

# *Ball Lightning*

by Liu Cixin

Translated by **Joel Martinsen**

*The descriptions in this book of the characteristics and behavior of ball lightning are based on historical records.*

## **Prelude**

I only remembered that it was my birthday after Mom and Dad lit the candles on the cake and we sat down around fourteen small tongues of flame.

The storm that night made it seem as if the whole universe held nothing but rapid flashes of lightning and our small room. Electric blue bursts froze the rain into solid drops for an instant, forming dense strings of glittering crystals suspended between heaven and earth. A thought struck me: the world would be fascinating if that instant became reality. Through streets hung with crystal you would walk surrounded on all sides by the sound of chimes, but in such an exquisite world the lightning would be unbearable...I had always seen a different world from the one others saw. I wanted to transform the world: that was the one thing I knew about myself at that age.

The storm had started in the evening, and the thunder and lightning quickened their pace as it progressed. At first, after each flash, my mind retained an impression of the ephemeral crystalline world outside the window as I tensed in anticipation of the peal of thunder. But the lightning had grown so thick and fast that I could no longer distinguish which thunderclap belonged to which bolt.

On a stormy night you get a sense of how precious family really is, because the warm embrace of home is intoxicating when you imagine the terrors of the outside world. You feel for those souls without a home, out there in the open shivering through the storm and lightning. You want to open a window so they can fly in, but the outside world is so frightening that you cannot let even the tiniest breath of cold air enter the warmth inside.

“Ah, life,” Dad said, and downed his beer. Then, staring intently at the cluster of flames, he said, “So random, all probability and chance. Like a twig floating in a brook, caught on a stone or seized by an eddy—”

“He’s too young. He doesn’t understand this stuff,” said Mom.

“He’s not young!” said Dad. “He’s at the age where he can learn the truth about life!”

“And you know all about that,” Mom said with a sarcastic laugh.

“I know. Of course I know!” Dad drank half a glass, and then turned to me. “Actually, son, it’s not hard to live a wonderful life. Listen to your father. Choose a tough, world-class problem, one that requires only a sheet of paper and a pencil, like Goldbach’s Conjecture or Fermat’s Last Theorem, or a question in pure natural philosophy that doesn’t need pencil and paper at all, like the origin of the universe, and then throw yourself entirely into research. Think only of planting, not reaping, and as you concentrate, an entire lifetime will pass before you know it. That’s what people mean by settling down. Or do the opposite, and make earning money your only goal. Spend all of your time thinking about how to make money, not about what you’ll do with it when you make it, until you’re on your deathbed clutching a pile of gold coins like Monsieur Grandet, saying: ‘It warms me...’ The key to a wonderful life is a fascination with something. Me, for example—” Dad pointed to the watercolors lying all over the room. They were done in a very traditional style, properly composed and lacking all vitality. The paintings reflected the lightning outside like a set of flickering screens, “I am fascinated with painting even though I know I can’t be van Gogh.”

“That’s right. Idealists and cynics may pity each other, but they’re really both fortunate,” Mom mused.

Ordinarily all business, my mother and father had turned into philosophers, as if it was their own birthday we were celebrating.

“Mom, don’t move!” I plucked a white hair out of my mother’s thick, black mane. Only half of it was white. The other half was still black.

Dad held the hair up to the light and examined it. Against the lightning it shone like a lamp filament. “As far as I know, this is the first white hair your mother has had in her entire life. Or at least the first that’s been discovered.”

“What are you doing! Pluck one, and seven will grow back!” Mom said, and she gave her hair an exasperated toss.

“Really? Well, that’s life,” Dad said. He pointed to the candles on the cake: “Suppose you take one of these small candles and stick it into a desert dune. If there’s no wind you may actually be able to light it. Then leave. What would it feel like to watch the flame from a distance? My boy, this is what life is, fragile and uncertain, unable to endure a puff of wind.”

The three of us sat in silence looking at the cluster of flames as they shivered against the icy blue lightning that flashed through the window, as if we were looking at a tiny life form that we had painstakingly raised.

Outside, lightning flashed dramatically.

This time, it came in through the wall, emerging like a spirit from an oil painting of a carnival of the Greek gods. It was about the size of a basketball and shone with a hazy red glow. It drifted gracefully over our heads, leaving behind a tail that gave off a dark red light. Its flight path was erratic, and its tail described a confusingly complicated figure above us. It whistled as it floated, a deep tone pierced with a sharp high whine, calling to mind a spirit blowing a flute in some ancient wasteland.

Mom clutched fearfully to Dad with both hands, an action I have looked back on in anguish my entire life, because if she had not done that, I might have one relative left alive today.

The thing continued to drift like it was looking for something, which it finally found: it stopped, hanging about half a meter over my father's head, and its whistle became deeper and intermittent, like bitter laughter.

I could see inside the translucent red blaze. It seemed infinitely deep, and a cluster of blue stars streamed out of the bottomless haze, like a star field seen by a spirit rocketing across space faster than the speed of light.

Later, I learned that the internal power density could have reached 20,000 to 30,000 joules per cubic centimeter, compared to just 2,000 joules per cubic centimeter for TNT. And while its internal temperature might have exceeded 10,000 degrees, its surface was cool.

My father lifted his hand, more to protect his head than to try to touch the thing. Fully extended, his arm seemed to exert an attractive force that pulled the thing toward it like a leaf's stomata absorbs a drop of dew.

With a blinding flash and a deafening boom, the world around me exploded.

What I saw after the flash blindness lifted from my eyes would stay with me for the rest of my life. It was like someone had switched to grayscale mode in an image editor: instantaneously, the bodies of my mom and dad had turned black and white. Or rather, gray and white, because the black was the result of shadows cast by lamplight playing off creases and folds. The color of marble. Dad's hand was still raised, and Mom still clutched at his other arm with both hands. There still seemed to be life in the two pairs of eyes that stared petrified out of the faces of these two statues.

A strange odor was in the air, which I later learned was the smell of ozone.

"Dad!" I shouted. No answer.

"Mom!" I shouted again. No answer.

Approaching the two statues was the most frightening moment in my life. In the past, my terrors had mostly been in dreams, and I was able to avoid a mental breakdown in the world of my nightmares because my subconscious was still awake, shouting to my consciousness from a remote corner, "This is a dream." Now, it took that voice shouting to me with all its might to keep me moving toward them. I reached out a trembling hand to touch my father's body, and the instant I made contact with the gray and white surface of his shoulder, it felt like I was passing through an extremely thin and extremely brittle shell. I heard a soft cracking, like a glass cracking when it is filled with boiling water in the winter. The two statues collapsed right before my eyes in a miniature avalanche.

