

# **The Clouds of Saturn**

A Novel By

Michael McCollum

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## 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 Century, a minor reduction in solar output caused the harbors of Iceland and Greenland to be blocked by ice for 6 months out of every year. At least one Viking colony starved to death because 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 solar flares. As such, outbursts grew more frequent and violent; astronomers began to reexamine their long held beliefs about the nature of the sun. 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 were 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 home world. No possibility was overlooked. Many research efforts were launched in a period that became known as the Golden Age of Pure Science. 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.*

## Chapter 1: The Battle of New Philadelphia

Lars 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 rays of the sun 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). Halley possessed a wide mouth, full lips, green eyes, and a scar that bisected her left eyebrow. She was scanning the sensor readouts that told them what ships were in their vicinity.

“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 was serving aboard the New Philadelphia flagship, *Delphi*, some two hundred kilometers to their west. It was his task to act as liaison between *SparrowHawk* and her New Philadelphia employers. Like them, 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. Although 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, *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 answered. “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 will 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. 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.

"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 are 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 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 time 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 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 forego its claim on New Philadelphia lest they place their own cities at risk.

Larson 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. They 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 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 responded by launching their own fleet. They had sent 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, it did not take long for New Philadelphia's massive flagship to materialize out of the blue haze of distance. *Delphi* was an anachronism, a machine from out of 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. 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 eventually, 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. However, 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 battle center of the flagship 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 of these were assigned to intercept the intruders and to 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. 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 healed over and began its long dive toward the invisible hydrogen sea two thousand kilometers below. There was no fire because there is no oxygen in Saturn's atmosphere to support combustion. While he watched, 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 that 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. By now the dogfight was spread across so much sky that *SparrowHawk* appeared 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's face was wide eyed as he came on the screen. Lars did not know when he had seen his brother so frightened.

"They came out of the cloud wall, Lars! Nearly thirty of them. They are boring in on the flagship. Our combat air patrol has gone out to meet them. We are 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 was still engaged and unable to break free.

“We should have known something was wrong. No one sends a 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 while the flagship symbol attempted to flee. The defending New Philadelphia craft lasted only a few seconds before fluttering into the depths. They left 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 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. It was 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 upper surface of the dirigible.

“*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 to 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.

Lars 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 desperation 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 dove 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, these 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 another on the pressure readout. Beside him, Halley sobbed 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 his own 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.

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The Makers searched for the secret to faster-than-light travel for 100,000 years. Their chosen instruments were the Life Probes, which they launched in every direction to seek out advanced civilizations among the stars. One such machine searching for intelligent life encounters 21st century Earth. It isn't sure that it has found any...

#### **2. Procyon's Promise - <sup>US</sup>\$7.50**

Three hundred years after humanity made its deal with the Life Probe to search out the secret of faster-than-light travel, the descendants of the original expedition return to Earth in a starship. They find a world that has forgotten the ancient contract. No matter. The colonists have overcome far greater obstacles in their single-minded drive to redeem a promise made before any of them were born...

### **3. Antares Dawn - US\$6.00**

When the super giant star Antares exploded in 2512, the human colony on Alta found their pathway to the stars gone, isolating them from the rest of human space for more than a century. Then one day, a powerful warship materialized in the system without warning. Alarmed by the sudden appearance of such a behemoth, the commanders of the Altan Space Navy dispatched one of their most powerful ships to investigate. What ASNS Discovery finds when they finally catch the intruder is a battered hulk manned by a dead crew.

That is disturbing news for the Altans. For the dead battleship could easily have defeated the whole of the Altan navy. If it could find Alta, then so could whomever it was that beat it. Something must be done...

### **4. Antares Passage - US\$7.50**

After more than a century of isolation, the paths between stars are again open and the people of Alta in contact with their sister colony on Sandar. The opening of the foldlines has not been the unmixed blessing the Altans had supposed, however.

For the reestablishment of interstellar travel has brought with it news of the Ryall, an alien race whose goal is the extermination of humanity. If they are to avoid defeat at the hands of the aliens, Alta must seek out the military might of Earth. However, to reach Earth requires them to dive into the heart of a supernova.

### **5. Antares Victory – First Time in Print – US\$7.50**

After a century of warfare, humanity finally discovered the Achilles heel of the Ryall, their xenophobic reptilian foe. Spica – Alpha Virginis – is the key star system in enemy space. It is the hub through which all Ryall starships must pass, and if humanity can only capture and hold it, they will strangle the Ryall war machine and end their threat to humankind forever.

It all seemed so simple in the computer simulations: Advance by stealth, attack without warning, strike swiftly with overwhelming power. Unfortunately, conquering the Ryall proves the easy part. With the key to victory in hand, Richard and Bethany Drake discover that they must also conquer human nature if they are to bring down the alien foe ...

