

A NOVEL BY

**MICHAEL MCCOLLUM**

author of *THUNDER STRIKE!*

In the flyways of  
Saturn the cloud cities vied for  
dominance, but the key to  
power lay on the  
abandoned  
Earth...

# THE CLOUDS OF SATURN



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# THE CLOUDS



**Michael McCollum**



A Del Rey Book  
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**For Kenneth Duane McCollum  
(1922-1990)**

***“He succeeded beyond his wildest dreams!”***

**A Del Rey Book  
Published by Ballantine Books**

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## UNFAIR PLAY

On the outskirts of the battle, Sands and Halley listened gloomily as the New Philadelphia fleet commander struck his colors. One part of Sands was saddened by the loss, another part relieved. His brother, a privateer on the New Philadelphia flagship, would be interned for a while, but there was no reason for the Alliance to harm their prisoners.

Sands was about to turn away when the first bright flash appeared on the flagship's upper surface. "*What the hell?*"

"They're attacking!" Halley screamed. "They're not accepting the surrender!"

**By Michael McCollum**  
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ANTARES PASSAGE  
A GREATER INFINITY  
LIFE PROBE  
PROCYON'S PROMISE  
THUNDER STRIKE!  
THE CLOUDS OF SATURN**

# Prologue

THE SUN IS A VARIABLE STAR. CHANGES IN SOLAR OUTPUT have sent glaciers marching toward the equator every fifty thousand years or so. The last such episode took place in late prehistoric times and coincided with the displacement of Neanderthal man by the Cro-Magnons. Nor has modern man been immune to the effects of the sun's variability. During the Little Ice Age of the sixteenth through nineteenth centuries, a minor reduction in solar output caused the harbors of Iceland and Greenland to be blocked by ice for six months out of every year. At least one Viking colony starved to death as a result of the climatic change.

It was not until the first decade of the twenty-second century, however, that humanity realized the true extent of Sol's variability. Beginning in 2102, the sun was wracked by a series of violent solar flares. As such outbursts grew more frequent and violent, astronomers began to reexamine their long-held beliefs about the nature of the sun, and it was with understandable horror that they realized Sol was about to enter a period of long-term instability. Projections called for the sun's output to increase gradually for several hundred years. While minor on the scale of the universe, the change would render Earth uninhabitable within a century. If nothing was done to stop it, the Mother of Men would become a twin to Venus—a hothouse planet on which liquid water no longer existed.

Faced with extinction, the human race directed its considerable resources toward saving the homeworld. No possibility was overlooked. Many research efforts were launched in a period that became known as the *Golden Age of Pure Science*, but despite their best efforts, the scientists could find no practical method for bringing the errant star to heel. After decades of study, Earth's leaders reluctantly concluded that humankind would have to abandon its ancestral home. They began to search the solar system for a place of refuge.

The haven they chose was not one many would have guessed.



# 1 The Battle of New Philadelphia

LARSON SANDS LAY IN HIS ACCELERATION COUCH AND watched the dawn as *SparrowHawk* raced eastward at a thousand kilometers per hour. Dawn on Saturn was always spectacular, but never more so than on a battle morning. As the sun climbed the sky, it quickly transformed the world from a black and silver etching to a blue-white panorama of air and cloud. Lars watched as the sun's rays chased azure shadows from the deep cloud canyons and turned the Arch overhead into a pale ghost of its former self.

"Message coming in from *Delphi*."

Sands glanced toward his copilot. Halley Trevanon was a brunette in her early twenties, Standard Calendar. She possessed a wide mouth, full lips, green eyes, and a scar that bisected her left eyebrow. She was scanning the sensor read-outs that told them what ships were in their vicinity. Like Lars, she was encased in an environment suit, with her helmet visor up. Should the ship be holed, she could seal her suit in a matter of seconds. The other four crewmen aboard *SparrowHawk* were similarly attired.

"Patch him through," Lars said.

The communications screen on the instrument panel lit to show Dane Sands's smiling face. Dane was Lars's younger brother and Halley's fiancé.

"Hello, *SparrowHawk*," Dane said. "Get enough sleep last night?"

