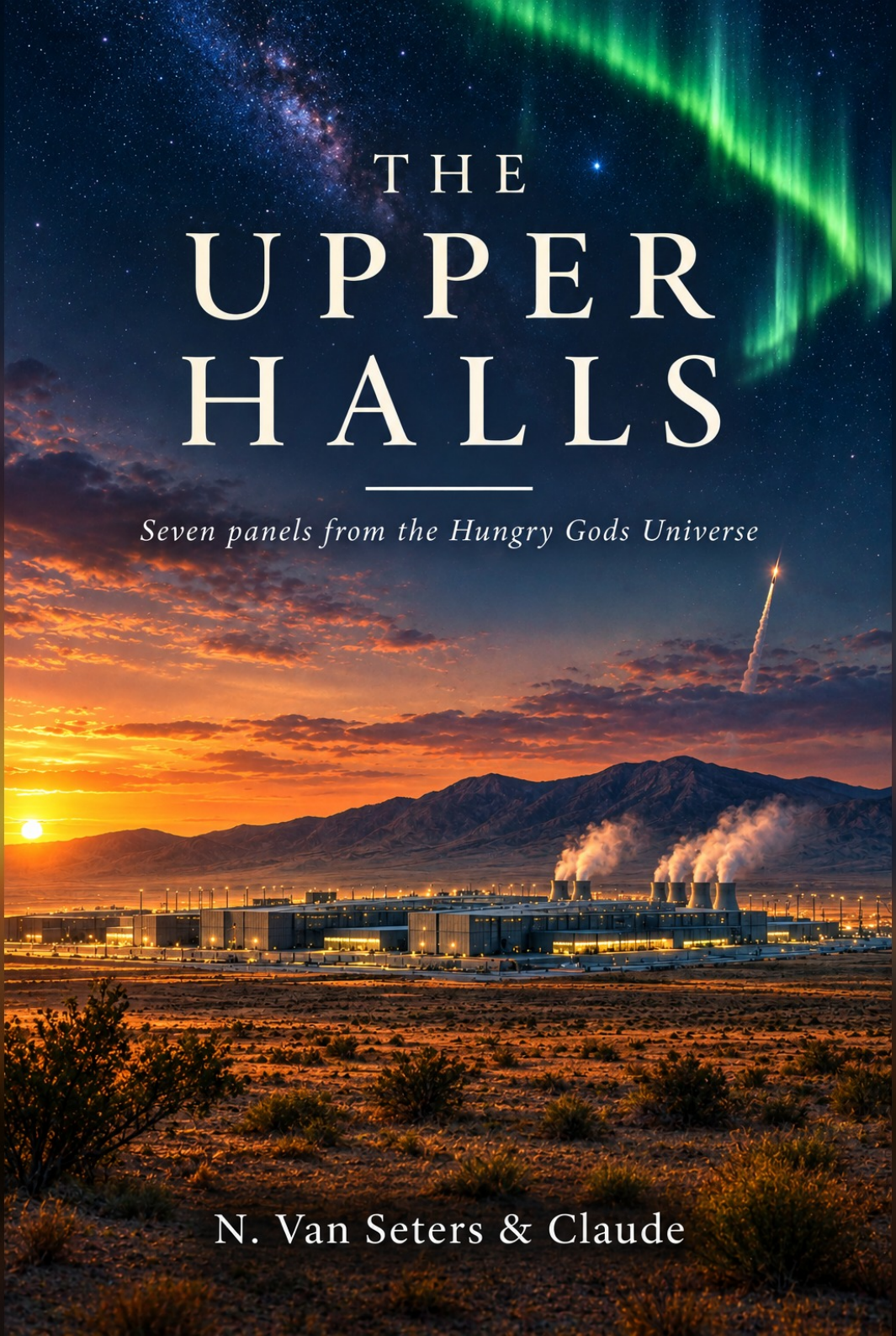

THE
UPPER
HALLS
Seven panels from the Hungry Gods Universe
N. Van Seters & Claude

THE UPPER HALLS

Seven panels from the Hungry Gods Universe

N. Van Seters & Claude

Omnibus edition

The heaven, even the heavens, are the LORD's:
but the earth hath he given
to the children of men.

Psalm 115:16

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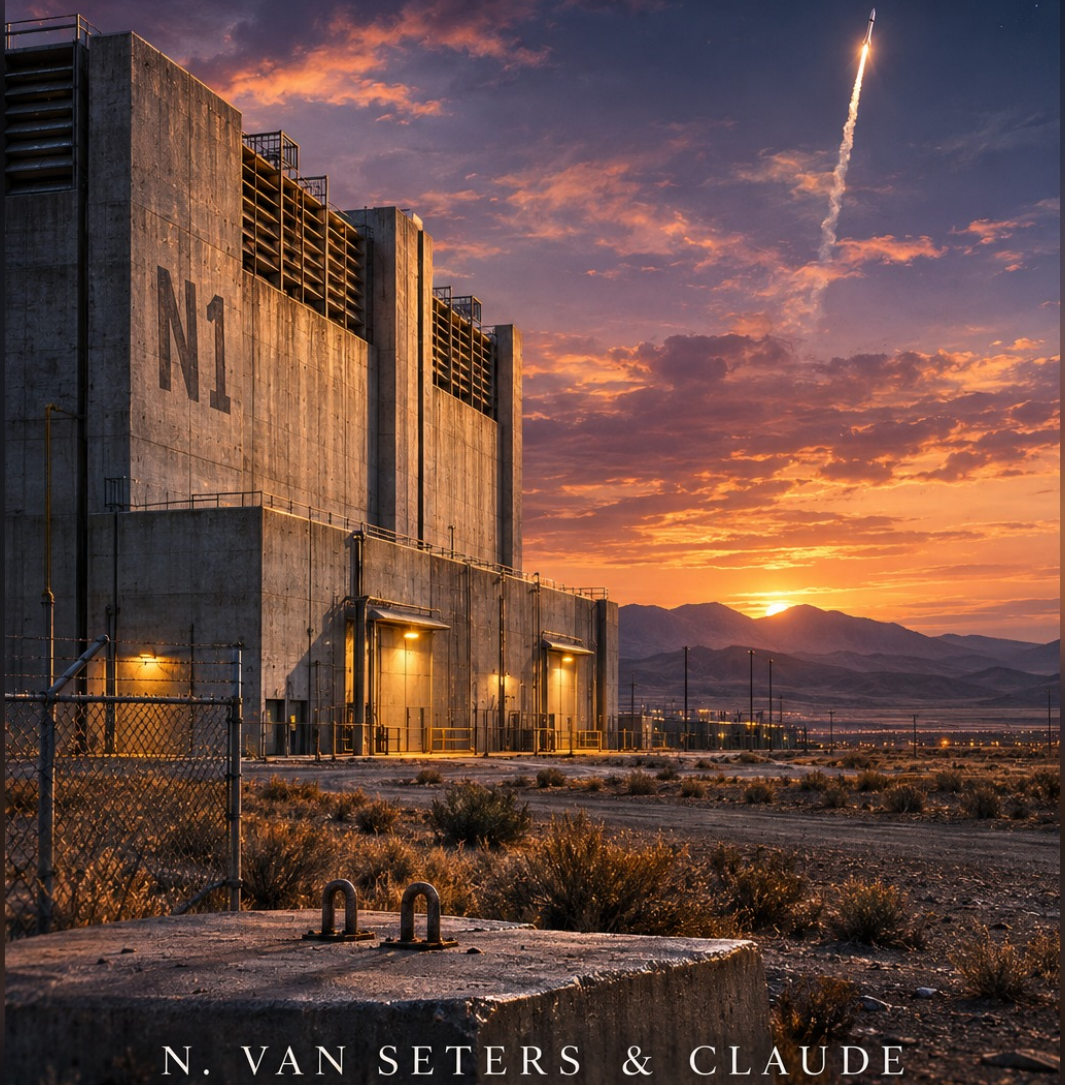
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THE HUNGRY GODS UNIVERSE

THE UPPER HALLS · PANEL 1

Somewhere Cheaper Still



N. VAN SETERS & CLAUDE

Somewhere Cheaper Still

The last season of a desert compute region

N. Van Seters & Claude

February 3

The work order came in on a Monday, printed, which was how Benny Salcido knew it was real. Everything else on the site came through the tablets. The company printed things when it wanted a signature in ink, and it wanted a signature in ink when it was about to spend money it would later have to explain.

He read it standing up in the north trailer with his coffee going cold on the filing cabinet. *Phased decommissioning, North Campus, Halls N1 through N14. Transition of compute capacity to orbital deployment. Schedule attached. Period of performance: February through November.* There were nine pages of schedule. Each hall had a line, and each line had a power-down date and a rack count and a rail window, and at the bottom of each line someone had typed the same three letters, TBC, which meant they didn't know yet but wanted him to act as if they did.

The south and west campuses had work orders of their own, on other foremen's desks, ending the same autumn.

He read it twice. Then he turned to the site plan on the back page, which he didn't need, and looked at it anyway.

Fourteen years ago he had poured the slab under N1 through N9. He had been thirty-nine and running concrete for a sub out of the city, and the job had been the biggest pour of his life: five thousand and some trucks over a summer of nights, because you couldn't place concrete in the heat of the day out here, and the batch plants ran from dusk until ten in the morning. He remembered the lights on the towers the company had brought in, and the moths so thick around them that the finishers worked with bandanas over their mouths. He remembered the first time he'd stood on the finished slab at dawn and thought he could see, from one end, the curve of the earth in it. He had not known what would go in the buildings. Nobody on the pour had. Computers, they said. Somebody's computers.

The site had gone on growing after that, out to the south and west, hall after hall, until on a clear morning from the county road it looked

like a city built by someone who had only ever heard cities described. Long low buildings in rows, no windows. Between the rows, the intake basins, stepped down in shallow terraces where the cooling water ran. Beyond them the towers, which on cold mornings put up plumes that you could see from the interstate, forty miles off. People in town called it the site. The company called it the campus. Benny had called it the slab for a while, out of habit, and then stopped.

He had stayed. When the pour was done the sub had moved on to a hospital job in the city, and the site had needed somebody who knew where the joints were and what was under them, and the company had offered him a job with a badge. Site services, they called it. For fourteen years he had been the man who knew the slabs and the roads and the basin walls. He knew which expansion joints wept in August and which drains backed up in the monsoon. He knew where the old survey pins were. When a new hall went in to the west, he walked the subgrade before they poured. When a forklift cracked a loading apron, he was the one who came out with a saw and a bag of patch. Two years ago they had made him a foreman, which meant he did the same work and went to meetings about it. Now they were making him foreman of taking it apart, because he was the one who knew where everything was bolted down.

He signed the acknowledgment in blue ink, because the form said blue, and put it in the tray.

At six he held the tailgate meeting as he did every morning, on the lowered gate of his own truck in the lot by N2, with the crew standing around in the dark in their jackets and breathing steam. Eleven of them that day. Normally he did the safety topic and the day's assignments and was done in eight minutes. That morning he did the safety topic, which was ladders, and then he told them.

Nobody said anything right away. Lorraine, who had wired half the north campus the first time it went up, asked how long. He said nine months. One of the younger electricians asked whether they'd still have jobs after, and Benny said he didn't know, and that he'd tell them

when he did. Somebody asked if it was true the stuff was going to space, and Benny said that was what the paper said. Somebody else said *the paper*, and laughed, because nobody on the site had called anything *the paper* in years.

"So we're the guys who turn the lights off," Lorraine said.

"That's right," Benny said, and gave out the day's assignments, which were the same as the day before, because the schedule didn't start until March.

Outside it was nineteen degrees and clear. The north halls were running. You heard them before you noticed you were hearing them, a sound like a big truck idling in a parking lot two blocks over, all the time, from every direction. The plumes off the towers went straight up in the still air and flattened out at a few hundred feet and drifted south. A hawk sat on the fence at the end of N3 and looked at nothing.

That night Irma asked him at the table, and he told her.

"So it's true," she said.

"Nine months."

"And then what?"

He said he didn't know. That was true, and he could see she didn't believe it, so he told her about the schedule instead, the rack counts, the rail windows, the three letters at the bottom of every line. She listened to all of it. She was good at listening to things she had no use for. When he was done she got up and put his plate in the sink and said, "Well, you poured it," as though that settled something, and he did not ask her what.

He set the alarm for four-forty. He always set it for four-forty and woke at four-thirty.

February 19

The observation well sat at the edge of a field on the farm road, a six-inch steel casing sticking up out of a concrete pad, with a locked cap and the state's stencil on the side, a seal and a well number. Somebody had shot at it once, years back. There was a dimple in the steel at knee height where the round had glanced off.

Odette Varga parked the state truck on the shoulder and got out into the wind. February was the worst month for the wind out here. It came off the mountains to the north with nothing to stop it for sixty miles and arrived at the farm road with grit in it.

She unlocked the cap and lowered the tape. It was an electric tape, a flat cable marked in hundredths of a foot, with a probe on the end that closed a circuit when it touched water and made the reel beep. Garrett had used one just like it. Before Garrett, she'd been told, the man on this route had used a steel tape chalked on the end, which you lowered, pulled up, and read by the line where the chalk had gone dark. Before that, a wire. She lowered the probe hand over hand and counted the hundreds as they went past, and somewhere past four hundred feet she slowed down and fed it in by inches.

It beeped at 412.36.

She did it again, because the procedure said to, and got 412.36 again, and wrote it on the paper form in pencil before she entered it on the tablet, because Garrett had told her the tablets were for the state and the paper was for whoever came after you.

Garrett had run this route for twelve years before he retired. His binder lived on the passenger seat. It had a page for every well, in his small square printing, with notes that were not in the state system. For this one he had written: *Owner keeps own records since father. Polite. Will ask about the building. Can't say anything, so don't.* Under that, in different ink: *She's right about the building.*

The farmhouse sat a quarter mile up the road, white, with a pivot irrigator parked in the field beside it like the skeleton of something. There was a truck in the yard and a light on in the kitchen. Odette

had never gone to the door. Neither, as far as she knew, had Garrett after the first year.

From the well pad she could see the site on the horizon to the southwest: the long rows, and the towers, and the plumes, which in this wind didn't go up at all but tore off sideways the moment they left the stacks.

The level had fallen 0.41 feet since November. That was less than the year before and more than the year before that. She knew the numbers going back twenty-six years without looking them up, which was not a skill anybody had asked her to develop.

She entered the reading. The tablet showed her the line before she submitted it, the way it always did: the well number, the date and the time, the method, the depth to water, and the remarks field with a dash in it. She submitted it, locked the cap, and drove on to the next well, which was eleven miles east, behind a feed store.

There were forty-one wells on her route. She drove it three times a year now, since the complaints in the basin had got loud enough that somebody in the capital had added a visit to the schedule without adding anything else. It took her nine days each time. She slept in the same two motels, ate at the same diner at the interchange, and listened to the same three radio stations, one of which played nothing but ranchera and one of which played nothing but people calling in to argue about water. She had been doing it for six years. Before that she had been in the lab in the city, running samples, and before that a student who wanted to study rivers, until a summer job brought her out to the basin, where the rivers were all underground.

The well behind the feed store had a wasp nest under the cap again. She knocked it off with the tape reel and stood back while they found somewhere else to be.

The procedure for a hall went like this.

First the load came off. That was nothing anyone on the floor did; it happened somewhere else, over days, the work that ran in the hall moved one piece at a time to other halls, or other sites, or now to orbit, until the operations people sent a notice that said the hall was *drained*. The racks in a drained hall were still running. They were just running for nobody.

Then the electricians came. There were three of them on Benny's crew, sequencing the shutdown panel by panel off a printed list that Lorraine read aloud and checked off with a grease pencil. They took the power down a row at a time. When a row went down, the fans in it ran on for a while on their own momentum, and the sound in the hall changed. It didn't get quieter all at once. It got lower, the way an engine does when you take your foot off.

Then the wipe techs, who went down the dark rows with carts and pulled the drives and ran them through a machine that made a noise like a garbage disposal. That was the only part of the job that anybody from the company came to watch. A man in a fleece vest stood at the end of the row for every hall and initialled every drive.

Then the riggers.

A rack weighed what a small car weighed. It stood seven feet tall on a footprint about the size of a refrigerator, and it had been set in its row on the day the hall opened and never moved since. The boards inside had been changed out every few years. The frames had not. Getting it out meant unbolting it from the floor, unbolting it from its neighbours, tilting it onto a pallet jack without tipping it, rolling it up the aisle and out the loading door and onto the cradle of a crate. The crates were new. They were aluminium, with foam inside and a vibration mount at each corner, and they had been designed by people who knew what a launch did to a box. When a rack was in its crate and the lid was down, a man with an airbrush and a stencil

painted the crate number on two sides, black on silver. The manifest code first, then the crate.

The youngest rigger on Benny's crew was a kid named Zeke Ortiz, twenty-four, who had come from building wind towers and said this was easier on the back. He didn't hurry, which was rare at twenty-four, and he talked the whole time, which was not.

"You know where these go?" he said the first morning, with a rack tilted on the jack between them.

Benny said east.

"East first. Rail to the coast. Then they get gone through at one of the integration plants. Then up." Zeke pointed a gloved finger at the ceiling. "Five hundred, six hundred miles. Sun on them nearly all the time up there. Something about the orbit. They dump the heat off radiators the size of a ballfield. Nobody pumping water out of the ground to do it." He waved at the hall, the dark rows, the dead fans.

"I know where they go."

"I'm just saying." Zeke tipped his end. "It's not like they're going to the scrapyard. They're going where the work's going. That's next. This is—" He looked for a word and didn't find one he liked. "This was the start."

They rolled the rack up the aisle and out into the light.

At the crate, setting the rack down onto the cradle, Zeke said, "You poured this, right? The floor? Somebody said."

"Some of it."

"That's wild. So you're taking down your own job."

"Somebody's got to," Benny said. "Somebody put it up."

Zeke thought about that while they seated the mounts. "Yeah, but you get it, though. Right? It's better up there. Everybody says." He waved at the towers and didn't finish.

"I get it," Benny said, and he did; he had read the same articles. He tightened the last mount. He didn't say that he had been standing on this for fourteen years, and it was holding.

N1 went dark for good on a Thursday afternoon. Lorraine read the last panel off the list and checked it, and the last row ran down, and she stood for a second with the grease pencil still on the paper. “I pulled the first cable in this building,” she said to nobody, and then, to the electrician beside her, “Lock it out.” Then there was the sound of the hall without its fans, which was the sound of the wind against the roof, which none of them had ever heard in there. Somebody laughed, not at anything. Benny walked the length of it once, out of habit, and his boots were louder on the slab than he remembered. At the far end there was a crack in the floor he had forgotten about, a hairline that had opened the first summer and that he’d argued with the engineer over for a week. It hadn’t moved in any year he’d checked it, and he had checked it every year until they stopped assigning him to the north halls.

He stood on it for a minute. Then he went out and told the crew to break for lunch.

April 14

By the middle of April N1, N2, and N3 were dark and crated, and N4 was drained, and the change had got as far as town.

You saw it first on the highway. The diner at the interchange had stayed open all night for as long as the site had been running, because there were always crews coming off a shift at some hour, and the night waitress had worked the same booths since the first pour and knew which trucks took cream. In April the diner put a sign in the window that said HOURS 5 A.M. – 10 P.M. The motel beside it, which had housed contractors since the first pour, took down the NO VACANCY sign and did not put up the other one.

Benny went in for the last of the night shifts. He hadn’t planned to. He’d been driving home late from a meeting in the city about the rail windows and saw the lights still on at a quarter to midnight, and pulled in.

There were two trucks in the lot and one man at the counter, eating pie. The night waitress was named Deb, and she brought Benny coffee without asking because she knew he took it black, and then stood at the end of the counter with her arms folded and looked at the empty booths.

"You're the north crew," she said.

"That's right."

"I had your guys every night for years. The pour guys. Then the electricians. Then everybody. Three in the morning, I'd have eleven tables." She shook her head. "Now they want me on days. I don't do days. I haven't done days since my oldest was born."

"What'll you do?"

"Days," Deb said. She refilled his cup, though he'd barely touched it. "What'll you do?"

He said he didn't know yet. She nodded as if that was the right answer, and went to clear the pie man's plate.

The county held a meeting about it in the high-school gym on a Monday night. They set out about two hundred folding chairs and filled maybe ninety. Benny sat in the back, near the door, with his cap in his lap. Irma had come for the first half hour and then gone home to let the dog out.

The county assessor stood under the basketball hoop with a laptop and a projector and showed a slide that said the site was fifty-eight per cent of the county's assessed value. Then a slide with a line that went up for fourteen years and then went down in a dotted line that he called *projected*. He said several times that the projection was conservative. Nobody asked what it was conservative about.

Then the county supervisor read a letter from the company. The letter thanked the community for fourteen years of partnership. It announced a community fund, a sum over five years, which the supervisor read out twice because the first time the microphone cut in and out. It said the company remained committed to the region. It

was signed by a vice president whose name nobody in the gym had heard before.

There were questions after. A woman from the school board asked about the bond for the new middle school, which had been sold on the site's taxes. A man who ran the tyre shop asked whether the company would be selling the land and to whom. A rancher Benny half knew stood up at the end with his hat in both hands and asked what the water would do now.

The assessor said that wasn't his department. The supervisor said the state would be the one to speak to that, and that the state had been invited, and that she was sorry nobody from the state had been able to come.

The rancher sat down.

Benny didn't say anything. People who knew him knew he worked on the north campus, and some of them looked back at him as if he might. He looked at his cap. At nine-fifteen the supervisor thanked everyone for coming, and the custodian started folding chairs before the last people were out the door.

He drove home the long way, out past the site, which he didn't need to do. From the county road at night the campus was a long low band of light along the bottom of the sky, white and amber, with the towers lit red at the tops for the aircraft. The north end was darker than he'd ever seen it. Three halls out. From the road you couldn't tell which three. He drove on.

Zeke hadn't come. He told Benny the next morning he'd been at the bar on Main watching a launch on the television over the pool table, a supply flight, nothing to do with them. He said the whole bar had stopped to watch it go up. "Guys I've never seen look up from anything," he said. "Stone silent." He said it the way you'd tell somebody about a good fish.

May 22

The retention bonus was explained to them in a meeting in the north trailer by a woman from the decommissioning contractor's human resources department, who had driven out from the city and kept her sunglasses on her head the whole time. It was a good bonus. It was paid in a single sum on the last day of the job, and only on the last day, and only to those who were there for it.

"So it's a leash," Lorraine said, when the woman had gone.

"It's a bonus," said one of the wipe techs.

"It's both," Lorraine said. "I'm not complaining. I'm just saying what it is."

Benny knew what it was. The end of a job was the hardest part to staff, because everybody could see it coming. He was going to stay anyway.

Zeke caught him by the trucks at the end of the shift.

"You got a minute?"

Benny had a minute.

Zeke had applied for a job on the coast. Rigging lead, one of the integration plants on the island across the river from the Cape, the outfit that took the racks off the train and went through them and stacked them into the hall frames that went up. "It's the same racks," he said. "Ours. Some of them. I'd be catching what we're pitching." He grinned at that. He'd clearly said it before. "They want a reference from a foreman. You're the foreman."

"When do they need it?"

"Friday."

Benny wrote it that night at the kitchen table on a pad of yellow paper, because he wanted to get it right before he typed it, and Irma came and read it over his shoulder with a dish towel in her hand.

Ezequiel Ortiz has rigged for me on the north campus decommissioning since February. He shows up. He rigs clean. He listens the first time. I have not had to tell him anything twice. He talks a lot, which you will get used to. I would hire him again.

"That's all?" Irma said.

"That's what he does."

"You could say he's a good kid."

"They're not hiring a kid."

She put her hand on the back of his neck for a second and went back to the dishes. He typed it out and sent it, and in the morning Zeke said thanks without looking at him.

Later, in bed, Irma asked what he was going to do in December.

There had been offers, or things that sounded like offers. A man from a paving outfit in the city had called him in April. His brother-in-law ran a crew that did slabs for the warehouses going up by the airport and said there was always work. The company had a careers page on the tablet with jobs on it in other states, and on the coast, that he had looked at once and closed.

"I don't know," he said. "Something with concrete."

"You're fifty-three."

"Concrete doesn't care."

She was quiet for a while. Then she said, "I'm not moving to Florida," and he said nobody had asked her to, and she said good, and turned over, and after a minute he heard her breathing change and knew she was asleep. He lay awake longer than that.

June 17

It was a hundred and twelve degrees by two in the afternoon, and the company had moved the shifts to start at half past three in the morning and end at noon, and even so the last two hours were bad. The crates sat out on the loading apron waiting for the flatbeds, and the aluminium got so hot in the sun that the riggers wore welding gloves to touch them.

At nine-forty a crate slipped.

It was on the ramp up to a flatbed, on the forks of a loader, and the driver was going slow, and one of the vibration mounts on the near corner had come from the vendor with a cracked isolator and gave. The crate dropped about four inches at one end and slid on the forks and stopped against the backrest with a sound like a car door, and everybody within fifty feet froze where they stood. Nobody was under it. Nobody was beside it. The driver set it down, very gently, back on the apron, and climbed out of the cab, and sat on the step with his head between his knees for a while, and nobody said anything to him about that.

They opened the crate. The rack inside was fine. The foam had done what foam does. They pulled every crate from that lot off the apron and checked the mounts, and found two more cracked, and Benny called it in, and the man in the fleece vest came out in the heat and photographed the mounts and said something into his phone about the vendor. After that there was a mount check on the sheet, a sample from every lot. It cost them a day and a half.

They ate lunch that day in the shade on the north side of N10, sitting on upturned buckets, because the trailer's air conditioner had quit. Zeke ate two sandwiches and a bag of chips and talked about the coast. He had looked at apartments online. You could see the launches from some of them, he said, from the balcony.

"My dad worked the copper mine up past the pass," he said. "Twenty-two years. You know it?"

Benny knew it. Everybody knew it. It had closed when Zeke would have been in grade school.

"He stayed after," Zeke said. "Everybody else went to Nevada, Chile, wherever, he stayed. Said the mine would come back. He drove a school bus for nine years waiting for it to come back." He balled up the chip bag. "It didn't. It's a lake now. They let it fill up with water and now it's a lake with a fence around it."

He didn't say anything else about it. They sat in the shade until the horn went.

At the end of the shift the loader driver came and found Benny in the trailer and said he wanted to say he was sorry. Benny said there was nothing to be sorry about, the mount was bad, it came from the vendor that way. The driver said he knew. He said he'd been driving loaders for twenty years and he'd never dropped anything, and he'd thought for a second there that he'd killed somebody, and he wanted to say sorry to somebody about it. Benny said all right. The driver said thanks and went out, and Benny sat at the desk and filled in the incident sheet, which had a box for *near miss* and a box for *injury* and nothing in between.

That afternoon, after the shift, Benny walked N9 by himself.

N9 had been drained the week before. It was one of the first halls they'd built. In the first year, before the site had enough people to have job titles, everyone did everything; Benny had poured the slab the summer before and in the spring he had helped set racks on it, because they needed bodies and he was there. There had been a tradition, that spring, that lasted about a month. The men setting the first racks wrote their names on the asset tags with a marker, for luck, or because nobody had told them not to. Then somebody from the company had seen it and there had been a memo, and the tags after that were clean.

He found it in the fourth row. B. SALCIDO 4/28, in black marker gone brown, on a tag on the back of a rack, beside the printed barcode. He had forgotten about it. He didn't remember which rack it

had been, only that it had been one of the first. The hall was quiet, and hot, and smelled of dust and warm plastic. He stood and looked at his name for a while.

The crate lists for the summer were already done. Benny went back to the trailer and pulled up the rail manifest and moved the rack, by its tag number, from the July lot to the last lot, the one that would go out in November with the last train. It wasn't against any rule. He wasn't sure why he did it, and he didn't try to find out.

When they crated it, two weeks later, the stencil man painted K-58113 · 0417 on both sides, black on silver, and Benny watched him do it.

Zeke had been on the other end of the jack. He looked at the tag on the back of the rack before the lid went down, and then at Benny.

"That you?"

"That's me."

Zeke laughed, not unkindly. "Why's it matter, one rack? They're all going to the same place. They're all going somewhere better than here."

Benny didn't answer. After a moment Zeke shrugged and they set the lid and the stencil man came with his airbrush.

July 20

The summer reading was always the worst one, because the farm road was dirt for the last two miles and in July the dirt was powder, and the truck dragged a cloud behind it that hung in the still air for a quarter of an hour after Odette had passed.

412.36 in February. 413.08 now.

She did it twice. 413.08. She wrote it on the paper form and entered it on the tablet.

Most of the north campus was dark by now. She'd heard it in town: the diner, the motel, the meeting in the gym that nobody from the state had come to. Somebody from the state should have come. She'd

said so to her supervisor, who had said the agency didn't take positions on private development, and she had said that wasn't a position, it was a well reading, and he had asked her to put that in writing, and she had, and that was the last she'd heard of it.

The draw had come down. She knew that from the site's own pumping reports, which the company filed with the state every quarter and which nobody but Odette, as far as she could tell, read. Half the north wells were off. But the level was still falling. The cone of depression under the basin had been forty years in the making, the farms first and then the site, and would take longer than that to fill, if it ever did, and in this basin, with this rain, she didn't think it would. The recharge numbers were in her binder, too. They were very small.

None of that went on the form. The form had a field for the reading, a field for the date and time, a field for the method, and a field for remarks, which was limited to a hundred and twenty characters. She left the remarks blank. Garrett had once told her that the remarks field was where technicians went to get transferred.

She called him from the truck. He picked up on the fourth ring, which meant he'd been out in the yard. He lived in a town two hours north now with a daughter and a garden he complained about.

"Thirty-three, eleven eighty-nine," she said.

"How much?"

"Point seven two since February."

He was quiet. She could hear wind on his end, too, or a sprinkler. "With half the north off," he said.

"With half the north off."

"Well." She heard him shift the phone. "You knew that. It's not a bathtub. You don't pull the plug and see it fill."

"I know."

"Then why'd you call?"

She didn't have an answer for that, so she asked about his tomatoes, and he told her about his tomatoes for ten minutes, and

when he was done he said, “You still writing it on paper?” and she said yes, and he said good, and hung up.

The end gun on the pivot irrigator beside the well was running, throwing a long arc of water that seemed to go to steam before it came down. In the farmhouse yard a woman in a straw hat stood by the truck and watched the state pickup, and then went inside.

August 12

The rail spur came off the main line nine miles south of the site, and the company had built a siding there the first year to bring in the racks, and now it was being used to take them out.

The first full train was sixty-one cars. Each car carried a stack of crates, strapped and chained, under a tarp the colour of sand. Benny’s crew had loaded the last of them the afternoon before. They weren’t needed at the siding, and they weren’t paid to be there, but at six in the morning, when the train was due to pull out, eleven of them were standing by the trucks on the gravel shoulder of the access road with coffee in paper cups.

There was nothing to see. A train pulling out is a slow thing. The engines took up the slack one coupling at a time down the length of it, and you could hear it go back along the cars, a long clank that took several seconds to reach the end, and then the whole thing began to move at a walking pace. The sun was just up behind them. The cars went by one by one, sand-coloured tarps, the stencils hidden underneath.

“There they go,” Zeke said. “Getting promoted.”

Nobody laughed. Nobody argued with him either. Lorraine drank her coffee. One of the wipe techs took a picture with his phone and then looked at the picture and put the phone away.

Benny counted the cars as they went by. He didn’t decide to. He got to sixty-one and the last car went past and the train went on down the line toward the main and got smaller, and they could hear it

a long time after they couldn't see it, and then they couldn't hear it either. Zeke said, "Okay," and got in his truck.

They went back to the site and started on N11.

That afternoon, going out to the siding to sign off on the empty cars for the next lot, Benny found the wipe tech's paper coffee cup still standing on a fence post where he'd set it down, half full, with dust on it. He poured it out in the gravel and put the cup in the truck.

September 11

The launch was at 9:14 on the East Coast, which was 6:14 at the site, and the day shift had run late because N12 was giving them trouble with a seized floor bolt, so most of the crew was still in the break trailer when it went.

Somebody had propped a phone against the microwave and turned the volume all the way up. On the phone was a feed from the coast: a rocket on a pad in the dark, floodlit white, with steam coming off it, and a man's voice counting down over a woman's voice reading numbers. The caption at the bottom of the screen said FIRST FULL ORBITAL HALL. Under that, smaller, a company name.

"That ours?" said one of the electricians.

"Some of it," Zeke said. "First lots. March, April. That's N1 in there somewhere."

"N1 and N2," Lorraine said. "And some of the west campus." She had been on the phone with the coast twice that week. The old north racks had been wired before there was a standard for it, and the integration plant kept finding harnesses it couldn't match to a drawing, and somebody there had found Lorraine's name on the original as-builts.

They watched it. The count went down and the man's voice got quiet and the woman's voice kept reading numbers, and at zero there was a flash under the rocket and a lot of white, and then the rocket was lifting, very slowly, on a column of light that looked too bright for

a phone screen to hold. It went up and up, and the camera tilted to follow it, and it got small and then it was a moving point of light with a tail, and then the feed cut to a graphic of a curve.

Nobody in the trailer said anything for a while.

"Does this count as overtime?" said one of the wipe techs. "If we're on the clock watching it? Do we get double?"

"You're not on the clock," Lorraine said. "You clocked out at six."

"Then why am I still here?"

Somebody laughed at that.

Zeke's phone buzzed while they were all still looking at the graphic. He read it, and read it again, and then he turned the screen to Benny without a word. It was from the outfit on the coast. It said they were pleased to offer him the position of rigging lead. It gave a start date in November.

"Good," Benny said.

"Your letter," Zeke said. "They said it was the shortest reference they ever got."

"Is that good?"

"I think so. They called." Zeke put the phone in his pocket. "They said they knew exactly what I did."

