

A Luminescent Darkness: My 1999 Eclipse Adventure

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After two years of dreaming, two months of planning, and two hours of packing, I drove to John F. Kennedy airport, took the shuttle to the Air France terminal, and checked in. I was brimming with excitement. In three days time, with a bit of luck, I would witness one the great spectacles that a human being can experience: a complete, utter and total eclipse of the Sun.

I had missed one eight years earlier. In July 1991, a total solar eclipse crossed over Baja California. I had thought seriously about driving the fourteen hundred miles from the San Francisco area, where I was a graduate student studying theoretical physics, to the very southern tip of the peninsula. But worried about my car's ill health and scared by rumors of gasoline shortages in Baja, I chickened out. Four of my older colleagues, more worldly and more experienced, and supplied with a more reliable vehicle, drove down together. When they returned, exhilarated, they regaled us with stories of their magical adventure. Hearing their tales, I kicked myself for not going, and had been kicking myself ever since. Life is not so long that such opportunities can be rationalized or procrastinated away.

A total eclipse of the Sun is a event of mythic significance, so rare and extraordinary and unbelievable that it really ought to exist only in ancient legends, in epic poems, and in science fiction stories. There are other types of eclipses — partial and total eclipses of the Moon, in which the Earth blocks sunlight that normally illuminates the Moon, and various eclipses of the Sun in which the Moon blocks sunlight that normally illuminates the Earth. But total solar eclipses are in a class all their own. Only during the brief moments of totality does the Sun vanish altogether, leaving the shocked spectator in a suddenly darkened world, gazing uncomprehendingly at a black disk of nothingness.

Our species relies on daylight. Day is warm; day grows our food; day permits travel with a clear sense of what lies ahead. We are so fearful of the night — of what lurks there unseen, of the sounds that we cannot interpret. Horror films rely on this fear; demons and axe murderers are rarely found walking about in bright sunshine. Dark places are dangerous places; sudden unexpected darkness is worst of all. These are the conventions of cinema, born of our inmost psychology. But the Sun and the Moon are not actors projected on a screen. The terror is real.

It has been said that if the Earth were a member of a federation of a million planets, it would be a famous tourist attraction, because this home of ours would be the only one in the republic with such beautiful eclipses. For our skies are witness to a coincidence truly of cosmic proportions. It is a stunning accident that although the Sun is so immense that it could hold a million Earths, and the Moon so small that dozens could fit inside our planet, these two spheres, the brightest bodies in Earth's skies, appear the same size. A faraway giant may seem no larger than a nearby child. And this perfect match of their sizes

and distances makes our planet's eclipses truly spectacular, visually and scientifically. They are described by witnesses as a sight of weird and unique beauty, a visual treasure completely unlike anything else a person will ever see, or even imagine.

But total solar eclipses are uncommon, occurring only once every year or two. Even worse, totality only occurs in a narrow band that sweeps across the Earth — often just across its oceans. Only a small fraction of the Earth sees a total eclipse in any century. And so these eclipses are precious; only the lucky, or the devoted, will experience one before they die.

In my own life, I'd certainly been more devoted than lucky. I knew it wasn't wise to wait for the Moon's shadow to find me by chance. Instead I was going on a journey to place myself in its path.

The biggest challenge in eclipse-chasing is the logistics. The area in which totality is visible is very long but very narrow. For my trip, in 1999, it was a long strip running west to east all across Europe, but only a hundred miles wide from north to south. A narrow zone crossing heavily populated areas is sure to attract a massive crowd, so finding hotels and transport can be difficult. Furthermore, although eclipses are precisely predictable, governed by the laws of gravity worked out by Isaac Newton himself, weather and human beings are far less dependable.

But I had a well-considered plan. I would travel by train to a small city east of Paris, where I had reserved a rental car. Keeping a close watch on the weather forecast, I would drive on back roads, avoiding clogged highways. I had no hotel reservations. It would have been pointless to make them for the night before the event, since it was well known that everything within two hours drive of the totality zone was booked solid. Moreover, I wanted the flexibility to adjust to the weather and couldn't know in advance where I'd want to stay. So my idea was that on the night prior to the eclipse, I would drive to a good location in the path of the lunar shadow, and sleep in the back of my car. I had a sleeping bag with me to keep me warm, and enough lightweight clothing for the week — and not much else.

