

Calling the Stars Home

By Anna Koester

For as long as I can remember, I have been fascinated by the night sky. My childhood ceiling was plastered with sticky glow-in-the-dark stars that I'd arrange and rearrange into different constellations. I'd stare at them before going to sleep, burning the image into my retinas so I could still see them after I closed my eyes. There they were every night before I fell asleep, my creations mimicking the higher roof of the sky overhead.

As a young girl, I repeatedly asked my engineer father to give me astronomy lessons until he gave in. I was sure he knew everything there was to know about everything. I even had a special composition cahier dedicated to our lessons. I loved stargazing and couldn't wait to become an astronomer, to study the stars and planets for a career. For many years it was the only profession I considered, and my father was happy to encourage his daughter to break through the barriers of a male-dominated career in science. He spoke with pride at parent-teacher conferences about my penchant for math and physics.

Every July, my family escapes the chaos of regular life and spends a week's vacation at a family camp on Upper Saranac Lake in the middle of the Adirondacks. Alongside the steadfast rotation of constellations at night, this vacation has been the only constant from my girlhood to the present. One clear night between sophomore and junior year of high school, my older sister and I paddled a canoe into the middle of the lake. *Look up*, she gasped. The sky looked like an art project: a jar of silver glitter spilled across a large, domed piece of black construction paper. The space between the points of light was textured like black velvet. I'd never known the sky to look this full before. There was no moon. We remained, floating without aim, heads together as we laid on our backs, and I was reassured that no career would be better than one involving the

wide mystery overhead. We lost track of time. The vision above us allowed me to form a bubble of comfort around myself; we were floating in abandon, untethered and invisible, far from shore.

Although my career interests had changed by the time I entered college, I still eagerly signed up for an astronomy course sophomore year. I called my dad on the first day of the semester right before I walked into class, seven years old again, giddy with anticipation. But my plastic-star gazing as a child had led me astray; astronomy has much less to do with the stars from my memory and more to do with what I saw as the complete opposite. The class focused on minute quarks and subatomic particles, not the facts and facets of the cosmos that I'd been expecting. I don't remember talking about the planets at all. I finished the term gloomily, feeling that I knew less about celestial life than I had before I enrolled. *Is astronomy only about those teeny tiny bits of matter?* Yet as I directed my feet back toward my dorm room, I couldn't help looking up at the night sky, filled with stars. They were rising earlier and earlier each night as autumn swirled and shivered into winter. Before nighttime became too cold for lingering outdoors, I perched on the grass outside my dorm, limbs sprawled out wide, and gazed up at the familiar stars that were so far from home and the little would-be astronomer I had left behind.

Stars aren't always the white color we see at night. Rather, they range in color from blue to red depending on how hot they are. Stars are blue at the beginning of their lifecycle before turning white, then yellow, then orange, and finally red as they make their way across the spectrum of light based on the speed of their wavelength. The higher the frequency of the wave, the hotter the temperature. Hotter stars with a higher frequency maintain a color closer to the purple-blue end of the spectrum. Waves that move at a lower frequency—orange and red—appear at the other end of the visible light spectrum. The lower the frequency, the older and redder the star; just like people, stars slow down as they age. Our own sun is a yellow dwarf,

which means it's somewhere around middle-aged. The oldest stars, red dwarves, can burn for trillions of years at a very low temperature and at a slow rate—so slowly that they will burn for much longer than the current age of our universe, which itself is fourteen billion years old. Red stars are the smallest stars in the night sky, a condition with which I feel a certain affinity since I am a small-ish human. I'm also no longer a child, no longer bright and energized with the blue youth of a newborn star.

No matter the color, stars die at the end of their lifespan because they simply run out of gas and sometimes, we only see the light that is left over from a burning star. They're so far away that it can take years for all those tiny light particles to reach us on Earth. But not all stars disappear completely; their core eventually cools off and even though we can't see them, they still remain a part of the celestial realm. My Earth-bound mind pictures them falling out of the sky, much like the coals in a fireplace fall through the grates when they're done burning oxygen. I think about how many stars there are in our Northern sky and how many might be mere echoes of light from stars now extinct. I like this idea that stars never truly disappear altogether. It's satisfying to know that even if I'm looking at a star long extinguished and seeing its dying shine, it will always be hanging somewhere up in the sky. Knowing that the celestial roof over my head won't ever really change, even when light dulls and begins again, is a great comfort that I've carried deeply with me. Unlike the glow-in-the-dark stars from my girlhood ceiling, the real things remain. After a star is gone, burned up, its ending still provides a path for new beginnings.

When I look back on the astronomy lessons of my youth, I realize that my father and I “had class” only once or twice. I don't remember what he taught me, but I do remember spending time together, just the two of us, in a quiet space with a small paperback book filled with pictures of nebulae and swirling galaxies. Life in our new house was only calm and

undisturbed for a few months at a time. Without fail, an event would come along that shook us up and took priority. My father and stepmother were both healing from their divorces while trying to blend their respective children into one cohesive family unit, and as children struggling with this fusion, we did not make it easy on them. My little sister dropped out of high school. Twice. My brother withdrew from the real world and into the virtual. Then my stepmother's cancer returned. After their mother passed away, my two older stepsiblings left for college in other parts of the state. And across town, my mother divorced her second husband after his alcoholism spiraled into abuse. Inside the walls of both of my parents' houses, turmoil became the normal hum of life. When the center of what's holding us together disappears, burns up, dies, it's alarming how quickly everything starts falling apart. The light from the white star flickers and fades, eventually becoming extinguished altogether. And yet the steadiness of celestial movement above eclipses the chaos below. Somehow, our Earth keeps circling the sun.

