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**Crossroads
of the Galaxy**

Stephen Goldin

**Parsina
PRESS**


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Prologue

When the people of Earth finally reached out to explore the Universe, they found, to their pleasant surprise, that there were shortcuts to the stars. Scientists had predicted that voyages between solar systems might take hundreds of years apiece—but, thanks to the discovery of the starpaths, such journeys required only a couple of days or weeks. Suddenly the whole Galaxy lay at man's doorstep.

The starpaths were creases in the fabric of space itself. By traveling along these folds, a spaceship could bypass the vast gulfs of interstellar space and arrive at its destination in a tiny fraction of the time it would ordinarily have taken. No one knew precisely how the starpaths were originally formed, although there were plenty of theories: that they were the “wakes” of black holes moving rapidly through space; or that they were primordial remains of the “Big Bang” that created the Universe billions of

years ago; or that they were somehow condensations of gravitic fields, possibly caused by pressure from adjacent universes. There were almost as many different theories as there were scientists trying to explain them.

But if the origins of the starpaths were unknown, their properties were quite well defined. The starpaths acted like tunnels in space. Light from outside the entrance did not filter in, and ships had to traverse their length flying by instrumentation alone. The starpaths were of fixed length, going generally between one solar system and another—although sometimes they opened out into empty space, where there was no star at all. The paths were not fixed in space, but rotated at roughly the same rate as the Galaxy itself so that, in general, their ends remained stationary with respect to the stars they linked.

There were thousands upon thousands of starpaths crisscrossing space throughout the Galaxy; there may even have been many millions. New ones were always being discovered and explored, with the result that frontiers were constantly being opened and the horizons of knowledge were continually expanding.

Humans quickly discovered that they were no longer alone, that they shared the Galaxy with many other races of intelligent beings. Usually the first encounters with aliens were peaceful, and an exchange of ideas, goods, and technology benefited both parties. Occasionally, a clash of cultures led to hostilities, sometimes even wars. On the whole, however, there was plenty of room for everyone, and a flour-

ishing trade grew up between the stars.

In some instances, more than one starpath would intersect within a given solar system. These intersections became the natural centers for interstellar trade, since they were easily accessible to several races. The largest of these intersections—a place with access to more than three hundred starpaths—became the largest multiracial complex and trading center of the Galaxy: a place called Nexus.

Chapter 1

Nexus

Alex Bredakoff had just turned on the viewscreen in his cabin when his father's voice came out of the air. "Everything tucked away, son?" Gregor Bredakoff asked.

"Sure, Dad."

"Take care to strap yourself in, too," Alex's mother said. "We wouldn't want you hurting yourself during maneuvers."

Alex sighed. His mother was still treating him like a baby, and here he was—fifteen years old, and a prime candidate for space training when he finished General Curriculum in another two years. He knew she worried about him, and he was glad she did, but there were times her constant attention annoyed him. "I'm all set," he said, and turned his own attention to the beautiful vista appearing on his

viewscreen.

As the *Rimbound* approached the Nexus system, tiny transmitters in the hull beamed an image of its destination back inside the ship, to be tuned in by any passengers who wanted to watch. Since Nexus was to be his home for the next few years at least, Alex wanted very much to watch.

The background of the screen glowed slightly with a milky luminescence that offset the dead blackness of space. It was hard to see any but the brightest stars through the glowing haze that surrounded Nexus. The clouds of gas were the remnants of a supernova that had occurred here thousands of years ago, when a giant star exploded with a force beyond human imagination. The area was quiet now, the expanding clouds being the only testimony to the act of incalculable violence.

Well off the edge of the screen to the left, Alex knew, would be the small white dwarf star whose meager glow lit the clouds around the area. It was all that remained of the once-mighty giant star, reduced to a pale semblance of its former self. There were no natural planets left in this solar system; if there ever had been any, they'd been reduced to rubble by the force of the cosmic cataclysm.

And there, directly in the center of the screen, was the group of artificial space colonies known as Nexus. They still looked small, like eight gems glistening in the star's feeble light. Eight sparkling pinpoints, so far away he couldn't yet make out their shapes. It was all so beautiful—and this was going to be *his* home!

“Screen, triple magnification,” he ordered, and

the computer obeyed. The image blurred for an instant, to be replaced by another in which the satiny backdrop seemed not to have changed at all, but where the island colonies had jumped much closer to him.

Now their individual shapes were more apparent, looking exactly like the pictures he'd been studying for the past two months. Four of the glowing jewels were cylinders, four were spheres. Although they seemed to hang perfectly still in space, Alex knew they were dancing a stately pavane in a complex mathematical pattern while, simultaneously, each one spun rapidly about its own axis of rotation. They were much too far away yet to notice any distinguishing characteristics. Alex knew his destination was Nexus-1, one of the cylinders, but he had no idea which of the four it could be.

A small blue dot appeared in the upper right-hand corner of the screen, reminding Alex to prepare for the *Rimbound's* arrival at Nexus-1. Alex glanced briefly around his small cabin, but there was nothing loose that might fall or cause damage when the engines came to life again; he had packed everything away quite some time ago, impatient for the moment of docking.

