

劉慈欣：鄉村教師

## The Village Schoolteacher

By Liu Cixin

Translated by Christopher Elford and Jiang Chenxin

HE REALIZED that the final class would have to be moved forward.

The pain in his side surged up again, nearly knocking him unconscious. He didn't have the strength to get out of bed, and could only move with great difficulty to the bedside window. The moonlight shone on the paper window a brilliant silver, making the small portal look like a door leading to another world, a world where everything was silvery, like a bonsai terrarium made of silver coins and snow that wasn't cold. Quivering slightly, he raised his head to look through a hole in the window paper and all at once the mirage vanished. He saw in the distance the village where he'd spent his entire life.

Spread out under the moonlight, the silent village looked as though it had been abandoned a century before. The houses, with the characteristic flat-topped roofs found on the Loess Plateau, were of a shape no different from the loess mounds that surrounded them. In the moonlight they were of the same tinge, as though the village had merged with the hillside. Only the old pagoda tree, standing out in front, could be seen clearly. The crows' nests in its withered branches stood out a blacker black, like large ink drops on the deep silver tableau. The village did have its moments of beauty and warmth. At harvest time, the young men and women who had gone off to work in the city would return, and the village would fill with the sounds of their joyous laughter; every rooftop was stacked high with golden corn and children could be seen rolling about in the freshly cut hay on the threshing ground. Or there was the New Year when the gas lamps over the threshing ground burned bright and there would be several days of wild festivities, the rowing of the 'land boat', and the dancing of the 'lion dance'. Of these lions not much remained save some clicking wooden skulls with the paint worn off, and a few bed-sheets, since the village could not afford to replace the coverings with proper lion skins ... yet everyone had great fun. But after the 15th, the young

people would all have returned to their jobs and the village had nothing to enliven it. Only at dusk, when the smoke rose from the chimneys in thin wisps, would one or two old men appear on the outskirts of the village, their faces, wrinkled like mountain hickory nuts, raised and peering eagerly at the road that led out of the mountains, till the last rays of the sun hanging from the branches of the pagoda tree faded away. By nightfall the lights in the village had long been put out. Electricity was expensive. It was now up to 1.8 yuan per kilowatt hour.

The faint sound of a dog barking drifted through the village, as though it was talking in its sleep. He looked around at the yellow earth in the moonlight and felt suddenly that it resembled the unbroken surface of a lake. If only it really was water. The drought was in its fifth straight year. The villagers had to carry water to irrigate the land to have any harvest at all. He thought of the fields as he looked off into the distance at the tiny mountain plots. In the moonlight they looked like footprints left by some prehistoric giant passing over the mountains. On these rocky slopes, covered with brambles and artemisia, there was only space for small plots here and there. Farm machinery was out of the question; even a draft animal could barely turn a full circle on the fields, so the fields had to be tilled by hand. Last year a farm machinery company came around selling a mini-push-tractor that would function even on these palm-sized plots of land. A good enough machine, the villagers said, but you must be joking: did the salesmen know how little these tiny fields produced? Even tilling them as carefully as if one were embroidering flowers, you'd be lucky to harvest enough to feed yourself year round; in a time of drought you might not even recover the price of the seeds you planted. With fields like these, who could afford a three or four thousand yuan push-tractor, plus the two-yuan-a-litre diesel fuel you'd need to run it? How could these outsiders understand just how hard life was in the mountains?

Several shadows passed by the windows. They squatted together at the edge of a field not too far off, for who knew what reason. He knew that they were his students. He could sense their presence when they were near him even without using his eyes. He had developed these intuitive skills over the course of his life, and they only sharpened in its final moments.

He could even identify which of the children it was under the moonlight. He was sure that Liu Baozhu and Guo Cuihua were among them. They were locals and so were not meant to board at the school, but he had taken them in anyway. Ten years ago Liu Baozhu's father had purchased a wife from Sichuan. The woman gave birth to Baozhu and by the time the child was five, Baozhu's father slackened his watch on the woman. The result was that she escaped and ran away back to Sichuan, taking all the money in the house with her. After this, Baozhu's father

wasn't himself anymore. He started gambling, and just like any old bachelor in the village, he reduced his household to but four walls and a bed. And then he started drinking. Every night he would hit the sweet potato wine hard, drinking himself into oblivion. He took his anger out on the kid, slapping him around once a day, violently beating him up every three. Just last month in the dead of night, he took a fire poker and beat Baozhu within an inch of his life. Guo Cuihua was even worse off. Her mother was respectably married—a rare occurrence in these parts—and her husband was very proud of the fact. But as all things good are short lived, as soon as the wedding festivities were over, she was discovered to be insane. That no one noticed before the wedding must have been due to the fact that she'd been drugged. Besides, what sane women would come to a place so poor that a bird wouldn't bother to shit on it? But despite all this Cuihua was born, and with some difficulty, grew up just the same. Her mother's illness grew worse, acting up more frequently. She hacked at people with a kitchen knife in broad daylight and tried to burn her house down in the middle of the night. More often she would just laugh darkly to herself. Her laughter made people's hair stand on end.

The rest of the children were from other villages, even those who lived near were separated from their homes by ten kilometres of mountain road. They had no choice but to live at the school. They would have to spend the entire term at this makeshift village school. In addition to their bedding they also brought with them a sack of rice or flour, which the children cooked together on the school's large cooking stove. When winter came, a dozen of them would gather around the stove to watch the food pop and sizzle. The straw burning inside the stove cast an orange glow onto their faces ... this was one of his most cherished memories. He would be sure to take the image into the next world with him.

Outside of the window several tiny red sparks appeared among the children, standing out a brilliant red against the silver-grey night. They were burning incense. Then they lit spirit-money, the flames casting the children's forms in bright orange against the silver-grey winter night. It made him think back to the stove fire, which brought to mind yet another scene. When the power went off in the schoolhouse (either because the wiring was bad, or, more often than not, because the school hadn't been able to pay the electricity bill) and their lessons ran late, he would hold a candle to the blackboard. 'Can you see?' he would ask. 'Not really!' the kids would respond. With so little light it most certainly wasn't easy to see clearly, but they had missed so many lessons that he had no choice but to hold classes at night. He would light another candle, holding it together with the first in his hand. 'Still can't see!' they would chorus. And so he would add another candle. They still couldn't see clearly but this time the children wouldn't bother

to shout out. They knew he would not light another candle—it would cost too much. He could see their faces drifting in and out of the circle of candlelight. They looked like little bugs struggling with all their might to throw off the darkness surrounding them.

Children and firelight, children and firelight. Always children and firelight, always children and firelight at night. It was what this world had burned into his mind, this image, and yet he never understood exactly what it meant.

He knew they were burning the incense and spirit-money for him. They had done it many times before, but this time he didn't have the strength to go out and reprimand them for being superstitious. He had spent his entire life lighting the fires of science and civilization in their hearts but he knew that in a remote mountain village shrouded in ignorance, the fires he lit were small in comparison to the fires of superstition, like the candle he held against the blackboard in a freezing cold classroom deep in the mountains on a dark winter's night. Six months earlier some villagers had taken the rafters from the already run-down school dormitory. They said they needed them to fix the old temple. When he asked how the dormers would get on without a roof over their heads they said the kids could sleep in the classroom. When he reminded them that the classroom let in drafts on all sides and asked what the children would do in the winter, they said, 'Well, they're all children from other villages anyway.' He went after them with a bamboo shoulder-pole and ended up with two broken ribs in the resulting fight. A couple of decent people took him thirty kilometres to the township hospital.

During his check-up they discovered by chance that he had cancer of the oesophagus. There was nothing strange about this, as the area was a high-risk zone for oesophageal cancer. The doctor congratulated him on his happy turn of fortune. The cancer was still in its early stages and hadn't yet begun to spread; a simple operation would take care of it. Oesophageal cancer has a high post-operative recovery rate. He was lucky.