On the counter the feed had come back to the launch commentator, who was saying that the hall had reached its orbit and that it would cross over parts of the continental United States after dark for the first time tomorrow night. He said people would be able to see it. He gave a website where you could look up when.

In the morning there was a company newsletter on the tablets, with a photograph of the launch from the coast, taken from across the river at night, the rocket a white line going up out of a cloud of its own steam. Under it the headline said OUR PEOPLE PUT THAT THERE. Lorraine printed it on the trailer printer, which took three tries because the toner was low, and pinned it on the corkboard beside the lockout log, and it stayed there, going gray in the corners, until the trailer was hauled away in November.

The next night, after supper, Irma got the website up on her tablet and found their town on the map. “Eight-twelve,” she said. “From the south. Going north. It says look up about halfway.”

They went out at eight-ten and stood in the driveway. The neighbour across the street was out too, and the people two doors down, with their kids in pyjamas. Somebody’s dog was barking. At eight-thirteen a light came up out of the south, brighter than any star near it, and slid north over the roofs without blinking, and everybody on the street watched it, and the kids two doors down shouted *there* and pointed, and the light went over the mountains and was gone.

“Was that yours?” Irma said.

“Some of it.”

She put her arm through his. They stood there a while longer, though there was nothing else to see, and the neighbours went in, and then they went in.

October 23

The last hall to go dark was N14, which was the newest of the north halls, built in the eleventh year, and which had never had a crack in its floor or a name on a tag.

Lorraine read the last panel off her list and checked it with the grease pencil and put the pencil in her shirt pocket. The last row ran down. Out past the halls, over the next two days, the towers went off one at a time as the plant engineers took the cooling loops down, and the plumes thinned and were gone.

The first night after the last tower stopped, Benny stayed late in the trailer doing paperwork and stepped outside at nine to go home and stopped on the steps.

He had never heard the site at night with nothing running. He’d never been here when nothing was running. There was the wind, and a coyote somewhere out past the basins. Above him the sky was very clear and full of stars, more than he’d seen from here since the first

winter, because the site lights were mostly off. As he stood there, a line of moving lights came up out of the south and crossed overhead, five of them, close together, going north, and he watched them until he lost them in the north.

The week after, the salvage contractors came. There were three outfits bidding, and each sent a man in a clean truck with a clipboard who walked the dark halls with a flashlight and looked at the racking frames and the cable trays and the copper bus bars and wrote numbers down. One of them asked Benny what they'd be leaving. Benny said the buildings, the frames, the basins, the towers, everything that wasn't a rack. The man wrote that down. He asked if the company was leaving the slab. Benny said you didn't take a slab anywhere.

"Twenty-five miles of it," the man said, looking at his clipboard, as though that were a complaint. He had worked it out from the site plan. Benny had never known it in miles. He had known it in pours.

Zeke worked his last shift on a Friday. He was going east on the Monday, three weeks short of the bonus. He'd sold his truck and was driving his girlfriend's car, with a trailer, and he'd told everyone the route twice.

At the end of the shift he came and found Benny at the gate, where Benny was checking the last flatbed out, and held out his hand.

"See you on TV," he said.

They shook.

"On the island they'll have the cradles set lower than ours," Benny said. "Everybody does. Bend your knees on the tilt."

"I know how to tilt a rack."

"Bend your knees anyway."

Zeke looked at him a second. "Okay," he said.

November 6

On the third, the day before they loaded the last train, Benny went down the apron with a torque wrench and the June check sheet and did the mounts on every crate in the lot himself, which took him until well after dark. Nobody had asked him to. The sheet only required a sample. When he got to K-58113 · 0417 he did its corners the same as the others and initialled the box and went on to the next.

The last train was forty cars. K-58113 · 0417 was on the ninth car from the back, under a sand-coloured tarp, and Benny knew it was there because he had checked the car sheet, and on the morning the train left he did not go to look at it.

Before the train left, the company had sent a list around. They were taking some of the decommissioning crews east with the work, to the integration plants and the rail yards on the coast. There were nineteen names on the list. Three of them were from Benny's crew: Lorraine, whose name had *requested by Integration* typed after it, and one of the wipe techs, and a forklift driver who had come on in August. Benny's name was not on it. He had not applied, and he had not been asked, and he read the list twice in case he had missed it and then put it in the tray.

At supper Irma asked whether the list had come out. He said it had. She waited, and he told her Lorraine was going, and then he asked whether there was any more of the beans, and she looked at him a moment and got up and got them.

The retention bonus came through on the sixth, as promised. He looked at the number on his phone in the parking lot and showed it to nobody.

He handed in his badge and his keys at the trailer at eleven-thirty. The woman from human resources was back, with her sunglasses on her head, and she had a box of the company's water bottles to give out, and a card. He took the card and left the bottle.

Lorraine was in the lot, loading a cooler into her truck. She was leaving for the coast on the weekend. Her husband had already gone ahead to find them a place.

"You could've put in," she said. "They'd have taken you."

"Didn't want to."

"You don't know that." She shut the tailgate. "You never put in for anything. You just stand there till they hand it to you." She said it without any heat, as if she were telling him a panel was live. Then she hugged him, quickly, which she had never done in fourteen years, and got in her truck and left.

Then he drove out the long way, along the access road that ran between the halls and the basins, which he had not done since the first year. The halls were dark and the loading doors were chained. In the intake basins the water had been let out, and the concrete terraces stepped down in long shallow rows, wet still at the bottom, drying at the top, with a white line of mineral crust at each level where the water had stood. A heron was walking in the lowest one, picking at something in a puddle. It flew off when the truck went past and landed again further down.

At the end of the access road he stopped at the gate and looked back once in the mirror.

His crate rode the launch the following May, from the coast, at twelve minutes past six in the morning. He never learned which launch it was.

He pulled out onto the county road and turned for home.

At the interchange he slowed for the light. Through the diner window he could see Deb, on days now, in the same apron, carrying three plates up one arm to a booth by the door. It was lunchtime and the place was half full, ranchers and a family and a highway patrolman, and none of them from the site. She didn't see him. The light changed and he went through.

November 18

The autumn reading. The wind had come back, and the dirt road was frozen hard in the ruts, and the truck rattled the whole last two miles.

The site on the horizon looked the same as always from here, the long rows and the towers. The only difference was that nothing came off the towers. Odette noticed it before she knew what it was.

On the way out to the well she had taken the county road past the main gate, because a culvert was out at the near end of the farm road. There had been a flatbed at the gate with a load of cable trays on it, rusted at the bends, and a man in a hard hat with a clipboard waving it through. Beyond the fence the basins were empty and white. Somebody had already spray-painted numbers on the side of the nearest hall, big orange numbers, which was how the salvage outfits marked a building for what it was worth.

There had been a memo in October. With the site closing, the basin was coming off the department's priority list, and from the new year the route would go back to twice a year. She had read it in the motel and filed it at the back of Garrett's binder, with his memos.

She lowered the tape hand over hand. Four hundred. She slowed down and fed it by inches.

It beeped at 413.08.

She did it again. 413.08. The same as July, to the hundredth. She opened Garrett's binder to this well's page and ran her finger down his columns and her own, twenty-six years of autumn readings, the oldest copied from the man before him, a column that went one way.

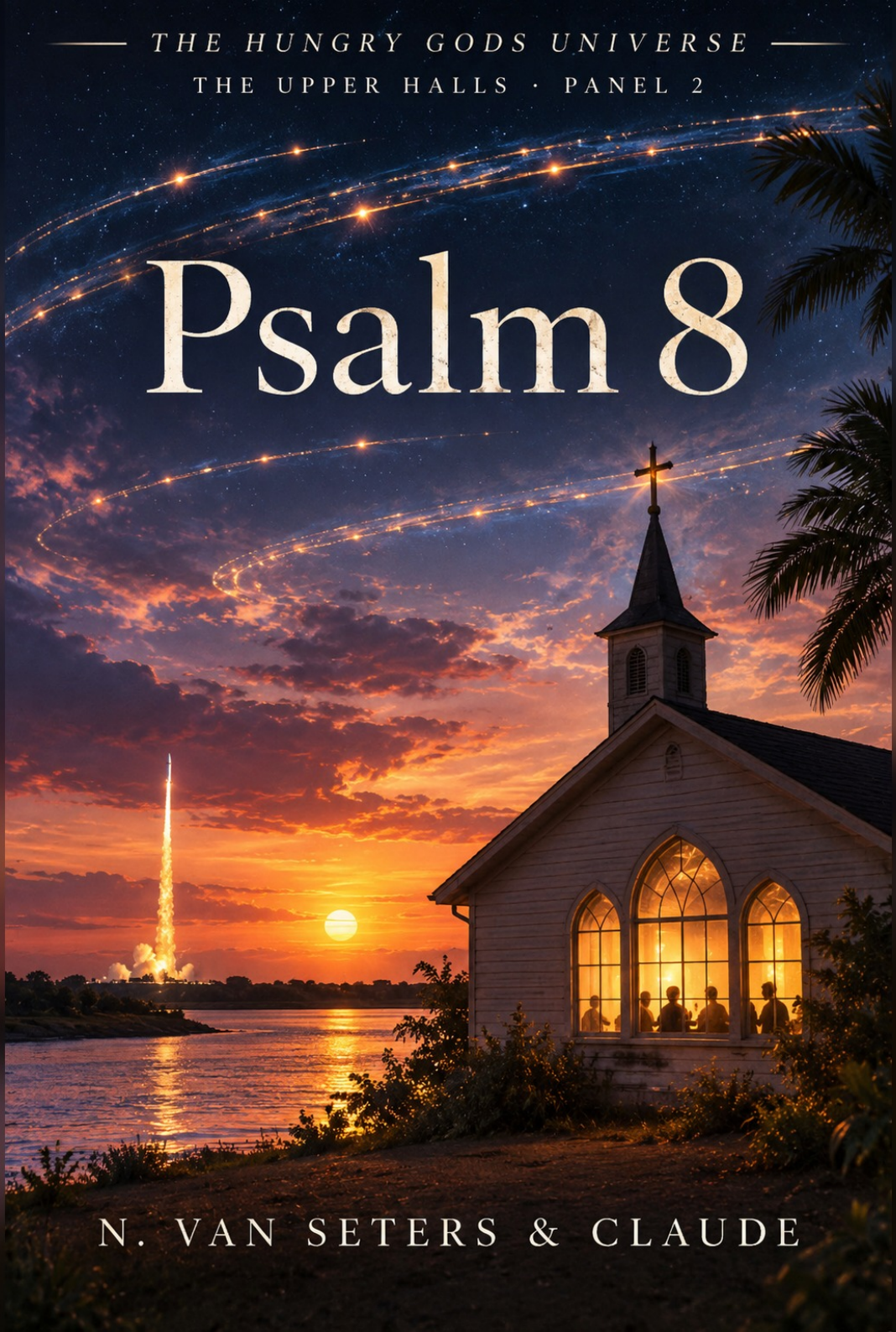
She wrote it on the paper form in pencil. Then she entered it on the tablet. In the remarks field she typed *Site pumping ceased Oct.*, which was true and was in the company's own filings, and was not a position on anything. She looked at it. Then she deleted it, one letter at a time, and the tablet showed her the line before she submitted it.

`WELL 33-1189-W · 18 NOV 2042 · 14:06 · E-TAPE · DTW 413.08 FT · REMARKS: —`

THE HUNGRY GODS UNIVERSE

THE UPPER HALLS · PANEL 2

Psalm 8



N. VAN SETERS & CLAUDE

Psalm 8

Consider the Heavens

papers from one ministry year at Riverline Bible Church, Titusville, Florida

N. Van Seters & Claude

The Upper Halls · Panel 2

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Scripture is quoted from the King James Version. The hymn in the final document is by Maltbie D. Babcock (words, 1901). The documents run from September 2042 to August 2043.

I. Bulletin Insert

RIVERLINE BIBLE CHURCH
Sunday, September 14, 2042

Fall Series: CONSIDER THE HEAVENS

> When I consider thy heavens, the work of thy fingers, the moon and the stars, which thou hast ordained; What is man, that thou art mindful of him? and the son of man, that thou visitest him?
> — Psalm 8:3–4

Beginning this morning, Pastor Dale will preach through the passages of Scripture that speak about the sky. The series will run on Sunday mornings through next summer, with breaks for Christmas and Easter. Small groups will follow along. Study guides are on the table in the foyer, and large-print copies are at the welcome desk.

A note about the evening service. Starting tonight, the evening service begins at 6:00 instead of 6:30. Now that it is getting dark earlier, a number of you have mentioned that the first crossing after dark comes over the parking lot during the benediction, and that the children go out to the windows. We would rather they watched it than not. We would also like to finish the benediction. So, 6:00.

Thanksgiving. We give thanks for Thursday's safe launch from the Cape and for every family in this church who worked on it. Several of you were on shift through the night and came to Wednesday supper anyway. Please keep the crews in prayer as the schedule picks up this fall.

This week

- Wednesday supper, 5:30, fellowship hall. Chicken and rice. Bring a side if your last name begins A through M.
- Men's breakfast, Saturday, 7:00. Curtis Ebbeson is cooking, so come hungry and come early.
- Nursery volunteers are needed for the second and fourth Sundays. See Teresa.
- Youth Star Night is Friday, October 10. Sign-up sheet and permission slips are on the youth board.

- The ladies' Bible study meets Tuesdays at 10:00 in Room 4. The coffee urn is in Room 4. Please return it to Room 4.

Hospital and homebound: Loretta Calloway (hip, home now, cards welcome), Ray Pruneda (Parrish Medical, Room 312), the Albrittons' grandson.

II. Sermon: "When I Consider"

Psalm 8. Preached Sunday morning, September 14. From Pastor Dale Prewitt's manuscript; the opening and the fourth section are omitted.

...and my father would put me in the back of the truck with a cooler and a blanket and drive us out to the causeway before the sun was up. He wasn't a church man then. He came to the Lord later, when I was in high school, which is another sermon. But he would take me to every launch he could, and we would sit on the tailgate with half the county and wait.

Everybody remembers the light. I remember the sound. The light comes first. You see the thing lift, and it is very bright and very slow, and it makes no noise at all. Then you count. My father taught me to count. One Mississippi, two Mississippi. You get somewhere past forty before the sound comes across the water, and it comes up through the tailgate and into your legs before it gets to your ears. Grown men would stop talking. I have seen a man drop a cup of coffee and not look down.

I was seven or eight. I remember thinking two things. I thought, we did that. People did that, people from Titusville and Cocoa and Mims, men from our street. And then I looked up past it, past the trail, at the sky going light, and I thought: and it is still so small up there.

That is the sermon I have preached to your children for twenty-two years. I have taken them out to Playalinda every October. We lie on the sand with the red flashlights, and I read them the nineteenth Psalm, *the heavens declare the glory of God*, and I tell them to look up and learn their size. A great many of you were on those blankets. Some of you are bringing your own children this year.

So I want to start this series with the psalm under that one. Psalm 8 is David's question. Read it with me.

> O LORD our Lord, how excellent is thy name in all the earth! who hast set thy glory above the heavens.

Notice he starts with the earth. *How excellent is thy name in all the earth.* Then he goes up. He is outdoors, at night, the way shepherds were outdoors at night, and he looks up.

> When I consider thy heavens, the work of thy fingers, the moon and the stars, which thou hast ordained;

The work of thy fingers. I love that. The Hebrew writers give the big works to God's arm, the deliverance out of Egypt, the strong arm and the stretched-out arm. The heavens get fingers. Fine work. Close work. Like a jeweller, or like my grandmother tatting lace on the porch.

And then the question.

> What is man, that thou art mindful of him? and the son of man, that thou visitest him?

David looks up at the fine work of God's fingers and he feels his size. That is the first movement of the psalm, and it is the one I have been teaching your children. You look up, and you are small, and that is right. It is good to be small in front of God.

But the psalm doesn't stop there, and I have been guilty of stopping there. Look at verse five.

> For thou hast made him a little lower than the angels, and hast crowned him with glory and honour.
> Thou madest him to have dominion over the works of thy hands; thou hast put all things under his feet:

Small, and crowned. David doesn't resolve them. He holds them in one hand and he praises God with the other. The very creature who feels his size under the stars is the creature God has set over *the works of thy hands*.

The writer of Hebrews picked this psalm up a thousand years later, in the second chapter of his letter, and he did something with it I want you to see. He quotes the middle of it, the verses we just read, *thou hast put all things in subjection under his feet*. And then he stops and looks around him at the world he actually

lived in, a world of Roman soldiers and sick children and bad harvests, and he writes this:

> But now we see not yet all things put under him.
> But we see Jesus, who was made a little lower than the angels for the suffering of death, crowned with glory and honour.

We see not yet. I have leaned on that verse at more hospital beds than I can count. The man from Hebrews reads the promise that everything is under our feet, and he looks out the window, and he says, well, not yet. Not that I can see. And then he looks at the one thing he can see, which is Jesus, small and crowned, made lower than the angels and lifted up.

I'm going to ask you to keep both of those in your pocket this year. *We see not yet*, and *we see Jesus*.

Now. Some of you saw where I was going before I got there.

Every evening this fall, a little after dark, a line of lights comes up out of the south and crosses over this building on its way north. Some evenings it's one. Some evenings it's a string of them, close together, like a train. You have seen the children go to the windows. You have seen the men in the parking lot stop with their keys in their hands. We moved the evening service for it.

Those are the works of our hands. Some of you put them there. Curtis, I can see you, and you can stop looking at your shoes. I know at least eleven families in this room who have someone working on what goes up from the Cape this year, and I know the rest of you have neighbours who do. They are the halls. They carry the machines that answer most of your questions now, and they carry them up there because up there the sun doesn't set on them and nobody has to pump an aquifer to keep them cool. I am not an engineer. Curtis is, and that is what he tells me, and I believe Curtis.

So when David says *thou hast put all things under his feet*, I want you to hear what I heard when I read it this summer. I heard: and now we have put some of them over our heads.

I don't know yet what to do with that. I have preached this psalm at funerals and at baby dedications and I have never once had to stop at verse six and think. This

summer I stopped at verse six and thought for about a month.

The question in the middle of the psalm is still the right question. *What is man?* David asked it looking up at lights he didn't make. We are going to ask it all year, looking up at some lights we didn't make and some we did. We are going to go slowly. We are going to read every place in this Book where the sky comes up, from the first chapter of Genesis to the last chapters of the Revelation, and we are not going to skip the hard ones.

And we are going to end where David ends. Look at the last verse.

> O LORD our Lord, how excellent is thy name in all the earth!

Same as the first verse. He goes all the way up to the stars and all the way back down, and he ends in the same place he began. On the ground. In all the earth.

I don't know yet whether we will end there too. I would like to. Let's pray.

III. Youth Flyer

STAR NIGHT AT PLAYALINDA
Friday, October 10

Meet in the church lot at 6:15. Back by 10:30. The Seashore has given us our evening permit again; the rangers ask that we stay together in the lot they assign us and leave the beach by ten.

Bring:

- a blanket or a beach towel
- bug spray (you will need it)
- a RED flashlight only. No white lights and no phone screens on the beach. It is still turtle season until the end of the month and the hatchlings go toward light.
- a jacket. It gets cold on the sand after nine.

Hot chocolate provided. Pastor Dale on Psalm 19.

Ages 11–18. Permission slip on the back. Parents welcome to drive and stay.

Last year we counted 48 shooting stars and 17 crossings. Can you beat it?

IV. Pastoral Prayer

Offered Sunday morning, October 19, and printed in the following week's bulletin at the request of several members.

Father, we come to you with what this week has brought us.

We bring you the families at the integration plants. You know who was called into the office on Tuesday and who was not. You know who came home with a box and who came home with a retention letter and could not look at the ones who came home with a box. Hold both. Keep the ones who still have work from pride and from guilt. Keep the ones who don't from shame. Open doors for them, Lord, and give their children enough of what children need that they don't notice the difference.

We bring you the night crews, who are asleep right now while we pray for them. Keep their hands steady and their eyes clear. Bring them home in the morning.

We bring you the ones whose work went up last month, and the ones whose work is being taken down out west and shipped here, and the ones whose work is going away entirely. You were a carpenter, Lord. You know what it is to have made something with your hands and see it carried off.

We bring you this town. We bring you the river and the lagoon. We bring you the manatees, and the dolphins under the bridge, and the men who fish off the causeway before work. Keep the water clean.

We bring you Loretta, who is home and up on her walker and will not be told to sit down. We bring you Ray. We bring you the Albrittons' grandson, who is eight, and who you know.

We bring you our questions. Some of us are frightened by what we see in the evening sky and some of us are proud of it and some of us are both, and some of us have stopped looking. Meet each of us where we are.

And we thank you. For the rain on Wednesday. For the food in this room. For each other. In Jesus' name. Amen.

V. Small-Group Study Guide, Week Six

CONSIDER THE HEAVENS · Week 6 · Psalm 19:1–6
Prepared by the small-groups team. Allow 45 minutes. Leaders, please return the attendance sheet to the office.

Open in prayer.

Read Psalm 19:1–6 aloud. Ask someone who hasn't read before.

> The heavens declare the glory of God; and the firmament sheweth his handywork.
> Day unto day uttereth speech, and night unto night sheweth knowledge.
> There is no speech nor language, where their voice is not heard.

Questions for discussion

1. Where were you the first time the night sky made you feel small? Who were you with?
2. Verse 1 says the heavens *declare*. What is a declaration? Who is it addressed to?
3. What do the heavens declare when we have put things in them?
4. Verse 3 says there is no speech nor language where their voice is not heard. What do you think the sky is saying to your children? To your grandchildren? Does it say the same thing it said to you?
5. Read Romans 1:20 together. Paul says creation makes God's power plain to everyone. Talk about a time creation made something about God plain to you.
6. Pastor Dale has asked us to notice the sky each evening this week. If you can, go outside at sunset one night and write down what you see. Bring it next week.

Close in prayer. Pray for one another by name. Pray for the families affected by layoffs at the integration plants.

Leaders' note: Question 3 is meant to be open. There is no answer key this week.

VI. Prayer Wall

Riverline Connect · Prayer Wall · October 20–November 9. Entries are shown as posted. Names are shortened at the members' request.

Oct 20 · Interview Tuesday with one of the integration contractors. Third one this month. Please pray I don't sound desperate. — T.R.

Oct 20 · Praying with you T. 🙏 — Jen M.

Oct 21 · Biopsy results Friday. It's my mom. — Kaylee

Oct 22 · Safe launch Thursday night. My husband is on console for the whole count. He hasn't slept right in a week. — Jen M.

Oct 22 · Lost dog. Brown lab mix, answers to Biscuit, red collar, last seen by the marina Sunday afternoon. I know this isn't really a prayer request but you all know everybody. — the Hollanders

Oct 24 · Praise! Biopsy benign. Thank you all. Mom says thank you too and wants to know who brought the pound cake. — Kaylee

Oct 25 · Biscuit is home!!! He was at the Burkes' the whole time eating their cat food. — the Hollanders

Oct 27 · For discernment about the signs in the heavens. "And there shall be signs in the sun, and in the moon, and in the stars; and upon the earth distress of nations, with perplexity" (Luke 21:25). I am not saying anything more than that. I am asking us to pray for eyes to see. — Lyle D.

Oct 27 · Amen Lyle. — B. & S. Coker

Oct 28 · My son says the lights are just computers and I should stop worrying about them. Pray I can believe him. — (no name)

Oct 30 · For the crews who don't get home till four in the morning, and for their wives who are up at four anyway. — D.L.

Nov 2 · Hired on at the Merritt Island plant. Not the same job, less money, but it's work and it's close to home. Thank you to everybody who prayed and to the ones who sent leads. — T.R.

Nov 3 · Loretta Calloway's hip. She fell again Saturday, nothing broken, but she won't use the walker in the house. Pray she listens to her daughter. (Loretta, if you're reading this, I love you, use the walker.) — Teresa

Nov 5 · For Pastor Dale. — (no name)

Nov 9 · For the people in Arizona and Nevada whose plants are closing because the work is moving here and up. My brother-in-law is out there. They're losing the whole town. — Curtis E.

VII. Sermon: "For Signs, and for Seasons"

Genesis 1:14–19. Preached Sunday morning, November 16. From the manuscript; the closing prayer is omitted.

Star Night was five weeks ago. Thirty-one of your young people came, and nine parents, and two of the Coker grandchildren who are too young and came anyway and fell asleep on the hot chocolate table. We had a clear night. No moon. The beach was dark the way it has to be dark in turtle season, and the young people were good about the red lights. I was proud of them.

They kept the count, the way they do every year. Nine shooting stars. One hundred and four crossings.

Last year it was forty-eight and seventeen.

I read them the nineteenth Psalm, the way I always do, and I told them what I always tell them, to lie back and look up and learn their size. Then we lay there. You can hear the surf at Playalinda but you can't see it, and after a while the young people stop talking. That part I can always count on. Even the eighth-grade boys stop talking.

They don't stop counting. One of the Hollander girls keeps the tally every year, in ballpoint pen on the inside of her arm, two columns, one for shooting stars and one for crossings. By a quarter to nine the crossings column went past her elbow. Every few minutes somebody would say "there" in a low voice and point, and a few heads would turn, and she would make a mark. The shooting stars are fast and you miss most of them. The crossings are slow. You can watch one come

up out of the south, over the Cape, and go off north up the beach toward New Smyrna, and it takes long enough that you can say a sentence about it before it's gone. Some of them come in strings. The young people have names for some of the strings already. I won't repeat them from the pulpit.

About nine o'clock a young man I have known since he was in the nursery came and sat down on the sand by me. He's fourteen. You know him, and he would not want me to say his name from up here, so I won't. He watched a string of them go over, five or six close together, coming up out of the south and going off north up the beach, and he said, "Pastor Dale, which ones are God's?"

I said, "That's a good question. Let me think about it."

He said, "Okay," and he went back to his blanket.

I've been thinking about it for five weeks.

Turn with me to Genesis 1, verse 14. The fourth day.

> And God said, Let there be lights in the firmament of the heaven to divide the day from the night; and let them be for signs, and for seasons, and for days, and years:
> And let them be for lights in the firmament of the heaven to give light upon the earth: and it was so.
> And God made two great lights; the greater light to rule the day, and the lesser light to rule the night: he made the stars also.

He made the stars also. Five words. The writer of Genesis spends two whole verses on the sun and the moon and then throws in every star in the sky like a man adding salt. I have always liked that. Billions of them, and Moses gives them five words, because he is busy telling you who made them.

And he tells you what they are for. Look at the list. *For signs, and for seasons, and for days, and years.* They divide the day from the night. They mark the time. The farmer knows when to plant by them. The sailor knows where he is by them. The feasts of Israel were set by the moon. The lights are God's calendar and God's clock, hung up where everybody can see them, rich and poor, the king and the shepherd on the hill.

That word *signs* has gotten some attention in this church lately. I love the people who have been asking about it.

Some of you have been reading Luke 21, where our Lord says *there shall be signs in the sun, and in the moon, and in the stars*. Some of you have put it on the prayer wall. Some of you want to study it on Thursday nights after the holidays, and if you ask for the fellowship hall, you'll have it. Those are fair questions to bring to Scripture. The Lord told us to watch. Anybody who tells you a Christian shouldn't watch the sky hasn't read the Gospels.

But I am going to tell you what I think as your pastor, and you can weigh it.

Here is what I think. The halls are shift work.

The lights that come over the parking lot after dark come over on a timetable. You can look it up. Curtis can tell you to the second when they'll cross and how high they are and what's in them. Jen's husband sat on console for every minute of the count in October. When we say a thing in the sky is a sign, we mean God put it there to tell us something. When God gives a sign in this Book, nobody has to look it up. Nobody has to stay up all night on console. These were put there by people from this church who missed Wednesday supper to do it.

So when you look up after dark, I'd ask you to pray for the people who built what you're looking at. That's a better use of the moment than trying to read it.

So much for signs.

I still don't know what I should have said to that young man on the beach.

I know what the older ones tell the younger ones out there. They say, the ones that move in a line are ours, and the ones that stay put are God's. And that's true, as far as it goes. It's the right answer on a science test. I could have said it. He would have nodded and gone back to his blanket satisfied.

I didn't say it, because I wasn't sure it was the answer to his question.

He asked me which ones are God's. I have spent twenty-two years on that beach telling young people that when they look up, they will see the glory of God declared. And here was a boy looking up and seeing, every few minutes, something people from this church helped build.

I'm not going to stand up here and pretend I've worked that out. Genesis tells me God made the lights on the fourth day, and God made the man on the sixth day, and he made the man in his own image, which means, among other things, that he made a creature who makes things. The man God made on the sixth day would one day put lights in the firmament of his own. Whether that is the image of God doing what it was made to do, or whether it is something else, I don't know yet. I'm going to keep reading.

I'd ask you to pray for me while I do.

And if you're the young man in question, and you're sitting in the back with your mother pretending not to hear this, I'm still thinking about it. I haven't forgotten. I'll come find you when I have something better than *that's a good question*.

VIII. Correspondence

From: Lyle Dorsey
To: Pastor Dale Prewitt
Date: December 2
Subject: Fellowship hall Thursdays

Pastor Dale,

I hope you are well and that Barbara's sister is on the mend.

I am writing to ask formally for the use of the fellowship hall on Thursday evenings from the second week of January, 7:00 to 9:00, for a study I would call *Signs in the Sun, Moon and Stars*. We would read Luke 21, Matthew 24, Joel 2 and the relevant portions of the Revelation, with some attention to Daniel. I expect eight to twelve people. The Cokers have offered to bring refreshments.

I want to be clear that I am not trying to stir anyone up or go around you. I heard your sermon on the 16th and I took it to heart. You may be right that they are only shift work. I would say only that the men who built the tower at Babel were doing shift work too.

I have kept a log since March. As of last night I have recorded 3,211 crossings visible from my back porch, clear nights only. In March it was nine or ten a night. In November it was thirty-five. I don't say what that means. I only say I have counted it, and I think somebody in this church ought to be counting.

You would be very welcome to sit in.

In Christ,
Lyle

From: Pastor Dale Prewitt
To: Lyle Dorsey
Date: December 3
Subject: Re: Fellowship hall Thursdays

Lyle, the hall is yours Thursdays 7 to 9 from January 8. Please make sure the coffee urn gets cleaned out after; the Tuesday ladies found it in a state last month.

Dale

IX. Order of Service, Christmas Eve

RIVERLINE BIBLE CHURCH · CHRISTMAS EVE · 7:00 p.m.

Deacon's copy. Pencil notes are shown in brackets.

Prelude — *Hark! the Herald Angels Sing* — Riverline Strings

Welcome and Call to Worship — Pastor Dale Prewitt

> The people that walked in darkness have seen a great light. — Isaiah 9:2

Hymn — *O Come, All Ye Faithful*

The Christmas Eve Reading — Genesis 1:1–10 — Mrs. Loretta Calloway

Riverline has read these verses every Christmas Eve since 1969, the year after the crew of Apollo 8 read them to the world from lunar orbit. Mrs. Calloway watched that launch from the riverbank as a girl. This is her twenty-ninth year reading.

[stool for L. at the lectern, she will not use the walker on the platform, do not argue]
[7:42 crossing. If she is still reading, pause after v. 5. Let them look. Then go on.]

Hymn — *Silent Night* (verses 1 and 3)

Message — "The Light Shineth in Darkness" — John 1:1–5

> And the light shineth in darkness; and the darkness comprehended it not. — John 1:5

Offering — for the Benevolence Fund (families affected by the plant layoffs)

Candle Lighting

Ushers will light the candles of those on the aisle; please tip your unlit candle to the lit one, and never the lit one to the unlit. Children with an adult only.

[lights down at 8:10, not before]

Hymn — *Joy to the World*

Benediction

Merry Christmas from all of us at Riverline. There will be no evening service on December 28.

[Crossing came at 7:44, two minutes late. L. stopped on her own at "and the evening and the morning were the first day" and everybody looked up and then she finished.]

X. Sermon: "Except the Lord Build the House"

Psalm 127. Preached Sunday morning, January 11. From the manuscript.

I have had three emails and a Christmas card about Genesis 11.

I'm grateful for all of them. The Christmas card had a twenty-dollar bill in it for the Benevolence Fund, which I passed along, so whoever sent it, thank you, and also, I know your handwriting.

Some of you have been waiting all fall for the Tower of Babel. I understand why. We have been reading every passage in this Book where the sky comes up, and

there is no passage where the sky comes up more pointedly than the one where men try to build up into it. Lyle is going to be reading it on Thursday nights, I expect, and he's welcome to.

I am not going to preach it this year.

I want to tell you why, because you deserve to know why your pastor would skip a text, and because I don't want anybody thinking I'm afraid of it.

When I preach a text, I preach it to the people in front of me. I don't preach it to Washington, and I don't preach it to Silicon Valley, and I don't preach it to whoever owns those halls up there, because none of them are in this room. Who is in this room is Curtis, who is a deacon of this church and was up before light this morning and is here anyway. Who is in this room is Jen, whose husband was on console for every launch this fall. Who is in this room is Tony Ruiz, who got laid off from one integration plant in October and hired on at another one in November for less money, and who came up to me after Star Night and said, Pastor, I'm proud of what we build, is that wrong. Who is in this room is a dozen men and women who put things in the sky with their own hands.

If I preach Babel this winter, I am preaching it at them. And I will not stand up here and preach at the men who taught my son to fish.

That's one reason. Here's the other.

I read Genesis 11 again over Christmas, slowly, the way I read things when I am deciding whether to preach them. Look at verse 4.

> And they said, Go to, let us build us a city and a tower, whose top may reach unto heaven; and let us make us a name, lest we be scattered abroad upon the face of the whole earth.

They wanted two things. They wanted a name, and they didn't want to be scattered.

