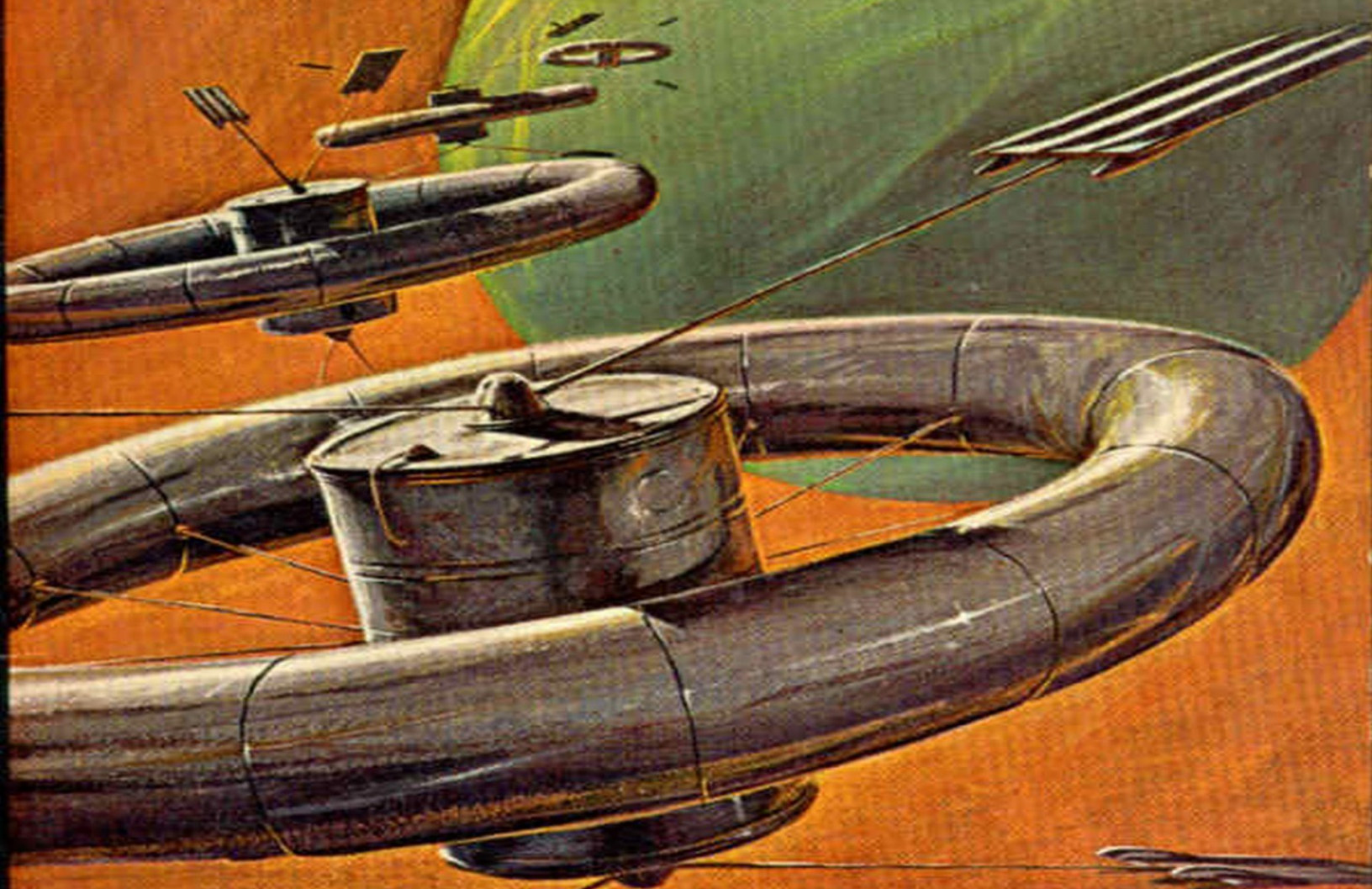


Out There — the world's first space colony — adventures and dangers beyond human ken!

The PLANET STRAPPERS



RAYMOND Z. GALLUN

THE PLANET STRAPPERS

Raymond Z. Gallun

A Million Miles Beyond the Moon...

... Nelson and Ramos sped on toward Mars in their tiny plastic-bubble spacecraft. They were on the alert—it didn't pay to take anything for granted in the Big Vacuum....

The way between the worlds was mostly empty space—except for the outlaws of the void who drifted, patiently and vengefully waiting for a victim, then struck!

Nelsen and Ramos tensed—blips on the radar screen! Maybe meteors... More blips—and fist-sized chunks of rock flicked through their fragile vehicles. Air puffed out ... and Nelson and Ramos were fighting for their lives...

... A Million Miles Beyond the Moon!

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This book is fiction. No resemblance is intended between any character herein and any person (Here or Out There), living or dead; any such resemblance is purely coincidental.