He had come all the way to the city and was in the cancer ward when he asked the doctor how much the operation would cost. The doctor replied that given his situation he would be qualified to move to the poverty-relief ward and other costs could also be reduced, making the final sum not large, probably around 20,000 yuan. Seeing as he had come from a remote mountain area, the doctor explained in great detail the procedure for staying in the hospital. He listened quietly and then asked abruptly, 'If we don't operate, about how long do I have?' The doctor stared at him blankly for a moment before saying, 'About half a year.' The doctor then looked confused as he let out a sigh of relief, as if he had been greatly reassured.

At least he would be able to send off this year's graduating class.

He really couldn't afford the 20,000 yuan. The salaries of locally-sponsored teachers were low, but since he had worked for many years and had only himself to worry about, it would be reasonable to suppose that he would have some savings. But he had spent all that money on his students, and could not remember how many times he had helped to pay tuition and other fees. Most recently it had been for Baozhu and Cuihua. Many times he had noticed that the food cooking in the pots lacked oil so he had used his own money to buy meat and lard for them ... Now he had only about one-tenth of what it would take to pay for the operation.

Following one of the wide city avenues, he walked in the direction of the train station. It was dark and the neon lights were already casting their enchanting glow across the cityscape, a gorgeous radiance that baffled him; when night fell, the tall buildings turned into giant multi-coloured lanterns. The music that drifted through the night air was frenzied and mellow by turns.

In a world that he had never been a part of, he thought back on his relatively short life. He was calm; each person had his own life to live. Returning to his primary school in the mountains twenty years ago after graduating from middle school had sealed his fate. Besides, he owed the greater part of his life to another village schoolteacher. The school he was now in charge of was the one he'd spent his childhood attending. His mother and father had died early and so the crude school was his only home. His teacher had taken him in and treated him like a son.

Even though they were poor, his childhood had not been without love. One winter, when school let out for the holiday, his teacher brought him to his own home. His teacher's house was far away and they had to travel down long mountain roads packed with snow. By the time they caught sight of the dim lights burning in his teacher's village it was already midnight. It was then that they saw behind them four small green shimmering discs of light. Wolves' eyes. At the time there were still many wolves in the mountains and one could see piles of wolf droppings near the schoolhouse. He'd been naughty once, igniting and tossing the whitish grey lumps into the classroom, filling it with heavy smoke. The children had bolted out of the classroom choking and his teacher had been very angry. Now the wolves behind them were slowly drawing close. His teacher broke off a thick tree branch and waved it in their path to block their approach, shouting for him to run into the village. He was out of his mind with fear, and could only run, could only think about the possibility of the wolves bypassing his teacher to get at him, could only think there might be other wolves. He ran, breathless, into the village, and returned with several men carrying guns to help his teacher. They discovered

him lying in a frozen pool of blood, with half a leg missing and one entire arm ripped off. It was on the road to the hospital that his teacher breathed his last. He had caught a glimpse of his teacher's eyes in the torchlight and the deep bite on the side of his cheek where a large chunk of flesh had been torn off. Although his teacher could no longer speak, he had used his eyes to communicate a most urgent and sincere concern. He understood this. He would never forget it.

After graduating from middle school, he had given up his chance to get a good job in the township government and returned instead to this destitute mountain village, to the school his teacher had worried so much about. By then the school had already been abandoned for a number of years.

Not long before this the Ministry of Education had announced a new policy directive. They were discontinuing the 'locally-sponsored teachers', with those who could pass their examinations to become 'state-certified teachers'. When he received his teaching certificate, showing that he was now a nationally certified primary school teacher, he was happy, but merely happy, not elated as his colleagues had been. He didn't care about the difference between locally-sponsored and state-certified. All he cared about were the children who passed through his classroom: that they might graduate and go out into the world. Whether they stayed in or left the mountains didn't matter; their lives would always be a little different from the lives of those who had never attended a day of school.

This desolate mountainous region was one of the poorest in the entire country. But being poor wasn't the worst of it. The worst was how numb to their condition people had become. He remembered many years ago, when it came time to fix household farm quotas, the village began dividing up the fields and then went on to divide up other things. As for the village's only tractor, nobody could decide how to divide the cost of fuel or arrange a time schedule for its use. Finally they settled on the only solution everyone could live with and divided up the tractor itself. Literally divided it up: you'll take the wheels, they'll take the axle.

And then there was two months ago when, as part of a poverty relief effort, a factory had come to install a water pump. Since electricity was expensive they had thrown in a diesel generator and an ample supply of fuel. A nice thing that was, but as soon as they had gone, the village sold all the equipment, pump, fuel and all, for only 1,500 yuan ... enough for everyone to have two hearty meals, and the New Year to be regarded as a happy one. Then there was the tannery that came to build a factory. The villagers sold the land without asking any questions. After the factory was built, the poisonous chemicals used for tanning the leather began running into the river and soon seeped into the wells. The people who drank the water broke out all over in sores. But nobody cared even then. Instead they felt

very pleased with themselves for having gotten a good price for the land. The old bachelors in the village who could not afford to get married did nothing but drink and gamble all day long. They didn't even bother to till the land and for this they had their reasons: if they were poor enough they would be given an annual relief payment by the government, and this amounted to more than what one could make in a year pounding that palm-sized clod. Without knowledge people became ignoble. Those mountains with their barren hills and bad water could make one lose heart but what really made one lose hope was the dull and lifeless gaze seen in people's eyes.

He was tired and sat down on the curb. Opposite him stood a luxurious restaurant, its outer wall a solid pane of glass. Magnificent hanging lamps threw their light into the street. The restaurant looked like a giant aquarium and the lavishly dressed patrons like schools of ornamental tropical fish. He saw, seated at a table by the side of the street, a fat man looking as though he was oozing grease from his face and hair, which made him look as though he were a giant ball of wax. Seated on either side of him were two tall, thin, scantily clad women. The man turned and spoke to one, causing her to burst into laughter. He joined in, while the other woman whined and punched him with her tiny fists playfully in his ... Who would have thought that women could be so tall. Xiuxiu was only about half their height. He sighed; he was thinking of Xiuxiu again.

Xiuxiu was the only one in the village who hadn't married her way out of the mountains. Perhaps this was because she'd never been away and was afraid of the outside world. Perhaps there was some other reason. He'd been with Xiuxiu for two years till they were finally ready for marriage. Her parents were reasonable people and only asked 1,500 yuan in 'belly pain' money. That's one word for dowry in the Northwest; it means that the mother should be compensated for her pain in giving birth to the girl. Then some of the men who had gone to the city to make money returned with their earnings. One Erdan, the same age as the teacher, was illiterate but clever enough, and had gone to the city and cleaned kitchen ventilator hoods door to door. He made over 10,000 a year this way. The year before, he had returned and stayed for a month, and nobody knew when and how he got together with Xiuxiu. Xiuxiu's entire family was illiterate. On the walls of their house, which was coarsely made by filling in the gaps between wooden planks with mud, were balls of melon seeds, also stuck together with mud; there were long or short lines scratched on the walls as well—these were her father's accounts over the years. Xiuxiu had never attended school but she'd always had a fondness for literate people, which was the reason why she was with the teacher. But Erdan changed all that with a bottle of cheap cologne and a gold-plated necklace. 'Just

because you can read doesn't mean you'll have enough to eat.' Xiuxiu had said. Even though he knew that being literate one could earn enough to eat, he had to admit that in his case, he didn't eat anywhere near as well as Erdan so he could not say anything in his own defence. Seeing this, Xiuxiu turned away, leaving behind her a lingering cloud of cheap cologne that made his nose wrinkle.