Oh, it was such a good plan, clean and simple, and that's why my heart had so far to sink and my brain so ludicrous a calamity to contemplate when I checked my wallet, an hour before flight time, and saw a gaping black emptiness where my driver's license was supposed to be. I was struck dumb. No license meant no car rental; no car meant no flexibility and no place to sleep. Sixteen years of driving and I had never lost it before; why, why, of all times, now, when it was to play a central role in a once-in-a-lifetime adventure?

I didn't panic. I walked calmly back to the check-in counters, managed to get myself rescheduled for a flight on the following day, drove the three hours back to New Jersey, and started looking. It wasn't in my car. Nor was it in the pile of unneeded items I'd removed from my wallet. Not in my suitcase, not under my bed, not in my office. As it was Sunday, I couldn't get a replacement license. Hope dimmed, flickered, and went dark.

Deep breaths. Plan B?

I didn't have a tent, and couldn't easily have found one. But I did have a

rain poncho, large enough to keep my sleeping bag off the ground. As long as it didn't rain too hard, I could try, the night before the eclipse, to find a place to camp outdoors; with luck I'd find lodging for the other nights. I doubted this would be legal, but I was willing to take the chance. But what about my suitcase? I couldn't carry that around with me into the wilderness. Fortunately, I knew a solution. For a year after college, I had studied music in France, and had often gone sightseeing by rail. On those trips I had commonly made use of the ubiquitous lockers at the train stations, leaving some luggage while I explored the nearby town. As for flexibility of location, that was unrecoverable; the big downside of Plan B was that I could no longer adjust to the weather. I'd just have to be lucky. I comforted myself with the thought that the worst that could happen to me would be a week of eating French food.

So the next day, carrying the additional weight of a poncho and an umbrella, but having in compensation discarded all inessential clothing and tourist information, I headed back to the airport, this time by bus. Without further misadventures, I was soon being carried across the Atlantic.

As usual I struggled to nap amid the loud silence of a night flight. But my sleeplessness was rewarded with one of those good omens that makes you think that you must be doing the right thing. As we approached the European coastline, and I gazed sleepily out my window, I suddenly saw a bright glowing light. It was the rising white tip of the thin crescent Moon.

Solar eclipses occur at New Moon, always. This is nothing but simple geometry; the Moon must place itself exactly between the Sun and the Earth to cause an eclipse, and that means the half of the Moon that faces us must be in shadow. (At Full Moon, the opposite is true; the Earth is between the Sun and the Moon, so the half of the Moon that faces us is in full sunlight. That's when lunar eclipses can occur.) And just before a New Moon, the Moon is close to the Sun's location in the sky. It becomes visible, as the Earth turns, just before the Sun does, rising as a morning crescent shortly before sunrise. (Similarly, we get an evening crescent just after a New Moon.)

There, out over the vast Atlantic, from a dark ocean of water into a dark sea of stars, rose the delicate thin slip of Luna the lover, on her way to her mystical rendezvous with Sol. Her crescent smiled at me and winked a greeting. I smiled back, and whispered, "see you in two days..." For totality is not merely the only time you can look straight at the Sun and see its crown. It is the only time you can see the New Moon.

We landed in Paris at 6:30 Monday morning, E-day-minus-two. I headed straight to the airport train station, and poured over rail maps and my road maps trying to guess a good location to use as a base. Eventually I chose a medium-sized town with the name Charleville-Mezieres. It was on the northern edge of the totality zone, at the end of a large spoke of the Paris-centered rail system, and was far enough from Paris, Brussels, and all large German towns that I suspected it might escape the worst of the crowds. It would then be easy, the night before the eclipse, to take a train back into the center of the zone, where totality would last the longest.

Two hours later I was in the Paris-East rail station and had purchased my

ticket for Charleville-Mezieres. With ninety minutes to wait, I wandered around the station. It was evident that France had gone eclipse-happy. Every magazine had a cover story; every newspaper had a special insert; signs concerning the event were everywhere. Many of the magazines carried free eclipse glasses, with a black opaque metallic material for lenses that only the Sun can penetrate. Warnings against looking at the Sun without them were to be found on every newspaper front page. I soon learned that there had been a dreadful scandal in which a widely distributed shipment of imported glasses was discovered to be dangerously defective, leading the government to make a hurried and desperate attempt to recall them. There were also many leaflets advertising planned events in towns lying in the totality zone, and information about extra trains that would be running. A chaotic rush out of Paris was clearly expected.