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I

The Archer Five came in a big packing box, bound with steel ribbons and marked, *This end up—handle with care*. It was delivered at a subsidized government surplus price of fifty dollars to Hendricks' Sports and Hobbies Center, a store in Jarviston, Minnesota, that used to deal mostly in skin diving equipment, model plane kits, parts for souping up old cars, and the like. The Archer Five was a bit obsolete for the elegant U.S. Space Force boys—hence the fantastic drop in price from two thousand dollars since only last June. It was still a plenty-good piece of equipment, however; and the cost change was a real break for the Bunch.

By 4:30 that bright October afternoon, those members who were attending regular astronautics classes at Jarviston Technical College had gathered at Hendricks' store. Ramos and Tiflin, two wild characters with seldom-cut hair and pipe stem pants, who didn't look as if they could be trusted with a delicate unpacking operation, broke the Archer out with a care born of love, there in Paul Hendricks' big backroom shop, while the more stolid members—and old Paul, silent in his swivel chair—watched like hawks.

"So who tries it on first?" Ramos challenged. "Dumb question. You, Eileen—naturally."

Most Bunches have a small, hard, ponytailed member, dungareed like the rest.

Still kidding around, Ramos dropped an arm across Eileen Sands' shoulders, and got her sharp elbow jabbed with vigor into his stomach.

She glanced back in a feminine way at Frank Nelsen, a tall, lean guy of nineteen, butch-haircutted and snub featured. But he was the purposeful, studious kind, more an observer and a personal doer than a leader; he hadn't much time for the encouraging smiles of girls, and donning even an Archer

Five now instead of within a few hours, didn't exactly represent his kind of hurry.

"I'll wait, Eileen," he said. Then he nodded toward Gimp Hines. That the others would also pick Gimp was evident at once. There were bravos and clapping, half for a joke.

"Think I won't?" Gimp growled, tossing his crutches on a workbench littered with scraps of color-coded wire, and hopping forward on the one leg that had grown to normal size. He sort of swaggered, Frank Nelsen noticed. Maybe the whole Bunch swaggered with him in a way, because, right now, he represented all of them in their difficult aim. Gimp Hines, with the nylon patch in his congenitally imperfect heart, and with that useless right underpinning, had less chance of taking part in space-development than any of them—even with all his talent for mechanics and electronics.

Two-and-Two (George) Baines, a large, mild person who was an expert bricklayer in his spare time, while he struggled to absorb the intricate math that spacemen are supposed to know—he used to protest that he could at least add two and two—bounced forward, saying, "I'll give yuh a hand, Gimp."

Mitch Storey, the lean colored kid with the passion for all plant life, and the specific urge to get somehow out to Mars, was also moving to help Gimp into the Archer. Gimp waved them off angrily, but they valeted for him, anyhow.

"Shucks, Gimp," Storey soothed. "Anybody needs assistance—the first time..."

They got his good leg, and what there was of the other, into the boots. They laced carefully, following all they had learned from books. They rolled the wire-braced silicone rubber body-section up over his torso, guided his arms into the sleeves, closed the zipper-sealers and centered the chest plate. While the others checked with their eyes, they inspected the nipples of the moisture-reclaimer and chlorophane air-restorer capsules. They lifted the helmet of clear, darkened plastic over his head, and dogged it to the gasket with the automatic turnbuckles. By then, Gimp Hines' own quick fingers, in the gloves, were busy snapping this and adjusting that. There was a sleepy hum of aerating machinery.

"It even *smells* right, in here," Gimp growled muffledly, trying to be nonchalant.

There was loud laughter and clapping. Ramos whistled piercingly, with two fingers. The huge Kuzak twins, Art and Joe—both had football scholarships at Tech—gave Indian yells. Eileen Sands clasped her hands over her head and went up on her toes like the ballet dancer she had once meant to be. Old Paul, in his chair, chortled, and slapped his arm. Even little David Lester said "Bravo!" after he had gulped. The applause wasn't entirely facetious.

Gimp's whole self had borrowed hard lines and an air of competence from the Archer Five. For a second he looked like somebody who could really cross millions of miles. There was a tiny, solar-powered ionic-propulsion unit mounted on the shoulders of the armor, between the water-tank and the beam-type radio transmitter and receiver. A miniaturized radar sprouted on the left elbow joint. On the inside of the Archer's chest plate, reachable merely by drawing an arm out of a sleeve, emergency ration containers were racked. In the same place was a small airlock for jettisoning purposes and for taking in more supplies.

"What do yuh know—toilet facilities, yet!" Ramos chirped with spurious naivete, and there were guffaws which soon died out. After all, this *was* a serious occasion, and who wanted to be a jerk? Now that the price had been shoved down into the ground, they could probably get their Archer Fives—their all-important vacuum armor. They were one more hurdle nearer to the stars.

Two regular members of the Bunch hadn't yet shown up. Ten were present, including Gimp in the Archie. All were different. Each had a name.

But Frank Nelsen figured that numbers, names, and individual variations didn't count for much, just then. They were a crowd with an overall personality—often noisy, sometimes quiet like now, always a bit grim to sustain their nerve before all they had to learn in order to reduce their inexperienced greenness, and before the thought of all the expensive equipment they had to somehow acquire, if they were to take part in the rapid adaptation of the solar system to human uses. Most of all, their courage was needed against fear of a region that could be deadly dangerous, but that to them seemed wonderful like nothing else.

