The Crystal Highway by Jeff Hecht

Copyright (c)1997 by Jeff Hecht First published in Odyssey, December 1997

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Science Fiction

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I long to walk the Crystal Highway that soars out of reach beyond the poison sky above the barren land $\ --$ Vaxila

* * * *

"Go," the dean of the school of literature told Axel Cormier when his fortieth birthday brought his first sabbatical. "You can spend the rest of your life in the library, after time catches you and ties you down," he gestured toward the wheeled robot that carried the gas exchanger and power pack for his artificial heart and lungs. His long arm moved with a grace that belied his 82 years. "Now is your chance to chase your dreams, to get off old Earth and explore the universe."

"But words are my life," protested Axel, as strongly as he dared. The old man had wandered a dozen worlds and written novels before he became a scholar. He still wrote eerie songs about the Age of Engineers and Generals, and sang them to synthesized music that he programmed himself. The dean's accomplishments scared Axel, who analyzed the structure of poetry, and hoped someday to find the courage to try to publish his own poems.

"Life is out there, Professor Cormier, and it goes beyond words. Learn how the poets lived. Visit their worlds. Find out who your mysterious Vaxila she really was. Walk her Crystal Highway. But go..."

* * * *

"Why do you want to visit Lambrecht Station?" asked Hannah Hsu, as she walked with Axel beneath the giant trees that lined the worn stone walkway across campus.

"Vaxila worked there. She wrote about a vision that always lingered just out of reach. She called it the Crystal Highway."

"I came across a crystal called Lambrechtite last week." Hannah's dark eyes twinkled, warming Axel's soul, and washing the gray from her hair. "It comes from Lambrecht Station and makes beautiful colors."

"Colors? What does a physicist need with colors?"

"Wavelength is the properly quantitative word. The crystal makes the wavelength I need to make electrons spin a certain way in iron atoms."

"Do you have the crystal? May I see it? It may be all I can see of Vaxila's world until I get there."

Hannah turned, and the morning sun reached through the leaves to make a pattern of light and dark on her face. "I'll show it to you if you will marry me instead of Vaxila."

It was not the first time she had asked in the three years they had lived together, but as always Axel was afraid. "I don't want to marry her,

Hannah. It's her words that I love. She's probably dead; her book of poems appeared over 50 years ago."

"I think you will marry me when you come back, Axel Cormier," she insisted. "But I don't know why I think that, or why I put up with you."

Axel searched his memory for some notable poetic quote as they walked to her laboratory, but no words came.

* * * *

Lambrechtite: a crystal containing uranium in its +5 valence state in an unusual matrix rich in chromium, iron, lead and magnesium. When illuminated by ultraviolet light, the uranium fluoresces brightly in the indigo part of the spectrum. The precise wavelength is difficult to produce at reasonable power levels by other means, and the crystals are prized by spectroscopists. Known only from a single large outcrop, on Lambrecht Station. The crystal formed at the bottom of a long-vanished sea of unknown composition approximately 200 million years ago. Successful synthesis has not been reported. -- _Minerals of the 12,000 Planets_

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Hannah gave Axel a book on exotic minerals the morning he left for the Starport. It puzzled him until, on the ship, he found three pages on Lambrechtite. A color plate showed a small crystal. Beside it, Hannah had written in her precise hand, "The printing process cannot reproduce the exact color. Tell me what it looks like on the planet. I miss you. Love, Hannah."

Axel endured the trip, reading most of the time. Hannah's book told how minerals were mined on distant planets. It said Lambrecht Station was a mining colony on a lifeless planet, with air so corrosive it could eat through a spacesuit in hours. He turned to Vaxila's _HUNDRED POEMS_, and read how light shining through breaks in the deadly clouds brought the Crystal Highway to glittering life. And he turned to the picture of the crystal, but stared instead Hannah's words.

He left old Earth on a huge starship full of travelers who talked of new lives, great business deals, or fantastic vacations, trying to convince themselves that their missions were worth two boring weeks in cramped quarters. He spent another week on a smaller passenger ship, but the only way to Lambrecht Station was on a freighter that brought supplies to the planet.

"What can you tell me about Lambrecht Station?" Axel asked the captain, a small blond woman whose hands were always busy with a long necklace of smooth gray stones. Her sister was the rest of the crew, and except for the necklace and the different insignias on their uniforms, Axel could not tell them apart.

"It is dangerous," the captain said. "The air corrodes our ship, even through the best coatings we can find. We can only stay a few hours each trip."

