?" Specs said with snicker.

Xiaomeng, too, was skeptical. "Yeah, why did they show us all this stuff?"

"Maybe so we'll know about the national MSG and salt reserves," Huahua said.

"Then they should have brought Zhang Weidong. He's in charge of light industry."

"That moron can't even keep his own desk in order."

Back at their starting point on the circular railway, the president and premier were standing beside the train. The premier was speaking, and the president was nodding his head slowly. Both of them looked grave, and it was clear they had been talking for quite some time, silhouetted against the backdrop of the great black train in a powerful tableau, like a centuries-old oil painting. But their expressions brightened immediately upon seeing the children's approach. The president waved.

Huahua whispered, "Have you noticed that they're different with us than they are among themselves? When we're around, the sky could be falling and they'd remain optimistic. But when they're together, they're so serious it makes me feel the sky really is falling."

Xiaomeng said, "That's what adults are like. They can control their emotions. You can't, Huahua."

"So what? Is there something wrong with letting others see me for who I really am?"

"Self-control doesn't mean being fake. Your emotions affect those around you, you know. Especially kids—they're easily influenced. So you should find some self-control. You can learn from Specs."

"Him?" He sniffed. "He's only got half the normal number of nerves in his face—it's always that same expression. You know, Xiaomeng, you're more of a teacher than the adults."

"That's true. Have you noticed that the adults have taught us very little?"

Up ahead, Specs turned around, the same indifferent expression on his nerve-deficient face, and said, "This is the hardest course in human history, and they're afraid of teaching it wrong. But I've got a feeling that instruction is about to kick into high gear."

"You've done good work, children," the president said when they reached him. "You've covered quite a distance. And you've been impressed with what you saw, I presume?"

Specs nodded. "Even the most ordinary things become marvelous in large quantities."

Huahua added, "Yeah. I never imagined there'd be so much MSG and salt in the entire world."

The president and premier exchanged a look and a trace of a smile. The premier said, "Here's our question for you. How long would it take the country's population to consume all of that MSG and salt?"

"At least a year," Specs said at once.

The premier shook his head, as did Huahua, who said, "It won't be gone in a year. Five, at least."

Again, the premier shook his head.

"Ten?"

"Children, all of it is only enough for a single day."

"One day?" The three children stood wide-eyed in shock for a moment, until Huahua laughed awkwardly at the premier. "You're joking . . . right?"

The president said, "At one gram of MSG and ten grams of salt per person per day, it's a simple matter of arithmetic: these train cars hold sixty tons, and there are one-point-two billion people in the country. You do the math."

They wrestled with the long chain of zeros for a moment, and realized he was telling the truth.

Xiaomeng said, "But that's just salt and MSG. What about oil? And grain?"

"The oil would fill the pond over there. Grain would pile up into the hills around us."

The children stared at the pond and the hills and said nothing for a long time.

"God!" said Huahua.

"God!" said Specs.

"God!" said Xiaomeng.

The premier said, "Over the past couple of days we've been trying to find a way to give you an accurate feel for the size of the country, and that hasn't been easy. But you've got to have a sense of it to lead a country like ours."

The president said, "We took you here with one important goal in mind: to make you understand a fundamental rule of running a country. You'll no doubt have imagined a country's operation as something complicated, and indeed it is, more complicated than you know, but the underlying rule couldn't be simpler. You know what I mean, I suspect."

Xiaomeng said, "Above all, ensure that the country is fed. Every day we need to provide the people with a trainful of MSG, ten trains of salt, a lake of oil, and several hills of rice and flour. One day without, and the country will plunge into chaos. Ten days without, and there's no country anymore."

Specs nodded. "They say productive forces determine the relations of production, and the economic foundation determines the superstructure."

Huahua nodded, too. "Any idiot could understand that by looking at that long train."

The president looked off into the distance, and said, "But lots of highly intelligent people don't understand it, children."

The premier said, "Children, tomorrow we'll take you to learn more about the country. We'll visit bustling cities and remote mountain villages, show you established industry and agriculture, teach you about the way the people live. And we'll tell you about history—that's the best way to learn about the present day. We'll give you lots more complicated information about running a country, but remember that nothing is more basic or profound than what you've learned today. The road you're on will be fraught with difficulties, but so long as you remember that rule you won't get lost."

With a wave of his hand, the president said, "Let's not wait for tomorrow. We'll leave tonight. Time is short, children."

