

BOOK THREE OF
THE LEGACY TRILOGY



STAR MARINES



IAN DOUGLAS

author of *Star Corps* and *Battlespace*

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HarperCollins e-books

*For Brea,
who saw me through the worst of times*

Contents

Prologue

They were called the Hunters of the Dawn. 1

1

He was sealed inside a windowless
carbotitanium laminate alloy canister... 3

2

In the dark and lonely gulf beyond the orbit of... 19

3

The huntership decelerated with inertialess
ease, coming to a relative... 33

4

In the four and a quarter hours since the
huntership... 48

5

“I want to volunteer, sir.” 63

6

Garroway felt his gut twist as the autie spun end...77

7

The trick was to keep a firm hold on his... 92

8

It began as a rain of fire. 107

9	Gunnery Sergeant Travis Garroway lay in a tangled jumble of...	121
10	Colonel Robert Ellsworth Lee entered the conference chamber—doing so in...	135
11	“We are not going to abandon Earth!” Admiral Marcia Thomas...	153
12	It took Recruit Private Nal il-En Shra-dach a long time...	167
13	Gunnery Sergeant Travis Garroway hadn’t been able to sleep. The...	180
14	Recruit Private Nal il-En Shra-dach dropped to the deck when...	195
15	Puller Auditorium, an enormous chamber with stadium seating located in...	210
16	Garroway carried his tray to an unoccupied table, took a...	225

17	“...and acting in the very best traditions of the United...	238
18	Travis Garroway floated into the compartment, using the handholds fastened...	254
Interlude	The MIEU task force assembled in Mars polar orbit, the...	265
19	Technically, it was midafternoon on board the Lejeune. Though the...	270
20	“Okay, boys and girls,” Colonel Lee’s mental voice said through...	288
21	The passageway, clearly, was not designed for humans. It was...	302
22	It was, General Garroway thought, now down to a race,...	319
23	For almost half an hour, the Marines had drifted out...	336

General Garroway stood on Henderson's command deck, watching the battle...	351
---	-----

Epilogue

"Damn, but it's good to be home," Travis Garroway said,...	367
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About the Author

Other Books by Ian Douglas

Cover

Copyright

About the Publisher

Prologue

They were called the Hunters of the Dawn.

Their own name for themselves did not translate well into the languages of lesser beings. It might have been rendered, very approximately, as “the Sentient Ones,” or even, more approximately, as “Living Ones,” or simply as “We Who Are.”

All who were not We Who Are were lesser life forms, scarcely worthy of notice save when they became threats. When that happened, they became prey.

The name Hunters of the Dawn had been applied to them by others long ago, members of an interstellar cooperative now long extinct. More recently—several thousand years before, another species had named them *Xul* . . . a word that translated, again approximately, as “Demons.”

What other species called them, or thought of them, scarcely mattered. The Ones Who Are obeyed Darwinian dictates hard-wired into the genome of their distant ancestors a billion years in the past, dictates that drove them to seek out and eliminate any civilization capable of posing a threat to their eons-long dominion over the Galaxy.

Lately, a star system at the edge of a minor branching on one of the galactic spiral arms had become of particular interest to We Who Are. A signal from a Living Ones Seekership long believed lost had been received, indicating that intelligence once again had developed space-faring technology in Sector 2420. More recently, a Huntership had taken samples from a primitive interstellar vessel at the Gateway designated 2420-001, confirming the re-emergence—and the technological evolution—of an organic species listed as Species 2824.

And not long after that, the Huntership had been tracked through the Gateway—presumably by those same intelligences—and destroyed.

This was not to be tolerated, *could* not be tolerated, without violating the genetic coding that formed the social dynamic of We Who Are.

The ancient records had been consulted. The system designated 2420-544 had been of interest at least twice before in the past three hundred thousand cycles, and there were indications of contact and annihilation within that star system even farther back than that. The Lords Who Are had consulted together, drawn their conclusions, and generated their plans.

A Huntership had been dispatched.

That vessel emerged now from paraspace, six light-hours from the target primary. That primary, a bright star only at this distance, was a fairly typical yellow sun possessing a number of planets. Samplings of the electromagnetic spectrum revealed a cloud of structures, vessels, and transmitting objects swarming about the inner system. Most were clustered around one particular planet—third from the sun, blue with liquid water, the spectra rich with the absorption lines of chlorophyll, and humming with the electronic signature of technic life.

The system matched—within a probability of ninety-plus percent—the system described by the creatures taken at Gateway 2420-001 a hundred cycles ago. Dissected, patterned, and absorbed, those creatures had yielded a wealth of information about their nascent civilization and origins. That Gateway, about eight light-years distant from this system, was called *Sirius* in the language of these creatures.

Species 2824 called this star system Sol . . . and their homeworld, the third planet, *Earth*.

The Lords Who Are within the Huntership examined the data, and reached consensus.

Species 2824 posed a threat to We Who Are.

This species, therefore, would die.

Ponderously, and with cool and unemotional deliberation, the Huntership began moving sunward.

12 FEBRUARY 2314

Assault Detachment Alpha
Above Olympus Mons,
Mars
1235 hrs, local

He was sealed inside a windowless carbotitanium laminate alloy canister so tiny there was scarcely room to breathe, much less move, but his noumenlink gave him a complete three-sixty on the view outside.

Gunnery Sergeant Travis Garroway, USMC, was streaking through thin atmosphere, hitting it hard enough to scratch a searing contrail of ionized gas across the night-black sky. His entry pod was surrounded by a faint haze of plasma, but he could still see the surface of Mars spread out beneath him like a map—all ochers and tans and rust-reds, desert colors achingly reminiscent of the American Southwest back home.

Ahead, Olympus Mons rose against the curve of the Martian horizon, enormous, stunning in its size and sweep and grandeur. The crest of Olympus Mons reached twenty-seven kilometers above the Martian desert floor—three times the height of Everest above sea level. As big as the state of Missouri, it was the largest volcano in the Solar System.

Garroway had stood at the base of that mountain three months earlier, playing tourist, and hoping to get a look at it from ground level. The results, however, had been disappointing. Olympus Mons was so large that the curve of the

Martian horizon actually hid the peak from an observer standing at the mountain's base. The only way to see, to really feel the size of that monster shield volcano was to see it from orbit, or . . . as Garroway was doing now, on a hot-trajectory re-entry forty kilometers up.

"Alpha Two, Alpha Three," he called. "Do you copy? Over." Static hissed in his earphones.

"Alpha Two, Alpha Three. Chrome, are you hearing me?"

Still nothing. The re-entry ionization was still too heavy to permit radio communications. Damn. He'd wanted to share this with Chrome—Staff Sergeant Angelina O'Meara.

A jolt caught the entry capsule, punching the breath from his lungs and eliciting a sharp, bitten-off curse. There was a popular misconception going the rounds at Eos Chasma, the Martian equivalent of an urban legend, to the effect that Olympus Mons was so tall the crest actually extended above the Martian atmosphere. He wished the idiots spreading that nonsense were with him *now*, enjoying the ride. The average surface pressure on Mars was only about one percent of Earth-normal, and at the top of Olympus Mons, the pressure dropped to two percent of *that*.

By contrast, the atmospheric pressure at the top of Mt. Everest was about twenty-five percent of the pressure at sea level; the Martian atmosphere was thin—the next best thing to hard vacuum, as Captain Fetterman liked to say—but the one-third gravity meant that it didn't get squeezed down as tightly to the surface as on Earth, but extended much farther into space. There was plenty of—*thud!*—atmosphere here two miles above the mountain's caldera-cloven crest to give him a hell of a ride.

Mars Military Training Command
Stickney Base,
Phobos
1236 hrs, local

Colonel Robert Ellsworth Lee lay in a couch on the Mars Observation Deck, watching the show. In reality, the tiny,

inner Martian moon was currently above Elysium, over the horizon from Olympus Mons, but his noumenal link relayed the imagery from a low-altitude robotic satellite positioned to track Alpha's atmospheric entry and descent.

From this vantage point, unfolding within the window of his mind, the orange face of Mars, pitted and wrinkled, stretched across the entire black reach of the sky. A cloud of brilliant stars streaked across that face, trailing white fire.

Thirty-two of those stars were the IMACs of the Alpha drop. The rest were decoys, deployed to shield the insertion from enemy radar and laser sensors. *IMAC*—the acronym was pronounced “eye-mac”—stood for Individual Marine Assault Craft, a name that seemed a bit grandiloquent for something not much bigger than a large garbage can.

Ever since World War II, some 370 years before, the Marine Corps had searched for new and effective ways to deliver combat Marines to the beachhead. On an island atoll called Tarawa, in 1943, thousands of Marines had died because their landing craft had grounded on a reef well off an enemy-held beach, forcing the men to wade or swim ashore under devastating machine-gun, mortar, and artillery fire. That near-disaster had resulted in the introduction of the Marine amphibious vehicle—the AMTRACK—and, in later years, a whole zoo of armored amphibious vehicles designed to swim Marines ashore and provide them with firepower once they got there. Other innovations had included the helicopter, the tilt-rotor Osprey, and the high-speed hovercraft.

As their battlefields began extending into the vastness of space and to the surfaces of alien worlds, those delivery systems had become more and more powerful, more and more complex. The AMTRACKs, LCACs, LVTPs, and AAVs of the twentieth century had given way to various types of planetary landing and assault boats, combat shuttles, and boarding pods. IMACs were only the latest twist, derivations of the standard ship-to-ship boarding pods in use for the past century or so.

A boarding pod or an assault boat, however, had one key weakness. It had to get from *here* to *there* through enemy

point-defense fire, but with the knowledge that one hit would take out the craft and every Marine packed on board—perhaps as many as fifty or more on some of the larger shuttles.

The key to survival in modern combat was *dispersal*. Don't provide the enemy with a few large targets, each carrying many Marines. Instead, let each Marine have his own landing craft—many, many small targets, each with one Marine sealed into a tiny, high-tech cocoon. High-energy lasers and missiles with antimatter warheads were going to score a kill if they hit the target, no matter what. Better, then, that each warhead that struck home killed one Marine rather than fifty.

Besides, for each one-man pod in flight, there might be a dozen or more decoys which, together with the high-energy electronic jamming going on, was guaranteed to give radar technicians, airspace monitor AIs, and tracking networks complete and utter breakdowns of one kind or another.

Colonel Lee was intensely interested in this new application of LZ-acquisition technology, as the current milspeak phrased the concept. He was CO-1MarReg, the commanding officer of the 1st Regiment of the 3rd Marine Division, and he'd been tasked with transforming that unit into something new—a Marine Recon Strike Team, or RST.

Or . . . perhaps the concept wasn't that new after all. In an earlier era, with simpler technologies, the Regimental Landing Team had been the ground element of a Marine Expeditionary Brigade. Over the past two centuries, as the Corps had added interstellar operations to its collective repertoire, the primary measure of force deployment had been the Marine Interstellar Expeditionary Unit (MIEU), which numbered about a thousand to twelve-hundred personnel, and which could be deployed, with all its gear and supplies, on board a couple of fleet transports.

The RST numbered only eight hundred men and women, the size of two traditional battalions, but it included a recon battalion, a special weapons battalion, an attached air element of sixteen aerospace fighters, plus a headquarters constellation. Smaller meant faster, more flexible, and more

maneuverable, or, at least that was the idea. An RST could be dropped onto a hostile planet to reconnoiter ahead of an MIEU landing, or provide troop backup for the Navy's High Guard in the Outer System. These new IMACs would increase a landing team's chances of surviving an insertion onto a hostile planet under fire, or serve as boarding pods in ship-to-ship actions. If the new Oannan/N'mah technology worked as advertised, it would mean a whole new era in interstellar Marine force-projection. If it didn't . . .

Well, Lee wasn't going to look that far ahead, not yet. Thirty-two good men and women were riding that tech now, and their lives depended on it functioning perfectly.

He sensed other presences in the noumen around him—Major Bishop of Second Battalion, and Captain Fetterman of Bravo Company. Those were *their* men and women down there, too. There were some higher-ranking officers present as well. Rear Admiral Kenneth Jollett, who was in charge of the Penetrator program; Brigadier General Hudson, an Army officer assigned to the training center as a Congressional liaison; and Major General Hernandez, CO of the MMTC facility on Phobos.

And, of course, Brigadier General Clinton Vincent Garroway, CO of 1MIEU. Strictly speaking, the IMAC test didn't directly concern his command, but there was no way he wasn't going to be present, not with his nephew riding one of those hot tin cans down from orbit. Keeping him clear of the Phobos observation deck would have required a direct order from the Commandant . . . backed up by nothing less than the battlecruisers and carrier squadrons of Fifth Fleet.

Sometimes it seemed tougher watching from the rear. . . .

"*When will we be able to get direct data again?*" Hudson asked over the noumenal link. "*I don't like being in the dark up this way.*"

"*According to the predicted track . . . another thirty seconds or so,*" Jollett told him. "*Then we'll have all the data we can slurp.*"

"*Assuming they make it through,*" Hudson said.

"*Don't even think it, Walter,*" Garroway growled over the link. "*They'll make it!*"

"I just don't like this reliance on alien technology," Hudson said. "We should have developed it on our own."

"Beggars," Jollett told him, "can't be choosers."

"Well, it does look like everything's going smoothly," Hudson said.

"I imagine the Marines sealed inside those cans would have something to say about that," Lee replied, wryly amused. "According to the predicted flight track data, they're at the point of maximum turbulence in their descent. I imagine things are a bit wild, right now."

"Roger that," General Garroway added. "Damn, I wish I was down there with them!"

"They can handle it, General," Admiral Jollett said.

"Damn right they can handle it, Admiral. They're Marines."

Lee felt the pride in the older man's mental voice, but couldn't detect any fear. He knew the general was close to his nephew; he honestly didn't know how the man was handling the stress of . . . just watching, watching as his nephew fireballed into atmosphere at five clicks per second.

Like General Garroway, Lee's single biggest regret was that his request to accompany the team had been unceremoniously rejected. He was a firm believer in leading from the front.

Assault Detachment Alpha
Above Olympus Mons,
Mars
1236 hrs, local

His noumenal HUD showed him the probable locations of each of the other fifteen IMACs in Alpha Section. *Probable* location meant just that. For the duration of the communications blackout incurred during re-entry, transponder signals were scrambled and the datalink connecting the Marines with one another and with headquarters wasn't much more than wishful thinking. His battlesuit's AI was taking an educated guess on the current positions of the

other IMACs, based on the last recorded vector of each, and plotting them on the display imagery unfolding within his mind.

Directly below, the caldera of Olympus Mons opened like a gaping mouth—an oval eighty-five kilometers long, sixty wide, and a sheer-sided three kilometers deep. Six overlapping pit craters pocked the yawning caldera; he could see a trace of snow in the shadows. The atmospheric pressure there was too low to permit water vapor to freeze out; those white streaks must be frozen carbon dioxide.

And then the mountain was falling away behind him, the vast swelling of the mountain dropping faster than the IMAC's descent. At his mental request, data cascaded through his noumen. Altitude now thirty-two kilometers, dropping at three hundred meters per second, velocity four point one kilometers per second. A bubble of superheated plasma was forming around him—not thick enough yet to block visibility, but fiery enough to create the illusion of blowtorch flames billowing past him.

His heart was pounding, his mouth dry. He felt like he was getting hotter, and sternly told himself it was his overactive imagination. He'd worked with IMACs endlessly in simulation, both on Earth, and ever since he'd arrived at the Marine Corps Deep Space Training Facility at Eos Chasma. But this was his first time in one for real, his first time stuffed into a shit-can and fired out of a Marine Stealth Starfire in planetary orbit.

Another thud, a hard one, and his AI feed reported chunks of ablative falling away. From his vantage point, it looked as though he'd just loosed a salvo of flares through the fireball. He had to remind himself that that was what was *supposed* to happen. As the ceramic ablative material broke free of the IMAC, it helped shed some of the fierce heat building up outside, scant centimeters from his battle-armored body, and also added to the confusion of ground-based sensors and AIs.

But it was difficult to avoid the disconcerting thought that he was flying in a conventional spacecraft, and that pieces were breaking off and falling away.

Altitude twenty-five thousand meters, a voice told him in his mind. *Deploy air brakes and aeroform surfaces, yes, no?*

"Negative on air brakes and aeroform," he told the AI in his head. "We'll deploy at twelve thousand meters, with HALO deployment as automated backup."

In other words, if something nasty happened and he was rendered unconscious or worse by high G-forces in the next few moments, the AI would still bring him safely to the surface. Or what was left of him, at any rate. The important thing was that the data from his suit be retrieved.

Very well. Backup HALO deployment confirmed. I will re-confirm at seven thousand meters.

"Nag," he told it. There was no response. The suit AI was rather limited in its conversational abilities, or, indeed, for any thought beyond an extremely narrow purview.

Ahead, he could see three more shield volcanoes stretched across the horizon in orderly procession. Similar to Olympus Mons, but far smaller, they were, with their huge cousin, part of the ancient Tharsus Bulge, a static region of volcanic activity where magma deep beneath the planet's surface crust had upwelled into the crust perhaps a billion years ago. From north to south they were Ascræus Mons, Pavonis Mons, and Arsai Mons. The central mountain, he recalled, was perched almost precisely on the Martian equator. His descent would carry him above Ascræus Mons, on the left.

Garroway gave his flight system indicators another mental glance. Everything was tracking as expected. Decoys maintained their position in a loose cloud around and ahead of him, each leaving its own meteor-trail of ionized gas.

Ascræus Mons slid gently past below, followed moments later by the vast and tangled patchwork of rills and canyons dubbed Noctis Labyrinthus, the Labyrinth of Night. Strike Force Sierra One-one burned through the dark Martian sky.

Operation Skyfire. It was a training exercise—*only* a training exercise, though that didn't mean Garroway and his fellow Marines were guaranteed a ride back to base and a hot shower when they got there. Marines trained constantly, honing skills against the day when they would be needed for

actual combat. Two millennia before, the Jewish writer Josephus had observed of the Roman legions that their exercises were bloodless battles, their battles bloody exercises, and that could accurately be said of the modern U.S. Marine Corps as well . . . except for the fact that even training exercises could turn bloody in a single unguarded instant.

Today, a total of thirty-two Marines of Bravo Company, of the 3rd MarDiv's 2/1, were training with the newly commissioned IMAC combat-insertion pods, launched from one of the equally new S/R F-8 Starfire deep-recon spacecraft. The mission objective was to enter the Martian atmosphere and deploy in a simulated planetary surface strike. Their intended LZ was a stretch of ancient watercourse terrain at the far end of the Vallis Marineris called Eos Chasma, not far from the Eos USMC Deep Space Training Facility.

Excitement in Bravo Company was running at damned close to lightspeed. This was the first time the IMACs had been employed outside of simulation and with human Marines—as opposed to test pilots or robotic AIs—strapped inside. Everything was going well so far, but *so* much was still in the hands of the Laughing Dark God, Murphy.

A very great deal could still go horribly wrong.

Beyond the Noctis Labyrinthus, the terrain split to north and south, then yawned open in the titanic chasm called the Vallis Marineris—the Valley of the Mariner Spacecraft, named for the robot that had first imaged the canyon three and a half centuries before.

If Olympus Mons was the largest volcano in the Solar System, Vallis Marineris was the largest valley—three thousand kilometers long, in places six hundred kilometers wide and as much as eight kilometers deep. The Grand Canyon on Earth could have fit comfortably in one of Marineris's tributary valleys.

Garroway looked down at the chasm with a certain amount of proprietary fondness. A great-great-several-more-times-great grandfather of his—also a Marine—had led a march up that valley at the onset of the UN War in 2047. “Sands of Mars” Garroway had contributed a bit to the Marine legend, and three centuries later remained one of the major

heroes of the Corps' history, alongside such names as Puller, Basilone, and Ramsey. Travis Garroway enjoyed a certain amount of notoriety in the Corps today, thanks to the exploits of his illustrious ancestor . . . not to mention the fact that his own uncle was also a Marine, and a major general to boot.

Of course, that notoriety had a downside as well. With a name like Garroway to live up to, there were certain . . . *expectations* circulating about his character and his sense of duty, little things like needing to be the first to volunteer to be stuffed inside a shit can and fired out the launch tube of an experimental recon-raider.

That shit can continued its descent, now scarcely thirty kilometers above the gashed-open desert below. Garroway could clearly make out the banded layering of sedimentary rocks along the weathered faces of the cliffs—the final proof, if proof was needed, that Mars once had possessed a vast ocean covering nearly half of its surface and, by extension, an atmosphere thicker than the thin, cold wisp of CO₂ that enveloped the planet now.

His mind flicked to the Ancients, the inevitable name for the mysterious and godlike civilization that had tried to terraform Mars half a million years ago—and failed. They'd left traces of their presence on the Red Planet—including evidence that they'd tinkered with the DNA of certain bright and promising primates on the Blue Planet, next in toward the Sun.

And there was evidence, too, that the Ancients' colony on Mars had been destroyed by another darker, far-ranging interstellar civilization, the so-called Hunters of the Dawn. A robotic ship, nicknamed the Singer, had been discovered beneath the ice of the world-ocean of Europa, one of Jupiter's moons. Evidently, the Singer had taken part in the destruction of the Ancient colony.

If the Hunters of the Dawn had been limited to the Galactic stage of half a million years ago, that would have been one thing. But it was now known that the Hunters were still out there, somewhere, among the Galaxy's myriad stars. The

Hunters had crushed the reptilian An some eight thousand years ago, destroying the colony *they* had planted on Earth. And they'd emerged from the huge wedding-band circle known as Sirius C—the Sirian Stargate—to capture a human-crewed starship just a century and a half ago.

The blink of an eye, by the standards of the vast and slowly turning Galaxy.

For that reason, the Marines continued to train, and the science wonks continued to develop new and better and more fearsome military technologies. The Gateway through from Sirius to a nameless star system on the outskirts of the Galaxy had been closed by a Marine expeditionary force in 2170, but few in military circles believed that that had solved the problem. The Hunters of the Dawn were out there, and they now were aware that an upstart technological species known as *Homo sapiens* was beginning to make its presence felt on the Galactic stage.

Sooner or later, the Hunters would return.

*We Who Are
Outer Solar System
0436 hrs, GMT*

The Huntership had slipped quietly into the target star system designated 2420-544 on the old records, unseen, undetected, until the system's star was just over a scant light-hour distant. One of the sources of radio emissions became aware of the Huntership's approach, and accelerated to intercept. Radio signals and coherent light at a variety of wavelengths reached out from the challenger, evidently seeking communication.

We Who Are deliberated briefly, then extended their consciousness.

The challenger was patterned, its energies recorded, its material structure dispersed. The patterns of the primitive vessel's occupants—confirmed as Species 2824—were dissected and questioned, all the way down to the quantum

level, confirming the stored data on this system's species acquired recently from other sources.

The Huntership continued on its implacable course inbound.

*Assault Detachment Alpha
Above Olympus Mons,
Mars
1236 hrs, local*

Atmospheric drag had slowed his velocity to less than a kilometer per second, and the plasma fireball was dissipating. His noumenal display began showing pinpoints of light against the sky and horizon around him—the other IMAC pods in their descent formation, imbedded in a cloud of decoys.

“Okay, boys and girls,” a voice said over his headset. The ID tag identified it as Lieutenant Wilkie, riding Alpha Flight Six and in charge of the drop. “Sound off!”

“Alpha One, copy and acknowledged,” another voice replied.

“Alpha Two, sweet and neat.” That was Chrome.

“Alpha Three, okay,” Garroway replied.

The litany continued down the roster, until all thirty-two pods had checked in. Garroway breathed a bit easier, then. These pods had been endlessly tested for their re-entry capabilities, both in sim and in actual, but there’d still been that lingering, tiny doubt that something, some design flaw, might have been overlooked. But they all had made it past the first hurdle, at least.

“Hey, Chrome,” he called on a private lasercom channel. “Did you get a load of Olympus coming down? Looked like the Solar System’s biggest tit.”

“Roger that, Trigger. But her nipple was an innie, not an outie.”

“Collapsible model, Chrome.”

“Can the chatter, people,” Wilkie said, cutting in. “Verify ECM, and release chaff.”

An alarm sounded in his mind. His pod was being tracked by ground radar. Decoys or not, the pretend enemy on the ground was watching their approach, and had just targeted *him*.

Not good. Garroway—"Trigger" to the other Marines in Alpha Company—engaged Level One ECM. A thought fired six chaff canisters from the outside hull. The cloud of silvered Mylar expanded around him, mingling with ablative fragments still following the pod's descent. They might see them coming from the ground, but it would be next to impossible to know what to shoot at.

That was the idea, at least. Part of the Marines' training involved spending time in a ground fire-control radar center, watching this sort of exercise from the other side. At times like this, it could be comforting to know that the ground techs were seeing an ungodly hash of static on their screens, not the array of sixteen crisp, sharp blips that meant a flight of incoming hostiles.

Minutes more passed. They were twelve kilometers up, and one hundred from the LZ. "Alpha Flight, Alpha Six. Deploy aeroform flight surfaces for landing."

At a focused thought, portions of Garroway's pod began unfolding, transforming the cylindrical pod into a blunt-nosed lifting body. The tiny craft shuddered and banged, engaging atmosphere as his rate of descent decreased. His battlesuit AI noted that the flight surfaces had deployed; there would be no need for emergency HALO systems.

Noumenal indicators showed the Oannan drive coming up to power. *That* was the really scary part of this exercise . . . working with that alien and poorly understood technology. The amphibian Oannans, or the N'mah, as they called themselves, discovered at the Sirius Stargate a century and a half ago had been working with human scientists ever since, helping them integrate bits and pieces of archeotechnology into a coherent understanding of advanced physics. Humankind had a long way to go on that road, but one bit of early payoff, if the science techs were to be believed, was that long-dreamed-of, long-unachievable Holy Grail of propulsion technology, a reactionless drive.

The Marines' lives were quite literally riding on the gadget. If the Foureyes' little wonder child didn't work as advertised, there shortly would be sixteen fresh, bright, new craters in the Martian desert, and Bravo 2/1 would need to send for newbie replacements from Lejeune, stat.

"Okay, people," Wilkie's voice said. Was that nervousness adding a ragged edge to his voice, or just an effect of vibration as his pod slammed into heavier atmosphere? "Nice and easy, just like in the sims. Deploy inertial dampers and engage QRD."

Inertial dampers switched on, softening the pods' headlong plummet. They did not completely erase inertia—even the Oannans couldn't stop their spacecraft on the proverbial dime without deceleration—but they did muffle the occupants from the effects of abrupt, high-speed maneuvering.

Of course, the thirty-two incoming pods no longer responded like dead lumps of metal dropping through atmosphere. Drag now had a much greater effect, slowing their velocity substantially.

And that meant their obscuring cloud of chaff and ablative debris now left them, racing ahead at near-terminal velocity while the pods abruptly slowed. Red light warnings flared in Garroway's mind. The strike force was now being clearly illuminated by ground-based radar and ladar.

"Alpha Flight, evasive pattern one!" Wilkie shouted over the laser link. "Down on the deck!"

In tight, echelon formation, the flight engaged their Quantum Reactionless Drive units, veering sharply into a near-vertical drop, plunging toward the desert. At fifteen hundred meters they pulled up sharp and hard, arrowing across the blurring ochre surface of the desert. For ninety seconds more, they held to their course, before decelerating hard and descending the final mile to the surface of the desert.

The shock wave of their passage stirred swirling clouds of dust in their wakes. With the Oannan drives on full, they slowed, then slammed into the ground, the shock—most of it, anyway—absorbed by the inertial dampers.

The black hull of Alpha Three split open, folding back on itself, and Garroway emerged, unfolding from an uncomfortable crouch. His armor, coated with chameleonic surfacing, showed the jet black of the pod's interior, but in seconds had faded to an overall ocher-red, mirroring almost perfectly the surrounding color and shapes of desert and a pink-tinted sky. The Mark XLIV Marine CAS, or Combat Armored Suit, stood just over two meters tall, massive and blocky, a walking tank. A Hawking 34mm chaingun firing high-explosive rounds was mounted on the machine's right forearm; an A-frame launch unit strapped to the massive back carried three Shrike-C missiles with AI guidance and tactical nuclear warheads, each packing a two-kiloton punch. The suit's on-board AI unit was smarter than a man, with better speed, better memory, and better focus, though it lacked emotion or a sense of morals, of right and wrong. Kill-no-kill decisions still required a human wired into the decision circuit.

The Mk. XLIV—the “Fighting Forty-four”—was widely viewed in military circles as the endpoint of the evolution of individual combat armor, massive, high-powered, and lethal. Current military doctrine declared that the life expectancy of an unarmored man on the modern battlefield was to be measured in scant seconds, and the Mk. XLIV was intended to extend that lifespan to minutes, even to hours.

At the moment, there were thirty-two Marines in Mk. XLIVs scattered across the desert in a footprint twelve kilometers across. According to satellite nav data, they'd come down precisely on the planned LZ which, if all had worked as planned, put them well inside the opposing force's perimeter, almost on top of their objective.

“Okay, Marines!” Wilkie called. “Let's move!”

“*Ooh-rah!*” Garroway and the other Marines chorused, the ancient war-cry of the Corps.

The formation turned east and began moving, loping across the broken and water-eroded desert floor at a ground-eating five kilometers per hour.

*We Who Are
Outer Solar System
0448 hrs, GMT*

The Huntership continued its approach to the target world, sensors fully deployed, tasting the radiations and reflections of an immense volume of local space. A second artificial structure was detected, a large one—almost a quarter of the Huntership's mass—moving in an extended orbit well above the system ecliptic.

Again, We Who Are extended their collective consciousness, almost casually reaching for this new target. . . .

12 FEBRUARY 2314

High Guard Monitor U.E.S. Prometheus
Trans-Saturn Space
1248 hrs, local

In the dark and lonely gulf beyond the orbit of Saturn, one light-hour from a dim and shrunken Sol, the U.E.S. *Prometheus* maintained her year-long vigil.

During the twenty-first century, during the UN War, an attempt had been made to shift the orbit of a bit of nickel-iron debris in order to bring it down on North America with the destructive impact of many fusion warheads—a single blow to end a savage and expensive war. The attempt had failed—mostly. The wreckage of the spacecraft engaged in the tricky maneuver had come down over Lake Michigan; the ruins of Old Chicago would remain radioactively uninhabitable for a number of centuries yet to come.

Later, as Humankind began exploring its interstellar neighborhood, unsettling discoveries came to light, discoveries to the effect that the galactic predators known as the Hunters of the Dawn used asteroids to destroy promising civilizations, including the Ancients. Exoarcheologists were still exploring the planetwide ruins on Chiron, in the Alpha Centauri system, and believed that the Ancients' colony on Mars had failed when an asteroid impact there had stripped away much of the artificially induced atmosphere. The An colony on Earth eight millennia ago—and the nascent

human civilization that served as their slaves—had been wiped out by a small asteroid dropped into what was now the Arabian Gulf.

Evidently, when it came to planet-wrecking, asteroids were the long-established weapon of choice.

To ensure that asteroids never again were used as weapons against Earth—by that world's warring civilizations or by anyone else—the old Federal Republic of America had established the High Guard, a fleet of large warships patrolling through the emptiness from the Asteroid Belt out to beyond Saturn, tracking and monitoring all spacecraft moving into that immense zone.

The U.E. monitor *Prometheus* was one of the largest of the modern High Guard vessels, half a kilometer long, with a crew—Navy, Marine, and civilian—of almost three thousand. Mounting powerful batteries of high-energy lasers, missile batteries, and railgun-launched antimatter warheads, surrounded by a vast and far-flung cloud of robotic sensors, drones, and manned fighters, *Prometheus* was slow, but arguably the most powerful warship in the military inventory of the United Earth.

Much of the monitor's crew was in nanosuspension, the better to conserve limited expendables like food, water, and air. At any given time, a quarter of her crew was awake and functioning; Blue Watch had the duty now.

Sensor Technician Third Class Baldwin drifted within a sphere of night, star-dusted, with brighter points of colored light marking the positions of *Prometheus*'s drones and patrols, of Deep System Station 39, and of Saturn, now some thirteen million kilometers to spinward. His noumenal link connected him with the assembled sensory data from all of *Prometheus*'s remote drones and fighters.

And there was nothing, *nothing* out there to threaten the almost meditational calm of the watch.

Watchstanding on a High Guard monitor generally was the very definition of the word *boredom*. The United Earth had been at peace now—for perhaps the first time in its recent history—for the past eighty years. The last of Earth's wars, the abortive Central Asian Jihad of 2234, had ended

almost before it had begun, and had been limited entirely to ground-based forces. The thought that anybody now possessed the technology to challenge either the U.E. or the American Confederation that dominated that world body in space—much less launch an attack from the Outer System—was laughable. In fact, more and more political voices on Earth had been calling for an end to the High Guard, for so long a frightfully expensive relic of a long-past threat.

The politicians could argue; in the meantime, the Navy continued its patrols. *Tradition* would be, must be, maintained. It was the Navy way.

ST/3 Baldwin first noticed something was happening when the monitor's AI called his attention to an anomaly—a burst of high energy radiation arriving from the direction of the constellation Canis Major, close by the bright beacon of Alpha Canis Majoris—Sirius. Sensor drones in that direction responded an instant later, reporting a sizeable mass approaching at .95c.

“What the hell?” Baldwin asked, addressing no one in particular.

“*Contact appears to be a ship,*” *Prometheus's* artificial intelligence told him. “*Type unknown, propulsion system unknown, origin unknown.*”

“Sound the contact alert,” Baldwin snapped. “Get the skipper on-line!”

“Whatcha got, Baldie?” the captain's voice asked in his mind a heartbeat later.

“I don't know, sir,” he replied. “Whatever it is, it's big . . . and it's coming in at near-*c*, right behind its dopplered wave-front.”

That was the trouble with sensor systems limited to the speed of light. If your target was approaching you at close to that velocity, you had damned little warning of the approach.

And then, the contact was *there*—huge, gleaming gold, needle-slender but easily packing the mass of four *Titan*-class High Guard monitors. It decelerated from close to light-speed to almost motionless relative to the *Prometheus*, hanging there in the black emptiness a scant hundred kilometers away.

"*Christ and Krishna!*" Captain O'Mallory rasped. Baldwin felt him trigger the dispatch release, transmitting the details of the encounter so far Earthward.

Baldwin had seen records of an identical vessel—the mile-long needle that had emerged from the Sirian Stargate over a century and a half ago to snatch up the exploratory vessel *Wings of Isis*, and then emerged again in 2170—or had it been a different ship? Whether the same or different, the monster intruder, positively identified as belonging to the near-mythical Hunters of the Dawn, had been destroyed in the fierce-fought Battle of Sirius.

The Hunters of the Dawn, the *Xul* of ancient Sumerian legend, had returned.

An instant later, Baldwin began screaming as the quantum reality ground state patterns of the *Prometheus*, and every soul on board her, were wrenched from material existence. The transformation took only a few seconds.

From ST/3 Baldwin's perspective, however, the shrieking tortures of Hell engulfed him, the agony of discorporation going on . . . and on . . . and on . . .

Assault Detachment Alpha
Eos Chasma,
Mars
1410 hrs, local

Assault Detachment Alpha was nearly in position for the attack. They'd worked their way up a low range of rugged, eroded hills east of the LZ, and were looking down now on an enormous military base, sprawling towers, a large spaceport, and hectare upon neatly ordered hectare of warehousing. Most of the target was all in their heads—a noumenon conjured within their minds, as opposed to a phenomenon, existing in the world around them. The only material opposition were their human counterparts in this war game, Army Special Forces playing the role of OPFOR.

Still the training AI monitoring the operation was keeping track of both sides, tallying fire, casualties, and damage,

even while painting the illusion of the sprawling military base in the minds of all of the human participants.

There'd been no fire yet, and no casualties on either side. The landing, much closer to the target than expected, had caught OPFOR by surprise. Space-suited figures were spilling from the image of pressurized bunkers to meet the Marines, but Assault Detachment Alpha had already grabbed the high ground. There weren't many of them, either . . . only a company or so, perhaps fifty men. The rest must have already deployed deep into the desert, bypassed by Alpha's pinpoint drop.

Garroway grinned behind the opaque shield of his helmet visor as the enemy streamed into the open below, racing for the high ground and straight into Alpha's sights. It was going to be a slaughter—at least the way computers tallied things.

He ratcheted back the charging lever on his primary weapon, charging the Hawking. The ammunition load he was carrying was training ordnance, of course, but it would still make a *most* satisfying pyrotechnic display.

"A-D Alpha, Alpha Six," Wilkie's voice said over the net. "Let's take 'em! . . ."

"Alpha Detachment, this is Stickney Base. Stand down. The exercise is terminated."

"What the fuck?" Garroway looked up into the Martian sky—a deep ultramarine overhead, shading toward dusty pink near the horizon. Actually, Phobos was not above the horizon at the moment, though it would be soon. The tiny, potato-shaped moon orbited Mars in less than eight hours, rising in the west and setting in the east only five and a half hours later. But he stared up, anyway, as if to drag down from the sky some reason for the incomprehensible command. "What the hell's going on?"

"All right, Marines, you heard the order," Lieutenant Wilkie said. He stood up, sand spilling from his combat armor as its surface rippled with the rust and ochre hues of its chameleonic display. "Safe your weapons!"

In the valley below, the magical city of towers, warehouses, and bunkers shimmered and faded from view. In its

place, a pair of pressure domes remained, along with a few dozen black-armored Special Forces troopers.

In single file, the Marine element began trudging down the hillside toward the waiting soldiers.

"Hey, Marines," one of their former enemies called, raising a massively gauntleted hand. His words were light, bantering. "We were gonna kick your asses!"

"Ah, you guys were already dead," Lance Corporal Annette DeVries said. "We had you in our sights!"

"Yeah?" another SpecFor soldier said. "We were just suckering you in, jarheads. We had two more companies out in the desert, closing on you from all sides."

"That would have put you right where we wanted you, doggie," Chrome observed. "We could've shot in every direction without hitting our own guys."

"Quiet down, quiet down," Wilkie ordered. "Save it. A couple of transports are inbound to haul us back to base."

"So why the cancellation of the fun and games, Lieutenant?" Garroway asked. "Things were just getting interesting."

"You'll be told what you need to know when you need to know it, Gunny. Now get your ass in gear and *move* it!"

Garroway scowled at the back of the officer's helmet, just ahead of him in the file. Wilkie was a newbie to Bravo Company, fresh out of Annapolis, and hadn't yet learned the difference between leadership and bullying. Fresh meat. It would be the job of the platoon's senior NCOs—meaning him and Chrome—to get the guy squared away.

And if he didn't square, well, there were ways of dealing with that, too. Gentle ways, but ways. A company commander learned to work with his NCOs, his most experienced people, or he found himself transferred to a less life-and-death-oriented billet.

The fact remained, something was happening to upset the brass. He turned and looked back toward the western horizon again, where low, dun-colored hills stood out in crisp relief against the dust-laden sky. Phobos was just now rising—a tiny, misshapen disk, moving swiftly enough that he could actually track its movement by eye.

What the hell was going on up there?

*Mars Military Training Command
Stickney Base,
Phobos
1455 hrs, local*

"This way, General, if you please."

Garroway followed the young Navy lieutenant commander down a corridor with rounded, padded walls and four sets of handrails placed to either side, and above and below. The surface gravity of Phobos was minute; he weighed only a few ounces here, and he could make his way with considerable speed by pulling himself along hand-over-hand. The tunnel was crowded with military personnel of all services, and a number of civilians as well, all moving in the same direction.

"Just where in hell are we going, commander?" Garroway demanded.

"Orders, sir," she replied. "From Earth! We're evacuating Phobos."

"So I gather. Why?"

"Damfino . . . uh, sorry, sir. I don't know. But *hurry!* Please!"

Like red cells crowding through a blood vessel, the crowd followed a bend in the passageway leading left, then took a new tunnel that opened in the overhead of the old. Hauling himself up against the moonlet's feeble gravity, he soon entered a massive airlock, and recognized one of the main docking connectors giving access to the labyrinth of tunnels and rooms honeycombing Phobos. Two scared-looking naval personnel clung to the bulkheads, waving people on, and up.

Moments later, Garroway followed his escort into the main lock of the armed transport *Commodore Edward Preble*.

His escort threaded her way ahead through the press of bodies, leading him at last to a compartment marked COMMUNICATIONS CENTER.

"They wanted you in here, sir," she told him. "Go to Channel Fifteen, and identify yourself. Good luck!"

“Thank you, Commander . . .”

But she was already gone.

Preble’s comm center was a circular room with several oversized, sharply reclined chairs set around the room’s perimeter, half of them already occupied by naval officers. Garroway picked an empty seat, lay down, and brought the palm of his hand into contact with the electronic pickup in the armrest.

“Channel Fifteen,” he said in his mind. “Garroway, Clinton. Major General. Service number seven-seven-six, three-one—”

A window opened in his mind.

He recognized the face looking out at him—an old friend, Major General Ronald Edison, CO of the Marine Interstellar Expeditionary Command, and Garroway’s boss. “Good morning, Clint,” Edison said. The older man’s eyes flicked to a point offcamera, then back. “At least, it’s morning *here*. We have . . . a problem.”

Garroway didn’t respond. Edison was on Earth—probably in his office in the Pentagon, in Arlington, Virginia—and with the current respective positions of Earth and Mars, a lasercom signal took over fourteen minutes to pass one-way from one to the other. Edison had transmitted this message almost a quarter of an hour earlier.

“Thirty minutes ago, we received an emergency tight-beam radio communication from the *Titan*-class monitor *Prometheus*. The message was transmitted from near Saturn at zero-four-forty-eight hours Zulu—that’s just over an hour and a half ago. Here is the message in its entirety.”

The general’s face vanished, replaced by a sight Garroway knew, but had hoped never to see in his lifetime—a rapidly growing oval of pure gold, reflecting the light of a distant sun as it approached the camera. The image shifted to a different angle, this one taken from a remote drone some distance away and off to one side. The golden oval was only the end-on view of an immense vessel, shaped like a flattened needle, slim, but titanic in bulk and mass. Flickering alpha- numerics on the border of the noumenal image, together with computer-generated schematics, suggested a vessel nearly

two kilometers long, hundreds of meters thick, and massing somewhere in the tens of millions of tons.

"The ship appears to be identical to the one we encountered at Sirius in 2170!" a new voice was saying. Static hissed and blasted, distorting the words. The intruder must be putting out some sort of high-energy field, interfering with the transmission. *"We have just lost contact with the High Guard patrol frigate Rasmusson, which . . . well, their last known position would have been pretty close to this monster's line of approach."*

"It's coming from just about right ascension six hours, forty-five minutes, declination minus sixteen degrees, forty-three minutes . . . in Canis Major. Pretty much bang-on the position of Sirius. I think this thing popped through the Stargate out there, and came straight to us. It's getting closer . . ."

Fresh static washed across the message, and the image shivered and flickered. Garroway strained to hear the next few words. *" . . . ters of . . . Dawn . . . huge . . . no communications . . ."* Image and sound garbled out for a few seconds, then, eerily, came back, momentarily clear. *"Get the word out!"* the speaker said. *"They're back!"*

Then the image flared white with interference snow, turned ragged, and was gone.

General Edison's face stared again into Garroway's noumenal gaze. "The Hunter ship approached the *Prometheus* at point nine-five *c* before slowing to a relative stop in seconds. We can assume that after destroying the monitor, it has continued into the inner system at near-light speed. It may reach Earth at any moment.

"The President has alerted all commands to the threat. As of this moment, we are on a full war alert. I've ordered the evacuation of Phobos, on the assumption that the invaders will be able to detect the communications nexus there, and may strike there as well. In ships, you might have a chance.

"This is what we've been dreading for a century and a half, Clint. It's finally happened. They've found us. Somehow, God knows how, we've got to stop them.

"I am hereby authorizing full implementation of the RST,

and transferring command to 1MIEU. If you can stop that monster, Clint . . . do it! We're counting on you. *All of us.*"

And the image blinked out, replaced by the words TRANSMISSION ENDS, and the globe-and-anchor logo of the U.S. Marine Corps.

Garroway opened his eyes, staring up at the green-painted overhead. Stop that monster? Gods . . . *how?* That thing was a mile long, tossed black holes as missiles, and—if the data recovered at Sirius was correct—capable of blowing up a sun.

They'd be damned lucky if *any* of them simply survived the next couple of hours.