"Why do people live there?" he asked, hoping to hear of the beauty that had inspired Vaxila.

"To mine crystal," she replied. "Old Man Lambrecht found it seventy years ago, and set up the base. Fifty years ago crystal jewelry became a fad for rich people who wanted to glitter with a new color. Grandfather Lambrecht had two hundred people down there once, and sold a lot of jewel-crystal. Now only six people are left, and they hardly sell anything."

Axel quoted Vaxila's poems, and the sisters found something else they needed to do. He went to the tiny room set aside for the odd passenger, and wrote in the diary he had promised Hannah he would keep.

When they reached the surface, two thick plastic tubes reached out from the station through the murky air. A short one clamped against the ship's cargo hold, and heavy robots began wheeling out boxes. A longer, thinner tube bent up to the passenger airlock, making a path for Axel. He walked carefully through the tube to another airlock, which let him into a tiny room in a small tower. The walls and floor were gray; the only light came from a fixture overhead. A pair of sliding doors faced Axel, marked with fine print in the 23 Standard Languages. He carried his luggage the five paces across the room and read: "Welcome to Lambrecht Station. This automatic elevator is programmed to deliver you to the Primary Room, at ground level, and to alert base personnel to your arrival." He pushed the button.

* * * *

"So you're the tourist," began the large man who greeted the elevator. He wore a thick, bushy gray beard and was so tall that Axel had to look up to him. "I'm Klaus Lambrecht, stationmaster."

"You got my message, didn't you?" Axel asked nervously. "I'm Professor Cormier, and I sent word ahead that I was coming. I never got any response, but the time came, so I had to..."

"I got the message, but I didn't know what to say," the stationmaster shrugged. "I'm sorry." He took one of Axel's bags, and led Axel to his office. He motioned Axel to sit in a well-worn armchair. "What brings you across the light-years to this desolate place?"

"I'm a scholar," Axel said.

"You're not a geologist, are you? The last one was really disappointed."

"No, I study poetry."

* * * *

"Really?" Lambrecht asked. "I didn't know anybody still did that." Trying to hide his hurt, Axel tried to explain the beauty of Vaxila's poems. He didn't think he succeeded very well.

"Beauty," mused Lambrecht. "A lot of people called the crystal beautiful, 50 years ago when crystal jewels were high fashion. But my grandfather told me back then that there were too many other pretty rocks in the galaxy for the fad to last. He was right, you know," he sighed.

"I saw a crystal on old Earth. It is beautiful," Axel said, remembering how carefully Hannah had held the cube she had taken from an air-tight box on her black metal optical table.

"But we can't sell it any more, except to a few rock collectors and scientists."

Poetry didn't sell any more, either. Nobody read it but a few scholars who passed the thin, finely bound volumes among themselves. Axel could hardly admit that bitter truth to himself, much less to Klaus Lambrecht. "I want to see what inspired Vaxila, and find out something about her. How far back do your records go? She lived her over 50 years ago."

Lambrecht seemed as puzzled by scholars as by fashion. "I guess our files go back that far, but I doubt you will find much." He pushed back from the desk, then paused. "I'll have to turn you over to Mary. She manages the records, but she isn't very pleasant about it."

Axel's face asked why, although he was too proper to say the words.

"She's old, and she can't leave the planet. She had a heart attack seven years ago, when she was working as our master polisher. It damaged her heart so badly that the Medicheks won't pass her for space flight, and nothing out here can repair it. She can't work the crystal any more, but we keep her on. We owe her that much."

As Lambrecht talked with the old woman, Axel realized Vaxila would be at least as old, if she was still alive. Vaxila had disappeared so utterly that Axel was sure she had died after writing the HUNDRED POEMS. He could not imagine that anyone with such a talent could ever stop writing. Perhaps she had died here, chasing her dreams; perhaps she had left more poems behind.

The old woman interrupted Lambrecht and gestured toward Axel without looking at him. "You want to let the little clown mess with our business files?"

"No, I want you to help him." "Why?" "Just do it, Mary. The poor man spent a month coming out here." She turned toward Axel, glowering. "So what do you want?" "I'm looking for someone who used the name Vaxila..." Axel began.

"Never heard of her," the woman interrupted.

"I doubt you would have. She was here fifty years ago." He spelled the name, and gave the dates.