A year after marrying Erdan, Xiuxiu died in childbirth. He remembered watching the midwife carelessly running those horribly rusty forceps through the fire before jamming them inside Xiuxiu. Xiuxiu was out of luck, her blood filled an entire copper basin and she expired on the way to the hospital. Erdan had spent nearly 30,000 on wedding preparations alone. This kind of extravagance was unheard of in the village, so he had wondered why Erdan was reluctant to pay the cost of sending Xiuxiu to the hospital to have her baby. He'd asked about the cost later—two hundred to three hundred, people said, just two hundred to three hundred. But the village had always been this way. No one ever went to the hospital to give birth. No one blamed Erdan, it was Xiuxiu's fate, they said. He'd also heard that compared to Erdan's mother, Xiuxiu had been lucky. Erdan's mother had a very difficult birth and once his father learned from the midwife that it was a boy, he decided he only wanted the child. They laid Erdan's mother across the back of a mule and had it trot in circles until the baby was squeezed out. People who were there remembered the bloody circle left in the yard.

He sighed once he thought this far. The ignorance and despair that smothered his village was suffocating.

But there was still hope for the children. For those children huddled together in the freezing dark looking up at the blackboard in the candlelight, he was that candle. It didn't matter how long he could stay lit or how bright the light he gave. He would burn brightly from beginning to end.

He stood up again and continued on. He had not gone far before he turned into a bookstore. How wonderful the city was with its bookstores still open at night. He spent all his money, save for his return fare, on books to add to the school's meagre library. At midnight, carrying two heavy bundles of books, he boarded the train home.

FIFTY THOUSAND light years from Earth, near the centre of the Milky Way galaxy, an intergalactic war that had raged for 20,000 years was near its conclusion.

In that region of space a dark square gradually appeared, as though a window was being carved out of the starry background. It was nearly 10,000 kilometres on each side and was darker than the darkness that surrounded it: a void within a void.



From out of this black square, several forms emerged. Roughly moon-sized, they were of a dazzling silver, each shaped differently. More and more of them emerged from the darkness and arranged themselves into a cubical formation. The silvery formation slid out of the black square, the two forming a mosaic that hung on the eternally unmoving wall of the universe, a picture with a perfect square velvet of absolute black as the backdrop, inlaid neatly with silver pieces that emitted a pure, bright, silvery glow. This unfolding seemed to be a moment in some universal symphony. Gradually, the black region melted away as the background stars filled it in. The silver formation remained, suspended imposingly among the galaxy's stars.

The fleet of the Milky Way Carbon-based Federation had completed the first space-time jump of its current patrol run.

On the flagship, the Carbon-based Federation's Chief Administrator contemplated the silver metallic world before his eyes. Its surface was criss-crossed with intricate lines, like a vast circuit board etched in silver. Occasionally a few shiny droplet-shaped ships appeared above the surface, traced the lines at a dizzying speed for a few seconds, then disappeared again soundlessly into a dark well that suddenly opened up in front of them. The ionized space dust produced by the space-time jump formed a cloud that floated in the atmosphere above the silver planet, emitting a dark red glow.

The Chief Administrator was known for his equanimity. The light blue and perpetually undisturbed intelligence field that surrounded him was the outward symbol of his character. But now, like the officers gathered around him, it emitted a pale yellow.

'It is finally over,' the Chief Administrator said, his intelligence field rippling slightly, passing this message to the Senator and the Fleet Commander standing on either side of him.

'Yes. It is over. A war that was far, far too long. So long we have forgotten how it began,' the Senator responded.

The fleet then began its sub-light speed patrol, the sub-light speed engines starting up all at once. On either side of the flagship several thousand blue suns appeared, and the surface of the silver planet resembled a giant mirror, doubling the number of blue suns.

A memory of the distant past had been rekindled. In actual fact, who could forget how the war had begun? Although the memory had been passed down through hundreds of generations, in the minds of the Carbon-based Federation's citizens, it was still fresh, still clear.

Twenty thousand years ago the Silicon-based Empire launched a full-scale

attack on the Carbon-based Federation from outside the Milky Way. All along the 10,000-light-year-long front line, the Silicon-based Empire's 5 million and more intergalactic battleships simultaneously began leapfrogging between stars. Each battleship used the energy of the star to open up a wormhole that would connect them to another star. They would then use the energy of the second star to open a second wormhole and continue on to the next. Because the wormhole consumed such a massive quantity of energy, the stars' spectrum would temporarily shift toward red. When the ship had completed its space-time jump the star would return to its original state. When several hundred thousand battleships leapfrogged stars at the same time, the effect was truly terrifying: at the edge of the Milk Way a 10,000-light-year-long band of red light would appear, and this band of light would move toward the centre of the galaxy. This effect wasn't visible within the speed of light but super-spatial monitoring systems could pick it up. This band of red-shifted stars looked like a 10,000-light-year-long blood tide sweeping into the Carbon-based Federation's territory.

The Carbon-based Federation first made contact with the Silicon-based Empire's attack vanguard at the Green Sea Planet. This beautiful planet orbited a double star system, a great ocean covering its entire surface. In this vigorous sea there floated a forest made of soft, vine-like plants. The gentle and beautiful Green Sea Planet inhabitants disported themselves gracefully through it, and established an Edenic civilization there. Suddenly tens of thousands of blinding light-bolts fell from the sky into the sea. The Silicon-based Empire had begun to vaporize the ocean with its lasers. In moments the ocean was a broiling cauldron. All life on the planet, including the 5 billion inhabitants of the sea, met a painful end in that boiling water. The cooked organic matter of their combined bodies turned the sea into a thick green soup. Finally the entire ocean was vaporized and the once beautiful Green Sea Planet turned into a grey hell-scape enveloped by a thick vapour.

This war then spread virtually throughout the entire galaxy, a violent war of survival between two competing civilizations, the carbon-based and the silicon-based, but who could have predicted that it would last 20,000 galactic years?

Now, none but an historian could remember exactly how many battles were fought by millions of starships. The largest battle, the Campaign of the Second Spiral Arm, took place in the middle region of the second spiral arm. Both sides committed more than 10 million intergalactic battleships. According to historical records, more than 2,000 supernovas were detonated on that one tremendous battlefield. These supernova explosions were like a furious firework display in the dark middle region of the galaxy's second spiral arm, ultimately turning it into

a sea of gamma radiation with spectral black holes drifting within it. The result was mutual destruction for both galactic fleets. Fifteen thousand years passed and the Campaign of the Second Spiral Arm now sounded more like a vague ancient legend, with only the historic battlefield itself to testify to what happened there. Very few ships have actually entered the ancient battlefield since, as it is the most terrifying region in the galaxy, and not just because of the radiation and the black holes. During the battle both sides used an unimaginably large number of ships, and in their strategic manoeuvres they had utilized a massive number of close range space-time jumps. It is said that some star fighters engaged in dogfights, making space-time jumps at distances of only a few thousand metres! This had a disastrous effect on the space-time continuum in the region, twisting it into tunnels like those a mouse makes through cheese. When ships accidentally enter the region they might be instantaneously stretched out into a thin metal string, or compressed into a sheet hundreds of millions of kilometres square in size but only a couple of atoms thick, or shattered to pieces in an instant by the radiation winds. More often the ships were converted back into their individual component parts, or suddenly aged to the point where everything turned to ancient dust and nothing was left of them but an old shell. The people inside would perhaps be returned to some embryonic state, or collapse into a pile of desiccated bones.

But the decisive battle was no myth as it took place only a year ago. In the desolate stretch of space between the first and second spiral arms of the galaxy, the Silicon-based Empire gathered its last remaining forces. Its fleet assembled 1.5 million battleships surrounded by a cloud of antimatter, forming a barrier with a radius of 1,000 light years. The first fleet of the Carbon-based Federation to enter the battle landed themselves in the antimatter cloud as soon as they completed their space-time jumps. Even though the antimatter cloud was very thin, it was deadly to battleships. Carbon-based Federation ships immediately turned into fireballs one after the other, but they continued steadfastly toward their goal, each ship leaving a glittering trail in its fiery wake. This array of more than 300,000 burning meteors was the most violent and magnificent image of the entire war. These fireballs gradually became smaller in the antimatter cloud and by the time they neared the Silicon Imperial force they had completely disappeared. But they had sacrificed themselves to clear a path in the antimatter cloud for the follow-up assault force. During this campaign, the Silicon-based Empire was finally driven back into the most desolate region of the Milky Way: the tip of the first spiral arm.