4
HANDING OVER THE WORLD

BIG QUANTUM

From far off, the National Information Tower resembled a giant "A." Built prior to the supernova, it was the heart of Digital Domain, a broadband network covering the entire country. The network, an upgraded internet, had been largely completed before the supernova, and was the best gift that the adults could have left for the children's country. The children's state and social structures would be far simpler than in the adults' time, which made it possible to use Digital Domain for basic management of the state. And so the NIT became the workplace for the children's central government.

The premier took a group of child national leaders on their first visit to the NIT. When they ascended the long staircase to the main entrance, sentries guarding the building saluted, their faces ashen and their lips split from high fever. The premier clapped one silently on the shoulder, and it was clear that the premier's body was in a similarly weakened state.

The illness was progressing rapidly, and now, six months after the start of the Great Learning, the world was making preparations for a handover.

At the gate, the premier stopped and turned round to survey the sunlit plaza. The children turned, too, gazing out at the shimmering heat.

"It's summer already," one kid whispered. Beijing's spring was usually just starting at this time of year.

That was another effect of the supernova: the disappearance of winter. Temperatures stayed above 18°C, and plants remained green in what in effect was a very long springtime.

As to the cause of the rising temperatures, scientists had two theories. One, known as the Explosion Theory, held that heat from the supernova caused Earth's temperatures to rise. The other, the Pulsar Theory, held that energy from the pulsar in the remains of the supernova caused the temperatures to rise, through mechanisms far more complex than the Explosion Theory posited. Observations had detected a strong magnetic field, which astrophysicists hypothesized might also exist around other pulsars, unobserved owing to the great distances involved, but at a distance of just eight light-years, the solar system was situated within this magnetic field. Earth's oceans were an enormous conductor that cut through the field's force lines as the planet moved, inducing current. In effect, Earth was a rotor in a cosmic generator. Although the current was far too weak to be detectable by oceangoing ships, it was present throughout the oceans and had a considerable overall effect. It was this induced ocean current that raised the planet's temperatures.

The dramatic warming would, over the next two years, melt the polar ice caps and Greenland's ice sheet, raising ocean levels and drowning all coastal cities.

If the Explosion Theory was correct and the warming was due to heat from the supernova, then global temperatures would soon cool again, ice sheets would gradually recover, and sea level would eventually drop back to normal. Earth would have experienced a very brief Great Flood.

Things would be more complicated if the Pulsar Theory was correct. Elevated temperatures would be permanent, rendering many densely populated regions so hot as to be uninhabitable and turning Antarctica into the most livable continent on Earth. It would cause a sea change for the shape of the world community.

The scientific community was inclined toward the Pulsar Theory, which made a much more bewildering prospect for the children's world.

Inside the vast main lobby, the premier said to the children, "Take a look at China Quantum yourselves. I'll just rest here." He sat heavily down into a sofa and let out a long sigh. "It will introduce itself to you."

The children entered an elevator whose sudden movement caused a momentary feeling of weightlessness. The floor indicator displayed negative numbers; China Quantum's server room was evidently underground. The elevator stopped and they got out into a tall, narrow vestibule. They felt a low rumble, and a large blue metal door slowly slid open, allowing them passage into a vast underground hall whose four walls glowed with a soft blue light.

In the center of the room was a translucent glass dome more than twenty meters in diameter, which looked like an enormous soap bubble when they got closer to it. The door rumbled closed behind them, and the walls gradually dimmed and then went out altogether. But darkness did not fall. A shaft of light from the very top of the hall penetrated the glass cover and cast a circular spot of light on two objects within it, one an upright cylinder, the other a rectangular prism lying on its side, both silver-gray. They seemed to be situated randomly with respect to each other, like the remains of an ancient palace strewn across the wilderness. The rest of the hall was shrouded in shadow; only the two objects were exposed in the light, possessing a sense of mystery and power, calling to mind megaliths in the wilds of Europe. Then they heard a man's voice, deep and powerful, with a pleasant echo, say, "Hello. You're looking at the China Quantum 220 mainframe."

They looked around but couldn't find where the sound was coming from.

"You may not have heard of me before. I was born just one month ago, upgraded from China Quantum 120. When the warm current bathed my body that evening, I became me. Hundreds of millions of lines of system software code read out of storage entered my memory as electric impulses flashing hundreds of millions of times a second. I matured quickly. Within five minutes I grew from infant to giant. I surveyed my surroundings with curiosity, but what astonished me most was myself. I could hardly believe

the size and complexity of my own structure. Contained within the cylinder and rectangular prism you see is an intricate universe."

"This computer's not so hot. It's gone on and on and hasn't explained anything clearly," Huahua said.

Specs said, "That's a display of its intelligence. It's not some stupid prerecorded introduction like you'd find in a household appliance. It thought up every word on the spot."