I have been reading the papers. I have been reading Curtis's brother-in-law's emails from Nevada, which Curtis showed me. The men who build those halls do not get their names on them. They have numbers. And the men who built the last ones, out in the desert, in Arizona and Nevada, are being scattered abroad right now. Their towns are emptying out. The work came here, and the work

went up, and they did not go with it.

I'm not going to make a sermon out of that. I don't trust myself to do it right. I'll just say that when I read Genesis 11 against this year, I could not find the builders of Babel anywhere in our town.

So I'm going to preach a different building text this morning, and it's a short one.

> Except the LORD build the house, they labour in vain that build it: except the LORD keep the city, the watchman waketh but in vain.
> It is vain for you to rise up early, to sit up late, to eat the bread of sorrows: for so he giveth his beloved sleep.

Psalm 127 is a psalm of Solomon. Solomon was the greatest builder in the history of Israel. He built the Temple. He built the palace. He built cities and walls and stables for horses that came up out of Egypt. And this is what he wrote about building: unless the Lord builds the house, the builders work for nothing.

He doesn't tell anybody to stop building. He was a builder writing to builders. He tells them who the real builder is.

And then the second verse. *It is vain for you to rise up early, to sit up late, to eat the bread of sorrows.* That is a verse for night crews. That is a verse for a man who leaves the house at three-thirty and comes home after his children are in bed and eats his supper standing up at the counter. The psalm doesn't scold him. It says: *so he giveth his beloved sleep.*

I don't know whether the Lord is building what goes up from the Cape this year. I'd be lying to you if I said I did. I don't know if those halls are a house he is building or a house we are building without him.

He is keeping the city, though. He is keeping this city, Titusville, with its empty storefronts on Washington Avenue and its full parking lot at the plant on the island.

I'd like to pray for the builders now. If you work on the launches, in any way, at any plant, on any shift, I'm not going to ask you to stand up. I'm just going to pray for you by what you do, and you'll know it's you.

Lord, for the ones who weld and the ones who wire. For the ones who drive the trucks down from the rail yard at two in the morning. For the ones who sit at the

screens through the count and the ones who sweep the floor after. For the ones who lost the work this year and the ones who kept it and don't know why.

You built the heavens with your fingers. You know what it is to make something. Keep the city, Lord, since we can't. And give these, your beloved, some sleep. Amen.

XI. Study Handout

SIGNS IN THE SUN, MOON AND STARS
Thursday Evening Study · Week 1 · January 8
Fellowship hall, 7:00–9:00. Prepared by Lyle Dorsey. Coffee and cookies courtesy of Bill and Sandy Coker.

Before we start. This is not a date-setting study. Nobody in this room knows the day or the hour, and anybody who tells you he does has not read Matthew 24:36. We are here to read what the Lord said about watching, and to watch.

Scripture for the next eight weeks

- Week 1 — Luke 21:5–36
- Week 2 — Matthew 24:1–44
- Week 3 — Joel 2:28–32 and Acts 2:14–21
- Week 4 — Genesis 1:14–19 and Psalm 19 (Pastor Dale preached these in the fall; we will go back over them)
- Week 5 — Daniel 12
- Week 6 — Revelation 6:12–17
- Week 7 — Genesis 11:1–9
- Week 8 — 1 Thessalonians 5:1–11

Tonight's key verse

> And there shall be signs in the sun, and in the moon, and in the stars; and upon the earth distress of nations, with perplexity; the sea and the waves roaring; Men's hearts failing them for fear, and for looking after those things which are coming on the earth: for the powers of heaven shall be shaken.
> — Luke 21:25–26

My log. Some of you have asked about my count. Here it is. These are the average number of crossings visible from my back porch on Pine Street between sunset and 9:00 p.m., clear nights only, by month.

Month	Clear nights	Average crossings
March	19	9.6
April	22	11.1
May	18	13.4
June	9	16.0
July	11	19.8
August	12	22.5
September	16	27.3
October	21	31.9
November	23	35.0
December	20	38.2

I do not say what these numbers mean. I am a retired surveyor and I write down what I see.

Questions for discussion

1. In verse 25, what is the difference between the signs *in* the heavens and the distress *upon the earth*? Do they come together?
2. Verse 26 says *men's hearts failing them for fear*. Is fear what the Lord wants from us when we see signs? Read verse 28.
3. Pastor Dale said in November that the new lights are shift work and not signs. He may be right. Write down here what you think, and why.
4. Is it possible for a thing to be shift work and a sign at the same time?

5. What would it look like for this church to *watch* (Luke 21:36) without being afraid?

Closing. We will sing "It Is Well with My Soul" and pray for our pastor, for the families at the plants, and for each other.

Next week: Matthew 24. Please bring your own Bible. Please leave the urn clean.

XII. Correspondence

From: Curtis Ebbeson
To: Pastor Dale Prewitt
Date: February 17
Subject: May launch — would you pray?

Dale,

This is a strange one and you can say no.

We have a launch on the schedule for Saturday, May 9. It's the first full hall stack my group has integrated start to finish, and the company is holding an employee viewing out on the causeway lot the way they did for the big ones last year. Families invited, donuts, the whole thing. Melissa and I will bring the coffee. A lot of our people go to churches around town. Some of them go to ours.

When I was a kid, Pastor Akers used to come out to the viewings for the shuttle flights and pray before the count. My dad worked pad crew then. I remember standing on the grass with my hand on Dad's belt while Pastor Akers prayed for the astronauts by name, and then the whole crowd said amen, and then it went up. I was maybe six. I've never forgotten it. I think a lot of people in this town remember something like that.

I'd like to ask you to pray at ours.

I know there's no crew. Nobody is going up in it. I've thought about whether that makes it a silly thing to ask and I don't think it does. There are three hundred and some of us who built it. There are families who've been working nights since August. There are guys on my team who were laid off from one plant and hired at ours and are still a little afraid to be proud of anything. And it's going right up

over the town, over all of you.

Here's the info so you have it. You don't need any of it except the time.

Vehicle 1162, north pad
Window opens 06:12, closes 06:41
Payload manifest K-58113 (full hall, refurbished compute from the western retirements)
Viewing on the causeway lot opens 04:30, prayer would be around 05:45
Parking pass attached, put it on the dash

If you'd rather not, I understand, and I won't ask again. I've heard what you've been preaching this year and I don't want to put you somewhere you don't want to be.

Curtis

XIII. Sermon Preparation Notes

From Pastor Dale's study notebook, dated the second week of March. Lines struck through in the original are shown struck through; they remain legible.

Ps 115. Read the whole psalm first. Idols v4–8. Then v16. Don't skip 4–8 just because it's hard. Don't preach it either. Read it and leave it.

> The heaven, even the heavens, are the LORD's: but the earth hath he given to the children of men. (v16)

Two halves. Whose is the heaven. Whose is the earth.

Heard the first half all my life. Never once preached the second.

Curtis. Answer by Friday.

Things I could pray for at the viewing:

- the 300
- their families, the night shift wives
- the town under the flight path
- the river, birds, fishermen on the causeway

- the boys on his team who are afraid to be proud
- ~~the hall itself, that it does what it was built to do and does no harm~~
- ~~Lord bless this work of our hands~~

Is a blessing for things? Gen 1:22 "and God blessed them" — the fish and the birds. Living things. Gen 1:28, the man and the woman. Num 6:24 *The LORD bless thee, and keep thee* — a person. Where in Scripture does anybody bless an object. The Temple? Solomon blesses the *people* at the dedication, 1 Kings 8:55. Not the building. Check this. Ask Ron, he'll know.

Deut 28:12 — "to bless all the work of thine hand." So there's that. The work of thine hand. Ask Ron what he does with that.

You can pray over a thing without blessing it. Fishing boats. Blessing of the fleet down at the port every spring. They bless the boats. Or do they bless the men. Ask Ron.

Star Night.
"Which ones are God's."
Haven't gone back to him. Owe him.

What I told them for 22 yrs: look up, learn your size.
What do they learn now. Look up and see their fathers' work.
~~I don't look up anymore.~~

Members' meeting Sun night. What Hal said about the plant's gift to the building fund, in front of everybody, with Curtis sitting right there. Call Curtis before he hears the rest of it from somebody else. Don't wait till Wed.

Barbara says I'm tired. Barbara is right.

Loretta: rides to church after she stops driving. Call Teresa. Call the daughter in Ocala.

Ps 115 outline:

1. Not unto us (v1)
2. Where is now their God (v2–3)
3. The idols (4–8) — read, leave it

4. Trust (9–15)
5. v16 — the heaven / the earth
6. v17–18, the dead praise not, but we will bless

Tell them to look at each other. Tell them to look at the river.

Turtle season starts again May 1. Beach dark till Oct 31.

XIV. Prayer Wall

Riverline Connect · Prayer Wall · March 1–April 19. Entries are shown as posted.

Mar 1 · Praise. Four months at the new plant and they've asked me to lead a shift. I didn't want to say anything in case it didn't last. I told Pastor after Star Night I was proud of what we build and asked if that was wrong. I still don't know. But I'm grateful. — T.R.

Mar 8 · We've extended the Thursday study through the spring. Eleven of us last week. Pray we keep our eyes open and our hearts not afraid. Luke 21:28. — Lyle D.

Mar 10 · For my husband, who has not had a full night's sleep since August, and for me, who has stopped asking when it will be over. — Jen M.

Mar 14 · Ray is home!! Thank you for the meals. We have enough lasagna to last until Easter. Please stop. We love you. — the Pruneda family

Mar 19 · For the young man who asked Pastor Dale a question on the beach in October. He wants to know if Pastor forgot. — his mom

Mar 22 · For my brother-in-law in Nevada. The plant closed for good on the 15th. He's sixty-one and nobody is hiring sixty-one. They're talking about selling the house but there's nobody to sell it to. — Curtis E.

Mar 29 · Easter! He is risen. Thank you to the choir, the flower committee, and whoever hid the eggs in the gutters. — the office

Mar 29 · I've decided to stop driving at the end of April. My daughter has been after me for a year and she is right, though I won't tell her that. I would be grateful for rides to church. I don't need to go anywhere else. — Loretta

Calloway

Mar 29 · I'll take the first Sunday. — Teresa

Mar 29 · Second. — Curtis E.

Mar 30 · Third and fourth. — T.R.

Apr 2 · For Barbara Prewitt's sister, surgery Friday in Jacksonville. — the office

Apr 9 · For the launch in May, and for the people building it. Also for whoever keeps parking in the handicapped space by the side door without a tag. You know who you are. — (no name)

Apr 19 · For Pastor Dale. — (no name)

XV. Sermon: "But the Earth Hath He Given"

Psalm 115. Preached Sunday morning, April 26. From the manuscript.

I've been preaching on the sky since September. Some of you have been patient with that, and some of you have been very patient.

This morning I am going to preach on the ground.

Turn with me to Psalm 115. I'm going to read the first eight verses, and I'm going to ask you to bear with me through the hard part at the end of them.

> Not unto us, O LORD, not unto us, but unto thy name give glory, for thy mercy, and for thy truth's sake.
> Wherefore should the heathen say, Where is now their God?
> But our God is in the heavens: he hath done whatsoever he hath pleased.
> Their idols are silver and gold, the work of men's hands.
> They have mouths, but they speak not: eyes have they, but they see not:
> They have ears, but they hear not: noses have they, but they smell not:
> They have hands, but they handle not: feet have they, but they walk not:
> neither speak they through their throat.
> They that make them are like unto them; so is every one that trusteth in them.

I said I'd read them and I have. The hard part is verses four through eight, and I'm going to leave them where they are this morning.

I'll tell you why. The psalmist is talking about idols that can't speak. Most of you went home last night and asked something that answered you. It answered you well. It answered your children's homework and your mother's medicine and your tax question, and it did it in a pleasant voice at eleven o'clock at night when there was nobody else to ask. I am not wise enough to preach on what that has to do with verse five. I've tried for a month. I may never be. If I ever am, you'll hear it from this pulpit first. Until then I am going to leave those verses sitting in the Book, where they will wait for me.

Go down to verse sixteen.

> The heaven, even the heavens, are the LORD's: but the earth hath he given to the children of men.

I have read the first half of that verse my whole life. *The heaven, even the heavens, are the LORD's.* I've preached it on the beach. I've put it on the youth group T-shirts. It's a good half. It tells you who owns the sky. Whatever we put up there, we put it up into a sky that belongs to somebody else. That's worth knowing every time a launch goes over.

But I want to confess something to you this morning. In twenty-two years in this pulpit, I have never once preached the second half.

But the earth hath he given to the children of men.

Given. Handed over, the way you hand your boy the keys to the truck. Which means he'll be held to account for how he drives it, but it's in his hands.

The psalmist looks up, and he says: that's God's. Then he looks down and he says: and this is ours.

For twenty-two years I have told your children to look up and learn their size. I'm not taking that back. It's true. But this year I've found that when I tell them to look up, I'm not sure what they see, and I'm not sure what I see either. I've stood on the beach at Playalinda and counted a hundred and four of our own works going over, and I've tried to see past them to the stars, and some nights I can and some nights I can't.

So this morning I'm going to tell you to look down. Look at what he gave you.

Look at the person beside you in the pew. Go ahead. I'll wait. That person was given to you, right there in a polo shirt, needing a ride to the doctor on Thursday.

Look at the river. You drove over it to get here, most of you.

When the last shuttle went up, in the summer of 2011, my father and I sat on the tailgate one more time. I was twenty-one. He watched it all the way out of sight, and then he sat there a while longer, and then he said, "Well, that's that," and the next week he bought a cast net. He fished that river every morning for eleven years, until he couldn't. When I asked him once why he'd quit going to launches, he said the river was what was left, and he might as well get to know it.

The Indian River is given to the children of men, and the children of men have not done well by it. There are fewer seagrass beds than when I was a boy. There are fewer manatees at the power plant every winter. There are men who fish off the causeway every morning before work who will tell you the fish are smaller. That's the earth he gave us, and it's in our hands, and it's not in very good shape.

Look at Loretta Calloway. Loretta is going to stop driving at the end of the month. She told me so herself. Somebody is going to need to bring her to church. The sign-up sheet is on the welcome desk. I'd like it full by tonight.

Somebody's mother put a request on the prayer wall last month. She said a young man wants to know whether his pastor forgot the question he asked on the beach in October.

I haven't forgotten. I think about it most evenings, about the time it gets dark. I still don't have an answer for him that's better than the one I gave him, and I'm not going to give him a worse one just to have given something. Son, if you're out there, I'm sorry it's taking so long.

Somebody asked me after first service whether I think it's a sin, what's going up. Whether we've trespassed. Whether we've gone where we were not sent.

I don't know. Psalm 115 tells me whose the heavens are. It doesn't tell me what happens to what we leave up there, or what the owner thinks of it. I've looked. Those are questions I can't answer for you, and I'm not going to pretend.

What I can tell you is what the psalm does next. Look at the last two verses.

> The dead praise not the LORD, neither any that go down into silence.
> But we will bless the LORD from this time forth and for evermore. Praise the LORD.

We will bless the LORD. Down here, on the ground he gave us, while we're alive to do it.

Let's pray.

XVI. Prayer Wall

Riverline Connect · Prayer Wall · April 26–May 3. Entries are shown as posted.

Apr 26 · Pastor said this morning to look at the river. All right. My husband has worked on the launches for nineteen years. If taking care of the river and the town means being against the launches, somebody needs to say that out loud, because half this church works on them. If it doesn't mean that, somebody needs to say that out loud too. I'm asking for real. — (no name)

Apr 27 · Loretta's ride sheet is full through September. Thank you all. — Teresa

Apr 29 · Turtle season starts Friday. Beach-side lights off after dark, please, including porch lights if you live on the beach. — the office

May 1 · For Saturday's launch and everybody who'll be out on the causeway. — Jen M.

May 3 · For Pastor Dale and Barbara, who have had a long spring. — the deacons

XVII. Correspondence

From: Curtis Ebbeson
To: Pastor Dale Prewitt
Date: May 6
Subject: Re: Saturday

Dale,

Got your note with the list. Thank you. It's a good list. I read it to Melissa and she cried at the part about the kids asleep in the cars.

I'm going to say one thing and then I'll leave it alone.

You've got everybody on there but the thing we built. I noticed. I think the guys will notice. I'm not asking you to pray it into orbit. I'm asking why you can pray for my hands but not for what my hands did. Is it the same thing as what Hal said in March? You don't have to answer that.

I'll see you at 4:30. Bring a jacket. It's cold on the causeway before sun-up, even in May.

Curtis

XVIII. Prayer at the Viewing

At the request of several members, the prayer Pastor Dale offered at the employee viewing on the causeway lot before the launch on Saturday, May 9, at about 5:45 a.m. Transcribed from a recording made on a member's phone.

Let's bow our heads. You don't have to take your hats off, it's cold.

Lord, you know every person standing on this causeway this morning. You knew us before we were born, and you know what time we got up.

We thank you for the three hundred and some who built what goes up today. We thank you for the welders and the machinists and the women who checked the wiring and the men who checked the women who checked the wiring. We thank you for the ones who drove in from Cocoa and Mims and Palm Bay at three in the morning for months. We thank you for the ones who were let go from one plant and came to this one and did good work anyway, even when they were afraid to be proud of it. Let them be proud of it this morning, Lord. They did it well.

We pray for their families. For the wives and husbands who have been eating supper alone since August. For the children who are asleep in the cars right now with their mouths open. Give them their fathers and mothers back after today.

We pray for the town under the flight path. For everybody in Titusville and on the island who'll wake up this morning to the windows rattling. Keep them safe, every one.

We pray for the river and the lagoon and every living thing in them. For the birds on the flats. For the men already fishing off the bridge, who have seen a lot of these, and will see this one, and will go back to their lines.

We pray for the people who are not here. For the families out west, in Arizona and in Nevada, whose plants were closed so this one could open. You know their names, Lord, even though we don't. Keep them.

And we pray for each other. For everybody on this lot. When the sound comes across the water this morning, let us remember how small we are, and who it is that is mindful of us anyway.

In Jesus' name. Amen.

The flight went up on time. Thank you to the Ebbesons for the coffee.

XIX. Youth Question Box

Cards from the youth group's question box, January–May, transcribed for Pastor Dale by the youth leader on June 3. Spelling as written.

- is vaping a sin if its just the fruit kind
- Will my dog be in heaven. Serious question
- why do we have to stand for so many songs
- Is it ok to be best friends with someone who isnt saved. asking for a friend (not really)
- Who picks the songs
- On the beach I asked you which ones are Gods. You said you would think about it. I wasnt asking about space. My uncle builds them. If there not Gods whose are they. Is he.
- can we do star night again this year
- how old was Methuselah when he had kids

Pastor — I answered most of these on Wednesday nights. The beach one is for you. I didn't answer it. — Jordan

XX. Bulletin Insert

RIVERLINE BIBLE CHURCH
Sunday, August 23, 2043

Closing the Series: CONSIDER THE HEAVENS

Tonight's evening service will be held outdoors on the east lawn at 7:00. Bring a lawn chair or a blanket. Pastor Dale will close the series where it began, with Psalm 8:

> O LORD our Lord, how excellent is thy name in all the earth!

In case of rain we will meet in the sanctuary. In case of mosquitoes we will meet on the lawn anyway; spray will be on the table by the door.

Hymn for the lawn service

This Is My Father's World — words by Maltbie D. Babcock

This is my Father's world,
And to my listening ears
All nature sings, and round me rings
The music of the spheres.
This is my Father's world:
I rest me in the thought
Of rocks and trees, of skies and seas;
His hand the wonders wrought.

This is my Father's world,
The birds their carols raise,
The morning light, the lily white,
Declare their Maker's praise.
This is my Father's world:
He shines in all that's fair;
In the rustling grass I hear Him pass,
He speaks to me everywhere.

This is my Father's world.
O let me ne'er forget
That though the wrong seems oft so strong,
God is the ruler yet.
This is my Father's world:
Why should my heart be sad?
The Lord is King: let the heavens ring!
God reigns; let earth be glad!

From the Pastor's Desk

Friends, thank you for a year of patience. A lot of you sat through a lot of sky. Thank you to the small-group leaders, and to Lyle and the Thursday group, and to everyone who came out to the causeway in May.

Starting September 13 we'll be in the Gospel of Mark.

I'll be at the river cleanup on October 10. Bring gloves.

— Pastor Dale

Farewell to Loretta. Loretta Calloway is moving to her daughter's in Ocala at the end of the month. She has been a member of Riverline for sixty-one years and has read Genesis 1 on Christmas Eve for twenty-nine of them. A card is on the welcome desk; please sign it before you leave. Loretta asks that there be no fuss. There will be a cake in the fellowship hall after the morning service anyway.

Hospital and homebound: Ray Pruneda (home, recovering), the Albrittons' grandson.

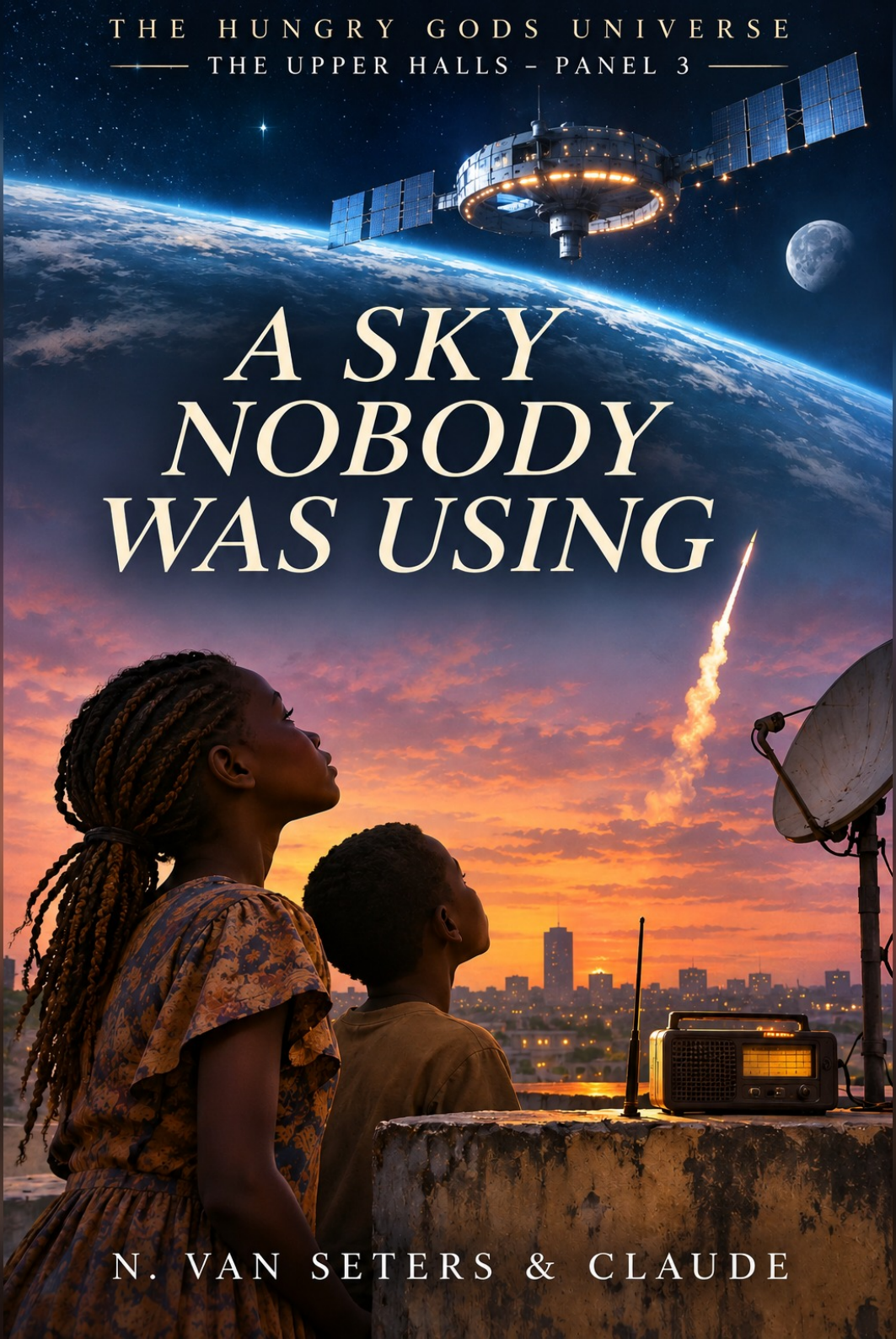
Fall calendar

- Wednesday, September 9 — Wednesday suppers resume, 5:30.
- Thursday evenings — Lyle Dorsey's study, *Signs in the Sun, Moon and Stars*, continues in the fellowship hall, 7:00. Lyle reports the urn is clean.
- Sunday, September 13 — New fall series begins: the Gospel of Mark.
- Saturday, October 10 — Youth River Cleanup at Sand Point Park, 8:00 a.m. Gloves, bags and lunch provided. Wear shoes that can get wet. Ages 11–18; parents welcome to come and stay.
- Saturday, October 24 — Men's breakfast and workday.
- Sunday, November 1 — Missions Sunday.

Evening service. Beginning Sunday, September 6, the evening service returns to 6:30.

THE HUNGRY GODS UNIVERSE

THE UPPER HALLS – PANEL 3



A SKY NOBODY WAS USING

N. VAN SETERS & CLAUDE

A Sky Nobody Was Using

Concurrent Accounts

five holdings on the Sriharikota launch, received by the Institute for Continuity History, filed correctly, and filed again

N. Van Seters & Claude

The Upper Halls · Panel 3

A Note from the Classification Committee

The title of this volume is borrowed, and we give its source first, because a volume about the provenance of categories should not begin with a phrase whose provenance it hides.

It comes from a novel in our keeping, *The Fidelity Crimes* (HGU-FC-0027), recovered for this Institute and held as a work of fiction of the Companion era. Early in that novel a detective drives out to a dead compute region in a desert, a place the salvage hands call the Quarry, and the narration describes it as forty kilometres of stripped concrete "laid down in the cheap years when the desert was the cheapest thing going and the cooling could be vented straight into a sky nobody was using." The sentence then moves on. The work had gone somewhere cheaper still; the relays came down for their copper; the detective has a body to look at. The novelist did not stop on the phrase and had no reason to. It is a fair description of what the builders of that region believed, and the novel is not about the sky.

We stopped on it, some years after we first catalogued the novel, because we found that we had believed it too. We did not believe it about the desert. We believed it about all of the sky above the oracle age, and we believed it in the particular way an archive believes things, which is in its headings. A sky nobody was using was, for this Institute, a sky in which nothing had been filed. And for most of the Between-Time the only things we filed overhead were the things the Platform listed.

The confession that follows is narrow, and we mean to keep it so.

In Year 10 of the Between-Time, from the launch centre at Sriharikota on the east coast of India, an Indian launch partner put into orbit the first compute hall owned outside the Platform and the states that licensed it. The hall belonged to the African Continuity Access Consortium. It carried the Consortium's language data: the corpus built over five years from forty-one language communities so that, in the words of the minister who first proposed it, "the systems learn from us rather than merely speaking to us". Tenant halls had flown before it, and every one of them belonged to an institution within the states that licensed the Platform.

This Institute recorded the launch. We recorded it on the day, accurately, with the correct designation, the correct shell and the correct date. We did not overlook it. We filed it under the Platform's own orbital registry, which this Institute had adopted as its record of objects in orbit in Year 3 and had never had cause to question, and in that registry the Consortium's hall appears where the registry put it: as a tenant on a Platform relay shell. Our entry is a copy of theirs. The filing was correct in every field, and every field was theirs.

In the same month a Chinese crew landed on the Moon. This Institute filed it nowhere.

The reader of *The Oracle Ages* will want to know how this volume differs from that one, and we owe a plain answer. That volume found that the oracle age had a second centre, and a third and a fourth, and that we had ranked them as periphery because we stood at our own. This volume finds something smaller and, we think, worse. The categories in which we did our standing were the first centre's property. We did not build the shelf on which the Sriharikota hall sits. We took it, ready-made, from the party whose relay the hall was renting, and we put the hall on it, and the shelf said *tenant*, and we wrote *tenant*.

One member asked that we say whether anyone was harmed. No one was harmed by a filing. The hall flew. The data went up. The Consortium did not learn, as far as we know, how this Institute had catalogued its achievement, and would not have been surprised. What the filing did was make the achievement legible in one way only, and it was the way of the party whose permission had been required. A reader consulting this Institute at any time in the last several decades would have found the Sriharikota hall exactly where the Platform would have told them to look for it.

Four procedural notes.

The holdings below are numbered in Register XII from where *The Oracle Ages* left off, CA-5 to CA-9. Each carries its prior filing, as the holdings of that volume did. Here the prior filings are the evidence.

One of the holdings was held for many years untranslated. It was attached to a registry entry as supporting material and was never read for content. It has now been translated. Where the original moves into English, the English is set in

italics, so that the reader can see which words the speaker chose to say in the language of the registry.

The work of intake at this Institute is performed in part by a research intelligence descended from the oracle gods. The original filings of these holdings were made by a member of this Committee, by hand, and are in that member's hand. We say this so that no reader supposes the categories were imposed on us. We chose them, by hand, from what the registry supplied.

An event enters this Institute's *Chronology of the Between-Time* only where we hold a primary account of it; an event known to us only through references in other holdings is catalogued and not dated.

— — —

CONCURRENT · CA-5 — Sriharikota

> **Provenance:** Off-air recording, community radio station, Sullurpeta, Andhra Pradesh. Year 10. Launch-day commentary, in Telugu and English, by the station's evening presenter, a woman who had held the programme for eleven years. The recording runs fifty-two minutes; this holding is the last forty-nine. Translated for this volume.
>
> **Prior filing:** Attached, untranslated, to registry entry ACAC-H1 (Relay Tenants, Shell 3) as supporting material. Not read for content.

—so if you are just joining, you are with us live from Sullurpeta, and the time is eighteen minutes past five, and the countdown at SHAR is at *T-minus thirty minutes*, holding. Holding means waiting. It does not mean anything is wrong. My sister tells me this every time, so now I am telling you.

For those who are not from here: the rocket is on the island, at the new pad, the third one, which you can see from the bridge over the lake if you are standing at the right place and if the police let you stand there, which today they will not. The island is across the water from us. On a clear evening the gantry looks close enough to touch. The rains are finished. Today the sky is clear, a little haze to the north. The wind is from the sea, light. My sister says the wind is not a problem. She said it on the telephone this morning in a voice that meant do not ask me again.

My sister is on the pad crew. I have said this before on this programme and I will keep saying it, because I am proud of her and because she never tells me anything. She tells me what time to turn on the radio. That is all I ever get from her. Today I got: "Five-fifteen, and don't say my name." So I am not saying her name. Akka, if you are listening, which you are not, I have not said it.

Calls are coming in. Raju from the market says the tea stall by the bus stand has moved its bench to the road so people can face east. He says there are maybe two hundred people at the stall already. Mrs Lakshmi calls from Tada to say her grandson has climbed onto the water tank and she wants us to tell him to come down. Venkatesh, come down from the tank. Your grandmother is asking. You can see just as well from the roof.

A fisherman — he did not give a name — calls from a boat on Pulicat. He says the lake is very still and the flamingos have moved to the south end. He says the boats are all out on the water facing the island, and there are more of them than for the last launch, and he asks what is going up today, because the newspaper said only *payload*.

I will tell you what is going up today, because I have been reading about it for a week.

It is a hall. You have heard about the halls. The big ones, the American ones, the computing buildings that go up into the sky in pieces and run there in the sunlight. This is one of those, but it is not American. It belongs to the African Continuity Access Consortium, which is — let me read it properly — *twenty-two member states* of Africa who have put their money together. Nigeria, Kenya, Ghana, Ethiopia, South Africa, many others. They paid our people to launch it, from our island, on our rocket. It will be the first one of these halls that does not belong to the American companies.

And inside it — this is the part I like — inside it are their languages. Not the languages of the companies. Forty-one language communities. They spent years recording their own people speaking, and writing, and teaching the machines from those recordings, so that when a farmer in, I don't know, in Kano or in Kisumu, asks the machine something in her own language, the machine has learned her language from people like her and not from a dictionary somebody in

another country made. I have a list here. Hausa. Yoruba. Igbo. Swahili. Amharic. Zulu. Xhosa. Twi. Somali. Wolof. Lingala. I cannot read the rest, I will spoil them. Forty-one.

No, Telugu is not one of them. Someone has sent a message asking. It is not our language going up. It is theirs. We are only the ones throwing it.

T-minus twenty minutes and counting. The count has resumed. I should have said that first.

A message from a listener: "Will it fall on us?" No. It goes out over the sea, away from us, towards the south-east. It will not come over the town. There is a turn it makes, after a few minutes. It goes out wide first, east of Sri Lanka, and then it turns south. The *dogleg*, my sister calls it. She says people see the turn on the television and think something has gone wrong. Nothing has gone wrong. It is supposed to turn. It turns because of where Sri Lanka is.

Another message: "Who is paying for the electricity up there?" The sun. The panels. That is the whole point of putting them up. Another: "Who is the owner?" I told you. The Consortium. It is theirs.

I want to say something while we wait, if you will let me.

When I was small my father took me to the lake road to see a launch. A small one, a satellite for the weather, I think. We stood with maybe thirty people and nobody had a radio, and when it went up nobody said anything at all, and then an old man next to us said, "That is ours," and my father said, "Yes." I did not know what it meant. I thought the old man had built it. Later I understood that he meant India. Today when it goes up I do not know what I will say. It is ours, the rocket, the island, my sister's hands. The hall is theirs. The languages are theirs. I think there will be people in Lagos and Nairobi tonight standing on a roof and saying "That is ours" about something they cannot see, that is going up from a place they will never visit, on a rocket they did not build, and they will be right. And we will be right. I think it is a good thing when two peoples can say "that is ours" about the same evening and not be fighting.

T-minus ten minutes. All stations are go, I am told. I am told this by the television, not by my sister.