Two piles of white ash settled on the carpet, and that was all there was.

The wooden stools they had been sitting on were still there, covered with a layer of ash. I brushed away the ash to reveal a surface that was perfectly unharmed and icy cold to the touch. I knew that crematorium ovens heat bodies at 2,000 degrees for thirty minutes to render them to ash. So this was a dream.

As I looked vacantly around me, I saw smoke issuing from a bookcase. Behind the glass door, the bookcase was full of white smoke. I went over and opened the bookcase door, and the smoke dissipated. About a third of the books had turned to

ash, the same color as the two piles on the carpet, but the bookcase itself showed no signs of fire. This was a dream.

I saw a puff of steam escape the half-opened refrigerator, so I pulled back the door to find a frozen chicken, cooked through and smelling delicious, and shrimp and fish that were cooked as well. But the refrigerator, rattling as the compressor started up, was completely unharmed. This was a dream.

I felt a little weird myself. I opened my jacket and ashes fell off my body. The vest I was wearing had been completely incinerated, but the outer jacket was perfectly fine, which was why I had not noticed anything until now. I checked my pockets and burnt my hand on an object that turned out to be my PDA, now a hunk of melted plastic. This had to be a dream, a most peculiar dream!

Woodenly, I returned to my seat, and although I could not actually see the two small piles of ash on the carpet on the other side of the table, I knew they were there. Outside, the thunder had let up and the lightning had slackened. Eventually the rain stopped. Later the moon poked through a gap in the clouds, beaming an unearthly silvery light through the window. Still I sat numbly in a fog, and in my mind the world had ceased to exist and I was floating in a vast emptiness. How long it was before the rising sun outside the window woke me, I do not know, but when I got up mechanically to leave for school, I had to fumble around to find my book bag and open the door because I was still staring dumbly into that boundless emptiness...

A week later, when my mind had basically returned to normal, the first thing I remembered was that it had been the night of my birthday. There should have been only one candle on the cake – no, no candles at all, because on that night my life started anew, and I was no longer the person I once was.

Like Dad said at the last moment of his life, I was fascinated with something, and I wanted to experience the wonderful life he had described.

## I College

*Major courses: Higher mathematics, theoretical mechanics, fluid mechanics, principles and applications of computers, languages and programming, dynamic meteorology, principles of synoptic meteorology, Chinese meteorology, statistical forecasting, long-term weather forecasting, numerical forecasting.*

*Elective courses: Atmospheric circulation, meteorological diagnostic analysis, storms and mid-scale meteorology, thunderstorm prediction and prevention, tropical meteorology, climate change and short-term climate prediction, radar and satellite meteorology, air pollution and urban climatology, high-altitude meteorology, atmosphere-ocean interactions.*

Just five days before, I had taken care of everything in the house and set out for a southern city a thousand kilometers away to go to college. Shutting the door for the last time to a now-empty house, I knew that I was leaving my childhood behind forever. From now on, I would be a machine in pursuit of a single goal.

Looking over the list of courses that would occupy me for four years, I felt a little disappointed. Many of the things on it I had no need for, and some of the things that I did need, like E&M and plasma physics, were not. I realized that I may have applied to the wrong major, and perhaps should have gone into physics instead of atmospheric science.

So I plunged into the library, spending most of my time on mathematics, E&M, and plasma physics, and going only to the classes that involved those subjects while basically skipping all of the rest. Colorful collegiate life had nothing to do with me, and I had no interest in it. Returning to my dorm room at around one or two at night and hearing a roommate mumble his girlfriend's name in his sleep was the only reminder I had of that other mode of life.

One night well after midnight, I lifted my head out of a thick partial differential equations text. I had assumed that at this time of night I would be the only student left in the night-time reading room, as usual, but across from me I saw Dai Lin, a pretty girl from my class. She had no books, but was simply resting her head on her hands and looking at me. Her expression was unlikely to have enchanted scads of admirers; it was the look of someone who has discovered a spy in camp, a look directed at something alien, and I had no idea how long she had been looking at me.

"You're a peculiar person. I can tell you're not just a nerd because you've got a strong sense of purpose," she said.

"Oh? Doesn't everyone have goals?" I tossed off the question. I may have been the only male student in class who had never spoken to her.

"Our goals are fairly vague. But you, you're definitely looking for something very specific."

"You've got a good eye for people," I said blandly as I gathered my books and stood up. I was the one person who had no need to show off for her, and this gave me a sense of superiority.

When I reached the door, she called after me, "What are you looking for?"

"You wouldn't be interested." I left without looking back.

In the quiet autumn night outside I looked up at a sky full of stars, and my Dad's voice seemed to carry on the air: "The key to a wonderful life is a fascination with something." Now I understood how right he was. My life was a speeding missile, and I had no other desire than to hear it explode into its target. A goal with no practical purpose, but one that would make my life complete once I reached it. Why I was going to that particular place I did not know, but it was enough simply to want to go, an impulse that lay at the core of human nature. Oddly, I had never gone to look up any materials related to It. It and I were two knights whose entire lives would be devoted to preparing for a single duel, and before I was ready I would neither seek It out nor think about It.

Three semesters passed in the blink of an eye, time that to me felt like one uninterrupted span, because without a home to return to I spent all of my holidays at school. Living all by myself in a spacious dormitory, I had few feelings of loneliness. Only on the eve of the Spring Festival, when I heard the firecrackers going off outside, did I think about my life before It had appeared, but that life

seemed like it was a generation ago. As I spent those nights in a dorm room with the heat turned off, the cold made my dreams especially lifelike, and although I had imagined that my mom and dad would appear in my dreams, they did not. I remembered an Indian legend that told of a king who, when his beloved consort died, decided to build a luxurious tomb the likes of which had never before been seen. He spent the better part of his life working on that tomb until finally, when construction was complete, he noticed his consort's coffin lying right at the center and said: That doesn't belong. Take it away.

My parents had long since departed, and it occupied every corner of my mind. But what happened next complicated my simple world.

## 2 Strange Phenomena I

The summer after my sophomore year I took trip back home to rent out the old place so I could handle my future tuition.

It was already dark when I arrived, so I had to feel around to turn the lock and make my way in. Turning on the light revealed a familiar scene. The table that held a birthday cake during the night of the thunderstorm was still there, with three chairs still sitting around it, as if I had left just yesterday. I sat down exhausted on the sofa, and as I took stock of my home, I felt that something was not right. The feeling was indistinct at first, but as it gradually took shape like a submerged reef coming into view during a foggy cruise, I could not avoid it. At last I discovered the source:

It was as if I had left just yesterday.