The maneuvering came thirty seconds later. The *Rimbound* had been coasting in freefall for nine days, its interior weightless; but in order to make its assigned rendezvous with the Nexus-1 colony, it had turned on its maneuvering jets, producing a false sensation of weight within the ship. Alex, who had grown accustomed to the weightlessness during the trip, suddenly had to cope with "up" and "down"

again.

The acceleration was mild, barely one-third gee, but it was more than he'd felt in some time. The maneuvering continued for a while, and the images of the Nexus colonies grew ever larger until they filled the entire screen even without magnification.

As he watched the pictures grow, Alex grew more and more awed by the colonies. It was one thing to be told that they were large, and quite another to experience their immensity firsthand. The *Rimbound* itself was no small ship, holding several hundred passengers and tons of cargo—but it was dwarfed by the large spinning colonies, each of which could have had hundreds of *Rimbounds* rattling around inside without filling it up.

Alex had memorized the numbers long ago. Each of the spheres was 25 kilometers in diameter, spinning about a polar axis once every 37 minutes to provide gravity for the inhabitants. Each of the cylinders had a cross-sectional diameter of 25 kilometers and a length of 40, rotating about the central axis once every 56 minutes. The total population of Nexus, including all eight colonies, was over two million beings representing more than a hundred separate and distinct races.

Never, in all of recorded history, had there been a place quite like Nexus. Within these totally artificial space colonies, people from all over the Galaxy came to arrange the commerce and futures of a thousand worlds. Nexus was at a natural gathering point, close to almost everyone by one or another of the starpaths that ended here. The satellites were a hodgepodge of cultures and languages, worlds of con-

stant change as beings came and went according to the dictates of their business. Nexus had been called—quite justifiably—the Crossroads of the Galaxy. Sooner or later, anyone or anything of any importance had to come through Nexus.

Alex suddenly felt very small and insignificant—particularly when he reflected on the fact that his father had just been named as the new chief of security for the entire Nexus system. It would be an awesome responsibility, and Alex made a vow to help his father whenever possible.

He was so intent on gazing at the large colony shells that he almost didn't see the smaller objects swarming through space all around them. Some of the tiniest pinpoints of light were other ships like the *Rimbound*, loading and unloading goods and passengers to the ever-seething hive of activity that was Nexus. But there were other objects clustered around each colony like moths around a lightbulb. These would be the farming tanks where food was grown. These would be equally important in Alex's life because his mother, Delya Bredakoff, had been assigned as a senior agritechnician for Nexus-1. It was not as glamorous a job as her husband's was, but it was every bit as vital—if not more so.

The *Rimbound* nudged gently inward toward one of the large cylinders that had to be Nexus-1. As the captain maneuvered the ship toward the rotational axis at one end, Alex looked closely at the sides of the cylinder, and could see that the outside alternated sections of metal and glass—three of each around the perimeter lengthwise down the tube. At the far end of the cylinder were enormous mirrors that re-

flected the feeble light of the white dwarf star down through the windows and into the colony, giving it sunlight during the “day.” At “night,” the mirrors were simply tilted away and no sunlight entered. Each day on Nexus was 25 Earth-hours long, and was divided into a hundred units called “centures.”

As the *Rimbound* reached its assigned parking spot, small grappleboats came out from the large colony to guide it into its position. The *Rimbound's* captain shut off the ship's engines, and freefall reigned once more in the ship. In the viewscreen, Alex could see a long metal tube snaking out from the colony to attach itself to the side of the *Rimbound*.

A flashing green light and a general announcement filled the air, breaking his concentration: “Docking at Nexus-1 now completed. All passengers for Nexus prepare to disembark.”

Suddenly Alex found he couldn't move fast enough. This was it! They were here, at one of the most fascinating settlements in the Galaxy. Ever since he'd first heard about his father's new job, he'd dreamed of this moment—and now he'd arrived.

“Screen, off,” he commanded, and the viewscreen faded to its normal blankness. Then, with a slight turn of his head, he added, “Drawers, open.”

From out of an almost seamless wall, the drawers, which had held his clothing during the nine-day voyage from Earth, slid open, revealing their contents: a series of boxlike force fields. Enclosed within the fields were Alex's personal possessions, all neatly packed away. Alex touched a stud on his belt and the force fields floated out of their drawers and wafted

gently through the air to his side. “Baggage slot, open,” he commanded, and a hole opened in the wall. “Route my field bags to new assigned quarters in Nexus-1,” he said and, one by one, each of the bags was sucked into the hole. Computers would guide them through the terminal and take them automatically to whatever housing had been provided for the Bredakoff family—sparing him the drudgery of carrying his own luggage. Each force field was coded with his own personal ident number, so there was no chance of its being mistaken for anyone else’s.

That task accomplished, Alex quickly brushed a hand through his curly brown hair and swam out of his cabin. It was noisy and crowded in the narrow corridor as other passengers milled about in freefall, eager to get off the ship after their nine days’ confinement. Even though his parents were just down the hall, it took Alex a couple of minutes to reach them.

Gregor Bredakoff was a tall, dark-haired man with a serious face that could burst into sudden, unexpected smiles. He was a trim and active seventy-two—still very young in an era when people routinely lived past two hundred. Delya Bredakoff was thirty years younger than her husband and a strikingly beautiful woman. Normally she let her long blonde hair flow freely down her back—but aboard the ship she’d been wearing it in a coronet braid so it wouldn’t be a nuisance in freefall. Her gray eyes were usually calm and filled with understanding—and if there was any subject she didn’t know something about, Alex hadn’t yet discovered it.