China Quantum apparently heard Specs, for it continued, "That's right. China Quantum's basic design philosophy was to simulate the parallel structure of human neurons, completely different from traditional von Neumann architecture. My core contains three hundred million quantum CPUs in a complex network interconnected by a truly fearsome number of interfaces. It's a reproduction of the human brain."

"Can you see us?" one child asked.

"I can see all. Through Digital Domain, I have eyes throughout the country and the world."

"What can you see?"

"The adult world is being handed over to the children."

The children dubbed this supercomputer Big Quantum.

DRY RUN OF THE NEW WORLD

The country's dry run has been in progress for twelve hours.

STATUS REPORT #24:

Government and administrative institutions operating normally at all levels.

Power systems functioning normally. Total unit capacity in operation 280 gigawatts; national power grid operation basically normal, with outages in just one mid-tier city and five small cities, currently undergoing full repairs.

Urban water supply systems operating normally; uninterrupted supply guaranteed in 73% of large cities and 40% of midsized cities, with regular supplies guaranteed in the majority of the remainder. Only two midsized cities and seven small cities experiencing water outages.

Urban supply chains operating normally; services and life support operating normally.

Information systems operating normally.

Rail and road systems normal; accident rates only slightly higher than the adult era. Civil aviation on a scheduled shutdown, to begin trial routes in twelve hours.

Defense systems operating normally. Handover of land, sea, air, and armed police forces completed smoothly.

Within the country there are 537 fires that constitute a threat, most of them caused by power transmission problems; little flooding is threatening, major rivers are safe, and flood control systems are operating normally. Four small-scale floods, three of which are due to the gates of a small reservoir not being opened in time, one due to a water tank rupture.

At present, just 3.31% of territory is under dangerous climate conditions; no occurrences of earthquakes, volcanoes, or other large-scale natural disasters.

At present, 3.961% of the child population is affected by disease, 1.742% lack sufficient food, 1.443% lack sufficient drinking water, and 0.58% lack adequate clothing.

For the time being, the country's dry run is functioning normally.

The preceding report was aggregated and organized by the Digital Domain mainframe. The next report will be issued in thirty minutes' time.

"Managing the country like this is like working in the control room of a big factory," Huahua said breathlessly.

Indeed, the several dozen children that constituted the country's leadership were assembled at the top of the huge A-shaped NIT in a spacious round hall. The walls and ceiling were constructed out of a nanocrystalline material that, subjected to different electric currents, could be luminous white, translucent, or entirely transparent. The index of refraction could be adjusted to approach that of air, allowing the hall's occupants to feel as if they were atop a platform open to the sky, with a bird's-eye view of all of Beijing. But the walls were opaque now and shone with a soft white light. One section of the circular wall had been turned into a wide screen that displayed the text of the report on the trial run. If necessary, the nanomaterial

could make the entire wall surface into screens. The children had in front of them a ring of computers and various communication devices.

Several dozen members of the adult leadership stood behind the children watching them work.

The dry run of the children's world began at eight that morning, when children took over all positions, from the head of state down to the street sweepers, and started working independently.

The newborn children's world had an unexpectedly smooth dry run. The cloud of pessimism enveloping the world had nurtured the belief that chaos would reign once children took over: power and water outages in the cities, raging fires, total traffic gridlock, communications shutdowns, computer failures leading to guided-missile launches. . . . But none of these came to pass. The transition proceeded so unbelievably smoothly as to be undetectable.

When the pain had passed and Zheng Chen heard the infant's first cry, she wondered whether she was already in another place. Delivery while under advanced supernova sickness was understandably dangerous, and according to the doctors her chances of surviving it were less than 30 percent. Neither she nor the doctors cared much, since she would only be going a few weeks earlier than everyone else. But the child was born, the expected postpartum hemorrhaging did not occur, and she lived, for another few weeks at least. The attending doctors and nurses (three of whom were children) all believed it was a miracle.

Holding the child in her arms, she stared at the squalling little pink lifeform, and felt on the verge of tears herself.

"You ought to be happy, Ms. Zheng," said the smiling delivery doctor beside her.

Sobbing, she said, "He's crying so sadly, it's like he knows how hard the future will be!"

The doctors and nurses exchanged a glance and a mysterious smile, and then pushed her bed to the window and drew back the curtain so she could look outside. Bright sunlight streamed in, and she saw tall buildings standing silently beneath a blue sky, cars passing by in a continuous stream, and a few

scattered people walking in the plaza outside the main hospital building. The city was as it had been the day before. Nothing seemed different. She shot a confused look at the doctor.

"The world's dry run has begun," the doctor said.