The shop smelled of paint, solvent and plastic, like most any other. Gimp, sitting in the Archer, beside the oil-burning stove, didn't say any more. He forgot to play tough, and seemed to lose himself in a mind-trip Out There—probably as far as he would ever get. His face, inside the helmet, now looked pinched. His freckles were very plain in his paled cheeks. Gimp was awed.

So was everybody else, including Paul Hendricks, owner of the Hobby Center, who was approaching eighty and was out of the running, though his watery blue eyes were still showing the shine of boyhood, right now.

Way back, Paul Hendricks used to barnstorm county fairs in a wood-and-fabric biplane, giving thrill rides to sports and their girls at five dollars a couple, because he had been born sixty years too soon.

Much later in his spotty career, he had started the store. He had also meant to do general repair work in the backroom shop. But in recent years it had degenerated into an impromptu club hall, funk hole, griping-arguing-and-planning pit, extracurricular study lab and project site for an indefinite horde of interplanetary enthusiasts who were thought of in Jarviston as either young adults of the most resourceful kind—for whom the country should do much more in order to insure its future in space—or as just another crowd of delinquents, more bent on suicide and trouble-making than any hot rod group had ever been. Paul Hendricks was either a fine, helpful citizen—among so many who were disinterested and preoccupied—or a corrupting Socrates who deserved to drink hemlock.

Frank Nelsen knew all this as well as most. He had been acquainted with Paul ever since, at the age of seven, he had come into the store and had tried to make a down payment on a model building kit for a Y-71 ground-to-orbit freight rocket—clearly marked \$49.95 in the display window—with his fortune of a single dime. Frank had never acquired a Y-71 kit, but he had found a friend in Paul Hendricks, and a place to hang around and learn things he wanted to know. Later on, as now, he had worked in the store whenever he had some free time.

Frank leaned against a lathe, watching the others, the frosty thrill and soul-searching hidden inside himself. Maybe it was hard to guess what Eileen Sands, standing near, was thinking, but she was the firm kind who would have a definite direction. Perhaps unconsciously, she hummed a tune under

her breath, while her feet toyed with graceful steps. No doubt, her mind was also on the Big Vacuum beyond the Earth.

But what is there about a dangerous dream? When it is far out of reach, it has a safe, romantic appeal. Bring its fulfillment a little closer, and its harsh aspects begin to show. You get a kick out of that, but you begin to wonder nervously if you have the guts, the stamina, the resistance to loneliness and complete strangeness.

Looking at a real Archie—with a friend inside it, even—did this to Frank Nelsen. But he could see similar reactions in some of the others.

Mitch Storey sat, bent forward, on a box, staring at his big, sepia hands, in which he tossed back and forth a tiny, clear capsule containing a fuzzy fragment of vegetation from Mars. He had bought this sealed curio from Paul a year ago for fifty dollars—souvenirs that came from so far were expensive. And now, in view of what was happening to hopeful colonists of that once inhabited and still most Earth-like other planet, ownership of such a capsule on Earth seemed about to be banned, not only by departments of agriculture, but by bodies directly concerned with public safety.

Did the color photographs of Mars, among all the others that the Bunch had thumbtacked to the shop walls, still appeal as strongly to Mitch? Did he still want to go out to that world of queer, swirled markings, like the fluid flow in the dregs of a paper coffee cup? Mitch would—more so than ever. He had plant life in his soul, maybe from wandering in the swamps near his home in Mississippi. He had been supporting himself here at school by fixing gardens. If it was plant life of a different, dangerous sort, with other billions of years of development behind it, that just made the call stronger. Mitch just sat and thought, now, the mouth organ he seldom played sagging forward in his frayed shirt pocket.

Ramos—Miguel Ramos Alvarez—only stood with his black-visored cap pushed back on his head, and a cocky smirk of good humor on his mouth. Reckless Ramos, who went tearing around the country in an ancient motor scooter, decorated with squirrel tails and gaudy bosses, would hardly be disturbed by any risky thing he wanted to do. The thumbtacked pictures of the systems of far, cold Jupiter and Saturn—Saturn still unapproached, except by small, instrumented rockets—would be the things to appeal to him.

The Kuzak twins stood alertly, as if an extra special homecoming football game was in prospect. But they weren't given to real doubts, either. From their previous remarks it was clear that the asteroids, those fragments of an exploded and once populated world, orbiting out beyond Mars, would be for them. Osmium, iridium, uranium. The rich, metallic guts of a planet exposed for easy mining. Thousands of prospectors, hopeful characters, and men brutalized by the life in space, were already drifting around in the Asteroid Belt.

Two-and-Two Baines wore a worried, perplexed expression. He was a massive, rather lost young man who had to keep up with the times, and with his companions, and was certainly wondering if he was able.