Alex smiled as he approached them. He was so

excited about finally arriving at Nexus that his freefall swimming was sloppy, and he bumped into the walls four times. Delya took his left hand and Gregor took his right, and together the Bredakoff family followed the blinking lights down the corridors of the *Rimbound* to the transfer tube that would take them into Nexus-1.

There was already a line to disembark, and Alex had to wait impatiently with everyone else until his family's turn came. Other people were babbling around them, a general buzz of conversation, but Alex was much too excited to talk. Gregor Bredakoff looked at his wife. "Any regrets?"

"None at all," she smiled back at him. "It may be a big disruption in all our lives, but it's a whole new and exciting world—and just think of the possibilities for Alex."

At last they reached the front of the line, and swam forward together into a blue cubicle. The walls glowed momentarily as a force field formed around them, detectable only by a slight shimmer in the air. Once the field was in place, it acted like an elevator car to pull them rapidly down the length of the tunnel that linked the *Rimbound* to Nexus-1. The walls of the tunnel were studded with advertisements for restaurants and shops within the colony, but Alex was too excited to do more than glance at the colorful holographic displays. No single place within the colony could interest him half as much as the colony itself.

At length their force bubble began to slow down, and a mechanical voice warned them to prepare for the feeling of gravity once again. Glowing arrows on

the tunnel walls indicated which direction would be down, and the Bredakoffs oriented themselves properly. Ahead, a spot of grayish light grew brighter until it could be clearly seen as the end of the tunnel. The Bredakoffs' force bubble shot out of the tube, hovered in midair for a moment, and then slowly began its descent to the surface of the colony.

Alex was disappointed at first, because they seemed to have emerged in the middle of a thick fog. The transfer tube from the ship entered the colony right along its central axis—in the middle of the “sky,” as it were—and there was nothing to see here but the clouds formed from excess water vapor in Nexus-1's atmosphere. As the force bubble floated gently “downward,” however, the clouds parted to give Alex his first real view of the colony. And this time he was not at all disappointed.

A vast panorama was spread before him, amazingly green and uncluttered. The ground curved upward on either side like a bowl, and extended off far into the distance until perspective brought the sides together at a point. Directly below, small buildings were clustered about the Welcome Center where visitors first arrived. Beyond that were park lands with trees, bicycle lanes, and meandering pathways. Still farther beyond that were groups of houses, close enough together to give them a feeling of community, yet separated enough for each to have a spacious yard and private garden. Even farther away, the houses were grouped into apartment complexes, terraced to look like hillsides—and beyond them, almost at the limits of Alex's vision, was a city of tall buildings and bustling commerce.

Delya Bredakoff said it best. “It’s hard to believe all this is *inside*.”

Over their heads, they could see nothing beyond blue sky and a layer of white clouds—but Alex knew that if the clouds could be made to disappear, there would be the other half of the colony visible, looking pretty much like this half except upside down. The spinning of the colony made the inside surface of the outer wall feel like “down,” no matter where on that inner surface you were.

On either side of the inhabited belt was a dark strip running the length of the colony. Through that strip, the stars and the milky luminescence of space could be seen, along with the bright white sun that gave Nexus its light and heat. It made an odd counterpoint to all the lush vegetation, to see it surrounded by the deadness of outer space—but it served as a constant reminder to Nexus’s inhabitants of the special nature of their world.

The force bubble dropped slowly towards the Welcome Center, and as it did Alex felt the pull of the false gravity—actually centrifugal force—on his body. The designer of this transit system had done his best to make the transition from freefall to gravity as easy as possible, but there was still a certain discomfort to it. By the time the bubble reached the ground, the effect of gravity had reached its fullest: nine-tenths Earth normal. This was less than Alex had grown up with, but still more than he’d become used to on the *Rimbound*.

As they reached the bottom the force bubble dissolved from around them, and Alex and his family stepped forward through a door into the terminus.

There they suddenly found themselves facing a swarm of local news reporters and their cameras, all here to cover the arrival of Nexus's new security chief.

At the first sight of the Bredakoffs the reporters began shouting their questions all at once, making an incomprehensible din. Alex backed slightly away from the commotion. Neither he nor his parents had been expecting a reception quite like this, and they weren't sure how to react. Gregor Bredakoff was more used to press conferences, however, and after a moment of being startled, he recovered his bearings and took command of the situation.

"One at a time, please," he said, holding up his hands to restore a semblance of order. "I'll be happy to answer your questions, but I have to be able to hear them first. Why don't we start with you, over there?"

The being he addressed was a Bolzad—tall, slender, and blue-skinned, with four arms and a tubular extended mouth that made it look as though he were playing a small trumpet. "Chief Bredakoff—if I may call you that—what is your first impression of Nexus?"

"I've barely had a chance to look at it," Gregor Bredakoff explained. "My only view so far has been the approach from space and a quick glimpse of the landscape as I came down here to the Center. But what I've seen is fantastic. It really makes me appreciate the enormity of my new responsibilities."

Another being, looking like a cockroach on two legs, signaled for recognition. "There've been some reports that you've been called in here to act as a

sort of ‘supercop.’ Would you care to comment on that?”