Before noon I was on a train heading through the Paris suburbs into the farmlands of the Champagne region. The rocking of the train put me right to sleep, but the shrieking children halfway up the rail car quickly ended my nap. I watched the lovely sunlit French countryside as it rolled by. The Sun was by now well overhead — or rather, the Earth had rotated so that France was nearly facing the Sun head on. Sometimes, when the train banked on a turn, the light nearly blinded me, and I had to close my eyes.

With my eyelids shut, I thought about how I'd managed, over decades, to avoid ever once accidentally staring at the Sun for even a second... and about how almost every animal with eyes manages to do this during its entire life. It's quite a feat, when you think about it. But it's essential, of course. The Sun's ferocious blaze is even worse than it appears, for it contains more than just visible light. It also radiates light too violet for us to see — ultraviolet — which is powerful enough to destroy our vision. Any animal lacking instincts powerful enough to keep its eyes off the Sun will go blind, soon to starve or be eaten. But humans are in danger during solar eclipses, because our intense curiosity can make us ignore our instincts. Many of us will suffer permanent eye damage, not understanding when and how it is safe to look at the Sun... which is almost, but not quite, never.

In fact the only time it is safe to look with the naked eye is during totality, when the Sun's disk is completely blocked by the New Moon, and the world is dark. Then, and only then, can one see that the Sun is not a sphere, and that it has a sort of atmosphere, immense and usually unseen.

At the heart of the Sun, and source of its awesome power, is its nuclear furnace, nearly thirty million degrees hot and nearly five billion years old. All that heat gradually filters and boils out of the Sun's core toward its visible surface, which is a mere six thousand degrees... still white-hot. Outside this region is a large irregular halo of material that is normally too dim to see against the blinding disk. The inner part of that halo is called the chromosphere; there, giant eruptions called "prominences" loop outward into space. The outer part of the halo is the "corona", Latin for "crown." The opportunity to see the Sun's corona is one of the main reasons to seek totality.

Still very drowsy, but in a good mood, I arrived in Charleville. Wanting to leave my bags in the station while I looked for a hotel room, I searched for the

luggage lockers. After three tiring trips around the station, I asked at a ticket booth. “Oh,” said the woman behind the desk, “we haven’t had them available since the Algerian terrorism of a few years ago.”

I gulped. This threatened plan B, for what was I to do with my luggage on eclipse day? I certainly couldn’t walk out into the French countryside looking for a place to camp while carrying a full suitcase and a sleeping bag! And even the present problem of looking for a hotel would be daunting. The woman behind the desk was sympathetic, but her only suggestion was to try one of the hotels near the station. Since the tourist information office was a mile away, it seemed the only good option, and I lugged my bags across the street.

Here, finally, luck smiled. The very first place I stopped at had a room for that night, reasonably priced and perfectly clean, if spartan. It was also available the night after the eclipse. My choice of Charleville had been wise. Unfortunately, even here, Eclipse Eve – Tuesday evening – was as bad as I imagined. The hoteliere assured me that all of Charleville was booked (and my later attempts to find a room, even a last-minute cancellation, proved fruitless.) Still, she she was happy for me to leave my luggage at the hotel while I tramped through the French countryside. Thus was Plan B saved.

Somewhat relieved, I wandered around the town. Charleville is not unattractive, and the orange sandstone 16th century architecture of its central square is very pleasing to the eye. By dusk I was exhausted and collapsed on my bed. I slept long and deep, and awoke refreshed. I took a short sightseeing trip by train, ate a delicious lunch, and tried one more time to find a room in Charleville for Eclipse Eve. Failing once again, I resolved to camp in the heart of the totality zone.

But where? I had several criteria in mind. For the eclipse, I wanted to be far from any large town or highway, so that streetlights, often automatically triggered by darkness, would not spoil the experience. Also I wanted hills and farmland; I wanted to be at a summit, with no trees nearby, in order to have the best possible view. It didn’t take long to decide on a location. About five miles south of the unassuming town of Rethel, rebuilt after total destruction in the first world war, my map showed a high hill. It seemed perfect.