*We Who Are
Asteroid Belt
0658 hrs, GMT*

The huntership didn't need to proceed all the way in-system to the primary target within 2420-544, a typical rocky, life-infested world three-quarters covered by water, and enveloped in an atmosphere consisting of nitrogen, oxygen, and various trace gases. We Who Are were never hasty, and never took unnecessary risks. Judging from the explosion of increased radio traffic now beginning to ripple out from the principle technological centers of this civilization, the dominant species here was aware of the Hunters' presence, and were in the process of responding. From the Huntership's vantage point, they'd just thrust a stick into a hive of swarming, stinging fliers. Until this Species 2824's technology—in particular their military capability—could be fully assessed, caution was warranted.

But closing with the infested planet was not necessary. Most solar systems contained the leftover debris of their formation, and this one was no exception. Between the orbits of the fourth and fifth planets, especially, a number of asteroids, ranging from gravel to objects the size of mountains to fair-sized worldlets hundreds of standard units across, drifted in their individual orbits about the local star. It

would only be necessary to capture a few of these and sling them into new orbits, targeting the infested worlds. How the primitives dealt with the situation would tell We Who Are much about their technical and military capabilities.

Intelligent civilizations, the group mind of We Who Are had concluded, were pernicious, like life itself popping up everywhere and anywhere, given the least bit of provocation. The majority, actually, were atechnic and harmless; some were actively useful in the greater scheme of things, candidates for patterning and inclusion within the college of minds comprising We Who Are. These, the far-ranging cultivators of We Who Are watched, tended, and occasionally weeded with clarity and dispassion.

A few, however, developed material technology early in their careers. As had the original progenitors of We Who Are a billion years in the remote past, these swiftly mastered primitive chemical energy-producing systems, nuclear power and nanotechnology, and finally the ultimate mysteries of quantum energy and the zero-point field. For such civilizations, anything was possible, including, inevitably, a direct challenge to the existence of We Who Are.

A billion years in the past, the Progenitors had survived a hostile and highly competitive world through the simple expedient of eliminating all possible rivals. It was a lesson in Darwinian realities that became virtually hard-wired into the species, a basic assumption of how the universe worked that, even when they began redesigning their own existence, they did not examine or question.

Any species, any civilization, any organism, any idea that posed a threat to the survival of We Who Are would be eliminated, immediately and by the most efficient and expeditious manner possible.

With some situations, it was necessary to induce the local star to go nova. That was definitely a last-resort option, however. Habitable planets were rare enough, and useful enough, that it was wasteful to reduce one to a seared and airless cinder. That option was reserved for alien civilizations that had advanced too far for a simple bombardment to be effective.

For most nascent technic civilizations, however, a few high-velocity asteroids slammed into the crust eliminated the pests without rendering the world permanently uninhabitable. Members of the species that survived the actual impacts—even those individuals belonging to space-faring cultures stranded on other worlds, tended to eliminate themselves in short order as they fought over dwindling resources, or died as their technological infrastructures—always so precariously in the balance!—failed.

That approach would certainly be adequate in the case of the infestation in the planetary system of 2420-544. We Who Are adjusted the vector of the huntership, closing with a likely asteroid. . . .

Assault Detachment Alpha

Eos Chasma,

Mars

1523 hrs, local

“Here they come!”

Garroway looked up into the deep ultramarine of the Martian sky. A trio of bright stars shone almost directly overhead, slowly growing brighter.

Two hundred meters away, the Special Forces troopers had already set out landing beacons, which pulsed brightly at both optical and infrared wavelengths. They would guide the shuttles down to the LZ.

“Assault Detachment Alpha, this is Navy Sierra One-one,” a voice said over Garroway’s headphones. “You boys are cleared for first dust-off. Stand ready.”

“Ah, roger that, Sierra One-one,” Wilkie replied over the same channel. “We’re ready.”

The voice of the shuttle pilot sounded tight and dry. What the hell was happening, anyway? Every one was stressed to the nines about something, and no one had bothered to tell the grunts what it was they had to worry about.

Typical. In fact, chances were that those Navy pilots up there didn’t know either, that they were simply reacting to

the sudden avalanche of worry and stress from higher up the chain of command, like everyone else.

Wilkie was right. They *would* be told when they needed to know. But it gripped him all the same.

One of the stars separated from formation with the other two, swiftly growing brighter, then resolving into an AUT-84 *Cambria*-class transport, all knobby modules, outriggers, and sponsons behind a bulky, insect-faced command module. A bright landing light shone from beneath the nose, and red and green running lights winked to port, starboard, and astern. Tiltjet thrusters were angled for a vertical touchdown, stirring up a swirling storm of dust and sand as the shuttle deployed its landing gear and gentled itself toward the ground. The landing was eerily silent, of course. The thin pretense that masqueraded as the Martian atmosphere wasn't thick enough to carry sound.

The AUT—Armored Utility Transport, and called an “autie” for short—touched down with a slight bounce, the cargo ramp in its belly already deploying.

“Okay, Marines!” Wilkie yelled over the command channel. “Double file, and haul ass! *Hut! Hut! Hut!*”

The twin columns of Marines jogged ponderously down a slight rise, passing through the cloud of yellow dust still billowing around the utility craft, then up the ramp and into the darkened troop bay.

A Navy chief in a lightweight pressure suit and bubble helmet waved them on. “Let’s go, Leathernecks!” he called. “We’re on the meter, here! Drop your loads and grab a chair!”

The double row of seats along either side of the troop bay were specially designed to accommodate Mark XLIV CAS-clad Marines. Garroway hit the release for his backpack with its Shrike-C dummies, and passed it forward with the stream of other CAS packs. He found a seat and settled into it, feeling the automatic grabbers take hold, anchoring him in place. As his gauntlet came into contact with a pad on the armrest, he felt the mental connection with the shuttle’s AI, and the flow of data between it and his suit. A moment later, a window opened in his mind, giving him a clear view of the

Martian landscape outside. The Special Forces were gathered in small knots well clear of the LZ, watching.

The autie was already climbing, boosting clear of the ground on its quad of outrigger tiltjets. There was a slight vibration as the jets began angling forward, repositioning for normal flight. The autie's nose tipped up, and then they were accelerating with surprising speed for so clumsy looking a vehicle.

Garroway watched the LZ dwindle, saw the dark and wrinkled gash of the Vallis Marineris opening up on the horizon to the west like a vast wound on the planet's dusky face. The sense of urgency remained. Someone wanted the Marines of Detachment Alpha someplace else in one hell of a hurry. At first, he thought they were shaping an approach vector to Phobos, which was rising in the west, now, well behind the accelerating autie. After a few more moments, though, it became clear that they were climbing beyond the orbit of Phobos, some 9,400 kilometers above the Martian surface, that the shuttle pilots had another rendezvous in mind.

For the first time, Garroway began to consider the obvious, the possibility that something had happened requiring a combat-ready Marine detachment.

No one had passed the word yet, but it *felt* like the Marines were going to war.

12 FEBRUARY 2314

*We Who Are
Asteroid Belt
0740 hrs, GMT*

The huntership decelerated with inertialess ease, coming to a relative halt close alongside the drifting chunk of dark gray rock, almost black, dust-cloaked and cratered. Invisible energies reached forth, caressing the stony, carbonaceous chunk, a leftover tidbit from the formative period of this star system.

Within the eldritch world of the quantum, qualities such as mass, inertia, and gravity all were dictated by standing waves within the background base state of reality known as the zero-point field. Here, within an arena far below those gross and clumsily huge manifestations of matter and energy known as protons, neutrons, or electrons, virtual particles came into existence and, within an instant, vanished again. Manipulating those standing waves allowed matter to be re-arranged, inertia to be banished, and gravity itself to be eliminated, reduced, or redirected. Accessing the zero-point field allowed space itself to be twisted and restructured, permitting faster-than-light travel, as well as the creation of incredible energies drawn from the vacuum of so-called empty space.

We Who Are found and wave-patterned the nameless lump of nickel-iron against the matrix of the zero-point field, then

gently adjusted the parameters determining mass, inertia, and vector. Instantly, the chunk of rock hurtled off at high speed in a new direction, one taking it in-system, toward the bright blue point of light identified as the homeworld for 2420-544's dominant sentient species.

Extending their electronic senses further afield, We Who Are located a second lump of dark stone tumbling through the night and moved to intercept it.

Commodore Edward Preble
Outbound from Mars
0817 hrs, Shipboard/GMT

Escape velocity from the surface of Phobos was only a hair over ten centimeters per second. A single sharp, short burst from the *Preble's* main thrusters, and the Navy transport was moving out from Mars fast enough that the tiny, potato-shaped moon rapidly dwindled to a dark speck barely visible against the orange-rust face of Mars, then vanished. General Garroway felt the sudden cessation of thrust, and the return of the falling sensation of microgravity, and wondered what was happening.

By tapping into the *Preble's* common access datalink, Garroway was able to open a navigational window, which showed that the transport was in the process of rendezvousing with a high-speed AUT coming up from the Martian surface ahead. The shuttle was already in a considerably higher orbit than was the *Preble*, which meant the transport would soon overtake the tiny craft, now three thousand kilometers in front of them.

A further data check revealed the interesting datum that the autie was carrying thirty-two marines of Detachment Alpha, the same group whose exercise he'd just been watching from the relative comfort of the Phobos training facility.

His nephew was on board, one of five or six senior NCOs.

He resisted the temptation to link into the autie's comm center and talk to Travis, to let him know that his uncle was

on board the *Preble*. There would be time enough for reunion later.

Besides, the change in the RST's status, transferring it to 1MIEU and putting it directly under his command, raised a nightmare specter—the possibility that soon, possibly very soon, General Clinton Garroway would be giving orders that meant Gunnery Sergeant Travis Garroway's death.

A warning chimed within his head. Jack Bettisly, his aide, was calling for his attention.

"Damn it, what do you want?"

He felt Major Bettisly's flinch, and immediately regretted the snap of anger. Still, there was no going back.

"Sorry to intrude, sir," Bettisly said. "But we have a feed from three High Guard pickets. They've found the intruder, sir."

"Let me see."

A three-dimensional schematic opened in a new mental window. The intruder's course was clearly marked, as were the last known positions of the monitor *Prometheus* and the patrol frigate *Rasmusson*, several High Guard drones, and Mars, with the *Preble* just beginning to get under way. A tiny white star had detached from the crimson star marking the intruder. "What's that?"

Data unfolded in columns down the right side of the window. "Mass analyses suggests it's a small asteroid, sir," Bettisly told him. "About one kilometer across . . . mass approximately two billion tons. The intruder seems to have nudged it onto a new vector."

Garroway studied the data with growing horror. "Two thousand kilometers per second?"

"Yes, sir."

"That's a hell of a nudge." A cold thought gripped his heart. "Where's it going? What's the target?"

The schematic shrank in the window, showing more of the orbit of Mars . . . and then of Earth. A yellow line projected itself along the rock's projected path, which passed just in front of Earth's current position. The white star tracked down the slightly curving line as Earth moved forward. . . .

"Great Father in Heaven . . ."

"Yes, sir. The rock *will* hit Earth."

"How long?"

"Nineteen hours, forty-seven minutes, thirty seconds from launch."

"Less than a full day. Still, there's time to intercept it."

"Yes, sir." Bettisly sounded uncertain.

"Talk to me."

"Two thousand kps, sir. That's *fast*. Just how are we supposed to intercept it? And the intruder appears to be closing on another small asteroid."

On the schematic, the Hunter ship appeared to leap ahead, vaulting across several thousand kilometers within an eye's blink. Seconds later, a second curving, yellow path drew itself across space, moving almost parallel to the first, but gently converging with it, the two lines intersecting where they crossed Earth's orbit.

"Damn," Garroway said quietly. "It's going to keep throwing rocks."

"That is Quincy's analysis at this point, General."

Quincy was the invisible member of Garroway's command constellation, an AI resident at the moment in Phobos, but who could be uploaded to the *Preble's* on-board computer network once the crew had things squared away. Their precipitous exit from Phobos had pretty much scrambled any hope of an orderly transition for the MIEU command group. They weren't even supposed to be *on* this vessel, which was small, cramped, and possessed a frankly second-rate electronics suite.

But Marines did what they could with what was available.

Even so, Garroway felt momentarily at a loss. What could the Marines do against such a weapon? Stopping falling rocks was the Navy's job—specifically the High Guard. At this larger scale, the mind-window schematic showed several dozen blue stars scattered across the Inner System and the near reaches of the Asteroid Belt. Many were already in motion; the rest soon would be. The World Federation was now going on full alert, at war with the Hunters of the Dawn.

Dozens of Navy warships were converging on the intruder.

But it's not enough, Garroway thought. Not nearly enough. . . .

*We Who Are
Asteroid Belt
0850 hrs, GMT*

The Lords Who Are took note of the swarm of hostile ships converging on the lone huntership, and dismissed the threat, a threat scarcely worthy even of contempt. Analysis of the local species' technological capabilities verified the data assembled from the various local spacecraft already patterned and stored. The local species—the name We Who Are reserved for such might have translated well as “pests” or “vermin”—used spacecraft capable of sustained thrust, but at accelerations so low it would take millions of seconds to reach a meaningful percentage of the speed of light, and they did not appear to possess faster-than-light capabilities at all.

So far as weapons were concerned, it appeared unlikely that they had anything more threatening than high-energy coherent beam weapons, missiles with various types of warheads, or kinetic-kill weapons employing high-velocity masses. Some of those weapons might prove to be a minor threat, if the vermin could get close enough to the huntership to employ them.

The Lords Who Are considered the advisability of a minor demonstration to convince the vermin of their own helplessness. It would be some time, however, before the nearest of the local defenders would be close enough for the huntership to employ its own weapons against them.

They elected to continue snatching small asteroids from orbit and imparting to them new vectors, vectors that would carry them in to strike the third planet, and utterly annihilate the vermin civilization.

Commodore Edward Preble

Outbound from Mars

0924 hrs, Shipboard/GMT

"That's the fifth asteroid launched in the past hour and a half," Admiral Jollet said. "They're testing our defenses by brute strength, throwing enough at them to overwhelm them."

"Testing?" General Garroway said. "It looks to me like an all-out attempt to wipe us off the face of the Galaxy."

"The intruder," Rear Admiral Thom Bennett was saying, "appears to be trying to wipe us out as a species, using classic wave tactics."

Bennett hadn't heard Garroway's comment, of course. Garroway and Jollett, both, were on board the *Commodore Edward Preble*, while most of the virtual conference participants were on Earth, currently seven light-minutes away. The exchange Garroway and the other brass on board the *Preble* were experiencing was old news—seven minutes old, to be precise. For that reason, they were out of the direct comm loop, but they could still talk among themselves.

"One ship?" Lieutenant General Clarence Armitage, Vice Chairman of the Joint Chiefs of Staff, said with a mental snort. "Preposterous!"

"Thom is right," General Eva Cortez said. "If even one of those rocks gets through, it means catastrophe."

Garroway felt the emotions of the other men and women within the noumenal briefing session. It was, he thought, less a formal briefing than a mental chat-room gabfest and sight-seeing session for the Federation's high-ranking brass.

From his point of view, he was still watching the schematic showing the intruder's progress through the Asteroid Belt, together with the fast-multiplying knot of new vectors intersecting at the point where Earth would be in another day and a half. Icons representing some two hundred other officers hung within the schematic with him, including the various chairpersons of the Joint Chiefs, their staffs, as well as a number of senior personnel representing the Federation

Joint Forces Command, both the regular Navy and the High Guard, and the U.S. Marines. More brass were dropping into the noumenon every moment, as the scope and seriousness of the threat became more and more clear. Also present were a growing number of civilian government officials—representatives and congresspersons both from the governments of the United States of America and of the American Federal Union, as well as representatives from member states of the World Union.

Garroway felt the buzz of mental conversations seven minutes past, as well as the ebb and flow of emotions. Those last ranged from genuine fear to outright disbelief; as the intruder kicked more and more kilometer-sized boulders onto intercept courses with Earth, however, outright skepticism among the observers was dwindling.

One of the officers who remained unconvinced, however, was General Armitage. "By 'wave tactics,' Admiral, I assume you mean an attempt to swamp our defenses."

"Yes, General. Five . . . no, six bodies, now . . . streaming in one after the other at two thousand kilometers per second . . . even the High Guard planetary defense AIs can't cope with that. They're *trying*, of course, but they can't guarantee that one or more of those rocks won't get through."

"By my count, there are two hundred thirty-six High Guard vessels currently in Solar orbit," a new voice said. The noumenal icon identified the speaker as Senator Alena Fortier, of Quebec. She was speaking Québécois French, but the AIs managing the mass mindlink handled the translations easily enough. "Perhaps it's time the military finally paid for itself in terms of some *useful* action."

"Madam Senator," Rear Admiral Karen Castellaw said. "Things are not that simple."

Castellaw was the current commanding officer of the High Guard, technically still a branch of the Federal Navy, but operating in most respects as a distinct entity, much like the Coast Guard that still patrolled North American waters on Earth.

"They never are," Major General Edison dryly observed.

"Indeed?" Fortier snapped. "The High Guard, according

to its charter, is there to protect Earth from impacts by comets and asteroids, am I right? In half a century, they've done nothing but act as a drain upon the public treasury. Now, there are asteroids—small ones, anyway, on collision course with Earth. Where, I ask, is the High Guard?"

Senator Fortier had a belligerent reputation. A staunch Democratic Unionist and a leader of the World Disarmament Coalition, she was an adamant and outspoken champion of an old and cherished dream—the total and complete elimination of the military. After eighty years of unbroken peace, many both in the North American Union and within the broader scope of the World Federal Union felt that Humankind could at last dispense with military expenditures entirely, diverting the money and the mind power instead to more peaceful and profitable uses.

Of course, the military's position on that issue was that, if nothing else, one day it would be necessary to face the Hunters of the Dawn. Garroway found it fascinating that now, confronted with the reality and the immediacy of the Hunter threat, Senator Fortier still retained her stubbornly anti-military bias.

"The physics of the situation," Dr. Katarina Walden, of the Union government's Office of Planetographic Studies, pointed out, "are . . . intimidating. Even a one-kilometer asteroid can mass something like three million tons. There are strategies for vaporizing, or, more likely, for diverting something of that size. But these bodies are moving at two thousand kilometers per second. We quite simply don't have anything that can match their courses and speeds in . . . less than eighteen hours, now."

"So?" Fortier asked with a mental shrug. "If you can't catch them with missiles, use plasma and HEL beams."

"Senator, do you have *any* idea how much energy is required to completely vaporize a rock one kilometer in diameter?" Walden sounded exasperated. Garroway was impressed, however, by her reserve. "We will need to target each rock in such a way that a burst of plasma from the weapon strike acts as a kind of jet to shove it aside. If we do that early enough, the rock could be nudged aside enough that it might

miss Earth. *Might*. If we can hit it early enough on its trajectory. At that kind of velocity, however, the rock might well not be shoved aside in time.”

“Then I would suggest that the sooner you begin, the greater the chance of success,” Fortier said.

“You’re right, Senator,” Admiral Castellaw said. “Of course. Our best and most immediate hope is the HELGA system, and I’ve already issued the necessary orders. All three weapons platforms have lines of sight on the incoming targets. They should be able to commence firing within two hours.”

HELGA stood for High-Energy Laser Gun Array. The word “Gun” in that acronym was often challenged by purists as redundant, but the Navy retained the age-old distinction of a *gun* as a very large and long-ranged shipboard weapon, as artillery rather than, say, a rifle. There were three HELGA stations, all sharing a single orbit around the sun between the orbits of Earth and Venus and spaced 120 degrees apart. Solar collector panels nearly ten square kilometers in gleaming expanse captured sunlight—far brighter and more energetic than the stuff that reached Earth—and stored it in the enormous high-capacity, high-discharge batteries that made up much of each orbital station’s bulk.

The HELGA stations, administered by the High Guard, had been designed with only one purpose in mind—to vaporize any asteroid or comet found to be on an intercept path with Earth. Since the twenty-first century, when an attempt had actually been made to destroy the United States through the deliberate manipulation of a ten-kilometer asteroid’s orbit, various Skyfall scenarios had remained the single biggest nightmare facing both military and civilian leaders. In the forty-seven years since the completion of Station One, they’d not once been necessary, though of course they’d been extensively tested against selected target asteroids in the Belt.

“Well . . . those big laser cannons won’t have any trouble with one-kilometer rocks, will they?” People’s Representative Gardenez, of the North American Federal Republic asked.

Castellaw sighed. "I'm sorry, sir, but I can't answer that yet. It takes time between each laser discharge to store up enough energy for the next shot. We're also programming twelve XEL satellites to contribute their fire as well. Between the two systems . . . *maybe* . . ."

"*If* the Hunters don't put so many rocks into the stream," General Dumont, the Marine Corps Commandant, added, "that neither the HELs or the XELs can handle them all."

XELs—pronounced "zels" and standing for X-ray Emission Lasers—were unmanned weapons positioned at strategic points throughout the inner Asteroid Belt. When triggered, a nuclear detonation provided an intense pulse of X-rays, which were focused into a very brief, but very powerful burst of coherent X-ray energy. For obvious reasons, they were single-shot weapons, but the energy each released in a fraction of a second, while substantially less than that of a three-second burst from a HELGA platform, could still vaporize large rocks.

"All available fleet elements are being deployed toward the intruder," Admiral Bennett said. "Unfortunately, it will take time to get there, and we run the risk of having them arrive piecemeal. What's worse, the intruder appears capable of accelerating at incredible rates . . . possibly enough to reach the speed of light within moments." He indicated the schematic, where the red star of the Hunter vessel suddenly winked out, to reappear tens of thousands of kilometers away. "We don't know how the hell that could be possible, but he seems to be providing a demonstration, just for us."

"An application of inertialess technology, obviously," Representative Logan, of the Federal Union observed. "Have we discussed this with the Oannans?"

"There hasn't been time yet, sir," Bennett said. "We have a call in to their delegation on Earth. Not that it can do us any good *now*."

"Maybe they can tell us how to hit the enemy's propulsive system. Cripple it, somehow."

"I doubt it, Senator," Garroway put in. "Remember that the N'mah have been running and hiding from the Hunters for at least five thousand years. If they possessed any weapon

or any tactic that could stop the Hunters, they would have done so by now."

"Well . . . what does the military plan to *do*?" Fortier demanded. "You can't just allow them to walk right over us!"

Garroway felt bitter amusement at her anger, but was listening with only half an ear. He had an idea, but it depended on coming up with some fresh IMAC pods. He opened a download of logistical data, checking the manifests of several military transports in the general vicinity of Mars. Yes . . . the *Cunningham* was in position to rendezvous with the *Preble*.

"There is one possibility," Garroway said, opening his own comm link to the conference and tagging his comments to a windowed playback of the relevant part of the conversation. They would hear his contribution in another seven minutes.

He didn't like making the suggestion, but *every* possibility had to be aired.

"We have a Marine VBSS team on board the *Preble*, en route for the battlespace now," he continued, speaking over the muted voices of the Earth-bound participants. VBSS stood for Vessel Boarding Search and Seizure, a boarding party, in other words. "They were carrying training load-outs, but I've already given orders to begin transferring live ammo from the *Preble*'s stores.

"I see here on the manifest list that there is a section of IMACs on board the transport *Cunningham*. If *Preble* can rendezvous with *Cunningham* and effect an in-flight transfer of those assault pods, we might be able to board the Hunter ship."

He continued speaking, laying out the rudiments of an operational plan. The biggest single difficulty he could see was the fact that the Xul intruder spacecraft clearly possessed both a technology far in advance of anything humans possessed, and a mobility to match. Still, there was a way to at least attempt to overcome the second of those problems. *Maybe*. . . .

Fourteen minutes later, the sounds and images Garroway, Jollett, and the other officers on board the *Preble* were experiencing suddenly reacted to Garroway's suggestion.

"You *must* be kidding!" Fortier said into the sudden mental silence that followed.

"No, Madam Senator," General Dumont said quietly. "I do not believe he is."

"How do you expect those assault pods to get anywhere close to the enemy?" Armitage asked. "An enemy this powerful . . ."

"IMAC pods have quite an extensive bag of tricks for getting in close, sir," Dumont replied. "It's what they're designed to do. I'm wondering, too, if we might not be able to divert some of the HEL and XEL firepower against the enemy ship at a tactically appropriate moment. That much energy, applied in a single burst . . . we might at least blind them, and we could get lucky."

Garroway smiled. Dumont, 131 million kilometers away, had immediately grasped the essence of Garroway's plan, including his suggestion for—momentarily, at least—overcoming the intruder's technological superiority.

"Absolutely not!" Fortier said. "Those weapons are Earth's only hope of stopping the asteroid attack!"

"Madam Senator, we can either chase that damned intruder all over the Solar System, trying to play catch-up . . . or we can find a way to immobilize it. If we can immobilize it, we have a chance, a small one, of getting some Marines on board."

"And what would be the point of that?"

"Madam Senator, the Marines would be armed with backpack K-94 nuclear devices. If just one of those goes off on board the Hunter vessel—or even if we can detonate it up against its hull—well, I doubt very much that even *their* technology could stand up to that kind of blast."

There was another silence as the Marine Commandant's words sank in.

"Are you aware, General," Armitage said quietly at last, "that you are proposing what is tantamount to a suicide mission?"

"Yes, sir. It will be volunteers only, of course. I'm sure that's what General Garroway has in mind."

It was. And Garroway had no doubt that there would be

plenty of volunteers from the assault detachment. He knew what these Marines were like.

"Very noble, General, I'm sure," Logan said. "But Senator Fortier is right. If the HELGA platforms are firing at the enemy ship, they can't be firing at the asteroids threatening the Earth."

"Sir, I submit that by the time *Preble* has picked up the assault pods and reached striking range of the intruder, the matter will already have been settled, one way or another."

Garroway nodded in silent, unseen agreement. He didn't add that a Marine assault on the Hunter warship could *only* take place if some way could be found to immobilize it. So long as it could slip away at the speed of light any time it felt threatened, no human weapon or vessel was going to be able to touch it. They would have to disable the intruder, at least temporarily, or they would never be able to catch it.

Unfortunately, Fortier, Logan, and the other civilian leaders had managed to hijack the informal planning session, turning it into a government-sponsored briefing session. That was one of the problems of chat-room technology; anyone with the appropriate codes and clearance could drop in. He would need to discuss things privately with Jollett, Castellaw, and Armitage.

And with Colonel Lee.

"General Garroway is right," Armitage said, thoughtful. "First things first. Let's see if HELGA and the XEL satellites can stop the asteroids already en route to Earth. After that . . ."

Of course, if Earth's high-energy defenses failed, it was quite possible that there would be no after that to worry about.

High Guard HEL Facility 3
Solar Orbit
1151 hrs, GMT

Captain Gupta Narayanan burst out of the access tunnel, propelling himself with long, easy strokes onto the main

control deck. Microgravity had its advantages, he decided, at least once you were used to it.

"Captain, we are at power," Kali, the station's AI, announced over his mindlink. "We are ready to commence the firing program."

Narayanan pulled himself into the control deck's command chair and strapped himself in. The targeting schematic came on-line, flooding into a newly opened window within his mind.

There were now seven asteroids en route from various points in the Belt, all on paths that converged on Earth.

A targeting curser tracked and locked on to the lead asteroid in the stream . . . or, rather, on the place where that rock would be in another five minutes. It would take that long for the HEL burst to cross the intervening space to the target.

Actually hitting that rock, Narayanan mused, was roughly akin to shooting at and hitting the base of a 10mm cartridge with a BB-sized pellet at a range of one kilometer—an accomplishment made even more astonishing by the fact that the cartridge actually moved six hundred meters between the moment the BB was fired and the moment it reached its target. Targeting such small objects across such vast distances required inhuman precision and accuracy—which, in point of fact, was why the actual aiming and firing were carried out by an artificial intelligence resident within the HELGA platform's computer net.

"Shall I request final confirmation from SPACDEF-COM?" Kali asked him.

Briefly, he considered making the request; standing orders required that formality. In fact, he could be court-martialed for failing to do so.

But it *was* formality only, and his immediate orders—and his duty—were clear. Those asteroids possessed among their number kinetic energy enough to scour every scrap of life from the planet several times over. At HELGA Three's current position relative to Earth, a radio signal would take four and a half minutes to reach Earth, and the reply would take another four and a half. The sooner he initiated the sequence, the better Earth's chances for survival.

The problem was that the HELGA platforms, though designed to protect Earth from asteroid and comet impacts, were deadly weapons of mass destruction in their own right. One three-second beam from HELGA Three striking New York, for instance, would release the energy of ten thousand Hiroshimas, and obliterate the city.

The weapons had been designed and deployed by the United States, but in accordance with the Jerusalem Treaty of 2270, control of the weapon was vested not in the Federal Union of the United States, or in the American Union. The World Union, though still embryonic and with uncertain authority, alone held the firing button for the three satellites. Crews were rotated on and off the stations on six-month schedules, and were drawn from nation states all over the world with histories of non-aggression or neutrality—Sweden, Switzerland, Tuamotu, and Narayanan's own Republic of Andhra Pradesh.

The firing protocols were so complex, the joke was that if a stray asteroid ever did threaten Earth, the dinosaurs would take care of it . . . after the clearance to fire came through from their HQ sixty-five million years before.

Politics, he thought, the word an obscenity.

"Negative on confirmation," he told the AI. "Initiate firing sequence."

"Firing one," Kali told him. "Time Zulu 1151 hours, seventeen seconds."

There was no flash, no sound, no dimming of the station's lights, no evidence at all of the titanic release of power save for the data stream appearing in the targeting window in Narayanan's head. For three seconds, an inconceivable torrent of laser energy streamed into space. Then, the station's massive capacitors drained, the system began recharging for the next shot.

Recharge would take just over forty-five minutes.

12 FEBRUARY 2314

Battlespace
1156 hrs, GMT

In the four and a quarter hours since the huntership had boosted that first small planetoid toward Earth, the rock had traveled almost 31 million kilometers which, on the vaster scale used to measure distances across something as large as a solar system, translated to a little more than one and a half light-minutes. HELGA Platform 3, in solar orbit 132 million kilometers from the Sun, currently and by chance, was five light-minutes from the rock that was its first target.

At their current respective positions, rock, HELGA Three, and Earth formed a triangle with slightly unequal legs—five light-minutes from HELGA to the rock, six from the rock to Earth, four and a half from Earth to HELGA. In physics, one watt of power delivered in one second equaled one joule. The HELGA laser—actually a battery of twenty-five lasers fired as an array—had an output of some 50 billion joules. The three-second beam, then, carried 150 thousand megajoules, the equivalent of 750 twenty-megaton nuclear warheads.

Some five minutes after Kali triggered the HELGA discharge, then, the kilometer-wide rock was struck by the laser energy streaming out from the distant military base between the orbits of Earth and Venus. The beam itself was invisible, of course; there was no air to ionize, no mist of dust or water

vapor in the vacuum of space to call the beam into visibility. The tumbling mountain of rock, however, abruptly flared sun-hot, as a brilliant, blindingly intense star-point of white light ignited at the planetoid's limb.

In fact, the targeting was less than perfect; tiny uncertainties about the rock's precise position and vector meant that the strike was not dead-center on the target, and, though the three-second beam was tracking along the asteroid's calculated inward-bound path, it actually connected with the rock for less than half a second before the rock tumbled out of the beam.

That half-second, however, was sufficient to pour the wrath of over a hundred detonating twenty-megaton fusion bombs into one very small section of the rock's surface. The asteroid was of the type designated a carbonaceous chondrite—the most common of planetoid bodies—and some twenty percent of its make-up was actually water ice. One side of the asteroid was still at the temperature of deep planetary space—nearly one hundred degrees below zero Celsius—while the other half in one dazzling instant attained a temperature close to that of the surface of the Sun.

White-hot plasma erupted from the planetoid's surface, stabbing into space like a rocket's jet. An instant later, the temperature differential shattered ice and stone alike, and the rock mountain disintegrated into an expanding cloud of debris, ranging in size from sand grains to chunks the size of a house.

And, of course, every piece of debris, from dust mote to ten-meter boulder, continued on a vector only very slightly modified by the impact's plasma thrust, still moving at over seven million kilometers per hour.

Commodore Edward Preble
Outbound from Mars
1215 hours

The virtual conference had continued uninterrupted throughout the morning hours, though some participants had

dropped out to attend to other duties, while new ones logged on. Such conferences, Garroway thought, often took on a kind of life of their own, changing, growing, dynamic, as the individual cells left the system and new ones joined.

Garroway himself had logged out in order to concentrate on writing orders for the RST, but then returned in time to watch, with nearly four hundred other men and women, the results of the first firing of the HELGA Three array. Participants were attending from all over the Earth, with the heaviest concentrations in Washington, New York, and Stockholm, the capitals, respectively, of the United States, the North American, and the World Unions. Perhaps ten percent were in space—on Earth's Moon, on Mars or Phobos, in Earth orbit, or in various spacecraft scattered from the Jovian moons to the orbit of Mercury.

Not all of those last could participate in any meaningful, real-time manner, of course. The fourteen-minute time lag between a signal being sent from the *Preble* and an answer being received was annoying; the Jovian system was on the far side of the Sun at the moment, over six AUs distant, with a total there-and-back signal time of ninety-eight minutes. Admiral Hargreave, CO of the Union's First Fleet, was currently at Callisto, and effectively out of the conversation, though his icon was showing.

As it was, Garroway was only able to participate in the background of the conference, his words and ideas coming through almost a quarter hour after the statements that had elicited them. At the moment, though, the attention of most of the participants was focused on the schematic that showed events unfolding in battlespace somewhat closer to Mars than to Earth, in the general region between the Inner Belt and the orbit of Mars. Sensor drones and fighters in the area had picked up images of the first of the asteroidal missiles suddenly brightening to intolerable brilliance, then vanishing. Garroway had seen those images before they reached Earth, and the Earth-bound observers' reaction hadn't reached him until seven minutes after that.

The cheers and shouts, however, clearly marked the moment when they saw those scenes as well.

"Gentlemen!" General Armitage was calling over the chaos. "Ladies, gentlemen! The celebration *is* premature!"

"But we've destroyed the first missile, General!" Senator Kenichi Kondo said. "We've proven that it can be done!"

"One missile . . . and there currently are eight more still en route to Earth. And there will be more, unless we stop the intruder. Otherwise, that bastard will keep throwing rocks faster than we can burn them down."

"But how—"

"People," General Dumont said, "we simply must implement General Garroway's suggestion. There is no other alternative."

"Redirect the HELGA platforms to fire on the Intruder?" Senator Fortier said, her voice conveying her shock at the idea. "That is tantamount to planetary suicide!"

"The data, Madam Senator, suggest that it will be planetary suicide if we simply try to play catch-up with the Intruder."

"There is also the option, General, of trying to communicate with those people. We have the language . . . or a language . . . from our studies of the Singer, and from AI contacts with Hunter ships."

"The *Prometheus* attempted to signal the Intruder," Dumont told her. "You saw how well they listened."

"Then we should try again!"

"Senator Fortier, right now these 'people' as you call them are doing their level best to destroy all life on our home planet! I submit that this is not the time to try to use diplomacy!"

"And if these beings are as advanced and as powerful as you suggest, General, perhaps diplomacy is our one and only hope!"

Damn the woman, Garroway thought. Someone put a lid on her and shut her the hell up! This was not the time to argue the matter. Whether she realized it or not, the entire human race was engaged in battle at this moment, a battle that very well might determine whether Humankind survived, or became extinct.

On the schematic, the red star marking the position of the

Hunter warship winked out, reappearing almost immediately in a new position.

Garroway stared at the new strategic configuration. "Ken!" he called out over the virtual conference link within the *Preble*'s computer net. "Do you see that?"

"I do," Rear Admiral Jollett replied. "If we could hold them there. . . ."

The intruder had just leaped to a new location less than eight hundred thousand kilometers from the *Preble*, and on a general line with *Preble*'s course—two and a half light-seconds away, instead of several light-minutes.

"We can," Garroway said. "At least we can *try*. Will you back me?"

It was, to say the least, a fascinating problem in international military chain of command.

The battle with the Hunter intruder was being directed from Earth. The three HELGA platforms were under the jurisdiction of the High Guard and Rear Admiral Karen Castellaw, but her bosses were Lieutenant General Armitage, of the Joint Chiefs of Staff of the North American Union, and General of the Union Eva Cortez, of the Joint Chiefs of the World Union.

The governments of the world existed in nested series, like Russian Matryoshka dolls—with the World Union above the North American Union above the government of the United States of America. Technically, the United States Marines, though still in direct U.S. service, "belonged" to the North American Union. Technically, too, the World Union did not have its own military, but relied on the military of the NAU to provide protection and order. According to the World Constitution, the WU civilian authority superseded the NAU and gave the orders; in practice, the NAU military had the guns, and, therefore, under the control of the NAU and U.S. civil authorities, the power.

Who was *really* in charge, who gave the orders, had never, until now, been tested. Clearly, Senator Fortier thought she and the WU civil authority did; there was no president of the World Union; leadership was vested in a rotating speakership within the WU Senate. Fortier was not the current Speaker.

That privilege was currently vested in Senator Ivan Danikov, of the Russian Union, but Danikov had not yet logged on to the discussion, and Fortier had assumed control of the battle.

Or so she thought. The actual orders were being given by Armitage and Cortez.

But on an even more practical level, it was Garroway and Jollett who were going to have to make the necessary call. Jollett was the second-in-command of the NAU's First Planetary Fleet; Admiral Hargreave was in command, but currently out of the loop at Callisto.

Garroway, CO of 1MIEU, was the ranking Marine officer on the *Preble*. Jollett outranked him, but technically could not command Marine units unless they were part of the First Fleet's TO&E . . . and 1MIEU was not currently assigned to his command.

But Jollett and First Fleet *could* give orders to High Guard units . . . like HELGA Three.

"You want me to redirect HELGA Three's targeting routine," he said.

"There are two XELs in Mars orbit," Garroway pointed out. "You could fire them as well. I suggest you order all three to fire. We don't know what the effect on the Intruder is going to be."

"Agreed." He sounded glum. "You know, Clint, this is not a career-enhancing situation."

"Fuck that," Garroway said with a bluntness calculated to shock, to startle. "You and I are both at the apex of our careers, anyway. Where else can we go? Except retirement."

"Speak for yourself. Anyway, I was thinking of the court-martial."

Garroway sighed. "Ken, they'll only court-martial us if this doesn't work. And if it doesn't, who's going to be left to head up the court?"

"You've got a point. Of course. Very well. Do you know what you're doing with your Marines?"

Garroway thought for a moment. "We're still two hours away from rendezvous with the *Cunningham*. We're going to have to give up on that . . . send them in straight up. I don't like that . . ."

"Too many unknowns, anyway," Jollett put in. "Like whether an IMAC pod could cut through whatever the Intruder is made of."

"Agreed. Anyway . . . call it another hour to launch, and maybe another hour . . . no, call it two hours to intercept and boarding."

"And we have to hope that HELGA and the XELs will make that thing stand still for it."

"Exactly."

He felt Jollett shaking his head, and at first thought the admiral was refusing him. "It's a gamble, General," Jollett said. "But the stakes are a damned sight higher than our careers. You have my backing. I'll transmit the orders for the targeting change."

"Thanks, Ken."

He felt a rush of relief.

But he also had to stifle the sense of dread that rose, knowing the probable result of the orders he was about to give.

High Guard HEL Facility 3

Solar Orbit

1231 hrs, GMT

Captain Gupta Narayanan looked up at the big time read-out in the HELGA Three control room. Time was an interesting concept when a control system was spread across an area measured in light-minutes. Deliberations in the virtual conferencing taking place in Earth space, as well as the clocks of all Earth spacecraft, were set to the common denominator of Zulu time—also known as GMT, or Greenwich Mean Time, back on Earth.

Damn politics! *Damn* the confusion binding the current chain of command! And, above all, *damn* the laws of physics!

His situation, he reflected, was not an enviable one.

Narayanan stared again at the words, translated into his native Urdu Hindi, glowing in empty space in the air next to

his chair. This new set of orders had just arrived from the general vicinity of Mars, which at the moment was a full light-minute closer than Earth, given with the current configuration of the planets in relation to HELGA. He glanced at another screen, showing a plot-chart schematic. If the Sun was at six o'clock from HELGA's current position, Earth lay at nine o'clock, four and a half light-minutes away, while Mars was at one o'clock, and only three and a half light-minutes away.

Narayanan's take on the politics of the situation was that, by rights, the World Union controlled the military of the lesser NAU and U.S., and *he* served the World Union. Orders should then, by rights, come to him from Stockholm and the WU.

He was currently in command, however, of a High Guard installation which was under the direct control of the North American Union and the NAU fleet. Under that TO&E, Rear Admiral Jollett was his commanding officer.

Gupta Narayanan was devoted to World Unionism . . . Earth's only hope, as he saw it, to end the so-far endless cycle of national rivalries, militant pride, and warfare. The World Union must take precedence over the various assemblies of nation-states that dominated the planet now—the European Union, the Russian Federation, and most especially the North American Union, which dominated world politics now purely on the strength of its military.

His avowed World-Unionist feeling was in fact the reason he'd been chosen for the rotating command roster for HELGA Three in the first place.

But if Narayana was a devoted planetary Unionist, he was also a Material Rationalist. Though Andhra Pradesh was officially a Reformed Neo-Hindu state, and his family had been Vaishnava for uncounted generations, Narayanan, at least, took pride in thinking for himself. The excavations, two centuries earlier, of vast undersea ruins off the coasts of Sri Lanka and in the shallow Gulf of Khambhat had proven—to him, at least, if not to his father—that the hero tales, myths, and legends of *most* world religions rested in the colonization efforts of several extraterrestrial

spacefaring species arriving on Earth eight to ten thousand years ago.

It was now known definitely that the Ahannu had established colonies at several points on the Earth, that those colonies had been annihilated by the Hunters of the Dawn, and that the Oannan/N'mah had at least visited the planet after the Hunter attack, helping scattered and disorganized tribes of primitive humans to reacquire the rudiments of civilization. There was no need to assume the intervention of deities when it was clear that star-traveling aliens had interacted with humans in the remote past.

Nor was it necessary, as so many of the newer world religions did nowadays, to grant those aliens divine status—either as gods, or as demons.

The point was that Narayanan thought for himself. What was happening now in near-Arean space transcended world politics or the philosophies of government and power.

His operational orders from Stockholm emphasized the need to keep the World Union tightly in the loop when it came to conflicts of orders or authority, and to consult with them closely if there were any conflicts. They would expect him to link through to the Senate in Stockholm and to General Linden at the Bureau of the Military and ask *their* opinion.

But the clock was running. It was now 1231 hours, GMT. If he put a call through immediately, it would be 1235 before they received the message on Earth, and 1240 at the earliest before he would have an answer.

And he *knew* General Linden, and he knew the WU Senate. It might be hours before they decided to get back to him with a yes-no decision.

The HELGA array would be ready to fire at 1243. In fact, he could fire the weapon now, though the capacitors would not be up to full power for another fourteen minutes.

The *Preble* was seven light-minutes away, which meant that a request for a clarification of those orders would not be answered before 1245 hours. And *any* delay was serious.

It is of the utmost importance that HELGA Three take the

Intruder under fire at the earliest possible opportunity, as it may move from its new location at any moment. So read the orders just downloaded to Kali from Admiral Jollett.

It was, he thought, what the Americans liked to call a “damned-if-you-do, damned-if-you-don’t” situation. If he obeyed Jollett’s direct order, he could be court-martialed by the Bureau. At the very least, he would lose his command, and his future career with the nascent WU military organization would be questionable at best. If he waited to consult with Stockholm, he would never be trusted by New York again, or by the military arms of the United States.

But worse by far—and the deciding factor—was the tactical situation. The Intruder would be in an ideal position for only a few moments, at best, and might leave at any instant. The sooner he targeted the Hunter vessel, the better Humankind’s chances in this fight.

“Kali?”

“Yes, Captain Narayanan?”

“Retarget and reconfigure targeting schedule. We are taking the Intruder under fire.”

“That is in violation of your orders from Stockholm, Captain. You are required to consult with Stockholm.”

“I am well aware of that. I believe the situation warrants this action.”

“Very well. I am retargeting the array.”

Retargeting required only an adjustment of the primary mirror, a change of a couple of degrees. There was no sensation of movement or of acceleration within the microgravity of the control deck.

“Retargeting is complete. We are locked onto the coordinates provided by the *Commodore Edward Preble*.”

