

Road to the Sky

The boat cut through the tranquil water, leaving in its wake regions of momentarily disturbed currents. It was well past midnight, and the muffled growl of the outboard motor was the prevailing sound on this stretch of Manitowish Lake. I sat at the wheel of the boat, with my brother beside me and his friend stretched out lazily across the front seats. We had turned off all of the boat's lights as we drifted across the water; there were no other vessels out at this late hour. As we waited anxiously for the night's show, I would occasionally throttle the motor and attempt to lose the single bat that was persistently circling the boat—and our heads. Above us, the sky was filled with a multitude of radiant lights. At this moment, it was easy to understand the sentiments of my forebears who believed the stars to be an array of pin-pricked holes in the firmament, a tantalizing glimpse into the great unknown expanse. I fervently searched the sky, reexamining an unusual arrangement of clouds hovering over the northwest tree line. The realization came with a strangely blended release of humility and exhilaration. What I had previously dismissed as an unusually elongated series of clouds was, rather, what we had been patiently waiting for all along—the Northern Lights.

For a few nights, the Lights were visible in southern regions where they were rarely seen, including northern Wisconsin. The three of us rested in silence, allowing the magnificence of the night sky to take our minds elsewhere. My brother, aware of my love for such things, asked me to speak about the vista stretching above us; and so, for nearly an hour, I did. I spoke of solar winds and magnetic fields as I explained the origin of the aurora. I delved into the mythologies of past eras as I took them on a journey through the summer constellations visible around us. I marveled at the sheer immensity of our lonely galaxy as I pointed out the Milky Way extending across the night sky. I breathlessly described the moment of the inception of our universe, and

then launched excitedly into a futile attempt to describe the splendorous expanses of hydrogen gas that constituted the entirety of space at that time. I concluded with an animated narrative, recounting the formation of stars, solar systems, galaxies, planets, and life—us. A momentary silence fell over the boat, and I could just make out the sound of the cicadas back on the shore. “That was amazing,” my brother said suddenly. A small warmth rose in my chest, fending off the increasingly cool air around us as I reveled in this small compliment. This was my passion: the wonders of space and humanity’s place in it all. To know that I could share this love with others, if only for a fleeting span of time, was a reassuring thought.

It is nights such as this one that remind me of who I am and where I am going. As I gaze, entranced, up into the dark expanse, I am driven to pursue understanding—driven to learn. There is something about pushing the boundaries of human knowledge, both geographically and epistemically, that gives me a thrill whenever I happen to think of it. I often find myself wishing I were an adventurous soul in 1845 who could drop everything and pursue new lands under the banner of Manifest Destiny. Unfortunately, more than 150 years sit between me and that great, final earthen frontier of humanity. But I do not fret, for around our humble green and blue planet lies an unexplored expanse far more vast than can be imagined, one which holds in it a countless multitude of secrets, waiting to be explored. It is for this reason that I have chosen to pursue a career in the space industry, to follow in the hallowed footsteps of Tsiolkovsky, Goddard, and von Braun. I find solace and courage in imagining that these legends of human spaceflight felt a thrill quite similar to the one I felt on the lake when they gazed up at the very same stars.

Despite all the passion with which I pursue this goal today, there was a point at which I was not nearly so ardent. It seemed during my pre-university years that every profession under the sun had been suggested to me by one mentor or another. I knew in my heart, however, that

my vocation was to be found in space, and so my focus naturally fell upon professions in that realm. What then proved troublesome to me for nearly two years was discerning the medium through which I was to explore this passion. The lure of the pure sciences was strong, for what could be more fascinating than peering directly into the milieu of space and matter? My answer, for a time, was “nothing”—it seemed that life as an astronomer, or perhaps a physicist, would be the one to best fulfill my interests. As the months passed by, I consumed as much literature as I could on the subject of space, and I felt increasingly comfortable with the idea of studying astronomy at a collegiate level. Needless to say, that plan was not meant to be, and I realized this fact precisely one year before my experience at the lake.

The family SUV was nearing the end of its long journey through the western United States. It was the beginning of summer, and my parents had elected to make a family trip out of my sister’s temporary move to Los Angeles. As we traversed the final stretch of the drive and approached the California border, I was deep into Carl Sagan’s *Pale Blue Dot: A Vision of the Human Future in Space*. I had devoured three of his other works during the previous, seemingly infinite, hours of driving, and was eager to finish this book before the road trip was over. Page by page, Sagan’s words resonated with me like nothing ever had, nor likely ever will. He spoke with elegance about the fragility of our existence and the paltry nature of our nation’s space program, and I found myself worrying alongside him about humanity’s uncertain future. At a certain point in my reading, I simply became overwhelmed with the gravity of it all, and I can recall looking up from my book and simply staring at the road ahead of us as questions raced through my mind. How much time will pass before humanity damages our home planet beyond repair? Where will we go when this inevitably occurs, or will we simply run out of resources? Why must our economy be built upon military spending when there is an entire solar system to explore and

colonize right outside our front door? It was at this moment that I realized I had to do *something* about resolving these fundamental questions. There would be plenty of others willing to study the stars from the comfort of Earth—my goal was to get us there. As we crested the hills on the outskirts of Los Angeles, I found myself knowing with absolute certainty what I was going to do with my life: become an engineer.

That we humans find ourselves living on this rock is, in my mind, an absurd bit of fortune. The explanations for such an impossibility range from theistic to philosophical to scientific, but the question of why we are here is utterly dwarfed by the question of what we are going to do next. The intellect of humanity, if concentrated in the appropriate fields, has more than sufficient potential to expand our species beyond Earth. The achievements that are within reach sound farcical—frequent and affordable transportation to space, colonization of nearby planets and eventually other star systems, harvesting of planetary bodies and asteroids for near-infinite resources—yet they are, truly, within our grasp. Establishing humanity as multi-planetary will ensure our prevalence in this tiny corner of the universe for the foreseeable future, and this is a task that must begin now. Tsiolkovsky knew this 100 years ago, von Braun knew it 50 years ago, and the likes of Musk, Bezos, and Diamandis know it today. The latter group, however, has the greatest chance thus far of seizing the opportunity, and they are already well on their way. It was with all this in mind that I finally realized my passion while driving over those Californian hills: to develop and launch the machines which will lift us off this Earth and into a new era of human exploration. Although it has been more than a year since that transcendental experience under the Northern Lights, my passion for space engineering has remained steadfast within me.