Fortunately, I learned just in time that this same high hill had attracted the attention of the local authorities, and they had decided to designate this very place the “official viewing site” in the region. A hundred thousand people were expected to descend on Rethel and take shuttles from the town to the “site.” Clearly this was not where I wanted to be!

So instead, when I arrived in Rethel, I walked in another direction. I aimed for an area a few miles west of town, quiet hilly farmland.

Yet again, my luck seemed to be on the wane. By four it was drizzling, and by five it was raining. Darkness would settle at around eight, and I had little time to find a site for unobtrusive camping, much less a dry one. The rain stopped, restarted, hesitated, spat, but refused to go away. An unending mass of rain clouds could be seen heading toward me from the west. I had hoped to use trees for some shelter against rain, but now the trees were drenched and dripping, even worse than the rain itself.

Still completely unsure what I would do, I continued walking into the evening. I must have cut a very odd figure, carrying an open umbrella, a sleeping bag, and a small black backpack. I took a break in a village square, taking shelter at a church's side door, where I munched on French bread and cheese. Maybe one of these farmers would let me sleep in a dry spot in his barn, I thought to myself. But I still hadn't reached the hills I was aiming for, so I kept walking.

After another mile, I came to a hilltop with a dirt farm track crossing the road. There, just off the road to the right, was a large piece of farm machinery. And underneath it, a large, flat, sheltered spot. Hideous, but I could sleep there. Since it wasn't quite nightfall yet and I could see a hill on the other side of the road along the same track, one which looked like it might be good for watching the eclipse, I took a few minutes to explore it. There I found another piece of farm equipment, also with a sheltered underbelly. This one was much further from the road, looked unused, and presumably offered both safer and quieter shelter. It was sitting just off the dirt track in a fallow field. The field was of thick, sticky, almost hard mud, the kind you don't slip in and which doesn't ooze but which gloms onto the sides of your shoe.

And so it was that Eclipse Eve found me spreading my poncho in a friendly unknown farmer's field, twisting my body so as not to hit my head on the metal bars of my shelter, carefully unwrapping my sleeping bag and removing my shoes so as not to cover everything in mud, brushing my teeth in bottled water, and bedding down for the night. The whole scene was so absurd that I found myself sporting a slightly manic grin and giggling. But still, I was satisfied. Despite the odds, I was in the zone at the appointed time; when I awoke the next morning I would be scarcely two miles from my final destination. If the clouds were against me, so be it. I had done my part.

I slept pretty well, considering both my excitement and the uneven ground. At daybreak I was surrounded by fog, but by 8 a.m. the fog was lifting, revealing a few spots of blue sky amid low clouds. My choice of shelter was also confirmed; my sleeping bag was dry, and across the road the other piece of machinery I had considered was already in use.

I packed up and started walking west again. The weather seemed uncertain, with three layers of clouds — low stratus, medium cumulus, and high cirrus — crossing over each other. Blue patches would appear, then close up. I trudged to the base of my chosen hill, then followed another dirt track to the top, where I was graced with a lovely view. The rolling *paysage* of fertile France stretched before me, blotched here and there with sunshine. Again I had chosen well, better than I realized, as it turned out, for I was not alone on the hill. A Belgian couple had chosen it too — and they had a car...

There I waited. The minutes ticked by. The temperature fluctuated, and the fields changed color, as the Sun played hide and seek. I didn't need these reminders of the Sun's importance — that without its heat the Earth would freeze, and without its light, plants would not grow and the cycle of life would quickly end. I thought about how pre-scientific cultures had viewed the Sun. In cultures and religions around the world, the blazing disk has often been attributed divine power and regal authority. And why not? In the past century,

we've finally learned what the Sun is made from and why it shines. But we are no less in awe than our ancestors, for the Sun is much larger, much older, and much more powerful than most of them imagined.