Now, the Carbon-based Federation fleet was about to accomplish its final combat mission. They were to establish a 500-light-year-wide quarantine zone

through the middle of the first spiral arm. This will require that most of the stars in the vicinity be destroyed, thus preventing the Silicon-based Empire from leapfrogging in. Leapfrogging by using stars was the galaxy's only long-range, high-speed assault option for large battleships and the greatest distance you could leap between stars was 200 light years. Once the quarantine zone was created, if the Silicon-based Empire's heavy battleships wanted to enter the Milky Way's central region, they would have to traverse the 500-light-year-wide quarantine zone at sub-light speed. This meant the Silicon-based Empire would be effectively confined to the tip of the first arm. They would never again be able to threaten the Milky Way centre's carbon-based civilizations.

'I bring with me the wishes of the Parliament,' the Senator used the vibrations of his intelligence field to tell the Chief Administrator. 'They still strongly recommend that before clearing the quarantine zone of stars, we screen for protected life forms.'

'I understand this,' the Chief Administrator said. 'In the course of this long war the blood spilled by every sort of living thing would be enough to fill the oceans of 1,000 planets. After the war the most pressing need is to restore respect for life. This respect extends not only to carbon-based life forms but to silicon-based life forms as well. It is precisely because of this respect for life that we did not completely wipe out the silicon-based civilizations. But the Silicon-based Empire completely lacks this feeling for living things. Before the Carbon-Silicon War, war and conquest were just a kind of instinctive enjoyment for them; but now these things are written into every single gene and every single line of their code. It has become the goal of their existence. Because Silicon-based life forms' capacity to store and process information far exceeds our own, we can only predict that their recovery and development at the tip of the first spiral arm will be extremely fast. We must therefore establish a wide enough quarantine zone between the Federation and the Empire. To carry out a life form screening on the billions of stars in the quarantine zone would not be practical under the circumstances. Although the first spiral arm is the most desolate region in the galaxy, the spread of stars with life-supporting planets orbiting them are dense enough for leapfrogging: their density would be sufficient for mid-sized battleships to leapfrog. Even if only one of these ships were to enter the Carbon-based Federation's territory, the damage could be immense. Therefore we can only afford to screen for civilizations. We must sacrifice the lives of the lower life forms surrounding some of the stars in the quarantine zone in order to save the greater part of the galaxy's higher and lower life forms. I have already explained this to the Parliament.'

The Senator replied, 'The Parliament understands you and the Federation's

Defence Committee. What I bring to you is merely counsel, not legislation. But stars that support 3C or higher levels of civilizations must be protected.'

'To be sure,' the Chief Administrator said, his intelligence field flashing a resolute red. 'For the stars in the quarantine zone with orbiting planets, the civilization screening will be extremely rigorous.'

The Fleet Commander's intelligence field made a transmission for the first time. 'To be honest, I think you are worrying too much. The first spiral arm is the most desolate region of the galaxy. There is no way a 3C civilization or above exists out there.'

'Let's hope so,' the Chief Administrator and the Senator transmitted simultaneously. Their intelligence fields resonated to produce a curved plasma field that spread out and broke across the atmosphere of the silver planet.

The fleet then commenced its second space-time jump, tearing off at nearly infinite speed toward the Milky Way's first spiral arm.

IT WAS LATE. In the candlelight, the entire class had gathered around his sickbed.

'Teacher, get some rest! You can teach tomorrow,' a boy said.

He smiled with some difficulty, 'Tomorrow we'll have tomorrow's class.'

He thought to himself: if I could really make it until tomorrow that would be great. I could teach another class. But intuition told him he was close to the end. He gestured and a student brought a small blackboard over and placed it on the blanket that covered his chest. This was how he had taught class for the last month. With his enfeebled hand he received half a piece of chalk from a child and laboriously placed its tip against the blackboard. The pain surged up again. His hand shook and the chalk tapped against the blackboard, ticking out a series of white dots. Since returning from the city, he hadn't gone back to the hospital. Two months had passed and his side, the place near his liver, began to ache. He knew that the cancer had spread there. The pain worsened until finally it was overpowering. He fumbled with his hand under the pillow and pulled out some painkillers. They were the ordinary variety, wrapped in long plastic strips and individually sealed. For severe late stage cancer pain, they were completely useless. Perhaps it was the placebo effect, but after taking them he always felt a little better. Demerol wasn't at all expensive, but the hospital wouldn't let him take it home. Even if he had, there wouldn't have been anyone who could administer the injections. As usual he took two pills out of the plastic wrap. But then he thought for a moment, unwrapped the remaining twelve pills, and swallowed them all at once. He knew he wouldn't be needing them later. He struggled again to write on

the chalkboard, but suddenly turned his head to one side. A child quickly snatched up a basin and held it under his mouth. He coughed up a mouthful of blood and then leaned weakly against the pillow, gasping for breath.

The children began to sob quietly.

He gave up trying to write on the blackboard and waved his hand feebly. He had one of the children take the blackboard away. He began to speak, his voice as thin as gossamer.

‘We’re going to keep doing parts of the middle school curriculum, as we have done for the past two classes. This isn’t on our syllabus. But most of you won’t ever have the chance to go to middle school, so for my final classes I just wanted to give you a sense of what slightly more advanced classes might be like. Yesterday we talked about Lu Xun’s “Diary of a Madman”. You almost certainly didn’t understand it. But whether you understood it or not, you should read it several more times, or better still learn it by heart. When you get older, you’ll understand. Lu Xun was an extraordinary man. Every Chinese should read him. You should all read him one day.’

He was tired. He paused for a moment to catch his breath and rest. While he watched the flickering candle, Lu Xun’s words floated through his mind. They were not from ‘Diary of a Madman’, nor was it in the textbooks. Those words were what he had read in his own dog-eared volume from Lu Xun’s complete works. Even when he read them for the first time many years ago, they were etched into his mind.

‘Imagine an iron room. It has no windows and is nearly impossible to destroy. Inside there are a great number of people, all of them sound asleep. They will soon suffocate and die. But they will die in their sleep, feeling no pain or sorrow. Suppose you were to shout, waking a number of them who are a bit more clear-headed, thereby bringing this unfortunate minority to an awareness of their irremediable predicament. Wouldn’t you owe them an apology?’

‘But now that several people are awake, you could no longer say that there is absolutely no hope of destroying the room.’

He used the last of his strength to continue.

‘Today we’re going to learn junior middle school physics. You’ve probably never heard of physics before. It deals with the principles of the physical world. It is a very, very deep subject.’

‘This class is on Newton’s three laws. Newton was a great English scientist. He said three things, three very profound things. He brought everything in the world

under an all-encompassing set of laws, from the sun and moon above to the wind and running water below. Nothing could escape the delimiting circle of the three things he said. And with these three things you could calculate solar eclipses, which is what the old folks in the village call “the heavenly dog eating the moon”, and be exact to the minute and the second of its occurrence. When people fly to the moon they rely on these three things, they are called Newton’s three laws.

‘Now we will learn the first law: A body continues in its state of rest, or of uniform motion in a straight line, when it is not compelled to change that state by external force.’

In the candlelight the children looked at him quietly and said nothing.

‘Let’s say you give one of those stone grain wheels a hard shove. It will keep rolling, and roll all the way to the horizon without stopping. Baozhu, what are you laughing at? Yes, of course it wouldn’t really happen that way. There is friction, and friction will make it stop. There is not really a place in this world where friction does not exist ...’