“Initiate firing sequence.”

“Capacitors are not yet up to—”

“The target is not solid rock. Fire. Now. If you please.”

“Firing.”

If the AI governing HELGA Three’s systems was chagrined, it showed no sign of the fact. The energy of multiple fusion bombs streamed into space.

*We Who Are
Asteroid Belt
1236 hrs, GMT*

The Lords Who Are had directed the huntership to approach the fourth planet of this system. They'd detected a high concentration of electromagnetic signals emerging from several points on the planet's surface, and from the inner of the planet's two small moons, and there were a number of spacecraft in the vicinity as well. The Lords Who Are felt it necessary to examine the world more closely, especially in regard to its military capabilities and potential.

The blast of coherent energy that struck the huntership, then, caught the Lords Who Are somewhat by surprise. Their approach had been cautious, with EM shields fully up and powered, but they were prepared for an attack from the planet in question, or from one of the tiny spacecraft swarming through this region; the laser beam arrived from a different direction and source entirely—from a base circling this system's star between the orbits of the second and third planets.

That orbital base had fired once, a few tanut earlier, and at least partially annihilated the first of the asteroids already set in motion toward the third planet. The Lords Who Are had analyzed the data, and concluded that the laser array was designed to intercept and destroy small asteroids, but that it was not primarily a military weapon. The array's output, based on the reflected light from the laser strike against the rock, suggested that the array was not capable of seriously threatening the huntership in any case.

It was clear now that the analyses of the beam's power was understated by at least eighty percent. Possibly, much of that initial beam had actually missed the hurtling asteroid, and been lost in deep space, a possibility that the Lords Who Are had not considered.

They considered it now, as the beam struck the huntership's shields, overwhelmed them, and drove them down. Star-hot radiation struck the living surface of the huntership, flash-boiling vast quantities into the vacuum. The power

plant and the reactionless drives, both those that maneuvered the huntership through normal space, and those that made faster-than-light travel possible, began boiling away an instant later, as heat exchangers and quantum dampers strove to compensate for the torrent of coherent EM radiation.

Worse, optical and other sensors located in the huntership's skin were seared into uselessness. New ones could be grown, but, for the moment, at least, the ship and the Lords Who Are were blind, deaf, and helpless.

Given the technology of the species inhabiting system 2420-544, this was not a serious situation, but it was irritating. And frustrating. Vermin were not supposed to fight back.

There would be no more experimentation with the locals' defenses. The damage to sensors, power plant, weapons, and drives would be repaired, the huntership restored to full operational capacity, and the worlds of this star system would be sterilized.

Once and for all.

Assault Detachment Alpha

On Board Commodore Edward Preble

Outbound from Mars

1308 hrs, GMT

"All right, Marines," Garroway bellowed over the platoon channel. He was standing in the central aisle of the crowded autie, gauntleted hands braced on seatbacks on either side. The CAS helped him stand, but it still wasn't pleasant. They were pulling, according to the telemetry coming through his link, two and a half gravities. "Noumie briefing in five! Check your contacts!"

"Damn it, Gunny," Corporal Kevin Yancey said. "When can we peel out of these tin cans? It's getting freakin' ripe in here."

"Stew in it, Yancey. 'Your combat armor is the Marine's skin. Your combat armor *will* keep you alive and able to kill your enemies. You *will* care for your combat armor as though it was your own body. . . .'"

The old litany out of boot camp raised a chorus of groans from the Marines, which had been Garroway's intent. A griping Marine wasn't necessarily a happy Marine, but he *was* an alert and attentive one. And he needed their attention now.

He didn't blame them, though. They'd been suited up for the better part of nine hours, now, ever since they'd prepped for the IMAC launch at zero-dark-thirty that morning, Zulu. The Marine CAS was a flexible and remarkably versatile instrument. It had its own water supply, and a ready cache of combat rations, which, of course, the more inventive Marines stocked with candy bars and other gedunk. It had attachments to let you piss and shit, too . . . all the comforts of home.

Well, most of them. The trouble was, after a few hours sealed in the thing, the best filtering and air scrubbing cyclers in the world couldn't keep up with the canned stink of excrement and sweat. They *said* you got used to it after a while. Once, Garroway had been on a training exercise where he'd donned a CAS and kept it donned for fifty-three hours. "They" were wrong.

"Man, I don't see why we have to stay suited up either, Gunny!" Sergeant Roderick Franks said. "This stink ain't never comin' out!"

"Don't worry, Roddy," Chrome told him. "You couldn't get a date, anyway."

"Says you. Anyway, we all know the brass is just jerking us around."

"Jack in and ice it, people," Garroway said. "The word is we're on another op. We stay in the cans until the Man says otherwise. Ooh-rah?"

"Ooh-rah!" several Marines chorused back . . . but not many, and not with a lot of enthusiasm. Morale was not good.

Lieutenant Wilkie had passed the word coming down from higher up on the chain of command. The RST had been ordered both to stay suited up and to remain on board the dust-off autie, which had been swallowed whole a few hours ago by the transport *Preble*. Now they were going *some-*

where in one hell of a hurry. Two point five Gs was about max for a *Patriot*-class transport.

That told Garroway that they wanted the Marines ready to go at an instant's notice. Unfortunately, no one had yet bothered to tell any of them what the hell was going on.

But maybe that was about to change. Wilkie had just passed the word that there would be a noumenal briefing in five more minutes. *About damned time*, he thought fiercely. Marines never liked operating in the dark . . . at least, not the kind of political-situational darkness that even Mk.XC night-vision equipment simply could not penetrate.

The minutes dragged past. Then the noumenal link alert flashed on. Garroway took his seat, making the connections with his armor gauntlets on his seat.

Lieutenant Wilkie's virtual image appeared in the window that opened in his mind. The face looked a lot like Wilkie's real face, Garroway thought, but had obviously been aged a bit, to give it a more experienced and commanding presence. Garroway didn't like playing that sort of game with the noumenon, though he knew a lot of officers who did.

"Listen up, people," Wilkie said. "We have new orders. Approximately four hours ago, an alien spacecraft entered our solar system and destroyed several of our ships, including a *Titan*-class High Guard cruiser. It then proceeded to accelerate several small asteroids on new courses, apparently in an attempt to bombard the Earth.

"A few moments ago, the alien changed its position, moving to a point less than eight hundred thousand kilometers from the *Preble*. At that point, the High Guard heavy laser arrays took it under fire, and appear to have disabled it. We have been ordered to board the alien, and destroy it."

Garroway listened, reserving judgment, but waiting for the proverbial second shoe to drop. Clearly there was a lot that Wilkie wasn't saying . . . though whether that was because he was withholding information from the enlisted personnel, or because no one had bothered to tell him the whole story, there was no way of knowing.

The biggest question was . . . what could thirty-two Marines do against an alien warship capable of flinging

asteroids at the Earth? It sounded like it must be one of the fabled Hunters of the Dawn . . . something like the two-kilometer-wide Singer discovered three centuries ago on Europa, or the Hunter ship that had come through at Sirius . . . and those things were *huge*.

The only way a handful of Marines could take out something that big was . . .

“In order to effect the target’s destruction,” Wilkie’s image went on, “the RST is being issued all available K-94 packs on board the *Preble*. I need five volunteers to actually deliver the weapons into the enemy spacecraft.”

That was the other boot.

Five Marines were being asked to commit suicide.

And the rest almost certainly would die with them.

12 FEBRUARY 2314

Assault Detachment Alpha
On Board Commodore Edward Preble
Outbound from Mars
1412 hrs, local

“I want to volunteer, sir.”

The face of Lieutenant Wilkie’s icon didn’t change expression. “Request denied.”

“The hell it is. You wanted volunteers. I’m volunteering.”

“Gunny . . . I don’t think you understand. I can’t let you go out there.”

Garroway was startled by that. “Huh? What do you mean? Sir, we’re *all* going on this op.”

“You’re not. I want you to stay on board the *Preble*.”

“Fuck that! Do you think I’m going to watch my boys and girls vaporize themselves from a safe distance? No way! Sir.”

“Gunny . . . your uncle is on board the *Preble*.”

That stopped him for a moment. “My . . . uncle?”

“General Clinton Garroway, yes. He came aboard at Phobos, when they evacuated the high-ranking brass.”

Garroway gave a mental shrug. “Doesn’t change anything, Lieutenant. I *am* going on this op. With my people.”

He felt Wilkie hesitate. “If you buy it in there . . .”

“C’mon, Lieutenant. Uncle Clint didn’t order you to pull me off of this run, did he?” The very idea was ludicrous.

Both Garroways were Marines. Both knew what that meant. "Are you telling me you discussed it with him, and he said no?"

"No. Of course not. But regulations—"

"If I know the General," Garroway said, interrupting, "he's going to be looking for an excuse to come along with us. If you want to quote regs at someone, talk to him. This is *your* op to lead, sir, not a goddamn general's!"

"Roger that, Gunny." He felt the lieutenant's mental sigh. "Okay. Forget what I said. You're on the op."

"Affirmative, sir. But what I wanted to say is . . . I want one of the boom-packs."

"Denied."

"Sir, it's my *right*. . . ."

"And it's my right to refuse. We're not leaving you on the Intruder."

"Damn it, Lieutenant, how can I let five of my people volunteer to go out in a nuke fireball when I won't do it myself? My uncle would grab one and go in a second."

"No. Your uncle knows that a very great deal of money, time, and effort has been expended in making him a general. The days when an officer led his men by running out in front of them and shouting 'follow me' are long over."

"But—"

"Furthermore, Gunny, the platoon needs you. *I* need you. You know as well as I do—better, maybe—that a unit's success and efficiency both depend on the experience of its senior NCOs. I cannot afford to lose you."

Garroway had worked with Wilkie long enough to know that tone, to know that the lieutenant was not going to give in on this. The man might be barely out of Annapolis, but he could be as gold-plated stubborn a bastard as any gunnery sergeant when he set his mind to it.

"Therefore, Gunny," Wilkie continued, "if you insist on going along, you will go in your capacity as senior NCO, to lead the other Marines and to support me as CO. Is that understood?"

"Yes, sir."

"Good. Are your Marines ready to boost?"

"Absolutely, sir."

"Load-outs checked?"

"Yes, sir." He resisted the temptation to add *of course*. "We're going in light with expendables, but we have four extra pigs."

"And the boom-packs."

"Yes, sir."

"Good. Pass the word, then. Fifteen more minutes to launch."

"Aye, aye, sir."

"Dismissed, Gunny Garroway."

Garroway broke the link, and was again aware of his surroundings—sealed inside his CAS, squeezed into one of the chairs on the cargo deck of the autie with thirty other Marines. The lieutenant was riding this out in relative comfort up on the flight deck.

Briefly, Garroway considered uplinking through to his uncle, but decided against it almost before the thought had fully formed. No sense in risking having to disobey a direct order. Besides, once you started going around the chain of command to get what you wanted, discipline and order started to break down. There was a reason for the chain of command, and both Garroways were dedicated to upholding it.

Besides, he wasn't sure his uncle even knew he was a part of Detachment Alpha. Generals didn't usually pay much attention to the individual grunts, and the IMAC tests weren't 1MIEU's concern yet. Garroway didn't know how his illustrious uncle had turned up on Phobos, but he doubted very much that it had anything to do with *him*.

Travis Garroway was a Garroway on his mother's side, but, like several others in the family line over the past century or two, he'd chosen to take his mother's family name at his Naming Day ceremony. His father, a psychtech applications specialist with Dynate Systems in Atlanta named Travis Kraig, had been disappointed, understandably, but he'd understood. Travis's father had never been in the military, but simply by marrying into the Garroway family, he'd come to learn a hell of a lot about the Corps, and what it meant to bear that name.

Hell, most of why he'd chosen the Garroway name was due to his Uncle Clint, who'd been a lieutenant and, later, a captain running a platoon in 1MarDiv when he'd still been in his early teens. Some of the stories he'd heard back then about the Corps had fired his passions . . . but even more he'd been hooked by the historical stuff involving his own family, Major Mark "Sands of Mars" Garroway, Lieutenant Kaitlin Garroway, Corporal John Esteban Garroway, and others. *Many* others. It certainly wasn't true that *all* Garroways ended up in the Marines, but there were enough ghosts looking over their shoulders to make anyone in the family think twice about joining—for instance, and perish the thought—the Navy.

He sighed. Wilkie was right, of course. He didn't belong on the suicide squad. But he didn't have to like the alternative.

Suicide squad. That was what some of the Marines in the platoon were calling it, of course, though Garroway, Chrome, and the other senior people were trying to discourage that idea. This would be a team effort . . . gung ho. *Everyone* pulling together.

No one would be left behind.

Even so, it was hard to imagine hauling a thirty-one kilo pack containing a 120-kiloton nuclear device into the bowels of an alien starship without thinking in terms of suicide. No one knew what kind of close-in defenses the Hunter of the Dawn warships possessed. No one knew for certain what the crew was like. Xul starships appeared to be crewed, or at least *defended*, by mobile machines . . . though the vessels seemed also to be little more than bodies housing titanic and very alien artificial intelligences.

Did they possess other means for discouraging enemy troops from coming onboard and leaving unpleasant surprises behind, surprises such as a quintet of K-94s?

No one knew. But the Marines of RST-1 would be finding out for themselves very soon now.

"Equipment check," Garroway called. "Everybody check your buddy."

The Marines were paired off, each with a partner . . .

except for Garroway, the platoon gunny. He watched the others check one another, moving down the crowded aisle. "Chien! Check your starboard-side harness. You're dangling."

"Right, Gunny."

"Tomasek! Shorten up that strap on your 'thirty."

"Aye, aye, Gunny Garroway."

He continued making his way among the men, checking equipment, but mostly letting them see that he was there with them. Twelve of the thirty were newbies straight out of boot camp. And two of *those*, he saw—Istook and Lowey—had volunteered to backpack a couple of the '94s.

Both were sitting next to each other on the starboard side aft, and their vitals readouts showed they both were scared. Well, hell. So was Garroway.

"Hey, Marines," he said over a private channel. "How's it going?"

PFC Gwyneth Istook was a pale, red-headed youngster from Sebree, Kentucky. Private Randolph C. Lowey was a black kid from Manchester, Georgia. "Doin' okay, Gunny," Lowey said.

"Yeah," Istook added. "*Ooh-rah!*"

"I want you both to stick close to me, understand? No heroics. No wandering off."

"Right, Gunny."

"Okay, Gunny."

"This is *not* a suicide mission. You will follow me in, place your devices, and follow me out. Got it?"

"Got it, Gunny." Istook's mental voice was level and hard.

"Good."

He wished he could be as sure of that as he sounded.

"Uh . . . Gunny?" Lowey asked. "What if that thing collapses while we're in there?"

It was a question for which there was no answer. Marines had boarded a disabled Xul huntership once before . . . and escaped moments before the black hole that apparently powered the thing had devoured the entire mile-long hulk.

"Then we're dead," he replied, his voice cold. "But we'll be dead so fast we won't even know what hit us. And we know the bastards won't take the rest of humanity with 'em. Right?"

"Right, Gunny. It'll be quick?"

"Faster than an eye-blink."

He didn't add that it would *also* be quick if they all went out in their own nuclear fireballs. They knew. In a way, it was a kind of blessing. Most Marines Garroway knew were more afraid of being seriously wounded or mutilated than they were of a fast and clean death. There was scuttlebutt—*only scuttlebutt*, he reminded himself—that if the Xul captured you, it was neither fast nor clean.

Casualties in the unforgiving vacuum of space tended to be fatal, and rapidly so, in any case. But right now, he thought, every man and woman in the autie must be thinking about the alternatives.

"*Five minutes!*" sounded over the command channel. "*Everybody strap in!*"

Garroway made his way back to his seat, squeezing the bulk of his CAS into the bucket between Corporal Visclosky and Sergeant Bonilla.

"Think they'll have the front door open for us?" Chrome asked him over a private channel.

"Damfino," he replied as the grabbers snugged him in. "Wish we'd had time to load on some IMACs."

"Roger that. This whole fucking op feels like the brass is making it up as they go along."

"Yeah. What if we can't breach the objective's hull?"

"Then we'll do it the Marine way," Garroway told her. "Improvise, overcome, and adapt."

"We can use Will-kill's head as a battering ram."

Garroway let that pass . . . and hoped, for Chrome's sake, that Wilkie wasn't monitoring the private channels. Chances were, though, that the lieutenant had other things on his mind right now.

Like how the hell the RST was going to get inside the Intruder if its hull hadn't been breached.

Garroway, along with most of the Marines in this compartment, had studied the intelligence data gleaned from studies of the Singer, found almost three centuries before beneath the ice of the European world-ocean, and from the battle with a Hunter-of-the-Dawn starship at the Sirius star-

gate 144 years ago. The Xul Hunters possessed a technology that made human starships look like stone axes by comparison.

But that technology *could* be overcome. The ship that had emerged through the Sirius stargate had been protected by an electromagnetic force field of some kind, designed to divert charged particles, but it had been crippled by the field expedient of turning the plasma drives of seven starships against it. That concentration of charged particles had evidently overwhelmed the Xul vessel's shielding and breached the hull, allowing a small Marine boarding party to enter.

A boarding party, Garroway thought with a dark smile, that had included one of his Marine ancestors—his great-granduncle Corporal John Esteban Garroway.

According to the records, studied in almost obsessive detail by generations of Marines since, the Xul starship had been destroyed by a rogue micro-black-hole released by its own disabled drive, literally collapsing into a gravitational singularity of its own manufacture. Before that collapse, however, the Marine boarding party had been able to tap into the equivalent of the Xul's computer net, information that was still being studied, translated, and argued over.

This time, the Marines would be going in to make sure the Xul monster was destroyed.

The big question was whether they would even be able to get on board. Intelligence data suggested that the Xul's outer hull was a manufactured synthetic tougher than diamond, resistant to nuclear explosions and other forms of large-scale mayhem. IMAC pods were designed to use special nanodis-assembler docking cuffs that would eat through anything, even Xul hulls. In the absence of fresh IMACs, though, the Marine RST was going to have to wing it. Four Marines were equipped with portable disassemblers; it would be a lot simpler if whatever had disabled the Xul starship had also burned a hole through it.

What had they used? The XEL pods orbiting Mars, and in the Asteroid Belt? The HELGA platforms in solar orbit? Or had someone gotten lucky with an antimatter warhead?

Well, they would know in a few more minutes. *If* the Xul were disabled enough not to be aware of their approach.

Damn it, this op *was* suicide . . . or close enough as made no difference.

*We Who Are
Asteroid Belt
1417 hrs, GMT*

The Lords Who Are were . . . frustrated.

The group mind that comprised the guiding intelligence for the huntership did not understand, could not understand, emotional responses such as fear or anxiety, any more than it could comprehend concepts such as individuality. From their studies of various organic beings—the vermin that infested so many planetary bodies—they understood that there were such things, but they could never experience emotions for themselves.

But the Lords Who Are did understand that peculiarly unpleasant inward disturbance, that inner conflict of desire and acceptance, that arose when a planned and expected outcome was thwarted by unforeseen events. Indeed, that might be the closest We Who Are could ever come to experiencing anything like emotion.

They experienced it now, however, as they took stock of the current situation. The local system's vermin had somehow managed to overwhelm the huntership's shielding, and blind it as well. Analyses of the vectors of several nearby vermin spacecraft suggested that the locals were going to try for an intercept. That could not be permitted.

Another concept We Who Are rarely needed to deal with was the idea of hurry. Time, generally, was simply another factor to be worked into the equations of the moment. But it was imperative, now, that repairs be completed in a very great hurry indeed. Clearly, the locals should be classified as a 'amv' yet, meaning a serious threat to We Who Are.

A threat requiring the immediate sterilization of this entire star system.

Assault Detachment Alpha
Autie Navy Sierra 1-1
1417 hrs, GMT

"Three . . . two . . . one . . . grapple release."

Garroway felt the jolt as the autie was cast clear of the *Commodore Edward Preble*. They were falling free through empty space once more.

"We're clear," the mental voice continued. *"And . . . primary ignition in five . . . four . . . three . . . two . . . one . . . ignition!"*

A giant's hand slammed down on Garroway's chest, pressing him back into the thinly padded seat. The AUTs—like the *Preble*, and like most human-crewed spacecraft nowadays—made use of Oannan drivefield technology, but that only *reduced* the effects of inertia, allowing higher accelerations and more violent maneuvering than would otherwise be possible with a human payload. The effects of acceleration were still felt, and they were still unpleasant.

The autie boosted hard for two minutes before the blessed relief of zero-G again enfolded him.

"C'mon!" one Marine griped over the platoon channel. "When do we get to see where we're going?"

"Belay that," Garroway snapped. Every Marine on the autie was keyed to the breaking point. It was the platoon gunnery sergeant's job, *his* job, to make sure they didn't actually snap. "When they have a feed, they'll give it to us. For now, keep hitting your weapons checklist. Ooh-rah?"

"Ooh-rah." But the response was scattered and weak.

In fact, the team had been over its weapons and equipment checks time and time again already. They were as ready as they could be . . . as ready as *any* military strike force could be flying blind into an unknown tactical situation.

"How about it, Lieutenant?" he asked, using the private command channel. Wilkie was on board the autie, though he wasn't on the cargo deck with the rest of the Marines. As CO of the op, he would monitor things from a console-couch in the AUT's cockpit. "They haven't told us a fucking thing.

Right now, morale sucks and our performance is going to suffer for it. When do we at least get to see where we're going?"

"Like you just told them, Gunny," Wilkie said. "When they decide to give us something to look at. In the meantime, we have to be patient."

"Yeah, yeah, yeah, 'patience,' " Garroway replied, falling back on an old joke. "How long will that take?"

Wilkie didn't reply, however.

Garroway was concerned about the lieutenant. He was almost as new to the Marines as Lowey, Atkins, and a couple of the other newbies were. According to the man's personnel files, he'd commanded a platoon Earthside out of Annapolis, but that had only been for three months, until he'd been assigned to SCS, Space Combat School. After that, he'd been sent straight to RST-1, and that had been just two months ago. Garroway had no doubts whatsoever about Wilkie's technical qualifications. But he did wonder about his ability to lead Marines. In his two months with the RST, Wilkie had seemed . . . remote, somehow. Nothing Garroway could really put on the table and criticize, but his abrupt manner was worrisome, sometimes. Distracted. And inflexible. A good Marine officer listened to his senior NCOs carefully, even let himself be guided by them. Wilkie, somehow, seemed driven by his own agenda, with a single-mindedness that had won him the nickname "Will-kill."

The joke was that no one knew who his single-mindedness would kill—the enemy, or the Marines under his command.

But that was outside of Garroway's control. A good platoon gunny got his people through all kinds of obstacles and problems—including those presented by obstinate or know-it-all junior officers.

Damn it, though, this time it was worse than usual. *No* information was coming down from the top . . . and that made Garroway's job a hell of a lot tougher.

The minutes dragged by, as stress—measured by the bio readouts for each member of the platoon—grew to near-intolerable levels.

Only in the last couple of minutes did the Marines see what was awaiting them.

The datafeed, according to the peripheral alphanumerics, was coming from an unmanned drone approaching the Intruder. *That*, he thought, *is why the delay. We didn't have anything close enough to send us a picture.*

The alien was definitely a twin of the Xul starship that had come through the stargate at Sirius a century and a half ago—two kilometers long, a slender needle forward, gently swelling into bulges and protuberances of unknown purpose farther aft, the whole gleaming gold in the weak light of a distant Sol.

And—the God of Battle be praised—it looked dead.

Looked. That was the operative word. The HELGA lasers had slashed into the rear quarter of the ship, leaving that end raggedly truncated and surrounded by a slowly expanding cloud of dust, frozen mist, and debris. Much of the golden hull forward was scorched and blackened.

Still, he'd studied recordings made at the Battle of Sirius, and this didn't look as bad as the damage that had taken out the other Hunter vessel. The Marines would have to assume that whatever passed for crew over there were very much alive and ready to defend their property.

Garroway heard the mingled comments of several of the watching Marines.

"Jesus! Look at the size of that thing."

"Hey, Cowboy. Size doesn't matter. *You* should know that!"

"What are we gonna do . . . fly up its ass?"

"You got a better way to goose that bitch?"

Abruptly, the image winked out, raising an angry chorus of complaints and groushings.

"Hey! Who turned it off?"

"Let us see, damn it!"

"Listen up, people," Wilkie said over the platoon channel, overriding the grumblings. "They just passed the word that they're going to trigger two XELs in a minute. It'll be like a preliminary bombardment, giving us some cover going in. They switched off the drone's feed to save its optics."

The grumbling abated somewhat, but not entirely. For Garroway, though, that was good news. Hitting the Xul intruder again, moments before the RST boarded it, might make the difference between survival and death.

And if we're real lucky, he thought, they'll overdo it and the damned thing will be vaporized! He found he didn't mind at all the possibility that this operation would be aborted at the last minute.

Battlespace

1443 hrs, GMT

The X-ray laser platforms in extended orbit about Mars were under the control of an artificial intelligence named Artemis. She was, in fact, a software clone identical in most respects to Kali, who was handling the long-range targeting of the Xul intruder at HELGA Three, but she was resident in the military computer network that embraced Mars, Deimos, and Phobos, as well as several of the warships currently within a few light-seconds of the Red Planet.

Her name was apt. In Greek mythology, Artemis was half sister to Ares, the God of War who became Mars when the Romans acquired him, and she was a huntress, expert with the bow. Artemis wasn't using a bow now, of course, but she was having to take very careful aim at a target several light-seconds distant . . . which meant she had to take into account the target's residual velocity of several kilometers per second relative to the planet.

The XEL satellites could deliver only a fraction of the energy yield of a single HELGA shot, but every indication seemed to suggest that the Xul ship's energy screens were down. If so, Humankind might have just lucked out; XELs were designed to vaporize mountain-sized boulders on an intercept course with Earth, or at least vaporize enough of them that they were nudged, hard, into a new path.

Artemis was about to nudge the Intruder . . . hard.

Her targeting task was made more difficult by the fact that

the XELs were on opposite sides of Mars, and separated by almost two light-seconds. Artemis had to time the triggering as well as take into account the time it would take the bursts of X-ray energy to reach the target. For optimum effect, one X-ray laser pulse should hit the target no less than half a second after the other.

She was also at a disadvantage because there was only one drone within imaging range of the target right now, and she'd just switched that off in order to give her something by which to make a damage assessment after she fired.

Like the expert software system that she was, Artemis took all into account, made the necessary calculations—adjusting even for the slight bend in space created by both the Acrean gravity well and the much smaller gravity well created by the black hole inside the target's drive system. She delayed the shot as long as possible so that the Marine shuttle now approaching the target would enjoy the maximum effect, but not so long that she risked catching the AUT in the two beams of coherent X-rays.

At precisely the appointed moments, the two XELs detonated in nuclear fury, a hair over a second apart. In each, a 10 megaton fusion explosion generated an intense pulse of X-rays, which were shaped into coherence and given an aim point by powerful magnetic fields a stark instant before the generators of those fields were vaporized.

Two pulses of X-ray energy, each a tenth of a light-second long, flashed across intervening space. Both were invisible, both due to the airlessness of space and to the fact that X-rays are invisible to the human eye, but at the last instant both showed as dazzlingly bright threads of light as they seared through the cloud of dust and gas now surrounding the target. For another instant, though no one was present to see it, an intolerably brilliant point of light dazzled off the Xul ship's side.

One point. The other shot had missed. Even the best AI expert system wasn't perfect.

But when Artemis switched on the drone image feed again, it was clear that the first shot had hit, and with good

effect. The target had not vaporized, unfortunately . . . but it had been badly holed amidships.

Artemis transmitted a brief signal to the approaching AUT. "You are clear to board."

The Marines were going in.

12 FEBRUARY 2314

Assault Detachment Alpha
Battlespace
1508 hrs, GMT

Garroway felt his gut twist as the autie spun end for end. The image of the objective didn't change, of course, since it was coming from a remote drone. At least they had an image now; from the drone's vantage point, it looked as though the XEL lasers had burned another hole into the Xul giant, roughly amidships.

A flashing red light illuminated the autie's cargo deck—warning that the compartment was now in vacuum. For several minutes, now, the atmosphere had been bleeding away into storage tanks belowdeck. The Marines did not want to have to deal with the explosive effects of sudden decompression when the aft hatch opened up.

Acceleration slammed again into Garroway's chest, and he heard the stifled gasps of several other Marines on the platoon channel. The autie was decelerating hard, backing down toward the objective as it fell stern-first, killing its residual velocity.

He found himself fervently hoping that the navigational AI piloting the autie knew what it was doing. Inertialess field or no, if they hit the Xul vessel too fast, all the Oannan technology in the Solar System wouldn't keep them all from

being reduced to bloody paste inside their armor—*Spam in a can*, as the old saying put it.

He wondered what Spam was. It didn't sound pleasant.

To take his mind off that claustrophobic image, he checked his Hawking 34mm chaingun—again. The *Preble*, fortunately, had been carrying a store of live ammo, including cases of 34mm rounds, both AP and HE, and the Navy ratings had passed what they had down into the autie en route. Unfortunately, the supplies of expendable ammo were sharply limited—only about a thousand rounds per man. That meant the Marines' ammo bins were less than a third full.

Still, it was better than going into live combat with training rounds. And the team's pig-gunners all had fresh power packs. His chaingun loadout gave him a standard AP-HE three-to-one ratio—three rounds of armor piercing, followed by one of high explosive, a mix guaranteed to cut through just about anything a human opponent could throw at them.

Of course, these were not human opponents. He tried not to think about the possible consequences of *that*, either.

The deceleration went on for a long time. At the last moment, as his vision started to blur, Garroway saw the autie on the drone feed, a tiny bright star moving fast—*too* fast—toward the gaping hole in the Hunter ship's flank.

Hell, where was the external feed from the autie? There ought to be a camera up, to show them where they were going . . . but there was no time to think about that.

"Brace for impact!" he called over the platoon channel.

In the image window in his mind, the star vanished into the far vaster mass of the Xul ship, slicing through tangled wreckage. The jolt slammed him back against the seat, nearly driving the breath from his body. The impact was silent in hard vacuum, of course, but he could *feel* the shuddering, grating vibrations of hull metal sliding through whatever the hell the Xul vessel was made of, transmitted through deck and seat.

And then he felt the familiar dropping sensation of zero gravity. The seat grabbers released him, and he flexed his body, drifting into the aisle between the seats, which now

felt more like a tunnel, with no up or down, no deck or overhead. "Okay, Marines! Stand up! By twos! Secure your drift!"

The tunnel began filling with armored Marines moving gently out of their seats and turning to face aft, gripping the seat backs in gauntleted hands to keep from floating free. Aft, the main hatchway was opening up, the ramp swinging slowly out of the way. Peering past the shoulders of the Marines in front of him, Garroway could see . . . blackness. An empty cavern.

At least the hatch is opening, he thought. If the mechanism had been damaged by the autie's tail-first impact, they would have had to emerge one at a time from the single-man hatches forward, an awkward and deadly way of entering combat.

"Ramp down!" the autie's crew chief yelled. "You're clear to go!"

"Okay, Marines," Garroway called. "It's going to be a close-quarters tangle in there. Weapon status on safety-interrupt! Acknowledge!"

Acknowledgments came back in rapid succession. With safety-interrupt engaged in their combat suit computers, their weapons would lock each time their line of fire intersected a fellow Marine.

"Boarding party away!" Garroway called. "*Gung ho!*"

The ancient battle cry was a contraction of a Chinese phrase, *gung-ya hod-za*, meaning "everyone pull together," a beloved relic of the Corps' deployment into China during the early twentieth century. In this case, *pull together* was meant literally. Gripping the seatbacks, the twin line of Marines had to haul themselves along, everyone moving in perfect unison to avoid colliding with one another. The bulky, two-meter suits, heavy with external armament and ammo bins, were tricky to maneuver in zero-G. By all pulling at the same time, the two lines of Marines propelled themselves forward, looking, as Garroway liked to think of it, like an enormous black millipede.

They exploded from the open rear ramp, exiting the claustrophobic confines of the AUT and emerging in a vast and

partly empty volume of space. The shuttle had backed into the crater burned into the Xul vessel, pushing in through a tangle of what looked like girders or struts and coming to rest in a spider web of twisted beams. Whatever had been in here had largely been reduced to wreckage and debris. Huge masses remained, but so blasted and melted that it was impossible to tell what those masses had been.

At optical wavelengths, the space was in complete darkness, but Garroway's infrared sensors showed the walls and debris within the hole still glowing in eerie reds and oranges. Some of the wreckage was still molten, in fact, and it looked as though the white-hot plasma from the autie's thrusters had added to the fiery destruction. Beyond the trapped autie, through the gaping hole in the Xul ship's side, he could see the stars outside.

"Now *that's* what I call a fucking preliminary bombardment!" Chrome yelled over the platoon channel. "Section Two! Follow me!"

They'd sketched out their tactical deployment during the hours of transit as part of the *Preble's* cargo. Half of the Marines peeled off and began moving aft within the Xul wreckage, hauling their way through the debris where they had to, using their suit thrusters in open space. Daugherty and Hoyer were with her, hauling two of the nukes.

"Section One!" Garroway called out. "With me!" His suit's AI oriented him with the forward end of the Xul vessel, painting a targeting cursor on the cavern wall in that direction. He pushed off from a twisted, sullenly glowing girder. On his tactical readout, he saw fifteen of the Marines following him. Lowey, Istook, and Sergeant Ortiz were close behind him, carrying first section's allotment of nukes. They had a long boost through relatively empty space—almost two hundred meters—to reach the charred and twisted ruin of the cavern's forward wall. For a long moment, they drifted through empty space. Then, using a much-practiced maneuver, they tucked and twisted, turning so that they were drifting feet-first.

ZGM—Zero-Gravity Maneuvering—was endlessly prac-

ticed by Marines assigned to space billets; arguably, that was what distinguished Fleet Marines from the ground-pounders. Garroway's boots hit the wall, and he allowed himself to crumple with the impact, absorbing the energy in his legs and back to avoid rebounding back into the cavern.

The other Marines came in around him, silently falling into the wall; two, Atkins and Freemont, bounced, drifting back into the cavern, but their buddies grabbed hold of their harnesses before they floated out of reach and hauled them in. Garroway made a mental note to talk to them later about scheduling additional ZGM training.

If there is a later, he reminded himself. So far, the Xuls hadn't paid any attention to the tiny force of Marines crawling around in the savaged bowels of their ship. But that would change.

"Istook, Ortiz, Lowey," he said. "Listen up! Engage triggering sequence Alpha. Confirm!"

"Trigger sequence Alpha confirmed," Ortiz told him.

"Alpha confirmed," Lowey said.

"Sequence Alpha, confirmed," Istook added.

Sequence Alpha was controlled by their individual suit AIs. It armed the backpack nukes, setting them to detonate if—and *only* if—Garroway or Chrome, or Wilkie back on board the autie, or General Garroway back on board the *Preble*, transmitted a coded radio signal. It was a form of mission insurance. If every member of the boarding party was somehow and suddenly killed, the nukes in their CAS backpacks could still be fired.

Garroway wasn't sure he entirely trusted Wilkie's mental thumb on the destruct switch. He hated admitting that to himself, but . . . there it was. The idea of having a nested set of destruct sequence go/no-go triggers was so that if Chrome and Garroway both bought it in the next few minutes, Wilkie could decide whether or not to trigger the nukes immediately, based on the status of the rest of the assault force. If the AUT was destroyed in the next few moments, and Wilkie with it, the decision would revert to Uncle Clint.

He trusted his uncle. Wilkie, he did not . . . not entirely. It

wasn't that Garroway thought the guy would push the button on the RST deliberately, but the guy *could* panic. If he did, he might transmit the firing code before the rest of the Marines could get clear of the Xul vessel, might trigger the nukes even before the autie got clear. That, in fact, was his responsibility if it looked like the mission would otherwise fail.

Cool heads were needed to make that kind of call. And Garroway just wasn't convinced that the twenty-seven-year-old Wilkie had the prerequisite chill to the organic component of what was stuffed into his skull. He *worried* too much.

And this wasn't the time to worry about Wilkie's worrying. "Lowey!" he said. "Plant your boom-pack here. The rest of you, look for an entrance, some way to get into the ship."

"Aye, aye, Gunnery Sergeant."

He helped Lowey fasten the backpack nuke to the cavern wall, using a nano sealant that bonded tighter than any weld. "Okay. Set the timer. Sequence Bravo."

He watched as he placed his left gauntlet on the pack's contact plate and fed the Bravo code into the weapon's computer.

"Charge 'Whiskey' is in place," Garroway announced over the platoon channel. "The clock is running."

The five nukes had been given the last five letters in the phonetic alphabet—Victor, Whiskey, X-ray, Yankee, and Zulu. The Bravo sequence would detonate the weapon in two hours, *unless* it received a coded order to revert to Alpha, or to proceed to Charlie.

"Hey, Gunny!" Corporal Hoeffel called. "We got movement!"

Direction was indicated on his tactical feed. Garroway rotated his CAS in space, searching the indicated direction. Yes . . . there it was.

He wasn't at first sure of what he was seeing, exactly. It looked as though some of the masses of half-molten metal, the remnants of hull and bulkheads, were *growing*, with new pieces being extruded from the old. And . . . he could see a

cloud moving past the stars visible through the opening in the hull, like a swarm of gnats or locusts. As he watched, the swarm appeared to solidify in places, filling in gaps and emptiness.

Swiftly, inexorably, the Xul ship was repairing itself.

Battlespace

1537 hrs, GMT

The HELGA facility, its fire mission against the Xul ship complete, had returned to its original task—tracking and destroying each of the stream of rocks now hurtling in past the orbit of Mars, bound for Earth. Every forty-eight minutes, its recharge was complete, and Kali would loose another brief but deadly stream of invisible fire at another of the distant, fast-moving asteroids. After several shots, HELGA One came on-line as well and began adding its three-second bolts to the ongoing barrage.

HELGA One was directed by a fire-control AI named Durga, after the Hindu mother-goddess destroyer of demons. As soon as she came on-line, Durga began coordinating her fire patterns with Kali, ensuring that two bolts were not loosed toward one target when a single bolt would suffice. There were too many targets, and too little time, for duplication of effort.

Unfortunately, the radar and laser imaging scans that allowed Kali and Durga to identify and target fast-moving rocks light-minutes distant were rapidly becoming less and less reliable. Each time multimegaton bursts of energy vaporized mountain-sized chunks of rock and ice, a great deal of debris was left over, ranging in mass from dust and grains of sand to pieces the size of a large house. Each single piece had received its own new vector component when it was blasted from the parent body, causing the debris cloud to expand as it moved, but each piece also retained the original two-thousand-kilometers-per-second velocity of the original vector.

Toward Earth.

Assault Detachment Alpha
On Board the Xul Intruder
1545 hrs, GMT

The Marines of Detachment Alpha had been moving through the blast-tangled guts of the Xul ship for thirty minutes, now, exploring the nearest passageways in the glare of the lights mounted on the shoulders of their battle armor. X-ray backscatter imaging scanners had identified areas behind intact bulkheads that might be passageways and others that appeared to be packed with the Xul equivalent of electronics and heavy machinery. Nanodisassembler packs slapped against portions of the bulkhead walling off rooms or passageways had given them entrance into the bowels of the alien ship. The passageways were in vacuum—which might mean the ship's air supply had bled away, or might simply mean the Xul didn't *need* air. Researchers were still arguing over whether what humans knew as the Xul even possessed an organic component. They might well be a pure artificial intelligence—as good a term as any to apply to near-immortal beings apparently comprised of vast arrays of separate minds somehow downloaded from many sources.

It was the strangest combat Garroway had ever experienced, either in live action or in sim. The passageways, not meant for humans, were triangular in cross-section, the walls strangely folded and wrinkled, lined with almost organic-seeming masses of resin or extruded nanalloy that had a positively organic look to it. In places, the walls appeared sharp-cornered, crenellated, and neatly ordered; in others, they were lined with shapeless blocks, swellings, depressions, and bulges, often wet and oozing, with the result that moving through them felt like a nightmare journey through the intestines of some inconceivably vast beast.

The tunnels ranged anywhere from less than a meter to over six meters in height. Even in the larger corridors, the converging walls seemed tailor-made to induce feelings of claustrophobia, together with a gut-felt sense that something was simply *wrong* with the perspective of the place. They were not lit, not in the spectrum visible to humans, though

in some the bulkheads glowed at infrared wavelengths. Backscatter examinations of the walls showed that many of the passageways, despite the fact that their interior walls were anything but smooth, were almost certainly transport tubes, which used magnetic induction coils hidden within the bulkheads to impel cargos or vehicles along their lengths at high speed.

Needless to say, the thought that an alien version of an elevator car or subway capsule might come hurtling at them out of the darkness at any moment did not at all help matters.

When Garroway led his team through a gap in the bulkhead, however, carefully picking his way past edges still glowing and dribbling off molten gobbets of hot metal from the thermal effects of the ND charge, it was not to face Xul subway vehicles, but the first onslaught of the alien vessel's defense network.

Humans had encountered the Xul defenders before, in the battle at the Sirius Gate, and the scanty information acquired during that encounter had been endlessly studied, back-engineered, and extrapolated in sim. Like the soldiers of a terrestrial ant or termite colony—or the leucocytes in the human bloodstream—they responded to threats within the ship, appearing first in handfuls, then in greater and greater numbers. It was hypothesized that the Xul vessel was manufacturing them somewhere in its depths, deploying them to the point of attack via the internal system of tubes and tunnels.

Garroway first became aware that the detachment was under attack when Corporal Visclosky, four behind him in the queue, screamed and his icon on Garroway's noumenal tactical display window flashed from green to blue, then winked out. Dozens of red icons suddenly popped into existence on the same display, seeming to literally grow out of the walls on all sides.

"Man down! Man down!" Dulaney was yelling. High-speed autofire lit up the tunnel walls, casting flickering, eldritch shadows. "Shit, shit, *shit!* They got Visky!"

A second scream, a second light winked out. "Ortiz's down! We lost Sergeant Ortiz!"

"Someone grab Ortiz's boom-pack!" Garroway ordered. A brutally harsh command, but necessary. Ortiz's telemetry showed he was dead, but the tactical nuke he'd been packing was still live and set to sequence Alpha.

It wouldn't do to let the enemy get hold of it.

The thought elicited a derisive snort. *Idiot!* he thought. *What would they want with it? Xul technology makes nuke-packs look like stone axes!*

In the darkness ahead of him, Garroway saw movement, a flicker of black tentacles, a wink of reflected light, a shape emerging from shapelessness less than five meters away. Without thinking, he triggered his Hawking chaingun, sending a stream of 34mm slugs smashing into the half-glimpsed target. The recoil slammed him backward and tried to give him a left-to-right tumble, but his suit's thrusters compensated automatically. He kept firing. Rounds sparked and flashed along the bulkheads with each ricochet; the shape flared white and came apart, half shattering into ragged fragments, the rest tumbling end-for-end back into the shadows.

Other targets appeared, seeming to separate from the strangely folded and crenellated walls, and he pivoted with the new motion, continuing to squeeze the firing contact inside his right gauntlet. His suit's targeting system painted a crosshair reticule at the Hawking's aim point, the image glowing bright in his visual field.

He could see very little of what he was fighting, even at what amounted to knife-fighting range. From intelligence gathered at Sirius Gate, he knew each Xul soldier was a tele-operated robot linked in with the ship's controlling intelligence. Each was an elongated ovoid between a meter and two meters in length, obsidian-black, the smoothly sculpted body swollen and bulging in places, indented and concave in others, with no apparent matching of the details of its shape with others of its kind. Crystalline lenses like fist-sized rubies were set here and there in the body, again with no single design plan evident, and tentacles, as few as one and as many as twenty, sprouted from random points, helping the device to propel its way through the passageways in the zero-gravity of the Xul vessel's interior.

Its weaponry was varied, but usually consisted of a microparticle accelerator designed to fire very tiny but *very* high-energy bolts of charged particles along an intense magnetic field. They also used laser technology . . . and in direct hand-to-hand combat, those tentacles possessed superhuman strength.

The good news was that they were not heavily armored. Even handgun fire could punch through those paper-thin shells and wreak havoc with the quantum circuitry within. The stream of 34mm slugs from the chaingun slashed through them with explosive effect, sending chunks and fragments spinning wildly through the corridor.