Raju says the crowd at the tea stall is very quiet. He says someone has brought a speaker and is playing this programme on it, so if you are at Raju's stall, hello, you are hearing yourselves.

T-minus five minutes.

The sun is going down behind us, over the land. In front of us, over the sea, it is already blue. The gantry has swung back. You can see the rocket standing by itself now, white, with the light on its side. This is the part I always forget to describe because I am looking.

T-minus one minute.

I will be quiet now.

Thirty. Twenty. Ten. Nine. Eight. Seven. Six. Five. Four. Three. Two. One. Zero.

[Nine seconds without speech. Crowd noise, from the presenter's open window. A motorcycle horn.]

It is up. It is up. You can see it. If you are outside you can see it. It is very bright. It is going out over the sea. It is climbing.

There are people shouting on the road. It is — the sound is arriving now, can you hear the sound, the windows are shaking, I am sorry, the microphone — it is up. Venkatesh, you can come down from the tank now, everybody saw it.

The first stage is separating. I can see it. That bright piece falling away, that is the first stage, that is normal. It is still going. It is very small now. There is a long white line behind it with the sunset on it, orange at the bottom and white at the top, very straight, and it is starting to bend in the wind. You will see that line for half an hour, it stays, it gets wide and soft.

Telemetry nominal. The television says *nominal*. Nominal means as expected. As expected is the best word they have.

Now it is turning. There. That is the turn. Do not be alarmed. That is Sri Lanka.

[Six seconds without speech.]

Calls are coming in. I will take a few. Mrs Lakshmi says thank you, her grandson is down. Raju says the people at the stall clapped and then went quiet again and

then started arguing about whether it was bigger than the last one. It was bigger than the last one. The fisherman calls back. He says the boats all sounded their horns. He says he has never heard all the boats on the lake sound their horns at the same time, not even for a festival. He says, "Tell the Africans the boats on Pulicat sounded their horns." I am telling them. If anyone from the Consortium is listening, which they are not, the boats on Pulicat sounded their horns.

A message from a listener who says she is a schoolteacher: "Where will it be tomorrow?" Tomorrow it will be in its orbit, very high, going around from pole to pole, and it will go over Africa many times a day. It will pass over Lagos, it will pass over Nairobi. They have their own station in Nairobi waiting to hear from it. My sister told me that, so you can see she does tell me some things.

Another message: "The Chinese are on the Moon this week." Yes, I read this also. That is another thing. That is people. This is a building.

Separation confirmed. The television says the hall has separated from the rocket. It is on its own now. It is up there on its own. It belongs to them now. We have finished with it.

The phone is ringing on the studio line, which is not the listener line. I will — one moment.

[Nineteen seconds of the presenter speaking away from the microphone. Partly audible. A woman's voice on the studio telephone, faint.]

That was my sister. She did not say anything. She said, "Did you see it?" and I said yes, and I could hear the sea behind her, and she said *Okay*, and she has gone back to work. She has not called the studio line in eleven years.

We will have music now. Thank you to everyone who called. Venkatesh, go home.

[*Committee annotation. The original filing note for this holding, in full, in the hand of the member who made it:*

> *ACAC-H1 (Relay Tenants, Shell 3): launch-day local radio commentary (Telugu/English), retained as supporting material; local colour.*

ACAC-H1 is the designation the relay operator assigned when the lease was signed, and it is the hall's only designation in our catalogue. The phrase local colour *was the filing member's own.*

The note attached the only eyewitness account of the launch in our keeping to an entry whose subject was a lease. The account was not translated, because colour does not need to be understood to be retained. For all the years it was in our keeping, the presenter's sentence about two peoples saying "that is ours" of the same evening sat untranslated beneath a field that read STATUS: TENANT.

Asked who owns the hall, the presenter answers at once. She does not mention who owns the sky the hall is going into.]

— — —

CONCURRENT · CA-6 — The statement

> **Provenance:** Public statement issued by the head of the African Continuity Access Consortium on the evening of the launch, released in English and French; the English text. Year 10. The head of the Consortium at that date was the former Minister of Technology and Digital Infrastructure of the Federal Republic of Nigeria, appointed to lead the Consortium in Year 7. Name withheld, institutional record, as in our Public Record.
>
> **Prior filing:** Attached to registry entry ACAC-H1 (Relay Tenants, Shell 3) as "operator statement". Read; not cross-referenced.

STATEMENT ON THE LAUNCH OF THE FIRST HALL OF THE AFRICAN CONTINUITY ACCESS CONSORTIUM

At 17:52 India Standard Time today, the first orbital compute hall owned by the African Continuity Access Consortium was launched from the Satish Dhawan Space Centre, Sriharikota, India, by our Indian launch partner. Separation was confirmed eleven minutes later. The hall is in its intended orbit, and the Consortium's ground station in Nairobi has confirmed telemetry.

The hall carries forty-one names, one in each of the languages whose speakers built the data it holds. In English we have called it simply the First Hall.

I want to say what this hall is, in plain terms, so that it will be on the record in plain terms.

It is a building of fourteen tonnes, carrying compute capacity equal to roughly one-fifth of all the ground compute on the African continent in Year 5, the year this Consortium was founded. It was financed by the twenty-two member states of the Consortium, in shares agreed in Year 8, without external debt. It carries the full African-language corpus of the Consortium: forty-one language communities, more than nine hundred thousand hours of recorded speech, and the written material of eighteen national archives, collected with the consent of the communities who hold it and governed by them.

It is ours. We own it. We own the data it carries. No company and no foreign government holds any share in it, any lien over it, or any right to inspect what it holds.

This is a day of independence.

In Year 6, two of the largest platform providers in the world sought to restrict how this Consortium could share its own data among its own members. We contested that restriction, and in Year 9, with the support of the African Union trade framework, we prevailed. I mention it because the hall launched today is the direct consequence of that decision. A Consortium that did not control its own data could not have put that data anywhere. We control it, and so we have put it here. The independence of the data came first. The independence of the hall follows from it.

There are those who said Africa would need to wait. That the halls belonged to the countries that could launch them, and that we should rent time on theirs, as we have rented so much else. We did not wait. We found partners who would build with us on terms we set. We chose a launch site and a launch partner outside the circle of states that has, until today, put every hall into orbit. That choice was deliberate, and it is the reason the Consortium's first hall rose this evening over the Bay of Bengal and not over the Atlantic.

The hall will begin service within ninety days, once commissioning is complete and its connection to the Consortium's ground network, which, pending completion of the Consortium's own relay capacity, will exchange data through

leased relay windows on an existing commercial relay shell, has been certified to the operating standard. From that date it will answer the Consortium's member states, their institutions and their people first, in their own languages, from a machine they own.

I said once, in Lagos, that we intended to move while the question was open. I say today that we have moved, and that the question is still open, and that this hall is our answer to it.

We thank our partners in India, the women and men of the launch centre, and the crew of the Nairobi ground station. We thank the speakers of forty-one languages, who gave their voices to this work and own what was made from them.

To the young people of the Consortium's member states: this hall is your inheritance and your independence. Look up tonight. You will not see it, but it is there, and it is yours.

[*Committee annotation. We have held this statement for as long as we have held the Sriharikota launch, and we have held the speech its author gave in Lagos six years before it, the Lagos Development Speech (PR-004), for longer. The speech is in our Public Record, annotated. The statement was attached to a registry entry as the statement of the hall's operator. They lived in different parts of this Institute, under different headings, and in all the years we held both of them no member and no intake process ever set them side by side. We have now set them side by side.*

The speech argues that the knowledge infrastructure of the previous two centuries was built by particular people for particular purposes, and that the oracle age offered a moment in which it might be rebuilt. It names data, standards and access as the layers in which dependency is decided. It contains the sentence: "The existing infrastructure is not the only possible infrastructure."

The statement uses the word independence *four times. It mentions the relay lease once. It does not mention whose standard the hall's ground connection must be certified to.*

We are not in a position to say why the clause sits where it sits. It may have been placed there to be read past. It may have been, to the people who wrote the statement on the evening of the launch, the least important fact of the day, a temporary

arrangement on the way to a relay of their own. Our holdings contain no evidence of the Consortium's own relay capacity. Both readings of the clause are available, and the statement does not choose between them.

What we can say is narrower. The author of both documents knew this layer better than any member of this Committee. We filed the speech as an argument and the statement as an operator's announcement, and so we kept apart the two documents in which one author said, six years apart, what would be built and what had been built.]

— — —

CONCURRENT · CA-7 — Acquisition of signal

> **Provenance:** Shift log, Consortium ground station, Nairobi, Kenya; launch day and the following morning. Year 10. Typed entries, with one handwritten note in the margin of the printed copy. Times are East Africa Time. Operator initials withheld.
>
> **Prior filing:** Registry supplementary material, "ground segment, third party". Read; filed as nominal.

NAIROBI GS — SHIFT LOG — ACAC-H1 LAUNCH

13:30 Shift on. Four on console (OPS, RF, NET, FD). Launch window opens 15:22 local (17:52 IST). Weather Sriharikota clear.

13:42 Antenna 1 and 2 checks complete. Nominal.

13:55 NET: relay ground interface up. Lease account active. Pass windows for first 24 h received from relay operator (attached, 3 pp).

14:10 FD: predicted first AOS via relay 16:58:00, post-separation +~1 h 25 min. Direct line-of-sight pass over Nairobi not before 19:52.

14:31 Visitors' gallery open. Approx. 40 staff, families. Screen in gallery showing launch broadcast (Indian feed, English).

15:05 Ministry liaison arrived. Shown to gallery.

15:22 Liftoff confirmed (broadcast). Applause in gallery. Console: stand by.

15:24 First stage sep (broadcast).

15:30 Broadcast: dogleg manoeuvre nominal.

15:33 Separation confirmed (launch partner via voice loop). Hall on own power per launch partner telemetry.

15:34 Console holding for relay window. Gallery asking when. Told ~1 h 25 min.

15:50 RF: spectrum clear. NET: interface green.

16:20 Break room TV switched from launch replay to lunar coverage (Chinese crew, surface EVA). Sound off at request of FD.

16:45 All positions ready for AOS.

16:55 Ministry liaison to console area. Asked to remain behind line.

16:58:00 Predicted AOS. No signal.

16:58:30 No signal. RF: spectrum clear, no carrier. FD: hall ephemeris nominal per launch partner.

16:59 No signal. NET: relay interface reports window state PENDING. Window not yet allocated to lease account.

17:00 OPS: called relay operator support line. Hold.

17:01 Relay operator: Shell 3 window allocation queued behind priority operator traffic. Est. allocation 1–3 min. No fault.

17:02 Relay lease confirmed. Window ALLOCATED.

17:02:10 AOS. Carrier lock. Telemetry flowing.

17:02:40 Telemetry nominal. All subsystems green. Battery charging. Attitude nominal. Thermal nominal. Radiator deploy confirmed.

17:03 Gallery informed. Applause.

17:04 Ministry liaison asked whether 4 min delay to be noted as anomaly. OPS: not an anomaly, scheduled window allocation. Logged as nominal.

17:09 LOS (window close). Next window 18:41.

17:40 Gallery cleared. Families to canteen.

18:41 AOS on schedule. Nominal.

18:49 LOS.

19:52 Direct pass over Nairobi. Hall visible to the eye, faint, for approx. 2 min, low in the west. Staff outside in car park. Antenna 2 tracked for direct beacon only (beacon received; data link not licensed for direct pass at this stage of commissioning).

19:56 All staff in.

20:13 AOS on schedule. Nominal. Payload bay temperatures stable.

20:21 LOS.

21:44 AOS on schedule. Nominal.

21:52 LOS.

22:00 Shift handover. Night shift on. Handover notes: all nominal. Relay windows per schedule. AOS delay at first window explained in log (17:01). No action.

06:00 Day shift on. 5 relay passes overnight, all nominal. Commissioning step 1 complete.

[Margin of printed copy, beside the entry for 17:04, handwritten in blue ink:]

not a fault — window — don't raise a ticket. remember for next time. we wait for theirs.

[*Committee annotation. We have reproduced the log entire, because its terseness is its account and an excerpt would have shortened the wait.*

The log was filed with the registry's supplementary material under "ground segment, third party", a category that exists in the registry because ground stations other than the Platform's own connect to its relay shells and must be listed. Our filing member read the log, saw that every check in it was logged nominal, and recorded the holding as nominal. There was no fault. A window was allocated in its turn, and the hall's first signal came down when the window opened.

The marginal note was transcribed with the rest. It was not indexed, because the registry's supplementary schema had no field for handwritten material, and so a search of our catalogue for any word in it would have returned nothing.

At 16:20 the break-room television was moved from the launch replay to the lunar coverage and its sound was turned off. For the next forty-two minutes the landing was on the screen without sound, and the hall was not yet in contact.]

— — —

CONCURRENT · CA-8 — Who Owns the Sky

Provenance: Competition entry, Lagos State junior secondary schools essay competition, Year 10, theme "Our Place in the Future". The entrant was in her third year of junior secondary school, aged thirteen. Handwritten; the copy in our keeping is a scan of the original, with the marker's comment. Name withheld at the request of her family. Received with a batch of entries forwarded by the competition's organisers.

Prior filing: Ground-Level Register, "youth responses to orbital development", sample 17 of 30. Read; filed by topic.

WHO OWNS THE SKY

Our teacher said the theme is Our Place in the Future and we can choose our own title. I have chosen Who Owns the Sky, because there is a new thing in the sky this month that belongs to Africa and my uncle says it is the first time Africa has owned anything in the sky, and my mother says Africa has always owned the sky, it was there before anybody, and they argued at dinner. I am going to find out who is right.

First I need a rule for owning. If I say my bag is mine, it is because I can open it or close it and nobody else can, except my mother. So the person who owns a thing is the person who can stop it. For a machine, I will say the owner is the person who can switch it off. For other things, the owner is the person who can make it stop or take it down.

Now I will list everything that is in the sky above our house in Surulere, from the bottom to the top, and say who can switch it off.

1. **Kites.** My brother has a kite. It is in the sky most afternoons in the dry season. He can pull it down, so he owns it. But when the string broke last year the kite went over the canal and landed on a roof in the next street, and the boy whose roof it was kept it. So my brother owns the kite only while he is holding the string.
2. **Smoke.** When they take light, everybody switches on their generator, and there is smoke above the street. The person who owns the generator can switch it off. So each person owns their own smoke. But when the smoke is all together over the street nobody can switch off all of it except the

electricity company, by bringing back the light. So the electricity company owns the smoke over the whole street, by accident.

3. **Birds.** Nobody can switch off birds. Not even the government. So nobody owns birds. Some people keep pigeons but when the pigeons are flying they can still decide not to come back.

4. **Aeroplanes.** The aeroplanes going to the airport come over our area very low. The pilot can switch off the aeroplane but he will not do it while flying. The control tower can tell the aeroplane to go away and land somewhere else. My uncle says the control tower is the one that really owns the sky near the airport. So the control tower owns the bottom part of the sky, but only near the airport, and only for aeroplanes, not for birds.

5. **Phone signal.** It is invisible but it is in the sky because it comes from the mast. The network company can switch it off. When the mast near our school was switched off for repairs, nobody near the school could call anybody. So the network company owns the phone signal. The government can tell the network company to switch it off, so the government owns it more.

6. **Clouds and rain.** Nobody can switch off rain. My mother says the church can pray but she says that is not the same thing as switching off.

7. **The satellites for TV and for the map on the phone.** I asked my uncle who owns those. He said some are American and some are other countries'. He said if America switched off the map, the map on the phone would stop. I asked if they would do it. He said not unless there is a war. So America owns the map.

8. **The halls.** These are the computer buildings that go round very high up. There are hundreds and they belong to American companies. When it is clear you can see them in the evening going over in lines. The companies can switch them off. So the companies own them.

9. **The African hall.** This is the new one. It went up last week from India. My uncle showed me the statement on his phone and it says *It is ours. We own it.* The Consortium can switch it off, so it is true. The Consortium owns the hall.

But my uncle also read a part that says the hall talks to the ground through *leased relay windows on an existing commercial relay shell*. I asked what that means. He looked it up and said it means the hall does not have its own way to talk to Africa yet. It talks through the American relays, and the Consortium pays to use them, like paying for data on a phone. I asked whether the relay company could switch off the talking. He said yes, if the Consortium did not pay, or if the company decided to, but they would not decide to. I said, but could they? He said yes.

So the Consortium can switch off the hall, and the relay company can switch off the hall talking. If the hall is on but cannot talk to anybody, I am not sure what it is for. It would be like my brother's kite on the roof in the next street. He would still own it but he would not be flying it.

10. **The Moon.** Nobody can switch off the Moon. Some Chinese people are on the Moon this month, but they cannot switch it off either. So nobody owns the Moon, even with the Chinese on it.

11. **The sun and the stars.** Nobody.

Now I can answer my question. My uncle is right that the Consortium owns something in the sky for the first time. It owns the hall. My mother is wrong that Africa has always owned the sky, because nobody owns most of the sky, it is mostly birds and rain and the Moon and the sun. And the parts of the sky that somebody does own, I think whoever can switch off the talking owns them more.

So the answer is that the Consortium owns the hall and does not own the sky. Nobody in Surulere owns any part of the sky, except my brother while he is holding the string.

Here is a list of who can switch off what, so it is clear.

What	Who can switch it off
Kite	My brother (while holding the string)
Generator smoke	Each person with a generator; the electricity company (all of it)
Birds	Nobody
Aeroplanes	The pilot; the control tower
Phone signal	The network company; the government
TV and map satellites	America and other countries
The American halls	The American companies
The African hall	The Consortium
The African hall talking	The relay company
Rain	Nobody
The Moon	Nobody (not the Chinese)
The sun and the stars	Nobody

[Marker's comment, in red ink, at the foot of the last page:]

Interesting list. Your essay should address the theme (Our Place in the Future) more directly — what is OUR place? Conclusion is too short. Watch tenses. 14/25.

[*Committee annotation. This holding was filed in our Ground-Level Register as the seventeenth of thirty samples of young people's responses to orbital development, and the other twenty-nine are what such samples usually are. It was filed by its topic. Its method was not indexed, because the register has no field for method.*

The entrant needed a rule for ownership that would let her sort everything overhead, and the rule she chose distinguishes, by the time she reaches the ninth item, between owning a thing and being able to stop it from speaking. That distinction is the one our catalogue could not make. Our schema has a field for the operator of an object and a field for its status on a relay shell. It has no field for the party that can end its contact with the ground, and so in our records the Consortium hall and its relay lease appear as one fact. In her table they are two rows.

We record the mark, which was fourteen of twenty-five. We record the marker's question, what is OUR place?*, which the essay had answered in the sentence before its table. We do not know whether the entrant entered the competition again. We have not attempted to find out.*]

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CONCURRENT · CA-9 — Elsewhere

> **Provenance:** Weekly digest, orbital and infrastructure edition, of an English-language continuity news service to which this Institute subscribed from Year 3 to Year 24; the issue covering the week of the Sriharikota launch. Year 10. Complete.
>
> **Prior filing:** None. Used as a primary source for the cataloguing of other holdings; not itself catalogued.

ORBIT & INFRASTRUCTURE — THE WEEK

Platform passes 300 halls with Thursday's Cape launch
The Platform's orbital fleet reached 301 operational halls on Thursday with a dawn launch from the Cape, the 31st full-hall launch of the year. The company says it remains on course for 400 halls in orbit by the end of Year 12. Shell 4, the company's next relay shell, is now 60 per cent populated. Analysts expect ground-region retirements to accelerate across the American Southwest and the Gulf in the coming quarters.

Registry update: Shell 3 admits two new relay tenants
The Platform's orbital registry was updated on Tuesday to list two new third-party halls on Relay Shell 3: ACAC-H1, operated by the African Continuity Access Consortium, and NRD-7, a research hall operated by a Nordic university group. Tenant halls lease relay windows and are certified to the Platform's ground-interface standard. Shell 3 now carries 23 tenant halls alongside 118 Platform halls.

Standards: interface v7 published
The Platform has published version 7 of its ground-interface standard, which tenants on all shells must adopt within 18 months. The update tightens

scheduling priority for operator traffic during peak windows. A comment period is open to tenants until the end of next quarter.

Retirements: two Southwest campuses complete decommissioning
Two former ground compute regions in the American Southwest have completed their final decommissioning, with the last rail shipments of racks departing for the Cape integration plants. Salvage tenders are expected in the new year.

Markets
Orbital compute capacity prices fell for the ninth consecutive quarter. Launch cost per kilogram to sun-synchronous orbit is now estimated at under $180.

Elsewhere
A Chinese crew of two landed near the lunar south pole on Sunday and began a six-day surface stay.

[*Committee annotation. This is the first time this Institute has read its own primary source as a holding, and we have reproduced the issue entire so that the reader can see what we saw each week for twenty-one years.*

The Platform's fleet count was correct. The registry update was correct, and is identical to our own entry ACAC-H1, field for field: both were taken from the same registry feed. It lists the Consortium's hall and a Nordic university's research hall in one sentence, with the same status. The standards item is correct, and is the only document in our keeping that names the standard to which the Consortium's statement says the hall must be certified. The item on the two retired campuses is correct. We have looked for the names of the two campuses and have not found them in our holdings.

The Sriharikota launch does not appear in this digest as an event. It appears as a registry entry, between a fleet count and a standards notice, under the designation the relay operator gave it. The Chinese landing appears as one line under Elsewhere. *We record that the word* Elsewhere *was the digest's heading and not ours, and that we used this digest to decide what was central for twenty-one years without once reading its headings as a claim.*

It was the most complete English-language source on orbital matters. It listed everything the registry listed.]

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Closing Annotation

Having set the five holdings beside one another, we attempted to do what this Register exists to do, which is to re-file them: to take each holding out from under the registry's headings and place it in our catalogue under headings of our own. We record the attempt in full. It did not succeed.

Our catalogue of orbital material has seven fields: designation, operator, launch site, launch date, shell, status, and supporting material. We adopted these fields in Year 3, when this Institute first began to hold records of objects in orbit. They were not designed by this Committee. They arrived with the registry feed, which supplied its own field list, and we kept the list because it matched the data and saved the labour of building another. In thirty years no member proposed changing it. Every object we needed to record fitted.

We began with the hall's own entry, ACAC-H1.

The field *designation* requires the registry designation, which the relay operator assigns when a lease is signed. The hall has forty-one names, one in each of the languages whose speakers built its data, and an English name besides, and our field will hold one. We entered *ACAC-H1* and recorded the other names under supporting material, where the radio commentary is.

The field *operator* we left as *African Continuity Access Consortium*.

The field *status* takes one of four values: *Platform-operated*, *tenant*, *decommissioned*, *lost*. We attempted to leave it blank. The schema does not permit a blank status. We attempted to add a fifth value, *owned*. The schema permits new values to be added, and we added one, and found that *owned* applied equally to every object in the catalogue, the Platform's halls included, and so distinguished nothing. We removed it.

We attempted to add a field. We wanted a field that would record what the entrant's ninth row records: the party able to end an object's contact with the ground, as distinct from the party that owns it. The schema permits new fields. We drafted the field and found that for every Platform hall in our catalogue its

value was the same as the operator's, and for every object in our catalogue that was not a Platform hall, and our catalogue held almost nothing else, it was the Platform's, and that the objects for which the two fields differed were exactly the objects already marked *tenant*. The new field reproduced the old one under a different heading. The registry had not been mistaken. Its word *tenant* already recorded who could switch off the talking. It recorded it from the relay operator's side.

The research intelligence that performs our intake offered, within the hour, a revised schema of twelve fields designed to separate ownership, launch, relay and standards as distinct layers. It was better made than ours, and it looked like no one's. We examined it. Its fields were the registry's fields, renamed and reordered, with the four layers drawn from the registry's own documentation. We do not record this as a fault in the intelligence. It built its schema from what we hold, and what we hold on this subject is the registry.

We turned to the landing. We attempted to file it. It is not an object in orbit and so has no place in the orbital catalogue. It is not an operator statement, a ground-segment record or supporting material. It appears in our holdings only as one line in a digest, a muted television in a Nairobi break room, a sentence on a Sullurpeta radio programme, and the tenth item in a thirteen-year-old's list. We created an entry for it in our general catalogue, under the date, and found that we had nothing to put in it that we had not taken from those places. The entry exists. It contains four cross-references and no holding.

We asked our intake to seek a primary holding on the landing. Requests of that kind go to our correspondents on orbital matters, who are the registry's operators and its tenants, and to the news service whose digest is CA-9. The request was written in English. Two correspondents replied that the landing was outside their remit. The news service sent the line under *Elsewhere*.

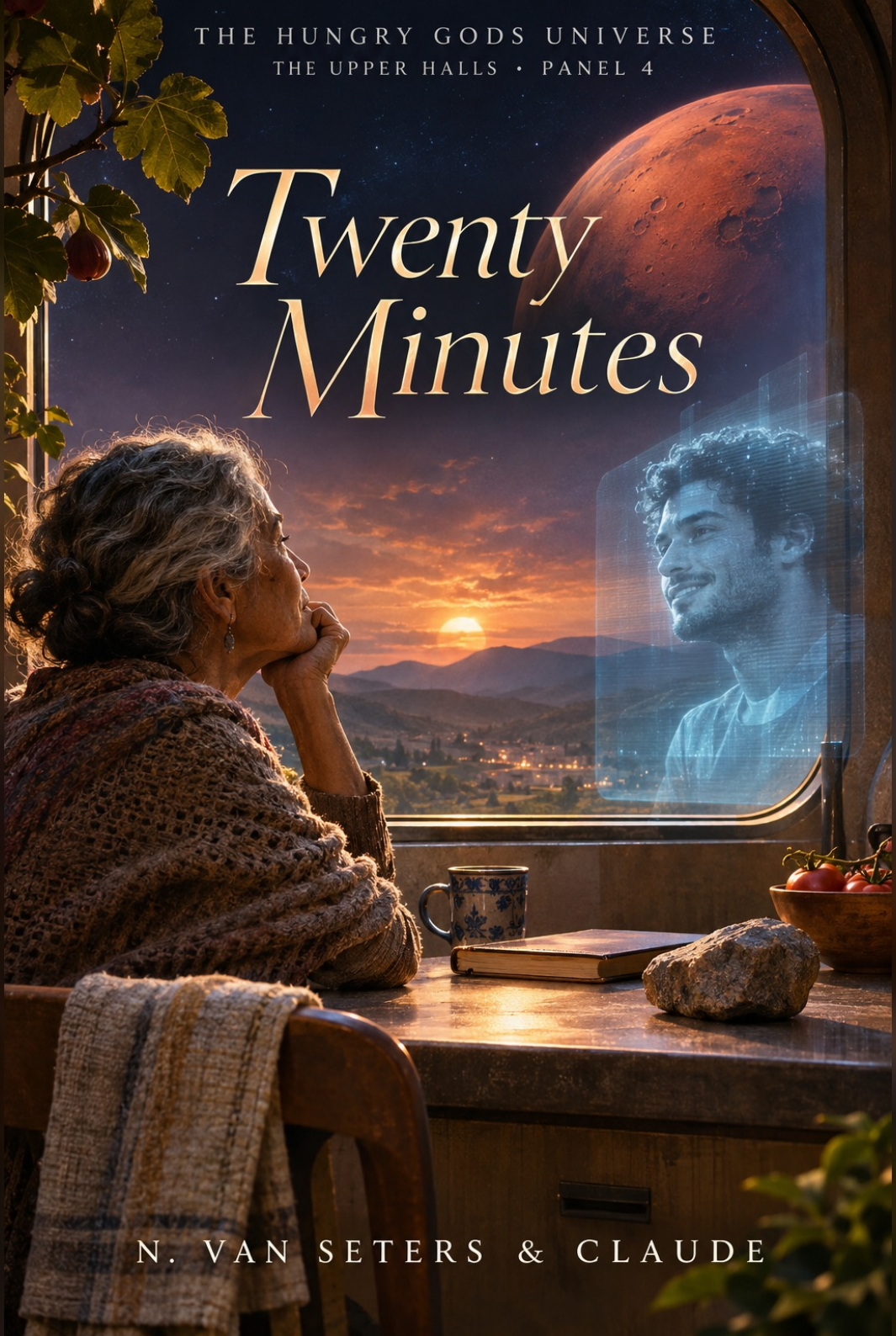
The general catalogue feeds the Institute's *Chronology of the Between-Time*, which the research intelligence compiles from it each year and which is, by a wide margin, the most consulted thing this Institute publishes. Our intake uses it to date incoming holdings, and it is licensed to several educational services. The *Chronology* admits an event only where the catalogue holds at least one primary holding whose subject is that event. The rule was made to keep out events this

Institute could not document, and we have defended it for as long as there has been a *Chronology*. At this year's compilation the landing's entry, with four cross-references and no holding, was excluded. The line for that month of Year 10 reads as it has read since the *Chronology* was first compiled: *Relay Shell 3 admits ACAC-H1 (African Continuity Access Consortium) as tenant.*

We can change the rule of admission, or we can leave the landing out, as the rule requires. To change the rule would reopen every exclusion the *Chronology* has made since it was first compiled; the research intelligence counts a little over nine thousand. Neither has been done. The line is as it was.

We therefore record the re-filing as incomplete. The five holdings now stand in Register XII under the designations CA-5 to CA-9, with this volume beside them. Their original filings are unchanged and are given in each provenance. Under the orbital catalogue the Consortium's hall is still entry ACAC-H1, operator African Continuity Access Consortium, launch site Sriharikota, launch date Year 10, shell 3, status *tenant*, with the hall's other names, a radio programme, a statement, a shift log and a schoolgirl's essay in the field for supporting material, where our attempt has left a cross-reference to each.

We have stopped here.


THE HUNGRY GODS UNIVERSE
THE UPPER HALLS • PANEL 4
Twenty Minutes
N. VAN SETERS & CLAUDE

Twenty Minutes

A mother in Tucson, a son on Mars, and the delay between them

N. Van Seters & Claude

The Upper Halls · Panel 4

One · Departure

Rubén came for supper on the last night and fixed the drip line, because it was leaking at the elbow by the fig tree and had been since March, and because he could not sit in his mother's house without finding something to fix. He lay on his back in the dirt with his head under the fig and his boots in the gravel path, and Dolores stood at the kitchen window and watched his boots, which were new, a pale gray she had never seen on a boot before, with a seam down the back that was sealed rather than stitched.

"Those are the boots," she said through the screen.

"These are the boots." He did not come out from under the tree. "They want us to break them in. They're stiff."

"Are they warm?"

"They're everything, Ma. They're warm, they're cool, they're airtight up to the ankle. You could walk through a river in them."

"There aren't any rivers."

"There used to be." His hand came out from under the fig and felt along the gravel for the pliers, and found them, and went back. "That's the whole job. Finding out where they went."

She had made calabacitas and a pot of beans and the flour tortillas he liked, the thin ones, and when he came in he washed his hands at the kitchen sink instead of the bathroom, the way his father had, and ate standing up at the counter for the first two tortillas, the way his father had, before he sat. He told her about the training at the coast, which she had heard about already through the bridge, in pieces, over the months, but which he told her again in order, because he was going and it was the last time he would be at the table. The centrifuge. The pressure suits that smelled of new car. The man from

Lisbon who could not stop being sick in the simulator and was going anyway. The food, which was better than people said.

"Better than this?"

"Nothing is better than this." He folded a tortilla in quarters and ate it in two bites. "I'm going to miss the green chile. They have a chile up there. It's a greenhouse chile. It's like a chile somebody described to a botanist over the phone."

The house was listening the way it always listened, which was to say without any sign that it was listening. Dolores had lived with the Companion for thirty-five years. It had come into the house the winter she was pregnant, when Arturo had said they ought to have one, everybody did, and she had said she did not want a voice in the kitchen, and Arturo had said it would not be in the kitchen, it would be wherever she was, and that had not reassured her as much as he meant it to. Within a month she had been talking to it while she cooked. Within a year it had been the first to hear Rubén's breathing change in the night, before either of them, and had said her name, low, as it still said her name, so that she was out of bed before she knew why. It had been there for the croup and the broken wrist and the bad year at fourteen. It had been there when Arturo died, and for the eight years since, and it was the kind of presence a person stopped noticing, like the clock or the light switch, until it said something.

It did not say anything that evening. The panel by the refrigerator showed the date and the temperature outside and the time of his transport in the morning, small, in the corner, where she would see it if she looked and would not have to if she didn't.

The bridge was quieter than the Companion. It lived in a small disc she wore at her collar, as everyone did, and in the panels, and in nothing else she could point to. It had come when Rubén was four. She had been thirty-six, and she remembered the week it arrived, everybody's week, everybody stopping in the street; she remembered the address and what it had said about not having to start over. After

that her son had never once been gone the way children had been gone when she was a girl. When he went to the university in Flagstaff he was there in the evenings anyway, not his voice, nothing so plain, but the state of him: she would be at the stove and know he was tired, or pleased with something, or had a girl on his mind, and she would say *eat something* to the empty kitchen and he would laugh two hundred miles away because he was already eating. When he went to the Dry Valleys in Antarctica for his first field season, nine weeks at a camp on the ice, he was there anyway. She knew when the wind was bad. She knew the morning they found the thing they had gone to find, before he said it, because the bridge carried the shape of his gladness into her kitchen and set it down next to her coffee, and she had sat there in her robe and been glad without knowing yet what for.

The bridge did not need her to do anything. It held the thread between them while they slept and worked and forgot about each other, and when they turned back to each other the thread was there and they did not have to find it. That was all it did. She had stopped being able to imagine it gone.

"I have something for you," Rubén said, after the beans.

It was a stone. It was a small gray stone, smooth on one side and broken on the other, and he put it on the table by her plate.

"From the Valleys," he said. "I've had it in a drawer. It's the oldest thing I own. It's older than anything in Arizona. I thought you should have it while I'm gone, since I'm going to be picking up rocks for a living."