I inspected the table: there was a thin layer of dust, a little too thin for the two years I had been away.

I went to the bathroom to wash the dirt and sweat off my face. When I turned on the light, I could see myself clearly in the mirror. Too clearly. The mirror should not have been that clean. I distinctly remembered going away with my parents during one summer break when I was in elementary school, and although we were only gone a month, when we came back I could draw a stick figure in the dust on the mirror. Now when I made a few strokes on the mirror with my finger I could not draw anything.

I turned on the faucet. After two years, rusty water should have issued from the iron tap, but what flowed out was perfectly clear.

I went back to the living room after washing my face and noticed something else: two years ago, just as I was about to leave but before I shut the door, I looked over the entire room on the off-chance that I had forgotten something and had noticed a glass sitting on the table. I thought about turning it upside-down so it would not collect dust, but with my luggage in hand it would have taken too much effort to go back, so I dropped the idea. I distinctly remembered that detail.

But now, the glass was turned upside-down on the table!

Just then, the neighbors came over to see why the lights were on. They greeted me with the sort of kind words one addresses to an orphan who has gone off to

college, promising that they would take care of renting the place and, if I could not come back after graduation, help me get a good price for it.

“The environment seems to have improved quite a bit since I left,” I said casually as talk turned to how things had changed over the past two years.

“Improved? Get your eyes checked! That power plant over by the distillery just started up last year, and now there’s twice as much dust as when you left! Ha! Are things improving anywhere these days?”

I glanced at the table and its thin layer of dust and said nothing, but when I saw them off, I could not help asking whether any of them had a key to the house. They looked at each other in surprise and said they most certainly did not. I believed them, because there had been a total of five keys, three of which still worked. When I left two years ago I took all three: one I had with me now and two others that were far away in my college dorm room.

After the neighbors left I inspected the windows, all of them tightly sealed with no evidence of break-ins.

The remaining two keys had been carried by my parents. But on that night, they had melted. I will never forget how I found those two misshapen lumps of metal among my parent’s ashes. Those keys, melted and re-solidified, were sitting in my dormitory a thousand kilometers away as mementos of that fantastic energy.

I sat for a while before starting to get together the things that would be stored or taken back with me once the house was rented. I first packed my father’s watercolors, one of the few things in the room that I wanted to save. I took down the ones hanging on the walls first, then got others out of a cabinet and packed as many as I could find into a cardboard box. Then I noticed that one more painting was still lying on the bottom shelf of the bookcase, face down, which was why I had missed it. When I glanced at it before putting it into the box, it seized my whole attention.

It was a landscape painting of the scenery visible from the door to our home. The surrounding scenery was dull: a few gray four-story walk-ups and several rows of poplars, lifeless from the dust covering them...As a third-rate amateur painter my father was lazy. Rarely going out to sketch from the real world, he was content to paint the muddy scenes that surrounded him. He said that there were no flat colors, only mediocre painters. That was the sort of painter he was, and these flat scenes, which acquired another level of woodenness as interpreted through his lifeless copy-brush, actually managed to capture daily life in this dingy northern city. The painting I held in my hand was like so many that were already in the box, with nothing in particular to recommend it.

But I had noticed something: a water tower that was a little more brightly-colored than the old buildings surrounding it, standing tall like a morning glory. Nothing special really, because there was indeed a water tower outside. I looked out the window at towering structure silhouetted against the lights of the city.

Except, the water tower had not been completed until after I went off to college. When I left two years ago, it was half-finished and covered in scaffolding.

I trembled, and the painting slipped out of my hand. A breath of cold air seemed to blow through the house on this midsummer night.

I crammed the painting into the box, closed the lid tightly, and then started

packing other things. I tried to focus my attention on the task at hand, but my mind was a needle suspended on a filament, and the box was a strong magnet. With effort, I could redirect the needle, but once I let up, it would swing back in that direction. It was raining. The raindrops tapped softly against the windowpane, but to me the sound seemed to be coming from the box...finally, when I could not stand it any longer, I raced to the box, opened it, took out the painting, and carried it to the bathroom, taking care to hold it face down. Then I took out a lighter and lit one corner. When about a third of the painting had burned up, I gave in and flipped it over. The water tower was even more life-like than before and seemed to poke out of the surface. I watched as it was consumed by flames, which turned strange, seductive colors as the water-colors burned. I dropped the last bit of the painting into the sink and watched it burn out, and then turned on the faucet and rinsed the ashes down the drain. When I turned off the faucet, my eyes were drawn to something on the edge of the sink that I had not noticed when I washed my face.

A few strands of hair. Long hair.

They were white hairs, some completely white so they blended in with the sink, and others half-white, the black portions catching my attention. Definitely not hair that I had left behind two years before. My hair had never been that long, and I had never had any white hair at all. Carefully, I lifted up one long, half-black, half-white strand.

*...pluck one and seven will grow back...*

I tossed the hair aside like it burned my hand. As the strand drifted gently downward, it left a trail: a trail made up of the fleeting images of many strands, like a momentary persistence of vision. It did not land beside the sink but fell only partway before vanishing into thin air. I looked back at the other hairs on the sink: they too had vanished without a trace.

I ran my head under the faucet for a long while, and then walked stiffly back to the living room, where I sat down on the sofa and listened to the rain outside. It had turned heavy, a storm without thunder or lightning. Rain pounded on the windows, sounding like a voice, or perhaps many people speaking softly, as if they were trying to remind me of something. As I listened, I started to imagine the meaning of the murmuring, which became more and more real as it was repeated:

“There was lightning that night, there was lightning that night, there was lightning that night, there was lightning that night, there was lightning that night...”

Once again I sat in that house until dawn on a stormy night, and once again I numbly left home. I knew I was leaving something behind forever, and I knew I would never return.

### **3 Ball Lightning**

I had to face It, because once the semester started, classes in atmospheric electricity would begin.

Atmospheric electricity was taught by an assistant professor named Zhang Bin. He was about fifty, neither short nor tall, wore glasses that were neither thick nor thin, had a voice that was neither loud nor soft, and his lectures were neither great



nor terrible. In sum, as average as a person could be, except for a slight limp in one leg, something you would not notice unless you paid close attention.