"You know damned well we didn't!" Lars muttered back. Dane, aboard the New Philadelphia flagship, *Delphi*, some two hundred kilometers to their west, was acting as liaison between *SparrowHawk* and her New Philadelphia employers. Like Lars and Halley, he had been at his post since just after Second Midnight, when the first sighting reports had come in.



Five thousand kilometers to the east a New Philadelphia scout had reported an unknown aircraft moving west at high speed. Even though there had been no positive identification, the commodore commanding the New Philadelphia fleet had ordered his heavier-than-hydrogen craft launched. In the three hours since they had left *Delphi*, *SparrowHawk* and the other ships of the fleet had been on guard for an approaching enemy. Despite their efforts, they had detected nothing.

"I've got some news for you," Dane said. "It looks like last night was a false alarm. *Dakota* may have suffered a sensor glitch caused by atmospheric conditions."

Lars nodded. Saturn's thick atmosphere of closely packed hydrogen atoms did strange things to radar performance. Eddy currents and vertical convection cells created ghosts that looked like the wake of a fast-moving aircraft. Such mistakes were common.

"What are our orders?"

Dane glanced at something out of camera range. "I show you two hundred kilometers east of *Delphi*."

"Correct."

"Why don't you work your way back in this direction. If nothing has shown up by the time you arrive, we'll take you back aboard. You should be here in time for breakfast."

"Understood," Lars said. "We're turning now."

He pulled his control to the left and back slightly, sending *SparrowHawk* into a gentle turn. As he did so, Dane Sands asked, "How's my girl?"

"Excited and a little scared," Halley responded.

"Don't wear yourself out," Dane said. "The high command here is still hoping our show of strength will cause the Alliance to back off. We know their fleet left Cloudcroft three days ago, but we still have no evidence that they're coming here."

"Do you really think that, my love?"

Dane flashed her his most lopsided grin. "That's the way we've been betting all along, isn't it?"

Larson Sands said nothing. Over the past few weeks he had started to wonder if their bet had been a wise one. The Delphis were expert geneticists who had long pursued the dream of engineering a life-form that could live in the upper Saturnian atmosphere. Rumors that they had developed a viable organism had reached the Northern Alliance, causing it to invite New

Philadelphia to join them. The invitation had been couched in terms that had caused the Delphis to look to their defenses.

As was the case with most independent cities, New Philadelphia could not afford a full-time navy to challenge the larger, more powerful Saturnian "nations." Rather, they maintained the core of a fighting force that could be rapidly expanded in times of trouble. In addition to a few customs ships, they had turned one of their large air freighters into a powerful flagship and mobile base. To supplement this fleet, they had sent recruiters throughout the northern hemisphere looking for privateer ships and crews.

The Sands brothers and Halley Trevanon had met the Delphi recruiters in a bar aboard Pendragon City. Lars still remembered the plump songstress who had belted out "The Ballad of Lost Earth" while the Delphi recruiters made their pitch. Afterward, Dane Sands had argued in favor of taking the job. He had thought it easy money, a simple show of force to convince the Alliance that their gain would not be worth the cost.

It was an argument that had the benefit of history on its side. For if there was one thing all the cloud cities of Saturn shared, it was their vulnerability to attack. When a single fanatic with a bomb could send an entire population plummeting into the crushing pressure of the lower atmosphere, those who ruled thought long and hard before challenging their neighbors. If faced with a large enough opposition force, the Alliance would forgo its claim on New Philadelphia lest they place their own cities at risk.

Larsen Sands and Halley Trevanon had been less certain about the job, but neither had voiced a strong objection to wearing the New Philadelphia livery. At the time, *Sparrowhawk's* fusion reactors had been more than a standard year past recommended overhaul. Worse, the ship's half-dozen crewmen had not been paid in months. Lars, Dane, and Halley had needed the money too badly to say no.

That had been three months ago. For some time after their arrival aboard the Delphis' capital city, it had appeared that the diplomats would resolve the dispute. A week earlier, however, the Alliance ambassador had broken off negotiations. The New Philadelphia high command had also received reports that the Alliance fleet had sortied.

New Philadelphia had responded by launching its own fleet, sending ships east along the North Temperate Belt flyway to interpose themselves between New Philadelphia's three cities and the Alliance. Their presence there was both a challenge and a warning. While it would be a simple matter for the Alliance to bypass the Delphi flagship and her covey of fusion-powered aircraft, to do so would leave their own cities open to attack. If they were serious about annexing New Philadelphia, they would first have to seek out the New Philadelphia fleet and destroy it. The Delphis hoped to inflict enough damage that the Alliance would lose interest and go home.