For a while, I listened to the radio. Crowds were assembling across Europe. Special events — concerts, art shows, contests — were taking place, organized by towns in the zone to coincide with the eclipse. This was hardly surprising. All those tourists had come for totality. But totality is brief, never more than a handful of minutes. It's the luck of geometry, the details of the orbits of the Earth and Moon, that set its duration. For my eclipse, the Moon's shadow was only about a hundred miles wide. Racing along at three thousand miles per hour, it would darken any one location for at most two minutes. Now if a million people are expected to descend on your town for a two-minute event, I suppose it is a good idea to give them something else to do while they wait. And of course, the French cultural establishment loves this kind of opportunity. Multimedia events are their specialty, and they often give commissions to contemporary artists. I was particularly amused to discover later that an old acquaintance of mine — I met him in 1987 at the composers' entrance exams for the Paris Conservatory — had been commissioned to write an orchestral piece, called "Eclipse," for the festival in the large city of Reims. It was performed just before the moment of darkness.

Finally, around 11:30, the eclipse began. The Moon nibbled a tiny notch out of the sun. I looked at it briefly through my eclipse glasses, and felt the first butterflies of anticipation. The Belgian couple, in their late forties, came up to the top of the hill and stood alongside me. They were Flemish, but the man spoke French, and we chatted for a while. It turned out he was a scientist also, and had spent some time in the United States, so we had plenty to talk about. But our discussion kept turning to the clouds, which showed no signs of dissipating. The Sun was often veiled by thin cirrus or completely hidden by thick cumulus. We kept a nervous watch.

Time crawled as the Moon inched across the brilliant disk. It passed the midway point and the Sun became a crescent. With only twenty minutes before totality, my Belgian friends conversed in Dutch. The man turned to me. "We have decided to drive toward that hole in the clouds back to the east," he said in French. "It's really not looking so good here. Do you want to come with us?" I paused to think. How far away was that hole? Would we end up back at the town? Would we get caught in traffic? Would we end up somewhere low? What were my chances if I stayed where I was? I hesitated, unsure. If I went with them, I was subject to their whims, not my own. But after looking at the oncoming clouds one more time, I decided my present location was not favorable. I joined them.

We descended the dirt track and turned left onto the road I'd taken so long to walk. It was completely empty. We kept one eye on where we were going and five eyes on the sky. After two miles, the crescent sun became visible through a large gap in the low clouds. There were still high thin clouds slightly veiling it, but the sky around it was a pale blue. We went a bit further, and then stopped... at the very same dirt track where I had slept the night before. A

line of ten or fifteen cars now stretched along it, but there was plenty of room for our vehicle.

By now, with ten minutes to go, the light was beginning to change. When only five percent of the Sun remains, your eye can really tell. The blues become deeper, the whites become milkier, and everything is more subdued. Also it becomes noticeably cooler. I'd seen this light before, in New Mexico in 1994. I had gone there to watch an "annular" eclipse of the Sun. An annular eclipse occurs when the Moon passes directly in front of the Sun but is just a bit too far away from the Earth for its shadow to reach the ground. In such an eclipse, the Moon fails to completely block the Sun; a narrow ringlet, or "annulus", often called the "ring of fire," remains visible. That day I watched from a mountain top, site of several telescopes, in nearly clear skies. But imagine the dismay of the spectators as the four-and-a-half minutes of annularity were blocked by a five-minute cloud! Fortunately there was a bright spot. For a brief instant — no more than three seconds — the cloud became thin, and a perfect circle of light shone through, too dim to penetrate eclipse glasses but visible with the naked eye... a veiled, surreal vision.

On the dirt track in the middle of French fields, we started counting down the minutes. There was more and more tension in the air. I put faster speed film into my camera. The light became still milkier, and as the crescent became a fingernail, all eyes were focused either on the Sun itself or on a small but thick and dangerous-looking cloud heading straight for it. Except mine. I didn't care if I saw the last dot of sunlight disappear. What I wanted to watch was the coming of Moon-shadow.

One of my motivations for seeking a hill was that I wanted to observe the approach of darkness. Three thousand miles an hour is just under a mile per second, so if one had a view extending out five miles or so, I thought, one could really see the edge coming. I expected it would be much like watching the shadow of a cloud coming toward me, with the darkness sweeping along the ground, only much darker and faster. I looked to the west and waited for the drama to unfold.

And it did, but it was not what I was expecting. Even though observing the shadow is a common thing for eclipse watchers to do, nothing I had ever read about eclipses prepared me in the slightest for what I was about to witness. I've never seen it photographed, or even described. Maybe it was an effect of all the clouds around us. Or maybe others, just as I do, find it difficult to convey.