That afternoon after class, the lecture room was empty except for myself and Zhang, who was gathering his things at the podium and did not notice me. A late-autumn sunset sent its golden beams into the room, and a layer of golden leaves covered the windowsill. Ordinarily cold and detached, I suddenly realized that this was the season for poetry.

I got up and walked over to the podium. "Professor Zhang, I'd like to ask you a question completely unrelated to today's lecture."

Zhang looked up at me for a moment before nodding and returning his attention to his things.

"It's about ball lightning. What can you tell me about it?" I uttered the words that I had kept buried deep in my heart, never daring to speak aloud.

Zhang's hands ceased their activity. He looked up, not at me, but out the window at the setting sun, as if that were what I was referring to. "What do you want to know?" he asked after a few seconds.

"Everything," I said.

Zhang continued to look at the sun as its light bathed his face. It was still quite bright at that hour. Didn't it hurt his eyes?

"The historical record, for example." I prompted in more detail.

"In Europe, records exist from as early as the middle ages. In China, a relatively clear record was set down by Zhang Juzheng in the Ming Dynasty. But the first formal scientific record only dates from 1837, and the scientific community didn't accept it as a natural phenomenon until the last forty years."

"Any theories about it?"

"There are many." After this simple sentence, Zhang Bin was silent. He turned away from the setting sun but did not resume getting his things together. He seemed deep in thought.

"What are the traditional theories?"

"That it's a vortex of high-temperature plasma whose high-speed internal rotation exerts a force that maintains balance with outside atmospheric pressure and thus can maintain relatively long-term stability."

"And?"

"Others believe that it's a chemical reaction within a high-temperature gas mixture, by which it maintains energy equilibrium."

"Can you tell me anything else?" I said. Asking him questions was like trying to move a heavy grindstone that barely budged an inch with each push.

"There's also the microwave-soliton theory, which says that ball lightning is caused by an atmospheric maser with a volume of several cubic meters. A maser is like a much less powerful laser which, inside a large volume of air, can produce a localized magnetic field as well as solitons, which then create visible ball lightning."

"And the latest theories?"

"Lots. For example, one that's gained a fair amount of attention is due to Abrahamson and Dinniss at the University of Canterbury in New Zealand. Their theory says that ball lightning is primarily due to the oxidization of a filamentary network

of silicon nanoparticles. There are many more, and some people even believe that it is a cold fusion reaction in the air.”

Zhang paused, but then came out with more information: “In this country, there’s someone at the Atmospheric Institute at the Chinese Academy of Sciences who has suggested an atmospheric plasma theory that starts off with magnetic fluid dynamics equations and introduces a vector-soliton resonator model which, under appropriate boundary temperatures, is theoretically able to achieve a plasma vortex in the atmosphere – a fireball – and whose numerical analysis explains both the necessary and sufficient conditions for its existence.”

“And your opinion of this theory?”

Zhang gently shook his head: “Proving the theory requires nothing more than producing ball lightning in the lab, but no one has succeeded yet.”

“Nationally, how many eyewitnesses have there been?”

“Quite a few. I’d say at least a thousand. The most famous was in 1998, when state television was shooting a documentary of the flood fighting efforts on the Yangtze River and unwittingly recorded ball lightning on film.”

“One last question, professor. In the atmospheric physics community, are there people who have personally witnessed ball lightning?”

Zhang once again looked out the window at the setting sun. “Yes.”

“When?”

“In July, 1962.”

“Where?”

“Yuhuang Peak on Mount Tai.”

“Do you know where that person is now?”

Zhang shook his head, then raised his wrist and glanced at his watch: “You should head to the cafeteria for dinner.” Then he picked up his things and left the building.

I caught up to him and finally asked the question that had been in my mind all these years: “Mr. Zhang, can you imagine a fireball-shaped object that can pass through walls and can reduce a person to ashes instantaneously even though it doesn’t feel hot? There is a record of a sleeping couple reduced to ashes in their bed without a single scorch mark on their blanket! Can you imagine it entering a refrigerator and instantly turning all your frozen food cooked and piping hot without affecting the refrigerator’s operation? Can you imagine it burning your undershirt to a crisp without you feeling a thing? Can the theories you’ve mentioned explain all of this?”

“There’s no proof for any of those theories,” said Zhang without altering his stride.

“Then if we leave the confines of atmospheric physics, do you think there is any explanation in the rest of physics, or even in all of science itself, for this phenomenon? Aren’t you even the least bit curious? Your reaction is even more shocking to me than seeing ball lightning itself!”

Zhang stopped and turned to face me for the first time: “You’ve seen ball lightning?”

“...I was just using a metaphor.”

I could not reveal my deepest secret to this unfeeling person before me. Society was plagued by stoicism in the face of the profound mysteries of the natural world: its existence was the bane of science. If science had less of that sort of person, who knows, maybe humanity would have reached Alpha Centauri by now!

Zhang said, "The field of atmospheric physics is very practical. Ball lightning is such a rare phenomenon that neither the IEC/TC-81 international standard for protection against lightning in structures nor China's 1993 Standard for Protection of Structures Against Lightning dealt with it. So there's really no point in devoting any effort to it."

There was nothing I could say to a person like Zhang, so I thanked him and left. And truth be told, even admitting the existence of ball lightning was already a major step for him. Before the scientific community formally recognized its existence in 1963, all eyewitness accounts were judged hallucinations. One day that year, Roger Jennison, a professor of electronics at the University of Kent, personally witnessed ball lightning at an airport in New York in the form of a fireball 20cm in diameter that passed through the wall of the airplane hanger and down the center of one of the airplanes before disappearing through the hanger wall.

That evening, I performed my first Google search for "ball lightning." I was not particularly hopeful, but I ended up with more than 40,000 web pages in the search results. For the first time, I felt that all of humanity was watching the thing to which I was prepared to offer up my entire life.

Another semester began, and then the sweltering summer arrived. For me, summer had an additional meaning: thunderstorms would appear and bring me that much closer to It.

One day, out of the blue, Zhang Bin came looking for me. The class I had with him had concluded the previous semester and I had practically forgotten him.

He said, "Chen, I've heard that your parents are gone and you're in a tight spot financially. I've got a summer project that needs another assistant. Can you come?"

I asked him what sort of project.

"It's a parametric demonstration of anti-lightning equipment for a railroad in Yunnan Province that's in the works. And there's one additional goal. In the new national standards for lightning protection currently under deliberation, the plan is to replace the previous standard ground flash density of 0.015 with one determined according to individual local conditions. We're doing the observations in Yunnan."