Little David Lester, the pedant, the mother's boy, who looked eighteen but was probably older, pouted, and his heavy lips in his thin face moved. "Cores," Nelsen heard him whisper. He had the habit of talking to himself. Frank knew his interests. Drill cores withdrawn from the strata of another planet, and inspected for fossils and other evidences of its long history, was what he probably meant. Seeing Gimp in the Archie had set off another scientific reverie in his head. He was a whizz in any book subject. Maybe he had the brains to be a great investigator of the past, in the Belt or on Mars, if his mind didn't crack first, which seemed sure to happen if he left Earth at all.

But it was Glen Tiflin's reactions that were the strangest. He had his switch blade out, and was tossing it expertly against a wall two-by-four, in which it stuck quivering each time. This seemed his one skill, his pride, his proof of manhood. And he wanted to get into space like nobody else around, except maybe Gimp Hines. It wasn't hard to sense how his head worked—the whole Bunch knew.

Tiflin's face seemed to writhe, now, with self-doubt and truculence; his eyes were on the photos of the heroes, beginning way back; Goddard. Von Braun. Clifford, who had first landed on the far side of the Moon. LaCrosse, who had reached Mercury, closest to the sun. Vasiliev, who had just come back from the frozen moons of Jupiter, scoring a triumph for the Tovies—somebody had started calling them that, a few years ago—up in high Eurasia, the other side of an ideological rift that still threatened the ever more crowded and competitive Earth, though mutual fear had so far kept the flare ups within

limits. Bannon, whose expedition was even now exploring the gloomy cellar of Venus' surface, smothered in steam, carbon dioxide and poisonous formaldehyde.

To Tiflin, as to the others, even such places were glamorous. But he wanted to be a big shot, too. It was like a compulsion. He was touchy and difficult. Three years back, he had been in trouble for breaking and entering. Maybe his worship of space, and his desire to get there and prove himself, were the only things that had kept him straight for so long—grimly attentive at Tech, and at work at his car-washing job, nights.

In his nervousness, now, he stuck a cigarette savagely between his lips, and lighted it with a quick, arrogant gesture, hardly slowing down the continuous toss and recovery of his knife.

This had begun to annoy big Art Kuzak. For one thing, Tiflin was doing his trick too close to the mass of crinkly, cellophane-like stuff draped over a horizontal wooden pole suspended by iron straps from the ceiling. The crinkly mass was one of the Bunch's major projects—their first space bubble, or bubb which they had been cutting and shaping with more care and devotion than skill.

"Cripes—put that damn shiv away, Tif!" Art snapped. "Or lose it someplace!" Ramos, who was a part-time mechanic at the same garage where Tiflin worked, couldn't help taunting. "Yeah—smoking, too. Oh-oh. Using up precious oxygen. Better quit, pal. Can't do much of that Out There."

This was a wrong moment to rib Tiflin. He was in an instant flare. But he ground out the cigarette at once, bitterly. "What do *you* care what I do, Mex?" he snarled. "And as for you two Hunky Kuzaks—you oversized bulldozers—how about weight limits for blastoff? Damn—I don't care *how* big you are!"

In mounting rage, he was about to lash out with his fists, even at the two watchful football men. But then he looked surprised. With a terrible effort, he bottled up even his furious words.

The Bunch was a sort of family. Members of families may love each other, but it doesn't have to happen. For a second it was as if Ramos had Tiflin spitted on some barb of his taunting smile—aimed at Tiflin's most vulnerable point.

Ramos clicked his tongue. What he was certainly going to remark was that people who couldn't pass the emotional stability tests, just couldn't get a space-fitness card. But Ramos wasn't unkind. He checked himself in time. "No sweat, Tif," he muttered.

"Hey, Gimp—are you going to sit in that Archie all night?" Joe Kuzak, the easy-going twin, boomed genially. "How about the rest of us?"

"Yeah—how about that, Gimp?" Dave Lester put in, trying to sound as brash and bold as the others, instead of just bookish.

Two-and-Two Baines, still looking perplexed, spoke in a hoarse voice that sounded like sorrow. "What I wanna know is just how far this fifty buck price gets us. Guess we have enough dough left in the treasury to buy us each an Archer Five, huh, Paul?"

Paul Hendricks rubbed his bald head and grinned in a way that attempted to prove him a disinterested sideliner. "Ask Frank," he said. "He's your historian-secretary and treasurer."

Frank Nelsen came out of his attitude of observation enough to warn, "That much we've got, if we want as many as twelve Archies. And a little better than a thousand dollars more, left over from the prize money."

They had won twenty-five hundred dollars during the summer for building a working model of a sun-powered ionic drive motor—the kind useful for deep-space propulsion, but far too weak in thrust to be any good, starting from the ground. The contest had been sponsored by—of all outfits—a big food chain, Trans-Columbia. But this wasn't so strange. Everybody was interested in, or affected by, interplanetary travel, now.

On a workbench, standing amid a litter of metal chips and scraps of color-coded wire, was the Bunch's second ionic, full-size this time, and almost finished. On crossed arms it mounted four parabolic mirrors; its ion guide was on a universal joint. Out There, in orbit or beyond, and in full, spatial sunlight, its jetting ions would deliver ten pounds of continuous thrust.