Alex’s father took a deep breath. “Nexus is a huge place. With more than two million people and a total land area of more than twenty thousand square kilometers—not to mention the constant flow of transients and commerce—it has special security problems all its own. I’ve been put in charge of the whole security department, which means I’ll end up more as an administrator than as a policeman. In some ways I think that’s a shame; I’ve been in law enforcement all my life, and it’s more exciting to be out on the line than to be stuck behind a desk. I see my job more as coordinating the efforts of others rather than taking a personal hand in security matters.”

“But you do have a reputation for always being where the trouble is,” the reporter persisted.

“There are many excellent security officers who never get the recognition they deserve. I’ve just been lucky—or unlucky—enough to have the spotlight turned on me a couple of times.”

“Why do you think you were hired for this job—you, an outsider—when there are plenty of capable officers serving here locally?”

“I like to think it’s because your governor thought I was the best person for the job. Sometimes an outsider, without preconceptions, can see solutions more clearly. All I ask is the chance to prove myself in this capacity.”

Another reporter—a creature shaped like a green tomato with arms and legs—asked, “Do you foresee any drastic shake-ups within your department?”

“It would be totally premature to answer that

question now,” Gregor Bredakoff snapped back. “I’ll have to see the system in operation before I make any suggestions. So far, I’ve made some preliminary studies of the files on my way over here, but I’ve formed no hasty opinions. Chief Nostr’dicus has left me an efficiently run department. Obviously I’ll have my own way of doing some things that will differ from hers, but I won’t tamper needlessly with success.”

A creature was pushing his way roughly through the crowd. He was wearing a security uniform, and seemed basically humanoid. He was a Darillian, with the short, stocky build typical to natives of high-gravity worlds. His face looked squashed in from the sides and pushed forward, and he had dark brown spikes of hair that stood out from his head like a pineapple’s crown. He pushed his way up beside Alex’s father, turned to look at the reporters, and said, “That’s enough. This news conference is over.” He glared at the audience with obvious malevolence, daring them to defy him.

As the reporters dispersed, grumbling, the Darillian turned to Gregor Bredakoff. “Those sniffers will follow you everywhere unless you’re firm with them. I’m Darago Fallon.”

“Ah yes, my second-in-command,” Gregor Bredakoff nodded, touching fingertips with the other officer in polite greeting. “I’ve read over your file. I think we should work well together.”

Fallon just gave a curt nod of acknowledgment. “I’ve arranged private transportation to your new house; I hope you’ll like it.” Without waiting for a reply, he turned and led them out of the room.

They followed Fallon through a series of corridors and down another force field tube to the subway level where a private tubecar was waiting. Alex and his family got in; Fallon entered after them, closing the door behind him. He set the car's controls and the vehicle jerked forward at an unnecessarily rapid pace through the underground maze that served Nexus-1 as public transport. Alex's neck was sore from the sudden acceleration.

"The trip ordinarily wouldn't be this fast," Fallon explained coldly. "I have the authority to order a priority clearance for this car; we take precedence over other traffic." Then he began discussing departmental organization with Gregor Bredakoff, totally ignoring the other two people in the car. Alex quickly lost interest in the conversation.

Instead, he stared idly out the windows of the car at the rapidly changing patterns of colored lights on the inner walls of the transport tube. He did not much care for Darago Fallon. His father's deputy was cold and clinical, and there was something unpleasant about him. Maybe he was just nervous about meeting his new boss, but Alex suspected it was something deeper than that. The boy could tell that his mother, too, did not much care for Fallon; she was sitting in that stiff-backed posture he recognized all too well—her I-am-being-polite-for-company posture. She had to endure her husband's business associates, but she didn't always have to like them.

The car came to a special niche and halted. "Your house has its own private tube stop," Fallon said brusquely. "Security reasons; the governor wants

you to have the same privileges as Chief Nostr'dicus." He punched a special code and part of the wall slid away to let the tubecar enter. Safe in their private garage, the Bredakoffs left the car with Fallon and ascended to the house itself.

Alex had thought that, because Nexus was known to be crowded, their house would be small and cramped; he was pleasantly surprised by its spaciousness. The living room had a large electronic recreation center built into one wall. The kitchen was open and airy, equipped with all the latest conveniences. Not only did Alex have his own bedroom, but a separate studyroom as well. Gregor Bredakoff had a den and a communications room, through which he could instantly contact any security unit in the Nexus colonies. Delya had a separate hobby room where she would work on her own private projects. A large garden and a high wall surrounded the house. The furniture inside was rather plain, but Alex knew his mother would correct that soon enough.

"I picked the layout myself," Fallon said flatly. "If you don't like it, you can reorder the walls to suit yourselves."

Fallon showed them through the house then excused himself brusquely and left. The Bredakoffs were alone for the first time since leaving the *Rimbound*, but there was little time for talking then. Their luggage had arrived before them, piled neatly in one corner, and they spent the next few hours sorting out their personal belongings and packing them away.

Finally, Gregor called a halt to the moving-in pro-

ceedings and dialed up a dinner on the house's kitchen computer. The house was equipped with only the basic fare; Gregor would have to program some of his special recipes into it at a later date. But for right now, even the simplest meal tasted exotic in their new surroundings.