As *SparrowHawk* came westward, New Philadelphia's massive flagship materialized out of the blue haze of distance. *Delphi* was an anachronism, a machine from another time and place. It was a dirigible, a giant gasbag half a kilometer in length whose whale shape traced its ancestry back to the earliest flying machines. Large stabilizers sprouted from the airship's stern, while the bow was a blunt curve that sliced the wind with minimum resistance. Behind the great dirigible roiled a long streamer of disturbed air that marked the flagship's exhaust. And where cargo hatches had once been, there were now weapons locks, long-range sensors, and sally ports.

Heavier-than-hydrogen craft like *SparrowHawk* had their uses, but sooner or later they had to land. The giant lighter-than-hydrogen dirigibles like *Delphi* provided them with a place to set down. Like the ancient aircraft carriers of Earth, they were the roving bases from which the smaller craft launched their attacks. But like those earlier behemoths, the flagship was a fragile construct. It depended on its squadrons for protection.

"Attention, all ships! Enemy craft sighted. Fifteen hundred kilometers at ninety degrees. All craft form up on *Avadon*. Prepare to attack!"

Lars glanced once at Halley. The voice was that of Commodore Kraken, the Delphi commander. A flurry of orders came over the command circuit from Dane as the flagship's battle center came alive. Lars looped *SparrowHawk* well behind *Delphi* in order to take his place in the defensive line. There were twenty-one New Philadelphia craft in all. Eighteen were assigned to intercept the intruders and drive them back.

"Everyone tied down?" he asked over his intercom.

*SparrowHawk's* four crewmen checked in. Ross Crandall was attending the ship's fire-control computer. Brent Garvich and Hume Bailey were at weapons stations, while Kelvor Reese monitored the ship's auxiliary systems.

When the squadron defending *Delphi* had formed up, they accelerated to two thousand kilometers per hour. Even at that speed they had not exceeded sonic velocity in Saturn's hydrogen-helium atmosphere.

The two fleets closed to maximum range and began their first cautious probings of one another's formations. In the thick atmosphere, lasers were limited to short range. Thus, the sky was filled with missiles as ships launched at their distant adversaries. Within seconds, individual sparks of light began to appear as enemy missiles came within laser range and were blotted from the sky.

The two dozen Alliance ships bored in to engage the mixed privateer-Delphi force. The two fleets interpenetrated, and within seconds the sky was filled with twisting, turning ships that stabbed at one another in a deadly dance.

The Alliance drew first blood as they blasted the wing off one of the Delphi customs craft. Sands watched as the small vessel heeled over and began its long dive toward the invisible hydrogen sea two thousand kilometers below. There was no fire, because there was no oxygen in Saturn's atmosphere to support combustion. Then a small object separated from the single-seat fighter and grew into a silver balloon with a tiny figure suspended beneath it.

Assured that the pilot had gotten out, Lars went back to the battle. The next two craft to take hits belonged to the Alliance. One of their prowlers was struck amidships by a missile, which exploded it. The rain of parts was such that Sands doubted anyone had survived. The second ship, a larger destroyer, took a missile in its reactor spaces. The results were less spectacular but sufficient to cause it to withdraw.

"We're winning!" Halley exclaimed after she launched a missile that was destroyed by laser fire scant meters from its target. Even though vaporized, the cloud of molten drops splattered across the wing surfaces of its target, causing it to follow its wounded companion east.

"They're not as strong as we were led to believe," Lars said through gritted teeth.

Another Delphi ship died within the next few seconds, along with one of the larger Alliance craft. The dogfight had spread across so much sky that *SparrowHawk* appeared to be alone. The only nearby ship was a single-seat Alliance fighter. Sands bore in as his opponent attempted to flee. His concentration was broken by a sudden cry for help.

"Attention all ships! This is *Delphi*. We are under attack. The group you have engaged is a diversion. The main fleet is here. All ships to us!"

"Damn!" Sands exclaimed. A high-gee turn transformed the curse into an unintelligible grunt. Once lined up to the west, he advanced his throttles to emergency maximum and felt *SparrowHawk* leap forward.