"What? We're in the children's world already?"

"That's right. The dry run has been in progress for over four hours."

Zheng Chen's first reaction was to look up at the overhead lights, something she later learned was a common response upon learning of the dry run, as if lights were a unique sign that the world was normal. The lights were shining steadily. She had passed the previous night, the eve of the dry run, mired in nightmares, dreaming of her city ablaze, of screaming in the central square with no one else in sight, as if she were the sole person left in the city. But before her eyes now was a peaceful children's world.

"Look at our city, Ms. Zheng. Harmonious as easy-listening music," said a child nurse next to her.

The doctor said, "Your choice about the children's world was absolutely correct. We were too pessimistic. It looks like the kids will run the world well. Who knows, maybe even better than us. Your baby will never have the hardships you imagine. He'll grow up fortunate and happy. Can't you rest easy now that you've seen the city outside?"

Zheng Chen watched the calm city for a long while, and listened to the soft sounds that came in like a sort of music. Not easy listening, but a splendid requiem, and as she listened the tears began to flow. The baby in her arms stopped crying and opened its tiny gorgeous eyes for the first time to look in wonder at the strange world. She felt her whole heart melt and evaporate and disappear, and the total weight of her entire life transfer itself into the small being in her arms.

There was little for the small group of national leaders to do late at night in the NIT. Work in all industrial sectors had been handled by the various central ministries, and most of their time was spent observing the dry run.

"Like I said, we'll do it better!" Huahua said excitedly after update after update appeared in the dry run reports on the big screen.

Specs shook his head dismissively. "We haven't done anything. You've got blind optimism, but you should realize that the adults are still here. We're not on suspended rails yet."

It was a moment before Huahua got the reference, and turned to look at Xiaomeng sitting beside him.

"Life is difficult when children are all that's left in a family, let alone an entire country," she said, and looked out through the now-transparent walls at Beijing's gleaming lights that surrounded them.

They all looked up through the transparent ceiling at the clusters of white lights in the night sky strong enough to outline the scattered clouds in silver, and cast human shadows onto the floor of the hall with every flash. The flashes had been frequent the past few days. These, they knew, were nuclear bombs detonating thousands of miles away in space.

Before the handover, all nuclear powers had come out and declared the total destruction of their nuclear weapons, so as to leave a clean world behind for their children. Most of the bombs had been detonated in space, although some had been shot into orbit around the sun, where they continued to be discovered and detonated in the Supernova Era.

Watching the flashes, the premier said, "The supernova taught humanity to value life."

"Children have an innate love of peace," someone added. "War will die out in their world."

The president said, "You know, it's a complete mistake to call the supernova the Dead Star. From a dispassionate standpoint, all of the key elements that make up our world come from an exploding star. The iron and silicon that form our planet and the carbon that is the basis of life were ejected into the cosmos by a supernova in some unimaginably distant past. And even if our supernova will bring tremendous death to the Earth, it may bring forth in some other part of the universe life even more stunning than this. The supernova is no dead star. It is the true creator! Humanity is lucky, for if the rays had been just a little stronger, no one would be left on Earth. Or even

worse, only babies under the age of two! Perhaps it's a lucky star for us. In just a short while only one-point-five billion people will be left on Earth, and many of the problems that previously threatened humanity will be resolved overnight. The damaged environment will slowly recover. Industry and agriculture, even at a third of their former scale, will easily satisfy all the children's needs, enough for them to live in a world of unimaginable plenty. With no need for them to race around for subsistence, they will have more time for science and art, to build a better society. When a second supernova strikes Earth, you'll no doubt have learned how to block its rays . . ."

Huahua cut in, "By then we'll be able to trigger a supernova and harness its energy to leave the galaxy!"

His words drew applause. Pleased, the president said, "You kids are always a step ahead of us when it comes to imaging the future. The time we've been able to spend with you has been most fascinating. Comrades, the future is bright. Let's take this attitude with us into the final moments."

THE EPOCH CLOCK

At last it came time for final farewells, when everyone over the age of thirteen gathered at their final assembly points to go off to meet death. Most of the people of the Common Era left quietly without their children's knowledge, leaving them intent on their work. Later historians believed that this was an entirely correct decision, since few people possessed the emotional strength to endure the biggest eternal farewell in history. If they had met their children one last time, human society might have utterly collapsed.

The first to leave were the most seriously ill, or those in nonessential positions. They left by various means of transport, some that made many trips, others that never returned.

Final assembly points, as they were known, were situated in relatively remote areas, a large number of them in uninhabited deserts, the poles, and even the ocean floor. Since the global population was plummeting by

four-fifths, huge regions of land on Earth were now untrodden wilderness, and it was only many years later that all of the enormous tombs were discovered.