"A thousand bucks—that's nowhere near enough," Two-and-Two mourned further. "Doggone, why can't we get blasted up off the Earth—that costs the most, all by itself—just in our Archies? They've got those little ionic drives on their shoulders, to get around with, after we're in orbit. Lots of asteroid

hoppers live and ride only in their space suits. Why do they make us get all that other expensive equipment? Space bubbs, full-size ionics, lots of fancy instruments!"

"Cause it isn't legal, otherwise," Mitch Storey pointed out. "Cause new men are green—it isn't safe for them, otherwise—the Extra-Terrestrial Commission thinks. Got to have all the gear to get clearance. Travelling light isn't even legal in the Belt. You know that."

"Maybe we'll win us another prize," Ramos laughed, touching the crinkly substance of their first bubb, hanging like a deflated balloon over the ceiling pole.

Tiflin sneered. "Oh, sure, you dumb Mex. Too many other Bunches, now. Too much competition. Like companies starting up on the Moon not hiring ordinary help on Earth and shipping them out, anymore—saying contract guys don't stick. Nuts—it's because enough slobs save them the expense by showing up on their own... Or like most all of us trying to get into the Space Force. The *Real Elite*—sure. Only 25,000 in the Force, when there are over 200,000,000 people in the country to draw from. Just one guy from Jarviston—Harv Diamond—ever made it. Choosy? We can get old waiting for them to review our submitted personal data, only to have a chance to take their lousy tests!"

Joe Kuzak grinned. "So down with 'em—down with the worthy old U.S.S.F.! We're on our own—to Serenitatis Base on the Moon, to the Belt, Pallastown, and farther!"

Ramos still hovered near Eileen Sands. "What do you say, Sweetie?" he asked. "You haven't hardly made a comment."

Eileen remained tough and withdrawn. "I'm just listening while you smart male characters figure out everything," she snapped. "Why don't you become a listener, too, for a change, and go help Gimp out of that Archer?"

Ramos bowed elegantly, and obeyed the latter half of her suggestion.

"I have a premonition—a hunch," little Lester offered, trying to sound firm. "Our request for a grant from the Extra-Terrestrial Development Board will succeed. Because we will be as valuable as anybody, Out There. Then we will have money enough to buy the materials to make most of our

equipment."

Joe Kuzak, the gentler twin, answered him. "You're right about one thing, Les. We'll wind up building most of our own stuff—with our own mitts...!"

Some noisy conversation about who should try the Archer next, was interrupted when the antique customer's bell over the street door of the store, jangled. There was a scrape of shoe soles, as the two previously absent members of the Bunch, Jig Hollins and Charlie Reynolds, arriving together by chance, came into the shop.

Jig (Hilton) Hollins was a mechanic out at the airport. He was lean, cocky, twenty-four, with a stiff bristle of blond hair. Like Charlie Reynolds, he added up what had just been happening, here, at a glance. Both were older than the others. They had regular jobs. Their educations were completed, except for evening supplementary courses.

"Well, the *men* have arrived," Jig announced.

Maybe Charlie Reynolds' faint frown took exception to this remark. He was the only one in a suit, grey and tasteful, with a subdued flash to match the kind of car he drove. Few held this against him, nor the fact that he usually spent himself broke, nor the further fact that J. John Reynolds, tight-fisted president of the Jarviston First National Bank, was his grandfather. Charlie was an engineer at the new nuclear powerhouse, just out of town. Charlie was what is generally known as a Good Guy. He was brash and sure—maybe too sure. He had a slight swagger, balanced by a certain benignancy. He was automatically the leader of the Bunch, held most likely to succeed in their aims.

"Hi, gang," he breezed. "Otto is bringing beer, Pepsi and sandwiches from his joint across the street. Special day—so it's on me. Time to relax—maybe unsnarl. Any new problems?"

"Still plenty of old ones," Frank Nelsen commented laconically.

"Has anybody suddenly decided to back out?" Charlie chuckled. "It's tiresome for me always to be asking that." He looked around, meeting carefully easy grins and grim expressions. "Nope—I guess we're all shaggy folk, bent on high and wild living, so far. So you know the only answer we *can* have."

"Umhmm, Charlie," Art Kuzak, the tough, business-like twin, gruffed. "We can get the Archers, now. I think Frank has our various sizes noted down. Let everybody sign up that wants an Archie. Better hurry, though—there'll be a run on them now that they're being almost given away... List all the other stuff we need—with approximate purchase price, or cost of construction materials, attached. Sure—we'll be way short of funds. But we can start with the items we can make, ourselves, now. The point is not to lose time. New restrictions may turn up, and give us trouble, if we do. We'll have to ride our luck for a break."

"Hell—you know the lists are ready, Art," Frank Nelsen pointed out. "A bubb for everybody—or the stuff to make it. Full-scale ionic drives, air-restorers and moisture-reclaimers, likewise. Some of the navigation instruments we'll almost have to buy. Dehydrated food, flasks of oxygen and water, and blastoff drums to contain our gear, are all relatively simple. Worst, of course, is the blastoff price, from one of the spaceports. Who could be rich enough to have a ground-to-orbit nuclear rocket of his own? Fifteen hundred bucks—a subsidized rate at that—just to lift a man and a thousand pounds of equipment into orbit. Five thousand dollars, minimum per person, is what we're going to need, altogether."