Indeed, the friction in his life was too great. In the village he was an outsider, with no connections to begin with, and with his bad temper, he’d offended everyone these past few years. He’d gone from door to door dragging their kids to school. He’d gone to the county seat to fetch back the ones who went with their dads to find work, had thumped his chest assuring them that he’d pay for their tuition. In doing this he hadn’t earned much gratitude, mostly because his views on how life should be lived were just too different from those around him. What he spent all day thinking and talking about were a bunch of impractical matters, which bothered people more than anything else. Before he’d discovered he was sick, he’d gone to the county seat and somehow managed to return with a sum of money given to the school for maintenance work by the Department of Education. The villagers had only taken a small portion, intending to invite an opera troupe to perform for two days during the New Year. But he messed up their plan, and even brought the vice county-head over to demand that the village return the money. But by then the opera stage had already been built. The school had of course been repaired, but he had all but swept away the villager’s good spirits in the process. After that things just got worse. First the village electrician—the mayor’s nephew—cut off power to the school. Then the village refused to give them straw for cooking and keeping warm. Things got so bad he had to abandon his own plot of land in order to go up into the mountains to gather kindling. And then there was the incident involving the dormitory’s rafters. The friction was everywhere. It exhausted him and kept him from moving at a uniform speed in a straight line, such that he could not help but slow to a halt.

Perhaps the world he was about to enter was without friction and where everything was sleek and lovable, but what was the point? His heart would still be here in this world of friction and dust, still in this village school he'd poured his entire life into. After he passed away, the remaining two teachers would leave as well. The village school he'd devoted his life pushing would, like the stone grain wheel in the threshing yard, come to a stop. He sank deep into sadness; whether in this world or in the other, he lacked the strength to change things.

'Newton's second law is a little bit more difficult. We'll save it for last. Next let's learn Newton's third law: Whenever one body exerts a force onto a second body, the second body exerts a force on the first. The two forces are equal in magnitude and opposite in direction.'

Again the children fell into a long silence.

'Do you understand? Who can explain it?'

The best student in the class, Zhao Labao said: 'I get his meaning but I can't really figure it out. This afternoon me and Li Quanguai got in a fight and he hit my face real hard so it hurt and swelled up. The force there definitely wasn't equal. I definitely took more of it than him!'

He took a moment to catch his breath and went on to explain, 'You got hurt because your cheek is softer than Quanguai's fist but the two forces were nevertheless equal ...'

He wanted to use his hands to illustrate but he couldn't even lift them. He felt as though his limbs were made of iron and this heaviness quickly spread throughout his entire body. He thought he might crash through the bed and end up on the floor.

There wasn't enough time.

'TARGET 1033715. Absolute visual magnitude: 3.5. Evolutionary status: above main sequence. Two planets discovered. Average orbital distance from the star: 1.3 and 4.7 units of distance. The first planet is found to support life. Red 69012 reporting.'

The Carbon-based Federation's 100,000 ships had already spread out along a belt 10,000 light years long in the cordoned off area and were in the process of constructing the quarantine zone. The project had just begun and they had already experimentally destroyed 5,000 stars, among which only 137 had planets. This was the first to have life.

'The first arm really is a desolate place.' The Chief Administrator sighed. His intelligence field rippled as he used a hologram to hide the ship beneath his feet and the stars above him, making him, the Commander, and the Senator look as though they were suspended in the black emptiness of space. He adjusted the



image sent by the detector. A blue, glowing fireball appeared in the void. The Chief Administrator's intelligence field produced a white frame that adjusted its size, till it encircled the star and covered the image. They sank again into the boundless darkness. But there was a small yellow light in the darkness. The image began to greatly modify its focal length and the image of the planet flew toward them at dizzying speed, rapidly filling half of the space around them, bathing the three men in the orange glow it reflected.

A thick atmosphere enveloped the planet. In this orange gaseous sea the swirling of the atmosphere produced complex, constantly changing lines. The image of the planet continued to approach until it engulfed the entire universe and the three men were completely swallowed up by the orange sea of gas. The monitoring device kept them on course through the dense fog. The gas rapidly thinned, allowing them to catch a glimpse of the planet's life forms.

A group of balloon-like forms floated in the uppermost layer of the dense atmosphere. Their surfaces were covered in beautiful, constantly changing patterns and colours. At one moment they were striped, at another speckled—perhaps it was a kind of visual language. The balloons had long tails that would flash from time to time. When they did the light travelled from the tip of the tail up to the balloon, causing it to glow brightly.

'Initiate four-dimensional scan!' said a captain serving as duty-officer aboard Red 69012.

A thin band of light began to scan the group of balloons from top to bottom. This wave band was only a few atoms thick but its internal dimensions exceeded that of the universe around it by one dimension. The scan's data returned to the ship. Inside the ship's main computer this group of balloons was cut up into billions of microscopically thin slices, with each slice measuring only a single atom in thickness. Each of these sections was then meticulously recorded, accurate down to the quark.

'Initiate digital reflective composition.'

Inside the main computer's storage device those billions of slices were reconfigured according to their original order to form a virtual balloon being. This planet's balloon creatures now had an exact replica in the main computer's vast interior universe.

'Begin the 3C Civilization Test.'

In this digital universe the computer had accurately identified the balloon's organ of thought, which was an ellipsoid hung in the middle section of its extremely complex nervous system. The computer had instantaneously calculated the structure of this brain, bypassing all of the more rudimentary organs and

constructed a direct high-speed informational interface.

The civilization test consisted of questions arbitrarily selected from an enormous database. If the test taker was able to answer three questions correctly it would pass the test. If the first three questions were all answered incorrectly the tester would have two options: either consider the test failed or continue the test, as the number of questions was infinite, until at least three questions were answered correctly. Once this had happened the test taker could also be considered to have passed the test.

‘3C Civilization Test question number 1: Describe what you have found to be the most basic unit of matter.’

‘Dee dee, doo doodoo, deedeedeede,’ the balloon answered.

‘Question number 1 failed. 3C Civilization Test question number 2: What are the characteristics of the flow of thermal energy through objects? Is this flow reversible?’

‘Doo doodoo, deedeede, deedeede doo doo,’ the balloon responded.

‘Question number 2 failed. 3C Civilization Test question number 3: what is the ratio of a circle’s circumference to its radius?’

‘Deedeedeede doodoodoodo,’ the balloon replied.

‘Question number 3 failed. 3C Civilization Test question number 4 ...’

‘Let’s stop here,’ the Chief Administrator said when they reached question number 10. ‘We don’t have time enough for this.’ He turned and signalled to the Commander next to him.

‘Launch the singularity bomb,’ the captain ordered.

The singularity bomb actually had no size. Strictly speaking it was a geometrical point. An atom by comparison would be infinitely large. While the largest singularity bomb was more than 10 billion tonnes, even the smallest was still around 10 million. When a singularity bomb followed the long guidance track and slid out of Red 69012’s bomb bay, a faintly glowing sphere with a diameter of several hundred metres could be seen. The light was the radiation produced by space dust as it was pulled into the tiny black hole at the bomb’s centre. Different from the black holes created by collapsed stars, these black holes were created at the beginning of the universe. They were shrunken prototypical singularities that existed prior to the Big Bang. The Carbon-based Federation and the Silicon-based Empire both had large fleets that patrolled the dark and barren outer reaches of the Milky Way collecting these mini-black holes. Some ocean planets’ inhabitants jokingly called them ‘the fishing fleets of the high seas’. They fished for one of the galaxy’s most feared weapons of war; the only weapons known that were capable of destroying stars.