I agreed to go. Although I was not particularly rich, I could still get by, so I agreed because this was my first chance for real hands-on lightning research.

The task force consisted of about a dozen people divided into five teams that were distributed over a large area, with several hundred kilometers between them. The group I was in had three actual members apart from the driver and experimental assistants: myself, Zhang Bin, and a grad student named Zhao Yu. When we reached our zone, we roomed at the county-level meteorological station.

The weather was quite good the next morning, so we could start our first day of field work. As we were moving the instruments and equipment out to the car from the room we were using as temporary storage, I asked, "Professor Zhang, what are some good ways for exploring the internal structure of lightning?"

Zhang peered at me intently for a moment, as if aware of what I was thinking. “Judging from the current needs of domestic engineering projects, research into the lightning structure is not a priority. The priority right now is large-scale statistical research.” Whenever I brought up anything even remotely related to ball lightning, he dodged the question. Evidently the man genuinely detested everything that lacked practical value.

But Zhao answered my question: “There aren’t many. Right now, we can’t even directly measure its voltage. We have to calculate indirectly from measurements of the current. The most common instrument for studying the structure of lightning is, well, this.” He pointed to a tubular object sitting in one corner of the storeroom. “This is a magnetic steel recorder, and it’s used to record the amplitude and polarity of the lightning current. The material it’s constructed from has a relatively high residual magnetism, and when the inside lead comes into contact with lightning, you can calculate its amplitude and polarity from the residual magnetism left on the device. This one’s 60sizm, but there are also plastic tubes, blade-core, and iron-powder types.”

“And we’ll be using it?”

“Of course. Why else would we bring it? But that’s for later on.”

The first stage of our mission was to install a lightning positioning system in the monitoring zone to aggregate signals from a large number of scattered lightning sensors and feed them into a computer that would automatically generate statistics of the number, frequency, and distribution of lightning strikes. It was really only a counting and positioning system and did not involve any physical data, so I was not interested at all. Most of the work consisted of setting up the outdoor sensors, and that was not easy. If we were lucky, we could mount the sensors on electrical poles or transmission towers, but most of the time we had to erect poles ourselves. After a few days, the experimental assistants were complaining incessantly.

Nothing interested Zhao Yu, least of all his major. At work, he constantly procrastinated, and seized every chance he could to slack off. At first he was full of praise for the tropical forest environs, but when the novelty wore off, he seemed dispirited. Still, he was easy to get along with, and we ended up talking quite a bit.

Every evening when we returned to town, Zhang always went back to his room to bury his head in that day’s materials, so Zhao took the opportunity to drag me off for a drink on one of the rustic streets. The electricity was usually off on that street, and the candles that flickered in the wooden buildings took me back to an age before atmospheric physics, before physics, before even science itself, so that for a moment I would forget reality. One day as we sat slightly tipsy in a small candlelit inn, Zhao said to me, “The people in the forest would have a wonderful explanation for you if they ever saw your ball lightning.”

“I’ve asked the locals,” I said. “They’ve been aware of it for a long time, and they already have an explanation. Ghost lanterns.”

“Isn’t that enough?” said Zhao, unfolding his fingers. “It’s beautiful. All your plasmas and vector-soliton resonators may not be able to tell you anything more than that. Modernity is complex, and I don’t like complexity.”

I snorted. “Look at you and your attitude. Professor Zhang’s the only one who’ll tolerate you.”

“Don’t talk to me about Zhang Bin,” Zhao said with a drunken wave. “He’s the sort of person who, if he drops his keys, won’t look for them in the place the sound came from. Instead, he’ll get a piece of chalk and divide the room into a grid and then search section by section...”

We broke down into fits of laughter.

“People like him are suited only to the sort of work that will be done entirely by machines in the future. Creativity and imagination has no meaning for them, and they employ rigor and discipline in their scholarship to cover up their mediocrity. You know the universities are full of them. Still, with enough time, you can still find things going section by section, so they still manage to do well in their field.”

“And what has Zhang found?”

“I believe he was in charge of R&D of an anti-lightning material for use on high-tension lines. It turned out to be quite effective as a lightning deterrent. Putting it on power lines would have eliminated the need for a shield wire along the top. But the cost was too high, and in large-scale use it would have been more expensive than a traditional shield wire. So in the end it had no practical value, and all he got out of it were a few papers and second prize for technological achievement from the province. Nothing more than that.”

At last the project advanced to the stage I was waiting for: collecting physical data on lightning. We put out a large number of magnetic alloy recorders and lightning antennae, and each time a storm passed, we retrieved the devices that had been struck, taking extra care not to jostle them or bring them close to transmission lines or other magnetic sources that could affect their sensitivity by influencing their residual magnetism. Then we used a field strength meter (basically a compass, the angle of which indicated magnetic field strength and polarity) to read the data and a demagnetizer to wipe all the devices before they were returned to their original positions to await the next strike.

The actual work at this stage was as tedious as before, but I was pretty interested because, after all, it was my first opportunity to conduct quantitative measurements of lightning. Zhao, that slacker, noticed this and began to slack off even more, and it got to the point that when Zhang was not around, he simply dumped his entire work load on me and went off to go fishing in a nearby stream.

As measured by the magnetic alloy recorders, the lightning current averaged around ten thousand amps and peaked at more than a hundred thousand, which meant we could calculate the voltage at one billion volts.

“What could you produce under those extreme physical conditions?” I asked Zhao.

“Produce?” he said dismissively. “The power of an atomic blast or a high energy accelerator is far greater, yet it won’t produce the sort of thing you’re thinking of. Atmospheric physics is a mundane subject, yet you want to turn it mysterious. I’m the opposite: I’m used to taking sacred things and turning them ordinary.” Saying this, he gazed out into the dark green of the tropical rainforest that surrounded the weather station. “Hey, you go chasing after your mysterious fireball. I’m going to enjoy an ordinary life.”

His career as a master’s student was reaching an end, and he had no desire to

continue on to a PhD.

Back at school, classes continued, and I took part in a few more of Zhang Bin's projects outside of class and during the holidays. His methodical fastidiousness sometimes annoyed me, but apart from that he easy-going enough, and I gained an immense amount of practical experience from him. More importantly, his specialty was in line with my own quest.

For that reason, when it came time to graduate, I chose to test into the master's program under Zhang.

As I had anticipated, Zhang firmly opposed my choice of ball lightning as a master's thesis topic. In all other matters he was accommodating, including tolerating a lazy student like Zhao Yu, but in this there could be no accommodation.

"Young people should not get wrapped up in imaginary things," he said.