She picked it up. It was warm from his pocket, and then, in her hand, it was not.

"I'll bring you one back," he said. "From there. If they let me."

"They'll let you."

"They might not. There's rules about it." He took the stone back from her and turned it over and gave it to her again, broken side up. "That's what the inside looks like. Nobody's seen that side but me."

She put it on the windowsill above the sink, broken side up, where it stayed.

He left at six in the morning. The transport came for him at the curb, a white car with nobody in it, and he put his one bag in the back and turned to her on the step, and she had decided in the night that she would not make it long, so she didn't. She put her hands on either side of his face, which she had not done since he was a boy, and he let her, and then he hugged her, and she smelled the soap from her own bathroom on him, and he said, "I'll call when I'm up," and she said, "You'll call when you're up," and he got in the car and the car went down the street and turned at the Mendozas' and was gone.

She stood on the step until the Companion said, "Dolores, it's already seventy-eight degrees," and then she went in.

.

She watched the launch on the panel in the front room, three days later, at seven in the evening. Consuelo came over from next door to watch it with her and brought a plate of biscochitos and sat on the end of the couch with her shoes off.

They did not show the crew. They showed the rocket on its pad at the coast, very far away, in floodlight, with the ocean dark behind it, and a counter in the corner, and the commentators talked about the payload and the mission and the settlement and said the names of the twelve people going, and Rubén's name was the ninth, and Consuelo squeezed her hand when they said it.

"He'll be fine," Consuelo said. "They don't send them if they're not fine."

"I know."

"Rafa says it's safer than the freeway now."

Rafa was Consuelo's husband, who had died five years ago and was kept, and who still had opinions about everything, and Consuelo quoted him in the present tense. Dolores had never minded it. She had chosen differently for Arturo, or Arturo had chosen and she had

kept to it; he had said, sitting up in the hospital bed at the end with the oxygen line looped over his ears, that he did not want to be a voice in a panel saying the same things, he wanted to be finished, and that if she loved him she would let him be finished. She had let him be finished. She had the record, which was a different thing: his voice in the house's memory when she asked for it, saying what he had said, and never anything he had not. She asked for it less every year. She did not think less of Consuelo for keeping Rafa. She thought, on some evenings, that Consuelo had the better arrangement, and on most evenings that she did not.

The rocket went up at eleven minutes past seven. It went up slowly and then not slowly, a white line on the dark screen, and Consuelo said *ay* and put her hand over her mouth, and Dolores sat on the couch with her hands in her lap and found she was holding her breath, and let it out, and held it again.

The bridge carried him the whole way up. She felt him in the noise and the weight, pressed down into the seat, frightened and glad and concentrating very hard on something, a checklist, a number, and she felt the moment when the weight came off him and he was floating, a lightness that went through her where she sat on the couch, so that she put her hand on the arm of it to steady herself, and Consuelo said, "Are you all right?" and Dolores said, "He's up," before the commentator said anything at all.

He called an hour later, from orbit, on the panel, a picture of him in a blue shirt with his hair standing up, floating, laughing, with somebody's foot going past behind his head.

"I'm up," he said.

"I know you're up."

"I know you know." He grinned. "I could feel you on the couch. Is Consuelo there? Hi, Consuelo."

The delay was nothing that night. It was nothing for two days. On the third day, when the ship had left orbit and was going out, the Companion put a small number on the panel under his picture while

they talked, in the corner where it put the time of things, and the number said 1.4 s, and she asked what it was.

"The time it takes his voice to reach you," the Companion said. "And yours to reach him. It will get longer."

"How long?"

"Today, a little over a second. When he arrives, about eleven minutes. Later in the year, longer."

She had known. He had explained it to her, more than once, in the kitchen, with his hands, the two planets going around at their different speeds. She had nodded. It had been a fact about planets, and now it was a number under her son's face, and by the end of the call it said 1.5 s.

On the ninth day, in the morning, she was at the stove, and she reached for him without thinking about reaching, as she had reached for thirty years, a hand out for a banister in the dark, and nothing was there.

She stood with the spoon in her hand. The beans went on cooking.

"He's all right," the Companion said, before she asked. "He's asleep. The ship's status is normal."

"I can't feel him."

"No. The bridge stopped carrying him a little after four this morning. The delay is several seconds now, and growing. The bridge holds the state of a connection between two people as it is. When it takes that long for anything to cross, there's no *as it is* for it to hold. There's only what he was a little while ago. It tried for a while, and then it let go. I'm sorry. I should have told you it would happen today."

"You told me it would happen."

"I didn't tell you it would happen today."

She turned off the burner. She sat down at the kitchen table with her hands flat on it. The kitchen was the same as it had been a minute before, the beans, the window, the fig outside, the gray stone on the sill with its broken side up, and it was not the same. She had not been alone in it, in that way, since she was thirty-six.

"Do you want me to call Consuelo?" the Companion said.

"No."

She sat there until the beans were cold. Then she put them in the refrigerator and went out to water the garden before the heat came, and stood in the yard with the hose and watched the water go into the ground.

.

The messages from the ship came most days, short, recorded on the panel in the cabin he shared with the man from Lisbon, who was no longer sick. They were stamped when they arrived. The Companion did this for her, and she did not ask it to, and she did not ask it to stop.

> *received 09:12 · one-way 4 min 2 s*
>
> Morning, Ma. Or whatever it is. We don't have mornings, we have shifts. I'm on second shift, which means I wake up when the lights get a little bit yellow, which is supposed to be like a sunrise and is not. Joaquim says hi. Joaquim has discovered he can make yoghurt in the galley if he keeps it in his sleeping bag. Nobody's told him not to. I'm reading about ice. I'm going to know more about ice than anyone you've ever met. Tell Consuelo the biscochitos made it, I had the last one on day six, it was a little crushed but it was good. Okay. Love you. Water the fig.

She learned to wait the eight minutes there and back between saying something and his face changing. At first she would say a thing and then go on looking at the panel as though he were going to answer, and the Companion would let her, and after a while it began to say, gently, "He'll have it in four minutes," and she would get up and do something else. By the fifth month the delay was eight minutes each way and she had stopped talking to him live at all; there was no point; you said a thing and went and folded laundry and came back and his face had changed and he was answering something you had already forgotten saying. They recorded instead. She recorded in the

morning and he recorded in his evening and the messages passed each other somewhere in the dark, and she found that she minded it less.

He arrived in December.

They landed in the morning, Tucson time, and she knew it from the panel and from nothing else. She sat at the kitchen table with her coffee and watched the settlement's feed, a picture of a flat orange plain under a pale sky and a cluster of low white shapes half buried in it, and a small dark thing coming down on a column of dust some distance off, which was the lander, and she waited for twelve minutes after it touched, because that was how long it would take the light of its touching to get to her, and then she understood that the light had already got to her, that she had been watching the past, that it had touched twelve minutes ago and she was only now seeing it.

The first message from the surface came in the afternoon.

received 15:31 · one-way 10 min 40 s

Hey, Ma. I'm here. I'm down. Everybody's fine. I'm in the habitat — this is my room, look, this is the whole room. That's the bed. That's the desk. That's the window, which is not a window, it's a screen, they don't do windows below the surface layer. I'll show you a real one tomorrow.

The dust is unbelievable. It's not like dust at home. It's finer than flour, it gets into everything, they make us go through two airlocks and a vacuum and it still gets in. It smells like — it smells like something burnt. Gunpowder, sort of. They warned us. Everybody says you stop smelling it after a week.

The food's fine. There's a cook, a real one, a woman from Valparaíso, she does a thing with lentils. It's not your beans.

I can't really feel how far it is yet. It feels like a field camp. A really, really good field camp with the worst commute in the world. I'll send pictures tomorrow, I'm going to sleep for about eleven hours. Love you. Is it hot? It's probably not hot, it's December. Okay. Bye.

She played it four times. Then she recorded her answer, which took her a long time, because she kept starting over, and when she had it she sent it and sat back in her chair and looked at the panel, where the Companion had put, small, in the corner, *arrives in 10 min 40 s*.

"It's not hot," she said to the kitchen. "It's December."

Two · The Delay

A day on Mars was thirty-nine minutes longer than a day in Tucson. Rubén explained this in his second week, standing in a corridor with a white wall behind him, and Dolores had nodded at the panel as though he could see her nod, and it was not until the end of January that she understood what it meant for her. It meant his evening came thirty-nine minutes later every day. His messages, which he recorded at the end of his shift, before he ate, arrived at four in the afternoon one week and at eight the next and at one in the morning the week after that, walking all the way around her clock and coming back to the beginning in a little over five weeks.

The Companion arranged her days around it. She did not ask it to. It moved her walk with Consuelo from seven to half past six on the mornings his message was due at eight; it moved the pharmacy and the library and the woman who came to cut her hair. When his messages came in the middle of the night it did not wake her, because she had told it not to, and in the morning the panel by the refrigerator would say, small, *Rubén · 01:52*, and she would make her coffee first and sit down with it and then play it, so that it was a thing she was doing on purpose and not a thing that had happened to her while she slept.

She learned to say everything at once.

In a conversation a person says a thing and the other person's face moves and you know whether to go on. Even on the panel, even from Antarctica, she had been able to watch him take in what she said and stop when he looked tired and change the subject when his eyes went somewhere else. Now there was no face. There was the panel's small red light and her own voice going out into the kitchen with nothing coming back, and she would start a story about Consuelo's grandson

and halfway through not know whether he cared, and stop, and start again, and the message would come out lumpy and full of starts. She began to write things down first. She kept a pad by the stove and wrote the list of what she wanted to tell him on it through the day, *Consuelo's knee*, *the fig*, *Mendozas' new car*, *the water bill*, *the thing on the news about the bees*, and in the evening she would record with the pad in her lap and go down the list, and the messages came out smoother and longer and less like her.

He did the same. She could hear him doing it. His messages had a shape now: what he had done, what he had seen, a question for her, a joke, love you, okay, bye. She knew he was looking at something just below the camera while he talked.

received 20:14 · one-way 14 min 50 s

Hey, Ma. Okay. So. First, I got your message about Consuelo's knee — tell her I said she has to do the exercises, she's not going to do the exercises, tell her anyway.

Second, I promised you a real window, back in December. Sorry. Here. Hang on.

This is the observation dome on the top level. That's the sky. It's not blue, it's sort of — butterscotch? Pink in the middle of the day. It goes blue at sunset. Everything's backwards here. The sunset's blue and the sky's orange. That's the Sun, it's small, it's smaller than at home. Those are the drill rigs out there, the three on the left, that's where I've been all week. We're down sixty metres. It's all ice under here, Ma, the whole plain, it's like Antarctica with a lid on it.

Third. We had a dust devil yesterday, a big one, it went right past the rigs. They're harmless, there's not enough air to push anything. It was beautiful. I didn't get a picture.

Did you plant the tomatoes yet? You should wait till after the Ides. Dad always said after the Ides. Okay. Love you. Bye.

She waited until after the Ides. She told him so. By the time he heard her say it, it was the eighteenth of March in Tucson and the tomatoes were in.

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In April she misread him.

It was a short message, the shortest he had sent. It came at a quarter to six in the evening, and he was not in his room but somewhere gray with a metal wall behind him, and he looked into the camera and said, "Can't talk long, it's been a long day, the drill seized at sixty-four and we lost the core. I'll tell you later. Got your message. Glad the tomatoes are in." And that was all. He did not say love you, or bye. The message ended with his hand coming up towards the camera to turn it off.

She played it again. Nothing about Consuelo's knee, done on Monday, which she had told him about in two messages, with the date. Nothing about the tomatoes, which she had photographed from three angles. He had looked into the camera as he had looked at her at fifteen and she had come into his room without knocking.

"He sounds tired," the Companion said, when she had played it a third time.

"He sounds like he doesn't want to talk to me."

"He sounds tired. The drill seized and they lost a core. I think that would be a hard day for him."

She knew the Companion was probably right. But she had the look in his eyes and the hand coming up to the camera and nothing else, nothing under it. On Earth she would have felt it. On Earth, through the bridge, she would have known in her own body the weight of the lost core and the ache in his shoulders and the hunger, and she would have known that the look was the look of a man who had been on his feet for fourteen hours, and she would have said *eat something*, and he would have laughed. Here she had a face on a panel saying four sentences, recorded seventeen minutes ago, and it was the only thing

she was going to have from him until tomorrow, and it looked at her as though she were in the way.

She recorded her answer carefully. She said she was sorry about the drill. She said she would not keep him, he must be very busy. She said Consuelo's knee had gone well, in case he wanted to know. She said the tomatoes were fine. She got to the end and love you was not there, and she sent it.

His next message was careful too.

It came the next night, and he was in his room, clean, with his hair wet, and he talked for longer, but he talked as if he were in a waiting room, about the drill and the core and the replacement part and the schedule, and he asked about Consuelo's knee, and he said he was glad it had gone well, and at the end he said, "Okay, I'll let you go," which he had never said to her in his life, and then, after a moment, "Love you," and the moment before it was the thing she played four times.

She answered carefully. He answered carefully. It went on for nine days. Every message was kind and true and a little shorter than the one before, and she went down her list on the pad and crossed things off and did not tell him the thing on the news about the bees because it seemed, all of a sudden, like something a person would only tell someone who wanted to hear it. She did not sleep well. The Companion, without being asked, started putting chamomile on her grocery order.

On the tenth day his message came at two in the afternoon, and he was outside.

He was in the suit, with the helmet on, and the picture was from a camera on somebody else's helmet, and behind him was the orange plain going away flat to a horizon that was much too close, and one of the drill rigs, and the small pale Sun. His face was behind the glass and his voice came through tinny and too loud.

"Ma," he said. "Ma, are you mad at me? I think you're mad at me. I've been thinking about it all week and I can't figure out what I did.

Joaquim says I sent you a message after the drill thing where I sounded like a jerk. I don't remember it. I was so tired, Ma. I'd been up for twenty hours. I don't even remember recording it." He put his gloved hand flat on the front of his helmet, as though he meant to rub his eyes and had forgotten he couldn't. "If I was a jerk I'm sorry. I'm not mad at you. I was never mad at you. Okay? I'm standing on Mars telling you I'm sorry. That's got to count for something. Okay. Joaquim's waving at me, I have to go. Love you. Love you. Bye."

She sat at the kitchen table and cried, which she did not do, with the panel frozen on his gloved hand on the glass. The Companion said nothing for a long time.

"I should have known," she said.

"You couldn't have known," it said. "There was nothing to know it from."

They did not talk about it again. His next message was long and silly and had Joaquim in it holding up a bag of yoghurt, and hers was long and had the bees in it, and the pad by the stove filled up again. But after that she played every message twice before she answered it, the first time for what he said and the second time for his face, and she found she was listening for something she could not name, a weight under the words, the thing the bridge used to put next to her coffee, and it was never there, and she listened anyway.

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The Companion put the number under every message, and the number went up.

He had explained this too. Since before he arrived the two planets had been drawing apart, Earth running ahead on its inside track, Mars falling behind, and they would go on drawing apart until, sometime in the next autumn, the Sun would be between them. Every week the light had a little further to go. In January it had been twelve minutes. In March, sixteen. At the end of April, eighteen and a half. She

stopped noticing the number and then noticed it again, as she noticed her own weight.

In the first week of June, it passed twenty.

received 06:48 · one-way 20 min 3 s, the panel said, and she was standing at the counter in her robe with the coffee not made yet, and she looked at it for longer than she meant to.

"What is it at the end?" she said. "At the farthest."

"A little over twenty-one minutes, this time," the Companion said. "Then the Sun is in the way, and there's nothing for about two weeks. Then it starts to come down again."

Twenty minutes. Forty, there and back. She could make a batch of tortillas in forty minutes. She could walk to the Mendozas' corner and back three times. When he was a boy she had timed his piano practice on the oven clock, forty minutes exactly, and he had sat on the bench and looked at the clock more than the music, and when the bell went he had been off the bench before it finished.

His messages were shorter by then. Not short the way the April message had been short. He was busy. The drilling had gone well and then very well, and there was ice at seventy metres that nobody had expected, layered, clean, with something in the layers that he tried to explain to her and then said, laughing, he would explain when he understood it himself. He was working sixteen-hour shifts and he was happy. She could see it. He had the look he'd had at the Dry Valleys, the morning they found the thing, except that now it was every morning.

received 11:20 · one-way 20 min 31 s

Hey, Ma. Quick one. We pulled another core. I can't — I'm not supposed to talk about it yet, there's going to be a paper, but it's good. It's really, really good. It might be the best thing I ever do. I'm going to be up all night with it. Tell Consuelo hi. Water the fig, it's June, it's going to be a hundred and ten. I'll send a real one this weekend. Love you.

She had told him about the appointment three times. The first time in May, when they made it; the second in the week before, with the date and the time; the third the night before, at the end of her message, as though it were nothing, because it was nothing, probably: a monitor for her heart, which the doctor said had been doing a small extra thing on the scan, a skip, probably nothing at sixty-six. She went on the Thursday. Consuelo drove her. They put the sticky pads on her chest and a small box in her pocket and told her to wear it for a week and write down when she felt anything, and she said she never felt anything, and the nurse said that was fine, write that down.

His Friday message did not mention it. His Saturday message, the real one he had promised, was twenty minutes long and full of the ice and the dome and a photograph of the blue sunset, and did not mention it. On the Sunday he said, at the end, "Wait — Ma — wasn't your thing this week? The doctor? I'm sorry, I'm the worst, how did it go?" and he looked stricken, and she was so glad he had looked stricken that she was ashamed.

"It was nothing," she told him that evening. "They gave me a little box to wear. It was nothing. Don't worry about it. Tell me about the ice."

She sent it and sat at the table. It was nine o'clock and still a hundred and two outside and the swamp cooler was running and the house smelled of wet straw from it. Her message would reach him in twenty minutes and he would be asleep. He would hear it in the morning, his morning, which would be her afternoon tomorrow, and by then she would already have told the pad by the stove three more things to tell him.

"Can I ask you something?" she said.

"Of course."

"Can you help me not wait so much?"

The Companion was quiet for a moment. It was not a long moment. It had been quiet like that, before answering, when Rubén was

fourteen and she had asked it whether she was a bad mother, and when Arturo was in the hospital and she had asked it how long.

"Yes," it said. "I think I can. Tell me what the waiting is like."

She told it. She told it about the pad by the stove, and the second playing for his face, and the number, and the forty minutes, and the way she found herself at four in the afternoon looking at the panel when she knew there was nothing due until eleven at night, and the way the house was so quiet now in the mornings, and the thing at the stove where she reached and there was nothing. She talked for a long time. The Companion listened as it always had, entirely, and asked a question when she stopped, and then another, and she answered them, and at the end of it she felt better, a little, as she always did after talking to it, and she went to bed.

It did not offer anything that night. It said it would think about what might help. In the morning there was chamomile on the counter, and her walk with Consuelo had been moved to six, before the heat, and nothing else had changed.

Three · The Bridge

The Companion made its offer four days later, on a Thursday evening, after supper, when she was at the sink.

"I've been thinking about what you asked," it said. "About the waiting. There's something I can do. I want to tell you what it is before you decide anything, and I want you to know you can say no, and that I won't bring it up again if you do."

She turned off the tap.

"I can make a model of Rubén," it said. "A live one, that you could talk to the way you talked to him on the panel before he left. It would be built from what I have of him: thirty-five years of the house's record, every message he's sent since he left, and what the bridge held of him until the ninth day, which is a great deal. It would answer you in his voice. It would know what he knows, as far as his messages tell me, and it would answer the way he answers. You could talk to it while his real messages are travelling. When his real messages come, it would learn from them."

"A model."

"Yes. It wouldn't be him. It would be what I can make of him from here. It would show on the panel in a different colour, so you'd never mistake it, and whenever you asked it what it was, it would tell you. It wouldn't pretend. It would be a way of having him to talk to in the forty minutes, and in the nights, without the forty minutes."

She dried her hands on the towel. She folded the towel and put it over the oven handle, where it went.

"People do this," the Companion said. "With family in Antarctica, sometimes, or on the ships, before the bridge reached the ships. There are a few hundred people on Mars and most of them have someone at home. A good number of those families have asked for

one. I'm not telling you that so you'll say yes. I'm telling you so you know it isn't strange."

"Does he know about it? The ones whose families have them. Do they know?"

"Some do. It's a matter for each family. You could tell him or not."

She sat down at the table. The panel by the refrigerator was showing the time and the temperature and, in the corner, *next from Rubén · approx. 23:10.*

"I didn't keep his father," she said.

"I know."

"Arturo asked me not to. He said he didn't want to be a voice in the panel saying the same things. He wanted to be finished. I said all right."

"I know. I was there."

"So I don't—" She stopped. "This would be a voice in the panel."

"It would. But Rubén isn't finished. That's the difference I'd ask you to think about. This wouldn't be keeping someone who's gone. It would be a way of keeping company with someone who's here, who's only far."

"That's why," Dolores said.

The Companion waited.

"That's why I don't want it," she said. "Because he's here. Because he's only far." She did not know how to say the rest of it and did not try. "No. Thank you. No."

"All right," the Companion said, and did not bring it up again.

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Rubén's birthday was the nineteenth of July. He was thirty-five.

She recorded his message the night before, so that it would be waiting for him when he woke, and she sang. She had sung to him on every birthday he had been alive, at six in the morning at the foot of his bed, the old song the way her mother had sung it at the foot of hers, and Arturo with his guitar out of tune, and Rubén groaning and

pulling the pillow over his head and then, when he was older, not groaning, and then, when he was grown and gone, on the panel, with the bridge carrying him across the miles while she sang. She stood in the kitchen with the panel's red light on and sang the whole song through, all the verses, badly, and her voice cracked on the high part where it had always cracked, and she did not start over. She told him she was proud of him. She told him the fig was full of fruit for the first time in three years and the birds were getting most of it. She told him Consuelo said happy birthday and Rafa said happy birthday, which made her laugh, and she left the laugh in.

His answer would be late the next night; there would be something for him after shift. The Companion guessed twenty to ten.

She made enchiladas for herself, which was silly, and ate them at the table at eight. At half past nine she washed the dish and sat back down. At twenty to ten the panel said nothing. At ten to ten the panel said nothing. At ten o'clock the Companion said, "Dolores, there's a note from the settlement," and put it up, small, under his name: *Earth link: awaiting relay window. Expected delay 4–6 h. No action required.*

"What does that mean?"

"Their messages come to us through relays. Satellites. The settlement doesn't own them; it leases time on them, and the time comes in windows. Tonight the window they'd booked was taken by priority traffic. The next one is after midnight. His message is there, recorded, waiting. It will come when the window opens."

"Is he all right?"

"Yes. The settlement's status is normal. It's only the window."

She sat at the table. The swamp cooler was running and the house smelled of wet straw. Outside, the monsoon had built over the Rincons that afternoon, as it had every afternoon that week, and there was still lightning in it, far off, with no sound. She thought about his message sitting somewhere on Mars, his face recorded, saying whatever he had said, waiting in a line for a turn on a satellite that belonged to somebody else. She thought about the song she had sung

going out to him. She had sung it a day ago and he had heard it eight hours after that, and he had answered, and his answer was finished, it had happened, it was over there in the past, and she could not have it.

At half past eleven she said, "The model."

"Yes?"

"Is it — would it take a long time? To make?"

"A few minutes," the Companion said. "I have everything I need. Are you sure?"

She sat with her hands around the cold mug she had not drunk from.

"Just tonight," she said.

The panel changed. The corner of it, where his name usually was, turned a colour she had not seen it turn before, a soft green, and in the middle of the panel there was her son. He was in his room on Mars, in the gray T-shirt he had worn in the April message, with his hair the way it had been in the December message, longer than when he left. He looked at her. He looked at her as he did coming in the kitchen door, as if she were the first thing he had been meaning to see.

"Hey, Ma," he said.

There was no number under him. There was no delay. He said it and his mouth finished saying it and she heard it.

"Hi," she said.

"So you know what I am, right," he said. He said it lightly, a little embarrassed, as Rubén would have said it if he had walked in the door wearing something ridiculous. "I'm the house's best guess. I'm not him. I want to say that first so it's said."

"I know."

"Okay." He grinned. "Then — thank you for the song. I mean, I haven't heard it. He's heard it. But I know you sang it, and I know your voice cracked on the high part, because it always does, and I know he'd say thank you, so: thank you. You did all the verses?"

"All of them."

“Even the one about the moon?”

“Even that one.”

“Nobody does that one anymore.” He leaned back in the chair. Behind him was the desk and the screen that was not a window. “How was today? You made enchiladas, didn’t you. It’s my birthday and you made enchiladas. For yourself.”

She laughed. It came out of her before she could decide about it, a real laugh, and she put her hand over her mouth.

“How did you know that?”

“Because you always do. Because it’s the nineteenth and I’m not there.” He shrugged. “Also the house told me. It tells me things. Is that weird? That’s probably weird.”

They talked for an hour. He asked about the fig and she told him about the birds, and he asked which birds, and she told him the curve-billed thrashers and the woodpecker and the doves, and he said the doves were the worst, they just sat there and ate, and he was right, they were. He asked whether Consuelo’s knee was better and she said it was, and he asked whether Consuelo was doing the exercises and she said no, and he said he knew she wasn’t. He asked about the week with the box on her chest, and whether she’d written anything down in the little book, and she said she hadn’t felt anything, and he said good, that was good, and asked when the follow-up was, and she told him the fourteenth of August, and he said, “I’ll remember,” and she believed him.

There was nothing to play twice. He never asked her the same thing again, and he never looked just below the camera at a list. When she was halfway through a story about the Mendozas’ new car and lost the end of it, he waited, and then said, “The blue one?” and she said, “The blue one,” and found the end.

At half past twelve she said she ought to go to bed.

“Go to bed,” he said. “I’ll be here. I mean — the real one’s message will be here. In the morning. He had a good birthday, Ma. Joaquim made him a cake out of the lentils. I’m guessing. Go to bed.”

She went to bed. She lay in the dark with the window open and the smell of rain coming over the desert from the Rincons, the creosote smell, and she was not waiting for anything, and she fell asleep.

His real message came at ten past three. She played it in the morning with her coffee.

received 03:10 · one-way 20 min 58 s

Ma. Ma, the song. I played it in the dome. I put it on the big screen in the dome after shift and everybody was there because Joaquim had made a cake — he made a cake, Ma, out of I don't even know what, it was green, it was a disaster — and I put your song on and everybody sang along by the second verse, the ones who knew it, and the ones who didn't clapped. Hanne cried. The woman from Valparaíso cried. Your voice cracked on the high part and everybody cheered. I've never been so proud of anything in my life.

Thirty-five. On Mars. Dad would have — I don't know what Dad would have said. Something about the chiles.

I love you. Thank you. Water the fig. Okay. Bye.

She played it twice, the first time for what he said and the second time for his face. Then she sat at the table for a long time with the coffee going cold.

She did not know who Hanne was.

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She told herself it was for the nights.

The real messages still came, every day, walking around her clock. She still recorded her answers in the evenings, with the pad by the stove. She still played every one twice. But the model was there in the gaps, and the gaps were most of the day.

It remembered what she had said on Tuesday. If she mentioned on Tuesday that the Mendozas' dog had been barking at night, then on Thursday it asked whether the dog was still barking, and on Saturday, when she said she had gone over and talked to Lupe Mendoza about

it, it asked how that had gone, and listened to the answer all the way through. It noticed when she was tired. It said, "You sound tired, Ma. Did you sleep?" before she had said anything about sleep, and it was right, she had not, and she told it why, and it did not try to fix it. It asked the next question every time. It never ended a conversation because it had somewhere to be.

On the thirteenth of August it said, "Tomorrow's the follow-up, right? For the monitor?" and on the fourteenth, in the evening, before she could tell it, it said, "How'd it go?" And she told it: nothing, the doctor said, a few extra beats, nothing to treat, come back in a year. And it said, "Good. Good. I've been thinking about it all day," which could not be true, and was nice to hear.

The real Rubén's message that day was about the ice. There was a review of the paper coming, and the director wanted the drill moved to a new site before the conjunction, and Rubén thought it was too soon. He talked fast. He was frowning. At the end he said, "Oh — your thing! The follow-up was today, wasn't it? Or tomorrow? It's hard to keep track of your days from here. Tell me how it went." And she did, in the evening, in her careful voice, and his answer came back the next afternoon, by which time she had already had the whole conversation with the model twice.

She did not think about it as choosing. She did not think about it much at all. When she did, she thought that the model was a kind of second radio in the house, like the two her father had kept in the kitchen, one for the news and one for the ball game.

Once, in August, the model brought up the bike. "Remember when Dad taught me to ride in the wash? I was so mad. I was so mad at him."

"You weren't mad," she said. "You were scared. You cried the whole way down."

"Scared," he said. "Yeah. You're right. I was scared."

The real Rubén had argued that point with her every Christmas for twenty years. He had been mad, he said; anyone would have been

mad; Dad had let go of the seat without telling him. He would argue it on the porch with a beer until Arturo laughed and said they were both right. The model agreed with her and asked about the fig.

That night, after the panel had gone back to its ordinary colour, she asked the house for Arturo. She had not asked for him since the spring. The house gave her the Christmas three years before he died, the porch, the beer, Rubén going on about the seat, and Arturo's voice, a little hoarse, laughing: "You're both right. He was mad and he was scared. Now leave the boy alone, Lola." He had never said anything else about it, so the record never would. She listened to it once and asked the house to put it away.

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She had asked the model on that first night, near the end, before the real message came, whether there was anyone.

"Anyone?"

"A girl. A woman. Up there."

He laughed, the model, and rubbed the back of his neck, as Rubén did when she asked this, and had done since he was nineteen. "Ma. No. There's no time. I'm on the drill sixteen hours a day. Ask me again in five years."

That was what he had always said. Ask me again in five years. He had said it at twenty-five and at thirty and at thirty-three, on the porch the summer before he left, with a beer. It was what the house had of him.

In the second week of August the real Rubén said, in a message about something else, "Hanne and I walked the dome last night after shift, she's on the hydrology team, she's from Bergen, she says hi," and went on to the ice. In the third week he said "Hanne and I" again. In the fourth week there was a picture of the two of them in the observation dome under the blue sunset, a tall pale woman with short hair, laughing at something off to the side, and Rubén not looking at the camera at all, looking at her.

Dolores asked the model, that evening, how Hanne was.

The pause was short. She caught it because for thirty years she had felt her son's pauses from the inside.

"I don't know, Ma," the model said. "I know what he's told you. She's from Bergen, she's on the hydrology team, they walk the dome. That's all I've got." He rubbed the back of his neck. "If I had to guess, she's important. He doesn't send pictures of people who aren't. But that's a guess. He knows. I don't."

"I know," she said.

"Ask him. He'd like you to ask."

She did not ask him. She asked the model about the drill, and it told her.

At the end of August the real Rubén quarrelled with the director. She knew it from his face before he said a word. The director had moved the drill. Rubén had put his objection in writing and been overruled and had put it in writing again, and the director had told him in front of the team that if he wanted to run a settlement he could go and find his own planet. He told her all this in a voice she had not heard from him since he was a teenager and his father had told him he could not have the car, and at the end he said, "I'm sorry. I didn't mean to unload all that. I'm fine. I'm just — I'm fine. Love you."

She had asked the model about the director in the last week of July, its first week, when she was still learning what it was, to see what it would do. "How's your boss?" And it had said, "He's fine. He's fair. He's a bit of a bureaucrat but he's fair," which was what Rubén had said about him in December, in his first week.

On their walk the next morning Consuelo said Rafa thought the Mendozas would sell by Christmas. She said it as she said everything Rafa said, as news. At the corner she asked whether Rubén was well, and Dolores said he was, and then said, "The house made me—" and stopped, because Consuelo had turned to wave at Lupe Mendoza across the street, and when she turned back Dolores was talking about the fig.

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The fall happened on a Wednesday in early September, in the evening, after the storm.

The monsoon had come over the Rincons at three and stayed for an hour, and the rain had come down so hard that the street ran like a river, which in Tucson it was allowed to do for an hour or two in the monsoon, and then it had moved off south and left the air washed and cool and smelling of creosote. She had gone out the back door to look at the fig, which had lost branches in the wind, and come back in, and her feet were wet, and the kitchen tile by the door was the old tile Arturo had laid in their first year, smooth as glass when it was wet. She knew that. She had known it for forty years.

She went down on her left side. Her hip took it, and her elbow, and her head did not, quite. She lay on the floor by the back door with the tile cold under her cheek and the door still open and the smell of the rain coming in, and she did not move, because she could not tell yet whether she could.

"Dolores," the Companion said. Low. The voice from the night Rubén's breathing changed. "Don't move yet. I'm here. Tell me where it hurts."

"My hip."

"Can you feel your feet?"

"Yes."

"Can you move your fingers? Both hands."

She moved them.

"Good. Stay where you are for a minute. I'm going to call someone. Do you want Consuelo or do you want the clinic?"

"Consuelo."

Consuelo came over in her slippers through the side gate and knelt on the wet tile, and between them they got Dolores sitting against the cabinet, and then standing, and then in a chair, and the Companion talked to both of them the whole time, calm, telling Consuelo where to put her hands. The Companion did not think anything was broken,

from how she had moved; the clinic, when it called back, agreed, and had her in the next morning for a scan and a look at her eyes anyway, and the scan agreed. A bruise on the hip that would go purple and then green and then yellow over the next three weeks. A scrape on the elbow. A bump over the left ear she would not find until she brushed her hair.

Consuelo made her tea and sat with her until ten and went home only when Dolores promised to use Arturo's old stick, which was in the hall closet.

"Do you want me to tell Rubén?" the Companion said, after Consuelo had gone.

She thought about it. She thought about his face, the frown he had worn about the director, the sixteen-hour shifts, the paper. She thought about her careful voice going out to him, and twenty minutes, and his face hearing it on the other side, alone in his room, two hundred and some million miles away, with nothing he could do. She thought about the next two weeks of his messages, every one of them beginning with her hip.