It had been a few trips around the sun when I found myself floating again, now an adult and this time without my sister. I was under another breathtaking dome of astral beauty, another calm night of stargazing, this time in the middle of the Caribbean Sea on a boat a couple miles from shore. It was mid-March and the sky above Eleuthera was shocked clear of all clouds and light pollution. I couldn't open my eyes wide enough. I imagined my pupils looked like perfect black disks, completely eclipsing my irises. I was covered with a thick blanket of stars stretching from horizon to horizon. They were so close that I could reach out and touch them; I lifted my arm out of the towel wrapped around my shoulders and held it in the air, caressing the million little points of light above me. Laying there on my back, I was entranced.

I was a chaperone leading a project trip of high school students, about to embark on a night snorkel, and our group had been on edge about it all week. Anxiety gave way to both good nerves and bad. *Will we even see anything underwater at night?* I wasn't sure I would get in the water until the very moment I released my vice grip on the aluminum ladder and let myself become enveloped by the surface of the calm, cool, salty waves. We were at the same reef our guides had taken us to explore that same morning; it had looked so colorful and alive in the light of day. But what had been warm and welcoming was now lit up in rays of monochrome and slashed with shadow, haunting and silent. As soon as I got in the water, the cold embryonic feeling closed in around my lungs and caught the breath in my chest. Alone on the fringes with my paltry flashlight, I realized that I didn't want to see any sea life, especially after our guides had described the creatures as ugly and unpredictable earlier in the day. After only a few moments, I climbed back up the ladder, still holding my breath.

Out of the water, I changed into dry clothes and calmed myself by gazing at the stars, willing my heart rate to slow. Here were the familiar stars above me, just like always. The complete opposite of the underwater horror show below. Soon my students were out of the water, and they sounded as spooked as I had felt. Then everyone turned their attention skyward.

Silence draped over the boat; the curtain of stars above closed the gap between conversation and contemplation. Slowly, it dawned on each of us that we had never seen the night sky so full of stars before. During the boat ride out to the reef, we had been distracted by anticipatory chatter, making sure we could set our eyes on all the different pieces of gear needed for the snorkel. But now we rested peacefully and turned our attention skyward. I will remember this moment with my students: lying side by side, each in our own quiet reverie, observing the heavens reflected in our eyes.

Night off the shore of Eleuthera Island is a true definition of night; there isn't a city or even a town to pollute and blanch the sky with light. The sky here is so clear of distractions that we could see how the night sky was supposed to look, free from human intervention or alteration. A cosmic painter had taken a fine brush laden with white paint and flicked it over and over at the black canvas overhead. Thicker where the belt of stars was smeared down the center, and thinner along the fringes. I had never experienced a night like this before, nor had I been far enough away from shore to see this exquisitely starry sky full in the face. There was nothing to see but stars. It was difficult to find a foothold in a familiar constellation because there were so many stars now visible around and between the bright ones that made the usual patterns in the sky. Between us, the students and I counted seventeen different versions of Polaris. No one knew which one was true North, but it didn't matter. I realized then that this evening was special, that I would be looking for another perfect starry night like this one for the rest of my life. It was familiar and new at the same time.

This familiarity is something I've learned to rely on. Almost nothing from my childhood has remained the same. My parents have remarried two times apiece. My siblings have moved across both state lines and oceans. I no longer have a childhood home to return to for holidays, since no one in my family lives closer than two hours from my hometown. I don't have a special place that I return home to or a house that retains the echoes of my life before adulthood. Memory is the only place where my history exists. Without a foothold in a physical place that I can call home, my past has been eroded and shifted so that what was once true slips away a little more each year. As an adult, I've become untethered from the young person I used to be. It is, all at once, a freeing feeling that the past can gladly stay right where it is, and a simultaneous tinge of being unmoored, separated from the girl I used to be. My footprints have been all but erased.

My shadow is no longer attached. The ripples from the wake behind my boat have calmed. The water is still once again, and all evidence of the journey is gone. Here I am, lying in a canoe in the middle of the lake or on top of a boat at sea, the dock miles from sight. And the same stars are in my sky.

My permanent home, the red house where I keep my toothbrush, has only existed in my life for the past ten years. When I move away or take a new job, I'll further perpetuate the nomadic temporality of "home." It will be another uprooting and overhaul of life and routines. I will have to find a new physical permanent. Luckily, over the years, I've learned to build a strong enough foundation in myself to move my home wherever the current takes me next. I've learned to lean into discomfort and change when what's overhead will never really change at all.

The stars will remain exactly as they always have. Whenever I look up at night, I search for the same constellations, and there they are: Cassiopeia, the Big Dipper, Venus, Orion and his favorite accessory. It always catches me off-guard how perfectly geometric and exact the constellations are. I marvel at how the moon is just bright enough to spread its light so the constellations can stand in stark contrast to the black background, unencumbered by the smaller clutter of freckles. Those tinier points of light are no match for the moon's strong rays.

The longer I look up and beyond the earth on which I'm standing, the stronger my sense of being grounded. With my head in the familiar stars, I know where I am and how to navigate myself back home, a home that isn't necessarily a physical place. Outside at night, there is a roof over my head. I remember the starry nights in Eleuthera and on Upper Saranac Lake; they remind me that when I push far enough away from the shore, that's when I can see the real night sky. It will always be familiar. These stars are a constant comfort whether the boat is rocking or still.