The woman entered the name on the keyboard, not bothering with the dates, and for minutes the screen said that the machine was "searching." Axel stared uneasily at the screen, worrying that too much time had passed, and he might find no trace of Vaxila. At last the machine beeped, and showed a new display: "NO EXACT MATCH FOUND. NO VARIATIONS WITHIN STANDARD SEARCH LIMITS."

Axel was not surprised; the name was supposed to be a pseudonym, but he had to be certain. "I expected that. I think she may have died here. Do you have a list of accident victims?"

"I can tell you right now there weren't any accidental deaths," Lambrecht said. "A few people cut themselves, but we've always run a safe operation. The only person who ever died here was my grandfather, about 20 years ago. He got sick and wouldn't leave."

Axel wondered what else could have happened. He fumbled for his notes, and asked, "Can you list people who worked here fifty years ago? The women first?"

"Won't find anything," the woman warned. "Wouldn't bother if I were you."

"Just do it," muttered Lambrecht gruffly. He sat in a chair by the side of her desk, looking bored.

She frowned and turned back to the keyboard to enter the dates. After another long wait, the machine printed "317 FEMALE EMPLOYEES" and began scrolling names across the screen.

The words rolled too fast across the screen to make sense to Axel's eyes. He would need to get a file with data on everyone on the list. It was not much of a start, but it was something.

As the list neared the end of the alphabet, Lambrecht's hand reached out to hit the HOLD DISPLAY button. "I didn't know you were here that far back, Mary," he said, pointing at the name WILTH, MARY on the screen.

"Wish I hadn't been. Stayed a few years, when your grandfather ran the place. Polished a lot of crystal. Then I left, for over thirty years. Should have stayed away, but the money looked too good..."

"You must have known her.... "Axel burst out. He shivered. The old woman could even BE Vaxila, angry and bitter after burning out long ago. How awful would it be fifty years after the fires flickered out? Yet he couldn't imagine that was possible; Vaxila had left on some unknown quest. The angry old woman's presence was just a coincidence.

The old woman shook her head. "No poets ever lived here. Just people who cut and polish crystal..."

"I can find her. I know I can," Axel insisted. "You must have biographical files. Resumes. Personal data. Print it all out. The poems have personal references; I can sort them out."

"No!"

"Mary!"

"I won't do it, Klaus! People who worked here have a right to their privacy. This man has no business in our records, nosing into their lives." "The law is not that strict, Mary. You can filter out what's sensitive.

The search program has a routine for that."

"What about my rights? I don't want him poking into my past."

"Then filter yourself out. But I want the rest of that data. Print it out and I'll give it to the professor. Right now I'm going to take him out to see the crystal." * * * *

The two men walked down endless corridors, past closed rooms that told of better times. "In my grandfather's day, this place was alive with people. There are only four workers now, plus Mary and me," Lambrecht sighed, pointing down an empty corridor. "There's not really enough market to keep us here, but we have obligations."

The stationmaster guided Axel down another corridor. He bent over to push a button, and machinery somewhere underground began grinding. Part of the wall slid back to show a broad window of thick glass.

"There is the Crystal Highway," Lambrecht swept his arm broadly. Deep brown sand swirled in harsh winds that blew across the rough desert. Light from the planet's sun burned down from the sky, beating upon the sand. In the center of the scene, surprisingly close, a shimmering sheet of color ran partway up the sky, a mad artist's vision of an overhead freeway in the automobile age of old Earth. "The layer is over 50 kilometers long, but it's no more than 20 meters thick. We think it crystallized at the bottom of an ancient sea, and lay buried underground for eons until mountain-building tilted it. We don't know how to make the stuff; the geologists can only guess at the nature of the ocean where it formed. It's tough stuff; the other rocks erode much faster."

Axel stared at the glittering colors. He wished Hannah was beside him to see it. Her little bit of crystal and Vaxila's words barely hinted at the glory of the whole thing. The steep, jagged cliff drank in sunlight and spewed forth brilliant sprays of multi-colored light. Only when dust blew by the window, hiding it, could Axel pull himself away enough to ask, "Who goes out there?"

"Just robots. We run them under remote control with a radio link. We spray them with coatings and wash them every day, but still the atmosphere eats them up."

Axel stared at the crystal, above and beyond the poison sky and barren land. Vaxila's words did not say enough. "Have you gone out..." he started.

"I'm not crazy. You know what's outside?" Lambrecht gestured. "The corrosives -- nitric acid, sulfuric acid, and worse -- eat their way through space suits if they can find a dent. Dust storms can rise up and bury robots in minutes. We take no chances. No humans go outside."