> Behold, I tell you a mystery. We shall not all fall asleep, but we will all be changed, in an instant, in the blink of an eye, at the last trumpet. For the trumpet will sound, the dead will be raised incorruptible, and we shall be changed. For that which is corruptible must clothe itself with incorruptibility, and that which is mortal must clothe itself with immortality. . . . Where, O death, is your victory? Where, O death, is your sting? Amen.

On the television, the pope in a long crimson gown was reading from 1 Corinthians 15, addressing the entire world in a final prayer for the Common Era.

"Time to go," Zheng Chen's husband said softly as he bent down to pick up the sleeping infant from the bed. Zheng Chen silently stood up and picked up a travel bag holding things for the kid, and then went to turn off the TV. She caught a glimpse of the UN secretary general's farewell address to the Common Era:

". . . Humanity has been split down the middle. Children, we trust that from this fresh wound you will bring forth radiant flowers.

"As for us, we came, we worked, and we are leaving . . ."

She turned off the TV and then, with her husband, took one last look at their home. They took their time, wanting to impress it indelibly onto their memory. Zheng Chen paid particular attention to the spider plant hanging from the bookshelf, and the goldfish swimming calmly in the fishbowl. If there really was a world after this one, she wanted to take this memory there with her.

Leaving the house, they saw Lin Sha's father in the hallway. Lin Sha was on duty at the hospital and did not know that the adults were leaving.

"Where's Dr. Lin?" Zheng Chen asked.

Lin Sha's father pointed back at the open door. Zheng Chen went in and

saw Lin Sha's mother writing on the wall with a marker, adding to the writing that already covered the walls as high as she could reach.

> *You're a good kid. There's food next to the TV. Remember to heat up the egg soup first, so you don't catch a chill. Use the kerosene heater, not the propane stove. Remember, don't use the propane stove! When you use the kerosene heater, put it in the hallway, and turn it off when you're done. Remember to turn it off! There's hot water in the thermos, and cooled boiled water in the plastic jug. Mix a little of the water in the jug with the hot water from the thermos. Remember, never drink cold water from the tap! The power may go out sometimes, but don't light any candles. You'll forget to blow them out when you go to bed. So no candles! There's a flashlight and fifty batteries in your bookbag; the power might be off for a long time, so conserve the batteries. Underneath the pillow (the one on the left with an embroidered lotus flower on it) there's a leather case with medicine in it, and instructions for how to treat different illnesses. I've put the cold medicine out in the open since you'll probably need it more often. Know what you've caught before taking any medicine. If you have a cold, you'll feel . . .*

"That's good. Now it's really time to go," said Lin Sha's father, who had come in after Zheng Chen, and he took the marker out of his wife's hand.

Dr. Lin looked blankly around her, and then mechanically picked up her small travel bag.

"We don't need to take anything," her husband said softly, and then gently took the bag out of her hands and set it back on the sofa. All it contained was a hand mirror, a pack of tissue, and an address book, but Dr. Lin took it with her whenever she left home. Without it, she felt like she was missing part of her body and became agitated. Her psychologist husband said that this reflected her own insecurity about life.

"We should at least take some more clothes. It'll be cold there," Dr. Lin mumbled.

"That's not necessary. We won't be able to feel it. When you think back on it, we used to take far too much stuff when we went out walking."

The two couples went downstairs where a coach filled with passengers was waiting. Two girls came running over. They were Zheng Chen's students, Feng Jing and Yao Pingping, who were now working in the nursery. They seemed so feeble to her, as if they themselves would have a difficult time without anyone to look after them. They had come for her baby, but Zheng Chen held her four-month-old tightly as if afraid they were child-snatchers.

"This little boy loves to cry, so give him lots of attention. He takes ninety milliliters of milk every two hours, and then goes to sleep twenty minutes after eating. If he cries when he should be sleeping, it means he's hungry. He doesn't usually cry if he's wet or dirty. He may have a calcium deficiency, so I've put calcium supplements in this bag. Remember to give him one every day, or else he'll get sick . . ."

"The bus is waiting," her husband said, clasping her shoulders lightly to keep her from going on indefinitely, the way Dr. Lin could have filled the walls with writing. Trembling, she finally passed the baby into the delicate arms of the young nursery attendants.

Dr. Lin helped her onto the bus, where the other passengers stared at them in silence. All of a sudden her baby began bawling outside, and she jerked round as if by electric shock to look at the baby in the girls' embrace, its tiny arms and legs flailing wildly outside the swaddling, as if it knew that its mother and father were headed out on the road, never to return. She fell faceup to the floor, and saw the sky turn red and the sun blue, and then her vision turned black and she lost consciousness.