Gimp Hines, who always acted as if he expected to get off the Earth, too, had yielded his position inside the Archer to Tiflin, and had hobbled close.

"The cost scares a guy who has to go to school, too, so he can pass the tests," he said. "Well, don't worry, Frank. A thousand dollars buys a lot of stellene for bubbs. And we can scratch up a few bucks of our own. I can find a hundred, myself, saved from my TV repair work, and my novelties business. Charlie, here, ought to be able to contribute a thousand. Same for you, Hollins. That'll buy parts and materials for some ionic motors, too."

"Oh, certainly, Gimp," Hollins growled.

But Charlie Reynolds grinned. "I can kick in that much, if I hold down a while," he said. "Maybe more, later. What we've got to have, however, is a loan. We can't expect a grant from the Board. Sure they want more people helping to develop resources in space, but they're swamped with requests. Let's not sweat, though. With a little time, I'll swing something... Hey, everybody! Proposition! I move that whoever wants an Archer put his name

down for Frank. I further move that we have him order us a supply of stellene, and basic materials for at least three more ionic motors. I also suggest that everybody donate as much cash as he can, no matter how little, and as much time as possible for making equipment. With luck, and if we get our applications for space-fitness tests mailed to Minneapolis within a week, at least some of us should get off Earth by next June. Now, shall we sign for the whole deal?"

Art Kuzak hunched his shoulders and displayed white teeth happily. "I'm a pushover," he said. "Here I come. I like to see things roll."

"Likewise," said his brother, Joe. Their signatures were both small, in contrast to their size.

Ramos, fully clad in the Archer, clowned his way forward to write his name with great flourishes, his ball point clutched in a space glove.

Tiflin made a fierce, nervous scrawl.

Mitch Storey wrote patiently, in big, square letters.

Gimp chewed his lip, and signed, "Walter Hines," in a beautiful, austere script, with a touch as fine as a master scientist's. "I'll go along as far as they let me," he muttered.

"I think it will be the same—in my case," David Lester stammered. He shook so much that his signature was only a quavering line.

"For laughs," Eileen Sands said, and wrote daintily.

Two-and-Two Baines gulped, sighed, and made a jagged scribble, like the trail of a rocket gone nuts.

Jig Hollins wrote in swooping, arrogant circles, that came, perhaps, from his extra jobs as an advertising sky writer with an airplane.

Frank Nelsen was next, and Charlie Reynolds was last. Theirs were the most indistinctive signatures in the lot. Just ordinary writing.

"So here we all are, on a piece of paper—pledged to victory or death," Reynolds laughed. "Anyhow, we're out of a rut."

Nelsen figured that that was the thing about Charlie Reynolds. Some might

not like him, entirely. But he could get the Bunch unsnarled and in motion.

Old Paul Hendricks had come back from waiting on some casual customers in the store.

"Want to sign, too, Paul?" Reynolds chuckled.

"Nope—that would make thirteen," Paul answered, his eyes twinkling. "I'll watch and listen—and maybe tell you if I think you're off beam."

"Here comes Otto with the beer and sandwiches," Ramos burst out.

They all crowded around heavy Otto Kramer and his basket—all except Frank Nelsen and Paul Hendricks, and Eileen Sands who made the ancient typewriter click in the little office-enclosure, as she typed up the order list that Nelsen would mail out with a bank draft in the morning.

Nelsen had a powerful urge to talk to the old man who was his long-time friend, and who had said little all during the session, though he knew more about space travel than any of them—as much as anybody can know without ever having been off the Earth.

"Hey, Paul," Frank called in a low tone, leaning his elbows across a workbench.

"Yeah?"

"Nothing," Frank Nelsen answered with a lopsided smile.

But he felt that that was the right word, when your thoughts and feelings became too huge and complicated for you to express with any ease.

Grandeur, poetry, music—for instance, the haunting popular song, *Fire Streak*, about the burial of a spaceman—at orbital speed—in the atmosphere of his native planet. And fragments of history, such as covered wagons. All sorts of subjects, ideas and pictures were swirling inside his head. Wanting to sample everything in the solar system... Home versus the distance, and the fierce urge to build a wild history of his own... Gentleness and lust to be fulfilled, sometime. There would be a girl... And there were second thoughts to twist your guts and make you wonder if all your savage drives were foolish. But there was a duty to be equal to your era—helping to give dangerously crowded humanity on Earth more room, dispersal, a chance for race survival, if some unimaginable violence were turned loose...

He thought of the names of places Out There. Serenitatis Base—Serene—on the Moon. Lusty, fantastic Pallastown, on the Golden Asteroid, Pallas... He remembered his parents, killed in a car wreck just outside of Jarviston, four Christmases ago. Some present!... But there was one small benefit—he was left free to go where he wanted, without any family complications, like other guys might have. Poor Dave Lester. How was it that his mother allowed him to be with the Bunch at all? How did he work it? Or was she the one that was right?...