For how can one relate the sight of daylight sliding swiftly, like a sigh, to deep twilight? of the western sky, seen through scattered clouds, changing seamlessly and inexorably from blue to pink to slate gray to the last yellow of sunset? of colors rising up out of the horizon and spreading across the sky like water from a broken dyke flooding onto a field?

I cannot find the right combination of words to capture the sense of being swept up, of being overwhelmed, of being transfixed with awe, as one might be before the summoning of a great wave or a great wind by the command of a god, yet all in utter silence and great beauty. Reliving it as I write this brings a tear. In the end I have nothing to compare it to.

The great metamorphosis passed. The light stabilized. Shaken, I looked up. And quickly looked away. I had seen a near-disk of darkness, the fuzzy whiteness of the corona, and some bright dots around the disk's edge, one especially bright where the Sun still clearly shone through. Accidentally I had seen with my naked eyes the "diamond ring," a moment when the last brilliant drop of Sun and the glistening corona are simultaneously visible. It's not safe to look at. I glanced again. Still several bright dots. I glanced again. Still there – but the Sun had to be covered by now...

So I looked longer, and realized that the Sun was indeed covered, that those bright dots were there to stay. There it was. The eclipsed Sun, or rather, the dark disk of the New Moon, surrounded by the Sun's crown, studded at its edge with seven bright pink jewels. It was bizarre, awe-inspiring, a spooky hallucination. It shimmered.

The Sun's corona didn't really resemble what I had seen in photographs, and I could immediately see why. The corona looked as though it were made of glistening white wispy hair, billowing outward like a mop of whiskers. It gleamed with a celestial light, a shine resembling that of well-lit tinsel. No camera could capture that glow, no photograph reproduce it.

But the greatest, most delightful surprise was the seven beautiful gems. I knew they had to be the great eruptions on the surface of the Sun, prominences, huge magnetic storms larger than our planet and more violent than anything else in the solar system. However, nobody ever told me they were bright pink! I always assumed they were orange (silly of me, since the whole Sun looks orange if you look at it through an orange filter, which the photographs always do.) They were arranged almost symmetrically around the sun, with one of them actually well separated from its surface and halfway out into the lovely soft filaments of the corona. I explored them with my binoculars. The colors, the glistening timbre, the rich detail, it is a visual delight. The scene is living, vibrant, delicate and soft; by comparison, all the photographs and films seem dry, flat, deadened.

I was surprised at my calm. After the great rush of the shadow, the stasis of totality had caught me off guard. Around me it was much lighter than I had expected. The sense was of late twilight, with a deep blue-purple sky; yet it was still bright enough to read by. The yellow light of late sunset stretched all the way around the horizon. The planet Venus was visible, but no stars peeked through the clouds. Perhaps longer eclipses have darker skies, a larger Moon-shadow putting daylight further away.

I had scarcely had time to absorb all of this when, just at the halfway point of totality, the dangerous-looking cumulus cloud finally arrived, and blotted out the view. A groan, but only a half-hearted one, emerged from the spectators; after all we'd seen what we'd come to see. I took in the colors emanating from the different parts of the sky, and then looked west again, waiting for the light to return. A thin red glow touched the horizon. I waited. Suddenly the red began to grow furiously. I yelled "Il revient!" — it is returning! — and then watched in awe as the reds became pinks, swarmed over us, turned yellow-white...

And then... it was daylight again. Normality, or a slightly muted version of

it. The magical show was over, heavenly love had been consummated, we who had traveled far had been rewarded. The weather had been kind to us. There was a pause as we savored the experience, and waited for our brains to resume functioning. Then congratulations were passed around as people shook hands and hugged each other. I thanked my Belgian friends, who like me were smiling broadly. They offered me a ride back to town. I almost accepted, but stopped short, and instead thanked them again and told them I somehow wanted to be outside for a while longer. We exchanged addresses, said goodbyes, they drove off.

I started retracing my steps from the previous evening. As I walked back to the town of Rethel in the returning sunshine, the immensity of what I had seen began gradually to make its way through my skin into my blood, making me teary-eyed. I thought about myself, a scientist, educated and knowledgeable about the events that had just taken place, and tried to imagine what would have happened to me today if I had not had that knowledge and had found myself, unexpectedly, in the Moon's shadow.