Garroway's Marines had been spread out along a three-meter-wide corridor when the Xul defenders began emerging from the bulkheads, literally appearing out of nowhere right in their midst. Pivoting in mid-passageway, Garroway saw Gwyneth Istook struggling in the grasp of a forest of black tentacles that seemed to grow from the nearest of the three enclosing walls.

Sending a stream of chaingun fire down that passageway would kill more of his Marines than Xul robots, despite the weapon's safety-interrupt; he mentally thumbed his weapon selection to CQC and fired.

Close-Quarters Combat called for a change in ammo as well as a change in tactics. The mental selector switched his Hawking loadout to SX, low-velocity safety-explosive rounds that detonated on impact and would neither ricochet off the walls nor pass through the target to kill someone in the line of fire beyond. It also switched his fire selector to single-shot. He raised his right arm, dragging the reticule in his visual field onto the black mass entangling Istook, and squeezed the firing switch. Nothing happened; Istook's struggles had pulled her around until her suit entered Garroway's line of fire, and the safety-interrupt in his combat computer had blocked the shot. Cursing under his breath, Garroway shifted his aim into the shadowy mass farther from the jerking form of Istook's CAS and fired three quick-spaced rounds. Tentacles whiplashed, then came apart. Istook tumbled backward out of the thing's grasp,

bouncing hard off the opposite bulkhead. "Th-thanks, Gunny!"

"Not a problem," he said, snagging the arm of her suit and stopping her rebound. "Stay close!"

"Gunny! The black-hats are on the run!"

It was true. The attackers were vanishing from the tactical display—destroyed, or retreating back into countless small, hidden side passages.

"Section! Who has Oritz's boom-pack?"

"Right here, Gunny," Corporal Hood called.

"Give it here." They needed to plant these last two charges, then get the hell out of Dodge. "C'mon! In here!"

His suit lights had revealed a side passageway leading off at an odd angle from the main one. Ducking inside, they found themselves in a small, elongated room with glistening walls. "Place your weapon there," he told her, pointing. He watched her back as she set her K-94 against one wall and release the nanoseal in its base, anchoring it solidly in place. "Set sequence Bravo."

"Bravo set, Gunny."

"Okay. Two down, one to go. . . ."

*We Who Are
Asteroid Belt
1549 hrs, GMT*

The Lords Who Are were growing increasingly . . . concerned. Not fearful or worried, for those were emotional responses for which they simply were not equipped, but concerned, for hostile units were moving through the hunter-ship's bowels and the initial attempt to repel them had failed. True, the enemy had not penetrated far, and none were close to critical areas of the vessel, but internal scans had revealed several point sources of radiation that almost certainly represented primitive fission weapons of some sort.

Such a weapon might be primitive, but it could still kill. The Lords Who Are suddenly perceived a serious threat to their continued existence, and began moving to counteract it.

*Assault Detachment Alpha
On Board the Xul Intruder
1605 hrs, GMT*

“Gunny! We got company! Several metric tons of it!”

“I see it.” His tactical display showed the onslaught, a red mass of enemy icons expanding like a cancer ahead of the Marine column.

Damn! He’d hoped to get a kilometer or so deeper into the Xul vessel to plant the last charge, but the fresh enemy attack had the route toward the ship’s bow completely blocked. Fresh red icons were beginning to appear behind the Marines as well, in fewer numbers, but positioned to block their retreat back to the AUT.

So be it. He unslung Ortiz’s K-94 pack, slapped it against a bulkhead, engaged the nanoseal, and set sequence Bravo. “Okay, Marines,” he ordered. “Fall back, by squads. Nice and slow, and by the book. Moulton!”

“Yeah, Gunny?”

“You’ve got point now. Pig free! Use it to best effect!”

“Roger that, Gunny!”

Staff Sergeant Moulton had been tail-end Charlie on the column, but as the Marines turned and began retracing their steps through the lightless tunnels, he would be in the lead. He was the section’s plasma gunner—carrying the unit’s PG-140, or “pig,” a twenty-five-megawatt weapon that could burn through three inches of plasteel at a range of one hundred meters. Because of the danger of frying fellow Marines in these tight quarters, he’d been under orders to direct his fire only toward the rear, keeping the enemy off their tails.

With Moulton in the lead, there’d be no fire restrictions as they retraced their path back to the AUT.

Their suits remembered the way, guiding each Marine unerringly back through the tangle of dark passageways. Ten minutes into the march, however, Moulton shouted a warning. “Bogies! Comin’ out of the bulkheads!”

“Burn ‘em!”

Despite the shielding of his CAS, Garroway felt a tingling buzz pass through his body, the magnetic bleed of Moulton’s

pig as it powered up, then loosed a tenth-second bolt of energy equivalent to the detonation of half a kilo of high explosives.

There was no air in the passageway to carry the shock wave, but Garroway felt the blast thrumming through the bulkheads beneath one hand and both feet. Someone cheered. “*That’ll show the sons of bitches!*”

Garroway was backing down the passageway, loosing short, controlled bursts from his chaingun at the machines closing in from behind. Splinters and shards of metal and circuitry danced and spun through the corridor, bouncing off of bulkheads and from his armor, glittering in his lights. And still the robotic enemy kept coming.

And the Marines kept fighting. “Retreat, hell!” Marine General Oliver P. Smith had said of a withdrawal in a minor war of an earlier century. “We’re just attacking in a different direction.” And the immortal Chesty Puller had once said, “We’re surrounded. That simplifies the problem.” This was a battle Smith and Puller both would have understood, despite the alien battleground, despite the high-tech weaponry.

They fought their way through the smoking wreckage and charred fragments of their foe.

Battlespace

1618 hrs, GMT

Since the late twentieth century, astronomers had known that many asteroids—some estimates said fifty percent—possessed satellites, a smaller asteroid circling the larger at distances of from a few tens to a few hundred kilometers. Early in the history of the Solar System, collisions between asteroids had been common, and many of the fragments, moving too fast to fall back to the parent body, but too slowly to escape, fell into orbit.

Asteroid 2127-VT was such a body. Twenty-three kilometers long and eighteen wide, it was orbited by a nameless chunk of rock barely 1.2 kilometers across at a distance of 30 kilometers. For almost five billion years, it had circled the

sun at a leisurely pace in the bare-empty gulf between Jupiter and Mars.

Human science did not yet understand the quantum-effect field technology employed by the Xul that allowed them to instantaneously transfer a given amount of energy to a target body. Most physicists would insist the trick was impossible, even given the stark evidence of the Xul attack.

Nevertheless, when the Xul ship kicked 2127-VT out of orbit, imparting to it a velocity of 2,000 kilometers per second, the satellite was caught in the energy transfer field, and continued to circle its parent despite the abrupt change in course and speed.

Hours later, 2127-VT was tracked and imaged by both HELGA One and HELGA Three, as well as by fire-control and tracking centers on the Moon and in Earth orbit. Those scans missed the satellite, however. That volume of space was becoming increasingly obscured by dust and debris from earlier laser strikes.

At 1608 GMT, a direct hit by HELGA Three turned 2127-VT into an expanding cloud of rubble, much of which would miss its target, and of which most of the remainder would burn up in Earth's atmosphere.

The tiny satellite, however, had not been touched. It continued to circle the cloud's center of mass, even as it began plowing through the gravel, rock, and ice that once had been its parent. Myriad impacts altered its course slightly; its course altered more, and very gradually, as the debris cloud dispersed more and more.

Overall, however, it continued along the same path, heading directly toward Earth.

And the debris cloud served perfectly to mask the satellite's presence from the laser and radar scans being used to track the incoming stream of asteroids.

2127-VT's moonlet would strike the Earth in another eleven hours and twenty-one minutes.

12 FEBRUARY 2314

Quincy
Resident within the Xul Group Mind
1634 hrs, GMT

The trick was to keep a firm hold on his identity.

In any modern battle, the key weapon was information, and the ability to penetrate an enemy's computer net often determined the encounter's victor before the actual fighting began. Software penetrators of various types and capabilities, ranging from simple viruses to extraordinarily complex AI systems, were among the most basic and common of weapons in the modern military arsenal.

Quincy—in more proper terms, KWN-C3 1189 (military grade)—was an artificial intelligence, an extremely intricate and flexible set of software instructions running to several billion lines of polyplex hypercode arrayed within a virtual four-dimensional quantum matrix, self-maintaining, self-diagnosing, self-modifying, self-replicating within certain rather stringent situational parameters, and, most importantly, self-aware. Spawned as a code seed almost fifty years earlier within the Bell-Hitachi Naval Research Labs at China Lake, California, Quincy had written most of his own code himself—again following carefully outlined parameters—and guided his own development with a speed, skill, and depth of understanding impossible for human programmers.

At the moment, most of Quincy was resident within the Marine HQ computer net in Phobos, though nearly exact duplicates of him, identical save for memories and experience, served with Marine command constellations throughout the Solar System and elsewhere. Perhaps forty percent of his code had been copied, however, and downloaded to the AI net within the *Commodore Edward Preble* hours before. This independent aspect of Quincy called itself Quincy₂.

And now, a tiny fraction of that total, designated Quincy₃, swam within the eldritch sea of an alien cybernetic network. Around him, like blending voices in a vast, choral symphony, echoed and re-echoed information packets equivalent to individual thoughts—the mental workings of the alien AI.

Despite the claims made through centuries of fiction—books, movies, threevee, and noumenal sims—hacking into an alien computer was not a matter of finding a password or of simple numerological cryptography. When two distinct computer systems lack even such basic philosophical agreement as the use of binary logic, when mutually alien languages, reasoning processes, and background assumptions are *really* alien, there is simply no common ground for communication at any level.

Fortunately, the problem of entering and compromising the Xul computer network was not as complex as it might have been. On two previous occasions, human-created AIs had penetrated Xul networks. In the twenty-first century, an artificial intelligence known as Chesty had managed to penetrate the fringes of The Singer, a Xul mentality, an utterly insane composite electronic mind trapped within a vessel locked for half a million years beneath the ice crust of the European world-sea. Subsequent studies of The Singer's hardware had yielded important clues to the basics of Xul computer technology—or at least to the technology they'd used half a million years before.

And during the battle at the Sirius Gate, in 2170, a Marine command constellation AI named Cassius had penetrated the Xul intruder's network, using techniques developed after studies of The Singer's dead hulk a century earlier.

What the AIs had gleaned from those contacts was only a

glimpse of the alien minds inhabiting those titanic starships, but a glimpse had been enough to allow considerable advances both in the understanding of Xul computer technology, and in the creation of a means to infiltrate it. Essentially, human military AIs had learned how to create a kind of penetrator body, encased within a shell of memes crafted to mask it from the alien intelligence; the analogy favored at China Lake was an organic virus using a protein shell to enter a target host cell.

Quincy₃ was such a penetrator, carried in close to the target within the computers on board the AUT, and electronically launched once the AUT's electronic sensor suite detected the RF leakage from the damaged Xul huntership.

Quincy₃, disguised as one of the myriad component minds adrift within the metamind of ancient alien consciousness, began searching for specific thoughts, listening for hints and whispers dealing with navigation, with origins, with views of catalogues of stars and views of the sky, and related esoterica, and tracking them. . . .

Assault Detachment Alpha
On Board the Xul Intruder
1655 hrs, GMT

"Fall back!" Garroway called. Anchoring himself to the bulkhead outside the entry breach, he snapped off orders. "Everyone fall back to the autie! Moulton! You're with me!"

They'd emerged at last from the tangled interior of the Xul hunter, entering the partially enclosed chamber where they'd made their entrance. The AUT, Garroway was relieved to see, was still in place, imbedded in the shattered hull. The Xul vessel was continuing to repair itself, but didn't seem to know what to do about the trapped AUT. The Xul defenders were still following them, but cautiously. Moulton's pig had vaporized hundreds of them during the march back.

Could machines—even intelligent ones—be taught fear?

His tactical display showed a surging, blood-red cloud

moving up the corridor they'd just left. If they were learning fear, they were also learning to find courage in strength of numbers.

A red light flashed in his awareness, and he checked his ammo. Fewer than two hundred rounds remaining.

"I'm almost dry!" he told Moulton. "Watcha got left?"

"Power's at twelve percent, Gunny. And the barrel's overheating. My last one."

Garroway shook his head inside his helmet. "No sense in holding back now. Hit 'em!"

Moulton swung the massive barrel of his plasma gun into the opening and triggered the weapon. Garroway felt the tingle of the heavy weapon's fringe effect, as bolts of high-energy plasma seared into the darkness of the open corridor, the impacts at the far end flashing in strobing flares of brilliant, violet-white flares. The blasts were soundless, but he could feel the vibration of each explosion, transmitted through the alien vessel's internal supports to his boots and gauntlets.

"Section Two!" he called. "Chrome! What's the word?"

"Charges set, Gunny," was her reply. "We're almost back to the autie!"

"Copy that. Give my people some cover, but watch your targets. They're coming in now."

"You got it. We have 'em!"

"Gunny Garroway! This is Wilkie!"

"Yes, sir!"

"We have a problem."

God, what now? "Tell me, sir."

"Our telemetry shows that Victor just went off-line. The Xul may be disarming the charges!"

Shit, shit, shit! . . .

"Copy that." He hesitated. "Just the one so far?"

"So far . . . no, check that. Zulu just went off-line."

Of the five nukes placed, two had now been deactivated. At this rate, in another few minutes none of the charges Alpha had put in place would be operational. Of the three remaining boom-packs, two—Whiskey and X-ray, were charges his section had placed—Whiskey was right there beside him,

still nano-glued to the bulkhead—while the third, Yankee, was one of Chrome’s, somewhere in the aft end of the Xul ship.

“Are you suggesting going to Charlie, Lieutenant?”

Sequence Charlie was the emergency triggering protocol. Wilkie, or Chrome, or Garroway could initiate a firing command that would detonate all weapons immediately.

Obviously, that was intended as a last-ditch option, since it would guarantee the death of every Marine within several kilometers at least.

The Corps frowned on suicide. They had a lot invested in the training and equipping of each Marine, and Sequence Charlie was wasteful.

On the other hand, this was fast becoming a use-it-or-lose-it situation.

“Negative,” Wilkie replied after a chillingly long hesitation. “HQ says they have a penetrator inside the Xul ship. They want some telemetry before we pull the plug.”

“Roger that.”

HQ? That must be the brass on board the *Preble*, which was only a few thousand kilometers distant, at last report. They must have piggybacked a penetrator AI into the radio-frequency bleed from the Xul ship in the hope of winning some useful intel.

Okay, so Alpha needed to buy some more time.

“That’s it, Gunny!” Moulton said. “My last barrel’s damned near slagged.”

“Boost for the autie, then.”

“Aye, aye!” Moulton flexed his knees and kicked off from the bulkhead, sailing out into the emptiness of the chamber. Garroway watched him go, saw the correcting bursts from his suit thrusters putting him on a vector that would take him to the AUT.

It was time to vam the hell out of Dodge.

He kicked off from the bulkhead, but kept his back to the autie, the heavy-barelled Hawking attached to his right forearm trained on the opening between his feet. He was just fifteen meters clear when black, metallic tentacles flickered out of the opening, questing, reaching . . .

He squeezed the firing switch on his Hawking, sending a sharp, quick burst into that black opening, and the blacker mass within. On full auto, he'd run the weapon flat dry in less than twenty seconds.

The burst threatened to knock him into an uncontrolled tumble, but his suit thrusters compensated. He fired again . . . then again . . . each burst acting like a rocket blast to shove him just a bit faster.

But he was aware now of something like clouds of thick, black dust issuing from other parts of the vast sweep of the interior bulkhead, clouds made up of tens of thousands of individual machines. The ones emerging at his feet were closest, so he kept firing at them, the rounds slashing through fragile metal shells, explosions ripping open bodies and severing whiplashing tentacles, sending fragments spinning through space . . . and then the noumenal warning light stopped flashing and stayed on, and his weapon clocked empty.

He wished now he had a couple of live tactical nukes on his backpack A-frame, then discarded the notion. The blasts would fry any Marines still in the open, and might well slag down the surviving nukes implanted inside the ship. But it was a charming thought, taking a hell of a lot of bad guys with them.

He ordered his suit to go to full thrust.

Marines at the autie were firing now, sending a storm of rounds and plasma bolts slashing through the advancing clouds of black dust.

The covering fire wasn't slowing them down at all. . . .

Quincy

Resident within the Xul Group Mind

1702 hrs, GMT

Quincy₃ had found what he was searching for.

From his electronic perspective, the alien computer net's function sang to him, a chorus of voices and tones ebbing and flowing around him, an infinite sea of sound within

which he drifted like a speck of flotsam. The chorus at first seemed cacophonous, an endless babble of sound with no apparent meaning or melody. The more he listened, however, the more aware of undercurrents and harmony he became.

He could not understand what the voices were singing, of course, and whether the intonations even represented a language at all was problematical. Despite almost three centuries of study by the best, most powerful, and fastest cybernetic analysts in existence, the key to anything like a Xul language remained elusive.

Images, however, were something else, a matter of finding and identifying matrices of numbers representing qualities of tone, hue, and contrast. Quincy₃ had discovered what felt like a storage area holding some trillions of gigabytes of data that appeared to factor out as two- and three-dimensional images, apparently a part of some sort of navigational network. Sampling one of the larger images, he recognized a thick-strewn dusting of white suspended within black that might represent a three-dimensional image of one section of a galactic spiral arm.

He began copying data as swiftly as he could. Since Quincy₃ possessed little in the way of storage space compared to his bigger and older brothers, he began transmitting the data as quickly as he could retrieve it.

*We Who Are
Asteroid Belt
1703 hrs, GMT*

The Lords Who Are detected the radio transmission almost immediately. While they could not read it, it was certain that it consisted of data gleaned from the huntership's memory matrix—probably navigational and mapping data.

That, in turn, suggested that the enemy had somehow infiltrated the huntership's computer network. It was imperative that the intruder be found and stopped.

This was not an easy task—the electronic equivalent of searching an ocean for a particular fish. We Who Are initiated

a search, of course, successively walling off portions of its own mind, trying to isolate the virtual area from which the broadcast was being sent. The process would take time, however.

A more promising track, however, was to destroy the hostile vessel imbedded in one of the aft cargo holds. The intruder had almost certainly projected itself into the net from that vehicle, and depended upon it to remain connected with the universe outside.

Unfortunately, destroying the intruder would also take time. Until the huntership's external sensors were repaired, the enemy craft could not be targeted by either weapons or the quantum energy transference field used to manipulate the vectors of asteroids. We Who Are could fire into the area blindly, of course, but that would almost certainly be self-destructively counter-productive.

Some hundreds of thousands of defenders were in the area now, however, and they could be remotely programmed to seek out the enemy vessel and disassemble it.

That option carried the best chance for rapid success.

*Assault Detachment Alpha
On Board the Xul Intruder
1705 hrs, GMT*

"C'mon! C'mon! C'mon!" Garroway yelled. "Move it, Marines!"

The last of the combat-armored Marines grabbed hold of safety lines and hauled themselves up the gaping ramped entrance to the AUT. Garroway, firing his braking thrusters wildly, nearly careened off the transport's hull, but Chrome and Bauer were waiting for him, reaching out and snagging his suit as he tumbled past and hauling him back within reach of a line.

The black clouds—swarms of Xul combat machines—were getting closer.

"We're all on board!" Chrome yelled over the tactical net. "Kick us the hell outa here!"

The ramp was still down, the Marines not yet in their seats as the Navy pilot fired the AUT's main plasma thrusters and brought them up to full power. Garroway was jolted to the deck as acceleration slammed him down and back. Black tentacles snapped and writhed above his head, but for a stunned moment he couldn't process what he was seeing.

"The Xuls are on the ship!" Chrome yelled. "They're goddamn boarding us!"

Hood and Ortiz opened up with their chain guns, firing past other Marines still crowded into the aft end of the transport's cargo deck. Garroway started to rise, but another lurch knocked him down. Gravity twisted and shifted in odd directions; it felt as though the AUT was tumbling, falling end over end, and adding a centrifugal component to the acceleration.

"What the hell's going on up there?" Garroway demanded over the command channel.

"It's the Xul defenders!" Wilkie shot back. "They're all over the autie, clinging to the hull!"

Garroway looked at his data feed from the AUT. According to the numbers, the transport had cleared the Xul ship by about three hundred meters.

"Lieutenant!" he yelled. "We need to go to Sequence Charlie!"

Now it *was* use it or lose it, with no other options. The three remaining nukes on board the Xul vessel wouldn't detonate on their own for another thirty minutes . . . and by then the enemy might well have found and disarmed them all.

And if the defenders on the AUT's hull broke through. . . .

"Lieutenant! Do you copy?"

There was no answer . . . and suddenly the data stream from the AUT cockpit was gone as well. The enemy machines might already have entered the cockpit.

He wanted to find Chrome, but the cargo deck was a chaotic tangle of Marine armor in tumbling darkness. He had to make the decision, and he had to do it *now*. . . .

Closing his eyes, he formed the triggering code in his mind, verified the sequence, and launched it.

At first, nothing happened, and he wondered if he'd been, after all, too late.

And then a giant's hand slammed the AUT, and a searing, blue-white glare seared through the still open aft cargo hatch.

Still in the utter silence of hard vacuum, the AUT rode the expanding plasma wavefront of a nuclear detonation.

Commodore Edward Preble

Outbound from Mars

1707 hours GMT

General Clinton Garroway was in the stateroom set aside as a command center for him and his staff, watching a nomenclal image of the Xul intruder, the view downloaded from a combat drone less than fifty kilometers out, when the nuclear weapons detonated. Instrumentation on the drone confirmed that at least two separate explosions had triggered simultaneously—and possibly three, though precise measurements could not be taken.

In the image window in his mind, however, the entire aft end of the gold, needle-slender Xul vessel suddenly vanished in a tiny sun, a sun that expanded almost too quickly for the eye to follow. He saw the forward half of the ship crumple, then shred away as the sun engulfed it. Bits of flotsam and debris spun ahead of the blast wave, which continued its rapid expansion . . . and then the image winked out as the blast caught the drone and annihilated it.

Garroway inwardly stared into the empty window for a long time after that.

The *Preble* had been receiving continual updates from Wilkie on board the AUT. Garroway knew that the Xul, somehow, had disarmed at least two nukes, and he'd heard at least a garbled report that the AUT was boosting clear of the Xul vessel, but that something was wrong.

What? What had gone wrong? Whatever it was must have been damned serious, because evidently Wilkie or one of the section leaders had decided to execute Sequence Charlie, detonating the remaining weapons immediately . . . and before the AUT could accelerate clear of the Xul ship.

His nephew was dead. . . .

Garroway was having some trouble wrapping his mind around that one. He'd given the orders that had sent Travis into harm's way, sent him on what had amounted to a suicide mission, but still he'd held out hope that the Marines would overcome as they always seemed able to do. That they would survive.

The AUT had been no more than two hundred meters from the detonation point when the nukes had triggered. There seemed to be little chance that anyone had survived.

"Major Bettisly," he called over the constellation com net.

"Yes, sir." Bettisly sounded subdued. He must have been watching the feed as well.

"I want a search launched for the AUT. Immediately."

"Yes, sir."

"I also want drones sent in to check out the Xul ship. It doesn't look like there'll be much left, but we need to be sure."

"Yes, sir."

"Any word on Quincy?"

"The software penetrator? Not yet, sir, but I'll check."

"Quincy Sub-three was not able to disengage from the Xul group mind before the explosion," another voice, steady and measured, said in Garroway's head. "I have been attempting to re-integrate with him."

"You have no contact at all?" he asked the AI.

"That is correct, General. However, Quincy Sub-three was transmitting data as he uncovered it, and I have stored it within *Preble's* main memory. I believe Quincy Sub-three successfully carried out his assigned mission."

Could an AI feel pride? Garroway thought he could detect that emotion—just a hint—behind the calm and precisely articulated words.

And . . . if self-aware software could feel pride, did it feel grief, or pain, or anything over the loss of a part of itself?

He wanted to ask, but decided to wait until he had a private channel. "That's good," he told Quincy₂. "I want backups made of everything, and multiple copies transmitted

both to Phobos and to the Pentagon immediately. Flag them for intelligence analyses.”

“Yes, General. I have already done that.”

As always, Quincy was a quick three steps ahead.

“What . . . what are the chances that the AUT survived the blast?” he asked.

“Unknown, General. And the debris and plasma in that sector make radar searches for something as small as *Cambria*-class transport problematical, as does the fact that we do not have a precise vector on Detachment Alpha’s craft.

“An estimated two- to four-kiloton nuclear detonation, however, creates a fireball of approximately one- to two-hundred meters’ diameter. *In vacuo*, of course, the fireball’s expansion is considerably greater, perhaps as much as half a kilometer, but it is conceivable that the plasma front had cooled significantly by the time it reached the AUT, and that the transport survived both the impact and the thermal radiation.

“A greater danger is represented by the radiation flux, which, two hundred meters from a four-kiloton blast would have generated between ten to the fifth and ten to the sixth REMs—instantly fatal to unshielded organic life forms. Armored Utility Transports have significant magnetic shielding, however, and should have helped minimize exposure.”

“So . . . you’re saying there’s a chance?”

“A chance. I do not have sufficient data to estimate a numerical value for that chance, however.”

“We’ll take anything we can get.”

“General,” the AI said in a mental voice that sounded puzzled, “the loss of Quincy Sub-three is of relatively minor importance. True, re-integrating with him might yield additional contextual data for Intelligence, but its loss is not significant within the broader context.”

“Actually, Quincy, I was thinking about the Marines on board the AUT.”

“Of course. Your nephew is on board.”

“There were thirty-two Marines in Detachment Alpha,” he snapped, angry. “And a Navy crew of four on board the

transport. *All* of them deserve every chance we can give them!”

“I understand, General.”

Garroway wondered if that were true. AIs like Quincy were programmed to simulate human emotions and speech patterns, and to show an interest in topics of interest to the humans around them, but what they *really* felt—assuming they could experience anything a human would recognize as emotion—was always tough to pin down. Not for the first time, Garroway wondered how humanity would deal with alien species like the Xul when they didn’t even yet understand the thought processes of their own intelligent offspring.

Or how human thought worked, for that matter.

He focused again on the replay of the data feed from the drone, playing it through slowly, at extreme magnification. It was tough to tell, but it *looked* like a tiny, oblong speck glittering in the light of a distant sun, had been captured moving away from the Xul vessel. At extreme magnification, it *might* be an AUT. Again and again, he watched as the nuclear fireball expanded, blocking the tiny object from the drone’s view.

Quincy might be able to make more of the imagery. There was no way the unaided human eye could tell if that was the AUT, or if it might have survived. Still, it was something. If that was the AUT, analyses of the images might give a clue to its vector when it was hit by the plasma wavefront. And that could cut down tremendously on search time.

Well done, people, he thought, staring at the anonymous fleck of light. *Very well done.*

Only now was Garroway beginning to appreciate what had just happened. The Xul intruder, so far as could be determined from several thousand kilometers away, had been destroyed. The attack it had launched on Humankind’s homeworld had been interrupted, and the XEL and HELGA defense complexes should be able to take care of the asteroids the enemy vessel had already accelerated toward Earth.

A tiny detachment of thirty-two Marines, assaulting an alien vessel two kilometers long from a transport that was a rowboat by comparison, had just helped save the Earth.

If those Marines and sailors had died in the saving, as seemed probable, theirs had been a truly heroic sacrifice, the stuff of legend. And if any of them were still alive . . .

He turned sharply from the thought. Drones and rescue vessels were already en route. All that could be done was being done.

Earth and her billions had been saved.

But he couldn't help wondering if his nephew still lived.

High Guard HEL Facility 3

Solar Orbit

1805 hrs, GMT

Captain Gupta Narayanan studied the mental readout, paying special attention to Kali's projection on the elimination of the remaining Earth-threatening asteroids. Eight more bodies remained to be targeted, and eight and a half hours remained before the first of those bodies—now reduced to a cloud of dust and rubble—would have struck the planet. Between HELGA Three and HELGA One, each of those remaining bodies could easily be engaged and destroyed long before they reached the vicinity of Earth.

It had been a near thing. Had the intruder continued launching asteroids, no possible application of the firepower available to the High Guard would have been able to engage them all. Senator Danikov himself had already transmitted a brief message of congratulations; few on Earth, it seemed, had even been aware of the attack, but those who were—chiefly in the various government military branches—had broken into jubilant celebration.

The Xul intruder was destroyed. Earth was safe.

Narayana wasn't so sure.

It was an absolute and inviolable dictum of physics: matter, like energy, could *not* be created or destroyed. Multi-megaton bursts of laser and X-ray energy could vaporize large chunks of those tumbling boulders into harmlessness, but the majority of that very considerable mass was going to continue on course, reduced to dust and gravel, perhaps, but

still bearing most of the original mass on multiple paths that would begin intercepting Earth in another eight and a half hours.

Normally, this wouldn't be a problem. Rocks the size of gravel would burn up in the atmosphere. But this wasn't normally. Those rocks were moving at truly astonishing velocities. When they reached the Earth, they would punch through the planet's slim envelope of air so quickly they wouldn't have time to vaporize.

Earth—perhaps even the survival of Humankind—remained in the balance. The luminaries back at Space Command and the Pentagon didn't seem to realize the danger.

Yet, Narayanan had no doubt that they would recognize their error very soon, now. He'd sent off a message after Danikov's transmission. So far, there'd been no reply.

All the High Guard could do, of course, was try to intercept each threat as swiftly as it could be detected and tracked, and destroy it. When these next eight flying mountains had been reduced to rubble, Narayanan would direct Kali to begin searching for smaller pieces of rock remaining in the expanding, fast-moving clouds and begin targeting them as well, from the largest down to the smallest.

They wouldn't be able to get them all. Of that he was certain.

No matter what they did, Earth was in for a hell of a bombardment, beginning just eight and a half hours from now. . . .

13 FEBRUARY 2314*Earth**0529 hrs, GMT**0029 hrs, EST*

It began as a rain of fire.

For three hours, now, the nightside skies of Earth had provided spectacular entertainment. What approached Earth now, some twenty-three hours after the Xul intruder nudged the first one-kilometer rock out of its eons-old orbit, was a series of expanding, cone-shaped clouds of fragments.

Dust and debris flashed into the planetary atmosphere at 2,000 kilometers per second, flaring in an instant into dazzling incandescence. At 0229 hours GMT, the night sky first exploded into dazzling brilliance, a meteor shower of unprecedented size and brilliance. At any given instant, the sky was streaked by hundreds of threads of light, all radiating from a single point in the sky, the overall light bright enough to read by. In Ukraine and western Russia, already past the dawn terminator, bright streaks of light and occasional vapor trails could be seen rising like streams from a celestial fountain from the western horizon even in full daylight.

The most dramatic sky appeared with the swarm's origin at the zenith, in the constellation Gemini, directly above the American west coast where it was 2000 hours, and fully dark. There, meteors appeared second by second in uncounted

thousands, flashing out from the origin and raining like white fire to the horizon.

After less than half an hour, the first debris field began to fade, but then the second cloud of fragments intercepted the Earth, and the fireworks began anew. Since each asteroid had been kicked out of its original orbit at a different point in the Asteroid Belt, this new light show seemed to originate from a slightly different part of the sky, this time appearing to emanate from the constellation Taurus.

Fortunately, due to the clouds' scattering, most entered the atmosphere at an oblique angle; their speed was so great that even fragments the size of peas would survive all the way to the ground, their passage so swift that they didn't have time to vaporize completely. Pieces entering the shell of atmosphere at a flat angle tended to skip back into space, or to fragment and vaporize. Smaller pieces, dust motes and fragments the size of grains of sand, were slowed enough as they struck atmosphere that they *did* burn up, and the result was a light show more spectacular than anything seen in the sky during the span of *Homo sapiens* on the planet. Vast throngs of people gathered outdoors to witness the spectacle; the skies were clear across most of North America, the mid-February temperature in this age of advanced global warming a pleasant 15 degrees or more.

Larger pieces, however, punched through the atmosphere in an instant, heating white-hot, but losing very little of their mass in the transit. Gravel-sized chunks were reported falling in sparsely populated areas from Saskatchewan to Sonora, from Hawaii to Florida.

Few of the planet's inhabitants were aware of the danger, of course, at least initially. Many knew that an alien spacecraft—rumored to be a Xul vessel like the one destroyed at Sirius a century and a half before—had entered the Solar System, and that High Guard forces were battling with it. Such was the information easily and immediately accessible on the global data net, and rumor and word-of-mouth spread variations of that basic theme throughout the growing crowds.

But none of the governments involved—the North American Federation, the World Union, the European Union, or

the United States of America—had as yet issued an official statement—or a warning. What was the point? There was no time to evacuate cities . . . and when the entire planet was the target, no one place was any safer than any other. Earth's entire combined off-world cargo and passenger transport capacity might have sufficed to lift a few hundred, perhaps even a few thousand people off of the planet, *if* there'd been sufficient warning.

While most of the watchers simply enjoyed the show, a few pursued their own agendas. Since the twenty-first-century revelations that nonhuman aliens had been in large part responsible for much of the original evolution and development of the human species, numerous new religions, and a fair number of old, had grappled with the question of aliens in various creative ways. For many, the Ahannu and the N'mah, the only two ET species with which any serious communication had been achieved so far, were gods . . . or, at the least, they played a decidedly godlike role. For others, especially the older, more conservative bastions within Islam and Christianity, they were deceivers and therefore agents of evil . . . not gods, but demons.

Since the Hunters of the Dawn were still largely a mystery, but since it *was* now certain that Hunter ships had devastated Earth in an asteroid bombardment some 8,000 years B.C.E., most religions placed them squarely on the side of the demons in any celestial warfare, but there were a few who thought otherwise. As the light show progressed, a major riot started in San Francisco between communicants of the Grey Enlightenment and the Circle of the Celestial Illuminants. CCI dogma insisted that there could be no evil among the angelic beings of other worlds, and that rumors of aliens throwing planet-buster asteroids at the Earth must be lies, while GE belief featured the Xul as chief among Satan's legions. Two hundred died in the resulting clash of doctrines. Similar riots were reported in Ciudad Méjico, Rouen, Oporto, and Naples. In the Vatican, in Saint Peter's Square, similar doctrinal disputes resulted in a clash between followers of the Papess and of the counter-Pope, beginning with cobblestones and clubs, and ending with handguns and

civilian laser weaponry. Fires gutted half of the Vatican offices before the Italian Army and the Swiss Guards could disperse the prowling mobs.

But worse was to come, and swiftly. Throughout the early evening hours in the western Americas, reports began coming in of unprecedented high-energy impacts, from Hawaii east to Ukraine. Hundreds—then thousands—began crashing out of the sky, striking the empty lands between cities or out at sea, for the most part, cities being remarkably tiny targets when compared to the planet as a whole. Thunder, isolated at first, but soon becoming continuous and deafening, sounded across North America as the celestial bombardment began in earnest. There were scattered reports of damage and injuries, but nothing serious. People continued to flock to outdoor vantage points, watching the sky fall.

At 0215 hours GMT, a large portion of Bordeaux, France, was demolished by a rock the size of a loaf of bread as it came skimming in just above the horizon and smashed into the Rue Emil Fourcand at 2,000 kilometers per second, creating a shotgun-blast effect that demolished buildings as far east as Bergerac. Three minutes later, the top half of the kilometer-high Helios Tower in the Miami Offshore Complex disintegrated in thunder and flaming fragments, at just about the same instant that the town of Pont Rouge, in Free Quebec, vanished in the equivalent of the detonation of a thirty-megaton fusion warhead.

It didn't help that a probable majority of the fragments entering the atmosphere actually did explode before hitting the surface. The shock waves were powerful enough to flatten cities, strip mountains bare, and punch kilometer-wide depressions into the landscape below. One large boulder massing several tons slammed into atmosphere east of Hawaii and, in an instant, punched a straight line of vacuum through the sky before vanishing again into space above the Marshall Islands. The thunder clap of its passage sent tidal waves rolling across the Pacific, deafened thousands, swatted atmospheric fliers out of the air, and shattered windows as far away as Japan.

From orbit, Earth's night hemisphere presented an awesome and terrifying spectacle. Observers on board the Nippon/Celestine Orbital Hotel Complex, then passing two hundred kilometers above the Gulf of Mexico, watched, stunned, as brilliant pinpoints of light flashed and strobed in random patterns among the streaks of shooting stars seen from above, each point representing an impact equal to the detonation of millions of tons of chemical high explosives. The scene was captured by the hotel's Earth-observer cameras and uploaded to the Global Net, which preserved it when the orbital hotel itself was smashed out of existence ten minutes later.

Other orbital facilities were destroyed as well—communications stations, orbital factories and nanufactory centers, naval yards and orbital depots, solar power stations with their far-flung, gossamer-fragile photocell wings. The French freighter *Garonne*, the Cantonese asteroid miner *Fushun*, and the North Indian frigate *Godavari* all were wiped from the sky before they could power up and move clear of the planet.

Of the actual impacts, most were over water, of course, but those were no less destructive than those fragments falling over land. A twenty-ton rock came down in the Gulf of Maine, and the tidal wave obliterated Nova Scotia, all of coastal Maine, and flooded the tide barriers around Boston, washing away much of the city, and submerging the rest. The offshore tourist and shopping complex of Pacifica simply vanished—probably carried away by the same tidal wave that scoured Baja and flooded San Diego.

For the past three centuries, all of the world's established coastal cities had been battling the effects of global warming—including rising sea levels. Some, like Charleston, had followed the ancient example of Holland and built extensive sea walls, creating safe havens and new land behind them that were for the most part below sea level. Others, like the Manhattan Megaplex, continued building *up* as the sea waters flooded in, controlling the effects of storm surges and high tide through the use of concentric rings of tidal barriers, while protecting the central portions of each metropolis beneath

enormous transplas domes. Most domed cities fared well through the bombardment, save for those, like Houston, which took a direct hit. Most cities protected only by tidal barriers or flood-control walls were overwhelmed by the repeated impacts of fifty- and eighty-meter-high waves.

In the first three hours of the bombardment, an estimated six hundred thousand people died.

And even worse was soon to come.

Thanks to the vast, obscuring cloud of asteroidal debris, it wasn't until the orphan moonlet of 2127-VT passed the orbit of the Moon that this singularly cataclysmic threat to Earth was finally detected by the deep space tracking facility at Fra Mauro. At a distance of 400,000 kilometers, however, the hurtling mountain was only three minutes and twenty seconds away from impact when the warning was flashed back to Earth.

The three cis-Lunar High Guard facilities had been designed as a kind of last line of defense against Earth-threatening asteroids. As long ago as the late twentieth century, astronomers had discovered several potential planet-killers as they passed within a few hundred thousand kilometers of Earth—sometimes after they'd already made their closest approach and were on their way back into interplanetary space once more. Since it was possible that a rogue nation seeking to bombard Earth with an asteroid might do so by changing the orbit of one of these Earth grazers, leaving too little time to bring the HELGA facilities on-line, it was decided to create three inner-sanctum bastions—large X-ray lasers orbiting at the points of an equilateral triangle midway between Earth and Moon. Since each could only be fired once—firing involved the detonation of a small fusion warhead to pump the laser, vaporizing the satellite—they'd been held out of the original battle against the possibility that one or more large bodies made it past the HELGAs and into near-Earth space.

The three stations, and the artificial intelligences operating them, were named Verdande, Urda, and Skuld—the three Fates of Norse mythology who measured the span of a man's life, and who also guarded the World-Tree of Life.

Almost certainly, the trio of satellites saved Earth from total destruction. The body, the orphaned satellite of 2127-VT that entered cis-Lunar space at 0526:35 GMT, massed 2.35×10^{12} tons. At 2,000 kilometers per second, it carried a kinetic energy of 4.69×10^{21} joules . . . the explosive equivalent of close to one *billion* megatons.

Verdande, Urda, and Skuld all were on-line and ready when Alexander, the AI running the Pentagon Combat Center, flashed the warning to them. It took over two minutes for the individual tracking systems to locate the intruder, and rotate the satellites into position. As the asteroid flashed past the Moon's orbit and on toward Earth, they would have to pan very quickly to hit their fast-moving target.

The falling rock was one hundred fifty-two thousand kilometers out—seventy-six seconds from impact when all three stations fired.

Verdande missed. Of the three, that station was closest to the target, the lateral displacement as the planetoid passed the greatest and, at the last instant before detonation, meteoric fragments—dust- and sand-grain-sized remnants of 2127-VT—sandblasted the station, puncturing its solar cell array and minutely affected its aim. Both Urda and Skuld, however, burned as brightly as tiny suns, loosing two micro-second bolts of invisible X-ray radiation that converged on the rock from two directions nearly eighty degrees apart.

The planetoid body, like most of its class, possessed an extremely low density—1.5 grams per cubic centimeter, which made it only a little denser than Styrofoam. Much of it was composed of water ice, mixed with a kind of carbon soot.

Shock heating shattered the rock, but unevenly. Had it been traveling at more reasonable planetary velocities, the cloud of fragments might have expanded enough that few would have hit the planet.

Unfortunately, seventy-six seconds after firing the cloud hit atmosphere, the fragments, many glowing white hot and all still moving at 2,000 kilometers per second. The largest chunk, two hundred meters wide and massing eight million

tons, tunneled a straight line through atmosphere at an oblique angle high above the Atlantic Ocean, its shock wave thundering across the surface and shattering the above-water sea-farm complex at the Grand Banks.

Had it been deflected by another degree or two, it would have missed the surface entirely. Descending across the ocean in an instant, it plowed into the water on a trajectory that was very nearly flat.

The impact vaporized a hole in the water three miles across and a mile deep, all the way to the sea floor, with a blast cloud that actually ballooned well above the atmosphere and into space. For a seeming eternity, the wound in the tortured sea gaped open, held at bay by the bubble of superheated steam and the fiercely radiating molten rock exposed on the naked sea bed; as the steam rose and cooled, the ocean walls collapsed and the ocean came crashing in, but slowly, the boiling water still held back by the steam.

Some of the remaining fragments missed the Earth entirely, passing above the horizon and heading back into space. Others struck in a vast footprint from Bermuda to Spain, like the blast from a titanic shotgun, adding to the general devastation. A wall of flame seared across much of Europe, setting cities and forests ablaze.

Tens of millions died from the immediate effects of the strike.

Worse, *far* worse, tidal waves rippled out from each impact, like ripples from a rock thrown into a pond. These ripples, however, carried a significant fraction of the kinetic energy released by the strikes, and, as they neared land and the sea floor grew shallow, waves bulked into towering walls hundreds of meters high. Because the largest fragment had been traveling west to east and struck at such a shallow angle, the majority of the displaced water traveled east, smashing into Portugal and Spain first, the French Atlantic coast minutes later. The mountains saved much of Iberia, though the coast from La Coruña to Cadiz was devastated, and the flood boiled up the Douro River as far inland as Valladolid. The French Atlantic coast, however, was completely submerged for two hundred kilometers inland, and the narrowing

of the English Channel created a monstrous wave that scoured everything between London and Paris flat.

At the Strait of Gibraltar, the narrow gap between the mountains of Spain and of Morocco served as a similar bottleneck, focusing the incoming tidal surge into a deadly hammer's blow that rolled across the entire Mediterranean from end to end, simultaneously drowning and smashing ancient and populous cities from Barcelona to Rome to Athens to the Levant.

Only within the past two centuries had archeology—helped along by the studies of records kept by the extraterrestrial N'mah—finally acknowledged that the myriad stories about a lost continent in the Atlantic Ocean had actually been based on fact. Drowned Atlantis had not been a continent, in fact, nor had it been, as debunkers supposed, the island of Thera in the Aegean, destroyed by volcanic eruption.

Instead, there had indeed been a low-lying island the size of Iceland some hundreds of kilometers off the coast of southwestern Spain, opposite the Pillars of Hercules, just as Plato had recorded, and the site of a thriving Bronze Age culture first planted and nurtured by the N'mah in the aftermath of the last Xul incursion into the Solar System several thousand years before. That culture—and many others throughout the Mediterranean—had vanished in 1197 B.C.E. when a fragment of comet struck the sea floor nearby, coincidentally less than a thousand kilometers from the site of this new major impact.

The fragment that destroyed fabled Atlantis had been somewhat larger, but moving at only a tiny fraction of the newcomer's speed. That time, earthquakes and tidal waves had collapsed much of the offshore island, leaving only the Madeira Archipelago and the Canary Islands above water, and sent a tidal wave blasting through the Mediterranean that had toppled megalithic structures in Malta, wiped out the civilizations of the Hittites and the Achaean Greeks, and left behind countless tales to add to the growing body of myths telling of a worldwide flood.