That, Axel realized, was why Vaxila had said the Crystal Highway was out of reach. "How did you build the Station?"

"Robots built it, professor. My great grandfather sent them down seventy years ago, while he stayed in an orbiting control module. The basic structure was prefab; then they sent down the interior framework. It was all done by remote control from orbit, until they verified it could hold up..."

"But it's beautiful," was all that Axel could say, staring out. "The light makes it come alive..."

"That's why we built the window. It's half a meter thick, and sometimes I wonder if that's enough. We're lucky the atmosphere doesn't have more fluorine, or it would eat through the glass."

The light returned and the crystal came alive again. Axel stared through the window.

"The outside is coated with diamond," the stationmaster boasted. "Eight whole millimeters thick, enough to keep the sandstorms at bay for a millennium, my great-grandfather said..."

The words passed through Axel like light through the window. Eventually, Lambrecht tired of talking to himself, and said he was returning to his office. Axel mumbled that he would find his own way back.

Axel watched the colors change as the planet turned and the light struck the crystal at different angles. He wished he could capture the shifting patterns so Hannah could tell him how the crystal changed the light. A cloud blocked the sun, breaking the spell. Only then did he look down the corridor and see a dirty sign reading "EMERGENCY EXIT LOCK."

All his life Axel Cormier had sat and read and watched, never reaching or touching or venturing. "Go," the dean had said, and he knew the dean was right, even though he knew the going was a fool's errand. His hand did not want to move, but he reached to open the door. Four lockers were inside. Three were empty, but the fourth contained a pressure suit. It was dusty, stiff with age, and closer to Lambrecht's size than to his, but Axel could fit inside, and with a bit of effort he sealed it well enough to turn all the control lights a safe green. Not daring to delay any longer for fear that Lambrecht or common sense would find him, he closed the corridor door and opened the exit.

Axel heard the alarm scream. Somewhere inside the station, he was sure, a control system was announcing that a madman had gone outside. He did not know if they would send a person or a robot after him. Perhaps nothing would come, he thought as he felt the wind push on his suit and the brittle rocks crunch under his feet. The exit door showed no sign of having been used before. The suit's emergency radio crackled. Lambrecht's voice told him to come back. Axel turned the volume down low.

The winds were not strong, but their push felt strange to a man who had spent most of his life in inside structures where winds never blew. The uneven surface felt unreal after weeks of corridors and hallways. But the spacesuit would not let Axel think he was walking across a grassy lawn to a park monument. The temperature indicator read a steady 392 K, above the boiling point of water. The air composition light flashed POISON red. At each step across the plain surrounding the station, he put his feet carefully on surfaces that seemed solid. He had never explored strange places before, but he had read enough of danger to know the theory of caution.

The Crystal Highway was alive with light as he approached it, the colors danced and changed with each step. The rational explanation, he remembered, was the changing angle between the eye, the sun, the crystal, and its facets. He tried to recall the poem where Vaxila had included the laws of refraction, but the mere words and equations eluded him. The reality was far richer, a display of iridescent sparkling life. Some slight motions changed colors completely, yet several other steps might barely change the hue. He could hardly take his eyes from the looming crystal for fear he would miss something. It grew larger as he walked toward it, though Axel had no sense of the distance he covered, or of anything but the dancing light inside the crystal.

Partway across the plain, Axel forced himself to stop. "Observe," he told himself, "a poet must observe and distill." He turned slowly, scanning the plain with his eyes, then with the suit's VisionAid. Time, the winds, and the acid air had scoured the surface down to soft, rolling hills, save for the Crystal Highway and Lambrecht Station. Behind him, the bulk of the station hugged the ground, dug deep against the storms that Vaxila had written could shake its roots. Its surface was the same dull brown slippery stuff that coated his suit. The Crystal Highway was a jagged slab, reaching up toward the distant sun to capture its light. He walked toward it. The suit's left leg seemed stiff, but he ignored it.

The ages and the winds had scarred the crystal. From a distance, the wall facing the station looked smooth, but as he came closer, Axel saw the side facing him was chipped and cracked. The stuff of the crystal wanted to be smooth; when he came up to it, he could feel the smooth parts through his thick glove. That made the surfaces flat and bright, but weathering cracked the surfaces. Light sparkled off shatter patterns inside the crystal, but at the surface, the cracks weakened it, and fragments fell off at his touch. Axel bent down and picked some pieces from the rough ground. They glittered with life in the light. He opened a pouch on the outside of his suit and slipped the crystals inside.