"The existence of ball lightning is recognized by the scientific community. You think it's imaginary?"

"Fine, I'll repeat myself. What point is there to something that is not included in international standards or national regulations? When you were an undergraduate, you could study your own specialty using basic scientific techniques, but now that you are a graduate student that's no longer acceptable."

"But Professor Zhang, atmospheric physics is pretty much a basic discipline now. Apart from its engineering applications, it has a duty to help comprehend the world."

"But in this country, the priority is to serve the cause of economic development."

"Even so, if the anti-lightning measures at the Huangdao Oil Depot had taken ball lightning into account, the 1989 catastrophe might have been avoided."

"The source of the fire in Huangdao is just conjecture. Research into ball lightning itself is full of more conjecture. From now on, you're going to avoid such harmful elements in your studies."

There would be no further discussion of the subject. I was prepared to devote my entire life to that quest, so it was unimportant what I studied for three years of graduate school. So I submitted to Zhang's suggestion and did a project on lightning defense computer systems.

Two years later, my graduate studies reached a smooth and uneventful conclusion.

To be fair, I learned quite a bit from Zhang Bin during those two years, and I benefited substantially from his technical rigor, proficient experimental skill set, and his rich engineering experience. But, as I knew three years before, the core of what I required I was unable to find with him.

I also learned a fair amount about Zhang's personal life: his wife had died long ago, he had no children, he had lived alone for many years, and he had few social interactions. His humdrum existence echoed my own, but to my mind, that lifestyle required the presence of an overpowering quest, a "fascination with something," in my dad's words, or what the pretty girl in the library six years ago had called, "a sense of purpose." Zhang, with no goals and no fascination with anything, mechanically carried out his boring applied research, treating it as a job rather than a pleasure. His attitude toward fame and fortune displayed a similar rigidity. If that

were actually the case, then life must be a kind of torment for him, and hence I felt a little sympathy.

However, I did not think I was ready to explore the mystery quite yet. No, everything I had studied over the course of six years only made me feel all the more strongly my own impotence in the face of It. My first efforts were primarily in physics, but I later discovered that physics itself was a huge mystery, at the far end of which the very existence of the world was called into question. And assuming that ball lightning was not a supernatural phenomenon, only relatively low-level physics would be necessary to understand it: Maxwell's Equations and the Navier-Stokes Equations in fluid mechanics would be sufficient (only later did I come to understand how superficial and naive my initial ideas really were). But compared to ball lightning, all known structures in electromagnetism and fluid mechanics were simple, and if ball lightning was indeed a complicated structure in stable equilibrium that respected the basic laws of electromagnetism and fluid mechanics, it would have to be incredibly complex mathematically, just like simple rules for black and white tiles can describe *go*, the world's most complicated game.

This, then, was what I felt I needed now: first, mathematics; second, mathematics; and third, more mathematics. Complex mathematical tools were absolutely necessary for cracking the secret of ball lightning, tools as unruly as an unbridled mustang, and although Zhang felt that my math skills far exceeded the standard requirements of atmospheric physics, I knew that I was farther still from the level required for ball lightning research. As soon as complicated electromagnetic and fluid structures were involved, mathematical descriptions turned savage, involving weird partial differential equations that tangled up like twine and dense matrices that held blade-filled traps.

With so much to learn before my explorations could truly begin, I knew I could not leave the campus environment immediately, so I decided to study for a PhD.

My doctoral adviser, a man named Gao Bo, had a formidable reputation and had gotten his doctorate at MIT. He was the polar opposite of Zhang Bin. What first attracted me to him was his nickname, "Fireball", which I later learned had nothing at all to do with ball lightning, and perhaps more to do with his nimble mind and vigorous personality. When I suggested ball lightning as the topic of my dissertation, he acquiesced immediately, at which point I began to have second thoughts: the project would require a large-scale lightning simulator, but there was only one in the country and I would never have a chance to use it. But Gao disagreed.

"Listen, all you need is a pencil and a piece of paper. What you're constructing is a mathematical model for ball lightning. It needs to be an internally consistent, innovative, mathematically flawless, and executable on a computer. Treat it as a piece of theoretic art."

Still, I had worries: "Will they accept something that forsakes experimentation entirely?"

Gao waved his hand. "Are black holes accepted? To date there is no direct evidence of their existence, yet look how far astrophysics has developed the theory, and how many people make a living off it. At the very least, ball lightning exists! Don't worry. If it meets the requirements I gave you but your dissertation still doesn't pass, I'll resign and we'll get the hell away from this college!"

Gao was a little too far toward the opposite extreme from Zhang, I thought – I wasn't on a quest for a piece of theoretic art – still, I was pleased to be his student.

I decided to use the break before classes began to go back to my hometown and visit the neighbors who had been helping me. I could sense that I would have few chances to go back in the future.

When the train reached Tai'an Station, my heart jumped, and I remembered what Zhang had said about the atmospheric physicist who had witnessed ball lightning at Yuhuang Peak. I got off mid-journey and went to climb Mount Tai.

## 4 Lin Yun I

I grabbed a taxi to the Middle Gate to Heaven, where I had originally planned on taking the cable car up to the peak, but when I saw the long line, I headed upward on foot. The fog was thick, and the trees on either side were indistinct shadows that extended upward before vanishing into white. From time to time, stone inscriptions from past eras loomed into view.

Ever since my trip to Yunnan with Zhang Bin, I always felt a little frustrated whenever I found myself out in middle of nature. Looking around at the natural world, its mysteries, its unfathomable complexity and change on display, it was difficult to imagine that humanity could constrain it within the thin bonds of mathematical equations. And every time I thought of this, I would recall a line of Einstein's: "Every leaf outside the window shows how naive and impotent human science is."

But my annoyance was soon replaced with physical exhaustion, for ahead of me I could see stone steps stretching endlessly into the fog, and the South Gate to Heaven seemed like it was somewhere off far above the stratosphere.

Just then, I saw her for the first time. She caught my attention because she contrasted with the rest of the people around me. I had seen couple after couple stopped on the path stop, the woman sitting on a stone step in exhaustion while the man, breathing heavily, tried to get her to move onward. Whenever I passed someone, or on those rare occasions that someone passed me, I could hear their short, strenuous breathing. I pushed myself to follow a porter in whose broad bronze shoulders I found the strength to continue climbing, and it was then that a white figure slipped easily past us, a woman who looked like condensed fog in her white blouse and white jeans. When she passed me on light and springy footsteps, I could not hear her breathing at all. She looked back with a serene expression, not at me but at the porter, no sign of fatigue on her face, and her lithe body seemed to have no weight at all, as if climbing this exhausting mountain path was for her like strolling down an avenue. Before long, she vanished into the fog.