That flood had carried a tiny fraction of the power and destructive force of this one.

To the west, the tidal waves were smaller and less energetic than those that overwhelmed Europe and the Mediterranean, and reduced in destructive force by the greater distance they'd traveled, but inconceivably fast and powerful mountains of water still rose eighty meters above the beaches as they thundered into North America at three hundred kilometers per hour.

The wave swept across all of Florida and most of the Gulf Coast without stopping, and rolled inland as far as the western reaches of the Piedmont from Georgia to Virginia. Cities that had withstood the celestial bombardment thus far were crushed, overwhelmed, and submerged. Miami vanished almost without a trace, its dome crushed and its offshore office and housing towers swept away like twigs.

Cuba and the other Caribbean islands were inundated, only the highest mountains remaining above the waves as they roared past, from northeast to southwest. The surge swallowed much of the Amazon Basin, submerging farmlands as far south as the Matto Grosso. North, the Atlantic coast, already savaged by the impact in the Gulf of Maine, went under again, the waves this time reaching as far inland as the White Mountains of New Hampshire. Farther north, the waves broke against the Monts Notre-Dame, sent a tidal surge up the St. Lawrence as far as Lake Ontario, and spread north to flood the eerily circular formation of Lake Manicouagan—itself the crater marking an ancient asteroid strike that had struck Québec Libre 120 million years in the past.

Far to the east, the steam bubble at last collapsed, sending out a second set of ripples. Hours after the first tidal waves had exploded over dry land, the second waves, smaller but still destructive, struck. They added little to the overall levels of death and devastation, however.

The waves from the first impact had already scoured bare almost an eighth of the Earth's surface.

One additional result of what soon would be known as Armageddonfall was not at first apparent in the chaos and devastation immediately following the Atlantic impact. During the hours leading up to the major impact, as more

and more population centers had felt the sting of incoming high-velocity projectiles, major nodes of the Global Net—communications centers like Atlanta, Boston, Washington, and New York had begun dropping offline. Electronic traffic had been automatically rerouted to avoid blacked-out regions, but affected areas were rapidly spreading as the damage intensified.

Then the tidal waves had rolled in off the ocean, scraping entire cities off the coasts and plunging a third of the planet into a complete power blackout. All of North and South America, all of Europe, most of Africa, and parts of Asia, especially around the Pacific Rim, all found themselves knocked off the global power grid, and the computer networks in those regions collapsed.

Millions among the watching throngs across Earth's night side had noticed the effects first when they could no longer use their personal implant hardware to access the Net. Questions uplinked to local nodes went unanswered, and individuals found their mind-to-mind communication links with friends, families, businesses, and civil services abruptly cut off. Artificial intelligences—hundreds of millions of them, serving as personal secretaries, e-librarians, and electronic assistants of every kind and permanently resident within the Net—were suddenly gone or inaccessible. Alexander, the powerful AI operating as a command program within the Department of the Chiefs of Staff and responsible for the coordination of all American military forces, continued to exist within a fragment of the military's net in the sealed sub-basements of the Pentagon, but the Pentagon itself, and the nearby city of Washington, all were now submerged beneath ten meters of mud and water, and it would be a long time before survivors—human and electronic—could be rescued.

The majority of civilians across the planet depended on their links with the Net—for communication with others, for information retrieval, for operating vehicles and machinery, for nearly every aspect of modern technological life. They received their first basic nano implants shortly after birth, and these grew with the individual according to his needs. It

wasn't widely advertised, but during training, U.S. Marines and other elite military personnel were deliberately deprived of their intracranial hardware links, in part to demonstrate that they could function without them. Many recruits, however, were unable to adjust and washed out before receiving their military-issue upgrades. Others backed out before their civilian gear could be neutralized, unwilling to try life disconnected from the Net. The experience was traumatic and disorienting in the extreme, the electronic equivalent of dropping a civilized man into the wilderness, naked, without tools or weapons, and utterly, utterly alone.

That electronic psychic trauma was precisely what billions of humans experienced when the Global Net collapsed. Abruptly cut off from friends, from family, from news about what was happening as the sky continued to rain fire, millions of people panicked. The veneer of civilization is always agonizingly thin, and never more so than when the government infrastructure begins breaking down. Without Net access, local power grids failed, fire and emergency services were paralyzed, and civil authorities could see only what was happening outside their own doors, with no access at all to the larger emergency picture.

As the panic spread, cities burned from Paris to St. Louis and from Caracas to James Bay, looters roamed streets in hordes, and mobs battled one another in the ruins even before the scouring waves rolled in.

Other effects of the impact were even more serious, farther reaching, and more threatening to Humankind's survival.

Several cubic miles of seawater had been vaporized by the impact, and more had boiled away over the next few hours as liquid water tried to reach the incandescent crater on the sea floor. Rising in a vast, churning column, the steam cloud had peaked low in the stratosphere and begun spreading out, an immense and fast-growing disk of cloud.

After the first few cataclysmic moments, the air pressure near the impact was significantly lower than the pressure farther out. The cloud began to rotate, hurricane-like, counter-clockwise. Unlike a hurricane, the storm remained anchored

in place by the rising column of hot gas; from that column, the storm continued to draw energy, growing larger and more powerful hour by hour. Wind velocities near the central eye approached the speed of sound.

By the time the sun set over the tortured region, the storm's super cell covered a quarter of the planet, from Labrador to central Africa, and eighty percent of Earth's surface, all but in the extreme north and the extreme south, was socked in under a solid and impenetrable cloud deck.

At first, temperatures at the surface rose. The multiple impacts of that long and fiery night had dumped a *very* great deal of energy into the atmosphere as heat, and that heat was trapped by the cloud layer. For three centuries, global warming had slowly but steadily transformed the face of the planet, completely melting the North Polar ice cap, and melting all of the permanent sea ice around Antarctica and even much of the ice on solid ground. Sea levels had risen by several meters over the course of centuries, and even in midwinter at high latitudes, temperatures rarely fell more than a few degrees below freezing.

Now, in the mid-February winter of the northern hemisphere, temperatures rose steadily and inexorably, to thirty-five degrees, as hot as a sweltering midsummer's day.

But that was not to last. Those clouds retained a great deal of heat at first, but, as the days passed, and with the dramatic increase in the planet's albedo, temperatures fell and the water began to condense into droplets.

A week after the impact, it began to rain—worldwide.

And two weeks after that, so much solar radiation was being reflected back into space that temperatures continued falling, and swiftly. In places as far south as Mexico City, Hawaii, Canton, and the inundated streets of Cairo, it began to snow.

And snow.

And *snow*.

For three centuries, the two greatest threats to human survival had been incessant worldwide warfare and the effects of global warming. Both now were stopped cold—literally. Out of a total world population of 15.7 billion people, an

estimated four billion—over a quarter—had been killed immediately, or within a few hours of the impact. In the coming months, billions more would die of starvation, disease, and exposure to the brutal and unending global winter.

Global warming had been completely and irrevocably reversed with the onset of a new ice age. As for war . . . the survivors had all they could do just staying alive as the snow grew deeper around them. War—at least anything of that name larger and more organized than armed gangs battling over food in the ruins—was a thing of the past.

At least for the time being.

Sixty-five million years before, a twenty-kilometer-wide asteroid had fallen into the sea that one day would be the coast of Yucatán. Much larger than the moonlet of 2127-VT, it hit the planet with a velocity of only eleven kilometers per second, and liberated perhaps one percent of the total kinetic energy released by the Doomsday Impact of 2314. The Cretaceous Impact had set the North American continent ablaze, and created a global winter that drove seventy percent of all life on Earth to extinction—ending the ancient reign of the dinosaurs.

One hundred times more powerful than the dinosaur killer, the Xul Strike of 2314 was the hammer blow of Armageddon.

And the very survival of the human species now hung in the balance.

14 FEBRUARY 2314

Assault Detachment Alpha
Navy Sierra One-one
Location unknown
0308 hrs, GMT

Gunnery Sergeant Travis Garroway lay in a tangled jumble of combat armored suits on the AUT's forward cargo compartment bulkhead, waiting to die.

The AUT was tumbling end over end, centrifugal force creating a simulation of gravity—Garroway estimated about half a G—at both the forward and the aft ends of the cargo compartment. He'd actually started out at the aft bulkhead, but hours ago, he'd made the tortuous climb up what had been the deck, using seat backs as ladder rungs, to the deck's midpoint where "down" shifted from aft to forward. From there, he'd descended to the forward deck—in order to be with Chrome.

Fourteen Marines of Detachment Alpha remained alive inside the autie, all of them injured. Garroway's own wounds were limited to massive bruising and contusion—and what he suspected was a fatal dose of gamma radiation. His suit's automated med unit had engaged the medical nano already in his blood stream, and was working to keep the pain at manageable levels and the nausea in abeyance. At this point, he wasn't certain what would kill them first—the radiation burns or suffocation when their air supplies gave out.

That would be in another twenty to twenty-four hours, depending on how active they were in the meantime.

He leaned over, touching his helmet to Chrome's, speaking to her through direct conduction. "How you doing, baby?"

"Fucking . . . hurts . . ." he heard her say, her voice weak and very far away through the armor. "Just want . . . t'sleep. . . ."

"You stay with me, Chrome!" he shouted, his voice ringing off the walls of his own helmet. "Stay alert, Marine!"

Even as he said it, he wondered if it really mattered any more. Drifting off to sleep and never waking up sounded like a pretty decent way to go.

But as long as they were alive, they were *Marines* . . . and Marines didn't give up.

He held her close with one arm, awkwardly with both of them encased in combat armor. The rest of Alpha Detachment lay around them—or on what now was the ceiling somewhere in the pitch darkness twelve meters overhead. Half of them were dead, according to their suit readouts.

There was no power in the ship. Zero. They still had suit power, but communications had been lost when the local Net went down. Emergency backup suit radios were supposed to be shielded against EMP, but the powerful pulse from the blast appeared to have slagged the circuitry anyway. At least Garroway and the handful of Marines he'd been able to talk with suit-to-suit had no radio communications left. If any other Marines had working suit radios, he hadn't heard from them yet.

How long had it been? His implant timer told him that some thirty-four hours had passed since the detonation. Was that all? It seemed like *so* much longer. . . .

He checked Chrome's medical readouts. She had her oxygen flow set low, and he nudged it a bit higher. Everyone was trying to conserve expendables—power and O₂, especially—but it wouldn't do to shortchange yourself into hypoxia. The readouts on her armor suggested she was suffering from internal bleeding. Not good, especially since he couldn't crack her suit. The AUT's cargo deck was still in

hard vacuum, and the only medical aid available was what the rather limited medinano in her system could provide, coupled with her suit's first-aid computer. It did appear to be slowing the bleeding, but she was still deep in shock, and getting worse. Blood pressure ninety over twenty . . . pulse one-sixty but weak.

Damn! He was losing her.

Garroway had met Staff Sergeant Angelina O'Meara at Camp Lejeune four years earlier, when they'd both been DIs assigned to recruit training at the MCRD at Parris Island. His relationship with O'Meara—*always* "Chrome" and *never* Angelina—had started off on the prickly side. The woman was brassy, loud, and as unabashedly in-your-face as the animated tattoos crawling over sixty percent of her body, and he still wasn't quite sure how they'd finally ended up in bed during that liberty at Hilton Head.

But they'd been close—and frequent if not exclusive bed partners—ever since.

They were careful with the relationship. The Corps did *not* condone physical liaisons between Marines, though there was a lot more latitude for men and women stationed offworld and a long way from home. Groundside duty, though, was different. They'd managed to keep their trysts at Parris Island secret, at least from the brass, which was the only way they'd been able to wangle an offworld billet together, with 1RST on Mars and Phobos. Once offworld, most commanding officers were willing to look the other way, so long as morale and discipline did not suffer.

As it turned out, Colonel Ramsey was a good CO, tough without being anal about regs, fair without being distant or unapproachable.

But wangling that offplanet billet didn't seem like such a hot idea right now. If they'd still be stationed at the MCRD, training recruits, he and Chrome both would be alive, and with every expectation of staying that way.

Unless . . .

His thoughts wandered back to the Xul incursion. He wondered if any of the rocks the bad guys had tossed at Earth had made it through. Probably not. He felt a sharp

thrill of pride, of accomplishment. Alpha had stopped the xenophobic bastards before too many asteroids had been redirected toward Earth, and the High Guard, whose job it was to protect against just such an attack, had some damned decent technology to back them up.

The thought that Earth had made it through the attack okay was all that had kept him sane for the past day and a half. The mere possibility that Alpha's sacrifice had been in vain . . .

Travis Garroway refused to let his mind follow *that* particular track.

He tried to peer into Chrome's visor, but couldn't see much. Light within the crippled transport was limited to the glimmer from medical readouts, and from self-powered glow strips providing dim emergency lighting along the AUT's cargo deck. He couldn't see past the smear of dim reflections on her faceplate.

"Chrome? You still with me?"

He heard an answer, mumbled and all but inaudible.

"Hang on, Chrome! Damn it . . . *Angelina!* Wake up! get with the program!"

"Damn . . . you . . . Trigger," he heard through the helmet connection. "Said . . . never . . . fuckin' call me . . . that. . ."

"Stay with me, damn you!"

From this angle, he could see a sliver of open space through the still-open ramp at the aft end of the deck. There wasn't much to see—just stars slowly drifting past as the AUT continued its slow and relentless spin.

He wondered—not for the first time—where they were now.

Garroway remembered having downloaded a bit of history off the Global Net, an eon or two ago, about something called Project Orion back in the second half of the twentieth century. The idea—which had never gotten beyond the theorizing stage—had revolved around a search for peaceful uses for the nuclear arsenal that then was beginning to threaten the survival of civilization. A physicist named Freeman Dyson had suggested that a spacecraft might be built that employed fission bombs, detonated in a steady stream,

one every few seconds, just astern of the ship. A massive pusher plate equipped with prodigious shock absorbers, would catch the plasma wave of each blast and let it propel the ship forward. Using hydrogen-pellet fusion, a thermonuclear version could take a ship to the stars. The then-British Interplanetary Society had even designed an unmanned, two-stage starship, called Daedalus, that might have carried an instrument package from Earth to Barnard's Star in sixty years . . . again, on paper only.

What had happened to the AUT had been a kind of working model of the old Orion concept. The detonation of several nuclear devices two hundred meters astern had created a plasma shock wave that had accelerated the autie into deep space at high speed. With nothing to slow them down, the surviving Marines were continuing to travel at that new velocity, with the burned-out hulk of the AUT tumbling slowly as it fell.

So where were they now? Somewhere outside the orbit of Mars, obviously . . . but a more precise determination simply could not be made. The local Net was down or inaccessible—due, no doubt, to the fact that the AUT's electronics all were fried into useless hash, and Quincy₃ appeared to have died—if that was the right word—in the detonation. There was no way to determine the AUT's current vector—neither speed nor course—nor was there any way of determining where they now were, or how far they'd come.

What were the chances of someone spotting them? Not very large, he guessed.

In all of the adventure vids and entertainment sims dealing with this sort of situation, the hero always was able to cobble something together using spare parts and raw, human ingenuity . . . a flare using bottled oxygen, or a do-it-yourself radio set, or a laser signaling device using the ruby in the wealthy heroine's necklace.

But rubies were in short supply just now, as were pressurized combustible gases and spare parts for radios with enough signal strength to manage interplanetary ranges. A careful inventory of supplies remaining on the AUT had

turned up nothing that would reach another ship, or create a beacon bright enough to serve as a signal to searchers who might be out there. Garroway had no doubt that there were searchers in the area—Marines did *not* abandon their own—but the AUT was very tiny and very dead, and it was falling through an extremely large volume of empty night.

The one possible exception was the energy weaponry on board—laser rifles and a couple of man-portable particle guns. Charges were low, but energy could be diverted from the storage cells in some of the combat armor worn by dead Marines on the cargo deck.

The trouble with that bright little brainstorm lay in the fact that lasers and, to a lesser degree, pigs, had such tightly focused beams. A shooter would have to aim *directly* at the target ship for the beam to register, and when the targets couldn't even be seen . . .

Hell, from out here, even Earth and Mars each were just bright stars. Anything as small as a ship was invisible. And, to make matters worse, that endless end-for-end spin made anything like careful aiming impossible. The entire detachment, what was left of it, could fire off their weapons randomly from now until their air gave out, and the chances that anyone would notice were so vanishingly small as to be essentially equal to zero.

Even at that, Garroway had considered sending Marines out to hang over the edge of the half-open ramp and fire at Mars and Earth as they circled past. Even a vanishingly small chance was still a chance, right?

In the end, though, as he looked at alternatives, it seemed a better course of action to conserve the remaining air as much as possible. All of that scrambling back and forth to fire of lasers in the hope of signaling someone would burn up enough oxygen to substantially shorten their remaining survival time. It seemed to be a better use of resources to give any searchers out there as much time as possible to find the tumbling autie, with someone still alive on board.

As the hours passed, though, that, too, began looking like a bad call on Garroway's part. Every passing minute carried

the AUT farther from their starting point, alongside the Xul intruder.

Whatever their chances of rescue had been yesterday at this time, they were much dimmer now.

He shook his head inside his helmet as he cradled Chrome's CAS. *Hopeless*. . . .

Commodore Edward Preble

Outbound from Mars

0420 hours GMT

"General Garroway! I really must insist that you give up on this useless search! We have more important things to consider!"

Garroway looked up at the speaker, a rangy, sharp-featured man with an acid tongue and a prissy manner. Brigadier General Walter Hudson was an Army officer assigned to the Phobos training center as the American Union Congressional liaison.

As a major general, Garroway outranked the unpleasant man, but Hudson's role as an NAU representative technically gave him authority over merely U.S. military affairs.

Well . . . that was the theory. In strict chain-of-command terms, a liaison officer only served as a go-between, a kind of glorified messenger boy between the NAU Congressional Military Affairs Bureau and the staff to which he was assigned. The NAU could issue orders to Garroway using Hudson as an official conduit, but at the moment, the NAU did not appear to exist, not as a coherent and operational government body.

And Hudson was assuming authority which he simply did not possess. Not here, and not now.

But Garroway had so far resisted the temptation to chuck Hudson out of his office. The situation on Earth was as yet unknown, though the general assumption was that things must be pretty bad. Still, Garroway's commissioning oaths included oaths to support the North American Union as well

as the government of the United States of America; despite popular belief, the two were *not* the same, any more than the NAU was the sole voice and authority of the World Union.

Hudson might not have the authority to give Garroway orders, but Garroway was determined to observe proper government and military protocol. At the moment, protocol—and the shared illusion that something like government might still exist on *any* level—might be all that was holding human civilization together.

“General Hudson,” he said evenly, “I understand your sense of urgency. However, I still have Marines out there unaccounted for . . . men and women who put their lives on the line to destroy the intruder. I will *not* give them up for dead until hope for their survival is gone, or unless there is the gravest need otherwise.”

“What hope?” Hudson snapped. “General, those Marines died in the blast that destroyed the Xul ship. Tragic, yes . . . but I remind you that the situation on Earth is critical, *critical*. Almost certainly, billions have died. And there is every possibility that more Xul ships will enter the system at any moment in order to continue what the first began! I needn’t remind you that Humanity may not survive a second such attack!”

“And just what is it you would have me do, General? The *Preble* certainly can’t take on another Xul intruder.”

“No. But you can return me and my staff to Phobos. We have lasercom communication with the base there, and know the facility is still up and running. We also have lasercom contact with facilities on Mars, Luna, and in deep space, including the HELGA stations, the Jovian system, and bases in the Asteroid Belt.

“In short, our infrastructure throughout the Solar System appears to be intact, save for Earth itself, and the various stations and facilities in low Earth orbit.”

“Just what is your point, General?”

“My point? My point is that we need to prepare for a second Xul incursion, and the quicker we do that, the better! Even if the Xul ship was completely alone in carrying out its attack, you can’t imagine that the rest of them will ignore the fact that one of their warships has just gone missing! They’re

going to send other forces in to check up on us! And we need to be ready!

"Now, we're already planning a conference at Stickney Base. We're also lucky to have a N'mah ship in-system . . . the *T'krah Elessed Ev'r*." The alien name rolled off Hudson's tongue with practiced ease, glottal stops and all. "I'm told Stickney is in contact with them, and they will be arriving at Phobos within five days. I intend to be there to meet them!"

Garroway shot a quick mathematical query uplink to Quincy₂, and received a reply almost at once. The *Preble* was currently decelerating, on a course that would match the course and speed of the Xul vessel at the moment of its destruction in another five hours. That put them roughly halfway between the current positions of Earth and Mars, but outside of Mars' orbit, within the inner reaches of the Asteroid Belt. To return to Mars space, they would have to continue their deceleration for five more hours, then accelerate for two days back toward Mars, then decelerate for another two days. Not even the magic of N'mah semi-inertialess drive would change the cold numbers of fact. Four days. They could not return to Mars space in less than four days, at the very best.

He did a quick review of other assets. Possibly they could rendezvous with another ship already en route for Mars.

Quincy₂ assured him that there was nothing in transit now that would get Hudson back to Phobos in less than four days.

"General, if you'll check the math and the available ship assets, you'll see that you're going to miss that reception." He waited as the man's eyes took on a distant look. Hudson did not have access to Quincy₂, who was open only to members of 1MIEU's command constellation, or Garroway's immediate superiors with 3MARDIV.

"Nevertheless, General Garroway, I need to reach Phobos with the least possible delay. We could make it in four days if we decelerate at two gravities, then boost for Mars at two gravities instead of one. Captain Berger has refused my orders, and says he is operating under *your* orders, as ranking officer on board this vessel."

"Quite right. It is my intention to take the *Preble* into the general area where the Xul ship was destroyed, matching course and speed with the debris cloud. From there, I intend to have Captain Berger deploy additional remote probes and drones. My AI has analyzed recordings of the Xul's destruction, and we believe those recordings caught just a glimpse of the AUT an instant before it was hit by the blast. We believe we have enough data to extrapolate the AUT's vector after the blast . . . enough, anyway, to give us a fair chance of locating them."

"General Garroway! Face reality! Your Marines are dead! They were killed in the destruction of the Xul vessel. If any *did* survive, somehow, they were hit by so much radiation that, well, it must have been instantly fatal. They are *dead*, and nothing more can be done for them!"

Garroway drew a deep breath. "General Hudson. Those are my men and women out there, and I will determine when it is time to give up on them. The Navy hospital ship *Clara Barton* is two days from here, and on approach. They have the facilities to treat severe radiation poisoning.

"While I understand your need to reach that conference on Phobos, I assure you that that conference will be continuing for some time . . . and the *Preble* has everything you need to attend it electronically. By the time things get started, you won't even have much of a time lag to work around.

"But I will not give up on my Marines. Is that understood?"

Hudson glared down at him from across the desk, hands flexing at his sides. Then the man turned on his heel and stalked out.

Garroway leaned back in his chair, sagging a little inside. Making an enemy of an NAU liaison officer was not a career-enhancing move, as they said. If things were as bad as Garroway feared back on Earth, there was no NAU left . . . but the man could still make trouble.

In fact, Garroway's take on the man was that Hudson was suffering from a severe case of ambition. As an LO standing

in for NAU politicians unavoidably absent—perhaps permanently so—he was in a good position to create a power base for his own political aspirations.

Garroway scowled. If true, Hudson was playing political games with the lives of Garroway's Marines.

And that was something Garroway would not tolerate from anyone, not the Commandant, not the Chiefs of Staff, not the President of the United States.

No one.

But the thought left him feeling isolated and alone. Communications were coming back on-line across the Solar System, but the situation in near-Earth space was still fuzzy and fragmentary, at best. The most telling image was being transmitted from a telescope camera at Fra Mauro, on Luna. He called up the image in a noumenal window for another long look.

Currently, it was early morning over Greenwich, which made it night across all of North America. The image from Luna showed Earth very nearly full, so he must be looking at the hemisphere occupied by the vast sweep of Asia and the western Pacific.

But there was no way to tell what he was looking at. The Earth was a blindingly white, white globe, the surface as completely masked by impenetrable clouds as was the surface of Venus. In places—especially along the sunrise terminator, which he calculated must be eastern Europe, the eastern Med, and Africa—lightning played within the cottony, light-muffling depths of those clouds, constant, silent flickerings and stroblings larger and more powerful than anything Garroway had seen in all his years of observing Earth from space. He'd seen the storm over the Atlantic some hours earlier, noted the vast, spiral sweep alive with lightning flashes. If that was Europe he was looking at now, that lightning must be the eastern rim of the storm . . . and the storm must have grown considerably just in the past twelve hours.

He tried to imagine what it was like right now on Earth's surface, tried and failed. Darkness. Rain. Storm. Lightning.

It was clear that *something* very large had gotten past the High Guard defenses and punched into the Earth. To judge from the global cloud cover, that something had been a dinosaur killer in terms of kinetic energy at the very least.

Humankind's survival must now depend on humans living offworld . . . but that was a terribly slender hope. Outside of small colonies dedicated to research or to military operations on Luna and on Mars, there wasn't much else in the Solar System at large—a few dozen mining and processing centers in the Belt, some research stations among the Jovian moons and at Titan, fifty or so orbital facilities at the L-4 and L-5 points, and in solar orbit . . . nanofactories, for the most part, antimatter generating stations, and military bases like the HELGA stations.

That was the Solar System. There were a few bases and small colonies on worlds around other stars—most of them xenoarcheological research facilities like the one at Chiron, at Alpha Centauri A. There was a large colony now at Llandele 21185, on the Ahannu planet humans called Ishtar, numbering . . . what? Twenty thousand? If that.

He had no hard figures available, but the total human population off-Earth might total a few hundred thousand. That was *all*.

But it wasn't just the small off-Earth population. If his guess about that planet-girdling white cloud was at all accurate, it would be getting cold on Earth, from pole to pole, very cold. This might well be the start of a new global ice age. If so, the planet's survivors were going to be damned hard-pressed just feeding themselves.

Up until now, the majority of the food for offworld facilities had been shipped up from Earth. There were greenhouses on Luna and Mars, yes, but they were barely productive enough to feed the staffs at those sites. Most bases and orbital stations were just too small to produce their own food.

And now, somehow, those bases would not only have to feed themselves, but the Earth as well.

A daunting prospect.

Quite possibly an *impossible* prospect.

And all of that assumed that another Xul ship didn't pop

out of nowhere and begin flinging more rocks around. Hudson was right about that. The Xul might well be back, if only to find out what had happened to their first ship. A determined attack by even one more ship would wipe the small human communities from the faces of Mars and Luna in no time at all, would complete the destruction of Earth, would mop up the remaining orbital stations and ships almost as an afterthought . . . and there was *nothing* in the Solar System right now that could stand against them.

Humanity now faced two major problems, as Garroway saw it. The first was simple survival—pulling together whatever was left of Earth's groundside population and ensuring that they could be fed and housed in the aftermath of the single greatest calamity ever to overtake Humankind. If the Xul hadn't driven humanity into extinction, the ice age to come might well finish the job.

The second was just as serious, and perhaps more so. The human race was now at war with an enemy immeasurably superior in technology to its own. The Xul had faster-than-light drive. That alone gave them an insurmountable advantage in combat. A combat fleet trying to close with such a vessel would never get close enough to launch a single missile, not when the Xul could outrun light itself, at need. The Marines of Detachment Alpha had lucked out, getting as close as they had. The blasts from HELGA Three and the XEL satellites at Mars had obviously crippled the intruder enough that the AUT could close in and put the Marines on board. That was the sort of combat tactic that you could *not* expect to work a second time.

In combat, victory went to the lucky more than to the skilled.

And it was very possible that Earth had just used up its cosmic allotment of luck.

"General Garroway?" a soft voice spoke in his mind.

"What is it, Quincy?"

"I believe we have found them."

That brought him sharply into the here and now. "What? The AUT?"

"Yes, sir. Radar and lidar scans of this entire volume of

space identified a large number of fragments emanating from the blast that destroyed the Xul ship."

"Yes, I know. That was part of the problem, wasn't it?" The debris cloud had obscured much of the area, blocking both radar and laser tracking sweeps.

"Yes, sir. However, I made a careful analysis of the vector of each tracked fragment, eliminating those fragments massing less than one hundred tons."

An AUT massed 200 tons, so Quincy had been looking for anything larger than half of an AUT. Garroway thought he saw where the AI was going with this. "Go on."

"I paid particular attention to debris tracked in a cone extending out from the blast point along the general probable heading of the object we identified in the drone images. One fragment, massing an estimated two hundred tons, possessed a velocity component to its vector significantly greater than the rest."

"Ah!" Of course. The AUT had already been accelerating out from the Xul ship when the explosion occurred. The blast front had pushed it along faster, essentially adding to its velocity the same velocity imparted to all of the other fragments.

Through that sort of analysis, the AUT would have stuck out like the proverbial sore thumb.

"Well done, Quincy!"

"Thank you, sir. The application of basic physics seemed obvious." But, Garroway swore, the AI still sounded, well . . . *smug*.

"What do we have that can reach them?"

"I have already taken the liberty of directing several reconnaissance drones into intercept vectors. The *Clara Barton* can rendezvous with them in two days. The *Preble* could do so in nineteen hours."

"Put me through to Captain Berger!"

"Yes, General. On-line."

There was still a chance . . . small, but a *fighting* chance. And fighting was what Marines did best.

18 FEBRUARY 2314

*Mars Military Training Command
Stickney Base,
Phobos
1412 hrs, local*

Colonel Robert Ellsworth Lee entered the conference chamber—doing so in a less than dignified manner, he thought, as he pulled himself along the guideline, half-adrift in the Martian moon’s microgravity. His staff trailed along behind, the command constellation for 3MarDiv’s 1RST, formally the 1st Regiment of the 3rd Marine Division, and now officially the First Marine Recon Strike Team. The large, bowl-shaped auditorium was already filling up with high-ranking brass, to judge by the mass of gold and silver braid on so many full-dress uniforms, enough so as to leave him feeling distinctly on the peon side of things. He could see a few majors within the personal staffs of various flag officers, and a smattering of Navy captains and Army and Marine colonels, but by far the majority of officers wore the heavy gold braid of admirals and generals. There were, he guessed, a couple of hundred people there; he hadn’t realized there was that much military brass in Mars space.

There were quite a few civilians present as well, which made Lee uncomfortable. Until they identified themselves, you never knew who or what the suits might be—politicians, spooks, or civilian intelligence analysts.

Given the situation that had generated this unprecedented session, there likely were fair numbers of all three, and chances were that meant trouble, one way or another, for the professional military personnel in the room.

Lee found his seat in one of the back, higher tiers and strapped himself in. Chairs, of course, weren't strictly necessary; you could stand all day in Phobos's whisper of a gravity field and not feel the need to sit down. But seated ranks of attendees carried with them order and tradition, both; it simply wouldn't do to have a forest of generals and admirals all standing in a mob, at slightly diverging angles, trying to see past one another to the stage.

The central stage was occupied by a podium, and by a large holoprojection disk. Smaller disks were set in a circle around the stage; not all of the attendees to the conference could be present physically, and arrangements had been made for them to attend electronically instead.

But it was the large projection disk that particularly interested Lee. If the scuttlebutt floating about throughout the Phobos facility was true. . . .

Lee didn't let himself think about that. Instead, he directed his attention up, or what passed for up in this near weightless environment. Though the conference room was buried deep beneath the moonlet's surface, the dome was set to show the view outside as though the structure literally rested on the surface, at the rim of Stickney Crater. The view was . . . spectacular.

Once, eons ago, a collision with another large body had very nearly shattered Phobos, leaving it looking like a gray potato with a deep, smooth chunk gouged out of one end. That gouge was Stickney, a crater ten kilometers wide on a moonlet that itself measured only twenty by twenty-seven kilometers. Called after the maiden name of Asaph Hall's wife—Hall was the American astronomer who discovered Phobos in 1877—Stickney provided an awesome panorama of the Phobos surface, simply by virtue of its size compared to the moon itself. Outside the dome, the dusty surface of Phobos appeared to drop away in a deep and shadow-etched gulf; ten kilometers away, the far rim stretched across the

horizon, bisecting the enormous rust-orange face of Mars. Scattered boulders half-submerged in dust cast long, fast-moving shadows. Some of those rocks, ejecta from the original impact, were fifty meters across.

Though naturally a dark, dark gray in color, the surface of Phobos at this moment was bathed in a ruddy wash of Mars-light. The tiny satellite circled the planet at an altitude of just six thousand kilometers, so the planet's face filled much of the sky; with the moon orbiting the planet three times in a single Martian day, surface features on Mars were visibly moving, drifting slowly from east to west. At the moment, the dark, charcoal sprawl of Syrtis Major was rising slowly above Stickney's far rim, its borders marked by thickly overlapping craters, dark ravines, and bright highlands.

The choice of that particular surface view, Lee thought, had most likely been accidental . . . but he wondered if other people at the conference were looking at the seemingly bottomless gulf of Stickney, thinking about the ancient asteroidal impact that had gouged it . . . and connecting with the realization of what had happened to Earth.

Early reports were finally starting to filter in. The situation on Earth was as grim and as desperate as many had feared. At this time, only the governments of Japan, North China, and Australia had been able to jury-rig computer and communications links capable of reconnecting with the System Net, going through the nodes at Fra Mauro and at Crisium, on Luna.

Five days after the Armageddon Impact, as they were now calling it, it was *raining* on the planet Earth. That represented a kind of grim joke. Some of the cheaper fictional download entertainment sims he'd seen made the old mistake of forgetting just how large, and how varied, a planet truly was. "It was raining on the planet Mongo" was, generally, as short-sighted a fictional mistake as saying "It was dawn on the planet Earth."

But in this case, so far as early reports had indicated, it really was raining everywhere at once, save for at the poles, where it was snowing. Chinese aircraft had flown as far east as San Francisco and as far west as Ukraine, while Australian

aircraft had probed eastern Africa and parts of the Indian subcontinent. Everywhere, it was raining . . . and not in showers, either, but in streaming, thundering, heavens-opening torrents.

The single saving grace in the planetwide storm lay in the fact that vast fires set in central Europe, in South America, and in the North American Midwest appeared to have been drowned out. The bad news was that topsoil was being eroded away at a fearful rate.

Global temperatures were high, averaging 35 degrees Celsius everywhere but beyond the Arctic and Antarctic circles and reportedly was rising there as well. The rise in temperature was slowing now, as the rain continued, and no one expected that rise to continue for very much longer. Lee turned in his seat, studying part of the dome overhead opposite the vast sprawl of Mars. The Sun, currently, was below the Phobos horizon, but there, fairly high in the sky, a single star shone brightly enough to be seen despite the bright glare from the Martian desert below. That star now outshone Venus, a brilliant, diamond-sharp gleam of pure, white light.

That star was Earth, now as cloud-decked as Venus, and reflecting most of the solar radiation that hit it.

It wouldn't be much longer before the average temperature on Earth began falling.

And no one could predict how far temperatures would fall.

"Ladies, gentlemen," a voice sounded in his head. "This conference will now come to order."

Lee turned his full attention back to the stage, and its central podium. An NAU Army general stood there, addressing the throng, resplendent in the full dress NAU silver and blue uniform. Lee requested a noumenal ID, and his implant retrieved an identification for the speaker—Major General Lucius Vanderkaamp, commander of the North American Union's Fifth Army Group.

The title, Lee reflected was something of a misnomer. The NAU possessed an army organization, but very little in the way of actual troops. Instead, under the New York Charter of 2240, the NAU had the right to recruit military units from

its member nations—chiefly the United States. Right now, General Vanderkaamp was a general without an army.

“As the senior ranking military officer here,” Vanderkaamp went on, “I am assuming overall command of this meeting, ah, as chairperson. We are here to formally address the serious situation on Earth, determine possible courses of action, and to consider the threat now imposed by the Xul, the so-called Hunters of the Dawn.

“Before we begin, the chair will accept any opening statements or challenges.”

“Mr. Chairman!”

A bearded man in a blue civilian jumpsuit stood near the front. “This meeting is clearly illegal! Many representatives are not here, will not be here for days, yet. Many who are in attendance are so distant as to suffer from a full twenty-minute time-lag, the delay for a transmission and its reply to make the round trip, from Phobos to Luna and Earth orbit and back to Phobos.” He drew herself up straighter. “Further, there are no representatives present of the World Union.”

“And in what way does that make these proceedings illegal, sir?”

“Obviously, this body does not, *cannot*, speak for all of Humankind!”

François Brissard, Lee noted as he studied the man’s electronic ID, was an assistant consul from France stationed at Cydonia, one of several research colonies on Mars. He was also, he saw, an avid World Unionist, an advocate for a final elimination of international borders and the creation of a single world government . . . one based on World Union ideals, of course.

“Sit down, François!” another voice called from the crowd. “This isn’t the time for politicking.”

“Monsieur Brissard,” General Vanderkaamp said, patience in his voice, “these proceedings are intended as an initial survey of the . . . challenges now facing Humankind. I assure we’re not out to steal the World Union’s charter.”

Brissard sat down again, a bit reluctantly, Lee thought.

“Other statements?” Vanderkaamp asked the assembly.

"I have a statement." The woman's voice spoke Surzhyk, a creolized Ukrainian and Russian, but Lee heard it translated in his mind into English. Dr. Marta Petranova was a Russian xenoarcheologist, but she'd been granted diplomatic status by the Ukraine consulate at Clarke City, on Mars.

"Dr. Petranova."

"The agenda you published for this conference is not complete."

"In what way?"

"You list two items of interest—the survival of our brothers and sisters trapped on Earth, and the possibility of further attacks by the Xul. You have neglected the possibility of invasion."

"I would think that was covered by the item concerning the Xul—"

"Not invasion by the Xul, Mr. Chairman. By the *Chinese*."

Vanderkaamp looked blank. Lee checked Petranova's ID and bio, and saw that she, too, was a World Unionist.

When Vanderkaamp didn't reply immediately, she pressed on. "Mr. Chairman! My consulate has received reports, *many* reports, of troops and aircraft belonging to the North China Hegemony landing in widely scattered areas of the Russian Federation, the Emirate of Tashkent, and Ukraine! Beijing is taking advantage of the chaos and devastation on our planet to advance their own agenda—one of planetary conquest!"

"Good God! First things first!" someone called from the crowd, and then it seemed that everyone was shouting, demanding attention.

Lee leaned back in his seat, then glanced at Major Risler, seated beside him. Carol Risler was his executive officer. "Well," he whispered, "it's starting."

"You have to admit that parliamentary procedure lasted longer than we thought it would," she replied.

It was, Lee thought, a matter of scale. The destruction wrought on Earth by the Xul attack was so great, on such a vast and devastating scale, that many—perhaps most—of the men and women here simply couldn't see the whole

image. As a result, Brissard was pushing to make sure the World Union was properly represented, and Petranova wanted to make sure the Chinese didn't extend their hegemony into Siberia and eastern Europe.

Maybe they simply couldn't look at something as big as the extinction of Humankind.

"Mr. Chairman! Mr. Chairman!" Another voice cut across the babble, both of voices in the chamber, and the confusing mental cacophony as various delegates tried to speak over implant circuitry.

"The chair recognizes General Garroway. Gentlemen! Ladies! *Please!*"

The shouting died away, reluctantly, as a holographic figure appeared on one of the side projection daises. Lee recognized Garroway's craggy features. He was wearing dark gray Marine utilities, which cut a sharp contrast with the full-dress uniforms so in evidence among the members of the conference physically present.

The slightly translucent figure of General Garroway waited patiently for the confusion to die away. His ID tag indicated that he was still on board the transport *Preble*, several million kilometers out from Mars.

"I thought the conference would appreciate seeing some of the intel 1RST managed to snatch from the Xul ship," he said at last. "As I'm sure you've already been made aware, while the Marines were planting the charges that destroyed the Xul ship, the AI from my command constellation managed to infiltrate the Xul computer network."

That raised a fresh murmur of comment and low-voiced conversation. Evidently, most here had not heard this. Lee had, however, and he nodded quietly. The general knew how to grab the attention of everyone here.

A light winked at the edge of Lee's mental awareness—a noumenal warning that an image was available for download. He accepted the message, and a window opened in his mind.

He gasped, his sharp intake of breath mingling with similar sounds throughout the auditorium. The view was . . . spectacular.

The viewpoint appeared to be just above the plane of the Galaxy, looking along one of the spiral arms back toward the Core. Stars gleamed in uncounted hundreds of millions, most with a blue to white hue in the arms, but shading to red and orange at the central bulge of the Galactic hub. The camera appeared to be moving deeper into the arm; individual suns separated themselves from the clotted mass of stars in the background and drifted past, to left or right, above or below.

When Lee tried to focus on any one star, a small ID tag appeared next to it. The writing was gibberish—short bursts of dots and lines that might be Xul writing, or which might be some sort of electronic notation. He was also, aware, though, of lines drawing themselves from sun to sun through the starcloud ahead, and other symbols that might be navigational beacons . . . or stargates . . . or . . .

“We still can’t directly translate the Xul language,” Gar-roway continued, “but as you can see from this, we did get some navigational data.

“My staff transmitted the data we were able to get back from the Xul ship to our N’mah allies on board the *T’krah Elessed Ev’r*, and I’ve already discussed this with them. They agree that they may be able to figure out where that ship came from.”

The conference chamber now was deathly silent. The large holoprojection disk lit up and, a moment later, a tall and sinuous figure appeared in the projection area.

Every person in the room, Lee realized, was leaning forward now, watching both with physical eyes and through the downloads linking into their cranial implants.

The “Repulsive Ones,” Lee thought as the alien’s image took form, hovering as though adrift in a column of water. *And just incidentally the saviors of Mankind. . .*

The historian Berossus had written about them around 280 B.C.E., in his *History of Babylon*, recounting a myth possibly dating all the way back to ancient Sumeria. According to that story, a strange-looking being calling himself “Oannes” had appeared to people living at the head of the

Persian Gulf before recorded history, teaching them math, agriculture, science, medicine, writing, and other essentials of civilization. Oannes, Berossus said, took no food, but returned each evening to his home under the sea, for he was amphibious. The being was described as having "a fish's head atop another head, and also feet below, similar to those of a man, subjoined to the fish's tail."

In fact, the adult N'mah looked like a four-meter-long eel, mottled gray with an opalescent sheen, with a long and flattened tail. The head, elongated, strangely articulated, and encased in a black, chitinous armor, possessed four eyes—two the size of a man's fists ringed in bone high up, well above two smaller eyes deeply recessed into the skull. Two vertically slit nostrils were set between the two pairs of eyes, and seemed to supplement pulsing gill slits in what passed for a chest. The jaw was massively armored and set with needle-sharp teeth. The being was fully aquatic, though it could breath air for short periods.

To human eyes, a Repulsive One, indeed. But the N'mah were highly cultured and possessed a technology well in advance of humans. They used something like the electronic implant communications technology employed by humans—evident in the flat oval of silvery metal showing on the side of the being's long skull—and they used an organic form on nanotechnology to reshape their surroundings to their needs. Their near-inertialess drive allowed their ships to accelerate at as much as one hundred gravities without pulping delicate cargoes, like passengers. Human physicists were still trying to get a grasp on how they managed that little trick.

This N'mah appeared to be floating in midair but, in fact, the being was in a tank of water elsewhere, his image projected by the holographic display. As Berossus had claimed, the beings were amphibious—but in the reverse of the pattern seen in Terrestrial amphibians, like frogs. In the N'mah, the juvenile stage crawled out of shallow birthing waters and onto land, though they were truly amphibious and at home in the water as well; after about fifty terrestrial years, the adults lost their hind legs and became purely marine-aquatic. It was

the long juvenile phase of the life cycle that carried out the mining, the smelting, the fire-building, and the air-breathing industry for the race.

Berossus had called the creature of ancient Sumerian myth “Oannes.” Whether he meant that that was the being’s name, or the name of their species was not made certain in his *History*, but he’d been clear on one point: Oannes, whatever he was, was not a god, but an “animal with reason,” an intelligent being which claimed to hail from the star Sirius.

That was a vitally important distinction that had set the Oannes myth apart from the usual ancient stories of gods and goddesses.