### **6. Thunderstrike! - US\$7.50**

The new comet found near Jupiter was an incredible treasure trove of water ice and rock. Immediately, the water-starved Luna Republic and the Sierra Corporation, a leader in asteroid mining, were squabbling over rights to the new resource. However, all thoughts of profit and fame were abandoned when a scientific expedition discovered that the comet's trajectory placed it on a collision course with Earth!

As scientists struggled to find a way to alter the comet's course, world leaders tried desperately to restrain mass panic, and two lovers quarreled over the direction the comet was to take, all Earth waited to see if humanity had any future at all...

## 7. The Clouds of Saturn - US\$7.50

When the sun flared out of control and boiled Earth's oceans, humanity took refuge in a place that few would have predicted. In the greatest migration in history, the entire human race took up residence among the towering clouds and deep clear-air canyons of Saturn's upper atmosphere. Having survived the traitor star, they returned to the all-too-human tradition of internecine strife. The new city-states of Saturn began to resemble those of ancient Greece, with one group of cities taking on the role of militaristic Sparta...

## 8. The Sails of Tau Ceti – US\$7.50

*Starhopper* was humanity's first interstellar probe. It was designed to search for intelligent life beyond the solar system. Before it could be launched, however, intelligent life found Earth. The discovery of an alien light sail inbound at the edge of the solar system generated considerable excitement in scientific circles. With the interstellar probe nearing completion, it gave scientists the opportunity to launch an expedition to meet the aliens while they were still in space. The second surprise came when *Starhopper's* crew boarded the alien craft. They found beings that, despite their alien physiques, were surprisingly compatible with humans. That two species so similar could have evolved a mere twelve light years from one another seemed too coincidental to be true.

One human being soon discovered that coincidence had nothing to do with it...

## 9. Gibraltar Earth – First Time in Print — \$7.50

It is the 24th Century and humanity is just gaining a toehold out among the stars. Stellar Survey Starship *Magellan* is exploring the New Eden system when they encounter two alien spacecraft. When the encounter is over, the score is one human scout ship and one alien aggressor destroyed. In exploring the wreck of the second alien ship, spacers discover a survivor with a fantastic story.

The alien comes from a million-star Galactic Empire ruled over by a mysterious race known as the Broa. These overlords are the masters of this region of the galaxy and they allow no competitors. This news presents Earth's rulers with a problem. As yet, the Broa are ignorant of humanity's existence. Does the human race retreat to its one small world, quaking in fear that the Broa will eventually discover Earth? Or do they take a more aggressive approach?

Whatever they do, they must do it quickly! Time is running out for the human race...

## 10. Gibraltar Sun – First Time in Print — \$7.50

The expedition to the Crab Nebula has returned to Earth and the news is not good. Out among the stars, a million systems have fallen under Broan domination, the fate awaiting Earth should the Broa ever learn of its existence. The problem would seem to allow but three responses: submit meekly to slavery, fight and risk extermination, or hide and pray the Broa remain ignorant of humankind for at least a few more generations. Are the hairless apes of Sol III finally faced with a problem for which there is no acceptable solution?

While politicians argue, Mark Rykand and Lisa Arden risk everything to spy on the all-powerful enemy that is beginning to wonder at the appearance of mysterious bipeds in their midst...

### **11. Gibraltar Stars – First Time in Print — <sup>US</sup>\$7.50**

The great debate is over. The human race has rejected the idea of pulling back from the stars and hiding on Earth in the hope the Broa will overlook us for a few more generations. Instead, the World Parliament, by a vote of 60-40, has decided to throw the dice and go for a win. Parliament Hall resounds with brave words as members declare victory inevitable.

With the balance of forces a million to one against *Homo sapiens Terra*, those who must turn patriotic speeches into hard-won reality have their work cut out for them. They must expand humanity's foothold in Broan space while contending with a supply line that is 7000 light-years long.

If the sheer magnitude of the task isn't enough, Mark and Lisa Rykand discover they are in a race against two very different antagonists. The Broa are beginning to wonder at the strange two-legged interlopers in their domain; while back on Earth, those who lost the great debate are eager to try again.

Whoever wins the race will determine the future of the human species... or, indeed, whether it has one.

### **12. Gridlock and Other Stories - US\$6.00**

Where would you visit if you invented a time machine, but could not steer it? What if you went out for a six-pack of beer and never came back? If you think nuclear power is dangerous, you should try black holes as an energy source — or even scarier, solar energy! Visit the many worlds of Michael McCollum. I guarantee that you will be surprised!

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### **17. The Astrogator's Handbook – Expanded Edition and Deluxe Editions**

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