After the singularity bomb left its guide rail, it followed a path created for it by the ship's tractor beam as it picked up speed, heading straight for the star. After a moment this dust-like ball sped into the fiery surface of the star. Imagine a deep well with a 100-kilometre radius opening up in the middle of the Pacific Ocean and you'll have an approximate idea of what happened at this moment. A tremendous amount of the star's matter was sucked into the black hole, a swirling torrent of material falling toward a single point from all sides and disappearing there, producing radiation that created a ball of blinding light on the surface of the star, as though the star was wearing a brilliant diamond ring. As the black hole sank into the star, the ball of light dimmed. One could see that it was at the centre of a maelstrom several million kilometres in diameter. This maelstrom emitted a brilliant light, slowly turning and rapidly changing colour, making the star look like a giant savage face. Just as quickly the light disappeared, and so did the maelstrom. The star's surface seemed to have returned to its original colour and luminosity. But this was just the calm before the ultimate destruction. As the black hole sank to the centre of the star, the voracious glutton was even more ravenously swallowing up the high-density matter around it. In the space of a second it could devour an amount of stellar material equal to 100 mid-sized planets. The strong radiation produced in the process slowly spread out across the surface of the star. Because it was blocked by the star's matter, only a small amount reached the surface. The rest situated its energy inside the star, quickly destroying the star's every cell, pulling it away from its point of equilibrium. From the outside one could observe the star's colour gradually changing from light red to bright yellow, then from bright yellow to bright green, then from bright green it changed again as though washed in azure, and then from azure to a terrifying purple. At this point the energy produced by the radiation of the black hole at the centre of the star was far stronger than that of the star itself. Even more energy poured out in forms that were beyond the spectrum of visible light. The purple became darker. The star looked like a spirit being in space suffering through tremendous pain, a pain that increased rapidly. The purple deepened to its limit. In less than an hour, the star had reached the end of its billions of years of life.

A ball of light that looked as though it could engulf the universe flashed brilliantly and then slowly disappeared. Where the star had once been you could see a rapidly expanding orb, like a balloon being inflated. This was the surface of the exploded star. As this orb grew in dimension, it became transparent. Inside there was a second expanding orb and deep inside it a third ... This exploding star was like a series of exquisitely wrought ornamental glass spheres nesting one inside the other that had suddenly appeared in the universe. The surface area of

the innermost orb was hundreds of thousands of times larger than the surface area of the original star. When the first layer of the exploding star passed through the orange planet it was instantly vaporized. Against the background of the entire magnificent spectacle this part could not be seen. It was nothing more than a microscopic dust mote compared to the expanding outer shell of the star, its size not even adding up to a tiny mark on the surface of the glass sphere.

‘Do you feel depressed?’ the Commander asked, seeing that the Chief Administrator and the Senator’s intelligence fields had darkened.

‘Another living world annihilated, like a dew drop under the blaze of the sun.’

‘Just think of the great Campaign of the Second Spiral Arm, when more than 2,000 supernovae were blown up, when 120,000 worlds like this one were vaporized by Carbon-based and Silicon-based ships. Your Excellency, at this late hour we should really be done with this sort of pointless sentimentality.’

The Senator paid no attention to the Commander’s words and asked the Chief Administrator, ‘These surveys of random locations are unreliable. What if they are missing important cultural particulars on the planet’s surface? We should conduct a full surface area survey.’

The Chief Administrator said, ‘I’ve already discussed this with the Parliament. We will need to destroy more than 100 million stars in the quarantine zone, and in the process some ten million planetary systems. Among them there might be as many as fifty million planets in total. We are pressed for time. To conduct a full surface area survey on every single planet would be impractical. The best we can do is to widen the survey beam to cover a greater random survey area. Beside that all we can do is pray that those planets in the quarantine zone with cultures have them spread evenly over their surfaces.’

‘NEXT WE will learn Newton’s second law.’

He burned with impatience and did everything he could with his limited time to teach just a little more to the children.

‘The acceleration of a body is directly proportional to the force causing it, and inversely proportional to the mass. First, acceleration. This is the rate of change of velocity over time. It is not the same as velocity. High velocity does not imply a large acceleration and large acceleration does not imply high velocity. For example, a body is moving at 110 metres per second. Two seconds later its speed is 120 metres per second. Its acceleration is 120 minus 110 divided by two, or five metres per second ... wait no, five metres per second squared. Another body is travelling at ten metres per second. Two seconds later it is moving at thirty metres per second, so its acceleration is thirty minus ten divided by two, or ten metres per

second squared. See, in the second case even though the velocity is small the acceleration is large! Ah, I just mentioned the word “squared”. Squared means a number multiplied by itself.’

It surprised him that his mind could be so clear, his thinking so quick. He knew that the candle of his life had burned down to its base, that the wick had collapsed, igniting the last bit of wax, which burned ten times brighter than the candle flame had ever burned. The pain had disappeared. His body was no longer heavy. In fact he couldn’t feel his body at all. Of his life force all that seemed to remain was his brain, churning wildly, as though suspended in mid-air, using the very last of its resources to pass more of its stored up information to the children gathered around him. But speech was a bottleneck. He knew he didn’t have enough time. He began to hallucinate: a crystalline axe soundlessly cut his brain to pieces. The accumulated knowledge, not much but very valuable, all poured out like shiny pearls onto the floor, with a sweet tinkling sound. The children gathered around to snatch them up like New Year’s candy. This vision gave him a feeling of good fortune.

‘Do you understand?’ he asked anxiously. He could no longer see the children but he could hear their voices.

‘We understand! Teacher hurry up and take a rest!’

He felt the last of the flames die down, ‘I know you don’t understand, but memorize it and later you’ll slowly come to understand it. The acceleration of a body is directly proportional to the force causing it, and inversely proportional to the mass.’

‘Teacher, we really understand! We’re begging you, please rest!’

He used the last of his energy to shout, ‘Memorize!’

The children set about memorizing it through their sobs, ‘The acceleration of a body is directly proportional to the force causing it, and inversely proportional to the mass. The acceleration of a body is directly proportional to the force causing it, and inversely proportional to the mass ...’

This thought produced hundreds of years ago by a brilliant mind long since turned to dust in faraway Europe was now being reproduced in the innocent voices of children speaking in the thickly accented north-western dialect in a remote mountain village in twentieth-century China. Ensnared in this sound, the candle went out.

The children gathered around their teacher’s lifeless body and began to cry.

‘TARGET: 500921473. Absolute visual magnitude: 4.71. Evolutionary stage: main sequence. Nine planets. Blue 84210 reporting.’

‘An exquisite, nearly perfect planetary system!’ the Commander cried out.

The Chief Administrator agreed, ‘Yes. It’s small terrestrial planets and gaseous giants are deployed in a kind of rhyme scheme. The asteroid belt is perfectly positioned, like a beautiful jewelled necklace. The tiny icy outermost methane planet is like the last lingering note of a musical piece, hinting at the birth of a new era.’

‘This is Blue 84210, preparing to scan for life on the innermost planet. Survey beam projected. This planet has no atmosphere and rotates very slowly on its axis. Surface temperatures vary greatly. Random location survey number 1. The result is white. Random location survey number 2. The result is white ... Random location survey number 10. The result is white. Blue 84210 reporting. This planet contains no life.’

The Commander said with disapprobation, ‘This planet’s surface could be used as a smelter! There’s no need to waste any more time!’

‘Initiate life scan on the second planet. Projecting beam sent. This planet has a thick atmosphere. Surface temperatures are high and relatively homogenous, mostly covered by acidic clouds. Random location survey number 1. The result is white. Random location survey number 2. The result is white ... Random location survey number 10. The result is white. Blue 84210 reporting. This planet contains no life.’

Using four-dimensional communication, the Chief Administrator said to the officers on board Blue 84210 more than 1,000 light years away, ‘My intuition tells me that that there is a great probability of life on the third planet. Initiate thirty random locations surveys.’

‘Sir, we are pressed for time,’ the Commander said.

‘Do as I say,’ the Chief Administrator said firmly.

‘Sir, yes sir. Initiating survey of the third planet. Projecting beam sent. This planet has an average atmospheric density. Most of its surface is covered by ocean.’

THE LIFE SURVEY BEAM fell on a slightly southerly portion of the Asian continent. The tip of the beam formed a circle on the ground with a diameter of roughly five thousand metres. If it was daylight, one could detect the beam with the naked eye as all non-living things within the beam’s range became transparent when it hit them. It now shone on a small mountainous region in north-western China, and the loess slopes would have looked to an observer like crystal. The sun would have refracted in and out of these mountains, creating a truly magnificent scene. The observer would have seen the ground below him transformed into a bottomless abyss. All things determined to be living

remained unchanged. People, trees, and grass would have stood out with utter clarity in this crystalline world. But this effect would only have lasted for half a second. During this time the scanning beam would have already completed its initial scan and everything would have returned to normal. The observer would have thought it a momentary hallucination. But right now it was night and naturally it was difficult to notice anything.