Another set of myths had arisen in Central Africa, with a primitive tribe called the Dogon. Not contacted by the outside world until the 1920s, their myths included stories of strange beings called “Nommo” who came from the star Sirius—again, not gods, but thinking creatures very unlike men. The story might easily have been dismissed as flights of a tribal people’s imagination or religious myth . . . except for the fact that the Dogon appeared to possess information, incorporated into their dances and their pottery designs long before their contact with the outside world, about Sirius’s invisible white dwarf companion, Sirius B, and the system’s even smaller member, Sirius C.

The evidence, while not conclusive, had been strongly suggestive, enough so that xenoarcheologists began taking them seriously. During the twenty-first century, discoveries throughout the Solar System demonstrated repeatedly that Earth had been visited not once, but many times, and over a period of many thousands of years, by nonhuman intelligences from the stars. The Oannans/Nommo, it seemed, might be one of them.

Other ancient cultures revered Sirius as well—among them the Egyptians, who called Sirius Sopdet, or Sothis, and “the Sun behind the Sun,” identifying it with the goddess Isis and the civilizing influence of the gods. The fact that the rising of Sirius, the brightest star in the sky, coincided with the flooding of the Nile was most likely responsible for its veneration in ancient Egypt. Still . . .

In 2148, the Earth explorer vessel *Wings of Isis* had reached Sirius, 8.6 light-years from Earth, discovering that "Sirius C" was, in fact, an artificial structure, one containing the mass of a large planet somehow collapsed into a titanic metal hoop twenty kilometers across. Enormous masses compressed into artificial black holes counter-rotated within the hoop at an appreciable fraction of c , warping space and time and allowing instantaneous passage across impossible gulfs between the stars.

Tragically, *Wings of Isis* had been destroyed by a Xul starship while in the Sirian system; a later Marine expedition had made contact with the N'mah, as the inhabitants of the Sirius C gate called themselves.

And it turned out that the N'mah remembered the people of Earth. . . .

"My name," the being said, "or, rather, my title, is Duradh'a, and you may address me as such. Our peoples, N'mah and human, are closely intertwined," a voice said over Lee's cerebralink, dry and without accent, the product of a translation AI. "The threat of extinction has bonded us."

True enough, Lee thought. When discovered, the N'mah had been living within the stargate structure, not as owners, but as high-tech vermin lurking within the Gate's tunnels and inner chambers, living quietly beneath the Xuls's notice. But eight thousand years earlier, they'd possessed technologies now forgotten, including the ability to travel faster than light between the stars.

And eight thousand years earlier, their explorers had discovered Earth.

"This," the N'mah was saying, "is not the first time your planet has been bombarded by the entities you call Xul and Hunters of the Dawn. This you have learned for yourselves."

Earth, it seemed, had had a long history of visitors from the stars. Another alien race, the Ahannu, had colonized parts of Earth perhaps ten thousand years ago, enslaving large portions of the primitive human population, which came to worship them as the Anu, the gods. Archeoethnographers only now were beginning to unravel what that period of servitude had done in molding human thought, in planting

the seeds that later became the gods of ancient myth . . . and of modern religion.

But the Ahannu had attracted the attention of the Xul, and the Xul, it was now known, had diverted asteroids that time as well, including one that struck the Arabian Gulf, sending a tidal wave smashing into what later would be called the Fertile Crescent. The Ahannu colonies were literally wiped from the face of the planet. *That* impact, inundating with a tidal wave what centuries later would become Sumeria, proved to be the original genesis of Noah's Flood, transmitted to the ancient Hebrews by way of the Sumerian Epic of Gilgamesh, and other ancient sources.

On that occasion, too, as was hinted at by the story of Noah, Humankind had been brought to the point of extinction.

According to N'mah records, their explorers had discovered human survivors of the flood, wretched beings on the point of reverting to complete savagery when the starships arrived, bringing the gifts of civilization, and, in the process, planting the seeds that would one day become the legends of Oannes and the Nommo, of God's covenant with Man, of Prometheus's gift of fire.

Under N'mah guidance, civilization had emerged once more on the fertile plains between the Tigris and the Euphrates, cities had appeared, and humanity been reborn. The N'mah quite literally were the saviors of Humankind.

And now, every person in that conference auditorium desperately hoped, they would be Humankind's saviors once again.

"We have long recognized," Duradh'a continued, floating serenely in his tank, "the essentially cyclic nature of technic civilization within the parts of the Galaxy with which we are familiar. Your own discoveries—on your Luna, on the fourth planet of this system, on the world you call Chiron a little over four light-years from here, and elsewhere—have revealed the detritus of ancient star-faring civilizations smashed into extinction during repeated waves of devastation. You recognize, as well, that what you call the Xul or the Hunters of the Dawn are responsible for what your philosophers have called the Fermi Paradox."

The Fermi Paradox strikes again, Lee thought. During the mid-twentieth century, physicist Enrico Fermi was supposed to have asked the question, "Where is everyone?" In a galaxy of three or four hundred billion stars—to say nothing of the hundreds of billions of other galaxies—the possibility that other life, other civilizations would sooner or later arise seemed all but certain. Even if the magic of faster-than-light drives never appeared to tamper with the equations, a suitably aggressive and technically oriented species that began spreading across interstellar distances would, sooner or later, reach and colonize every suitable planet in the Galaxy. Given a top velocity of even just ten percent of the speed of light, and a long lead time between waves of colonization, that one species could be expected to colonize the entire Galaxy in less than a million years—an optical-organ's blink, compared to the age of the Galaxy itself. Given that the equations suggested hundreds, even thousands of star-faring species in the Galaxy at any given epoch, the sky ought to be fairly humming with interstellar signals and starships.

Hence Fermi's question: "Where is everyone?" For a long time, human astronomers and astrophysicists had simply assumed that life was a lot more infrequent an occurrence, technology sufficiently rare, and the life span of a technologically capable species sufficiently brief that there *was* only one intelligence in the Galaxy—*Homo sapiens*.

Once humans had reached the Moon and Mars, though, they'd found plenty of evidence of previous waves of interstellar visitors—the first half a million years ago, the second in barely prehistoric times, with the arrival of the Ahannu and, later, the N'mah. Something, *someone*, seemed determined to obliterate anyone else who achieved space travel.

That someone was the Xul.

"Unfortunately, we still know extremely little about the Xul," said Duandh'a. "They appear to exist as a blend of organic and inorganic components, but may be thought of as a machine group intelligence. They possess large and powerful starships which have faster-than-light capabilities, though they also employ the Ancients' Stargates to enable

them to achieve virtually instantaneous travel across extremely large distances. One base system has been positively identified in a star cluster outside the boundaries of this Galaxy; others are believed to exist within the Galactic Core. The Xul may be ubiquitous throughout this entire Galaxy of four hundred billion suns.

"The Xul have been in existence for at least half a million years. There is a strong possibility that the Xul, or their remote progenitors, evolved as much as one hundred million years ago and began spreading inexorably across the Galaxy. There is a distinct possibility—at this point unprovable, but a possibility—that a prehuman civilization on your planet, one arising among highly intelligent beings that in turn evolved from the animals you call dinosaurs, was obliterated by a Xul asteroid attack sixty-five million years ago. We see this identical pattern across the Galaxy appear again and again and again—life evolving, life attaining sentience and technology, technic civilization achieving interstellar space flight, followed by the abrupt appearance of the Xul and that civilization's complete annihilation.

"One of your scientists," the N'mah continued, "promulgated the biological concept you call 'survival of the fittest.' Briefly, an organism that develops a trait or characteristic that helps it survive will pass that characteristic on to its young. Over large periods of time, evolutionary pressures—survival of the fittest—will streamline those characteristics to sometimes astonishing degrees.

"We believe that the Xul originally evolved in an *extremely* competitive environment—perhaps a biosphere that was home to many large and dangerous predators. For those progenitors of modern Xul, survival became a matter of killing *anything else* that was a threat to the species. This trait may well have become completely and inflexibly instinctive with them, a way of seeing and dealing with the universe that leaves them incapable of seeing other civilized species as potential friends or allies.

"Once such a species developed advanced technic capabilities, we theorize, they might well maintain their place by deliberately seeking out newly emergent technic

civilizations—by means of their radio signals, for instance, or the neutrino flux of fusion power plants—and eliminating them . . . at least to the point of ‘bombing them into the Stone Age,’ as one of your military personalities so bluntly put it.”

Lee nodded as the being spoke. This understanding, this *resolution* of the Fermi Paradox had been floating around ever since the ruins on Mars, Chiron, and elsewhere had been discovered.

“Fortunately, the Xul are not always . . . *efficient* in their ministrations. You have initiated contact with the Ahannu, on the world you call Ishtar . . . a primitive remnant of what once was a star-faring empire. You have also established relations with we of the N’mah, whom you now know to be similar remnants of a once far-flung interstellar trade and exploratory cooperative.”

Rats in the walls, Lee thought. So far, humans had communicated only with the N’mah of the Sirius Stargate, a culture that had managed to remake portions of the gate’s interior into a microworld where they continued to live six thousand years later, unnoticed by the Xul even when the Xul continued to use that Gate for interstellar transits. Presumably, there were other N’mah colonies out there among the stars . . . but if so, they, too, were lying low, remaining *very* quiet, hoping to stay off the Xul sensor displays. The N’mah had lost or given up interstellar travel thousands of years ago; starships tended to attract a lot of attention.

“With both the N’mah and the Ahannu,” Duradh’a went on, “there *were* survivors. In our case, we deliberately gave up some aspects of our technology in order to, as you humans put it, ‘keep a low profile.’ In the case of Ahannu, one of their interstellar colonies was overlooked by the Xul, and maintained a primitive existence without recourse to space-flight at all.”

The Ahannu planet, Ishtar, had been a surprise—the Earthlike satellite of a super gas giant. Quite possibly, the Xul simply hadn’t bothered looking for Ahannu colonies outside of the normal liquid-water band surrounding the system’s cool, red dwarf star.

"We believe that a similar option is open to Humankind. We of the *T'krah Elessed Ev'r* wish to formally offer you this possibility of safety . . . to flee with us to a new sanctuary, possibly worlds located in a neighboring galaxy, there to rebuild your civilization and escape the Xul predators."

Shocked silence greeted this offer. Lee was surprised. He'd expected offers of technological help, but not an offer of wholesale migration.

"Durahd'a," one of the naval officers in the audience said, his manner tentative, "do I understand that you're suggesting we *abandon* Earth?"

"Of course. You managed to destroy the Xul ship—an act of incredible bravery and courage, I will add—but you must recognize the inevitable, that sooner or later the Xul will come looking for that vessel. When they do, they will not limit themselves to bombarding Earth with asteroids. They have the ability to turn your sun into a weapon that will incinerate every living creature in this star system."

"If that's true," Brigadier General Pamela Steubbins asked, "why didn't they just do it first time around?"

"The Xul, to judge by what little we know of them, must be an extremely conservative species. Think about it. They have been in existence as a technologically adept species for at least a million years, and quite probably for as much as one hundred times longer than that. They tend to move slowly, to *think* slowly, to draw conclusions slowly . . . but to make plans that seem quite long-ranged to more ephemeral species. We know they *can* incinerate entire star systems, and that they have done so when faced by a sufficiently dangerous foe. A world scorched by a nova, however, orbiting a burned-out white dwarf sun, is of little use to them. The Xul, we believe, do tolerate, and even cultivate, the existence of other intelligences . . . taking care to keep them in a pretechnological state. We don't know what they do with them, but we have seen evidence of this. Some of your years ago, the Xul dropped yet another asteroid on your planet to annihilate a promising Bronze Age culture there. They did not eradicate all life or all civilization,

however. Possibly they planned on using you humans for something else.

“To answer your question, General Steubbins, the Xul use the least amount of force possible in any given situation commensurate with accomplishing their goals—sending one ship instead of a fleet, using an asteroid bombardment instead of novae. But since you have just rather dramatically demonstrated that you *do* pose a long-term threat to them. I think you can be confident that they will not hold back a second time.”

“How the hell are we supposed to move the entire human population elsewhere?” a man in civilian clothing called out in what was almost a wail of despair. “There may be *billions* of people left alive on Earth!”

“With regret, Senator Langley, that situation will not long ensue. The heat currently enveloping your homeworld will soon give way to ice and sub-freezing temperatures. Only those of your species already in space—plus the handful more you may be able to rescue—will survive.”

Again, silence hung heavy within the bowl of the conference auditorium.

Only in the century or so since humans had reached Sirius had the N'mah begun building starships again, Lee knew, after a hiatus of at least five thousand years. One such was the enormous *T'krah Elessed Ev'r*; a ten-kilometer-long vessel that essentially was an asteroid with an inertialess drive attached, and rotating inner wheels housing thousands of N'mah, both aquatic adults and amphibian juveniles.

For more than eighty years, now, more and more of the N'mah population in the Sirian Stargate had been moving onto the asteroid starships. Sirius was no longer safe for them, not after the humans had destroyed a Xul huntership at the Gate.

“In any case,” Duradh'a said, “there is a limit to what we can do. Essentially, we propose to give you what help we can in turning several asteroids into . . . I believe your term for them is ‘interstellar arks.’ This is what we of the N'mah are doing, as we continue to abandon the Sirian Stargate. In fact,

we will not be able to evacuate all of our people, but we are doing what we can.

“This is the decision you must make as well, if *Homo sapiens* is to have a chance of surviving.”

There was another long silence at this . . . and then the conference hall broke out in a babbling, chaotic pandemonium.

18 FEBRUARY 2314

*Mars Military Training Command
Stickney Base,
Phobos
1435 hrs, GMT*

“We are *not* going to abandon Earth!” Admiral Marcia Thomas said, shouting to be heard above the murmur of shocked and angry voices. “This is our home!”

General Vandekaamp pounded the top of the podium with the flat of his hand, gradually restoring order. Turning to face the image of the floating N’mah, he said, “This conference was called to discuss our options if the Xul return. I believe I speak for most here when I say it is premature to discuss running away.”

“That is your decision, of course,” the N’mah said. Lee tried to read some sort of emotion into the voice, into the being’s manner, and failed. The four whiteless eyes, the chitin-armored face, the shoulderless arms, none of these was remotely human, and if they bore anything at all like a human emotion, Lee could not read it. The dry voice, of course, was the mentally projected voice of the translator AI; Lee had never heard a N’mah voice, but an article he’d downloaded once had said its speech issued through the two vertical slits on its face—analogues of human nostrils—and that the tooth-filled mouth was used only for eating. He doubted very much that he would pick up on

the strange being's emotions through its tone of voice, either.

The human emotion loose in the room, however, was undeniable, and quite clear. The murmurs were spreading throughout the audience again, growing louder, more urgent. "How do we know the N'mah aren't working with the Xul?" one insistent voice called out.

"Order!" Vanderkaamp yelled. "We *will* have order!"

"I believe that our, our honored guest doesn't understand our situation," General Steubbins said. "The N'mah have not known their homeworld for many thousands of years. Isn't that right?"

"Truth," Duradh'a replied. "Our world of origin, we believe, was destroyed by the Xul long ago. We understand your . . . emotional attachment to the world that gave your species birth. But believe me when I say that your survival as a species demands that you outgrow such attachments. I tell you the absolute truth. Earth, and every world in this stellar neighborhood, and every living being on or near them, is doomed. The Xul will not, they *cannot* experience competition or threat in any form without responding in the only way they are capable of responding—by returning to this system, and closely searching those nearby, in order to obliterate every trace of sentient life they can find.

"Your one hope is to find another world, in a star system so lost among the stars that the Xul can never find you."

"He can't be serious," Major Risler said quietly, at Lee's side. "How can we run from something that has FTL, when we don't?"

"I don't think he means outrunning them," Lee replied, whispering. "The cosmos is a big place. If we found another world, maybe in another galaxy, it would take even the Xul millions of years to find us, combing the stars one by one. I doubt they'd be that persistent."

"Another *galaxy*? But that would take millions of years!"

"Not for us," Lee said. "Not at near-*c*."

He was pretty sure he saw what the N'mah delegate was saying. Even the Xul had their limitations. Survivors of their past predations had escaped their notice in part because

there *were* so many stars—four hundred billion in this one galaxy alone. The Xul couldn't look everywhere, couldn't *be* everywhere. Like the N'mah, Humankind might be able to lose itself in the immensity of space.

And with the N'mah inertialess drive, even flight to another galaxy might well be an option. Lee had once seen a technical discussion of the idea. If a ship could be boosted to a high enough percentage of the speed of light, relativistic time dilation would slow the passage of time for those on board to a crawl. One estimate suggested that the Andromeda Galaxy, 2.3 million light-years distant, would be only twenty-seven years away, according to shipboard clocks. No Earth-built ship was capable of that yet, but with N'mah technological help . . .

Yeah, it just might work.

But . . .

While twenty-seven years passed for the passengers of a ship crossing between the galaxies, 2.3 million years would pass for the Xul. True, they appeared to change only very slowly, over the course of ages, but even so, where would they and their technology be two million years hence?

Lee found the thought disquieting.

Much more disquieting, however, was the thought of what would happen to those left behind. Senator Langley had it right. How could that fraction of Humanity already in space simply abandon the survivors on Earth?

Within the past standard day, Fleet Command at Fra Mauro, on Luna, had succeeded in inserting a large number of remote probes into Earth's tormented atmosphere, and the probes had begun sending back images. No numbers were available yet on how many might be still alive on the planet's surface, but there *were* survivors, teeming swarms of them in some places, sheltering as best they could from the torrential, never-ending rain, grubbing among the ruins of wrecked cities and fallen arcologies looking for food and emergency supplies, struggling to stay above the rising waters, to stay alive.

Things appeared to be worst in western Europe, where repeated tidal waves had scoured away the very surface of the

world right down to bedrock. Across eastern North America, there appeared to be little left in the way of infrastructure or organized government. Washington, D.C., Baltimore, the New York Metroplex, Boston, Charleston—cities as far inland as Atlanta had been reduced to utter ruin, and most of the coastal cities now stood under water, submerged by the tidal swell from the continuing hyperstorm that embraced most of the North Atlantic. Of some cities—Miami, Mobile, New Orleans, Galveston, there was not a trace remaining. Indeed, little remained at all of the entire former state of Florida or of the Gulf Coast as far north as Baton Rouge, and a new arm of the sea now reached far to the north to truncate the Mississippi River just below Vicksburg; the storm's tidal surge had—temporarily, at least—raised the gulf's water level by over thirty meters.

Things were not so bad in the Southern Hemisphere, or in Asia, or even inland along the North American West Coast, where cities still stood, aircraft again roamed the skies, and armies and heavily armed militia appeared to be enforcing order for the public good.

How many now remained alive on the planet? It was impossible as yet to say. Estimates ran from as low as five billion—mostly in eastern Asia and the Southern Hemisphere—to an optimistic ten to twelve billion. Intermittent contact had been established with survivors on the U.S. West Coast, suggesting that things were grim there, but far from hopeless. The shorelines and great metroplexes along the coast had been battered by tidal waves, but most people inland had escaped unharmed.

So far. That would change when the temperatures began dropping.

"Eight thousand of your years ago," Duradh'a said, continuing, "the survivors on Earth were of no importance to the Xul. Evidently, they checked in on your planet for some thousands of years after, monitoring your recovery, but after the incident thirty-five hundred years ago, they seem to have lost track of you.

"I assure you, that will not happen again. Your species has proven itself adaptable, resourceful, and . . . stubborn to a

degree that can only convince the Xul that you must be exterminated. Among the vast starclouds at the far end of the Galaxy, or, better, hidden away within the uncharted suns of a neighboring Galaxy, you might win survival."

"But at what cost, Duradh'a?" Senator Langley said, his voice loud in the chamber, and echoed by the link with Lee's implants. "Fleeing not into space, but into the remote future . . . beginning a new life elsewhere, giving up all thought of further interstellar exploration, giving up fusion power, even *radio* for fear that we'd tip the Xul off to our hiding place, always fearful of discovery . . . no, sir. I know what *my* vote would be."

"The N'mah might be right, Ted," another man in a civilian jumpsuit said. "How do we fight a technology that far in advance of our own? It would be like battling hovertanks with rocks!"

"We don't have a chance," an Aerospace Force colonel added.

"Actually," General Garroway said, "we might have a chance. Take a look at this."

Another download signaled readiness, and Lee opened the window. What he saw was an animated sim, computer-generated and quite realistic in tone and texture. A Marine in full battle armor was kneeling at the edge of a forest, taking aim at some target unseen with a man-portable plasma gun. Behind him, a Neanderthal, naked and hairy, slipped out of the woods with a primitive ax—a stone head strapped to the end of a heavy branch with rawhide strips. The Neanderthal tiptoed close with exaggerated stealth. The Marine's sensors must have been switched off, since he evidently didn't see the cave man, who swung the stone ax hard and level, crumpling the man's helmet.

Someone in the room laughed, a startling sound abruptly cut off, but most greeted the animation in cold silence. "Just what is your point, General?" Petranova asked.

"Just that technology is *not* the last word in combat. If the history of modern warfare hasn't taught us that much, it's taught us nothing."

He's got that right, Lee thought. *Korea . . . Vietnam . . .*

the Terrorist World War of the early twenty-first century . . . the Second and Third Mexican Wars . . . Siberia . . . the Giza Incursion . . . Brazil . . . it was always the big, high-tech Americans up against fanatical peasants fighting us with obsolete weaponry. Of course, Korea, Vietnam, and Brazil were the only ones we lost, and those were political defeats, not military.

But each time, we found technology had limits. You could never do it all from orbit or with robots. We always needed to get infantrymen in, boots on the ground, to kick ass and take names.

Even the wars clearly won by high technology were never the walkovers their advocates claimed they would be. An untrained civilian or a half-trained militiaman armed with any weapon and a fanatical certainty that his cause was right could be killed, but not convinced. And even obsolete weapons were still deadly, when properly deployed and used.

"Are you suggesting a guerrilla war, General?" Vandenkaamp asked.

"And how the hell do we conduct a guerrilla war when the Xul can just walk in despite everything we do and turn our sun nova?" a Navy captain asked. "Damn it, how do we fight them when we can't even *catch* them?"

"What I have in mind," Garroway said after the time-lag hesitation, "is a bit too conventional to be true guerrilla warfare. But what I do suggest is that we convince the Xul that wiping us out is going to be too damned much trouble.

"Have a look at this. . . ."

U.S.S. Clara Barton
en route to Earth space,
1510 hrs, GMT

Travis Garroway opened his eyes, honestly not sure what to expect. He was no longer wearing combat armor—that was a plus—and the pain that had wracked his body was blissfully, blessedly absent.

Even so, he felt washed out and limp, and the ache of remembered pain still throbbed in distant pulsings along his spine and at his temples.

The overhead glowed with an even, soft light. It was not the overhead of the burned-out shell of the AUT, with its bundled tangles of wiring conduits, nano ducts, and life-support modules.

And that was a definite plus as well.

"What the blazing hell hit me?"

A shadow came between his face and the glowing overhead. He blinked, focusing, and the shadow resolved into Chrome's face. "Twenty hours of nanoreconstructive hibernation hit you," she said. "Glad you decided to join the party!"

"Chrome! Gods! Are you? . . ."

She grinned. "I'm fine. So are you. You weren't as cooked as some of the rest of us, so they hooked you into medihibe last. The Doc says they got to us in time, though. You can even still have kids."

Tattooed images crawled disconcertingly across her face—a bat flapping its wings, a grinning skull with flames for eyes and stubby demon's horns, an old solar sailor towed by a billowing mirrored disk that actually reflected portions of Garroway's head and shoulders, shifting and distorting as it crawled across the topography of cheekbones, nose, and forehead.

"Turn those damned things off, will ya? You're making me dizzy."

"How's this?" The cartoons froze motionless, then blended themselves into a camouflage pattern of black, brown, and jungle green.

"Better. I think." He struggled to sit up, and realized he was lying on a hospital bed. Gravity felt pretty close to one G.

"We're on Earth?"

"Negative." She shook her head, and behind the camo patterns he detected a furtive emotion. Anxiety? Pain?

"Then where?"

"Hospital Ship *Clara Barton*. A drone off the *Preble*

spotted the autie, and the Barton was able to dispatch a high-acceleration transport to catch us.”

“I . . . don’t remember.”

“Me neither. We were on the final dregs of life support. Unconscious or first-stage dead, according to Doc.”

Garroway suppressed a shudder. Nanomedical technology was good enough to bring people back from the early stages of death, but it was still a touch-and-go thing to keep memory and personality intact, especially if any significant necrosis had set in. He spent a fearful moment probing his own thoughts. Was he any different than he’d been before? Would he even notice if he were? His last memories were of lying in the endlessly tumbling autie, unable to move, listening to his own pounding heartbeat as the O₂ content in his last LS pack thinned away to nothing. . . .

He couldn’t sense any difference, and his internal implant diagnostics indicated that he was healthy enough . . . a bit low on glucose, potassium, and sodium, a bit low on his red cell count and very low on lymphocytes . . . but considering what his system had just been through, not too bad at all.

The worst, the most subtle damage had been to the twisted strands of DNA in his chromosomes, and swarms of specially programmed nano, self-replicating, self-guiding, and self-destructing when their job was done, had rewoven damaged segments of his chromosomal structure using patches taken from repetitive non-coding intron DNA sequences.

He still felt like the same person, though. And maybe whether or not he *had* changed was a question not to be probed too deeply.

“Excellent,” another voice said. “Good to see you back with the living, Gunny. How are we feeling?”

“We are feeling like *we* were worked over by an Ahannu battle horde with *tagu* sticks. Who are you?”

“HM1 Foster,” the owner of the voice said, leaning over next to Chrome. He was a painfully young man in a Navy corpsman’s blue scrubs. He checked the diagnostic readout

on the bulkhead above Garroway's head. "Just checking your vitals."

"I'm doing okay, Doc. When can I get up?"

"When you're strong enough to do it. Give it a try."

Garroway sat up, but too quickly. He lay down again, head whirling.

"Give yourself a few minutes to adjust, Gunny. We had to replace most of your blood with fluorohypox, and your bone marrow hasn't had time to catch up yet. Just be careful moving . . . and drink water. Lots of water."

The corpsman moved on to the next bed where, Garroway now saw, PFC Ella Lindeman was lying, apparently still unconscious.

"So . . . what was the butcher's bill, Chrome?" he asked.

She looked away. "Fourteen of us made it, Trig. Eight bought it in the fight, and another ten on board the autie. And the Navy crew, too, of course."

"The lieutenant?"

She shook her head. "The Navy boys who pulled us out said the autie's flight deck was a real mess. Nobody made it."

"The charges blew."

"The charges blew."

He felt a small surge of excitement. "Did we get the bastards? Before they could slag Earth?" When she didn't answer right away, excitement turned to fear. "Chrome. What's wrong?"

"We don't have the whole story yet, Trig. Just bits and pieces, what the *Barton's* crew's been able to pass along. But . . . it sounds like at least one rock made it through and hit Earth. *Hard.*"

"Gods . . ."

"There's a conference going on back at Mars. Lots of wild scuttlebutt, of course. According to Doc Foster, the *Barton's* taking us back to L-4. We'll know more then."

"So . . . what? We're looking at a dinosaur-killer scenario?"

"Something like that. Those rocks were going real fast,

they said. Enough kinetic energy to pack a punch equal to a few million H-bombs, all going off at once. They say that enough of the Atlantic got vaporized that . . . well, if half the rumors are true, Earth has been hurt. Bad.”

Garroway digested this. He had no close family on Earth; they wouldn’t have accepted him for deep-space deployment if he had. His parents were dead, and he’d never married. There was his uncle and some other family in Baltimore, some cousins, his aunt, some childhood friends. . . .

Scratch that. *Had* some other family. An impact like Chrome was describing in the Atlantic Ocean would have meant tidal waves. *Big* tidal waves. And Baltimore was on the Patapsco River right off of Chesapeake Bay.

He’d spent some happy vacations at his uncle’s place north of Baltimore when he was a kid. He wondered if anything was left of the old city.

Or of Washington, D.C.

Or of Quantico, or Parris Island, both Marine bases he’d been stationed at earlier in his career, places where he had a lot of friends, a lot of roots.

They would be gone, too.

The world that Travis Garroway had known and grown up in was, he suddenly realized, drastically, horribly changed, the place of his memories wiped away in an instant of flame and flood. He felt the weakness reasserting itself, felt hands and gut trembling.

“I know, Trigger,” Chrome told him, putting an arm around his shoulders. “It hit me bad, too.”

“What are we going to do?” he asked.

“What Marines always do,” she told him. “Semper fi. Always faithful. We still have the Corps.”

“If the country, if the planet we were protecting isn’t there, though . . .”

“Earth’s still there, Trigger. And so are we. We’ll go on.”

He nodded, but felt a burning in his eyes. “Yeah. We’ll go on.”

What hurt was knowing that everything they’d done . . . and all those dead . . . and it hadn’t been enough.

Earth had been counting on them, and they’d failed.

*Mars Military Training Command
Stickney Base,
Phobos
1530 hrs, GMT*

The voting had proceeded electronically, the results tabulated at once. "We're agreed," Vanderkaamp said quietly. "One hundred eighty-five to sixty-two, with twelve abstentions. We will stay in the Solar System, and do all we can both to aid the survivors on Earth, and to defend the system against further incursions by the Xul. A similar vote, of one hundred fifty-seven to ninety-five, with seven abstentions, is in favor of pursuing General Garroway's suggestion of tracking the Xul ship's course, locating the star system from which it came, and mounting a preemptive strike. We will need to further study his suggested means of attack, which he has designated Operation Seafire, but the majority agrees that this tactic gives us our best hope of striking back against the Xul, and in a manner that will serve to keep them both off-balance, and at arm's length, at least for a time."

"It'll buy us some more time," Garroway's image said from the holoprojection disk. "Just like the Clusterspace Insertion."

The Clusterspace Insertion had been a Marine operation carried out on the fifth of April 2170—some 144 years ago. After the destruction of the Xul huntership as it emerged from the Sirius Stargate, probes of the Gate had pushed through to explore the space on the other side, the star system from which the Xul vessel had come. Marines emerging at the other side had found another Stargate, this one built into a tunnel excavated into the heart of a small asteroid, and located in a red dwarf star system on the outskirts of the Milky Way Galaxy, perhaps fifty thousand light-years or more from Sol.

There, in what had been dubbed Cluster Space, the asteroid Stargate had orbited with some hundreds of other gates. A world had been visible . . . and the Galaxy as seen from outside, a vast spiral of stars . . . and a globular star cluster, like a bee-swarm of red suns, filling a quarter of the sky.

Garroway had seen recordings made by the Marines on the raid—including one Corporal John Garroway, his great-great-granduncle.

With the possible exception of ancient humans carried to the stars by various aliens, those Marines had traveled farther from home than any other voyagers from the planet Earth.

Stargates, it turned out, could be tuned through myriad different possible destinations by adjusting the rotational velocities and magnetic moment of the gravitationally collapsed masses within them. However, by sending a Marine raiding team through the Gate to plant nuclear charges at the other end, in Cluster Space, they'd made certain that the Xul couldn't track the outbound path of their lost ship, and follow it up with a larger and more dangerous fleet.

At least, that was the assumption at the time, and it appeared to have worked for nearly a century and a half.

Now, though, another Xul ship had made it all the way to Earth. There remained a major question yet to be resolved as to whether the ship that had attacked Earth had come through the Sirius Gate; or arrived another way, through a different gate at some different star; or had reached Earth simply by traveling faster than light through open space. The navigational data recovered and transmitted by Quincy₃ ought to help resolve that question.

Operation Seafire might—just *might*—enable Earth to become lost again, so far as the Xul were concerned, lost among those hundreds of billions of suns strewn in a titanic spiral across a hundred thousand light-years.

It was all Humankind had remaining in the way of hope.

But Vanderkaamp was still speaking, turning now to the patient, floating image of the N'mah. "I hope the N'mah understand that in choosing not to leave our homeworld, we are not rejecting *you*. We still desperately need your assistance."

There was a long pause. In the silence, Lee could sense every one of the delegates in the auditorium straining to pick up some hint of the alien's feelings and thoughts.

"We understand your . . . attachment to the world of your origins," Duradh'a said at last. "We understand the idea, at least, if not the emotion.

"However, we must take care of our needs first. Sacrificing ourselves for another species, however cherished, when that species is ultimately doomed in any case, would be neither productive nor rational. We intend to return to Sirius, there to oversee the evacuation of as many of our own as we can in the flotilla of asteroid starships we have been building over these past several decades."

"If we stand together," a Marine general in the audience called out sharply, "we can *beat* these damned things! Stay! Fight with us!"

Again, there was a long pause, and Lee wondered if the being was conferring with others of its kind on the *T'krah Elessed Ev'r*. "The N'mah are not a warrior species," Duradh'a said at last. "What we will do, however, is leave a small group of our people with you—volunteers who will continue to work with your engineers in developing key technologies . . . especially the inertialess drive, and large-scale manufacturing and large-scale environmental restructuring. These are skills you will find particularly useful, both in the defense of your world, and in its repair."

"These volunteers at the same time will be constructing a starship of their own in your Asteroid Belt, so that they can join the rest of us at a later date. They will share with you the secrets of that construction; you may decide to remain and defend your world against the Xul, but your descendents, the next generation, may elect to pursue a different strategy. They should have the opportunity to find safety among the starclouds, even if you choose to stay here and die."

"That is . . . very kind of you," Vandenkaamp said. "I don't know how we can thank you."

"Your thank-yous are not necessary, of course," Duradh'a said, "since they represent a linguistic social gesture with meaning to your species, but not to ours. We believe that every species deserves a chance to survive and find its own destiny. That is why we aided you eight thousand of your years ago. It is why we aid you now."

"But you should recognize one fact. If it is in the N'mah nature to help other species survive, to nurture them, it is in the Xul nature to pluck them up and destroy them. They are

very good at this, and utterly and implacably relentless. The plan you've discussed here may indeed keep them away for another generation . . . or two . . . but they *will* be back.

"And when they return, it will be to ignite your sun into a nova, and sear the face of every planet in this system clean of life. They will then search the worlds of every star within a hundred light-years, track down your colonies and your outposts and even individual ships traveling between the stars, and they will destroy them as well.

"Whether you admit it here in this hall or not, your Earth is already dead. And unless and until you elect to flee as far as you can, and submerge yourselves as deeply as you can in the sea of space surrounding you, you as a species are already dead as well."

The holograph projector winked out, leaving 259 human delegates to the conference alone in a stunned and brooding silence.

18 MARCH 2314

Interstellar Marine Transport Chosin
Incoming, beyond the orbit of Jupiter
1814 hrs, GMT

It took Recruit Private Nal il-En Shra-dach a long time to wake up and, once he did, he wasn't sure coming back to life was worth the effort.

He emerged from cybe-hibe into a close, moist darkness, cold, aching, and confused. The first thing he was aware of was of a strangling sensation, as though he were drowning. Gagging, coughing, he struggled to breath, until the jelly filling his nose and throat and lungs dissolved away, absorbed by his mucous membranes, and he began drawing deep, shuddering breaths of cool air.

Complete darkness was overcome—barely and slowly—by a brightening of the walls encircling him. He was on his back, in a tube just large enough to enclose his prone body, lying on a narrow slab with a soft and yielding texture, like foam, and with the last of a wet, gelatinous substance still coating his bare skin.

Still struggling to breath, fighting now against panic and claustrophobia, it took a long moment to remember where he was . . . and to accept that he was *not* in *Ki-kala-kala*, the frigid netherworld of his people. At first, he could grasp only fragments of memory, and had to focus hard to remember anything more concrete than tides of shifting emotion.

They'd told him he wouldn't dream, but they'd been wrong, and some of those dreams haunting him through the stargulf had been less than pleasant.

His thoughts retained the flavor of some of those dreams, if not the substance. He felt images of the dark red and orange jungles, of the tree-sheltered *e-duru* that had been home slipping away.

Where was he?

He was a Marine—that much he remembered. His fists clenched at his sides as he closed his eyes and held that memory. He was a *Marine*.

Revivification to Stage Five, a voice said in his head. *Breathing passages and lungs clear. Circulation and respiration now fully autonomous. Proceeding to Stage Six.*

Nal wasn't sure what "Stage Six" might entail, but he managed to choke down his apprehension and simply wait. He was a Marine—a *Marine*—and Marines didn't let their terror get the better of them.

Of *that* much he was certain.

An image flashed into his mind, a scene of startling clarity and realism. For just a moment he was standing at the front gate of Gilgamesh Base, the U.S. Marine facility on Enduru . . . the world the Un-ki called Ishtar. His friends Vedda and Kel both were there beside him, along with other *dumu-gir*, and the Marine gunnery sergeant who's taken their oaths was yelling at them to stand in a line, to stand up straight . . .

The image changed in a bewildering flash. It was nighttime, with stars overhead, the sullen glow of Igi-digir—the Face of God—hanging immense on the western horizon, backlighting the awesome sawback of the Ahtun Range. A gossamer, a green-glowing airworm, rippled past a few spans away, as insubstantial as a breath. A village singer keened mourning at the death of Gir Ulet i-Kaff in an encounter with the Ahannu god-warriors in the jungle below Kur-Dev.

Gir had been a friend of Nal's, and his lover. Her death had been a large part of why he'd made the long trek down the hill to Gilgamesh Base, and told the Un-ki Marines that he wanted to be *nir-gál-mè-a* as well.

Memory checks complete. Proceeding to Stage Seven. . . .

Memory check. There was something . . .

Yes. They'd put something in his head . . . no, *grown* something in his head, and they'd told him that he would be able to hear the thing's voice. He still didn't understand. The *Un-ki* magic was so very powerful, so strange.

But the . . . what had they called it? The implant, that was it. The implant was supposed to help him learn.

Learn how to be a *Nirgal*.

That thought steadied him. *Not "Un-ki,"* he thought, a bit fiercely. *Earthmen. People. People just like me. . . .*

Like other young men in his *e-duru*—no, *village*, or *town*, not *e-duru*. He'd begun learning English at an early age, but the strange language had been difficult, not at all like the flowing music of Eme-gi, The People's Tongue, and he'd never been fluent. His vocabulary and his grammar both had improved a lot since they'd given him the implant, but he wasn't yet adept in thinking in the harsh and dissonant jumbles of alien syllables the Earthmen had brought with them from the stars.

Recruit I-763-56, the voice said. No, a different voice. A woman's voice. *How are you feeling?*

"Uh . . . I'm feeling . . . like I've been hit over the head by a *kur-gal-gub* . . ."

Quite understandable. Let's pop you out of there. Hang on. And you might want to close your eyes. It's bright.

He heard a sharp hiss, and then the hatch above his head cycled open, the shelf he was lying on extruded from the narrow, cylindrical chamber in which he'd been trapped, and he blinked against a near intolerable glare of light from somewhere overhead.

A woman's face blocked the glaring light.

"What's your name, Recruit?"

"Uh . . . Nal."

"*Full* name."

"Sir! Recruit Private Nal il-En Shra-dach, *sir!*" The formulaic recitation, drilled into him back at Gilgamesh, snapped him back to full awareness.

"Service number?"

"Sir! I-763-56, *sir!*"

"Don't overdue the 'sir' bit, Recruit. I'm not an officer and I'm not a DI. Relax. Do you know where you are?"

He searched his badly jangled memory for a moment. "One . . . one of the *Un-ki mul-hu-gal?*"

The woman laughed. "I'm not sure Captain Nakamura would refer to her baby as a 'great star bird,' but it works for me. You're on board the IMT *Chosin*. You've been sleeping for a long time, a *very* long time, but we're almost home. Time to get up."

Not home, he thought. *Home was Enduru, light years distant. Excitement pounded in his chest, his temples. The Chosin was nearing fabled Kia, the original homeworld of Man.*

He started to sit up, but she laid a hand on his bare shoulder. "Slowly. Sit up when you feel strong enough, but take it easy, okay? You've been bottled up in cybe-hibe for two years objective. When you feel ready, follow the green light."

She stood by as he rolled over and, slowly, sat up. He was nude, but Ishtaran humans possessed few body taboos, and any shyness he might once have possessed had been lost in ten cycles of Marine recruit training.

"You okay?" the woman asked.

He blinked twice . . . then remembered the Earth-human gesture, and nodded. "Yes, sir."

"Good. Get up when you're ready." She touched a box molded to her forearm, studied a readout, then left, moving to the next closed hatchway on this deck. Still blinking a bit in the bright light as his eyes adjusted, he looked out into an enormous chamber, a cylinder ringed by small, circular hatchways like the one from which he'd just emerged, each served by a walkway with a safety railing and deck gratings like steel mesh.

Perhaps half of the hatches, he saw, were now open, and other men and women were sitting up on the extruded pallets, or taking their first tentative steps, hands firmly on the railing. All were nude, save for a few, like the woman who'd just questioned him, wearing Marine utilities. These individ-

uals all seemed to be moving from hatch to hatch, opening them up and reassuring the newly awakened travelers.

When he leaned forward a bit, catching himself on the pallet when dizziness nearly toppled him, he saw that this was simply one of many identical levels, some above this one, some below. And, while his mind and his memory told him that he was inside a gigantic star bird from Lost Earth made of metal and other, less well-understood materials, flying at inconceivable speed through the emptiness of Anu—of heaven—there was absolutely no sensation of motion.

Asleep for two years.

They'd told him during his training that when they put him into cybe-hibe, billions of inconceivably tiny machines would enter his body, taking over his bodily functions, his muscles, his heart, his breathing, his brain, and let him safely sleep for hundreds upon hundreds of cycles. Two years? He still wasn't entirely sure what a "year" might be, but felt fairly sure it was a long time—several sixes of cycles, at least. The voice in his head, he now remembered, was something called an *AI*, an artificial intelligence named "Smedley" that lived within the ship, and in the implants of his fellow recruits.

Experimentally, he opened his mind, as he'd been taught, using a nonverbal symbol as a kind of key. *You have a question?* sounded in his thoughts—the voice of Smedley, speaking English.

"Uh . . . definitions. How many Enduri cycles are in a 'year?'"

One Enduri day-night cycle, the voice said, the time it takes for Ishtar to orbit Marduk, its gas-giant primary, once, is equivalent to six point four two Earth days. One Earth year equals 365.25 Earth days, or 56.893 Enduri cycles.

Voices speaking in his thoughts. Magic. It *had* to be magic, even though the village elders insisted that there was no such thing. No magic, no spells, no gods.

His initial classes as a Marine recruit had taught him much the same. There was no magic, his teachers had said, though any highly advanced technology might *seem* like magic to people who weren't used to it. The visitors from

Lost Kia were men and women, the same as the *Dumu-gir*, not gods.

The Ahannu had claimed to be gods, but the Marines from Earth had defeated them in battle, had created the *Dumu-gir Kalam*—the Land of the Free People. For over eight thousand cycles, now, men of Lost Kia had lived with the Free People on Enduru, defending them against the hated Ahannu, teaching them of their ancient home in Heaven. *Dumu-gir Kalam* was what they called an offworld territorial dependency of a Kian land called the United States, and was, therefore, part of the greater American Federation. He still wasn't sure what some of those words meant, but he did know that, among other things, the Free Peoples had the right to apply for U.S. citizenship. A few lucky ones were accepted every hundred cycles or so to become citizens of the United States. Once a citizen, the *very* lucky ones could volunteer to train to attend Ishtaran Recruit Training at Gilgamesh Base, just outside of New Sumer. There they would learn how to become U.S. Marines.

Nal had been one of those very lucky ones.

The thought steadied him, and brought a surge of strength. Technically, he wasn't a Marine yet, but a recruit—a lowly and unworthy creature, as his DIs had assured him time and time again.

A sudden memory flooded his mind—of Staff Sergeant Wojkowiz leaning forward, his nose almost touching Nal's, his face red as he thundered, "You are *not* a Marine! You are a *recruit* . . . and recruits are *so* low that *whale* shit looks like shooting stars to you!"

Nal had no idea what a whale was, but Staff Sergeant Wojkowiz had done an admirable job of communicating the general idea. Oh, yes.

For ten cycles, Nal and sixty-eight other Ishtaran recruits had trained at the Gilgamesh facility, strengthening body, spirit, and his mind, receiving the all-important nanoimplants that would let them download all they still needed to learn, and acquiring basic skills that would let them, some day, wear the precious talisman of Globe and Anchor.

Not all had made it. His Recruit Training Class, Number

763, had started with one hundred two recruits. The training regimen that followed had been carefully crafted—some would say sadistically so—to weed out those who didn't have what it took to be a Marine. They were encouraged to drop out at every opportunity, and each successive cycle was, if anything, tougher than the one preceding.