They spoke only in generalities through the first half of the meal, but Alex could tell from the tension that there was a more serious topic awaiting them. Finally, Delya came out with it. "I don't think I like your deputy very much."

Gregor Bredakoff looked up. "Fallon? I admit he's rude, but—"

"If he were any colder there'd be icicles forming on his nose.

Alex's father sighed. "I know, honey, I know. But he's in a very bad spot. I looked over his file, and I had some conversations with Chief Nostr'dicus. Fallon was her aide for almost ten years. He expected to be named security chief when she retired. Instead, the governor threw the competition open to people from outside the department, and I won the job. How do you think that makes Fallon feel? A lot of people in his position might have resigned angrily and tried to get a better job somewhere else; with Fallon's record, I'm sure he'd have had no trouble. Instead, he's decided to stay on with me. I appreciate that. I need someone here to show me the ropes while I get used to the new situation. We'll just have to give him time to get over his disappointment."

Delya nodded and returned her attention to her food. She might understand the situation perfectly, and she would be civil to her husband's aide; but

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there was no power in the Universe that could force her to like him.

Chapter 2

Kasinda

The next day began as a very lonely one for Alex. His father went off to the Administration Building with Fallon to meet the governor and start learning the demands of his new position. Alex's mother also had a new job to go to; she reported to Agronomics Control, where they would decide precisely which slot in the vast food-production chain of the colony she would occupy. That left Alex all alone in the new house.

It was not as though he had nothing to do. He had brought with him from Earth his educode, the complete record of his learning experience to date, plus the program for all his future lessons. His father had always bought the most challenging General Curriculum programs, wanting his son to receive

the finest education possible. It would take a while for the new home's computer to assimilate the program, correlate Alex's progress in his studies, and then chart the course of his future lessons. Alex could have spent the whole day just setting up his new studyroom, preparing to resume his education after the holiday of moving to Nexus from Earth.

But he was still feeling restless from the move, not yet ready to settle down. Already, on their first full day in the new world, his parents were out meeting the new people they'd be associating with, making new friends and acquaintances. Alex was stuck here at home with no one to talk to but the computers and nothing to amuse him but playing electronic games with the recreation center. All his friends had been left behind on Earth, and there was a whole new world waiting to be discovered just outside the house.

He tried playing chess with the home computer, but his concentration was elsewhere. He lost the first game quickly, and was well on his way to losing the second when he turned the machine off in disgust. He wanted to see some of this exciting new world for himself. His parents hadn't said he *couldn't* go out; they knew he was old enough to be responsible for his own actions. They expected him to stay at home and program in his new lessons, but they'd understand if he put that off for one more day.

At Alex's command, the recreation center projected a wall-sized map of Nexus-1. Having made the decision to go out, Alex now had to decide where to go. He looked over the map at random, searching for something to capture his interest, and eventually he

found the area marked as the Interstellar Consortium Institute. The Interstellar Consortium, often called the I.C., was a loose alliance of traders and merchants from all over the Galaxy who had banded together to protect their mutual interests. The I.C. had become one of the most powerful economic groups in space. Its Institute here at Nexus was supposed to be one of the finest educational facilities in the Universe—and Alex had long ago made plans to attend it, even before he'd known his family would be moving here.

His mind was instantly made up. Going down to the subway entrance, he summoned a tubecar and directed it to the coordinates of the Institute. The ride was long and tedious; even the best computer-guidance systems could not completely solve the eternal problem of Nexus's traffic congestion. It took nearly two centuries—half an hour—for Alex to reach his destination.

In these days of computer-assisted education, the Interstellar Consortium Institute was an anachronism. Schooling for most people, even at university level, consisted of learning from computer programs in the privacy of one's own home or office. A student progressed at his own rate, and the computer never moved on to new material until the student had thoroughly learned the old. There was no competition with classmates, no peer group pressure to maintain grades. The programs were designed to make education interesting, and the sole emphasis was on learning as much as the student could absorb.

The founders of the Institute, though, had decid-

ed to revert to some of the older values in education. The students who came here were learning to be traders; to do that, they would have to know how to run the massive starships that plied the routes between solar systems. Running a ship was a matter of teamwork; you had to learn to coordinate your efforts with those of the rest of the crew. That was nothing you could learn by sitting alone at your computer console; you had to train with other people who would also be running ships.

The Institute was a cluster of buildings where the techniques of spaceship operation, and trade management, were taught by live teachers. There were classes where dozens of students sat together to listen to their instructors, and laboratories where the trainees could practice their skills in simulators before ever setting foot on a real trading vessel. The Interstellar Consortium Institute had a reputation for excellence unsurpassed anywhere in the Galaxy, and ICI graduates were in constant demand.

People walked past Alex as he stood outside the buildings. Some of the students were only a year or two older than himself. There were representatives of every alien race he'd ever heard of, plus a few he hadn't. Trainees came here from all over the Galaxy to learn the secrets of successful trading, and Alex could only hope that, when he finished his General Curriculum, he too could qualify for admission to this special school.