He walked beside the Crystal Highway, seeking words to show the shifting rainbow kaleidoscope made by the sun's light hitting the cracks. He came to a small rise where the crystal was chipped close enough to the ground that he could climb onto it. The wind was stronger here, and the climb was hard in the bulky suit. But that could not stop Axel from pulling himself up until he stood on the jagged top of the crystal.

The top was not as high as he had thought, perhaps just 15 meters above the ground. Yet from there he could see the whole world, with Lambrecht Station just a low, brown hill. Light that had been captured by the crystal escaped beneath his feet, bringing the giant gemstone to life as he walked carefully along the ridge. Hannah had taken him climbing the hills of old Earth; now he had climbed on his own. He parsed the words to tell her, grasping the poetry to carry the vision across the light years.

For the first time, Axel felt his words come alive. Looking toward the station, he could see a glint of light from the diamond coating on the big picture window. Vaxila must have stared out that window for endless hours, studying the Crystal Highway. But only Axel could tell of walking on it; he almost felt bold enough to sing his tale. He wondered if the people inside could see him on the Crystal Highway. Was Vaxila still alive as Mary, or was she dead, or was her ghost watching at the window?

No person or thing came to rescue Axel Cormier from the Crystal Highway. Up on top, the winds that had gusted below did not touch him, and the air seemed clearer, though the red warning light still read POISON. He drank in the changing colors that surrounded him. In time, he came down of his own accord. The winds on the plains came back then, and he had to lean into their fullness on his way back to the station. They blew up a sandstorm, and instinctively he closed his eyes and kept walking. The left knee of the suit froze, but he pushed on, stiff-legged. Yellow warning lights turned orange; he did not want to read what they tried to tell him.

Something dripped down his left leg, he felt the drop fizz when it landed on the cloth leggings inside the suit. The blowing grit nearly blinded him. It did not scratch the diamond coating in front of his eyes, but a brittle chip broke off the edge of the diamond, and the atmosphere began etching into the layers beneath. Indicators in the suit guided him through the murk, and Axel worked harder and harder to set one foot in front of the other, putting his whole mind and soul into the simple movement. He pushed on until he bumped into something hard and low. It was the outer wall of Lambrecht Station. He felt his way along the diamond-skinned window to the Emergency Lock and let himself in.

Only after he had entered the airlock, and a spray of water had washed the poisons from his suit, did they come for him. Axel had slumped on the floor, leaning his back against the wall, suddenly too tired to do more than set the switch to change the air. He was slumped there, helmet still latched, when Lambrecht pounded on the inner door. When there was no answer, Lambrecht used his override key to enter. He found Axel half-conscious, and popped his helmet open to give him fresh air.

By the time Lambrecht had roused Axel, the old woman stood by the lock's inner door, leaning on a robot walking aide. Her face was sadness, the lines deeper and harsher than any time alone could inflict. Axel looked up at her, hardly feeling the acid burn on his leg. "You are Vaxila," he said.

She closed her eyes and looked away. "Perhaps ... perhaps I was once, half a century ago."

"You never went outside. You only saw it through the glass..."

"We didn't dare, but what does it matter now?" Age had scarred and deepened her voice; Axel wondered how she had sounded as a young woman, as Vaxila, before he was born. "I wrote some words and cast them out into the galaxy, but they never brought anything back."

"You had dreams, beautiful dreams. I treasure them..."

"I cut and polished crystal. That's all. It earned me a living and it trapped me and I'll die here in its shadow."

Axel reached an uncertain arm toward her, but she pulled away. His gloved hand slipped onto the pouch of crystal fragments.

"Don't touch me!" she warned, tears forming at the corners of her eyes. "Leave me alone!" Leaning heavily on the robot, she hobbled away toward the window.

Ignoring her, Lambrecht started removing Axel's suit. "I can't believe you made it back alive." When he saw the acid burn, he opened a faded first-aid kit and sprayed a cream onto the wound.

Axel cried. He cried from the pain of the burn, from the sting of the spray, for Vaxila and for Mary. The sting faded quickly, the burn eased in

minutes, but he knew the sadness would linger.

"You'll survive," Lambrecht said, standing. "It was a damn fool thing to do, but you'll survive." He removed the pouch of crystal from the ruined suit and handed it to Axel. "You probably want this."

Nodding, Axel stood up and held his treasure. He would take a fine piece and mount it with diamond for Hannah's wedding ring. The finest piece, he told the stationmaster, was for Mary.

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