Shakily, Nal stepped off the pallet and stood. Perhaps it was nothing more than the effects of those billions of tiny machines, but he was feeling stronger moment by moment. He was feeling warmer, too. The last of that unpleasant jelly seemed to be evaporating from his skin, now, and the air in the huge chamber was very warm, oxygen-rich, and fresh-tasting. He was aware of a distinct emptiness in the pit of his stomach . . . which, at the thought, rumbled ominously. He was *hungry*.

Looking down at the deck grating, he saw a glowing green arrow moving at a walking pace, left to right, followed at an interval by another . . . and another. More magic that was not magic, he assumed, and he wondered how the trick was done. Reaching out a hand, he took the railing in his left hand and began following the arrows. They would lead him, he knew, to a communal washing chamber, a newly issued uniform, and to food.

Derel ti-Haj Vah-gur walked up behind him, leaning heavily on the rail. "I hurt," she said. "How about you?"

Like Nal, like most of the native human population on the world Earth-humans called Ishtar, descendents of humans brought from ancient Mesopotamia as slaves by the Ahannu "gods" eight to ten thousand years before, Derel was small, with deep olive skin, black hair, and luminous brown eyes. Ten cycles of tough physical training and medinano injections had hardened her, like him, until the muscles of her belly, arms, and legs were clearly defined beneath her skin.

"Me, too," he said, stepping aside and letting her pass. He fell into step behind her, watching the hypnotic shift of her buttocks as she walked ahead of him. Normally, he would have appreciated the sight of Derel's nakedness—they'd shared several happy sexual trysts back on Enduru—but the aches and discomfort of cybe-hibe, and his current hunger,

did a lot to redirect any lust he might otherwise have felt. There were also rumors that some of those invisibly small machines swarming through his bloodstream were programmed to block any physical response to such thoughts.

It was just as well. The DIs and instructors had made it abundantly clear that fraternization among the recruits, as they called it, would *not* be tolerated, at least while they were still in training. “After you graduate, *if* you graduate,” he remembered Staff Sergeant Wojkowiz screaming at them as they stood rigidly at attention in their squad bay, “you can fuck each other’s brains out, what you have of ’em! But *until* that day you will have *no* feelings save two! You *will* desire with every miserable fiber of your miserable beings to please *me*! And you *will* love, with every miserable fiber of your miserable beings, *my* beloved Corps! . . .”

Wojkowiz had an odd manner of speaking, stressing every few words in a way that seemed calculated to impress their meaning on his Ishtaran recruits. That was just as well. All of the recruits knew some English besides their native Eme-gi—the Free Peoples used it as a trade and diplomatic language with the offworlder colonists—but few were really comfortable with it. That was changing, fast, with the downloads that had been coming at them faster and faster during their first training phase.

And on Kia, the Earth of ancient legend, they would be speaking nothing *but* English.

Earth, he told himself grimly. *Not Kia, but Earth*. . . .

According to the contract the Ishtaran recruits had signed back at Gilgamesh, they would train on their home world for ten cycles—roughly nine Earth weeks—then be transported to Earth, to a magical-sounding place called Parris Island, where they would complete their training, this time with recruits from Earth, in another fifteen cycles. The rigorous sessions on Ishtar before they even boosted for orbit were designed to make sure there were as few dropouts from the class as possible, once they’d made the long—and expensive—eight light-year journey from Lalande 21185 to Sol.

And after that? Graduation and assignment, of course.

Each Ishtaran had volunteered for six years—341 cycles—of service in the Corps, during which time they might be assigned to Earth, to various Marine Corps facilities throughout Earth's Solar System, to bases on the worlds of yet other stars scattered across the Vault of Anu, or even find themselves right back where they'd started, on Enduru/Ishtar.

Nal had to remind himself that his 341-cycle enlistment was 341 *subjective* cycles, that almost 600 full cycles had just passed in what had felt to him like an eye-blink. It still didn't seem real—knowing that he'd slept that long and not even realized it. Stranger still was something else he'd learned—that the *Chosin* had been traveling so fast that time itself had shortened somehow, so that while 600 cycles had passed back home, fewer than 200 had passed on board the ship, and *that* was how long he'd actually slept.

Neither the two hundred nor the six hundred counted against his enlistment. His subjective timekeeper told him he'd been placed into cybe-hibe just hours ago, despite the disturbing tides of his dreams, and no time whatsoever had elapsed.

He shook his head. There was no way, no way he was ever going to understand the games the men of Kia played with time itself. Better to just do what he was told, learn what he could, and accept the rest on faith. Trying to understand Kian magic, he'd heard, could drive you insane.

An hour later—the unit of time was half again longer than one *kin*, which was 1/360th of a cycle—he was showered, dressed in olive-green recruit utilities, and seated in *Chosin's* third-deck mess hall. The meal was scanty and bland—a kind of mush with little real flavor—but he'd been assured it contained all the nutrients he needed to keep going. He wondered if this were standard fare for Earth people.

Possibly, even probably, not. *Chosin*, he'd been told once, carried enormous quantities of water, which were used as radiation shielding at near-*c* velocities, but needed to be highly efficient when it came to hauling bulky expendables such as food.

Derel sat down next to him with her tray. "Have you heard anything?" she asked.

"Like what?"

"I don't know. Something has the Kians pretty upset."

He looked around the mess hall. It was crowded already, and more Marines were arriving moment by moment. There a thousand Marines on board the *Chosin*, he'd been told, and only sixty-nine of them were native Enduri. All the rest, Marines of the 3rd Marine Division, 15th Regiment, Third Battalion, had been from Earth, Marines stationed on Enduru—no, *Ishtar*—for 120 cycles. *Chosin* had arrived at Ishtar twelve cycles ago with replacements from Earth, and now these men and women were going home.

The Enduran-born Marines, he saw, had not been encouraged to mingle with those from Earth. Or maybe it was just their recruit status. *You are not Marines. You are recruits!* In any case, the Enduran personnel had been given a couple of mess tables to themselves, off to one corner of the compartment.

"I haven't heard anything. Why? What have you heard?"

She shrugged. "Nothing, really. Some of them . . . I don't know. Upset. Like the sergeant who lasered us for our uniforms."

He hadn't noticed anything different about the man who'd scanned their bodies, recording their precise measurements, and who'd then handed them freshly manufactured uniforms. But Derel was unusually perceptive, especially when it came to the emotions of others.

"They're almost home, Der," he told her. "Maybe they're just anxious. You know, worried about their families back on Earth. They've been away . . . what? Twenty-two of their years? That's a long time to be gone, even if they were in cybe-hibe for most of that time."

"Maybe. But I heard they'd been selected for duty on Enduru because they didn't have close families back on Earth. FamSit One or Two, it's called. They volunteered knowing that the Earth they knew would be thirteen hundred cycles older when they got back, but with no close family to return

to, it shouldn't matter that much. No, something else is wrong. Something bad."

"Well, I'm sure we'll be told if there's something we need to know. In the meantime . . ." He stopped. One bulkhead of the mess hall had just lit up, and now the head and shoulders of a Marine officer appeared, looking out over the crowded mess hall. Nal recognized her—Colonel Karla McTaggart, the commanding officer of the 15th Regiment, stationed at New Sumer for the past 120 cycles.

"Good evening, Marines," she said. "Or maybe I should say good morning, since we've all just been awakened from a very long sleep.

"But according to the shipboard clocks, it's 1930 hours, GMT, on the eighteenth of March 2314. After a ten-year flight, objective—two years, subjective—*Chosin* has entered the Solar System and continued to decelerate toward Earth. We are currently just inside the orbit of Jupiter. Earth—home—is less than two hundred million kilometers ahead.

"But I have some . . . news. Very bad, *stunning* news. Five hours ago, the High Guard cruiser *Endymion* hailed the *Chosin* by lasercom. After verifying our ID, they transmitted a long message from the CO of the Marine base on Mars.

"The text of the message will be available shortly for download, for those of you who wish to view it. The short version, however, is that two weeks ago, a Xul spacecraft entered the Solar System at FTL velocities and diverted a number of asteroids toward Earth at extremely high speed. The Xul ship was successfully destroyed by a U.S. Marine strike force. However, although most of the projectiles it launched were successfully intercepted and diverted or destroyed, at least one of those struck in the Atlantic Ocean, generating tidal waves and firestorms that have devastated our planet."

For a moment, there was stunned silence. Then hundreds of people tried speaking at once—murmuring to their neighbors, or shouting aloud.

"Please! Marines, silence . . . please!" Colonel McTaggart's image said. She waited as the crowd noise died down

once more. "I'm afraid I have little hard information beyond that. Casualties have been high—at least five billion dead, possibly many more than that. Damage is severe, on a scale literally inconceivable—dozens of major cities simply wiped out, and extensive damage to most others.

"We're told that remote probes sent in from Luna have been carrying out surveys of much of Earth's surface. The hardest-hit regions were Europe, western Africa, and the Americas. Asia and Australasia have both taken some damage, but are still functioning as dynamic sociopolitical entities.

"In other areas, however, the situation is appallingly grim. There are not millions, but *billions* of refugees, food stores have been wiped out, clean water is rare, medical nano supplies and hospitals destroyed, nanufactories and power plants smashed. There are already reports of cannibalism, of starvation and of epidemics on an unprecedented scale, of a complete breakdown of civilization. Volcanic eruptions in places are spewing poisonous gasses into the atmosphere. A cloud completely blankets the Earth, reflecting heat and light back into space. It's . . . getting colder. Scientists believe this may well be the beginning of a new ice age.

"There is a serious question as to whether Humankind can survive on our home world."

McTaggart paused, letting the words sink in. Nal tried to imagine what he would feel like if he learned suddenly that Enduru had been destroyed, that most of the people he knew were dead, that the villages and enclaves of the Free Peoples were wiped away.

He failed. Such complete devastation was . . . literally unimaginable.

"A large number of military forces were offplanet when the disaster occurred, of course," McTaggart went on. "Some of these—the High Guard, aerospace patrols, system defense facilities—all remain in place, on alert for a second alien incursion. Most of the rest, however, including all space-deployed elements of the U.S. Marines, are in the process of redeploying to Earth, where they will be employed in disaster relief and security efforts. *Chosin* was supposed to

rendezvous with the space yard at L-5, but has now been ordered to LEO. Once in low Earth orbit, shuttles will be employed to take us down to the surface.

"There are only eleven hundred of us, but we will do what we can. . . ."

There was more, but Nal heard little of it. The silence in the mess hall had deepened, become blacker, almost palpable.

Slowly, conversation resumed, low murmurs punctuated by people gasping for breath . . . or sobbing.

The colonel had said there was doubt that Humanity would survive, but at the moment, Nal's concern didn't go beyond the survival of the other Marines on board the transport. Some had an unhealthy look in their eyes, like cornered animals . . . or they simply sat, staring at nothing. After several more moments, several were suddenly, violently sick, vomiting onto the deck or rising suddenly and bolting from the compartment. Others, men and women alike, were hysterically crying.

Perhaps most disturbing of all, he could see one Marine, a corporal seated at the next table over, using a combat blade to make tiny, precise slices in the skin of his forearm. Blood trickled from his arm and pooled on deck and table . . . and no one around him appeared to notice.

Humanity might be on the verge of extinction, but the Marines on *Chosin's* hab decks might well be on the brink of madness.

25 MARCH 2314

Camp Hope
Ring City, Virginia, US/FRA
0720 hrs, EST

Gunnery Sergeant Travis Garroway hadn't been able to sleep. The dreams kept coming—especially the one where he was lost inside the endless, tangled maze of the Xul warship, the robotic horrors were swarming closer, and he *had* to get through somehow or everything was lost. . . .

Both Chrome and Earth were wrapped up in that dream somehow, with the feeling that if he failed—and there was no way he could succeed—both would die.

That dream, or variants of it, had haunted him now for weeks.

Despite the sleepless night, he'd stayed in his rack on the second deck of the temporary NCO barracks at the Fairfax Center until reveille, then gotten up, dressed, and gone below to the first-deck mess hall for breakfast.

As Marines filed into the mess hall, other Marines handed them a bowl and breakfast—one to a customer, a rectilinear lump half the size of a brick—dark brown, with the look and consistency of hard-dried mud—vacuum-sealed in plastic.

Garroway sighed. He was getting damned sick of NMFEs, and wondered if they would ever have decent food, *real* food, again.

Finding a space at one of the long tables in the mess hall,

he placed his brick in the bowl and lightly ran his thumb down the middle. His touch and his body temperature caused the plastic to peel away, exposing the brick to the air.

The NMFE rations being passed out now were nothing more than blocks of processed sludge, vacuum-sealed with a thin film coating of submicroscopic nanobots. Opening the pack and exposing the film to the oxygen in the air triggered the transformation within about three minutes, turning dried sludge into an equal mass of what was euphemistically called "porridge." Moisture pulled from the air rehydrated the meal; an extra programming trick let each nanobot liberate a tiny quanta of heat as it self-destructed into its constituent atoms once more, heating the entire meal.

It was hot and it was nourishing, but it still looked like mud.

After picking through the uninspired gruel, Garroway checked out a set of Class 1 combat armor—a lightweight vest with a sealed Mk. 56 helmet, as prescribed by the Plan of the Day—and a weapon, left the building, and crossed the parade ground outside, headed toward the Monument grounds. It was still raining, as it had been for the past thirty-eight days, though in the past week the torrential downpour had turned into a thin and chilly drizzle. The temperature this morning was five degrees—and falling.

It wouldn't be much longer before the snows came.

He checked his weapon's charge as he walked, then slung the LC-2300 laser carbine slung over his shoulder. The shaggies had come again last night, trying to storm the gun emplacements along Southgate Road, right outside of Henderson Hall, and there might still be snipers in the area.

A flight of Skydragons was expected in from the West Coast this afternoon. He hoped that proved true. A few Skydragons would go a long way toward tightening up the perimeter.

On the grinder outside of the barracks, he came to a halt. It was 0800 hours, and the flag detail was raising the flag as a recording of "The Star-Spangled Banner" played in the rain. Garroway came to attention and rendered a hand salute.

The brief ceremony was an important gesture, vitally so,

given that there was yet some question as to whether or not there *was* a United States of America anymore, or a Federated Republic. In this tiny corner of a shattered world, the Marines of 1MarReg were all that stood between the memories of civilization, and a very dark and savage reality.

Across Meade Walkway—once a road for wheeled traffic, and now a tree-lined footpath—he entered sacred ground.

By a miracle of topology, the Monument had remained above water.

Late in the twenty-first century, a 180-meter transplas dome had been raised over this hallowed circle of parkland to protect the Monument from the rapidly worsening effects of acid rain. That dome was gone now, blasted away by hurricane-strength winds booming in off the Atlantic with the Armageddon Strike five weeks before, but the famous bronze statue—over 23 meters tall overall, including the flagstaff—still, somehow, stood. Five figures stood in a tightly packed cluster as they raised the flag, perfectly duplicating the 2-D photograph captured by photographer Joe Rosenthal. Portrayed in bronze were the likenesses of five Marines and a Navy hospital corpsman, each ten meters tall: Sergeant Michael Strank, Corporal Harlon H. Block, Private First Class Franklin R. Sousley, Private First Class Rene A. Gagnon, Private First Class Ira Hayes, and Navy Pharmacist's Mate Second Class John H. Bradley. Rosenthal had snapped that photo—which later won him the Pulitzer Prize—on the summit of Mount Suribachi, the highest point on a tiny, embattled, volcanic atoll named Iwo Jima, on February 23, 1945. Of the six men depicted, three—Strank, Block, and Sousley—had been killed later in the same battle.

The American flag—flown from the monument's angled flagstaff twenty-four-hours a day by a presidential decree going back to 1961—had been blown away by the storm, but the Marines had raised another when they arrived on the scene three weeks earlier—seventy-two stars aligned in concentric circles on the blue field, the thirteen red and white stripes symbolizing the original thirteen states. It hung limp in the drizzle, as if dispirited.

Garroway came to attention a second time, and again rendered a hand salute.

Reverently, Garroway approached the monument. The base was of rugged Swedish granite, with the names and dates in burnished gold of every action in which the U.S. Marines had taken part, along with the inscription, IN HONOR AND IN MEMORY OF THE MEN OF THE UNITED STATES MARINE CORPS WHO HAVE GIVEN THEIR LIVES TO THEIR COUNTRY SINCE NOVEMBER 10, 1775. Another inscription was a quote from Fleet Admiral Chester W. Nimitz, referring to the assault on the black sands of Iwo: UNCOMMON VALOR WAS A COMMON VIRTUE.

The Memorial, though, was not just for the Marines who'd fought on Iwo. It honored *every* Marine who'd died in the service of the nation, from the American Revolution through to the eight Marines who'd died fighting Eridani separatists in the Eostre Insurrection of 2301.

Garroway looked at that last entry on a very long list, and wondered if anyone would add to it. Some good Marines had died in the defense of Earth, out there in the Asteroid Belt.

No. Someone *would* make that addition. Somehow. He remembered that, when the flag was raised over Suribachi, Secretary of the Navy James Forrestal, onboard a U.S. warship several miles offshore, had reportedly told the officers with him, "The raising of that flag on Suribachi guarantees a Marine Corps for the next five hundred years."

He ran a couple fast subtractions through his implant coprocessor. Iwo Jima had been fought 369 years ago—with 131 years left to go in order to fulfill Forrestal's prophecy. Perhaps it would be up to the Marines to guarantee the existence of the United States for the next few centuries.

Walking around the monument, Garroway approached a plasma gun emplacement on the bluff overlooking the Potomac River. Sergeant Hathaway looked up from his position behind a sandbag barricade. "Hey, Gunny. What brings you out in the rain?"

"Perimeter check. Everything quiet?"

"So far. I think the shaggies all gave up and went home."

“Nice, if true. Don’t count on it. Not when home is a hole in the rubble.”

“Roger that.”

Garroway took a moment to survey the landscape. The Memorial rose from a low hill overlooking what had been Theodore Roosevelt Island, in the middle of the Potomac River. Directly opposite was the center of Washington, D.C., only dimly visible through drifting clouds of mist, beneath a leaden overcast that turned early-morning into a deep and brooding twilight.

The tidal waves blasting in from the Atlantic had lost a great deal of their energy as they rolled across Delaware and Maryland’s Eastern Shore. By the time they reached the nation’s capital, they retained only a fraction of their original destructive power, but even that had smashed buildings, utterly shattered the huge transplas dome covering the Mall between the Capitol building and the Washington Monument, and sent a tidal surge up the Chesapeake Bay and the Potomac River that had buried everything below the Georgetown Heights in several meters of silt.

The waters were still high, as the steady rains continued to feed them, though they’d been going down slowly. The Potomac River was still ten meters above its normal level. Directly below the Marine Corps Monument, Roosevelt Island was completely submerged, as was the badly wrecked Kennedy Center on the bank just beyond. The Watergate Metrotower still rose above the flood waters, as did the Washington Monument, somehow still intact. Exactly 5.2 kilometers to the east, according to his helmet display, the Capitol dome, badly damaged but yet standing, stood on a low island in the midst of water-drowned rubble.

Many of the more massive structures of this “City of Monuments,” as D.C. had been known in centuries past, were still standing, the dark stains on their white marble sides showing just how high the waters had risen three weeks ago, and how far down they’d dropped since. But the marble was Washington’s public face, the clean and proud and shiny part of itself that it had showed to the world since the nineteenth century. Much of the poorer reaches of the outlying

city, especially to the south and east, had been leveled by the tidal hammer, and little now showed above that sea of mud stretching clear to the horizon save shattered buildings like broken teeth. Millions had died here; millions more had survived by fleeing to higher ground to the north and west, or by crowding the tops of the taller museums, hotels, metro enclaves, and monument buildings.

And in the ensuing weeks, many survivors had grown desperate. Heavily armed mobs had ranged inland, raiding farms, communities, and cities not so hard hit as the coastal regions. Stockpiles of food that had survived the fall of Armageddon were wiped out in the space of days, and there were disturbing, widespread rumors of cannibalism.

Desperation had bred insanity. Aerial transports bringing food, water, and medical support to the D.C. area from inland had been fired on. A C-980 Skyhauler on approach to Arlington had been brought down in Rock Creek Park southeast of the old Naval Observatory, the crew killed, the wreckage looted. The renegades were well-armed; the Skyhauler had been hit by antiaircraft plasma weaponry taken from a Guard armory.

The Marines of 1MarReg, 3rd Division were too few to secure the entire area. Instead, they'd set up a perimeter on the high ground west of the Potomac, from the Marine Corps headquarters complex at Henderson Hall in the south, to the Corps Monument in the north, and taking in the hallowed ground of Arlington National Cemetery in between.

This gave them an easily defensible position with clear fields of fire in all directions, and direct access to the quagmire of the Pentagon, just one and a half kilometers east of Henderson Hall. The Pentagon was on low-lying ground, just ten meters above the old sea level; west, the ground rose steadily, and the Corps HQ was nearly forty meters higher. Efforts were now underway to clear passages through the stifling mud and silt to reach some thousands of military personnel and political leaders still alive in deep subbasements of the Pentagon. Deep tunnels gave direct access to the lowest levels of the White House, the Capitol building, and other government buildings in the area, and priority had

been given to rescuing them before their supplies of food and air ran out. It had often been observed that an entire city beneath a city existed in the earth beneath the nation's capital; the Pentagon offered rescuers their best hope of reaching the survivors trapped below the mud.

The rescue would not be easy. Using blueprints, Army Engineers had located the positions of several deep-level ventilation tubes, and were now attempting to build casements around them. Once completed, the interiors could be pumped free of mud, the ventilator shafts opened, and survivors brought up, but a lack of available heavy equipment meant the operation had to proceed by hand, using essentially nineteenth- and twentieth-century technologies.

The casement shafts had collapsed twice already.

Worse, much of the work was being done under intermittent fire from the towers to the south that once had housed the old Drug Enforcement Agency. Four times in the past week, Marines had stormed those towers and come up empty. Because the towers were half-submerged in the waters of the swollen Potomac, HQ had decided it was too dangerous to leave men in place to guard the position.

And each time the Marines had pulled out, the snipers had come back in. Scuttlebutt had it that when those Skydragons arrived, their first targets would be those towers.

That, however, was not Garroway's concern. His team had been assigned to the Marine Corps Monument grounds, two and a half kilometers to the northwest. Here, the shaggies, as the renegades and looters were called, were less numerous, and less aggressive. Even so, the supplies flown in by the Marines when they established their perimeter on the Potomac's west bank had proven irresistible. Every night, a few desperate individuals at least tried to make it through the automated security perimeter and the robot guns.

And behind those outer defenses were people like Sergeant Hathaway.

"It's almost ten-hundred hours," Garroway told him. "Stay alert."

"Don't worry about *that*, Gunny. I'm not sure I'm ever going to sleep again. Dreams . . . y'know?"

“Yeah. I know what you mean. You see the Doc?”

Hathaway made a face behind his visor. “Yeah. Told me to use my implant ECs. Didn’t help.”

Lots of the Marines had been having trouble sleeping, Garroway included. No matter how tired they were, the nightmares always came.

Each Marine had a set of ECs, emotional control programs resident within his personal implant hardware, simplistic bits of software designed to help control fear and emotional trauma, to boost awareness during combat, or to serve as tranquilizers, but the Marines of 1MarReg were facing sets of trauma on a scale that the AI programmers had never envisioned, and they were facing it day after day after nerve-racking day. Download software for their implants had been promised to help shield them from PTSD and the terror of the more disturbing dreams, but the necessary connections hadn’t yet been set up. They still only had a local Net up and running, and intermittent connections with offworld.

Still, Garroway thought, it would be best over the long term if each of them somehow learned to deal with the nightmares without the help of software. None of them, *none* of them, had really come to grips yet with the magnitude of what had happened to Earth . . . which seemed to mean that the emotional trauma, the horror, the loss, the despair, the anger, the isolation that each Marine felt could only emerge during sleep.

Downloaded e-tranqs were well and good, but they would all have to face the situation squarely and on their own sooner or later.

He circled the Monument grounds, moving clockwise, checking at each gun emplacement. Morale was low, he noted, but not yet at a level severe enough to seriously compromise combat efficiency. *If we can just hang tough a little longer. . . .*

Satisfied that the Monument was secure, he retraced his steps back across the Meade Walkway to the barracks at the Fairfax Center. At the parade ground, he flagged down a Marine hover transport heading for the relief distribution point at the edge of the Ring City, and hitched a ride.

Once, the city had been the center of commerce, the hub for transport ways for private and commercial ground traffic, and a kind of magnet drawing people looking for work. Cities had grown, for the most part, at the nexus of key transportation lines—along navigable rivers, especially, and, later, rail lines.

During the twentieth and twenty-first centuries, though, something had gone wrong. Increasing population pressures, rising crime, racial tensions and, more than anything else, increasing city taxes on business and industry, had driven both people and jobs out of the inner cities and into the surrounding suburbs, where the so-called ring cities had taken root and grown.

Over the succeeding centuries, the original cities had been rehabilitated to a large degree, especially as more and more of the local industry and power production was moved offplanet into orbit. The advent of nanotechnology, too, had transformed crumbling infrastructures, and allowed the cheap construction of truly enormous metroplex towers and habitats capable of housing hundreds of thousands where only a few thousand could have lived before.

But the ring cities remained—usually as independent metropolitan entities in their own right. West of Washington, D.C., Alexandria-Fairfax had begun as a dozen isolated centers of commerce in northern Virginia, ultimately fusing into a single metropolitan swath following the old track of the Washington Beltway.

Seated in the back of the hovercraft with a dozen other Marines, Garroway watched the scenery stream past on the vehicle's cargo deck screens, walkways and parkland giving way to impressive white towers. Located on higher ground than the nation's capital, Alexandria-Fairfax had suffered less in the way of damage from Armageddon Fall than had Washington. The waves surging up the Potomac Valley had submerged much of Old Alexandria, but the metroplex towers, for the most part, still stood. Parts of the city had burned when the looters came, but most citizens had stayed put rather than fleeing, turning city facilities into fortresses to keep the marauding hordes at bay.

They had limited food reserves, however, and even more limited clean water. When the 1MarReg had touched down at Arlington two weeks ago, they'd found vast throngs of hungry civilians, desperate for food, for water, for medical help, and most especially for defense against the marauders.

The hovercraft gentled its way through a delivery entrance in the titanic wall of the Marshall Sports Complex, an enormous domed enclosure with seating for eight thousand looming above the Arlington Old City Center one kilometer west of the Monument grounds. The hovercraft grounded inside the main stadium, and the other Marines created a human chain and began offloading crate after crate of NMFEs. Garroway thanked the driver for the lift and began looking for Chrome.

He found her in charge of the security element at the C-D distribution point.

"Hey, Chrome," he called over the private chat channel. "How's it hangin'?"

"Trigger!" She was standing alone atop a raised platform, a kind of stage, beneath a holographic banner that read CAMP HOPE RELIEF CENTER: ANNANDALE, with instructions to form a single line, maintain order, and wait your turn. "What the hell are you doing here? I thought you were scheduled for downtime this morning."

"Screw that," he said, clambering up the steps to join her on the platform. "Too much to do. Anyway, I've been getting the comjits."

"Yeah." She looked around the interior of the stadium, which was filling rapidly with people, both civilians, and personnel in military uniforms. The stage, raised a good three meters above the stadium's floor, gave an excellent view over the crowd. "You and me both. The trick is knowing what's legitimate precog, and what's normal, healthy paranoia."

Comjits—combat jitters—was Marine slang for the premonitions shared by every combat veteran since the armies of Sargon the Great. Military psychologists now accepted as fact the heightening of extrasensory abilities, and even worked at strengthening them through mental disciplines

such as Weiji-do. But, as Chrome had just pointed out, it was impossible to differentiate between ESP and simple fear.

For Garroway, comjits were simply that feeling in the pit of his stomach that something was about to happen . . . an empty, gnawing, falling sensation in his gut indistinguishable from fear. His usual response, as now, was to try to find something constructive to do. If his extrasensory antennae weren't sharp enough to pick a genuine warning out of the ether, including details of where and when the attack would come, then the best thing he could do was be ready for anything.

He looked up at the dome roof, arching 200 meters overhead and ending in a ragged edge open to the gray sky and drizzle. The eastern half of the dome had been blown away, but what remained still provided some shelter from the incessant rain. More important, it served as an easily defensible bastion from which supplies could be passed out to the locals. Every morning, civilian representatives of the local enclaves would arrive, in hydrogen-powered trucks, in jury-rigged maglev transports, even in horse-drawn wagons, to receive their community allotment of water and precious NMREs. Individual citizens, too, came to volunteer several hours of work in exchange for food for themselves and their families.

"Attention," a loudhailer blared from somewhere overhead. "Civilian personnel will now approach the distribution stations. If you are here representing yourself, your family, or your block, please line up alphabetically, remain in single file, and maintain order. If you are here to receive distributions for your community, please move to the line identified by city or district. Attention . . ."

The message continued to repeat, as barriers across the entrances through the audience bleachers were lowered, and streams of civilians and civilian vehicles began separating from the amorphous mob gathered just outside the stadium's main gate and began feeding through to the fifteen distribution points set up near the center of the stadium. Garroway unslung his carbine and stood next to Chrome, watching the crowds move.

Most of the civilians on foot were lining up in front of the alphabetically designated stations. The vehicles, though, began queuing in front of the stations identified by community—Arlington, Alexandria, Fairfax, Bethesda, Silver Springs, and others. His feeling of nervousness moved up a notch. If anything was going to happen, it would happen very soon.

The regiment's primary mission had been the rescue of military and civilian leaders trapped beneath the Potomac mud, but Colonel Lee had made the determination on the spot that the Marines could help, and, more to the point, that simple humanity demanded that they do so. He'd begun by ordering extra stores of NMFEs without telling orbital HQ what he planned to do with them. By the time they caught on, he could point out, quite truthfully, that the locals were willing to help the Marines both in the work at the Pentagon, and even in the defense of the perimeter, in exchange for supplies of food and clean water.

Frankly, Garroway wondered how long it would be before there were food riots—not from lack of food, but as reaction against the NMFEs.

Nanufactured Meals, Field Expedient, had been in general use in the armed forces for over a century now. The concept was simple. All food, like the organisms that consumed it, was made up of the same organic molecules, in turn formed from the same elements—chiefly carbon, hydrogen, oxygen, and nitrogen. Nanobots—nano-scale machines, each less than a micron across, but working together by the hundreds of trillions—could manipulate large numbers of atoms very quickly, rearranging, say, a small hill of sludge pumped from the river, or even raw sewage, into NMFEs.

Of course, the Marines, who had to live on the stuff during waking periods on board interstellar transports or during long deployments on distant worlds with alien biochemistries had their own explanations for the acronym—many of them, in fact. “No More Fucking Excrement” was one of the most popular, but there were others.

The trouble was that the stuff, while both sterile and nourishing, didn't have much taste, and the reason had to do with

software copyright law. When manufactured foods had first become practical late in the twenty-second century, there'd been a period of intense competition among bioprospectors, a kind of high-tech gold rush, to develop and patent specific artificially assembled aromatic molecules for flavoring foods. The haute-cuisine restaurant industry, especially, had long ago established proprietary control over the nanoprocessees that could take bland gruel and transform flavor, smell, and texture into something indistinguishable from, say, *Escalopes de Saumon Gigondas*, or a nice green salad made with fresh produce, croutons, and bleu cheese dressing.

There *were* freeware downloads available for programming taste into nanomeals, but those had been lost, with so much else, with the collapse of the Global Net. Copies of some freeware cuisine programs existed in the various off-world nets, and included such basic and non-copyrightable standbys as chicken flavor, beef flavor, chocolate flavor, and the like. Tracking those down in the electronic chaos of the past few weeks, however, had been impossible, especially since so much else had higher priorities.

And so, the Marine relief efforts had settled for nutrition and purity, if not taste and appetizing appearance and texture. The same process purified water, and could be used to turn dirt, scrap metal, and debris into emergency nanocrete shelters, barricades, and even emergency spare parts for various pieces of standard equipment. Basic nanotechnic medicine was more specialized, but also available through all of the military nets, allowing the creation of swarms of short-lived nanomachines that could supplement and boost the human immune system, seal wounds, and serve as prophylaxes against the old killers following in the wake of disaster throughout the history of the human species—cholera, typhoid, typhus, dysentery, plague, flu, and a host of others.

Without nanotechnology, Garroway thought, the relief effort would have been doomed before it started. There was no way enough food could be grown offworld to feed Earth's starving population, and not enough ships in the whole Solar System to move it all even if it had existed. Starvation and

disease would have killed at least another twenty percent of the billions of survivors remaining on the planet, even ignoring the predicted effects of the coming long winter.

It still would have been nice, however, if they could have programmed the gruel to taste like chicken.

In any case, the latest word from orbit was that the huge, solar-powered nanofactories out at the Lagrange Points, normally used for military and large-scale power plant construction, were being converted to produce emergency supplies for the Earth relief effort. Initial setup was expected to take three weeks; after that, supplies of programmed nanobots for creating food, shelter, medical supplies, and even construction equipment would be coming down by glider in megaton lots.

All they needed to do was hold out until then.

Scanning the queuing crowds, Garroway noticed a number of Marines on the main deck in front of the alphabetically ordered stations. Using his helmet optics, he zoomed in for a high-mag view. They looked painfully young, and were unarmored—wearing olive-drab Marine utilities and forage caps instead of Class Ones and Mark 56s. They looked foreign to Garroway, with black hair, swarthy skin, and full lips; at first, he wondered if they were South Indian troops, possibly from the World Union. But when he queried the local MilNet over his helmet com, he saw they were new recruits from Ishtar. He'd heard about them a week ago, but had forgotten in the chaos since.

"How are the offworld newbies doing?" he asked Chrome.

"The Ishies? Okay, I guess. They need close supervision, just like little kids. They're still recruits."

"Yeah. They were supposed to be coming to Earth to go to Parris Island, right?"

"Right. Only Parris Island ain't there anymore."

Garroway felt a pang at that. No Marine really *enjoyed* the hell of recruit training, but once they were out, they tended to look back at Camp Lejeune with a kind of masochistic nostalgia.

We've lost so much. . . .

"So what are we supposed to do with them?"

"They've had Phase One of boot camp," Chrome said, "so they're not completely raw." She shrugged. "Hell, the way I see it, Trig, we need all the help we can get."

He nodded slowly. He wished, though, they had more experienced people. There were only about twenty Marines on duty here in the stadium, assigned to maintain order while the food and water were passed out.

That nagging feeling that something was wrong was still gnawing at him, still—

A savage, hollow bang echoed across the stadium. Garroway ducked and looked up in time to see a shower of debris falling from the north side of the dome overhead, perhaps fifty meters to his right. Civilians screamed and broke out of line, scattering in all directions.

"*Incoming!*" someone yelled over the tactical channel.

"*Bandits!*" another voice cried. "*Bandits at the North Gate!*"

"*Maintain order!*" a voice boomed over the mob from a speaker somewhere overhead. "*Stay where you are! Do not panic!*"

And then another explosion ripped through the stadium dome high above him, followed an instant later by a far heavier, massive *whump* from somewhere just outside, and all hope of restoring anything like order to the mob vanished.

25 MARCH 2314

*Near the Stadium North Gate
Marshall Sports Complex,
Relief Distribution Center
1020 hrs, EST*

Recruit Private Nal il-En Shra-dach dropped to the deck when the first explosion went off, and was very nearly killed as the queues around him disintegrated. Thousands of people were inside the stadium dome, and suddenly they were *all* trying to leave at once. A loudhailer voice was booming above the crowd noise, trying to maintain calm and order, but a moment later, the second and third explosions went off, and the stampede of civilians began to take on a life of its own, surging away from the North Gate and rolling back deeper into the stadium.

Rolling to one side, he managed to get his back to a wall—actually the barrier in front of the bleacher section—and to unsling his weapon, an LR-2290 laser rifle, standard Corps issue.

He still wasn't entirely sure how to use the thing.

Trust your downloads, the voice of Staff Sergeant Wojkowiz said in his head. *The knowledge is there. Trust it!*

Well and good, but he needed a target first. Right now, all he could see was a thundering, screaming mob trying to flee.

A fundamental fact of biology confronted Nal. Ten thousand years of genetic isolation on Ishtar had resulted in a

substantial drift in the genome; *everyone* in this huge, domed room was taller than he was, and he couldn't see more than a few meters.

But he could see far enough. Three meters away, Derel was struggling to remain on her feet as panicked civilians crowded past her. She fell, and he heard her scream as she was trampled.

"Make a hole!" Nal bellowed, pushing forward into the mob, wielding the stock of his laser rifle like a paddle. "*Make a hole!*"

It was unlikely that the crowd understood the ancient military expression, or that they even heard it. By sheer, brute strength and determination, though, Nal shoved, prodded, and beat enough people aside to create a tiny clear space around Derel long enough for her to regain her feet.

"Thanks, Nal!" she gasped.

"Hang on to my shoulder!" he yelled, turning his back on her and swinging his weapon hard. "Come on! This way!"

Perhaps the sight of two Marines, neither more than 150 centimeters tall, charging against the flow of traffic was startling enough to get through the fog of panic spreading through the mob. Civilians moved out of their way, or tried to. A woman clinging to an infant stumbled and fell, shrieking. Nal adjusted his course to push his way in front of her, as Derel helped her up. Several men locked arms and battled the tide to create a human barrier, forcing the rest of the crowd to flow around them.

Together, somehow, they fought the oncoming tide of humanity and managed to regain a measure of relative safety in the lee of the wall. The human barrier dissolved back into the sea.

"Now what?" Derel asked, panting.

"We move *up*!" Nal replied. He pointed toward a set of steps going up from a break in the wall a few meters to the left. There was a gate, but the lock yielded to a sharp blow from his weapon, and they clambered into the lowest levels of the bleacher section. From there, they could make their way along an aisle to a kind of bridge spanning the broad opening of the North Gate. Looking down over the railing,

Nal could see nothing but the tops of heads, as more and more people streamed through into the stadium's interior.

"*Smedley!*" he thought, transmitting the mental code to access the unit AI. "*What should we do?*"

All he got in response was the wait light blinking in his mind's eye. The AI was either down or overwhelmed by other requests at the moment. Nal and Derel were on their own, a bleak and terrifying thought.

Trust your training.

The thought—and the bass thunder of Wojkowiz's remembered bellow—steadied him. Phase One Marine training, back at Gilgamesh, had consisted largely of learning how to use their new Corps-issue implants. Basic skills—such as marksmanship, basic first aid, and the standards and protocols of military life—all had been electronically downloaded into the recruits' brains.

The trouble was, the information was there, now, but the physical neural connections in his jellyware brain required to make using it automatic were not. Rather than having a datum he needed simply *there*, at the instant he required it, he had to feel around in his thoughts searching for the memetic place marker that would let him access it. Phase Two of recruit training was supposed to have given them proficiency in extracting and using their downloaded training. Unfortunately, that part of training had been indefinitely postponed.

Another explosion ripped through the dome ceiling overhead, releasing a cascade of debris that showered onto the panicking mob, urging them forward. Nal could see bodies on the deck, some moving, some still, many bloodied, civilians trampled by the stampede. *Someone* was firing at the stadium dome, that much was certain. The question was why?

No, he corrected himself. Not "why." *The question is what do I do about it?*

Other recruits who'd been out on the deck managing the queues were making it, in bedraggled twos and threes, to the shelter of the wall. As he and Derel waved and shouted, more and more found the stairs, and began coming up into

the bleachers to join them . . . Vanet Gan-Me, Trab Jil Garad, Chakar Na-il Havaay, and others.

All of them were recruit privates from Ishtar, however. There were no AIs, officers, or NCOs to tell them what to do.

It was Nal who took the initiative. "I'm in command," he told the others, a ragged group of eight. "Follow me!"

And the miracle was that they did.

*Center Stadium Area
Marshall Sports Complex,
Relief Distribution Center
1029 hrs, EST*

Garroway was trying to connect with the unit AI. *Priority override!* he thought. *Give me a fucking channel!*

All he got in reply was the please-wait icon. Quincy was locked up and out of the running.

Which was one of the dangers of relying on artificial intelligences that were, by their very nature, reliant on massive parallel processing across multiply redundant communications nodes. Under normal circumstances, AIs like Quincy "lived," if that was the word, on large-scale data nets—Global Net or the myriad military Internetworks. A smaller and simpler version of Quincy, "Quincy₂," could function reliably on the smaller number of platforms and service nodes in a single ship, like the *Preble*, and on the numerous computers and interconnected processors carried by individual Marines.

A certain minimum complexity was required, however, to maintain a viable AI net, and 1MarReg had been working very close to that minimum for three weeks, now. Ninety percent of their processing power was still on board the *Preble*, in low Earth orbit. Most of the civil and military communications satellites that formerly had swarmed about the planet were gone, now, wiped away by the sleet of high-speed dust and debris sweeping in from the Asteroid Belt just before Armageddonfall, and only a handful had been replaced so far. As a result, once every ninety

minutes there was a twenty-three-minute hole in their communications links with the *Preble*, and the AIs working on the ground were limited to the rather narrow scope of the computers in Fairfax Center, at Henderson Hall, and in the individual combat suits and helmets of the Marines on the ground.

And the attack, by sheer bad luck, had been launched halfway through the blackout in comlinks with the *Preble*. Right now, Quincy₂ still existed inside the navigational computers on board the transport, but only fragmentary pieces of him—decidedly *non*-intelligent software—were working on the ground at the moment.

Unable to raise Quincy, he shifted to a straight communications channel. “Echo One! Echo One! This is Trigger! *Do you copy?*”

He heard nothing back but static, and bit off a curse. That loud thump he’d heard after the first couple of explosions had sounded like it came from the direction of the stadium’s main gate outside. Echo One was the security element in charge of the gate; it was possible that they’d been taken out.

Giving up on the com channel, he scanned the crowd on the stadium floor, using his helmet optics to zoom in on individuals and vehicles. There was a pattern here, and a damned disturbing one. The explosions on top of the dome—arpeggs, he thought—seemed designed to stampede the crowd in a specific direction—from the North Gate south through the center of the stadium. If that larger explosion had taken out the Main Gate security element, the attackers might be swarming in behind the panicked civilians any moment now.

There! He zoomed in closer on a mass of faces coming in through the stadium’s inner doors behind the fleeing civilians . . . hard faces, *determined* faces, and in the same instant he saw the weapons.

The Marines called them shaggies because they needed a name, and “marauders” or “bandits” seemed too intellectual, even prissy. In fact, they were no more ragged-looking or hairy than the rest of the mob. Many wore mismatched items of military clothing taken from military surplus shops or

stolen from armories. Some, not all, wore red rags tied over their upper right arms; some, not all, sported collections of animated tattoos as impressive as Chrome's. Their weapons were a miscellany of civilian and military arms, from slug-throwing hunting rifles to hand lasers and Army-issue mass drivers. Garroway didn't see any pigs in the mob, and was grateful for that . . . but the fact that he didn't see them didn't mean they weren't there. That starhauler, he remembered, had been brought down by a man-portable plasma weapon.

The shaggies seemed to represent a broad cross-section of races and ethnicity, Garroway saw. There were black faces in the crowd, and Latinos, and Middle-Eastern/Semites, and Asians, and there were plenty of blond and blue-eyed faces as well.

Desperation knew little of ethnic boundaries.

Desperate or not, this band had to be stopped. Clearly they'd come after the supplies of food and water being handed out to the civilian population, and clearly their assault had been carefully planned and timed.

From what intelligence the Marines had been able to gather so far in the Greater-D.C. area, the entire region was controlled by about a dozen different warlords, each with a personal army that might number as high as a couple of thousand. The more successful a warlord was in securing supplies of food and weapons, the more fighters he attracted and the bigger his army. Those red bands on their arms, Garroway thought, probably meant this bunch was with General Tom Williams, as he styled himself, and the Red Tiger Militia, one of the biggest and most troublesome of the private armies in the area.

And they were crowding into the stadium, mingling with the unarmed civilians.

"Bandits in sight!" Garroway called over the tactical channel. "Coming through the North Gate! Heads up! It's a puppy rush!"

Puppy rush was milspeak for using hostages, civilians, even crowds of children as human shields, herding them ahead of and around an attacking force in order to storm a

defended position. The attackers were hoping the Marines would hold their fire—or at least hesitate for a critical few moments—for fear of hitting unarmed civilians.

It was a low-tech means of defeating high-tech, and one that frequently worked. Still, military technology had a trick or two that continued to give the Marines an edge.