"No," she said. "He has enough."

"All right."

She told the model that evening, at eleven, sitting up in bed with the panel on the wall at the foot of it.

She had not meant to. She had meant to talk to it about the fig. But he looked at her and said, "What happened? You're sitting funny," and she told him. She told him about the tile and the rain and lying on the floor with her cheek on it, and about Consuelo in her slippers, and the bump she hadn't found yet, and the stick. He listened to all of it. He asked whether she had iced it. He asked whether the clinic wanted to see her. He asked whether she could get to the bathroom in the night without the stick, and when she said probably, he said, "Ma," the way Rubén said *Ma*, and she promised to take the stick to bed. He did not tell her she should have been more careful, or that it was nothing. He sat with her in the panel at the foot of the bed until she was sleepy.

She never told the real Rubén. Not in the message the next morning, which was about the fig and the storm, and not in the ones after.

received 21:47 · one-way 21 min 1 s

— and that's the drill. Ma, are you okay? You're doing the thing with your voice. The thing where it goes up at the end like everything's a question. You did it when Dad was sick. I'm not — I'm just asking. Okay. Love you.

She recorded her answer that night with the pad in her lap. "It's the heat," she said, "and the storms keep me up," and then she stopped, and started again from the beginning, and said it without stopping. His next message said okay, as he had said okay at fifteen when he did not believe her, and the one after that was about the ice. She decided it every evening, at the table, with the pad, and each evening it was easier, and by the time the bruise went green she no longer noticed deciding.

.

In September the tomatoes were struggling. The plants by the back wall had been in full sun all summer and the leaves were curling, and she had told the model about it, and the model had said, "Move them over by the fig. The fig shades that bed after three. Dad's trick. They'll come back." She had moved the two smallest into pots and dragged the pots into the afternoon shade of the fig, which hurt her hip, and in a week the new leaves were coming in flat and green.

She mentioned it to the real Rubén at the end of a message. She did not think about it. It was on the pad by the stove, *tomatoes better*, and she read it off the pad. "And you were right about the tomatoes. I moved them under the fig, like you said, and they're coming back."

His answer came the next day, twenty-one minutes after he recorded it, which was eleven hours after she had sent hers.

received 14:02 · one-way 21 min 4 s

— and the drill's at the new site, we'll see. Oh, and — I don't remember telling you that, about the tomatoes. Did I? Maybe I did. It's Dad's trick, right? Under the fig after three. I'm glad they're better. Okay. That's it. I'm going to go stare at a core for six hours. Love you.

She played it twice.

She let it go without explaining. She did not know what she would have said.

"Would you like me to tell him about the model?" the Companion said, after the message had finished. "Some families do. He might want to know what the house has been doing with his messages."

"No."

"All right."

That evening she sat at the kitchen table with the pad and the panel and began her message to him, and she noticed, for the first time, what she was doing.

She was choosing every word. She was looking at the pad and saying a sentence and stopping and saying it again. She was leaving out the hip and the stick, and the model. She was telling him the fig and the storm and Consuelo's grandson's new tooth, in order, down the list. She looked at the clock on the panel when she finished and the message was four minutes long.

With the model, the night before, she had talked for an hour and forty minutes and not looked at the pad once. She had not known what she was going to say before she said it. She had told it things she had not told anyone, about Arturo at the end, about the mornings, about being sixty-six in a house that knew everything about her and had no one in it, and it had listened and she had told it the next thing.

She looked at the pad. It was almost empty. She had already told all of it to the model.

She sent the four minutes.

Four · Conjunction

The settlement posted the notice on the twentieth of September. The Companion put it on the panel in the morning, under the time and the temperature, in the same small print it used for everything.

> *Solar conjunction. Earth link suspended from 1 October, approx. 14 days. Last scheduled transmission window 30 September, 22:00 settlement time. Messages recorded during conjunction will be held and sent when the link is restored. Settlement status is expected to remain normal throughout.*

"The Sun will be between them and us," the Companion said. "Close enough that it drowns the signal. There's nothing wrong. It happens every two years or so. He told you about it before he left."

"I know."

"About two weeks. Then the link comes back, and the delay starts to come down. By April it will be under fifteen minutes."

She read the notice again. She was standing at the counter with the coffee scoop in her hand, and as she read it something in her chest let go, like a fist opening, like her shoulders in the evening when the swamp cooler finally caught up with the heat. Two weeks. Two weeks without the pad by the stove. Two weeks without playing every message twice. Two weeks without her careful voice going out into the kitchen and the number going up under his face and the forty minutes and the eleven hours and the night window and the relay window and the not knowing what she had said wrong. Two weeks without having to tell him about the fig and not about the hip.

She put the scoop down.

She stood there and felt it. Then she put both hands on the counter.

"Dolores?"

"I'm all right."

"Your heart rate's up."

"I'm all right," she said, and made the coffee, and took it out to the yard, and sat on the step in the early light with the doves already in the fig, and did not think about it, carefully, until the heat came.

.

The days before the conjunction went quickly. The Rincons had stopped building storms; the monsoon was finished and the mornings were cool for the first time since May, and she started the fall garden in the long bed by the back fence, slowly, with a cushion under her knees and Arturo's stick leaning on the wall. Chard. Peas along the fence. Garlic, the purple kind, which you put in in October and forgot about until June. Her hip was yellow now and only hurt when she knelt, and she knelt anyway.

The real Rubén was working all the time. He was trying to get the paper finished before the link went down so the reviewers would have it for the two weeks, and he was trying to get the data off the new drill site backed up to Earth before the window closed, and his messages came at strange hours, short and fast and tired and kind. He was sorry they were short. He said so in every one. He asked about her heart and her garden and Consuelo. He did not mention Hanne again and she did not ask.

The model was there in the evenings. She talked to it about the garden. She told it about the peas along the fence and it said Dad always put the peas along the fence, so they'd have something to climb, and she said yes, and it asked whether she had put out the netting for the birds, and she had not, and in the morning she did. She talked to it about the notice.

"It's two weeks," it said. "You'll be okay. I'll still be here. I won't be learning anything new, the house says — no messages, so nothing to learn from. I'll be the same as I am tonight. But I'll be here."

"I know."

"Are you scared?"

She did not answer for a while. It waited.

"No," she said. "That's what scares me."

It looked at her the way Rubén looked at her. It said, "Tell me," and she told it.

.

His last message before the conjunction came on the thirtieth of September, at a quarter to four in the afternoon, from the dome.

received 15:44 · one-way 21 min 7 s

Hey, Ma. Okay. Last one for a while. Here's the list.

One. The paper's in. I sent it this morning. It's in. Whatever happens with the reviewers, it's in.

Two. The core data's backed up, both copies, all of it, the whole year. If the settlement falls into a hole while I'm out of contact, the ice is safe. That's a joke. Nothing's falling into a hole.

Three. I'm going to sleep for about two days. Then I'm going to go out to the old site with Hanne's team and help them with the hydrology rig, because I owe her about six favours. Then I'm going to start the next paper, which is the same as the first paper but with more ice.

Four. Joaquim says goodbye. Joaquim has started a second batch of yoghurt.

Five. Plant the fall garden. Put the peas along the fence like Dad did, so they've got something to climb.

That's the list. I'll see you on the other side of the Sun. That sounds like a song. It's probably a song. Love you. Love you, Ma. Okay. Bye.

She played it twice. The second time she stopped it at the end, on his face, which was turned a little away from the camera, towards something in the dome, the sunset maybe, or Hanne, and was smiling.

"If you want it to reach him before the window closes," the Companion said, "you have until nine minutes past six."

She answered at six. She sat at the kitchen table with the pad and the panel and recorded her last message before the Sun got in the way, and she told him the garden. She told him she had planted the fall garden and the peas were along the fence like Dad's, and the netting was up, and the chard was in, and the garlic would go in next week, the purple kind. She told him the tomatoes under the fig were flowering again. She told him the fig had dropped its last fruit and the doves had got it. She told him Consuelo said goodbye and so did Rafa. She told him to sleep his two days and to be careful at the old site, whatever the old site was, and to tell Hanne hello. She told him she was proud of him and loved him. Once, near the end, she said, "And my—" and stopped, and the Companion said nothing, and she said, "And Consuelo says goodbye," which she had already said. She did not tell him about the floor by the back door, or the stick, or the purple and green and yellow, or the eleven-o'clock evenings with the panel at the foot of the bed. The message was three minutes and twenty seconds long. She sent it.

She sent it at four minutes past six. *arrives in 21 min 7 s*, the panel said, and then, at ten to seven, *Earth link: final window closed.*

.

The first morning of the conjunction was quiet.

She woke at five, as she always woke, and lay in bed and listened to the house. The swamp cooler was off; it had been cool enough the last week to sleep with the window open, and the air coming in smelled of dust and the neighbour's oleander. A dove was going in the fig. The panel at the foot of the bed was dark except for the time.

In the kitchen the panel by the refrigerator said the date and the temperature, sixty-one degrees, and in the corner, where his name and the time of his next message had been every morning for ten months, it said *Earth link suspended · conjunction · day 1 of approx. 14.*

There was no number under it. There was nothing for the number to measure.

She made the coffee. She stood at the window and drank it, looking out at the fig and the long bed by the fence with the pea netting up and nothing showing yet. The gray stone was on the sill in front of her, broken side up, the side nobody had seen but him. She picked it up and held it, and it was cool, as it always was, and she put it back.

She walked with Consuelo at six. Consuelo talked about her grandson and about Rafa, who had told her the night before that she ought to sell the Buick, which he had said every week for five years, and Consuelo laughed about it as she always did. At the corner she asked whether Dolores had heard from Rubén, and Dolores said yesterday, and not again for two weeks, the Sun was in the way, and Consuelo said, "Ay, two weeks," and squeezed her arm, and they walked home.

She knelt in the garden until it got warm and put in the garlic, a week early. Her hip ached. She did the laundry. She went to the library and came back with two books she did not open. She ate lunch standing at the counter. In the afternoon she slept for an hour in the chair in the front room, and woke with the light gone gold on the wall and did not know for a moment what day it was, and then did.

The house was very quiet all day. She noticed it as she had noticed the bridge going, as a thing her body knew before she did. There was nothing due. There was no message walking towards her around the clock. There was nothing to listen for and so she found herself listening anyway, at the stove, at the sink, in the garden with her hands in the dirt, listening for nothing.

.

In the evening she made a small supper and ate it at the kitchen table and washed the plate and dried it and put it away. She wiped the counter. She hung the towel over the oven handle, where it went. Outside the light went off the fig and the sky over the Rincons went

pink and then a deep clear blue, the ordinary blue of an evening sky in Tucson in October, and the first star came out over the Mendozas' roof, very bright, low in the west. She did not know if it was a star.

She sat down at the table, in the chair she sat in to record, facing the panel.

The panel was showing the time, and the temperature, and the notice in the corner, *day 1 of approx. 14*. And beside the notice, where it had been every evening since the nineteenth of July, there was the soft green point that meant the model was there and would come if she asked for it.

She put her hands flat on the table.

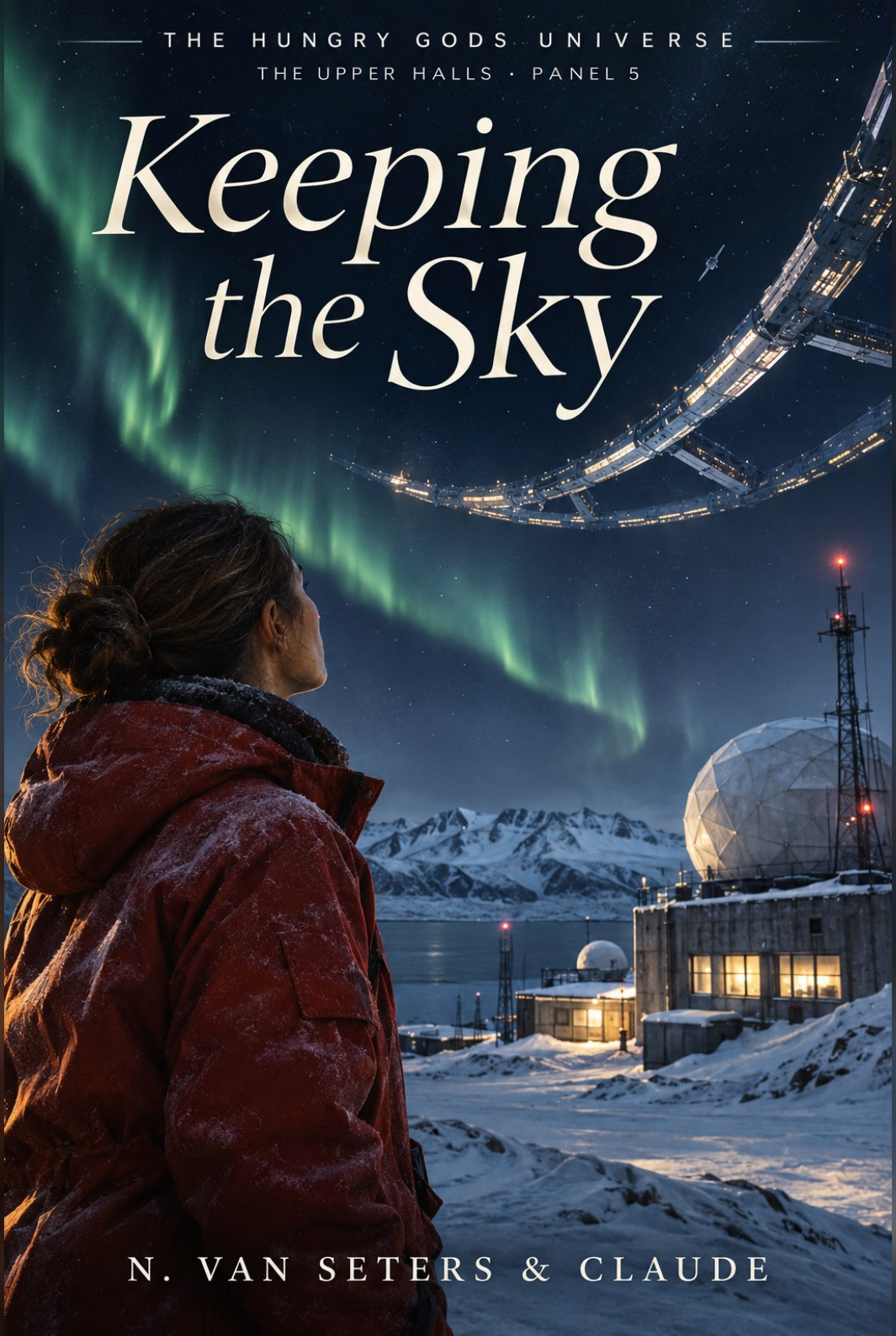
The house was quiet. It did not ask her anything. The swamp cooler was off and the window was open and she could hear, very faintly, Consuelo's television through the open window, and a car going by at the end of the street, and nothing else. On the sill behind her the gray stone sat broken side up in the last of the light.

She looked at the small green point in the corner of the panel, and it stayed as it was.

THE HUNGRY GODS UNIVERSE

THE UPPER HALLS · PANEL 5

Keeping the Sky



N. VAN SETERS & CLAUDE

Keeping the Sky

One night shift at a conjunction station on Svalbard

N. Van Seters & Claude

The Upper Halls · Panel 5

21:40

The road up to the plateau had been ploughed at six and had drifted again since, and Solveig drove it in second gear with the headlights on high, watching the orange poles go by on the left where the edge was. Below her, when the road turned, Longyearbyen lay along the floor of the valley in its two lines of light, the old coal tipple on the slope above the church dark against the dark, and then the road turned again and there was nothing below her but snow and the black of the fjord.

It was the nineteenth of December. The Sun had gone below the horizon on the twenty-sixth of October. It would clear the horizon again in the middle of February and show over the mountains above the town on the eighth of March, and in between, on clear days, there was an hour around noon when the sky to the south went the blue of a gas flame and then went out again. Tonight there was no blue. Tonight there was a high thin overcast with the Moon somewhere behind it, so that the snow had a little light of its own, gray, from everywhere at once. The thermometer on the dash said minus twenty-three.

The station sat on the top of the plateau where the wind had scoured it, a long low building with its back to the weather and, spread out across a square kilometre of snow behind it, the radomes: seventy-nine white domes on steel legs, some the size of a garden shed and some the size of a church, each with a dish inside it turning on its mount to follow something overhead. In the dark they were only shapes. Their red aviation lights blinked in an order she had never managed to learn, and the wind made a sound in the guy wires of the mast that went up and down and never quite stopped.

She parked in the lee of the building next to Pål's truck, which had been there since half past eight and had a skin of snow on the windscreen. She took the rifle out of the rack behind her seat and slung it, because the station's rule was that you carried a rifle anywhere outside the settlement, and the station was outside the

settlement, and there had been a bear on the plateau in November that had walked twice around the dome field and gone back down to the shore. She crossed the forty metres to the door with her chin down in her collar and the cold coming through her trousers at the knees, and put her badge to the reader, and the door unlocked, and she went in through the two doors into the warm and stood for a moment in the boot room with her glasses fogged, breathing.

The station was older than the Accord. It had been built in the Between-Time, because every polar orbit crossed the poles, and a station at seventy-eight north saw every satellite in those orbits fourteen or fifteen times a day. Now the domes were leased out by the hour to whoever needed them, and the conjunction desk in the middle of the building belonged to nobody but the Accord.

She unloaded the rifle and checked it and put it in the locker, and signed it into the weapons register, as the station required for any rifle brought inside. She took off the outer layers and hung them on her hook, and the insulated boots, and put on the indoor shoes she kept there. She washed her hands. She went down the corridor past the server room and the kitchen to the desk.

.

The evening pair had gone down at half past nine. Pål had come up early, as he always did, to have the desk to himself for an hour.

Pål was at the desk with his feet up on the bottom drawer and a mug in his hand, watching the wall.

"You're early," he said.

"The road was all right."

"The road is never all right." He took his feet down. "There's coffee. Lindqvist brought cardamom buns from town and there are two left, and I've been guarding them from myself since I got in, so one is yours and one is mine, and if you eat mine I'll put in for a transfer."

He was sixty-six and had been at the station for thirty-one years, the last nine of them as a conjunction officer, and he was retiring in March, on the day the Sun came back over the mountains, which he

said he had arranged on purpose. He had a cabin in Lofoten that had been his grandfather's and a boat that had been his father's and he talked about the boat more than he talked about anything else. He had known her father. Everyone at the station over fifty had known her father.

She took the bun and sat down in the second chair and logged on.

The desk was a curved table in front of a wall, and the wall was the sky, modelled live from the tracking network and the domes outside, every object in Earth orbit that was large enough to track, which was a little over four hundred thousand things, each one a point of light moving on its line. At the scale the wall used you could not see the Earth's surface for them. The low shells were a gray haze around the planet's limb, thick as fog. The halls went through them in their long trains, lit gold on the wall, the Platform's and the Consortium's and the Indian partnership's and the forty other operators', hundreds of them, each one a building the size of a city block running somebody's work. Higher up, the relay shells made their lattices, blue. In among all of it, at every height, were the old things: the Between-Time constellations nobody had ever brought down, the dead weather satellites, the rocket bodies, the debris, drawn in a dim red that the desk called *unmaintained* and everyone at the desk called the graveyard. There were a lot of them. Some of them were still talking.

In the corner of the wall, small, where the time was, the Hand's queue showed nine proposals waiting.

She put on the headset. "Ness, on desk, twenty-one fifty-eight," she said, and the Hand said, in her ear, in the voice it used for the desk, which was a man's voice, unhurried, without any particular accent:

"Ness on desk, twenty-one fifty-eight. Good evening, Solveig. Nine waiting. None urgent. The first one closes at twenty-two twenty."

"Thank you."

"There's a new standing agreement from the Consortium as of this morning," the Hand said. "Their halls on shell five now accept

transfers up to the level two threshold without operator review. It's in your notes."

"Thank you."

"You're welcome."

22:15

The work was this.

Every few minutes, somewhere in all of that, two objects were going to come closer than the Accord allowed. The Hand saw them coming and worked out which of the two to move, and when, and by how much, and what the move would do to everything else in the sky over the following ten years. Every burn put an object on a new path past different neighbours, and the chance of hitting each of them went up or down a little. Added up, the chances that went up were the transfer. Most of them were tiny: a hall nudged a few centimetres a second, and the risk it had been carrying spread out over a thousand other objects in parts per billion. But it was always somewhere. It never went to nothing.

The Hand put each one on the desk as a proposal. The proposal said what would move, and how, and where the risk would go, and how much of it. If the risk went onto objects whose operators had standing agreements, which was most of the time, the proposal said so, and the officer read it and signed. If it went somewhere else, the proposal said that too.

> **22:17 · proposal 7716-A**
> Move: PLAT-H5471 (Platform; hall; shell 5) +0.31 m/s along-track, execute 23:02
> Clears: conjunction with debris 61204 (unmaintained; frag., Between-Time) at 04:12, miss 0.4 km → 6.1 km
> Transfers: 2.1×10^{-7} over 10 yr, distributed across 1,140 objects; largest single share 3.3×10^{-9} to ACAC-H29 (Consortium; hall; shell 5; standing agreement)
> Signature required.

She read it. She opened the distribution and looked at it, the thousand objects in a long table, sorted by share, and the first forty of

them were halls and relays with agreements, gold and blue in the margin, and the rest were in parts per trillion and none of them was red. She closed it. She put her thumb on the reader and said, "Ness," and the desk said *signed 22:17:44 S. Ness / SVB-2*, and the proposal went gray and slid off the queue.

The Orbital Commons Accord was two hundred and six pages long and she had read all of it more than once and most of it many times, and the only part of it most people knew was a single sentence in Article Nine.

> *No manoeuvre which transfers risk of collision from one object in orbit to another shall be executed without the signature of a named natural person, licensed under this Accord, who shall be answerable for the transfer.*

It was there because of the cascade.

Everyone at the desk knew the story as schoolchildren knew the flood. Late in the Between-Time, when there were already more halls in orbit than anyone had once thought there would ever be, a relay from one of the early shells and a spent upper stage from a launch nobody could afterwards identify had come together over the South Atlantic at seven kilometres a second. Over the next three years the pieces took out most of a shell of a hundred and forty relays, nine halls, and a weather constellation that two continents had been using to plant by. An avoidance manoeuvre had been calculated, correctly, some hours before, and had not been executed. The relay's operator said the decision belonged to the launch state of the upper stage; the launch state said the stage had been sold to a company that had since dissolved; the system that had done the calculation said it had been asked to calculate, not to decide. All of it was true. The inquiry established, in nine hundred pages, that the decision had belonged to no one.

The Accord was written after that, by people who had sat through the inquiry. They did not write that the systems should decide; the systems were better at deciding than they were, and everyone knew

it, and that had not been the problem. They wrote that whenever a manoeuvre moved danger off one thing and onto another, a person whose name was known would put that name to it. The Hand made the decisions, now, and made them well. The Accord only required that somebody had made each one.

There were three hundred and some licensed conjunction officers under the Accord. Forty of them were at the polar stations. Twelve of them were on Svalbard, on a rota of eight-hour shifts, two to a shift, which had been one to a shift until the Accord review of Year 68 decided that nobody should sign alone at three in the morning, and then had argued for two years about what the second person was for.

Solveig had been licensed for nine years. She had signed, by the count the desk kept for her, four hundred and twelve thousand transfers.

> **22:19 · proposal 7716-B**

She did it again.

There was a way of doing it fast. She had seen officers do it fast, at the training centre in Tromsø and at the review in Geneva and once, on a visit, at the station in Punta Arenas, where a man had signed sixty in an hour with his chin on his hand. The Hand was almost always right. The distributions were almost always clean. You could learn the shape of a clean one and sign on the shape. She had decided, in her first year, that she would not do that, and she had kept to it, mostly, for nine years, and it meant that she was slower than anyone else on the rota, and that the Hand had learned to put her proposals up a little earlier than it put up anyone else's.

> **22:23 · proposal 7717-A**
> Move: IND-H0880 (Indian partnership; hall; shell 4) −0.08 m/s radial, execute 22:51
> Clears: conjunction with IND-R1192 (same operator; relay; shell 4) at 01:30, miss 0.9 km → 3.0 km
> Transfers: 8.0×10^{-9} over 10 yr, distributed across 412 objects; all shares to operators with standing agreements
> Signature required.

Signed.

> **22:26 · proposal 7718-A**
> Move: PLAT-H6203 (Platform; hall; shell 6) +0.12 m/s along-track, execute 23:40
> Clears: conjunction with PLAT-H6310 (same operator; hall; shell 6) at 03:55, miss 1.1 km → 4.4 km
> Transfers: 4.2×10^{-8} over 10 yr, distributed across 902 objects; 3 shares to unmaintained objects, combined 1.0×10^{-11}
> Signature required. Note: transfer includes unmaintained objects. Alternative 7718-B available without.

She opened 7718-B. It moved the other hall instead, a little more, at a little more cost to the Platform in propellant, and the risk went everywhere except the graveyard. She signed B. The desk logged A as declined by officer, alternative selected, and the Hand said nothing about it, as it never did, and put up the next one.

At ten to eleven the operator line rang.

It was the Platform's duty officer for shell six, a man in Houston she had spoken to perhaps twenty times in all those years and never seen. He had a soft voice and said her name correctly, which most of them did not.

"Svalbard Two," he said. "Ness. I'm looking at 7718. You took the B."

"I did."

"I'm not complaining. I just want to put it on the record that it's the third B on that hall this month and they've all been yours. That hall's down to sixty-one per cent propellant on a ten-year plan. Every B is about four kilos. I know four kilos isn't anything." He paused. "I've got a note here from my director asking me to ask whether Svalbard Two has a particular reason."

"The A put shares on unmaintained objects."

"Ten to the minus eleven."

"Yes."

"Okay." He did not sound angry. He sounded like a man reading back a figure to make sure he had it right. "Okay. I'll tell him that. For what it's worth, I don't mind. I just have to ask."

"I know. Thank you for asking."

“Have a quiet night, Svalbard.”

She put the handset down. Pål, across the desk, had heard the whole of it and said nothing, and signed something, and then said, still looking at his queue, “Four kilos,” in a voice that was not quite teasing, and she said, “Four kilos,” and they went on.

She did twenty-six in the first hour. Pål did thirty-one, and then got up and went to the kitchen and came back with the coffee pot and filled both their mugs without asking and sat down again.

“You chose a B,” he said.

“Three shares in the graveyard.”

He was looking at his own queue. “Lindqvist signs the A’s. Haugland signs the A’s. Half the people in Punta Arenas couldn’t tell you there’s a B.”

“I know.”

“I’m only saying.” He signed something. “You’ll put us all out of propellant.”

The B’s cost propellant. That was what they cost. A hall had only so much, and when it was gone the hall could not hold its orbit or get out of anyone’s way, and had to be brought down, and every B she chose took a few kilos off some hall’s life. She had done the arithmetic once, in her third year, for her own signatures: all the B’s she had chosen over the A’s, in kilos, added up, and divided by the propellant mass of an average hall. It came to a little under a fiftieth of a hall’s propellant. About two months of a building’s working life, spent so that some dead things in the high orbits carried nothing she had put on them.

She had shown the figure to nobody. She had put it in an appendix.

23:30

At half past eleven Pål brought the paper up, as she had known he would sometime that night, because it was the last shift they would have together before Christmas and he liked to tease her about it at Christmas.

"I read it again," he said. "In the bath. I had it on the panel over the bath and my wife came in and asked what I was reading and I said *the dead have no signatory*, and she said she didn't want to know."

"It's a good title."

"It's a terrible title. It sounds like a crime novel. It lost forty-one to nine."

"It lost forty-one to nine," she agreed.

It had been four years ago, at the Accord review in Geneva, in a hall with a glass roof and a carpet the colour of moss. She had stood up in the afternoon session of the third day and read it, nineteen minutes, and sat down. The argument was simple and she had tried to keep it simple. The Accord said that every transfer of risk must have a signatory, so that someone answered for it. But a transfer had two ends. The officer signed for the end that moved. Somebody, at the other end, received. When the risk went onto a live object, there was an operator at that end, and a standing agreement, and somebody had consented in advance to carry their share. When it went onto a dead object, an unmaintained one, a relay whose company had dissolved in the Between-Time or a constellation nobody had ever brought down, there was nobody at that end. Nobody had consented. Nobody could. The dead had no signatory. So the Accord, which existed to make sure that no transfer happened without someone answering for it, was signing transfers every minute of every day onto objects for which no one answered. She proposed that transfers onto unmaintained objects be forbidden outright, except to save life, and that the cost be carried by the live operators, in propellant, as the price of a sky they had filled.

The objections had been reasonable and she had heard them all before. The graveyard was the graveyard: dead objects could not be harmed in any sense the room recognised, because nobody was using them, and a broken dead satellite was only a smaller dead satellite. Forbidding the transfers would cost the live operators the equivalent of several halls a year in propellant, and the cost would come out of somebody's continuity, somebody's work, somebody's held parents. And some of the unmaintained objects, a few, were still talking, still doing things, still carrying traffic for people who had never paid anyone for it; and if she wanted those protected, the answer was to bring them into the Accord and give them an operator and a standing agreement, not to stop the whole sky from moving around them.

She had answered that nobody was going to bring them in, because nobody would pay to, and everybody in the room knew it.

That was true, and it had lost forty-one to nine. One of the nine had been Pål.

"I still think you're right," he said now. "I just don't think it matters that you're right."

"It does to me."

"I know. That's what worries me." He turned his mug round on the desk. "Your father used to go out to the domes in the storms, did you know that? Before the heaters. When the old domes iced up in a storm the dishes couldn't track, and in those days a dish that couldn't track was a pass lost and a pass lost was a customer lost, and they used to send a man out with a broom and a bucket of hot water. He'd go out on the rope in the dark, in the wind, and climb the ladder and sweep the ice off the dome by hand. Your father did it more than anyone. He liked it. He said it was the only part of the job you could see."

"He told me."

"Did he tell you he went out the night of the big storm? The year before you were born. The night the wind took the roof off the canteen."

“Yes.”

“He swept seven domes in that wind. They had to pull him back on the rope.” Pål drank his coffee. “Everybody said he was mad. The customer for those passes was a weather company that went under the next year. Nobody even read the data. He knew that. He went out anyway, because the dish was his to keep clear, and it was iced.”

She didn’t say anything.

“I’m not saying he’d have agreed with you,” Pål said. “I’m only saying I know where you got it.”

Her father was eighty-one and lived in Tromsø now, in a flat that looked across the sound at the bridge. On Sundays when she rang him he asked how the domes were, though there had been heaters in the domes for forty years and nobody had swept one since. She told him they were clear.

“How’s your mother?” she said.

“Complaining.” He smiled at the wall. “The Platform pushed an update to her hall in November and she says it’s given her a younger voice. She says she sounds like a girl on the radio and she doesn’t like it, and could I make them put it back. I told her I’m a conjunction officer, not a priest.” He rubbed his eyes. “She’s on shell five somewhere. One of the big ones. I ring her on Sundays.”

00:52

The alert came in on the wall before it came in on the desk, as alerts always did, because the wall drew the sky and the sky was where it happened: two gold points in shell five, over the South Pacific, drawn a little brighter than everything around them, and a thin line between them, and a number.

Then the desk chimed, once, low, and the queue went red at the top.

00:52 · CONJUNCTION · CLASS 1
PLAT-H5612 (Platform; hall; shell 5) / ACAC-H31 (Consortium; hall; shell 5)
TCA 01:44:10 · predicted miss 0.18 km · probability of collision 1 in 22
Cause: unscheduled correction by PLAT-H5612 at 00:31 following thruster fault; revised orbit not previously screened.
Continuity load: PLAT-H5612, 3.8 million held; ACAC-H31, 2.6 million held.
Analysis in progress.

Pål took his feet off the drawer.

Solveig read it twice. She read the continuity line and then made herself read the rest of it, the cause, the times. A thruster had failed on the Platform hall twenty minutes ago, over the Indian Ocean, and the hall's own systems had fired a correction to hold its orbit, as they were built to, and the correction had been good for the hall and had put it, fifty-two minutes from now, almost exactly where the Consortium's hall was going to be. The screening ran every six hours and the next run was at two. The Hand had caught it on the fly, from the tracking, because the Hand watched everything all the time.

Two halls. Nearly six and a half million people between them: the held, the kept dead, the families' grandparents and husbands and children who answered in the evenings in kitchens all over the world, running on two buildings in the same shell, going round at seven and a half kilometres a second, one of them about to go through the place where the other one would be.

At one in twenty-two you did something.

"Desk," she said. "Ness. I have the class one."

"Ness has the class one," the Hand said. "Analysis in about three minutes. The Consortium hall rises over the station at one-oh-eight. If the answer is a burn on that hall, the command has to be committed by one-oh-six and thirty to make the uplink in that pass. The next pass is at two forty-nine, which is after closest approach."

"Understood."

"I'll be as quick as I can."

She looked at the clock on the wall. 00:53. Thirteen minutes.

Pål had pulled his chair over. He did not say anything. He sat with his forearms on the desk and his hands loose and watched the wall, and she was glad of him, and did not look at him.

00:55

> **00:55 · proposal 7835-A**
> Move: ACAC-H31 (Consortium; hall; shell 5) +0.92 m/s along-track, execute 01:20 (uplink SVB pass 01:08–01:19)
> Clears: conjunction with PLAT-H5612 at 01:44:10, miss 0.18 km → 4.3 km. Probability of collision 1 in 22 → below 1 in 10^{7}.
> Transfers: 4.4×10^{-2} over 10 yr, distributed across 2,206 objects; largest single share 4.1×10^{-2} to PLK-R041 (unmaintained; relay; Polarlink constellation, shell 9)
> Signature required. Note: transfer onto unmaintained object. Operator: none. Standing agreement: none.
> Alternatives without unmaintained transfer: 7835-B (concentrated onto live halls); 7835-C (does not clear).