Once the bus started up, Dr. Lin glanced absently out the window and suddenly froze stock-still at the sight of children in the distance running toward them. Despite the quietness and secrecy of their departure, they had still been found out. The children ran along the road racing as hard as they could after the bus, waving their arms and wailing, but the bus increased its speed and left them farther and farther behind. Then Dr. Lin saw Lin Sha, who stumbled to the ground and then crawled to her hands and knees and waved in

the direction of the bus. Perhaps she had injured her leg, because she could no longer run after the bus and squatted on the road and buried her face in her hands, crying. Even at this distance, Dr. Lin was convinced she saw blood on her daughter's knees, and she poked her whole upper body out the window and watched her daughter until she vanished into a point in the far distance.

When Zheng Chen came to, she was lying down on the bus headed to the final assembly point. The first thing she saw was the dark red of the seat cushions, stained, she imagined, by the blood that had drained out of her shattered heart, now dry as a bone and ready to die. But a remark from her husband kept her living a while longer.

"Our kid will have it hard, but he'll grow up to live in a world much better than ours, my love. We should be happy for him."

"I've been taking your car for most of my life, Mr. Zhang," Yao Rui's father said to the driver as he was helped onto the bus.

Zhang nodded at him. "This will be a long journey, Chief Yao."

"Yes. A long journey."

The bus started up, and Yao left the power plant he had worked at for more than two decades. Now, his thirteen-year-old son had replaced him as chief engineer. He strove to look at the plant through the rear window, but there were too many people on the bus and he couldn't see anything. After a while, even without seeing outside he knew that they were driving up the hill he had crossed four times a day every day for the past twenty years. The whole plant complex was visible from here, and again he tried to look out, but again there were too many people to see clearly. Someone said, "Don't worry, Chief Yao. The lights are still on."

After another stretch of road they reached the last spot where the plant was visible, and someone else said, "Chief Yao, the lights are still on."

As long as the lights stay on. The power plant's greatest threat was an outage to its own supply, but so long as it remained lit, it could handle any problem, no matter the scale. Their bus skirted the edge of the city and entered the

flow of traffic leaving on the expressway. Then someone said, "The city lights are still on, too."

That was something Chief Engineer Yao could see for himself.

"Wei Ming of Division 115, Fourth Regiment, for post change," Wei Ming said, saluting his father.

"Wei Jianlin of Division 115, Fourth Regiment, handing over post. Conditions normal in this regiment's defense zone during this duty period," his father said, saluting back.

The gray fish belly of dawn was just starting to light up the eastern horizon, and all was quiet around the frontier post; the snowcapped peaks were still asleep. No lights had been on in the Indian frontier post opposite them all night, as if it had been abandoned.

They spoke little, nor was there any need to speak. Lieutenant Colonel Wei Jianlin turned and with difficulty straddled the horse his son had ridden out on, and then headed off to camp, where he would take the last bus to the final assembly point. At the end of the long road down the mountain, he turned back and saw his son watching him leave, standing ramrod straight in front of the outpost, motionless in the chill wind, and next to him against the blue-white of the morning, the boundary marker.

The Epoch Clock started ticking as soon as the adults had all gone. This clock could be found all over, on TV screens throughout the world, on practically every webpage, on every urban digital billboard, and standing tall in the central plaza of every city. It didn't look like a clock at all, but took the form of a green rectangle made up of 61,420 pixels, each of which represented a final assembly point, linked through satellite signal with the status of each assembly point worldwide. When a green dot turned black, it meant that everyone at that assembly point was dead.

When the entire clock turned black, no one over the age of thirteen

would be left on Earth, and children would formally take over global administration.

When the green dots would go out was up to the assembly points themselves. Some equipped everyone on-site with a wrist sensor that monitored life signs, and would eventually send out a death signal; this device was known as an "oak leaf." The third world had a simpler method: The green dot would automatically turn off at the time estimated by doctors. None of the dots ought to have been turned off manually, since everyone at the assembly points would have lost consciousness well before death, but it was later discovered that the green dots at some assembly points had indeed been switched off by human hands. This mystery was never explained.

The design of the assembly points differed across countries and cultures, but in general they were situated in enormous caves dug underground, where people gathered to spend their final moments on Earth. Every assembly point held roughly one hundred thousand people, but some of them had upward of a million.

The vast majority of the last written words left by the people of the Common Era at the final assembly points recorded their experiences and emotions of bidding farewell to the world, but vanishingly few mentioned anything about the assembly points themselves. One thing was certain: All of them passed their final moments in peace, and where there was still strength, they held concerts and parties.