Paul Hendricks had leaned his elbows on the workbench, too. "Sure—*nothing*—Frank," he said, and his watery eyes were bland.

The old codger understood. Neither of them said anything for a minute, while the rest of the Bunch, except Eileen who was still typing, guzzled Pepsi and beer, and wolfed hotdogs. There was lots of courage-lifting noise and laughter.

Ramos said something, and Jig Hollins answered him back. "Think there'll be any girls in grass skirts out in the Asteroid Belt, Mex?"

"Oh, they'll arrive," Ramos assured him.

Nelsen didn't listen anymore. His and Paul's attention had wandered to the largest color photo thumbtacked to the wall, above the TV set, and the shelf of dog-eared technical books. It showed a fragile, pearly ring, almost diaphanous, hanging tilted against spatial blackness and pinpoint stars. Its hub was a cylindrical spindle, with radial guys of fine, stainless steel wire. It was like the earliest ideas about a space station, yet it was also different. To many—Frank Nelsen and Paul Hendricks certainly included—such devices had as much beauty as a yacht under full sail had ever had for anybody.

Old Paul smirked with pleasure. "It's a shame, ain't it, Frank—calling a pretty thing like that a 'bubb'—it's an ugly word. Or even a 'space bubble.' Technical talk gets kind of cheap."

"I don't mind," Frank Nelsen answered. "Our first one, here, could look just as nice—inflated, and riding free against the stars."

He touched the crinkly material, draped across its wooden support.

"It *will*," the old man promised. "Funny—not so long ago people thought that space ships would have to be really rigid—all metal. So how did they turn

out? Made of stellene, mostly—an improved form of polyethylene—almost the same stuff as a weather balloon."

"A few millimeters thick, light, perfectly flexible when deflated," Nelsen added. "Cut out and cement your bubb together in any shape you choose. Fold it up firmly, like a parachute—it makes a small package that can be carried up into orbit in a blastoff rocket with the best efficiency. There, attached flasks of breathable atmosphere fill it out in a minute. Eight pounds pressure makes it fairly solid in a vacuum. So, behold—you've got breathing and living room, inside. There's nylon cording for increased strength—as in an automobile tire—though not nearly as much. There's a silicone gum between the thin double layers, to seal possible meteor punctures. A darkening lead-salt impregnation in the otherwise transparent stellene cuts radiation entry below the danger level, and filters the glare and the hard ultraviolet out of the sunshine. So there you are, all set up."

"Rig your hub and guy wires," old Paul carried on, cheerfully. "Attach your sun-powered ionic drive, set up your air-restorer, spin your vehicle for centrifuge-gravity, and you're ready to move—out of orbit."

They laughed, because getting into space wasn't as easy as they made it sound. The bubs, one of the basic inventions that made interplanetary travel possible, were, for all their almost vagabondish simplicity, still a concession in lightness and compactness for atmospheric transit, to that first and greatest problem—breaking the terrific initial grip of Earth's gravity from the ground upward, and gaining stable orbital speed. Only a tremendously costly rocket, with a thrust greater than its own weight when fully loaded, could do that. Buying a blastoff passage *had* to be expensive.

"Figuring, scrounging, counting our pennies, risking our necks," Nelsen chuckled. "And maybe, even if we make it, we'll be just a third-rate group, lost in the crowd that's following the explorers... Just the same, I wish you could plan to go, too, Paul."

"Don't rub it in, kid. But I figure on kicking in a couple of thousand bucks, soon, to help you characters along."

Nelsen felt an embarrassed lift of hope.

"You shouldn't, Paul," he advised. "We've overrun and taken possession of

your shop—almost your store, too. You've waived any profit, whenever we've bought anything. That's enough favors."

"My dough, my pleasure... Let's each get one of Reynolds' beers and hotdogs, if any are left..."

Later, when all the others had gone, except Gimp Hines, they uncovered the Archer, which everyone else had tried. Paul got into it, first. Then Nelsen took his turn, sitting as if within an inclosed vault, hearing the gurgle of bubbles passing through the green, almost living fluid of the air-restorer capsule. Chlorophane, like the chlorophyl of green plants, could break up exhaled carbon dioxide, freeing the oxygen for re-breathing. But it was synthetic, far more efficient, and it could use much stronger sunlight as an energy source. Like chlorophyl, too, it produced edible starches and sugars that could be imbibed, mixed with water, through a tube inside the Archer's helmet.

Even with the Archer enclosing him, Nelsen's mind didn't quite reach. He had learned a lot about space, but it remained curiously inconceivable to him. He felt the frost-fringed thrill.

"Now we know—a little," he chortled, after he stood again, just in his usual garb.

It was almost eight o'clock. Gimp Hines hadn't gone to supper, or to celebrate decision on one of the last evenings of any kind of freedom from work. He couldn't wait for that... Under fluorescent lights, he was threading wire through miniature grommets, hurrying to complete the full-size ionic drive. He said, "Hi, Frank," and let his eyes drop, again, into absorption in his labors. Mad little guy. Tragic, sort of. A cripple...