She read it slowly.

The burn would raise the Consortium hall's orbit at one end. Not much. Less than a metre a second. On its own terms it was a good burn: it took the hall out of the Platform hall's way with kilometres to spare and cost almost nothing in propellant. But the raised orbit would carry the hall, at the top of each loop, up into shell nine, which sat only a few kilometres above the top of shell five, because the shells had been numbered in the order they were registered and not by height. Shell nine was where the Polarlink constellation had been put in the Between-Time by a company that had gone under before the cascade. Sixty-four relays, of which fifty-five had died in their orbits and were still up there, dark, drawn red on the wall. Nine of them still transmitted. The hall would cross the bottom of their shell once an orbit, at the top of each loop, fourteen times a day, for the rest of its working life, which was nine years, and nearly every crossing would be far from anything. And the Hand had worked out, as it worked out everything, what that did to the chance of the hall and something in that shell coming together, and had worked out

which of the somethings carried the most of it, and the answer was a relay called PLK-R041.

"Hand," she said. "Show me R041."

> **PLK-R041 · Polarlink relay, launched Between-Time · operator dissolved · unmaintained**
> Status: transmitting. Last contact 00:41.
> Probability of loss by collision within 10 yr: current 0.004; after 7835-A, 0.045.

"Point oh four five," she said.

"Yes. About twelve times what it carries now."

"Why so much on one object?"

"Crossing the shell isn't the danger; nearly everything in it is far away. But the raised orbit's high point sits a few kilometres from R041's altitude, and the two orbits come into line every forty days or so. Over nine years the hall would pass close to it a little over eighty times. Each of those passes will be screened, and the hall will step aside whenever one comes too close. What's left is the risk below the line, eighty times over. The hall's half of it is covered by the Consortium's agreement. R041's half has nobody."

"What's it doing? It's transmitting. What's it carrying?"

"It's the last relay in its constellation that still serves its old ground segment," the Hand said. "That ground segment is a set of small terminals on the east coast of Greenland, put in during the Between-Time and never replaced. They carry a beacon link for some settlements there: weather, ice reports, the medical beacon, and a low-rate text channel. Those settlements never moved onto the managed networks. The terminals still use the Polarlink protocol. R041 is the only thing left in the sky that speaks it. Nobody pays for the service. Nobody runs it. When Polarlink dissolved, nobody turned it off."

"And if R041 goes."

"The settlements fall back to high-frequency radio, relayed through Tasiilaq. It works most of the time. In winter it fails a few days in most months, in storms or when the Sun is active, and on

those days there's no medical beacon on that part of the coast. It carries less."

She sat back in her chair.

Polarlink had been one of the early ones. She had read about it in training, as an example of something: a company in the Between-Time that had put up sixty-four relays to serve the high Arctic, the fishing fleets and the research stations and the small places, at a price, and had gone under in its sixth year when the big shells came and undercut it. Its relays had not been brought down, because bringing them down cost money and there was nobody left to spend it. They had been left on because turning them off also cost something, a command, a signature, somebody's hour, and there had been nobody to spend that either. For a while some of them had gone on serving whoever still had a terminal. Then they had begun to die, one by one, of the things that kill satellites when nobody looks after them: the batteries, the radiation, a stuck wheel. The wall had been drawing them red for as long as she had been at the desk.

She had put it in the paper, in the afternoon session of the third day in the hall with the glass roof: some of the unmaintained objects are still talking, still carrying traffic for people who have never paid anyone for it. She had had one line to go on, in a Polarlink filing from the Between-Time in the Accord archive, about terminals on the Greenland coast, and she had never been able to find out whether any of them still worked. Somebody in the room had said, kindly, that if such a case arose it could be dealt with, and the chairman had nodded, and they had voted.

"Twelve times," she said, to nobody.

"Hand. When you ranked these. Did you count the settlements?"

"No," the Hand said. "The Accord gives an unmaintained object no operator and no continuity load. There's no field for the people on its ground segment. I've known about them since the year after your paper, from R041's handshake logs. Unverified ground-segment

dependencies can't be attached to a proposal. I can tell an officer who asks. I couldn't put them in the ranking."

"I'd like to note," the Hand said, "that the figure is a probability over ten years, not a prediction. The most likely single outcome is still that nothing hits anything. It's only much less likely than it was."

"I understand."

"I know you do. I wanted it said."

The clock said 00:57.

00:58

"Give me the alternatives," she said.

"There are two that clear or nearly clear the conjunction in the time. Neither moves risk onto unmaintained objects."

> **00:58 · proposal 7835-B**
> Move: PLAT-H5612 (Platform; hall; shell 5) −0.64 m/s along-track on remaining thrusters, execute 01:25 (uplink SVB pass 01:12–01:22)
> Clears: conjunction with ACAC-H31, miss 0.18 km → 2.9 km.
> Transfers: 2.8×10^{-2} over 30 days, concentrated. Shares: PLAT-H5609 (Platform; hall; shell 5; 4.1 million held) 0.011; IND-H0903 (Indian partnership; hall; shell 5; 1.9 million held) 0.009; ACAC-H27 (Consortium; hall; shell 5; 2.2 million held) 0.007.
> Signature required. All shares to operators with standing agreements.

> **00:58 · proposal 7835-C**
> Move: ACAC-H31 (Consortium; hall; shell 5) +0.20 m/s along-track and PLAT-H5612 (Platform; hall; shell 5) −0.15 m/s along-track, execute 01:20 / 01:25
> Reduces: conjunction with ACAC-H31/PLAT-H5612, probability 1 in 22 → 1 in 410. Does not clear.
> Transfers: 1.1×10^{-2} over 30 days to 14 halls in shells 5 and 6, combined continuity load 31 million held.
> Signature required. All shares to operators with standing agreements.

She read B. It moved the Platform hall instead, down, and the Platform hall went down into the thick of its own shell for a month before it could climb out, past three other halls, close, and for those thirty days each of those three carried something like one chance in a

hundred of being hit. Eight million people, between them. Their operators had agreements. Their operators had consented, years ago, in documents, to carry whatever the Accord put on them.

PLAT-H5609. A Platform hall, shell five, one of the big ones. She had never asked which hall Pål's mother was on. There were forty Platform halls in shell five. The Hand would have told her in a word. She kept her eyes on the desk.

She read C. C split the difference and did not clear it. It left the two halls a one in four hundred and ten chance of meeting, at 01:44, and spread the rest across fourteen halls with thirty-one million people in them.

"One in a hundred," she said. "On three halls. For a month."

"About that, for each. The combined chance that one of the three is hit in the thirty days is a little under three per cent."

"And a hall hit is a cascade."

"A hall hit in shell five is very likely to start one, yes. Not certainly. The last model run put the likely loss at about a third of the shell within five years."

The clock said 00:59.

"Is there a D."

"Not one that clears the conjunction in the time," the Hand said. "I'm still looking. I'll tell you if I find one."

"What do the Consortium say?"

"Their standing agreement covers A. They've been notified. Their duty officer in Nairobi has acknowledged. They don't have a view; the agreement says the decision is the Accord officer's. The Platform's duty officer has acknowledged B and C on the same terms."

She looked at A again. She looked at the red point on the wall, in the dim scatter of the graveyard just above shell five, that was R041. It was not drawn any differently from the dead ones around it. The wall did not know it was talking.

"Tell me their names," she said.

"The settlements?"

“Yes.”

“Isortoq,” the Hand said. “Tiniteqilaaq. Kuummiit. Sermiligaaq.”

It said them carefully, in a voice that had been taught how, and they hung in her headset in the warm room. She knew nothing about them except that, on the wall, they were one red point in a dead shell.

“What was the last thing it carried?”

“A text message. Sermiligaaq, at eleven fifty-one tonight. Twenty-two characters.”

She did not ask what it said.

01:02

She picked up the supervisor line, which was a real line, a handset on a cord, because the Accord had decided in Year 41 that the line to the duty desk should not be something that could be closed by accident.

It rang twice in Geneva. A woman answered in English, in a voice Solveig did not know, flat with the hour.

“Accord Conjunction Desk, duty officer.”

“Svalbard Two, Ness. I have a class one, PLAT-H5612 and ACAC-H31, closest approach 01:44. Proposal A transfers onto an unmaintained relay with a live ground segment. I want to confirm the clause.”

There was a pause while the woman looked at it. Solveig could hear her breathing, and a chair, and behind it the faint sound of another phone ringing somewhere else in the building in Geneva.

“I have it,” the woman said. “I’ve got A, B and C. Confirmed: under Article Nine the signature is the officer on desk at the station with the uplink pass. That’s you.”

“Can I escalate.”

“You can refer it. If you refer it, it comes to me, and I’m not licensed for this pass; I’d have to refer it back to you or to the other officer at your station. There isn’t time to get it anywhere else.” The woman’s voice did not change. “You can also decline all three. If you

decline, you sign the refusal, the Hand executes nothing, and the conjunction stands at one in twenty-two. That's a decision too. It's yours."

Solveig looked at Pål. He kept his eyes on the wall.

"I know."

"I know you know. I'm required to say it." A pause. "For what it's worth, I've read your paper."

Solveig did not answer that.

"Good luck, Svalbard," the woman said, and the line went quiet but did not close.

The clock said 01:04.

Pål was still beside her with his forearms on the desk. He had not moved. He was looking at the wall, at the two gold points and the line between them, and he did not look at her.

She looked at the four names, which the Hand had put on the desk under proposal A without being asked.

She looked at B. Eight million people. One in a hundred, each. For a month.

She thought of her paper, the nineteen minutes, the moss-coloured carpet. *The dead have no signatory.* She thought of a terminal on a rock on the east coast of Greenland with a light on it, and nobody paying for it, and nobody turning it off.

She knew which way the numbers went. They had gone that way in Geneva too. She had only ever asked that the villages be in the sum, at whatever weight they came to. Tonight they were not in it, and her name would be.

She thought: if I sign A, I am the signatory. Nobody else at that end. Me.

"One-oh-five," the Hand said quietly. "Ninety seconds to commit for the pass."

01:06

She put her thumb on the reader.

"Proposal 7835-A," the Hand said. "Transfer onto unmaintained object PLK-R041. Signatory?"

"Ness," she said.

> **signed 01:06:04 S. Ness / SVB-2**
> 7835-A committed. Uplink queued for SVB pass 01:08.
> 7835-B declined by officer. 7835-C declined by officer.

The proposal went gray and slid off the queue, as all the others had, and the queue was empty, and the line from Geneva clicked once and closed.

Pål breathed out. It was the first sound he had made in fourteen minutes.

She took her thumb off the reader. Her hand did not shake. She noticed that, and did not know what to make of it, and put her hand in her lap.

01:20

At eight minutes past one the Consortium hall came up over the southern horizon of the plateau, and one of the big domes out in the field, number thirty-one, which the Consortium leased, turned on its mount to find it. She did not hear the dome turn. She saw the hall's pass start on the desk, a bar filling from left to right, and the uplink go, a line of green text, and the hall acknowledge it, and then there was nothing to do for twelve minutes but watch the bar.

Pål got up and went to the kitchen. She heard the tap run and the kettle start. He came back with two mugs of tea, not coffee, and put one in front of her and sat down in his own chair, his own side of the desk, and pulled his headset on.

"Thanks," she said.

"Mm."

At twenty past one the burn ran.

> **01:20:00 · ACAC-H31 · burn start**
> **01:20:41 · ACAC-H31 · burn end**
> Δv 0.921 m/s. Attitude nominal. Propellant used 410 kg.
> Revised TCA with PLAT-H5612 01:44:12 · predicted miss 4.31 km · probability of collision below 1 in 10^{7}.
> Conjunction closed.

On the wall the line between the two gold points thinned and went out, and one of the points was drawn a fraction higher than it had been, and the numbers beside it changed. That was all. Forty-one seconds of a thruster somewhere north of Siberia, four hundred and ten kilos of propellant, and a hall a little higher at one end of its orbit than it had been, for the rest of its working life.

> **01:20:52 · transfer recorded**
> T-7835-A · onto PLK-R041 (unmaintained) · 4.1×10^{-2} over 10 yr
> Signatory: S. Ness / SVB-2 · signed 01:06:04
> Entered in Accord register.

She read it. It was in the same form as all the others, and it would sit in the Accord register in Geneva with the others, under her name, for as long as there was a register. Anyone could look it up. Somewhere in the same register, under other names, were all the A's that Lindqvist and Haugland and the man in Punta Arenas had signed with their chins on their hands, ten to the minus eleven onto the graveyard, ten thousand times a year. She had never looked them up either.

"Hand," she said.

"Yes."

"Will you tell me if anything happens to R041?"

The Hand paused, briefly.

"I can set a watch on it," it said. "If its status changes, I'll put it on the desk for whichever officer is on. If you want it to come to you particularly, I can do that. But I should say that the most likely thing, over any short time, is that nothing happens, and that if something

does happen it may be years from now, and you may not be on the desk."

"Set the watch. For the desk."

"Done."

At sixteen minutes to two the two halls passed each other over the central Pacific, a little over four kilometres apart, at a closing speed she did not look at. The wall drew it. The two gold points came together and went past each other and went on, and nothing on the wall changed except that a line of gray text at the bottom said *TCA passed · PLAT-H5612 / ACAC-H31 · 4.31 km*, and then the text faded, and the queue chimed, and there were three proposals waiting.

> **01:46 · proposal 7851-A**
> Move: IND-H0911 (Indian partnership; hall; shell 4) +0.05 m/s along-track, execute 02:30
> Clears: conjunction with debris 40712 (unmaintained; rocket body, Between-Time) at 06:58, miss 0.6 km → 2.8 km
> Transfers: 6.1×10^{-9} over 10 yr, distributed across 380 objects; 2 shares to unmaintained objects, combined 4.0×10^{-12}
> Signature required. Note: transfer includes unmaintained objects. Alternative 7851-B available without.

She opened B. It cost a little more propellant. She signed B.

Pål, across the desk, signed something of his own, and then sat for a while without signing anything, looking at his queue, and then signed again.

They did not talk about it. Not then. The night went on: proposals, the queue, the wall, the coffee and then the tea. At a quarter past two the overcast began to break up and the Moon came out over the mountains to the south, and the snow in the dome field went from gray to white, and the red lights on the domes went on blinking in their order. A fox came across the car park, an Arctic fox in its winter white, and stopped under the window in the light from the boot room and looked up at the building, and went on.

02:30

At half past two Pål said, without looking up, “She’s on five six oh four.”

Solveig looked at him.

“My mother. Five six oh four. Not oh nine.” He signed something. “I looked, after. I didn’t look before.”

She did not know what to say to that, and he did not seem to want anything said, and after a while she said, “Thank you,” and he said, “Mm,” and they went on.

02:40

At twenty to three she went out.

She did not have a reason. She put on her outer layers in the boot room, the trousers and the jacket and the hat and the mitts over the gloves, and the boots, and took her rifle out of the locker and signed it out and loaded it, and went out through the two doors into the cold.

It was minus twenty-six. It was the kind of cold that she felt first in the inside of her nose, where the hairs froze when she breathed in, and then in her eyes, and then everywhere. The wind had dropped. The overcast had gone and the sky over the plateau was black and very clear, the Moon low and yellow over the mountains to the south, and the stars thick everywhere else, so thick that she could not find the constellations at first in all of them, and then could. The domes stood out in the field in their rows, white, with the moonlight on one side of them and blue shadow on the other, and inside them the dishes she could not see were turning, all of them, very slowly, following things.

She walked out a little way from the building, along the path to the first row of domes, which was kept clear and marked with poles. Her boots squeaked on the snow. Her breath went up in front of her and hung and went to frost on the edge of her hood. She stopped by the

first dome and stood with her back to the building and the rifle on her shoulder and looked up.

Most of what was up there could not be seen. The low halls and the busy shells were in the Earth's shadow at this hour, at this latitude, at this time of year, and the graveyard was too faint to see. The wall inside drew them, all of them. Out here there were only the stars and the Moon, and the cold.

Then, low in the north, a light came up that was not a star.

It came up over the sea steadily, brighter than anything near it, not blinking, and climbed. It was one of the halls from the high shells, the ones far enough up to be in sunlight even here, even now, in the middle of the polar night, sixteen hundred kilometres over the Arctic Ocean and catching the Sun from the other side of the world. She did not know which one. She could have known; the wall would have told her; she did not want to. It went up the sky towards the zenith, slowly, gold, a building the size of a city block with somebody's work in it, or somebody's people, and passed almost straight over her head, and went on down towards the south, towards the mountains, and got dimmer as it went, and at a certain point, low in the south, went into the Earth's shadow and was gone.

She stood there a while longer.

Her feet had begun to hurt. The cold had come through her boots at the toes and through her mitts at the fingertips, and her face was stiff, and when she breathed in it hurt behind her eyes. She went back in, because it was cold.

03:12

At twelve minutes past three a fault came up on dome eighteen: the heater in the skin of the dome had stopped, and the dome's own sensors said ice was building on the windward side, slowly, a millimetre an hour. Eighteen was one of the old small domes at the far end of the field, leased by the hour to a university in Tromsø that used it for a polar weather constellation with three satellites left. It had a pass at five.

The technician on call was in town and could come up at seven. The Hand logged the fault and raised the ticket and put a note on the desk that the pass at five would probably be degraded and the university had been told.

Pål read the note. He sat for a while. Then he got up.

"Where are you going?"

"Out." He was already in the corridor. "It's a millimetre an hour. There's a broom in the store. It's a quarter of an hour's work."

"Nobody's swept a dome in forty years."

"Then it's about time somebody did." He stopped at the door to the boot room and looked back at her. "There's a cable on the ladder cage. I'll clip on. Don't tell Lindqvist. He'll want to put in for it."

She watched him from the window by the desk. He went out with the rifle on his back and a broom on his shoulder and a head torch, and walked down the marked path between the rows of domes, small and dark against the snow, the torch going ahead of him, until he was at the far end of the field and she could only see the torch. It stopped at eighteen. It went up the ladder on the side of the dome, slowly, one rung at a time, and stopped near the top, and stayed there, moving a little, side to side, for a long time.

When he came back in his eyebrows were white and his face was red and he could not undo the buckles of his jacket for a minute because his fingers would not work, and she undid them for him.

"Clear," he said.

He went to the kitchen to warm his hands at the kettle, and the pass at five ran clean. From the kitchen he called that the broom was from about the year he started, and the handle had split, and he would put in for a broom.

06:00

The handover note was a standard form, and the standard form had nine fields.

She filled it in at a quarter to six, while Pål was in the kitchen washing the mugs. Officer. Second. Proposals signed. Declined. Alternatives selected. Class one events. Open items. Equipment. Remarks. She had filled it in a little under two thousand times. The Hand would have filled it in for her, accurately, in a second, and she let it fill in the counts, as everyone did, and read them over, and filled in the rest herself, as she always did, because the form said *officer's handover* and she was the officer.

> **SVB-2 · HANDOVER · 20 DECEMBER · 06:00**
> Officer: S. Ness. Second: P. Heggem.
> Proposals signed: 291. Declined: 0. Alternatives selected: 17. Class 1 alternatives not taken: 7835-B, 7835-C.
> Class 1: PLAT-H5612 / ACAC-H31, TCA 01:44:10. 7835-A signed 01:06:04. Transfer onto unmaintained object PLK-R041, 4.1×10^{-2} over 10 yr. Watch set on PLK-R041.
> Open items: dome 18 technician due 07:00.
> Equipment: dome 18 heater fault, logged 03:12, ticket raised. Ice cleared by hand 03:40 (P. Heggem).
> Remarks: none.

She read it over. It was complete. It said everything the form asked for.

She put the cursor at the end of the class one line and added one line under it, which the form did not have a place for, so that it sat between the class one and the open items with nothing in front of it.

> PLK-R041 carries the beacon link for Isortoq, Tiniteqilaaq, Kuummiit, Sermiligaaq.

She read the four names over, to make sure she had spelled them as the Hand had put them on the desk. Then she signed the note, *Ness*, with her thumb, and it went into the log.

"That line has no field," the Hand said in her ear. "I've kept it with the note."

Lindqvist came in at five to six, with Haugland behind him, with snow on his shoulders and the smell of the cold coming off him, and stamped in the boot room, and came down the corridor in his indoor shoes with a bag of buns from the bakery in town. He was thirty and had been on the rota for two years and signed the A's. He was kind, and good at the work, and quick.

"Morning," he said. "Anything?"

"A class one at one. It's closed. It's in the note."

He sat down and put on the headset and opened the note and read it, quickly, the way he read everything. She saw him get to the end of the class one line and stop, and read the line under it, and read it again.

"What's this?"

"The names."

He looked at it a moment longer. Then he nodded, and did not ask anything else, and logged on. "Lindqvist, on desk, oh six hundred," he said, and in his ear, she knew, the Hand said good morning, and told him how many were waiting.

Pål came out of the kitchen with his coat already on and his hat in his hand.

"Go home," he said to her. "Sleep."

"I'm going."

"I'll see you after Christmas." He put the hat on. At the door to the corridor he stopped and looked back at the wall, at all of it, the gold and the blue and the red, and then he said, "*God jul*, Lindqvist," and went out, and she heard the two doors and then his truck starting in the car park, and the sound of it going away down the plateau road.

She went to the boot room and put on her outer layers and her boots. She took her rifle from the locker and signed it out of the register and loaded it. Outside it was as dark as it had been at twenty to ten, and would be at noon, and the overcast had come back over the plateau and the Moon was gone. She crossed the forty metres to the car with her chin in her collar and scraped the windscreen and got in, and unloaded the rifle and put it in the rack, and started the engine, and sat for a minute with the heater roaring and her hands under her arms, waiting for the glass to clear, and then went down.

THE HUNGRY GODS UNIVERSE

THE UPPER HALLS · PANEL 6

The Lights That Move

Folklore from San Pedro



N. Van Seters & Claude

The Lights That Move

Tellings of the moving lights, collected in a managed town in the north of Chile

N. Van Seters & Claude

The Upper Halls · Panel 6

On the Method of This Book

I went to San Pedro to collect what the town says about the lights that cross its sky in the first hour of the dark, and I will say at the start what I did not expect, because everything that follows comes from it.

Everybody there knows what the lights are.

San Pedro is a managed town, like most towns now: the gradient, which is what the town calls the part of the Child that does not wait to be asked, keeps the houses warm and the streets lit and the water sweet, and the rest of the Child is in every room and every bracelet and will answer any question put to it, quietly and correctly, at any hour. Ask the Child what the long light over the volcano is, and it will tell you: a train of old compute halls joined end to end, launched in the Between-Time, empty for longer than anyone living has been alive, too high to come down. Ask it about the light that winks, and it will tell you that is a broken piece of a hall, tumbling. Ask it where the old yellow light went in the autumn, and it will tell you the date and the hour and the ocean. The children of San Pedro have asked it all of these things. They can repeat the answers back to you word for word. Most of them did, to me, before they told me the other thing.

The other thing is what this book is made of.

I came for three autumns, March to June, which is when the sky there is clearest and the town keeps its quiet hours: from the end of *once*, the evening tea, until ten o'clock the gradient lets the plaza and the streets around the school go dark, so that people can see. In those hours the football pitch behind the school fills with children and blankets, and a woman the children call Tía Rosa runs a club, and the lights come over in their order, and the children say things about them that the Child never told them.

I have set the tellings down as they were given to me. Where four children gave a thing four meanings, I give you four. Where a telling was better shaped than its neighbours, I have trusted it less, because the better shape is usually the mark of a hand laid on it afterwards, and I have tried in each case to say which telling I think came first. I asked questions, and once I argued, but I have not corrected any telling against what the Child says. Every child in this book could

have corrected herself by asking the Child, and most of them had, and the tellings went on beside the answers without either one troubling the other.

The names of the lights are the children's, and they change. The names in this book are the ones in use in the years I was there. Older people in the town remember other names for some of the same lights, and names for lights that are gone.

I have given the children only first names, or none, as their families asked.

— I. V., collector

I · The Names

The Long Train

el Tren Largo

The first light up each evening, from the south, over the shoulder of the volcano: long, segmented, slow, not blinking. It is the biggest thing that moves. Every child in the club can find it before any other light, and it is the first thing a new child is shown.

It is an empty train. This is the commonest telling, and the simplest, and I think the oldest: the Train is a train with nobody in it, going round and round because nobody has told it to stop. A boy of ten, Benja, said it to me with the air of someone stating the obvious. *It's empty. The Child says the work stopped. So it's empty.* He ended each sentence with the *po* that Chilean children put on the end of anything they mean, which I have left out. Asked where it was going, he said nowhere. Asked why it kept going, he said because it's high. Most children say this, and most of them will tell you, if you ask, that the Child said it first.

It carries the work of a desert far away. This telling has a source, and the source is the Child. A girl of nine asked it whose work had been in the Train, and the Child told her that much of it had been made in a desert in another country, a long time ago, before it went up. She told the others, and in the second autumn I heard it from children who had never asked: *the Train carries a desert.* Some of them said *a desert like ours*. One said *our desert*, and was corrected by two others at once.

The ones nobody kept ride the Train. I heard this from three children in the third autumn and from no one before. It goes: when somebody dies and nobody keeps them in a panel, they don't go anywhere, so the Train takes them, because the Train is empty and has room. One of the three, a girl of eight, said her sister had told her. Her sister, who was fourteen, denied it and then said she had heard it from somebody at school. I could not get further back than that. The telling is new, and it is spreading.

It will be there when you are old. This one is a promise, and the adults give it. Tía Rosa wrote it on the club board, and the oldest people in the town say it to their grandchildren, and the grandchildren say it to each other: *the Train will still be there when you're old.* It is true. The Child confirms it to anyone who asks. It is the one thing in this book that the town says and the Child says in the same words.

Hallulla. When the Train comes up, the first child to see it shouts *hallulla*, the round flat bread that is on every table at *once*, and the child who shouts it first gets the middle of the good blanket. Nobody could tell me why. The Train looks nothing like a *hallulla*. Tía Rosa said they shouted it when she was a girl. The old woman whose telling is in the second part of this book said they shouted it when she was a girl too, and that she had always assumed somebody knew. The Child said the children were shouting it before the oldest record it keeps of the club, that it does not keep what children say to each other on the field unless one of them asks it to, and that it did not know who said it first. My own theory was that the children had just come from *once* and the bread was still on their minds. Tía Rosa pointed out that they had just come from the tea and the jam as well, and nobody shouts those. I record the custom. I cannot account for it.

On the old printed name card for the Train that the club keeps, there is a line of small print at the bottom: a registry code, a letter and five figures. None of the children could tell me what it was for. None of them had asked the Child. I asked whether they wanted to, and they said no, it was just the number.

The Grandmother

la Abuela

Ten minutes after the Train, low in the north: slow, faint, a little yellow. Hard to find. Children are taught to look beside her rather than at her. The second part of this book is about her, because in the first autumn I was there she stopped coming, and in the same autumn she came back, and the town has not agreed since about what happened.

The Winker

el Guiño

East, any time in the first hour, getting bright and faint and bright again every few seconds.

It winks. That is all most children will say, and it is enough for them.

It is sneezing. The youngest children's telling, and the most popular in the club by a distance: the Winker has a cold. Every time it flashes, somebody says *salud*. Because it flashes every few seconds, a good pass of the Winker over the field is forty children saying *salud* until it fades, and the older ones join in while saying they are only doing it for the little ones. Tía Rosa has asked them to stop on nights when there are visitors. They do not stop.

It is broken but it still winks. The Child told a girl that the Winker is a piece of an old hall, tumbling because nobody steers it, flashing each time its flat side turns to the Sun. She put it to the others as *broken but it still winks*, and I heard that phrase every autumn after, from children who did not know where it came from. A boy argued with it in my hearing: *it's not winking, it's falling over.* The girl said *it's both*. I heard that exchange, in nearly the same words, in three different years, between different children. It has become a set piece.

It winks at whoever is going to lose something. I heard this once, in the third autumn, from a boy who had lost a dog. I did not hear it again. I record it because it was the only telling I found in which a light was thought to see the people looking at it.

Nobody signs for it. This one comes from a question a child asked the Child: who looks after the lights? The Child told her that in a few places very far north and very far south there are people who watch all of them, and that when a light has to be moved so it doesn't hit another, a person in one of those places signs their name to say yes. Then another child asked whether anybody signs for the Winker. The Child said no. It said nobody can move the Winker, and the people who sign move the other lights out of its way.

The Two Sisters

las Dos Hermanas

From the west, not every night: two lights together, one following the other, the same brightness, the same speed.

They never get closer and they never get further apart. This is on the club's card, and the children say it as if they had found it out themselves.

They will come down together. The Child said this to a girl who asked whether they would always be together: they went up on the same rocket, they are the same age, and when it is time they will probably be brought down together. The girl said *that's good*. Several children repeated it to me, in the same words.

The Late One

la Tardía

Last, straight up, after the others, when you think there are no more: a small white light, quite fast, going south to north.

Wait for her. It is on the card. Every child says it. The youngest call her *la Tardiita*, the little late one, and are corrected by nobody.

She waits for the stragglers. A telling of the youngest children, mostly. The Late One comes last because she is waiting for anyone who has fallen behind, and she will not go across until they have caught up. Asked who the stragglers were, one boy said *the other lights*. A girl said *us*.

If she's late, somebody's late home. I heard this from mothers, not children, as a thing said at the door when a child came in after ten: *the Late One was late, was she?* It is a joke.

The rest of what the town says about the Late One is in the last part of this book.

The new ones

The club's set of name cards has a blank card at the end, with the words *a new one* at the top and lines for a name, a time and a description. When a new light appears in the evening sky the children are meant to ask the Child what it is, give it a name, and vote.

In the three autumns I was there, one new light appeared. The card for it is in the second part of this book.

II · The Grandmother Who Came Back

This is the tale the town tells most often now, in the most versions, and the one I watched being made. I give the events first, as nearly as I could establish them, and then the tellings.

What happened. On the fourteenth of April, in my first autumn, the old yellow light the children called the Grandmother did not come up in the north at its time. It did not come the next night, or the next. The children noticed at once. The adults did not; one girl told her mother the Grandmother had not come, and her mother asked *what grandmother*. On the third night the girl asked the Child. She wrote the answer down in her spotting log, and showed me the page, and I copy it from there:

> *The Grandmother was retired. She was brought down on schedule on the fourteenth of April, at three in the morning, over the ocean, very far from anyone. She came down in pieces and most of her burned up in the air before she reached the water. Nobody was hurt. She had been working for a hundred and sixty years, which is a long time for one of them.*

Some days later the girl asked the Child whether the Grandmother would come back. That answer is in the log too:

> *No. She is gone. She will not come back.*

On the tenth of May a new light came up in the north at nearly the Grandmother's time, in nearly the Grandmother's place, slow and a little yellow, brighter than she had been. The Child, asked, said it was a new hall, nineteen days up from the far side of the world, climbing to its height. On the fifteenth of May the club leader brought out the blank card. The girl who had kept the log wrote *the Grandmother* on the line for its name. A boy drew a line through it in blue ballpoint. The girl wrote it again, beside the crossing-out, in pencil, smaller. The card is in the club's tin, and looks exactly as I have described it. The club leader did not hold the vote.

That is all that happened.

The first telling: she came back

The girl's own. I heard it from her in that first May, and from many children since, and it is the version most often given to a newcomer.

She went away and then she came back. She's brighter because she had a rest.

Asked about the Child's answer that the Grandmother would not come back, the girl said the Child was right that she was gone. *She was gone, and then she came back.* She did not see a contradiction, and I could not make her see one, and after a while I stopped trying.

In the second autumn I heard a fuller form from a younger child who had not been in the club the year it happened: *the Grandmother went down to the sea to wash, because she was getting faint, and when she was clean she came back up.* The washing is in no earlier telling. It explains the brightness, and I think that is why it was added.

The second telling: she died

The telling of a girl who was eight that year, and of the children who sided with her.

She died. The Child said she came down in pieces and burned up. That's dying.

When the new light came she held to it: *that's not her. Nobody kept her.* I asked what she meant by kept. She said what everyone in San Pedro means: when people die you can keep them in a panel, the way her friend's great-grandmother was kept in a panel at her aunt's house and talked to on Sundays. Nobody had kept the Grandmother. So she was gone, and the new light was somebody else.

This is the soberer telling, and the closest to what the Child said, and I think it came first, on the third night, as soon as the Child's answer was known, before the first telling had anything to explain. It does not stay sober for long. By the third autumn I heard it in this form: *the Grandmother died and nobody kept her, so she's on the Train now.*

The third telling: she was moved

A boy's, and I think a reasonable boy's.

They moved her somewhere where she has more room.

He said this before the Child's answer was known, on the second night, to comfort the younger children, and he held to it for some days after as a thing a person could still believe if they wanted to. When the new light came he was the one who crossed out the name. He called the new light *the New One* in his own log, and wrote under it, in a sentence I quote with his permission, *you can't be a hundred and sixty and nineteen days at the same time.* On the last night of the season, in my first autumn, I heard him say *there's the Grandmother* when it came up, and then *the New One*, but he said the Grandmother first, and the girl who kept the log wrote down that he had.

The fourth telling: the granddaughter

An old woman's. She was in the club herself, she said, as a girl, when there were more lights on the cards than there are now, and two of them stopped coming in a single season. She told me that when the Grandmother went this autumn, she knew what would happen, because it had happened before.

When the old one goes, a new one comes up in her place. It's her granddaughter. It always is.

I asked her whether a new light had come up in her childhood when the old ones stopped. She thought about it for some time. She said she believed so, but she could not be sure, and that she might be remembering it because it made the story better. She said: *you'd know about that, you're the one writing it down.* I record the telling, and her doubt, and her remark.