The village school happened to be right at the centre of the circle made by the survey beam.

'RANDOM LOCATION SURVEY number 1. The result is ... green! The result is green! Blue 84210 reporting. Target 500921473. The third planet contains life!'

The survey beam began to classify the many kinds of life that fell within its range, ranking the species according to the complexity of their structure and their estimated stages of intelligence, and putting them in order in its digital database. The group of creatures under a square shelter were ranked at the top. The beam speedily retracted, focusing on that shelter.

The Chief Administrator's intelligence field received Blue 84210's image and enlarged it to cover the entire space background. That image of the village schoolhouse in an instant covered the entire universe. The image processing system had already removed the shelter, but the images of the life forms were still unclear. These life forms' appearance was not eye-catching in the slightest and even seemed to blend in with the silicas and yellow dirt that surrounded them. The main computer could not but eliminate from the image everything lifeless, including the larger dead form that was surrounded by the life forms, making them look as though they were suspended alone in the vast emptiness. Even this way they seemed rather ordinary, devoid of colour, looking like yellow plants. One look and you knew these creatures weren't capable of performing miracles.

Blue 84210 projected a thin four-dimensional beam. The moon-sized ship had anchored just outside Jupiter's orbit, temporarily providing the solar system with an additional planet. The four-dimensional beam moved through three-dimensional space toward Earth at almost infinite speed. It plunged straight through the roof of the school and began conducting an elementary particle scan on the eighteen children. The torrent of information returned to space at a speed scarcely conceivable to humans. In an instant the children's digital replicas had been assembled in Blue 84210's main computer's database, a database more vast than the universe itself.

The eighteen children were suspended in a boundless space of a colour impossible to describe, not really a colour at all since the void does not have a

colour but is more transparent than transparent. The children couldn't help but grab onto each other. They looked normal but their hands passed through each other's bodies without the slightest obstruction. The children felt an indescribable terror. The main computer observed this, and thinking that these life forms needed familiar objects, it created in its own internal universe a blue that mimicked that of the planet's sky. The children immediately looked up at the blue sky, with no sun and no clouds and no dust, just blue, so pure and profound. There was no ground under their feet but a sky same as the one over their heads. They seemed to be in a universe of endless blue, and they were the only substance in it. The computer felt that these digital life forms were still in panic and in a millionth of a second, understood: most of the living things in the Milky Way galaxy were not afraid of being suspended in space, but these life forms were not the same. They were land creatures. It therefore provided them with ground and a feeling of gravity. The children were surprised to see the ground suddenly appear beneath their feet. It was pure white and its surface was criss-crossed with an orderly black and white grid. They seemed to be standing on a gridded writing practice book that extended to infinity. Some of them bent down to touch it. It was the smoothest thing any of them had ever seen. They took long strides but did not move, as the surface was absolutely smooth, the coefficient of friction was zero. They wondered why they did not fall down. One of the children took off a shoe and slid it across the ground. This shoe slid forward at a uniform speed. The children stared as it moved off into the distance at an unchanging speed.

They had seen Newton's first law.

A sound, gentle and lovely, resounded in the digital universe.

'Begin the 3C Civilization Test. 3C Civilization Test question number 1: Please describe the evolutionary principle of life on your planet. Is it natural selection or gene mutation?'

The children remained in stupefied silence.

'3C Civilization Test question number 2: Please briefly state the source of the stars' energy.'

The children still remained in stupefied silence.

...

'3C Civilization Test question number 10: Please explain the molecular structure of the liquid which fills your oceans.'

The stupefied silence continued.

The shoe, now only a tiny dot on the horizon, disappeared.

'Let's stop here!' the Commander said to the Chief Administrator 1,000 light years away. 'We cannot delay any longer, or we won't be able to complete the first



stage of the mission on time.'

The Chief Administrator's intelligence field rippled slightly to signal agreement.  
'Launch the singularity bomb!'

The beam carrying this information travelled through four-dimensional space and arrived in an instant at Blue 84210, anchored in the middle of the solar system. A faintly glowing foggy ball slid out of the front of the battleship and down the long guide rail, following an invisible tractor beam as it swiftly gathered speed and hurtled toward the sun.

The Chief Administrator, the Senator, and the Fleet Commander turned their attention to other areas of the quarantine zone, where they found a few more planetary systems that contained life. But the highest form of life they found was a brainless worm that lived in mud. The exploding stars looked like blossoming fireworks, reminding them of the epic Campaign of the Second Spiral Arm.

After a long time, a small portion of the Chief Administrator's intelligence field unconsciously wandered to the solar system. He heard the voice of Blue 84210's captain:

'Prepare to exit the force field of the explosion. Ready for space-time jump. Thirty second countdown.'

'Wait, how long will it take for the singularity bomb to hit the target?' the Chief Administrator asked. His question attracted the attention of the Senator and the Fleet Commander.

'It is crossing the orbit of the innermost planet to the star, so it will take another ten minutes.'

'Spend the next five minutes doing a few more tests.'

'Yes, sir.'

The voice of Blue 84210's duty-officer rang out. '3C Civilization Test question number 11: On a three-dimensional plane, what is the relation between the three sides of a right-angled triangle?'

Silence.

'3C Civilization Test question number 12: What number planet is your planet within your solar system?'

Silence.

'Sir, this is pointless,' the Commander said.

'3C Civilization Test question number 13: Describe the motion of a body when unaffected by external force.'

The children's clear voices suddenly sounded out through the wide blue space of the digital universe: 'A body continues in its state of rest, or of uniform motion in a straight line, when it is not compelled to change that state by external force.'

‘Question number 13 passed! 3C Civilization Test question number 14 ...’

‘Wait!’ The Senator interrupted the duty-officer. ‘Choose the next question on the laws of motion at low speeds.’ He turned to the Chief Administrator. ‘This doesn’t contravene the rules of the test, does it?’

‘Of course not, as long as the test questions are from the digital test database,’ the Commander answered instead. These living beings had surprised him and captured his full attention.

‘3C Civilization Test question number 14: Describe the interaction between two bodies when one exerts a force on the other.’

The children replied in unison: ‘Whenever one body exerts a force onto a second body, the second body exerts a force on the first. The two forces are equal in magnitude and opposite in direction.’

‘Question number 14 passed! 3C Civilization Test question number 15: Explain the relation between the mass of a body, its acceleration, and the force exerted on it.’

The children chanted: ‘The acceleration of a body is directly proportional to the force causing it, and inversely proportional to the mass.’

‘Question number 15 on the 3C Civilization Test passed. The Civilization Test has been passed! We have ascertained that the third planet orbiting the targeted star number 500921473 contains a level 3C civilization.’

‘Redirect the singularity bomb away from the target!’ The Chief Administrator’s intelligence field flashed urgently, forcefully sending his order through hyperspace to Blue 84210.

Inside the solar system, the repulsor beam propelling the singularity bomb curved. It bent like a bow hundreds of millions of kilometres long, straining to divert the bomb from its trajectory toward the sun. The force field generator on Blue 84210 was operating at maximum capacity, and its immense heat dispersion plates turned from dull red to white-hot. The force field it beamed out was starting to make the trajectory of the singularity bomb curve away, but it had already crossed Mercury’s orbit and was now too close to the sun. No one knew whether the redirection would succeed. Through live hyperspace projection, the whole Milky Way was gazing at the trajectory of that foggy ball, and watching it suddenly get brighter. This was an alarming sign: it meant the bomb was already encountering the greater density of particles surrounding the sun. The captain’s hand was on the red button for space-time jump, so as to escape the area the instant before the singularity bomb hit. But the bomb grazed the sun like a bullet, with only a few dozen kilometres to spare. The singularity bomb grew bright as the black hole sucked in the matter from the sun’s corona, becoming a flaming blue-white sphere

that became visible at the edge of the sun. For an instant, they looked like a double star system, a sight humans would never be able to explain. As the blue-white sphere whizzed by, the sun's own ocean of fire dimmed by comparison. Like a boat speeding through calm water, the black hole's gravitational force made a V-shaped wave on the surface of the sun that spread across a whole hemisphere before it disappeared. The singularity bomb ruptured a solar prominence, making this beautiful million-kilometres-long veil that rose from the sun shatter into a beautiful dancing vortex of plasma swirls under the impact of such high velocity ... Soon after the bomb had skimmed past the sun, it dimmed and vanished into the vast night of the universe.