It was not difficult; I had only to imagine what I would feel if the sky suddenly, without any warning, turned a fiery red instead of blue and began to howl. It would have been a living nightmare. The terror that I would have felt would have penetrated my bones. I would have fallen on my knees in panic; I would have screamed and wept; I would have called on every deity I knew and others I didn't know for help; I would have despaired; I would have thought death or hell had come; I would have assumed my life was about to end. The two minutes of darkness, filled with the screams and cries of my neighbors, would have been timeless, maddening. When the Sun just as suddenly returned, I would have collapsed onto the ground with relief, profusely and weepingly thanking all of the deities for restoring the world to its former condition, and would have rushed home to relatives and friends, hoping to find some comfort and solace.

I would have sought explanations. I would have been willing to consider anything: dragons eating the Sun, spirits seeking to punish our village or country for its transgressions, evil and spiteful monsters trying to freeze the Earth, gods warning us of terrible things to come in future. But above all, *I could never, never have imagined that this brief spine-chilling extinction and transformation of the Sun was a natural phenomenon.* Nothing so spectacular and sudden and horrifying could have been the work of mere matter. It would once and for all have convinced me of the existence of creatures greater and more powerful than human beings, if I had previously had any doubt.

And I would have been forever changed. No longer could I have entirely trusted the regularity of days and nights, of seasons, of years. For the rest of my life I would have always found myself glancing at the sky, wanting to make sure that all, for the moment, was well. For if the Sun could suddenly vanish for two minutes, perhaps the next time it could vanish for two hours, or two days... or two centuries. Or forever.

I pondered the impact that eclipses, both solar and lunar, have had throughout human history. They have shaped civilizations. Wars and slaughters were

begun and ended on their appearance; they sent ordinary people to their deaths as appeasement sacrifices; new gods and legends were invoked to give meaning to them. The need to predict them, and the coincidences which made their prediction possible, helped give birth to astronomy as a mathematically precise science, in China, in Greece, in modern Europe — developments without which my profession, and even my entire technologically-based culture, might not exist.

It was an hour's walk to Rethel, but that afternoon it was a long journey. It took me across the globe to nations ancient and distant. By the time I reached the town, I'd communed with my ancestors, reconsidered human history, and examined anew my tiny place in the universe. If I'd been a bit calm during totality itself, I wasn't anymore. What I'd seen was gradually filtering, with great potency, into my soul.

I took the train back to Charleville, and slept dreamlessly. The next two days were an opportunity to unwind, to explore, and to eat well. On my last evening I returned to Paris to visit my old haunts. I managed to sneak into the courtyard of the apartment house where I had had a one-room garret up five flights of stairs, with its spartan furnishings and its one window that looked over the roofs of Paris to the Eiffel Tower. I wandered past the old Music Conservatory, since moved to the northeast corner of town, and past the bookstore where I bought so much music. My favorite bakery was still open.

That night I slept in an airport hotel, and the next day flew happily home to the American continent. I never did find my driver's license.

But psychological closure came already on the day following the eclipse. I spent that day in Laon, a small city perched magnificently atop a rocky hill that rises vertically out of the French plains. I wandered its streets and visited its sights — an attractive church, old houses, pleasant old alleyways, ancient walls and gates. As evening approached I began walking about, looking for a restaurant, and I came to the northwestern edge of town overlooking the new city and the countryside beyond. The clouds had parted, and the Sun, looking large and dull red, was low in the sky. I leaned on the city wall and watched as the turning Earth carried me, and Laon, and all of France, at hundreds of miles an hour, intent on placing itself between me and the Sun. Yet another type of solar eclipse, one we call "sunset."

The ruddy disk touched the horizon. I remembered the wispy white mane and the brilliant pink jewels. In my mind the Sun had always been grand and powerful, life-giver and taker, essential and dangerous. It could blind, burn, and kill. I respected it, was impressed and awed by it, gave thanks for it, swore at it, feared it. But in the strange light of totality, I had seen beyond its unforgiving, blazing sphere, and glimpsed a softer side of the Sun. With its feathery hair blowing in a dark sky, it had seemed delicate, even vulnerable. It is, I thought to myself, as mortal as we.

The distant French hills rose across its face. As it waned, I found myself feeling a warmth, even a tenderness — affection for this giant glowing ball of hydrogen, this protector of our planet, this lonely beacon in a vast emptiness... the only star you and I will ever know.