After several minutes, he gathered up the courage to actually enter the buildings and wander through the halls. It was in this way that he eventually reached the main rotunda of the administration

building, where a museum had been set up for the general public. There were more than enough exhibits here to hold his attention for hours: the I.C. Code of Ethics inscribed in a brass plaque on the wall; the samples of handicrafts from more than two hundred different worlds; miniature models of trading ships; dioramas of some of the strange planets I.C. merchants visited in their travels; and a Hall of Fame to recount the exploits of the I.C.'s more famous members.

But all those things were of minor importance to Alex. His attention was riveted on the central display: the control room of a starship. A sign alongside the display said this was a working simulator, and the general public was encouraged to step aboard and see what it felt like to command one of the large star traders.

Alex felt his heart leap. This was every young man's dream: to hold the helm of a starship and pilot it through space, to visit the faraway planets that were just names in stories, and to meet beings who thought and acted in totally alien ways. An interstellar trader was the personification of romance and adventure; no one was ever quite free of that spell.

For most people, this remained an idle dream. Alex, however, had pursued the matter further. He had talked it over with his father at great length, with the result that his General Curriculum educational program emphasized math, science, and engineering—the fundamentals he'd need as background to enter ICI. In his spare time he'd read every book he could find, fiction and nonfiction, on the subject of interstellar traders. He'd turned his own computer

into a mock-up of a pilot's control board, and he'd practiced for hours in his spare time learning what the instruments meant and what each control did. On the trip aboard the *Rimbound*, he'd practically driven the captain crazy with all his questions, and had even been allowed to visit the bridge, though he'd been forbidden to touch anything.

But this was an opportunity he'd only dreamed of—to go aboard a simulation of a real bridge and work the controls himself. He looked nervously around, but there was no one else in the hall at the moment. His body trembling with excitement, he climbed the stairs onto the bridge and seated himself in the pilot's couch.

He imagined the room darkened around him, quiet except for the efficient chatter of his crew as they reported on their instruments. He was Captain Alexander Bredakoff, now, coming into port after a successful run to Pasdoggan. He punched at the control board, and smiled with satisfaction as it lit up to give him a full readout. There was the orbital computer awaiting his choice of parameters; there were the dials and gauges indicating fuel level, engine temperature, available side thrust, and so many other critical factors; there were the knobs and buttons that, in combination, would move the ship exactly as he willed it to go. He felt as though he were delicately balanced atop an enormous pyramid; a million independent systems formed the foundation under him, and they all reported up here to the very top, where the pilot made the final crucial decisions.

Looking at the full board lit up in front of him, he was almost paralyzed with the responsibility a star-

ship captain had to bear. There were so many dials to watch, so many systems to control all at the same time—and making a mistake in any one of them could be fatal. He realized now, as he never had before, exactly why a ship’s pilot had to undergo so many years of rigorous training. He felt a sinking feeling inside him that perhaps he might never have what it took to master such a complex skill.

“Were you just looking, or did you eventually plan to do something?”

The voice behind him startled him out of his reverie. He almost jumped out of the pilot’s couch, his heart banging at twice its normal pace. The room had been deserted when he entered the simulator, and he’d been so lost in his own thoughts he hadn’t heard anyone come in. He twisted around in his seat to see who had spoken.

The girl was standing in the doorway to the rotunda, her shape silhouetted against the brighter light outside. Then she stepped forward and Alex could see her more clearly. She appeared to be an Earth-human like himself, and about his own age, with the curves of her young body just softening into womanhood. Her skin was the color of cocoa, and she had black hair that was braided strangely around her head. There was an odd shape on her left side, but he couldn’t tell immediately what it was.

“You startled me,” he said lamely to explain his overreaction. “I didn’t know anybody was there.”

“Were you going to be using the simulator?” the girl persisted. “If not, I’d like to have a few practice runs.”

“I’m sorry, I didn’t know anyone else was sup-

posed to have it. This is my first time here, and—”

The odd shape on the girl’s left side moved, and Alex abruptly saw that it was an animal of some kind. It looked vaguely like a monkey, except that it had six limbs instead of four. Its fur looked brown at first, but when it shifted position, Alex could see it was really green tipped with brown. It climbed around the girl’s body and peered at him with enormous black eyes from over the top of her head.

“What’s that?” Alex asked, interrupting his own apology.

“What’s what? Oh, you mean Dobi?” The girl reached up behind her to stroke the animal’s fur. “He’s a wallinor from Aperia. He goes everywhere with me. I’ve had him since I was seven or eight.”

The wallinor responded to her petting by emitting a high-pitched sound, like a diesel engine trying to purr.

“I’ve never seen anything quite like it,” Alex admitted.

The girl smiled. “He is kind of unusual. Not too many people ever go to Aperia, so hardly anybody knows what their animals are like.”

“How did you get him?”

“I was on a trade mission to Aperia, and Dobi just adopted me. Once a wallinor decides he’s your pet, he’s hard to get rid of. Not that I’d want to, of course.”

Alex looked at her with more than a touch of envy. “You were on a trade mission?”

“Hundreds of them,” the girl said casually. “Been a trader all my life. Look, if this really *is* your first time here, I ought to apologize for disturbing you. I

thought you were some rubrummer trying to hog the simulator all day. I know you from somewhere, don't I?"

Alex shook his head. "No, that's not possible. I just arrived—"

"Don't contradict me," the girl snapped. "If I say I know you, then I know you. Don't tell me where I know you from; Pol tells me I have to train myself to remember these things if I'm going to be a successful trader. Just let me think a couple of minutes. It can't be from the Institute; you still look a little young for that—"

"No, it's—"

"Quiet! Let me think."