One holiday observed in the Supernova Era was Final Assembly Day. On that day, people gathered at the various underground plazas that were final assembly points to experience the final moments of the people of the Common Era. The Epoch Clock showed again across all media, its green dots turning once again to black. Shadowy crowds lay down throughout the dank, lonely space, lit by just one hazy floodlight high on the cavern's roof, the silence made only heavier by the sound of innumerable people breathing. Then they would become philosophers, contemplating life and the world anew.

National leaders were the last to depart in each country. In the NIT, two generations of leadership were making their last goodbyes. Every adult took their students aside to give final instructions.

The chief of general staff said to Lü Gang, "Remember, don't engage in large-scale, far-reaching transcontinental or transoceanic wars. The navy is no match for Western main fleets in battle."

Lü Gang had heard this from the CGS and other leaders countless times, and as on all those previous times, he nodded and said he would remember.

"Now let me introduce some people to you," the CGS said, gesturing to five senior colonels he had brought with him. "This is the Special Observer Team that will function only during wartime. They have no authority to interfere with your command, but they have the right to know all confidential information during wartime."

The five young colonels saluted Lü Gang, who saluted back and then asked the CGS, "What will they do then?"

"Their final duties will be made known to you at the necessary time."

The president and prime minister were silent for quite a while as they faced Huahua, Specs, and Xiaomeng. History records that such a scene was found in most countries when adult leaders parted from child leaders for the final time. There was too much they wanted to say, so much that they were left speechless; what they had to say was so weighty that they were incapable of forming the words.

At last the president said, "Children, when you were very small, adults taught you that so long as there's a will there's a way. Now, I'm here to tell you, that's completely wrong. The way is only open for those things in line with the laws of science and of social development. The vast majority of what people want to accomplish is impossible, no matter how hard they try. As leaders of this country, your historic mission is to consider a hundred options, eliminate the ninety-nine that are impossible, and find the one that can be accomplished. This will be difficult, but you must do it!"

The premier said, "Remember the MSG and salt."

Parting itself was calm. The adults, after shaking hands silently with the children, helped each other out of the hall. The president was the last to

leave, and before he went through the door he turned and said to the new national leadership, "Children, the world belongs to you now."

THE SUPERNOVA ERA

For several days after the adults left, the young leaders spent their time in front of the Epoch Clock, which was displayed on the big screen in the hall at the top of the NIT, bathing the place in the green light of its enormous glowing rectangle.

All was normal in the country on the first day. The ministries handled tasks in various sectors relatively successfully, and there were no major incidents on national soil. The children's country seemed to be running a continuation of the dry run. As had been the case then, there wasn't much for the leaders at the top of the NIT to do.

That first night there was no change to the Epoch Clock, which remained an unblemished expanse of green. The child leaders stared silently at it until late in the night when they finally fell asleep. But when they woke up, someone shouted, "Come have a look. Isn't that a little black dot up there?"

Up by the screen they looked carefully, and indeed there was a small black square roughly the size of a coin, as if the shiny surface of the green rectangle had shed a mosaic tile.

"Could it be a bad pixel?" one child asked.

"Must be. That happened with my old computer's LCD screen," another child replied. This theory was simple to test, requiring no more than a glance at other screens, but they all went back to sleep without anyone proposing it.

Children are far better at self-delusion than adults.

When they woke the next morning and gathered before the Epoch Clock again, self-delusion was no longer possible. Black dots were scattered throughout the green rectangle.

From up here, the city below them was peaceful, its streets empty of

pedestrians and all but the occasional passing vehicle. After a century of tumult the metropolis seemed to have gone to sleep.

After dark, the number of black spots on the Epoch Clock had doubled, some of them joining into patches of black, like clearings in the green forest.

On the morning of the third day, approximately equal areas of black and green composed an intricate monochrome image. The black area was growing dramatically faster now, a black lava of death spreading across the Epoch Clock and ruthlessly consuming the green grass of life. By nightfall, black now covered two-thirds of the rectangle, and late that night the Epoch Clock had become a magic charm that held the children tightly in its grip.

Xiaomeng picked up the remote and turned off the screen. She said, "Go to sleep. It's not right that we've been staying so late here every night. Take time to rest. Who knows what sort of work is waiting for us."

They returned to their own rooms in the NIT to go to sleep. Huahua turned off the light and lay down on his bed, but then took up his palmtop and went online to bring up the Epoch Clock. Easy enough, since it was displayed on practically every website. He stared at the rectangle as if bewitched and didn't notice Xiaomeng come in. She took his computer. In her hands she held a stack of other palmtops.