'We nearly destroyed a carbon-based civilization,' the Senator breathed.

'Crazy, isn't it, a level 3C civilization in such an isolated place!' exclaimed the Commander.

'That's true, neither the Carbon-based Federation nor the Silicon-based Empire included this area in their plans for civilizational mentoring and development, so if this civilization evolved on its own, that makes it unique,' said the Chief Administrator.

'Blue 84210, stay in that solar system and thoroughly examine the level of civilization across the entire surface of Planet No. 3. Your other duties will be taken over by other ships,' the Commander ordered.

UNLIKE the digitally reproduced beings stationed beyond Jupiter's trajectory, the children in the village school had not noticed anything out of the ordinary. They had gathered around their teacher's body in the flickering candlelight, sobbing. Finally, after a long time had passed, they quieted down.

'Let's go to the village and tell the grown-ups,' Guo Cuihua said, sniffing.

'How would that help?' Liu Baozhu hung his head. 'They couldn't stand him when he was alive, I bet they wouldn't even pay for a coffin.'

The children decided to bury their teacher themselves. With hoes and shovels, they began to dig a grave on the hill beside the school. A whole universe of dazzling stars looked silently at them.

'IT'S A LEVEL 5B civilization they have on that planet, not a level 3C!' The Senator was amazed by the report Blue 84210 had sent back from 1,000 light years away.

Images of the skyscrapers in human cities began to appear in the space above the main spaceship.

'They have started using nuclear power, and are beginning to explore space using chemical propulsion. They have even successfully landed on their planet's satellite.'

‘What are their chief characteristics?’ the Commander asked.

‘What would you like to know?’ Blue 84210’s duty-officer replied.

‘For instance, what is the level of hereditary biological memory on this planet?’

‘They don’t inherit memories biologically. All their memories are acquired.’

‘How do individual beings communicate among themselves, then?’

‘By a primitive and unusual means. They have a very thin organ inside their bodies which, when it vibrates in the chiefly nitrogen- and oxygen-based atmosphere of the planet, creates sound waves. They encode the information they want to convey in these sound waves, and the recipient absorbs this from the sound waves via another thin-membrane organ.’

‘How fast is this means of communication?’

‘One to ten bits per second.’

‘What?’ Everyone on the spaceship began to laugh.

‘It really is one to ten bits per second. We didn’t believe it either, but we’ve checked time and again.’

‘Captain, are you some kind of imbecile?’ the Commander fumed. ‘Are you trying to tell us that a species of being without inherited memory, that communicates via sound waves, and only manages to convey between an unimaginable one and ten bits of information per second, created a level 5B civilization that evolved of its own accord without external help from higher civilizations?’

‘Sir, those are the facts.’

‘But under these circumstances, these beings would simply be unable to accumulate and convey information between generations, which is crucial for an evolving civilization!’

‘There are a certain number of individuals dispersed throughout the population who serve as the medium conveying knowledge between two generations of these beings.’

‘It sounds like a myth.’

‘It’s true that such a concept existed in the remote antiquity of Milky Way civilizations,’ the Senator said, ‘but even then it was very rare. No one knows about it except those of us who specialize in the history of how galactic civilizations evolved.’

‘You mean the individuals that communicate knowledge between two generations of living beings?’

‘They are called teachers.’

‘Teach-ers?’

‘Yes, it’s an archaic word that has long since disappeared, very rare, you can’t even find it in most databases of ancient words.’

Now the images sent back from the solar system zoomed out, showing a blue planet revolving slowly through space.

‘During the Milky Way’s federal period, independently evolved civilizations have been very rare, and as for a 5B civilization—this is the only one. We should allow this civilization to continue evolving undisturbed. Further observation and study will contribute to our understanding of ancient civilizations, and it may also be significant for today’s Milky Way civilization,’ said the Chief Administrator.

‘So let’s have Blue 84210 leave that solar system immediately, and designate a 100-light year radius around this star to be a no-fly zone,’ the Commander said.

INSOMNIACS in the northern hemisphere would have seen the sky shudder with circular ripples that appeared to start from a point in the sky and expand outwards, as though the sky were a clear pool of water touched by a fingertip.

The space-time warp caused by Blue 84210’s space-time jump had greatly weakened by the time it reached the earth, merely making all the clocks there three seconds faster. But human beings living in three-dimensional space would have had no way of noticing this.

‘IT’S A PITY,’ Chief Administrator said. ‘Without being fostered by a higher civilization, they will be stuck in three-dimensional space at sub-light speeds for another 2,000 years. It will take them at least 1,000 years more to start using annihilatory energy, and a further 2,000 to communicate across multidimensional space-time. As for travelling through space by space-time jumps, it might take another 5,000 years. It could be 10,000 years before they meet the basic requirements to become part of the Milky Way’s great family of carbon-based civilizations.’

The Senator said, ‘This kind of independently evolved civilization is a thing of the Milky Way’s ancient history. If the records of antiquity are correct, my ancestors lived in the deep seas of an oceanic planet. After countless dynasties in that dark world, a great exploration project began. They launched their first spaceship, a transparent floating ball, which floated all the way up to the surface of the ocean. It was night, and the ancestors in the little sphere saw the starry sky for the first time ... Can you imagine how splendid and mysterious it must have seemed!’

‘Those were exciting times, in which a planet like a speck of dust would have seemed like an infinite world to our ancestors,’ said the Chief Administrator. ‘They would have gazed up at the universe from green oceans and purple plains, full of awe ... We lost this feeling millions of years ago.’

‘No, I have rediscovered it!’ the Senator said, pointing to the image of the Earth,

its white clouds swirling across a crystal-blue surface. He thought it looked like the kind of beautiful oceanic pearl from the oceanic planet of his ancestors. 'Look at this little world. The living beings on it are living their lives, dreaming their dreams, unaware that we exist, unaware of the wars and destruction in the Milky Way. To them, the universe is a fount of hope and dreams. It's like an ancient ballad.'

He actually started singing. Their three intelligence fields merged and rippled with rose-pink waves. This song that had survived from an unimaginably ancient civilization sounded mysterious, far-away, desolate. It spread through the Milky Way via hyperspace, so that countless beings in this galaxy of hundreds of billions of stars suddenly experienced a long lost warmth and tranquillity.

'The most unfathomable thing about the universe is that it can be fathomed,' the Chief Administrator said.

'The most fathomable thing about the universe is that it cannot be fathomed,' the Senator said.

THE SKY had grown bright by the time the children finished digging the new grave. They placed the body on a door dismantled from the classroom and buried their teacher with two boxes of chalk and a dog-eared set of primary school textbooks. They marked the grave with a stone, on which they had written in chalk: Mr Li's Grave.

The first rains would wash the childish handwriting from that stone; before long, the grave and the man sleeping in it would be entirely forgotten by the outside world.

The sun peeped out from behind the mountains and cast its golden rays on the sleeping village. In the valleys still enfolded in shadows, dewdrops glinted on the grass, and a bird or two chirped timidly.

The children walked back to the village on a mountain path, and their little shapes soon disappeared in the pale blue morning fog of the valleys.

They would continue to live. On this ancient, impoverished piece of land they would reap a small, but truly substantive hope.

Material not available  
due to copyright restrictions.

Village 村居 by Lu Yushun 盧禹舜  
Courtesy of the Hong Kong Museum of Art