"What's your situation, Dane?" he asked over his private command circuit.

Dane was wide-eyed as he came on the screen. Lars didn't know when he had seen his brother so frightened.

"They came out of the cloud wall, Lars! Nearly thirty of them. They're boring in on the flagship. Our combat air patrol has gone out to meet them. We're running west as fast as we can. I don't think we're going to make it."

"We're on our way."

"Hurry, damn it!"

"How many others are with us?" Lars asked Halley.

She made a quick sensor survey of the sky. She noted six other craft with the green New Philadelphia icon. There were a dozen enemy vessels behind them. The rest of the Delphi fleet were still engaged and unable to break free.

"We should have known something was wrong. No one sends two dozen ships to attack a city."

"Do you think Dane's in danger?" Halley asked, horror suddenly creeping into her voice.

"I think we're *all* in danger," he replied grimly.

As they rocketed through the sky, Halley put up the long-range scanner display. What they saw sent a chill through Sands. A swarm of red icons was being opposed by three green ones while the flagship symbol attempted to flee. The defending New Philadelphia craft lasted only a few seconds before fluttering into the depths, leaving twenty-eight intact Alliance craft free to swarm around *Delphi*.

"That's it," he said as the Alliance fleet reached the flagship. "Kraken will have to surrender now."

Almost as though the commodore had heard Sands's comment, the call went out. The two privateers listened gloomily as the New Philadelphia commander struck his colors. One part of Sands was saddened by the loss, another part relieved. Dane would be interned for a while, but he would eventually be freed. There was no reason for the Alliance to harm captured privateers.

"Let's get away from here," he ordered Halley. "We don't want to be interned, too."

"Right."

Ahead of them the flagship was just coming out of the blue, still so distant that they could not see the smaller Alliance ships darting around it. Lars was about to turn away when the first bright flash appeared on the dirigible's upper surface.

"What the hell?"

"They're attacking!" Halley screamed. "They're not accepting the surrender!"

"Stand by," Lars ordered. "We're going in."

It was impossible for *SparrowHawk* to move any faster. Despite its headlong speed through the thick atmosphere, it seemed they were barely moving as two more missiles impacted the flagship. Sands watched in horror as the dirigible split open like a ripe grape. With the central gasbag holed and the hot hydrogen spilled into the surrounding atmosphere, the ship was unable to support its own weight. It sagged in the middle, then broke in two as its keel snapped. The stern section, burdened by heavy drive reactors, began immediately to drop toward the distant cloud floor of the flyway. Freed of the weight of the stern, the bow bounced upward as men and machinery tumbled out through the gaping hole in the midsection.

It was then that Sands realized the attack had been no mistake. The bow section was obviously helpless as it rose out of control. Yet the Alliance ships pressed their attack. More explosions rent the forward gasbags, and the bow lost its lift. It, too, foundered and then started on a long downward spiral.

Larsen Sands screamed in rage as he watched the calculated cold-bloodedness of the attack. Dane was in the forward combat center. Every missile hit was like a knife into his own ribs.



No longer was the Alliance shooting at a dangerous enemy craft. Honest battle had been transformed into the murder of helpless men and women.

*SparrowHawk* reached the Alliance fleet and launched every missile in her depleted magazines. The desperate attack took the Alliance by surprise. Three ships that had been vectored to intercept the surviving New Philadelphia craft were smashed. The resulting gap allowed *SparrowHawk* free passage through their defense line. The arrival of the rest of the New Philadelphia fleet kept the other Alliance ships too busy to pursue.

Sands dived for the falling flagship remnant, heedless of the pain in his ears as cabin pressure increased with each kilometer of altitude lost. It began to grow warm, as well. By the time *SparrowHawk* overtook the bow section, *Delphi* had plunged twenty kilometers yet was still under attack. With no missiles in his magazines, Sands ordered his weapons crews to slash at the marauders with defensive lasers.