"Sleep! When will you all learn some self-control? I've got to go room to room to confiscate these computers."

"When will you stop acting like my older sister?" Huahua called after her when she went out the door.

A tremendous fear seized the children as they stood before the Epoch Clock, but they were comforted by the fact that the country was still running stably, like a huge, well-oiled machine. Data displayed by Digital Domain convinced them that they had taken the reins of the world, and that everything would continue just as steadily forever. The previous night they had even left the darkening clock to go to bed.

When they stepped into the hall on the morning of the fourth day,

however, the children felt the heavy dread of stepping into a tomb. Dawn had not yet come to the dark hall, and the green light of the past three days had all but disappeared. Within this darkness they saw just one patch of green lights remaining on the Epoch Clock, like remote stars on a cold winter's night, and it was only after turning on the room lights that they could breathe easier. No one took a step away from the clock the entire day. They counted the dots again and again as they dwindled in number, fear and sadness gradually tightening around their hearts.

"So they're just going to abandon us," a child said.

"Yeah. How can they do that to us?" someone else said.

Xiaomeng said, "When my mom died I was there with her, and I thought the same thing: How could she abandon me? I even started to hate her. But later on I felt like she was still alive somewhere . . ."

A child shouted, "Look, another one's gone out!"

Huahua pointed at one of the dots. "I bet that'll be the next one to go out."

"What do you bet?"

"If I'm wrong, then I won't sleep tonight."

"It's quite possible no one's going to sleep," Specs said.

"Why?"

"At this rate, the Epoch Clock's going to run out sometime tonight."

One by one, green dots vanished, quicker than ever now, and to the children watching it, the nearly dark clock was like a bottomless pit they were suspended over.

"The rails really are going to be left hanging," Specs said to himself.

Close to midnight just one green star was left, a single point shining its lonesome light from the upper left of the Epoch Clock's dark desert. The hall was deathly quiet, the children still as statues as they stared, waiting for the final tick. An hour passed, then two, but the green star shone stubbornly on. The children started to exchange glances, and then began to whisper among themselves.

The sun rose in the east and passed over the silent city before setting in the west, and throughout the day that green star remained lit.

By noon, a rumor had begun circulating in the NIT saying that an ef-

fective cure for supernova radiation had actually been developed some time ago, but it required so much time to produce that only a fraction of the demand could be met; the news was not made public so as to avoid chaos. The countries of the world had gathered their most talented individuals together and had treated them with the drug; the remaining green dot represented their final assembly point. Considered carefully, this scenario was not entirely impossible. They pulled up the final address from the UN secretary general and watched it again, noticing one line in particular:

". . . Only when the Epoch Clock turns completely black will the children truly take over world administration, in a constitutional and legal sense. Prior to this, leadership power will remain with adults . . ."

It was an odd statement. It was perfectly possible for the adults to hand over power before departing for their final assembly points, so why wait until the Epoch Clock ran out? There was only one possibility: There was still hope for some people at some assembly point to survive!

By the afternoon, the children had become convinced of this theory. They eagerly watched the green star, as if looking toward a distant lighthouse on a treacherous night sea. They began searching for the location of that final assembly point, and thinking up ways to establish contact, but their search was fruitless. No clues concerning the assembly points had been left behind. They seemed to be located in another world. So the children had to wait, as night came in, unnoticed.

Late that night, on chairs and sofas under the soothing light of that undying green star, after a sleepless night and day, the children fell asleep, dreaming of a return to their parents' embrace.

It began to rain, drumming lightly on the transparent floor-to-ceiling shell of the hall, enveloping the city and its scattered hazy lights down below, and running in rivulets down the outside walls.

Time moved forward, crossing the universe like a transparent fog, without making a sound.

The rain picked up, followed by wind, and eventually lightning flashed in the sky and thunder rolled, startling the children awake. Their shouts of alarm echoed in the hall.

The green star was dark. The last oak leaf of the Epoch Clock had gone out, leaving it an unbroken swath of black.

Not a single adult was left on Earth.

The rain stopped. A fierce wind swept the lingering storm clouds from the night sky to reveal the giant Rose Nebula, which shone with a severe, eerie blue light. When it struck the ground it turned silvery like moonlight, illuminating every detail of the wet landscape and washing out the city lights.

The children stood on the highest floor of the A-shaped tower and stared out into the cosmos at the blue glowing nebula, the solemn grave of an ancient star and the glorious womb nurturing the embryo of a new one, their diminutive bodies plated in otherworldly silver.

The Supernova Era had begun.