By the time I finally reached the South Gate, it was already floating on a sea of clouds stained red by the sun, which was just setting in the west.

I dragged my heavy feet to the Yuhuang Peak Meteorology Station. Once the people inside learned who I was and where I was from, they acted as if nothing was out of the ordinary: meteorological workers were constantly arriving at the famous station to conduct all sorts of tests. They told me that the station chief had gone



down the mountain, so they introduced me to the deputy chief. I almost cried out in astonishment when I saw him: it was Zhao Yu.

It had been three years since our trip down to Yunnan. I asked him how he ended up in this peculiar place, and he said, "I came here in search of peace and quiet. The world down there is too damn frustrating!"

"Then you should become a monk at Dai Temple."

"That's not a peaceful place, either. What about you? Are you still chasing your ghosts?"

I explained my reason for coming.

He shook his head. "1962. That's too long ago. They've changed staff at the station so many times since then, I can't imagine that anyone would know about it."

"That doesn't matter," I said. "I only want to learn about it because it was the first time a meteorological worker personally witnessed ball lightning in this country. It's not all that important, really. I came up the mountain as a diversion, and who knows, maybe there'll be a thunderstorm. Next to Wudang, this is the best place for lightning."

"Who's got the time to sit and watch lightning? I think you've really gone over the edge! Still, you can't escape thunderstorms up here. If you really want to see something, then stay for a few days and maybe you will."

Zhao took me to his dormitory. It was supper time, so he called up the cafeteria to have them send over some food: thin, crispy Taishan pancakes, green onions as big around as shot glasses, and a bottle of Taishan Liquor.

Zhao thanked him, and when the old man turned to go, a thought suddenly occurred to Zhao. He asked, "Master Wang, when did you first start working at the station?"

"It was 1960 that I started, right at this very cafeteria. Those were trying times. You weren't around then, director Zhao."

Zhao and I shared a surprised smile.

Immediately, I asked, "Have you seen ball lightning?"

"You mean...rolling lightning?"

"Right! That's what they call it."

"Of course I've seen it. Over the past forty years, I've seen it three or four times!"

Zhao picked up another glass and we enthusiastically invited Old Wang to sit down. As I poured him a drink, I asked, "Do you remember the one time in 1962?"

"Sure do. That's the one I remember best. A guy got hurt then!"

Wang started into the story: "It was at the end of July, maybe a little after seven in the evening. Normally, it would still have been, but that day the clouds were so thick that you couldn't see anything without a lantern. The rain came in driving sheets, enough to smother you if you stood out in it! Flash after flash of lightning, without no pause between them—"

"Probably a thunderstorm at the head of a passing front," Zhao put in.

"I heard one crack of thunder. The lightning just before it was really bright, enough to almost blind me where I was sitting in my room. Then I heard a voice outside shouting that someone had been hurt, so I ran out to help. At that time,

there were four people at the station conducting observations, and it was one of them who had been struck. When I hauled the man into the room, one of his legs was smoking and the rain fizzled where it fell, but he was still fully conscious. And then the rolling lightning came in. It entered through the west window, but the window was closed at the time! The thing was about...about the size of this pancake, and red, blood red, so that it filled the whole room with red light. It drifted around the room, about this fast..." He lifted his glass and gestured in mid-air. "Floating this way and that. I thought I'd seen a ghost and was so scared I couldn't speak. But those science guys weren't panicked. They just told us not to touch it. The thing floated for a while, up to the ceiling, and down across the bed – fortunately it didn't touch anyone – and finally it entered the chimney. Right as it got in, it exploded with a bang. All these years on the peak, out of all the thunder I've heard, I don't remember hearing anything that loud. It set my ears buzzing, and did something to my left ear so now I'm hard of hearing. All of the lanterns in the room went out, and the lantern globes and the glass liners for the hot water bottles shattered, and burn marks were left on the bed. When we went outside afterward we found that the chimney on the roof had exploded!"

"Where did they come from, the four people doing the monitoring?"

"I don't know."

"Do you still remember their names?"

"Hmm. It's been so many years...I only remember the one who got hurt. I carried him down the mountain to the hospital with two other people from the station. He was very young, and must've still been a college student. One of his legs was burnt to a crisp, and because Tai'an Hospital wasn't all that great back then, he was sent to Jinan. Geez, it must've made him lame. The guy was named Zhang, I think. Zhang...something...fu."

Zhao slammed his glass on the table. "Zhang Hefu?"

"Right, yes. That's the name. I looked after him for a couple days at Tai'an Hospital, and after he left, he wrote a letter to thank me. I think it came from Beijing. Then we lost contact, and I don't know where he is now."

Zhao said to Wang, "He's in Nanjing. He's a professor at my old university. He was our adviser."

"What?" My glass nearly dropped out of my hand.

"Zhang Bin used to go by that name, but he changed it during the Cultural Revolution because it reminded people of Khrushchev."

Zhao and I sat for a long time without saying anything, until finally Wang broke the silence: "That's not really all that coincidental. You're in the same field, after all. He was a fine young man, that one. With his legs hurting so bad he'd bite through his lips from the pain, he just lay in bed reading. I tried to get him to rest for a while, but he said that from then on, there was no time to waste, because his life had just now acquired a purpose. He was going to study that thing, and he wanted to generate it."

"Study and generate what?" I asked.

"Rolling lightning! The ball lightning you were talking about."

Zhao and I stared at each other.

Not noticing our expressions, Wang continued, "He said that he would devote a lifetime to its study, and I could tell that what he had seen on the mountain peak had him fascinated. People are like that, they sometimes become fascinated with something without knowing it and are unable to get rid of it their entire life. Take me, twenty years ago I went out to get some wood for the cooking stove and pulled out a tree root, and when I was about to toss it into the fire, I thought it looked a little bit like a tiger, and then after I polished it up and set it down, it really looked rather nice. Since then, I've been fascinated with root carving, and that's the reason that I've stayed on the mountain, even when I retired."

I noticed that Zhao's room did indeed have lots of root carvings of various sizes, which he told me were all Wang's pieces.

We did not speak of Zhang Bin after that. Although we were thinking things over to ourselves, it was not something easily put into words.