Alex felt fidgety. The girl was studying his face with piercing intensity, and the wallinor perched on her shoulders mimicked her stare. It all made him very nervous, and he began to feel that perhaps he should be home after all, programming his teaching machine.

"If you wanted to use the simulator, go right ahead," he told the girl. "I really shouldn't be here anyway. I've still got a lot of unpacking to do. I just came down here to pass some time and see what the Institute looked like."

The girl snapped her fingers. "That's it!" she said, so loudly that she startled the wallinor, who scampered halfway down her body before coming to a halt, clinging upside down around her waist. "That's where I know you from," she continued. "You're the son of Gregor Bredakoff... um, what's the name?"

"Alex."

She glared at him. "I didn't want you to tell me.

I'd have gotten it in another minute."

"But how did you know that?" Alex wondered.

"No big trick. I saw you on the news last night. Your father was having a press conference at the Welcome Center, and you were standing there behind him, looking all sort of lost and cute. I kind of liked you."

Alex turned his face slightly so the girl wouldn't see him blush. "Lost and cute" indeed. "Well, you seem to know everything about me," he said, "but I don't know anything about you. Who are you?"

"Kasinda," the girl smiled. "Kasinda Venderling. Welcome to Nexus."

"Thank you, Kasinda," Alex said, nodding gravely. "You know, you're the first person who's said that to me. Everybody's happy my father and mother are here, but no one cares whether I'm around or not." The admission came out of his mouth before he even realized it, putting into words for the first time the underlying cause of his unrest today.

"Well, from this moment on, *I* care," Kasinda stated firmly. "When Kassi Venderling makes a friend, then by the Seven Circles of Balderen he knows he's got a friend for life."

Alex blinked, not quite sure what to make of this very straightforward young lady. "Uh, thanks. I don't want to be too much trouble to you—"

"Sluicejuice. I'm harder to get rid of than a wall-nor. Everybody says so. Don't worry, I'll wear down your resistance. Now, as I said at the beginning of our conversation, are you really interested in all this, or were you just gawking?"

Alex grinned and shrugged his shoulders. "I did

always sort of want to be a pilot. I've done some studying—”

“Want me to show you how all this really works?”

“Could you?” Alex's excitement carried him away momentarily.

“Sure,” Kasinda said, striding across the room to stand beside him. Alex realized then that she was much taller than he was; standing, he would only come up to her chin. “I've worked out in here dozens of times,” Kasinda went on. “It's almost as much fun as the real thing. See, you've only got it on halfway. You turned on the instruments, but you haven't set in a problem for it to simulate. Hmm, let's see, since you're just starting out why don't we try a simple one? Want to try finding a planet right after coming out of a starpath? That should tell us something about what you can and can't do.”

She started fiddling with the controls at the side of his console, so rapidly that he couldn't keep up with her. It was more than obvious this girl knew precisely what she was doing.

“You said you'd been a trader all your life,” Alex commented as he watched her work.

“That's right,” Kasinda said without even looking up. “My father's in the I.C., sometimes even teaches here at the Institute. That's what he's doing now, which is why I'm here in Nexus. When he's out trading, I go with him. I've been to almost every planet in the Galaxy.”

Again, Alex felt a strong twinge of envy that this girl, who was no older than himself, had been so many places and seen so many exciting things. Wanting to change the subject, he said, “What about

your mother? What does she do?”

“She died when I was one. Space accident.”

“Oh. I’m sorry.”

“Why? You didn’t do it.” Kasinda looked up at him, her eyes locking onto his. “Look, I’ve gotten used to it by now. I’m told she was a very nice lady, but I never knew her and I can’t remember her. You can’t miss what you never had. The last thing I need is people automatically telling me they’re sorry for me when I don’t feel sorry for myself. Pol is a better father than any two other people put together, and the Interstellar Consortium has been as much of a mother as anyone could want. Subject is closed, okay?”

“Whatever you say.”

“Good. You’re learning fast.” She smiled at him, then turned back to the control panel. “Now what I’ve done is told the simulator to pretend you’ve just come out of an uncharted starpath. There’ll be a star right ahead of you, and there’ll probably be some planets circling it. Your job is to find those planets, approximate their orbits, see if there are any that are likely to have carbon life and, if so, start off in that direction. Think you can handle it?”

“All that in my first problem?”

“Are you kidding? That’s baby stuff. I was doing it when I was nine years old. Doesn’t require any precision at all, just math and basic science. I even found a new planet all by myself, and Pol named it after me. Kasinda isn’t much of a world, but it’s all mine. Now, are you ready to give it a try, or do you quit before you even start?”

Alex gritted his teeth and turned all his attention

to the control panel. He was not going to let this brash girl shame him out of his lifetime dream. He'd show her he had what it took to be a starship captain.

Just math and basic science, that was all she said it took. All right, he would handle the problem that way. First, how were planets discovered? The surest way was by astronomical observation, watching the heavens and seeing whether any of those points of light moved against the stable background of distant stars. But that sort of work could take weeks at least, with hours of backbreaking work staring at photographs. Since Kasinda expected him to solve the problem this afternoon, there had to be a simpler solution.