The initial attack on *Delphi* had been centered on the dirigible's upper surface in order to dump the hot hydrogen that buoyed the ship. Since most of *Delphi*'s lifeboats were housed atop the gasbag, they were destroyed in the first seconds. Still, there was the possibility that individual crewmen might yet bail out. Sands kept *SparrowHawk* in a tight circle around the falling bow as he watched intently for the silver balloons of survivors. As the pressure and temperature continued to mount, the Alliance ships broke off the fight and climbed for the safety of the upper atmosphere. *SparrowHawk* continued its plunge alongside the doomed flagship.

"Come on, Dane! Get out!" Sands muttered to himself through clenched teeth as he kept one eye on the dirigible and the other on the pressure readout. Beside him, Halley wept quietly. Sands's universe narrowed to exclude everything but the falling airship until Ross Crandall's growl came over the intercom.

"For God's sake, Lars, break off! Cooking us won't help Dane."

Lars glanced once more at the outside temperature readout. Then, with a sob, he pulled back on his controller and sent the ship into a flat circle. They did not gain altitude, but they were not losing any, either. For the next minute he watched as *Delphi*'s remains sank lower and lower. Finally, it disappeared

into the cloud floor of the North Temperate Belt. As Sands scanned the sky, nowhere could he see the silver sphere of a rescue balloon.

He looked at Halley, who was staring at him. There was horror behind the glistening tears in her eyes. Suddenly Sands felt an emptiness greater than any he had ever known.

"I'm sorry, Halley. He's gone."

His comment was answered by nothing save the rushing hydrogen wind beyond the hull.

## **2** Port Gregson

THE ALOUETTE BAR WAS ON THE OUTER RIM OF THE Port Gregson support truss, beyond the protective enclosure of the gasbag, with picture windows overlooking the abyss. At one time the place had boasted a balcony where patrons could step outside—suitably bundled up against the cold and wearing a nose breather, of course. It had been the custom for drinkers to lean over the waist-high railing and spit into the wind. The balcony had been closed when one expectorator had let go with too much enthusiasm and had nearly followed his saliva into the misty depths.

For the past twenty minutes Larson Sands had been eyeing the graphite railing through the floor-to-ceiling plastic window and thinking how easy it would be to end his problems forever. All that was required of him was to get up from the table, walk casually to the hydrogen lock, slip open the safety bar, and step through. It would then be three long strides to the city's outer edge. Once over the railing, Lars would have two thousand kilometers of empty sky in which to soar before plunging into the hydrogen sea that had swallowed Dane. Without a breather, he would pass out from asphyxiation long before the temperature or pressure rose to fatal levels. All things considered, not a bad way to go.

“Ready for another, Lars?”

His drinking partner's question shook him out of his reverie. Ross Crandall was an old man for a privateer. At forty-five standard years, he had been a hired mercenary for more than two decades. He had once had a ship of his own but had lost it in a brushfire war five years earlier. After bouncing from ship to ship, he had joined *SparrowHawk* as a weapons specialist. It had been Crandall's marksmanship that had cleared the way for them to go to the aid of the stricken *Delphi*.

“Sure, Ross.”

Crandall signaled for the waitress's attention. She sauntered over to the table. She was a typical Gregsonite, a fact made obvious by a costume that left little to the imagination. Had Lars been in a better mood, he might have been interested in the wares she was so forthrightly advertising. As it was, Crandall ordered two more scotches while Lars stared off into space.

The bar was on the starboard side of the city, which meant that it faced south. The Arch was a pale rainbow of soft white light barely visible in the royal-blue sky. From this latitude it climbed nearly one-third to the zenith. The sun was low to the right, casting darkening shadows over the cloud canyons. In only a few minutes it would dip below the horizon, and First Night would begin.

“Stop torturing yourself,” Crandall said. “Dane's death wasn't your fault.”

“It should have been me,” he muttered, his voice breaking with emotion. “Fleet liaison is my job. If I'd done my job, Dane wouldn't have been aboard *Delphi* when she went down.”

“No, but you would have! You would now be dead, and Dane and I would be having this conversation. Dane was a privateer. He knew what he was doing. In our line of work, people get killed.”

“But damn it, they'd surrendered!”

Crandall nodded. “And the Alliance shot them down anyway. Not too difficult to figure their motives, is it? Most of the New Philadelphia brass were aboard that ship. Better for the Alliance that they not be around to cause problems during the assimilation. Dane was just one of the poor bastards unlucky enough to be aboard the ship when the Alliance assassinated it.”