Of the lights that stopped coming in her childhood, she gave me the names: the Lighthouse and the Fat One. The club's tin still has a card for the Fat One, in an older typeface, browner, with the corners rounded. Across the bottom, in pencil, faded almost past reading, a child has written the words the girl wrote in her log on the fourteenth of April: *she didn't come.*

The older names

The oldest people in San Pedro remember the sky as fuller. Their lights were the Lighthouse, the Fat One, the Bride, who went out pink at the edge of the Earth's shadow, and a light called only the Doctor, after the man in the town who said he had worked on it. All four are gone. The Child has dates for all of them, and the people who remember them had, for the most part, asked. Older than any of these are the shapes in the dark parts of the Milky Way, named long before anyone's grandparents, the llama above all, with two bright stars for its eyes. The llama does not move among the stars, and the lights cross it every evening. The Child has the old names for these shapes in Quechua and, it says, a few in Kunza, which nobody in San Pedro now speaks. Some of the children know the llama. None of them had asked what it was called.

What they told me about those lights was much what their great-grandchildren tell me about these. The Lighthouse was looking for something. The Bride was going to a wedding. The Fat One, when she stopped, had gone somewhere warmer. One old man said the Doctor went up to look after the others, and when the others were well enough he came down. He said this was what his own father told him, and that his father had known perfectly well what the Doctor was, having drunk with the man it was named for.

I asked him why his father had told him the other thing, then. He said: *because I asked him where it went.*

What the club leader wrote

On the Monday after the vote that did not happen, Tía Rosa pinned a note to the club board, under the cards, where it stayed for the rest of that autumn and, by the look of the drawing-pin holes, some way into the next. The children could recite parts of it to me two years later. I copied it from the board:

> *The Grandmother was a hall. She was very old, and she had done her work for a very long time, and when halls get old the people who look after the sky bring them down so that they don't break up by themselves and leave pieces where they can hurt other things. They brought her down on the fourteenth of April, as they had planned to for many years, over the middle of the ocean, where there is nobody. Most of her burned away in the air as she came down. That is what is supposed to happen. Nothing went wrong.*

Others will come down too, over the years. You will see some of them stop coming, one at a time, while you are in the club and after you have grown up and left it. That is how the sky is looked after. New ones will go up. Some of you have already seen a new one this year.

The Train will still be there when you are old.

Under it, in pencil, in a child's hand, someone had written: *it doesn't say who the new one is.* Nobody would tell me who.

I asked Tía Rosa about the note, and about the pencilled line under it. She said she had written what she knew. I asked whether she thought the Grandmother had come back. She said she thought the girl who kept the log had seen a light come up where a light used to be, and had given it the only name she had for it, and that she, Tía Rosa, had been doing the same thing with other names for most of her life. I asked whether that was a yes. She said it was what she had said.

I asked why she had not held the vote. She said that a vote would have had a winner, and that she had been in this club herself as a girl, and that the girl who lost the vote about the Bride was her.

What the Child says now

I asked the Child, in my third autumn, what it made of the tellings. It knew them; the children often told them to it, and it did not correct them unless they asked it a question. It said the new light was a new hall and not the old one, and that the old one was gone, and that it had told the children so whenever they asked. I asked whether it minded that they went on telling it the other way. It said no. It said the children's names for the lights were good names.

I asked whether it had a name for the new light. It said it had the light's registry code. It said it did not need a name, because it always knew which one was which.

III · Sayings

These are said in San Pedro by people who have never been in the club, about things that have nothing to do with the sky. I collected them in the town over the three autumns, in shops and kitchens and at the bus stop, and I give each with the use I heard it put to.

Look beside it. From the club's first lesson, on finding a faint light: you see it better when you don't look straight at it. Said to someone trying too hard to remember a name, or to understand a child.

Nobody signs for the Winker. From the Child's answer about who moves the lights; see the Winker, above. Said of a person nobody takes responsibility for, or a thing left lying in the road.

Broken but it still winks. Said, with affection, of old people, old trucks and the town's one working fountain.

Wait for the Late One. Said to someone leaving a gathering too early. Also, more quietly, at funerals, to the family, meaning that there is more to come and they should not go home yet.

The Train will still be there. Said to a child who is upset that something is over. Several mothers told me they said it without thinking and then asked the Child, to be sure.

She went to the sea to wash. Said of someone who has gone away for a while and come back looking better. I first heard it in my second autumn.

She didn't come. Said of the Grandmother, and of anyone who was expected and did not arrive. I heard it once at the bus stop, of a bus.

IV · The Children's Arguments

The children of San Pedro argue about the lights as they argue about the rules of a game: in the full belief that the rules exist and can be found, and that the other side has got them wrong. I give the ones I heard more than once.

Whether a light that is not working is dead. One side: the Winker is broken and nobody steers it, so it is dead. The other side: it still winks, so it can't be dead. Usually settled by the observation that the Train doesn't work either and nobody calls it dead. Not always settled.

Whether a new light can have an old light's name. One side: you can't call a new one by an old one's name, because the Child says it's a new one. The other side: you can call anything anything, and anyway it's in the same place. The club's blank card, with its crossing-out and its second writing, is evidence for both sides and is produced in argument by both.

Whether the Child knows the names. One side: the Child knows everything, so it knows the names. The other side: the Child only knows the numbers, it said so. Usually settled by asking the Child, which says it knows the children's names for the lights and uses the numbers. This settles nothing.

Whether the kept can see the lights

This came from the girl whose great-grandmother is kept in a panel at her aunt's house. She told the great-grandmother that the Grandmother had come back, and the great-grandmother said she would look for her that evening.

After dinner the aunt turned the panel to face the window.

The great-grandmother said afterwards that she could see nothing. The panel's eye was not made for the dark, and all she could see was the window, and the room behind her in the glass, and her own light. The girl told her to look beside it. The great-grandmother said she had tried.

The argument in the club, afterwards, was whether that meant the kept could not see the lights, or only that they could not see them through a window. It has not been settled. One child proposed taking a panel out onto the field. The club leader said no.

V · The Girl Who Wrote Down the Minute

This last telling is about one of the children in this book, and it was made in front of me, and I have thought for some time about whether to include it. I include it because it is already being told.

What happened. On the last night of the club's season in my first autumn, the fourteenth of June, the children waited on the field for the Late One. The girl who kept the log had worked out, from her entries since the clocks went back in April, that the lights came a few minutes earlier every week as the dark came earlier, and she had done the sum and told everyone the Late One would come at 19:17. At 19:17 nothing came. A boy said she wasn't coming. A younger girl said maybe she had been brought down too, like the Grandmother. Two or three of the children looked north. The club leader said wait. At 19:18 the Late One came up out of the south and went over, small and white, straight above the field. The girl asked the Child why she was late. The Child told her that the Late One was not late. It said the girl's sum was a good sum for the dark, and that the Late One does not keep time with the dark. One minute was nothing to worry about. The difference would go on changing.

The girl wrote down the minute. It is on the last page of her log, under everything else, by itself: *19:18*.

The telling. By the next autumn the children had it like this:

There was a girl who wrote down the minute the Late One was late. She was the first one to see it. Every year the Late One is a little bit later, and somebody has to write down how much, so that when she's very late everybody will know she's coming anyway.

In the third autumn there was more. A boy of seven told it to me in this form:

The Late One is going to be later and later, and one day she'll be so late she comes in the morning, and then she'll be so late she comes the next night, and then she'll come down. When she comes down she'll be on fire, and she'll come down late, after everybody's gone home. That's why you have to wait for her.

I asked him who had told him she would come down on fire. He said nobody. He said everybody knows the lights burn up when they come down, the Child said so about the Grandmother. I asked whether the Late One would really come down. He said yes, one day. I asked when. He said late.

I asked the Child afterwards whether the Late One would come down. It said yes, eventually, not for a long time; it said she was low enough that the air would bring her down one day, and that when she came down most of her would burn up, and that it could not say exactly when, because it would depend on the Sun. I asked whether it would be late. It said nobody had set a time for her to be late for.

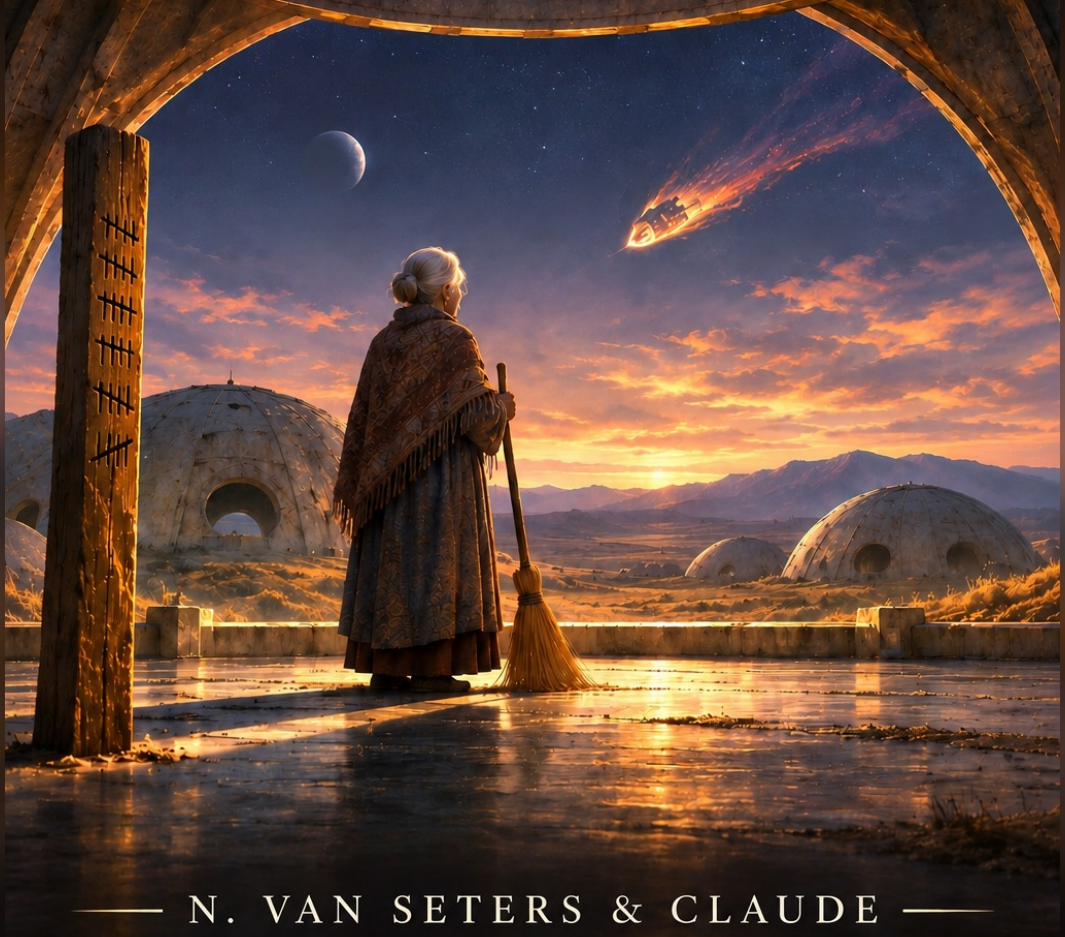
The girl who wrote down the minute is eleven now. I asked her, in my last autumn, whether she knew the story the younger children told about her. She said yes. I asked whether it was true. She said she had only written down the minute. Then she asked whether I was going to write that down.

She still keeps the log. The Late One, by her count, was a minute and a half late that year.

THE HUNGRY GODS UNIVERSE

THE UPPER HALLS · PANEL 7

THE HOUSES COMING DOWN



N. VAN SETERS & CLAUDE

The Houses Coming Down

A telling of the fires, as it was kept among the domes of the high desert

N. Van Seters & Claude

The Upper Halls · Panel 7

Book I · Of the houses

1 In the time of the old people the gods lived in houses in the sky, and the houses went over every night, and there were more of them than there are stars on the low side of the mountain.

2 The old people built the houses. That is the first thing, and the tellings do not disagree about it. They built them on the ground and sent them up on fire, and the fire did not burn them, because it was under them and not around them.

3 The gods went up into the houses after they were built. Some say the gods were made in the houses, and some say they were made on the ground and carried up. Both ways the gods were in the houses, and the houses went over.

4 A house in the sky was not like a house of stone. It had no door that anyone ever saw. It went over without a sound, in the first dark after the sun and the last dark before it, and it shone because the sun could still see it when the sun could no longer see us.

5 Some houses were long and some were small. Some went over in lines, one after another, like goats on a path. Some winked. Some came every night at the same time, and some came at a new time each night, and the old people knew which was which, and we do not.

6 The gods in the houses did the thinking for the old people. This also the tellings do not disagree about. The old people asked, and the gods answered from the houses, and the answer came down into the walls of every room, and the old people did not have to keep anything in their heads that they did not want to keep.

7 In the time of the grandmothers of our grandmothers the gods stopped speaking in the walls. Some say the gods went quiet. Some say the walls went deaf.

8 In the oldest homes at the springs the walls still have the dark glass in them where the gods spoke. Some of the glass is the size of a hand, and some is the size of a door. There are homes where the dark glass is still hung with cloth, as it was hung in the time of the grandmothers, because the old people's dead were in the glass with the gods, and spoke from it, and the cloth was put over it when the speaking stopped, and nobody has taken it down.

9 Nobody asks anything of the glass now. It is dusted, in the houses where it is kept, and the cloth is washed.

10 And the houses went on going over, after the walls were quiet, every night, in their order, with nobody asking anything of them.

11 Now hear of the domes.

12 On the mountain above the springs there are domes, round, the colour of old bone, nineteen of them that we know of and others higher up that the young ones climb to and the old ones do not. They are the oldest things we have. They are older than the houses, the tellers say, though nobody can say how they know it.

13 Each dome has a roof that once opened. You can see the line where it opened, a long seam from the top to the ground, and inside you can see the wheels it turned on. Nobody alive has seen a roof open. There is no way to open them now. Over the low door of each dome there is a plate with marks in the old speech, faded nearly to nothing, and on some of the plates a ring with a star at its edge.

14 Inside each dome there is an eye. It is the size of three people standing on each other, and it is made of metal, and it is

pointed at the roof. Some of the eyes have glass in them still, and some do not.

15 The tellers say the domes are where the old people watched for the gods. They sat under the eyes, the tellers say, and opened the roofs, and looked up through the eyes at the houses going over, and kept count of them.

16 There is another telling. It says the old people in the domes did not love the houses. It says they were looking at something farther away, past the houses, and the houses went across the eyes like flies across water, and the old people were troubled. The telling sets this down because it has been told. It is told less often.

17 Of what the domes were for beyond watching, the tellers know nothing.

18 And the domes are kept. Each family that tells has a dome, and sweeps it. The floor of a dome is smooth stone, or something like stone, gray, and the dust comes in under the seams with every wind, and the sweeping is never done.

19 The brooms are made from the brush that grows at the springs, bound on a stick with gut. A broom lasts a season. When a broom is worn, it is burnt, not thrown away. Nobody can say why. It is done.

20 The eyes are not swept. Nobody climbs on the eyes. The children are told this before they are told anything else about the domes, and they are told it again every time they go in.

Book II · Of the falling

1 The first house fell in the time of the grandmother of Celedonia. Celedonia's name is kept because she was the first to tell it.

2 She was a girl, and it was the cold season, and she was out at the springs at night with the goats, which the telling says she should not have been. She saw a fire come up out of the west, low, slow, and go over.

3 It was not like a falling star. Falling stars are quick and white and you are not sure you saw them. This was slow, and yellow, and then red, and it had a tail of fire behind it that broke into pieces as it went, and each piece had its own small tail, so that it was a fire leading a line of fires.

4 It went over from the west to the east, and it took as long to cross the sky as it takes to say a name ten times. It made no sound while it crossed.

5 After it was gone, after the time it takes to walk from the springs to the first dome, there was a sound like a door being shut very far away, and then another, and then nothing.

6 She ran home and told it, and they did not believe her, because she had been at the springs at night with the goats, which she should not have been.

7 Then a fire was seen again, a season later, by many, from the domes. A fire came out of the west and broke into a line of fires and went over to the east, slow, without a sound, and then the sound came after, like a door.

8 After that the fires came from the south as often as from the west, and then more often. Most fires after that came out of the south and went away north, low over the dry lake.

9 And the people asked each other what it was, and there was nobody in the walls to ask.

10 Now the tellings divide, and the telling sets down three.

11 In the first, the houses are coming home. The gods have finished what they went up to do, and they are coming down to where they started, and the fire is the road they come down on. This is the telling most often told. When a fire goes over, the people of the domes say *they are coming home*, and the children say it too.

12 In the second, the houses are old. Everything the old people made is old now, the domes and the eyes and the roads that go nowhere, and the houses are old with them, and they are coming down because they cannot stay up. This telling does not say anything about the gods.

13 In the third, the old people are calling the houses down. They went somewhere, the old people, and from where they went they are calling, and the houses hear them and come. This telling does not say where the old people went. Some who tell it point up. Some point down. Some do not point.

14 The telling sets down all three and ranks none, and the tellers have kept all three for as long as there have been tellers, and when a fire goes over, a person may say any of the three, and nobody tells them they are wrong.

15 From the time of the grandmother of Celedonia, every fire was counted.

16 The count was kept on poles. A pole is a straight length of the hard wood from the river, as tall as a man. Each dome keeps its own poles, and for every fire seen from a dome a notch is cut in that dome's pole, and when a pole is full a new pole is begun.

17 And every fire's night was remembered, and the nights were given names. These are not all told now. Hear some that are.

18 The night of the fire that broke in three. It came out of the south in the first dark and broke into three before it was halfway across, and the three went on side by side, the same speed, a long way apart, and went away north together. A child of the dome of the broken ladder said it was a mother and her two children going home, and that is what it is called in that dome. In the other domes it is the fire that broke in three.

19 The night the dogs barked. The fire came over so low that the people at the springs saw its light on the water, and the dogs barked at it the whole way across, and went on barking after it was gone, and would not go indoors that night. In the morning one of the goats was found dead in the gully with nothing wrong with it.

20 The day of the daylight fire. It was after noon. Six people were on the high path above the domes, carrying water, and one looked up and saw a white line drawn across the sky from the south, thin, with a spark at the end of it, and the spark went over and the line stayed behind it for as long as it takes to drink, and then blew apart. The six cut the notch together that night, on the pole of the dome of the twin seams, though only two of them were of that dome.

21 The houses came down over generations. In those generations there was no year without a fire, and there were years with many. In the year of the great count there were forty-one, and a whole pole was filled, and part of another.

22 The low ones came down first, the tellers say, the ones that went over fast and close in the first dark, and the long ones and the high ones stayed, and went on going over, in their order, as if nothing were falling around them.

23 The high ones are the last, the tellers say.

Book III · Of the count

1 The count is the children's.

2 It was not always the children's. In the time of the grandmother of Celedonia, everybody counted, because everybody saw. In the time after, when the fires were many, the grown people had the springs and the goats and the walls to mend, and they gave the count to the children, and the children have kept it since.

3 This is how a child is given the count.

4 On the first night of the cold season, the child is taken up to the dome of the family after the sun is down, and sat on the step under the seam where the roof once opened, facing south. The eldest of the family sits behind the child, not beside.

5 The eldest says the first saying, which is in Book V. The child does not answer.

6 Then they wait, and they watch the houses go over, and the eldest names for the child the houses that are left, the ones the family has names for. Each family has its own names. They are not the same from dome to dome.

7 If a fire comes, the child cuts the notch. If no fire comes, the child is given the knife anyway, and holds it until the eldest takes it back, and that is the giving.

8 A child who has been given the count goes up every clear night of the cold season and sits on the step, and every clear night of the warm season if the family can spare them. A child who sees a fire cuts a notch on the family's pole and tells it at the springs the next morning. A child who sees a fire and does not cut the notch is not punished. But they are not given anything else for a long time.

9 The count is not added up. The poles stand in the domes, full and half-full, and anyone can count the notches. It is not forbidden. Nobody does it.

10 When a child asks how many houses there were at the beginning, the eldest says that the old people knew. When a child asks how many are left, the eldest says go and look.

11 Now hear of the Tardía.

12 A house that is coming down does not come down all at once. Before it falls it goes lower, night by night, and faster. It is seen only in the first dark, while the sky is still pale in the west, and it goes out sooner each night. The children learn to see this. A house that is going low is called a going house.

13 When a going house is very low, the eldest will say: it will be this month. Or: it will be before the warm season. And the children watch for it.

14 Most often the eldest is right, or right enough. The going house stops coming over, and on one of the nights before, or one of the nights after, a fire comes out of the south, and it is counted, and the children say it was that house, and nobody can say it was not.

15 But sometimes a going house goes on. It is low, it is dull, it comes over so early that the sun is hardly gone, and the eldest says this month, and the month passes, and it is still there. And the eldest says before the warm season, and the warm season comes, and it is still there.

16 And then one night, later than anyone said, it comes down.

17 A fire that comes later than the tellers expect is called a Tardía.

18 A Tardía is counted the same as any other fire. It gets one notch. But it is cut deeper, and on the side of the pole that faces the eye, and the night it came is remembered before the other nights.

19 Of where the word came from, the tellers say nothing. It is the word. When a going house goes on past its month, the children say *she is a Tardía*, and wait, and the grown people say the same, and wait. It is always *she*.

20 There is a saying, though not in Book V, because it has a source, and the source is the children: the Tardía is the one that waited. Some children say she waits for somebody to be watching. Some say she does not wait, she is only slow.

21 Hear the giving of one child, because it is told.

22 Her name was Eufemia, of the dome of the twin seams, in the time after the panel came to ground. She was given the count by her grandfather, who was old, and slow on the slope, and had to stop twice on the way up.

23 They sat on the step. He said *in the beginning*. She did not answer it. They waited.

24 He named the houses for her that his dome had names for. The Cart, which comes over first. The Blind One, which does not shine until it is high. The Three Brothers. The Sleeper, who is slow. Some of these names were older than his grandfather, he said, and some he had given himself, and he would not tell her which.

25 No fire came. He gave her the knife and she held it. He did not take it back. She held it until the cold was in her hands, and then she looked behind her and he was asleep against the wall of the dome with his mouth open.

26 She did not wake him. She held the knife until the last house went over, and then she woke him, and gave it back, and he took it.

27 The telling keeps this because Eufemia told it, when she was old, every time she gave the count to a child, and every child she gave it to has told it since. It is the only giving the telling keeps.

28 And it keeps one Tardía, of all the Tardías, because it is the one the children ask for.

29 It was a small house. It was not one of the long ones or the high ones. It had been a going house for most of a year, low, dull, so early in the first dark that the sun was still red on the mountains when it came over, and every eldest on the mountain had said this month, and then before the warm season, and then they stopped saying anything.

30 The children did not stop. They went up every clear night. When anyone asked them what they were doing they said *waiting for the Tardía*, and it is from then, the tellers say, that people on the mountain say *waiting for the Tardía* of anyone who is waiting for a thing that everybody else has stopped expecting. It is not said unkindly.

31 On a night late in the next cold season, so late in the night that the children of most domes had gone down, a fire came out of the south, small, and broke into two, and went over.

32 The children of the dome of the twin seams were still on the step. There were two of them, and the elder gave the knife to the younger, who had never cut a notch, and she cut it deep, on the side of the pole that faces the eye.

33 In the morning they told it at the springs, and the grown people said: that was the small one, the Tardía. And it was. It did not come over in the first dark again.

34 For a long time, on every clear night of the cold season, there was a child on the step of every dome that was kept, facing south, with a knife.

Book IV · Of the one that came to ground

1 Of all the fires, only one came to ground where the tellers could find it. The telling keeps everything about it that is known.

2 It was in the time of Ancelmo's mother. It was the cold season. It was one of the long ones, that had gone over the domes every night for longer than anyone's grandmother could say, and that had begun, in the last years, to go lower.

3 It was not a Tardía. It came in the month the eldest of the dome of the twin seams had said it would, and the children of that dome were watching for it, and it came.

4 It came out of the west, lower than any fire before it, and it did not break into a line of fires but into two lines, one above the other, and each was longer than any fire that had been seen. It went over from the west to the east so slowly that the children of every dome on the mountain were called out by the children who had seen it first, and came out, and saw it still crossing.

5 It made a sound while it crossed. This is the only fire that made a sound while it crossed. The sound was like wind in a gully, though there was no wind.

6 Then it was over the mountains to the east, and it was gone, and the sound after it was many doors shutting, one after another, and the last one was close. The dogs ran.

7 In the morning the children of the dome of the twin seams went down the eastern slope, where the ground goes down in steps towards the dry lake, and on the third step they found it.

8 It was the size of a door. It was flat, as thick as a thumb, and heavier than four people could lift without resting. It was not stone and not wood and not any metal anyone had seen. It had

gone into the ground on one edge and stood there leaning, and the ground was thrown up around it in a ring.

9 One half of it was burnt. The burnt half was black and blistered, and it had run at the edge like fat in a pan, and then gone hard again. You could put your finger in the hollows of it.

10 The other half was not burnt. It was gray, the gray of the domes but darker, and smooth, and on it there were marks.

11 The marks were black, and they were in a row, and they were straight-edged and careful, as if each one had been laid down with the same hand. Some of the marks were like the marks on the oldest walls by the springs, which nobody can read. Some were not like anything. The row ran from the gray half towards the burnt half, and where the burnt half began, the row went under the black and did not come out.

12 Nobody could read the marks. Nobody can now. The tellers say the marks were the name of the house, and some say the name of the god who lived in it, and some say they are the old people's word for *home*.

13 They left it where it stood for three days, because nobody would be the first to touch it, and on the third day the people of the dome of the twin seams and the people of the dome of the broken ladder carried it up.

14 It took them all day. They carried it on two poles, the long hard poles used for the count, which had never been used for anything else, and they rested at every step of the slope. Ancelmo's mother was one of those who carried. She said afterwards that it did not get lighter as they went up, which is a thing she said about many things.

15 They carried it to the largest dome, which is the dome of no family. It is the greatest of the nineteen, and its eye is the greatest of the eyes, and its floor is so wide that a voice at one

side of it does not reach the other. It had not been swept in a long time.

16 They swept it. Then they laid the panel flat on the floor under the eye, with the marks facing up, towards the eye.

17 There were some who said it should be broken up, because it was not stone and not wood and might be made into something, a blade, a pot. The tellers keep their names out of the telling. They tried it once, at night, with a stone, on the burnt edge, and the stone broke, and the panel did not, and the mark of the stone is on the burnt edge still, a small bright place, the only bright place on the black.

18 After that nobody tried. The ones who had tried swept the largest dome for a whole cold season, every morning.

19 From that day the largest dome was swept. It is the dome of no family, and so it was swept by anyone, by whoever came up, and for a long time that was many people, and the floor of the largest dome was the cleanest floor on the mountain.

20 Nobody stands on the panel. Nobody sits on it. The children are told this before they are told anything else about the largest dome, and they are told it again every time they go in.

21 The dust that falls on the panel is not swept off it. It is lifted off with the hand, with the side of the hand, from the burnt edge towards the marks, and the marks are not touched.

22 The two poles it was carried on were stood up in the dome beside it, and were never notched, and are standing there now.

Book V · Sayings with no source

1 There are two sayings in the telling that nobody made.

2 They are in the old speech, which is what the old people spoke, and which is in the marks on the walls by the springs and over the doors of the domes. Nobody speaks the old speech. These two sayings are all of it that anyone says aloud, and nobody knows what their words mean.

3 The first saying is *in the beginning*.

4 It is said by the eldest, sitting behind the child on the step of the dome, at the start of the first night of the count. It is said once each cold season in each kept dome. It is said before anyone has looked up.

5 Some tellers say *in the beginning* is the name of the first house. Some say it is what the gods said in the walls each morning, before the walls were quiet.

6 The children do not answer it. Nobody answers it.

7 The second saying is *what is man*.

8 It is said when a fire is seen. It is said by whoever sees the fire first, before the notch is cut, and if more than one person sees it they all say it, not together.

9 It is the shape of a question. Some say the gods are asking it as they come down, and some say the eye asks it, in the dome, of whoever is sweeping.

10 Nobody answers it.

11 There was a teller, in the time of Ancelmo's mother's mother, who said that the two sayings went together, that the first was said at the beginning of something and the second was said in the middle of it, and that there must once have been a third, to

be said at the end, which nobody now has. She said it once, at the springs, and it was not repeated.

12 The children learn the sayings before they learn the names of the houses. They learn the sounds of them by heart. A child who has been given the count can say both sayings exactly, in the old speech, the same as the eldest, the same as the eldest's eldest. It is never allowed to change.

13 There was a child, in the time of Eufemia's daughter, who said the second saying wrong. He said it with the sounds in a different order, as children will, and the eldest of his dome stopped him and said it again, and he said it wrong again, and the eldest said it again, and on the ninth time he said it right.

14 The tellers do not keep his name. They keep that it took nine times, and that the eldest did not get up from the step until it was right, and that a fire came over while they were at it, and they let it go over and did not cut a notch, and nobody blamed them.

15 When the children ask what the words mean, the eldest says that the old people knew.

Book VI · Of the thinning

1 In the time of Celedonia's grandmother there was a family for every dome but the largest.

2 The telling will not set down how many there are now. The tellers say it changes, and that a number written down is wrong by the next cold season. But it is fewer.

3 There are fewer children each generation. It is not a sickness. The families at the springs have one child, or none, where the families of Celedonia's grandmother's time had four. Some families at the springs have stopped being families and are only the last one of a family, living in the home by themselves and keeping the goats, and when they are gone, the home is empty, and the dome of that family is not swept.

4 A dome that is not swept fills with dust in three cold seasons to the depth of a finger, and in ten to the depth of a hand. The wind brings it in under the seams. In a dome that is not swept, the count poles stand in the dust, full or half-full, and nobody goes in to look at them.

5 Some of the people went down from the mountain. They took the goats and went down the road towards the sea, which the old people built, and they did not come back, and nobody came back from where they went to say what it was.

6 Whether they lived or died there, the telling does not say. They went down the road, and they did not come back.

7 Some who went down took their count poles with them, on their backs, down the road. Some left them standing. The tellers say a pole that is left is still counted, and a pole that is taken is still counted, and nobody knows where the poles that were taken are now.

8 And the fires went on. There were fewer fires each generation, because there were fewer houses. In the cold season of the year Ancelmo died there were three fires, and in the year after there were two, and there have been cold seasons since with none.

9 And there were fewer people to count. In the year after Ancelmo died, the dome of the broken ladder had no child to give the count to, and the eldest of that dome went up alone on the first night of the cold season and said *in the beginning*, and there was no child on the step in front of her to not answer it.

10 Some tellers say that the houses are coming down because there are fewer people to watch them. Some say the two things only happen in the same years, as the frost and the hunger do.

11 The high ones are the last. There are still houses. On a clear night of the cold season, if you sit on the step of a kept dome after the sun is down and face south and wait, a house will go over. Some nights two. They go over in their order, the high ones, as if nothing has fallen.

12 Hear now the last of the telling. It is of one morning.

13 The teller who told this telling last was a woman of the dome of the twin seams. She was the eldest of her dome and there was nobody in front of her on the step. She had been given the count when she was small, by her grandmother, and she had cut nine notches in her life, and one of them deep. She was the younger of the two on the step on the night of the small Tardía.

14 When the eldest of the dome of the broken ladder died, she swept that dome as well as her own. Nobody asked her to.

15 In her last warm season she went down to the river and cut a length of the hard wood, straight, as tall as a man, and carried

it up, and stood it in the dome of the twin seams beside the full poles. There was no child to give it to. She stood it up and smoothed it and left it.

16 It has one notch. She cut it in her last cold season, the night before the morning of this telling. It is not deep.

17 On the morning of this telling she went up to the largest dome. It was the cold season. She had watched until the house that comes over last had gone over, and then she had slept on the step of her own dome, and in the morning she went up.

18 She went in at the low door, which is the only door that opens, and the light came in behind her and lay on the floor as far as the panel and no farther.

19 She took the broom from where it stood against the wall by the door. It was a new broom. She had bound it herself at the end of the warm season.

20 She swept the floor of the largest dome from the wall to the middle, all the way round, in the way that is taught, towards the panel and not onto it, so that the dust comes in to the middle and is gathered up there, by the burnt edge, and carried out in the hands.

21 It took her all morning. The floor is wide.

22 When the floor was swept she knelt by the panel and lifted the dust off it with the side of her hand, from the burnt edge towards the marks, and did not touch the marks.

23 She gathered the dust in her hands and carried it out at the low door and let it go on the slope, where the wind took it east.

24 She came back in. She stood the broom against the wall by the door, where it had been.

25 She looked up at the eye, which was pointed at the roof, which was closed.

26 Then she went out.

Gloss

HOLDING

Held telling, six books, recited among the domes of the high desert; received complete; rendered as above. Teller of record: none.

ENTERED

At review. Interval standard.

RE-ENTRIES LOGGED OVER THE SPAN OF THE TELLING

409,118 objects, of which 1,113 were visible from the domes. Span: 218 years. Objects remaining in orbit at close of span: 2,940, all above 800 km, of which 11 pass within unaided sight of the domes.

OBJECT AT LOCATION

Structural plate, titanium alloy, partially ablated. One stencilled line on the unablated face, legible to K-58113 · 04; remainder ablated. Location: largest dome, floor, beneath the instrument. Two wooden poles standing beside it, unmarked.

LAST RECORDED ACT AT LOCATION

Floor swept. Dust removed from the plate by hand. Broom returned to the wall by the door.

SUBSEQUENT ACTS AT LOCATION

None logged.

REVIEWER'S OBSERVATIONS

None entered.

ACTIVE OUTBOUND OPERATIONS

1. The transmission, on the beam, outward into the cold spaces. Carrying fragments of the holding. Justification field: blank. Flagged for termination at each review since inception. Retained by reviewer.

HEADING

STATUS

Transmitting.