After dinner, Zhao took me for a nighttime tour of the meteorological station. When we passed the only lit window in their small guest house, I stopped short in surprise, for in the room was the white-clothed girl, alone and apparently lost in thought as she paced back and forth in the middle of the room between two beds and a desk covered in open books and papers.

"Hey, be polite. Don't peep through other people's windows." Zhao gave me a push from behind.

"I saw her on the way up here," I explained.

"She's here to arrange for lightning monitoring. The Provincial Meteorological Bureau notified us before she arrived but didn't say where she's from. It's got to be some big work unit. They're going to ship equipment to the peak by helicopter."

There were thunderstorms the following day, as it turned out. Compared to storms back on the ground, the way thunder rocked the peak was an entirely different experience, as if Mount Tai was a lightning rod for the earth that attracted a universe worth of lightning. Sparks flashing from the rooftops made you tingle all over. With hardly any gap between lightning and thunder, massive rumbles shook every cell in your body until you felt that the mountain beneath your feet had been blown to bits and your soul displaced, flitting terrified between the dazzling bolts with no place to hide...

The woman stood at the edge of the corridor, wind whipping at her short hair and her slender form frail-looking against the web of lightning that flickered within dense black clouds. She presented an unforgettable image as she stood motionless amid the terrible thunder.

"You'd better stand over here. It's dangerous, and you'll get soaked!" I called to her.

She shook out of her lightning reverie and retreated two steps.

"Thanks." She turned to look at me, and beamed. "You may not believe it, but it's only at times like these that I feel any sense of security."

Strange: normally you had to shout to be heard through the thunder, but even though she spoke softly, her gentle tones somehow penetrated the peals of thunder so that I was able to hear them clearly. The mysterious woman captivated me even more than the lightning.

“You’re something else.” I gave voice to my thoughts.

“So you’re into atmospheric electricity,” she said, ignoring my words.

By now the thunder had died enough that we could talk freely. I asked, “Are you here to monitor lightning?” I phrased my question carefully, because from what Zhao Yu had said, I had the feeling her background was off-limits.

“That’s right.”

“What aspects?”

“The lightning formation process. I don’t want to insult your profession, but even now there’s debate within the field of atmospheric physics over basic things like how lightning is formed in thunderclouds; things like how a lightning rod actually works remain unknown.”

I realized that even if she did not actually work in atmospheric physics, she had at least dabbled in it. Like she said, there was no satisfactory theory for the principle of lightning formation in thunderclouds, and although every schoolchild knows that lightning rods protect against lightning, the underlying theory was not well understood. Precise calculations made in recent years of the charge carried by the metal tip of a lightning rod showed that it was far from able to neutralize the charge that builds up in a thundercloud.

“So your research is very basic.”

“Our ultimate goals are practical.”

“Research into the lightning formation process. Hmm. Lightning elimination?”

“No. Artificial lightning.”

“Artificial...lightning? What for?”

She smiled sweetly. “Guess.”

“Manufacturing nitrogenous fertilizer?”

She shook her head.

“Patching the ozone hole?”

Again, she shook her head.

“Using lightning as a new power source?”

Once again, she shook her head.

“No, it couldn’t really be a power source because creating lightning would consume even more power. Then there’s only one thing left—” And jokingly, I said, “Killing people with lightning?”

She nodded.

I laughed. “Then you’ve got to solve the targeting problem. Lightning follows a fairly random broken line.”

She sighed slightly. “We’ll worry about that later. We haven’t even figured out how to produce it yet. But we’re not interested in how lightning is formed in thunderclouds. What we want is the rare lightning that forms on cloudless days, but observing that is even more difficult...what’s wrong with you?”

“You’re serious!” I said, stunned.

“Of course! We’ve predicted that the most valuable use of this project will be the construction of a high-efficiency air defense system comprising a vast lightning field blanketing a city or some other protected target. Enemy planes will attract lightning when they enter, and under those circumstances the targeting issue you mentioned becomes unimportant. Sure, if land is used as one of the poles, then

you could also hit land targets, but there are additional problems with that...we are really only performing a feasibility study for the concept and are looking for inspiration in the most basic areas of research. If it turns out to be feasible, we'll turn to professional organizations like your own for the implementation specifics."

I exhaled. "Are you in the army?"

She introduced herself as Lin Yun, a doctoral student at the National University of Defense Technology who specialized in air defense weapons systems.

The storm stopped, and the setting sun radiated golden light through the gaps in the clouds.

"Look at how new the world looks, like it's been reborn in the thunderstorm!" She gasped in admiration.

I shared that feeling, although it was unclear whether it was because of the storm or the girl in front of me, but at any rate it was not a feeling I had experienced before.

That night, Lin, Zhao, and I went for a walk. Before long Zhao got a call to return to the station, so Lin and I continued along the path up the mountain until we reached the Skyway. It was late, and the Skyway was shrouded in a light fog through which streetlamps shone hazily. Nighttime on the mountain was quiet, so still that the clamor of the world below seemed but a distant memory.

When the fog lifted somewhat, a few stars emerged in the sky, their light reflected immediately in her limpid eyes, and I gazed spellbound at the reflected starlight before quickly turning to look at the stars themselves. If my life was a movie, then what had been a black and white screen had burst into color today on the peak of Mount Tai.

In the night fog on the Skyway, I told my deepest hidden secret to Lin. I told her about that nightmarish birthday night so many years before, and I told her about the thing to which I had decided to devote my entire life. This was the first time I had told it to anyone.

"Do you hate ball lightning?" Lin asked.

"It's hard to feel hate toward an unknowable mystery, regardless of how much disaster it may bring. At first I was only curious, but as I learned more about it, that curiosity was transformed into total fascination, so that in my mind it became a doorway to another world, a world where I can see the wonders I have been dreaming about for so long."

A winsome breeze picked up and the fog dissipated. Up above, the glittering summer star field stretched across the heavens, and far off down the mountain, the lights of the town of Tai'an formed their own star field like a reflection in a pond.

In a soft voice, Lin began to recite a Guo Moruo poem:

The distant streetlamps are lit,  
Like countless glittering stars.  
Stars emerge in the heavens,  
Like the lighting of countless streetlamps.

I continued:

I think the wafting air,  
Must hold beautiful streets.  
And objects laid out on those streets,  
Must be rarities like nothing on earth.

My tears welled up. The beautiful night city quivered for a moment through my tears and then resolved to an even greater clarity. I understood that I was a person in pursuit of a dream, but I also understood how unimaginably hazardous was the road I followed. Yet even if the South Gate to Heaven never emerged from the fog, I would keep on climbing.

I had no other choice.

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