His eyes scanned the instruments at his disposal, and he nodded as he came to the uldar screen. Uldar—an acronym for Ultra Light Detection And Ranging—was the successor to twentieth century radar; faster-than-light beams were broadcast from the ship, and bounced back if they hit something. If there were any solid objects as large as planets in this solar system, they would eventually show up on the uldar screen. He smiled grimly, and instructed the uldar computer to make rapid scans of the space around the star. He took a sidelong peek to see whether Kasinda approved of his procedure, but the girl kept her face rigidly neutral. Alex turned back to his screen and focused all his attention on it.

After fifteen boring minutes, his patience was rewarded first with one blip, then a second, then a third. "I've got those three points," he said aloud, "and since most solar systems lie within a given

plane of rotation, and since those three points determine a plane, I've found the most likely ecliptic. I can just search along that plane to find most of the other planets."

"Not bad," Kasinda said. "But you could have done it faster and easier."

"How?" Alex asked belligerently.

"You could have used the dopplering ular on the star itself to find its axis of rotation. The solar equator is usually a pretty good approximation of the ecliptic."

Alex kicked himself mentally. Kasinda was absolutely right. By using the principle of the Doppler shift—namely that moving objects reflected light and ultralight beams differently depending on their motion—he could have seen very quickly which edge of the star was moving towards him and which was moving away, thereby giving him a clue to its direction of rotation. The solar equator would be perpendicular to the axis of rotation—and, as she'd said, the solar equator was usually close to the ecliptic of any given solar system.

Knowing the plane of rotation, Alex sullenly went about looking for more planets. He was angry with himself for having made such a childish mistake, and he transferred some of his resentment to her. If this cold silence bothered Kasinda, however, she didn't let it show.

After half an hour, he leaned back from the ular screen. "I've found seven planets, total," he announced.

"Not bad. I programmed in eight, but the last one is very small and far away. It probably doesn't mat-

ter much. Let's see how you do with the rest of the problem."

The traditional way of finding a body's orbit again involved long series of observations over time. When three separate points in an orbit were known, the orbit itself could be calculated with great precision. A starship captain didn't always have the time for such niceties, though, and had to rely on quick-and-dirty approximations.

This time Alex did make use of the dopplering ular. By training it on the planets and noticing the shifts in frequency—and allowing small corrective factors for the planets' own rotations—he was able to obtain line of sight components of the planets' orbital velocities. He used his trigonometry to take into account the fact that he was seeing this motion at an angle, and he made the assumption—again, generally valid—that the solar system would be rotating in the same direction as its star. By knowing a planet's exact position, its approximate plane of motion, its direction of revolution, and at least a component of its velocity, he could set the ship's computers to approximating the orbital characteristics of each world.

Alex proudly showed his results to Kasinda, adding, "When I move in closer to one of the planets I can take another set of Doppler readings and pin these numbers down more precisely."

The girl just looked at the figures and nodded. "Fine. Now, are there any worlds worth visiting?"

Alex turned grimly back to the problem. The spectroscope would be his major tool in this battle. First he used it to check on the characteristics of the central star, and found it to be class G, very similar

to Earth's own sun. Knowing the type of star and how bright it was would define this solar system's zone of habitability. Any world that orbited too close to the star would be too hot to support life; any world too far away would be too cold. There was a narrow belt within which the temperatures would be acceptable for carbon-based life to exist, and planets outside that zone could be discounted for the time being.

Alex checked the orbital data he'd just compiled, and saw that two of this system's planets lay within that zone, planets number two and three. His ship was still too far away from either to get a good telescopic image of them—but visual images could be deceiving, anyway. Instead, he turned to the spectroscope again to see how each of the candidate planets reflected the sunlight from its star.

The final data was quite conclusive. Planet number three had almost no atmosphere; it was an airless ball of rock orbiting silently through space. There might be worthwhile minerals there to interest a developer, but traders were more interested in short-term profits. He could explore that planet at his leisure, make a report on its resources, and sell the information to the highest bidder. He, as a trader, was interested in what other intelligent beings might have to offer him.

The second planet from the sun was much more promising. It had a high albedo, meaning it reflected much of its sunlight back into space—a probable indication of cloud cover. Spectroscopic examination backed up this hypothesis: there was an atmosphere containing plenty of oxygen, nitrogen, carbon dioxide, and water vapor. That didn't prove there would

be any life there, but it was certainly worth a closer look.

“Planet number two is the target,” he said aloud, and without even checking Kasinda’s reaction, he began setting into the computer the equations to find a route for his ship that would intersect that world’s orbit. Having gotten his answer, he made a quick check of the ship’s systems to see that everything was working properly, and programmed the desired course into the guidance system. There was only one step left to take. He pressed the acceleration button, and the simulated ship began to vibrate just as though it were actually blasting towards its destination.

Alex swiveled in his couch to look at Kasinda. “Well, coach, how’d I do?”

The girl was smiling at him, a look of acceptance in her eyes. “Not bad for the first time,” she said. “I think we may make a trader out of you yet.”

Alex beamed, and Kasinda added quickly, “Don’t get too smug, rockrubber. You’ve still got a long way to go before you’re even as good as I am, and I’m a long way from getting my license. Let’s try a couple more problems and see how you do with them.”