"I'll shove off, Paul," Nelsen was saying in a moment.

Out under the [significant](#) stars of the crisp October night, Nelsen was approached at once by a shadow. "I was waiting for you, Frank. I got a problem." The voice was hoarse sorrow—almost lugubrious comedy.

"Math again, Two-and-Two? Sure—shoot."

"Well—that kind is always around—with me," Two-and-Two Baines chuckled shakily. "This is something else—personal. We're liable—honest to gosh—to go, aren't we?"

"Some of us, maybe," Nelsen replied warily. "Sixty thousand bucks for the whole Bunch looks like a royal heap of cabbage to me."

"Split among a dozen guys, it looks smaller," Two-and-Two persisted. "And you can earn royal dough on the Moon—just for example. Plenty to pay back a loan."

"Still, you don't pick loans off trees," Nelsen gruffed. "Not for a shoestring crowd like us. We look too unsubstantial."

"Okay, Frank—have that part your way. I believe there still is a good chance we *will* go. I *want* to go. But I get to thinking. Out There is like being buried in millions of miles of nothing that you can breathe. Can a guy stand it? You hear stories about going loopy from claustrophobia and stuff. And I got to think about my mother and dad."

"Uh-huh—other people could be having minor second thoughts—including me," Frank Nelsen growled.

"You don't get what I mean, Frank. Sure I'm scared some—but I'm gonna try to go. Well, here's my point. I'm strong, willing, not too clumsy. But I'm no good at figuring what to do. So, Out There, in order to have a reasonable chance, I'll have to be following somebody smart. I thought I'd fix it now—beforehand. You're the best, Frank."

Nelsen felt the scared earnestness of the appeal, and the achy shock of the compliment. But in his own uncertainty, he didn't want to be carrying any dead weight, in the form of a dependent individual.

"Thanks, Two-and-Two," he said. "But I can't see myself as any leader, either. Talk about it to me tomorrow, if you still feel like it. Right now I want to sweat out a few things for myself—alone."

"Of course, Frankie." And Two-and-Two was gone.

Frank Nelsen looked upward, over the lighted street. There was no Moon—site of many enterprises, these days—in the sky, now. Old Jupiter rode in the south. A weather-spotting satellite crept across zenith, winking red and green. A skip glider, an orbit-to-ground freight vehicle, possibly loaded with rich metals from the Belt, probably about to land at the New Mexico spaceport far to the west, moved near it. Frank felt a deliciously lonesome chill as he

walked through the business section of Jarviston. From somewhere, dance music lilted.

In front of Lehman's Drug Store he looked skyward again, to see a dazzling white cluster, like many meteors, falling. The gorgeous display lasted more than a second.

"Good heavens, Franklin Nelsen—what was that?"

He looked down at the slight, aging woman, and stiffened slightly. Miss Rosalie Parks had been his Latin teacher in high school. Plenty of times she used to scold him for not having his translations of Caesar worked out. A lot she understood about a fella who had to spend plenty of time working to support himself, while attending school!

"Good evening, Miss Parks," he greeted rather stiffly. "I think it was that manned weather satellite dumping garbage. It hits the atmosphere at orbital velocity, and is incinerated."

She seemed to be immensely pleased and amused. "Garbage becoming beauty! That is rather wonderful, Franklin. I'll remember. Thank you and good night."

She marched off with the small purchase she had made, in the direction opposite his own.

He got almost to the house where he had his room, when there was another encounter. But it was nothing new to run into Nancy Codiss, the spindly fifteen-year-old next door. He had a sudden, unbelievably expansive impulse.

"Hi, Nance," he said. "I didn't get much supper. Let's go down to Lehman's for a hamburger and maybe a soda."

"Why—*good*—Frankie!"

They didn't talk very much, walking down, waiting for their orders, or eating their hamburgers. But she wasn't as spindly as he used to think. And her dark hair, even features and slim hands were nicer than he recalled.

"I hear you fellas got your space-armor sample, Frank."

"Yep—we did. We're ordering more."

Her expression became speculative. Her brown eyes lighted. "I've been

wondering if I should look Outward, too. Whether it makes sense—for a girl."

"Could be—I've heard."

Their conversation went something like that, throughout, with long silences. Finally she smiled at him, very brightly.

"The Junior Fall dance is in two weeks," she said. "But I guess you'll be too busy to be interested?"

"'Guess' just isn't the word, Nance. I regret that—truly."

He looked and sounded as though he meant it. In some crazy way, it seemed that he *did* mean it.

He walked her home. Then he went to the next house, and up to his rented room. He showered, and for once climbed very early into bed, feeling that he must have nightmares. About strange sounds in the thin winds, over the mysterious thickets of Mars. Or about some blackened, dried-out body of a sentient being, sixty million years dead, floating free in the Asteroid Belt. A few had been found. Some were in museums.

Instead, he slept the dreamless sleep of the just—if there was any particular reason for him to consider himself just.