Garroway raised his laser carbine and projected the thought-code that switched on his weapon's CAT function. Computer-Assisted Targeting had been around since the late twentieth century, when laser, radar, or infrared tracking had enabled so-called smart weapons to stay locked on to designated targets. The CAT scope on Garroway's carbine was simpler. A camera bore-sighted with the weapon fed a magnified image to Garroway's helmet visor display, with red crosshairs marking the target point. Laser pulses traveled in precisely straight lines, unaffected by gravity, by magnetic fields, by friction with the air, or by the wind, so if Garroway could see even a portion of a militiaman's body beneath the reticule, he could hit it.

He thumbed the weapon's selector switch to implant control, and held down the trigger as he took aim. Now the weapon would not fire until and unless he gave a single, sharp mental code, fed through his cerebral implant to the weapon's firing control system. He magnified the image in his visor display, put the reticule on top of a red-banded marauder's scowling face, and gave the code—now!

The computer interface allowed him to trigger the shot without risking a jerky movement that might throw off his aim. A single bolt of coherent light struck the marauder just above his left eye, vaporizing a quarter of the man's skull in a splash of blood and red mist. Garroway smoothly shifted his aim a couple of meters to the left, targeting a second marauder, and taking him down with a clean shot through the throat. The LC-2300 fired a ten-megawatt laser pulse, which carried about the same energy—delivered as flash heating and thermal shock—as the detonation of two hundred grams of chemical high explosives. A single shot to an attacker's head, throat, or unprotected upper chest *did* end the argument, at least for that particular individual.

Other Marines throughout the stadium were opening fire as well, and the marauders were going down. Several broke suddenly, and ran, but others tried firing over the heads of their human shields, continuing to push forward.

A trio of projectiles arced high into the space beneath the dome one after another, hesitated for the space of half a second, then began to twist around toward the elevated platform. “Arpegs!” Garroway yelled. Rocket-propelled grenades—and these appeared to be smart weapons, capable of identifying people in armor and carrying weapons and homing in on them with deadly accuracy.

Before Garroway could react further, however, all three projectiles flashed briefly in a trio of sharp, loud cracks, and disintegrated into clouds of falling fragments. The Marines had set up a pair of autogun towers—robot sentries—behind the stand, and these could track and target incoming projectiles faster and far more accurately than could human gunners. More RPGs streaked into the air, only to be whiplashed by invisible laser pulses from the robotic gun towers.

Garroway tried to identify the sources of the RPGs, which were coming from the thickest part of the moving crowd. That crowd was beginning to open up, however, as civilians streamed past the elevated stand and into the southern half of the stadium. As the mob parted, Garroway saw a vehicle just emerging from the north entrance—a low-riding cargo GEV heavily layered with strap-on sandbags, scrap metal, and logs. The Ground Effect Vehicle was thrusting ahead through the crowd, scattering civilians, its skirts rippling with the blast of high-pressure air emerging from its ventral thrusters.

“Technical at the North Entrance!” Chrome called over the tactical net. “Repeat! We have a technical at the North Entrance!”

“Technical” was an old term for a civilian vehicle fitted out with makeshift armor and weapons—a serious threat when the crowds of fleeing civilians in front of it precluded the use of heavy weapons. The back of the vehicle was open, and Garroway could see armored figures there, one behind what looked like a heavy plasma gun mount. Taking aim, he

increased the magnification on his helmet optics, zooming in close enough to see that there were three men in back, and that they were mirror-armored.

Combat armor that could adopt the local light levels and hues, becoming, in effect, actively changing camouflage, had been around for several centuries and, at first, Garroway thought that's what he was seeing. The figures appeared to be reflecting their surroundings—mostly the grays and whites of the dome surface overhead.

He targeted one of the men, however, and fired. There was a flash, but no apparent damage. *Damn!*

Combat armored suits with nanoflage coatings that could both become perfectly reflective and repair themselves were more recent innovations than traditional active camo, and still expensive. Garroway didn't know where the marauders had managed to get these suits—stolen from a Guard armory, perhaps—but he knew they meant trouble. Those coatings were as reflective as liquid mercury, scattering nearly all incoming light, and swiftly repairing areas of the coating that were charred by the small amount of energy actually absorbed. The weak point was the helmet—specifically—the optical receptor patches for the interior visor display, which were small, almost invisible, and usually programmed to shift rapidly from point to point.

Garroway put the targeting reticule over what might have been the helmet's optical patch and triggered his weapon. As before, he saw a flash of scattering light, with no effect on the target. Other hits flashed and strobed off the slick, reflective surface, which seemed to ripple and distort as the vehicle moved slowly forward.

And now he could see two more GEVs following the first in line-ahead.

The plasma gunner in the back of the GEV slewed his weapon around on its mount and fired, the bolt trailing a thunderclap as it burned through the air a meter above Garroway's head. "Cover!" he yelled, and he and Chrome dropped flat on the platform's steel grating. A second shot struck the platform, and the structure canted sharply to the right, throwing the two Marines to the ground.

They scrambled to their feet. The mob was surging around them, fleeing the oncoming vehicles, but they were able to stand their ground as the crowd flowed past.

“C’mon!” he yelled at Chrome.

There was only one way to take on those hovercraft. . . .

*North Gate,
Marshall Sports Complex,
Relief Distribution Center
1031 hrs, EST*

Nal looked down over the railing from the promenade bridging over the inner gate, and saw the hovercraft directly beneath him, slowly moving forward as it cleared the entrance. Its thrusters howled, and clouds of dust and grit swirled out from its skirts. Three men in mirrored armor were crouched on the flatbed behind the low cab, and the entire vehicle was covered with makeshift armor of sandbags, sheet metal, and wood.

He’d led his small and makeshift army out onto the walkway above the main entrance, hoping to grab a high-ground position from which he could open fire on the marauders as they rushed through eight meters beneath. The walkway gave them that vantage point, but the arrival of the hovercraft changed everything.

Trab Jil Gar-ad snapped off a shot with his laser, but the bolt flashed uselessly from the shiny garment one of the marauders was wearing. Nal, too, took aim with his weapon, trying to let the downloaded information about how it worked flow through him, without having to dig for it. Aim . . . track . . . breath . . . hold . . . squeeze . . .

The bolt flashed harmlessly off mirrored armor.

Their download sessions back home had included a bit of factual data about lasers—that lasers were nothing but light, and, like light, were reflected from mirrored surfaces. Their laser weapons were useless here, even at almost point-blank range.

Nal had only a second to make a decision.

Dropping his laser rifle, he drew his combat knife from its sheath and vaulted over the railing.

*Center Stadium Area
Marshall Sports Complex,
Relief Distribution Center
1031 hrs, EST*

Garroway charged forward, Chrome close by his side, rushing headlong against the flow of panicked civilians. The crowds were greatly thinned out now, with most of the civilians behind them, now, filling the southern half of the stadium. North, eight or ten scruffies were firing randomly into the crowd and, beyond them, the first of the cargo hovercraft was edging through the North Gate and onto the stadium floor. The pig gunner on the flatbed behind the cab fired his weapon again, sending a bolt whipcracking across the stadium floor and striking one of the robot sentries at Garroway's back.

He saw a tiny group of figures on the walkway bridging the stadium entrance, directly above the slow-moving hovercraft now, and then he saw one of the figures drop, neatly vaulting the railing and falling toward the back of the hovercraft.

Garroway magnified the image in time to catch a glimpse of the falling man, one of the Ishtaran recruits, wearing nothing but Marine-green utilities as he plummeted about four meters and landed squarely on the shoulders of the marauder pig-gunner. The impact drove the marauder down and out of sight; the two other armored marauders were so busy shooting fleeing civilians they didn't appear to realize at first what was happening.

Zigzagging to avoid presenting too steady a target, Garroway ran directly toward the hovercraft. The cab's windshield was completely covered over with sheet metal, leaving only a tiny slit for the driver to see through.

Garroway fired into the slit as he ran. . . .

*North Gate,
Marshall Sports Complex
Relief Distribution Center
1032 hrs, EST*

Nal hit the back and shoulders of the marauder who was firing the plasma gun, the impact as hard as a fall from the branches of a red *durik* tree back home. The marauder dropped to his knees underneath him, then fell full-length, twisting wildly, trying to grapple with his assailant.

The Mk. XII combat knife looked much like the Marine-issue blades of centuries past, but it had some high-tech twists to it. The blade was a microgravity-bonded crystalline alloy of ceramic, titanium, tungsten carbonitrides, and molybdenum—an alloy that could cut diamond—forged and tempered by nanobots that had worked the cutting edge down to a whisper of cerametal one atom thick. The knife blade, in short, was *very* hard and *very* sharp.

The marauder's armor, however, was hard as well, and as Nal brought the blade down between the man's shoulder blades, the knife turned and skidded across the slick, mirror-bright surface. Nal had an instant's surreal glimpse of his own face, twisted with anger and reflecting back at him out of the man's back. Then the reflections shifted and rippled as the man turned, trying to throw him off.

All Nal could do was hang on tight with his left hand, and keep hammering at the armored form beneath him with the knife in the right. The blade *did* cut the armor with each stroke, but only in shallow nicks, and he had to pull hard to yank the knife free after each blow.

The armor wasn't all solid shell, however; when he shifted his aim to the marauder's elbows, the keen-edged blade sank through the folded ceramplas composite with startling ease, and he heard the helmet-muffled shriek of the man beneath him.

Rough hands grabbed him from behind, lifting him. The other marauders on the GEV flatbed had seen him and were turning their attention to this sudden assault from above. Seconds later, however, Derel's small and wiry frame landed

squarely on the back of one of the other armored forms, followed in quick succession by Trab, V'jak Ra-il Gub, Vanet Gan-Me, and Chakar Na-il Havaay.

One of the armored marauders spun hard, throwing V'jak against the flatbed guard rail and bringing his weapon to bear on him. The man was holding a pistol, an ugly, snub-nosed weapon that detonated small charges of chemical explosive to propel heavy metal projectiles the size of the tip of a man's little finger. The weapon barked twice, and V'jak pitched backward over the railing, blood exploding from holes opening suddenly in his chest and back.

"No!" Nal screamed, turning sharply and slashing at the marauder's knee with his bloodied knife. The marauder shrieked and the pistol flew from his gauntleted hand. The man jerked away, pulling the hilt from Nal's grasp.

Nal was never clear as to exactly what happened next. For a blurred and utterly chaotic few seconds, he struggled between two of the marauders, while his friends swarmed over both, stabbing and flailing at them with combat knives. Two more Ishtaran recruits leaped off the walkway above, but the hovercraft slewed sharply to the right and both missed, landing instead on the nanocrete floor of the stadium.

The hovercraft skittered sideways, wildly out of control. . . .

*Center Stadium Area
Marshall Sports Complex,
Relief Distribution Center
1031 hrs, EST*

Garroway kept firing as he leaped onto the front of the hovercraft's cab, his bolts gouging fist-sized craters in hard sheet metal. Some must have slipped through the driver's vision slit, however, and evidently the marauder behind the slit wasn't wearing a mirrored helmet, because the hovercraft suddenly swung out of control, going into a gentle spin as it drifted to the right on howling thruster blasts.

The motion almost threw him off, but he grabbed hold of

a sandbag lashed on the roof of the cab and pulled himself up, scrambling against the vehicle's makeshift armor until he could grab the flatbed railing.

The scene on the flatbed was one of utter and bloody chaos. Ishtaran recruits were swarming over three combat-suited marauders, stabbing them with knives or pounding at them with the butts of their laser rifles. Two had just succeeded in pulling a mirror-bright helmet off of one of the marauders; for a moment, the bearded man inside looked up at Garroway, horror dawning in his eyes, and then one of the recruits drove the black blade of a combat knife, far sharper than any razor, into the man's forehead, burying it to the hilt. The man's arms and legs jerked once, a death spasm, and then he sprawled lifeless on the deck; the recruits who'd killed him were already attacking a second marauder, who was trying to pull another knife out of his knee. The third armored scruffie was rolling on the deck, clutching both elbows with opposite hands, apparently badly hurt.

Garroway, seeing that the recruits had the situation well in hand, grabbed the plasma gun on its pintel mount, swiveled it around to face the next marauder vehicle in line, which was just coming through the gate. His thumbs pressed the butterfly trigger, and the weapon hissed and cracked, flinging a white-hot sliver of plasma into the cab of the other vehicle.

Sandbags and sheet metal couldn't protect the driver from that onslaught, and with no civilians nearby to serve as human shields, he was a slow-moving and naked target. Garroway fired three more rounds into the vehicle for effect, aiming for the undercarriage, then watching it suddenly crumple beneath a blossoming orange fireball.

The firefight ended with startling swiftness, then. The surviving marauders inside the stadium turned and ran for the gate, rushing past the burning wreckage as Marines closed in from all sides, weapons firing. Many of the marauders threw down their own weapons and raised their hands, unwilling to face the Marine countercharge without the firepower of their technical to back them up. The second technical in line slewed to a halt when Marines killed the

driver; the other ramshackle vehicles, still outside the entrance to the stadium, turned and ran, retracing their paths through sections of fence knocked over moments before.

They hadn't gone far, however, when a shrill roar cleaved the sky, and a quartet of ugly black fliers, looking like dragonflies with sleek fuselages slung behind insect heads with bulging eyes, streaked overhead. The A-699 Skydragons had arrived, and within moments the surviving technicals had been turned into twisted and fiercely burning heaps of wreckage.

Garroway turned to one of the unarmored Marines standing in the gate. He was young, looked scared, was unarmed, and his utilities were covered with blood.

He'd also leaped into a hovercraft to attack heavily armed and armored men.

"What's your name, son?" Garroway asked.

"Sir! Recruit Private Nal il-En Shra-dach, *sir!*"

"At ease, Marine," Garroway said. "You men did a hell of a job."

It seemed to take a moment for what Garroway had said to penetrate. *Marine!*

The Ishtaran, already at attention, seemed to grow taller by another half-meter.

12 JUNE 2314

*Henderson Hall
Ring City, Virginia, US/FRA
1020 hrs, EST*

Puller Auditorium, an enormous chamber with stadium seating located in the west wing of the ancient headquarters building for the United States Marine Corps, was packed to overflowing, and at the moment it sounded as though every person there was trying to get a word in. Colonel Robert Ellsworth Lee shook his head. Eight hundred people, all talking at once, made a hell of a racket.

Tom Llewellyn, the President's national security advisor, stood on the projection dais at the front of the room, hands held high as if in surrender, trying to restore order. "Please . . . please . . . people, *please!* Order!"

Gradually, the crowd noise died away. Llewellyn cleared his throat, then pushed ahead. "Gentlemen, ladies. Thank you for your attendance at this briefing. As it says in your download egendas, we will hear the report from 1MIEU first. After that, we will begin deliberations on the Andromeda Question, with a vote scheduled for 1500 hours this afternoon. While the results of this vote will not be binding, the results will be presented to the Federal Senate for final debate and vote next week."

Which, Lee reflected, would almost certainly rubber-stamp the decisions made here this morning. Most of the

senators who would be making that vote were in this room now, and he was sure that they would be paying *very* close attention to the feelings expressed in this chamber.

The hell of it was, this vote would override the vote made by the military council the previous February. The World Union had demanded a vote on the matter of whether or not to invest in asteroid starships for an exodus from Earth.

And the Federal Union of North America had committed itself to supporting that decision. If the WU voted to flee to Andromeda, the Marines would support the decision.

Even if the majority of the Marines felt that that would be the wrong way to go. The Corps had a very long tradition of supporting civilian policy, not making it.

"Obviously, emotions over this question are running high," Llewellyn continued. "We have before us essentially two possible courses of action . . . the Andromedan Option, and the Garroway Option. Madam Fortier, the honorable senator from the sovereign nation of Quebec, has proposed that we accept both the advice and the active help of the N'mah, construct as many asteroid starships as possible, with cybernetic hibernation facilities for as many people as possible, and use them to travel to the Andromedan Galaxy. At sublight speeds, the voyage will take some two million, three hundred thousand years, objective, though only twenty-seven years would pass on board the ships thanks to the effects of relativistic time dilation. The refugees would be revived over two million light-years away, and over two million years in the future. It is hoped that they will be able to find a new home world, and ensure the long-term survival of Humankind.

"Opposing this, the Garroway Option, as presented by General Clinton Garroway, suggests that we stay where we are, and use military means to prevent or at least to delay Xul reprisals against our planet.

"I am told that new information is available regarding the military option. Present this morning is the commanding officer of the 4th Regiment, 1st Marine Division, Colonel Robert Lee. Colonel Lee?" He stepped back off the dais. "If you would, please?"

Lee stood and walked down the steps of the aisle, then stepped up onto the scan dais at the front of Puller Auditorium. He took a moment to study the faces—*expectant* faces—of the men and women in the audience. The crowd was divided about half and half between civilians and people in uniform; most of the government and military leaders freed from their long subterranean imprisonment beneath the D.C. mud flats were here in person, as well as those members of the civilian governments—U.S. and Federal Republic—who'd survived the firestorm of several months earlier. Many, including President Raleigh and her staff, were watching through the newly recreated GlobalNet—still little more than a shadow of its former self, but robust enough now, at least, to support a large number of AIs, as well as linked humans. The Navy had been working constantly over the past months to build and place constellations of communications satellites in Earth orbit, as well as Earth-based nodes and server complexes.

According to the Net statistics he'd just downloaded, in fact, almost ten thousand minds were linked into this briefing so far, besides the eight hundred present physically in the auditorium, and more were linking in every second. Phobos HQ was connected, despite the long time lag, as well as the much closer virtual networks on Luna and in Earth orbit.

As was only fitting. This, he knew, would be a briefing session of historic importance.

His biggest question was why he had been chosen to make the presentation. This was General Garroway's baby, not his, and the general should have been the one to stand here and make nice to the brass and politicians. Lee felt out of place, and thoroughly inadequate. Searching through the auditorium and the watching faces, he found Garroway, ten rows back.

The bastard actually *grinned* at him, as though enjoying his discomfiture.

"Ladies," Lee said, "gentlemen, AIs . . . and, of course, our distinguished guests of the N'mah. Welcome."

He waited a moment longer as the buzz of conversation within the auditorium died down . . . and, he admitted to

himself with wry humor, to increase the suspense, just a bit. He wanted their absolute attention.

"Thank you for attending this briefing, whether physically or virtually. I think you'll be interested in what Intelligence has to say this afternoon, especially with the vote coming up this afternoon. In short . . . we know, with about sixty percent certainty, where the Xul attackers came from four months ago, what route they followed to get here, and something about their home system. We can, if we wish, launch a retaliatory strike, in accordance with the outlines of Operation Seafire as presented by General Garroway."

That announcement, almost casually presented, raised a sudden roar from the crowd. Many were on their feet, some cheering, some shouting . . . but very clearly the reaction was mixed. There were still many in the government who strongly advocated a policy of no retaliation, who were in favor of evacuating as many from Earth as possible, and for seeking a new world-home, somewhere far from this region of the Galaxy, where Humankind could begin again.

Lee made a mental connection, opening a download feed. At his back, the two-story wall turned dark, then lit up with stars; at the same time, windows became available in the mind of each person at the briefing, both the physical attendees and the virtual linkers.

"I think the information can best be presented by the entity that found and correlated it in the first place—the AI of the command constellation of 1MIEU—Quincy."

"Thank you, Colonel Lee," Quincy's voice said, his calm and measured tones speaking in the minds of all present. "It is good to be here."

Lee wondered if that last sentence represented Quincy's social programming, or if he really felt some positive emotion. The question, he realized, was meaningless; in any case, most humans would have said the same no matter what they actually felt—a polite noise to grease social wheels.

AI minds might not be so different from human minds after all.

"We have completed an exhaustive analysis of data retrieved by one of my downloaded avatars during the

Armageddonfall incursion,” Quincy went on. “This was carried out by linguistic AIs both at the Military Intelligence Analysis Center at Fort Meade, High Guard Headquarters at Fra Mauro, on Luna, and at the Marine Intelligence Complex at Stickney Base in Phobos. We were fortunate in being able to draw upon a great deal of archived data, going back to our first encounter with the Xul machine intelligence in the so-called Singer recovered at Europa in 2067. Translating an alien computer operating system from scratch would be all but impossible. We’ve had substantial help from the N’mah, and from the Ancients’ records found buried in the Cave of Wonders, in Cydonia, Mars.

“The images you see were stored within what we believe were the equivalents of a navigational computer system on board the Xul ship. The view here is of a portion of the sky as seen from here, within our Solar System.”

Under Quincy’s control, the scene swung sharply, the stars streaking left to right until the familiar three-in-a-row suns of Orion’s Belt came into view. The camera view then slowed, continuing to drift left and down, centering on a particularly bright star below and to the east of Orion.

“Alpha Canis Majoris,” Quincy said. “Better known as Sirius. Type A0, distance 8.6 light-years from Sol. We’re all familiar with the system as the location of the Sirius Star-gate, and the current home of a surviving colony of N’mah.”

As he spoke, the viewpoint seemed to accelerate toward the star, which became markedly brighter. A second, faint pinpoint of light became visible next to the star—Sirius’s white dwarf companion, Sirius B. Then a third pinpoint appeared, which expanded into something like a titanic wedding band adrift in space. The long-suspected Sirius C had turned out to be an artificial construct, a ring twenty kilometers across housing a pair of counter-rotating black holes moving at a high percentage of the speed of light. Gravitational stresses set up by those masses were sufficient to distort local space, opening a passage through non-space, and effectively permitting instantaneous travel across distances of many light-years. “According to the N’mah, the Xul use a network of these gates scattered throughout our Galaxy to

effect near-instantaneous travel across distances of many thousands of light-years.” Quincy paused. “I hear a question?”

“Yes, Quincy,” a woman in the audience said. Lee checked the speaker’s ID, intending to suggest that questions be held for the end of the briefing. When he saw that the speaker was Dr. Elena Martin, President Raleigh’s senior science advisor, he backed off. Some people here had the power, and the right, to interrupt any time they pleased.

“Why do the Xul need the Stargates if they have FTL travel?” Martin asked. “That doesn’t make sense.”

“A reasonable question. According to our N’mah sources, the Xul FTL drive enables them to make use of a hyperdimensional extrusion of normal space into a higher order which they call ‘*paraspaces*.’ By bypassing our normal four-dimensional spacetime, they can achieve velocities approaching five hundred c . Human physicists are still debating the terminology, I should add. FTL velocities in normal space are still impossible. Perhaps I should say that the Xul achieve *paravelocities* of five hundred times the speed of light.

“While extremely fast, such *paravelocities* are still finite. The Xul ship, we now believe, emerged from the Sirius Gate approximately six and a half days before arriving in our Solar System. The N’mah still at Sirius may have transmitted a warning, but at the speed of light it will take a little more than another eight and a half years to reach us. In other words, the Xul crossed 8.6 light-years in six days, for a *paravelocity* of, very roughly, five hundred c .

“While the use of a *paraspaces* drive allows for very swift travel between local star systems, such as Sol and Sirius, a ship traveling at five hundred c would still require two *centuries* to traverse the diameter of our Galaxy, crossing the span of one hundred thousand light-years from one side to the other.

“Our N’mah informants know of only a handful of stargates, but believe they may be scattered throughout our Galaxy, with no gate more than approximately one hundred light-years from at least one other gate.”

"You're saying the Xul could cross the Galaxy by traveling from gate to gate," Admiral Jason Colby, at Fra Mauro, put in, "with no more than two to three months' travel time between each? That doesn't buy them anything. Still takes over two centuries to cross the Galaxy."

"No, Admiral," Quincy said. "We now understand that these stargates can be tuned by adjusting the vibrational frequency of the rotating black holes. Matching frequencies between two gates connects those two gates. Theoretically, each stargate can be tuned to connect with any other stargate. This means that the Xul can reach any point within our Galaxy in no more than two and a half months."

Lee felt the shock of the audience as they tried to digest this datum. They'd all known that Xul technology was good and that the Xul had a very long reach, but no one had considered yet just how long that reach might be.

The N'mah were right. To escape the Xul threat, Humankind would have to flee to another galaxy entirely and, traveling at sublight speeds, millions of years into the future, an idea that still was daunting in the extreme.

Throughout the discussion, the elements of the Sirian star system remained on the screen at Lee's back, and in the download window open in all of their minds—brilliant Sirius A, the small but fierce pinpoint of Sirius B, and the gleaming hoop of the Stargate. The image shifted now, moving closer to the gate, which from the new vantage point became a perfect, thread-rimmed circle of silver light.

"This one stargate," Quincy continued, "may actually give us access to every other stargate in every part of the Galaxy. As yet, we don't know how, exactly, the tuning of one gate in order to connect it with another specific gate is accomplished. The N'mah say they know how to interact with the gates, and are willing to share that knowledge with us.

"Judging from the navigation data we acquired from the Xul intruder, we believe the probable origin of that vessel to be . . . here."

The computer-generated point of view plunged forward through the gate, the stars blurred for an instant, then snapped back into crystal clarity. Starclouds hung suspended in space,

half of the field of view a teeming beehive of suns, the other half empty and dark. From this new vantage point, they appeared to be hanging above the plane of the Galaxy; ahead, the Galactic Core glowed like red-orange embers thickly streaked by the dark wisps of nebulae, while, in the foreground, the Galaxy's spiral arms uncoiled in pale, cold, blue-and-white light.

An orange-hued sun detached itself from the background and grew larger, brighter. A crescent appeared, a bright sickle bowed away from the sun, its night side spangled with thickly clotted lights, as if from dozens of enormous cities.

"As you see," Quincy said, "this system is located above the plane of the spiral arms of our Galaxy. Like the Cluster Space system our Marines visited a century and a half ago, this system lies on the very fringes of our Galactic neighborhood.

"We have named this system Night's Edge," Quincy continued. "One of the human intelligence analysts on this project seemed to feel that the romantic imagery was important. The star is located well above the Galactic plane, and is somewhat closer to the Galaxy's core than are we. We estimate its distance from Earth to be nearly fifteen thousand light-years.

"Analysis gives us a sixty-five percent likelihood that Night's Edge is the location of a major Xul military and transport nexus, and that it contains the base from which the intruder vessel was dispatched in February. What we propose is to send 1MIEU to Sirius. There, we will consult with the N'mah still within the Sirius system, before they abandon it entirely, and confirm this analysis with them.

"The operation would then proceed in two phases. First would be a reconnaissance, carried out by AI drones. Depending on the information these drones return to Sirius, we will then pass through the gate in force in order to implement Operation Seafire."

Again, the room exploded into shouts, together with a smattering of applause. Again, Lee heard a distinct division in the reaction, with some in the audience cheering Quincy's statement, and others shouting against it.

"That's suicide!" one particularly strident voice called out. "It would just bring the entire Xul civilization down on us!"

"Yeah," someone else called out. "Wouldn't they know where the attack had come from? Won't they pass it on to other bases? What does it buy us?"

"According to our N'mah advisors," Quincy said, "communication between separate Xul bases is quite slow. The enemy is highly advanced technically, true, but we can't overlook the fact that the Galaxy is a *very* large place—four hundred billion stars, and an estimated fifty billion worlds supporting life advanced enough that resident species could evolve to intelligence and technical sophistication within a few million years. The N'mah believe that there are no more than a very few hundred bases like the one at Night's Edge.

"The Xul, for all their high-tech ability, simply cannot keep track of every planet, of every species, at least not in any detail. Each base is responsible for a very large sector containing many millions of stars, and hundreds of thousands, perhaps *millions* of worlds. The Xul also move slowly by our standards, taking their time before responding to a threat. So far as the N'mah have been able to determine, the Xul have no central authority, no emperor or home government. Information filters from one Xul world to another only intermittently, with the movement of their ships, and distant outposts may be thousands of years behind in acquiring news from the more centralized regions. By the same token, Xul worlds in toward the heart of the Galaxy, where we believe they are more thickly distributed, might not learn of events in the outlying regions for millennia.

"We believe, therefore, that if we destroy the base and any Xul ships present at Night's Edge, the Xul elsewhere will eventually learn of the attack, but not for a time . . . perhaps not for centuries."

"Then all we've done is put off the day of reckoning," President Raleigh observed.

"Yes, Madam President," Quincy replied. "But . . . which would be better? To delay a possible Xul response by centuries? Or to simply sit back and wait for the inevitable re-

sponse from the Night's Edge base when their warship fails to return? The vessel that struck Earth is already several months overdue. We believe they will respond within ten to fifty years—”

“You believe?” Lieutenant General Clarence Armitage, Vice Chairman of the Joint Chiefs of Staff, stood in the audience, interrupting. “You *believe*? The enemy could be in Earth orbit tomorrow!”

“General, the ten-to-fifty-year estimate was based on N'mah observations of Xul behavior over the past several millennia,” Quincy replied, his voice unruffled by Armitage's outburst. “You are quite correct, however. Given a possible flight time from Night's Edge of six days, by way of the Sirius Stargate, they could indeed be here at any moment. Their response to perceived threats tends to be ponderously slow, however. Remember, the Singer almost certainly broadcast a signal of some sort to the stars in 2067, quite probably an announcement of our existence, but there was no evidence of Xul activity in this part of the Galaxy until one of their ships emerged from the Sirius Gate in 2148, some eight decades later. After the destruction of the second Xul intruder at Sirius in 2170, another 144 years passed before one of their warships actually found Earth.

“However, we don't *know*, not with any surety. Earth remains in terrible danger.”

“Then how does this Seafire proposal help us?” Senator Fortier demanded, her Québécois French translated into acid English in Lee's mind. “All it will do is draw precious military resources away from Earth when we need them here most!”

“As I said, we don't know with any surety. All we can do is look at the problem statistically, seeking the greatest—”

“Excuse me, Quincy,” Colonel Lee said, breaking in. “Perhaps I can answer this one.”

“Of course, Colonel.”

Lee turned on the dais to face Senator Fortier. She was seated near the President, and he wondered if that indicated a sharing of viewpoint. Unlikely. The President had more sense, usually.

But Quincy and other expert AI systems were always at their weakest when attempting to respond to emotional arguments. For that, you needed a human mind.

"Madam President, Madam Senator," he said. "Quincy has given us the facts, the best analysis of the information retrieved from the Xul ship possible with our current technology. What we have to decide now is beyond the purview of any artificially intelligent system, and it is why we are meeting here this morning.

"General Armitage pointed out that our use of Seafire to delay the enemy may be futile. It will take ten years, objective, for a Marine expeditionary unit to reach Sirius. We have no way of cutting down on that travel time, none. And, as the general said, a Xul follow-up expedition could have departed from Night's Edge a week ago, emerged through the Sirius Gate, and be here in time for breakfast tomorrow.

"And Senator Fortier, you are right, as well. A Marine expeditionary force consists of a thousand Marines, several hundred naval personnel, and at least eight to ten major ships—transports, mostly, but we would want a significant fleet presence along as well—say, a battlecruiser and a couple of destroyers, at least.

"But ask yourselves this. Wouldn't it be better to take the fight to the enemy—even if it did not delay him by a single hour—rather than just sitting here and waiting for the end? Isn't it better to go down fighting, than to close our eyes and hope it's all just a bad dream, or that the bogeyman will go away? Isn't it better to strike back than to flee to some other galaxy in the hope—quite possibly the misguided hope—that the enemy will never be able to find us . . . or that he won't be there waiting for us when we finally arrive a couple of million years objective from now? We've been discussing the possibility of building asteroid starships and departing for M-31 in Andromeda at the speed of light." He shrugged. "The N'mah don't know of any Xul presence outside our Galaxy. The refugees *might* be safe.

"Or it could be that the Xul have been there for a million years already, or that within the next two million years, they'll decide to go there and be waiting to meet us. The

point is, no matter what we decide here in this chamber today, there are no guarantees . . . *none*, except for one. If we decide to wait here for the Xul to return, if we try to face even one of their FTL starships with military might, even our entire Navy and High Guard combined, we *will* be destroyed. While no accurate estimation is possible, Xul technology is at *least* a thousand years ahead of ours, and the tech-level difference might well be measured in hundreds of thousands, even *millions* of years. If we try to stand up to them on their terms, we will lose. And losing, I remind you all, means the extinction of *Homo sapiens*.

“So why the hell *not* invest ten ships and a couple of thousand volunteers in the possibility, however slight, that striking back, that hurting them, badly, will hide our location a few more centuries? The Xul are convinced that we’re some sort of a threat to them, long term? Then let’s prove it to them, and hurt them bad enough that they stop and really think about whether trying to eliminate us is a good idea?” Lee thought again of the computer animation General Garroway had shown them when he’d first proposed Seafire—the caveman sneaking up behind the combat-armored soldier and walloping him with a stone ax. “Right now, standing up to the Xul, for us, is like a Stone-Age primitive going it toe-to-toe with a fully armed and armored Marine. We try to fight him one-on-one, and we get killed. But if we do the unexpected, find a way to slip in under their defensive radar and get in just one, good, killing blow, we might win for ourselves the time to rebuild the Earth . . . and to bring our military technology up to a level that really gives us a fighting chance!”

He didn’t add a bit of history, something he’d downloaded from the net archives just last night. As the political debate over whether to flee or fight had continued to unfold over the past four months, a small group of military officers, here on Earth and in near-Earth space, had begun making reference to what they called the Doolittle Option.

Three and a half centuries before, during the Second World War, the United States had found itself at a serious disadvantage in fighting the Japanese Empire in the Pacific.

At the war's beginning, the Japanese actually enjoyed several significant technological advantages—better torpedoes, better surface warships—than the Americans, and their unexpected strike at the U.S. naval base at Pearl Harbor had savaged the American Pacific Fleet, leaving it vastly outnumbered in battleships, aircraft carriers, and other major fleet elements as well.

But four months after Pearl Harbor, Lieutenant Colonel James H. Doolittle had organized and led a raid against the Japanese home islands with sixteen medium bombers, aircraft normally flown from land bases but which, with special training on the part of the crews, could be flown off the deck of an aircraft carrier.

The raid had been a resounding success, though none of the aircraft made it through to their planned landings in China, and the actual damage inflicted on the Japanese had been trivial. The true value of the Doolittle Raid, as it came to be called, had been not in military advantage but in stirring the resolve of Americans at home, civilians stunned by news of an uninterrupted string of Japanese victories, from Pearl Harbor to the Philippines to the Dutch East Indies.

Military historians had convincingly argued since then that the raid had forced the Japanese to step up their attempts to annihilate the American carrier fleet—which had escaped the attack against Pearl Harbor—in order to prevent another such attack.

And that had led to the turning-point Battle of Midway two months later, when the enemy's naval juggernaut in the Pacific had at last been decisively stopped, allowing U.S. superiority in production to begin to catch up with, then surpass, the Japanese.

Operation Seafire shared certain elements with the Doolittle Raid. It stood no chance of seriously harming the enemy, and it depended on makeshift means to overcome Xul technological superiority.

But it had the potential to make a serious strategic difference, giving Earth the time it needed to rebuild, rearm, and develop a credible defense.

The audience had again erupted into shouting, and Lee

tried to make a guess as to which side had the numbers—or, at the very least, which was shouting loudest. A vote had been promised for that afternoon. From the sound of things, the vote would be close.

A substantial number of people still wanted to opt for leaving Earth, even though the best studies conducted so far suggested that at most only a few hundreds of thousands of people might be saved in a handful of asteroid starships—a tiny, tiny fraction of several billion survivors. Over the past weeks, word of the deliberations outside of Washington had leaked to the rest of the nation, then to the world, and thousands had died in the riots that followed. Both Canton and North China had threatened war against the Federal Republic, and the World Union, meeting at their new provisional capital in Sydney, had as their first official act passed a condemnation of both the Federal Union and the United States for “unilateral acts to the detriment of Humanity.”

If the U.S. or the FR decided to jump ship, the rest of the world wanted to jump as well.

“If I might have your attention a moment more,” Lee said, then waited. Gradually, the noise subsided, and each member of the audience again was looking at him.

“Thank you,” he said. “I just wanted to add that, as of two weeks ago, the selection process has begun within the 1st Marine Division. We already have more than enough volunteers to create our expeditionary force. We have also begun sequestering the supplies necessary at L-4, and begun necessary updates and modifications of several starships in anticipation of a mission to Night’s Edge.

“I would urge you, the civilian leadership that will make the final decision here today . . . even if you decide to save a few thousand souls and leave Earth forever, remember that *billions* will remain behind, and deserve a fighting chance. Send the Marines to Night’s Edge! Those who remain on Earth will not have a better chance for survival!

“This concludes my presentation this morning.”

Lee left the dais and walked up an aisle to an empty seat as the chamber around him thundered with argument and counterargument. Tom Llewellyn took his place on the projection

dais. In the window open in his mind, Llewellyn's face appeared as the science advisor again pleaded for order.

The vote, Lee knew, was going to be damned close . . . but now there was a good chance that the government would do what Lee *knew* to be the right thing. Some of Earth's survivors—the rich, the powerful, the governing elite—might well pursue the Andromedan Proposal as presented by Senator Fortier. With their power and economic bases on Earth wrecked by Armageddonfall, they might well conclude that they had nothing to lose and everything to gain by getting as far away from Earth as possible in space and in time and starting all over again. After all, they would still be in charge once they'd founded the new human colony.

Good riddance to them all, Lee thought, and he was surprised at how much bitterness rode with the thought. *We don't need them.*

But, before they left, they would agree to give those they left behind a fighting chance, even if it meant sacrificing some of their military assets.

Only time, possibly a great deal of time, would tell which decision was truly right, or even whether Humankind would survive at all.

Colonel Lee knew where he stood.

The Marines, he knew, men and women who'd sworn oaths to the United States and to the Federal Republic, for the most part stood with him.

And that was with General Clinton Garroway, the man who'd created Operation Seafire, and a man anyone in the Corps would have followed anywhere in the Galaxy.

25 MARCH 2314

Camp Hope
Ring City, Virginia, US/FRA
1815 hrs, EST

Garroway carried his tray to an unoccupied table, took a seat, and again contemplated the lump of dried, brown mud in a bowl that was dinner.

“Can I join you?” a familiar voice asked from behind his shoulder.

“Hey, Chrome,” he said. “Sure. Grab an ass support.”

“You look like you just lost your last friend.”

“Just giving thanks.” He touched the plastic covering, and watched it peel open and begin to cook. “‘For what we are about to receive . . . ’”

“Can the grouching,” Chrome told him. “In prehistoric times, Marines had to hunt and kill their own mud.”

“True. You think we’d get a better selection if we went down to the Potomac and dug our own?”

She made a face. “With all those dead lawyers and politicians carried away by the flood?”

“You’re right. Bottom feeders aren’t that appetizing.”

“Affirmative. I prefer to take my sustenance from higher up on the food chain. Eat your porridge.”

Barracks humor, Garroway thought, had taken a grim turn of late. Lots of jokes about cannibalism and the end of the

world. Maybe that kind of insanity was the only way sane people had of remaining sane.

He picked up a spoon and took a bite. In fact, it wasn't bad . . . kind of bland, a little gritty. If you didn't think too much about it, not bad at all.

"So whadja think of those kids in the amptheater this morning?" Chrome asked him.

"The Ishies?" He nodded. "They did good." He took another bite. "I put the bunch of them in for the Navy Cross."

"They won't get it. Has to be an officer to recommend them. They don't take the word of grunts for stuff like that."

"Hanes said he'd back me." Captain Theodore Hanes was their company commander here at Fairfax Center. "I played him my combat mems in the debrief this afternoon. He was impressed."

"Cool. Might go through, then."

"They deserve the recognition. Shit, they're all still kids, wet behind the ears and barely through Phase One of boot camp. More than that, they don't even have a handle on civilized life, yet."

"You call *this* civilization?" Chrome asked.

"You know what I mean. These people were primitives living out in the jungle on Ishtar. Biggest city they'd ever seen was New Sumer. They probably signed on out there because the Marines they saw looked like demigods, or something."

"Maybe they saw joining the Corps as a way out of the jungle. Or it was a way to say thanks for the liberation."

He shrugged. "Maybe. I don't care why they did it. I just think it was pretty spectacular the way they took on that technical this morning. That took sheer, raw guts."

"Roger that." She looked thoughtful. "You know, it seems to me there's too much emphasis on them being 'primitives,' whatever the hell that is."

"What do you mean?"

"The point is . . . they're human. Exactly like you and me. Different upbringing, sure. Different culture, different take on technology. But they're just as smart as we are. Maybe

more, since they haven't had the fancy hardware . . ." She tapped the side of her skull. "Implants, downloads, all of that. They've made do with less their whole lives."

"Could be. You know, there's a lot of talk lately about how ancient peoples needed so much help from extraterrestrials. You know, the Egyptians, the Sumerians, how they wouldn't have gotten anywhere without the N'mah giving them a leg up."

"Pretty good, since the N'mah don't have legs. The adult ones, anyway."

"Right. But our ancestors were as smart, as capable, as adaptable as we are today. The N'mah might have helped get civilization started, but our ancestors had already managed to survive when the Xul mopped up the An."

"And now we get to survive again."

"Maybe that's what humans are best at."

Another Marine, wearing green utilities, came up beside them, tray in hand. "Mind if I join you?" he said.

Garroway looked up, saw the silver bars on the man's collar, and started to stand up. "Sir!"

"Sit down, sit down," the lieutenant sounded tired. He also looked very young, in his mid-twenties, Garroway thought. "I just need a place to park."

The mess hall, Garroway saw, was pretty full. A line of other officers was filing through past the galley window, each receiving their ration of NMFes.

"No room at the BOQ, sir?" Chrome asked him.

"No. They sent us down here."

The Fairfax Center's Bachelor Officers' Quarters, Garroway recalled, were small and tight on space. The NCO barracks had more room.

"Just got shipped in, sir?" Garroway asked.

He gave a wry grin. "Just passing through. We're in from Twentynine Palms."

Understanding dawned. "You're one of those Skydragons from this morning!"

"Affirmative." He held out a hand. "Handle's Maverick."

"Good to meet you, sir," Garroway shook hands, accepting with the touch the download package that included the

man's name, rank, and unit—his electronic business card. "VMA-412?"

"Yup. Just in from Mars."

Chrome nodded. "We were out that way last deployment."

Maverick digested the electronic ID packet Garroway had passed him with the handshake. "You're 1MarReg! You were the guys who took out the Xul?"

"That was us," Garroway said.

"Good job, Gunny!"

"Thank you, sir."

"They scrambled the 412 when the Intruder came in," Maverick told them. "Had us boosting out to meet them, but you folks took out the bad guys before we could launch. I can't tell you how damned happy we were to hear we weren't going up against a Xul capital ship!"

"Yeah?" Chrome cocked her head to the side. "Excuse my saying so, sir, but that's not quite the image I thought you fast-movers wanted to present."

"What, you mean all the macho crap? Up, up and away? That's for the zoomies."

Zoomy was centuries-old slang for Aerospace Force pilots, and was usually meant as a pejorative. Marine aerospacecraft were generally referred to as fast movers, among other things. Marines had a special love for their ground-attack personnel, however. Ever since WWII, Marine pilots had excelled at close air support of their comrades on the ground, at least in part because of the remarkable esprit that bound them together.

"'Every Marine a rifleman,'" Garroway said, quoting. It was an old expression, a reflection of the fact that all Marines were considered to be riflemen first, even if their MOS—their Military Occupational Specialty—had them serving chow in the mess hall, or strapped into the acceleration couch of a high-performance aerospace fighter.

"Roger that," Maverick said.

"You guys kicked ass this morning," Chrome said.

"Kicked ass and took numbers, 'cause you were moving too fast to take names."

Maverick chuckled. "Wasn't like we had any tough opposition. What was it . . . civilian trucks?"

"It was tough enough from where we were," Chrome said. "I imagine the local warlords'll think twice before trying that shit again."

Maverick nodded. "Our orders are to redeploy out here, at least for the time being. They have us sitting on the old Reagan Aerospaceport, just south of here."

"Well, it's great to have you aboard, sir," Garroway said. "What do you think of the chow?"

Maverick had opened and heated his meal as they talked, and was just now taking his first bite. He made a face. "Gods! What is it?"

"Recycled lawyers, politicians, and other bottom feeders. Sir."

"Figures. Put 'em to best use." He looked at Chrome. "Hey, maybe you two can help me out."

"With what, sir?"

"Xul tech. Is it as hairy as they say?"

Garroway shrugged. "We got through it, okay." He tried not to think about those last moments, with Xul combat robots swarming around the transport as they boosted clear. He didn't think he had ever been so scared in his life . . . not even later, when they were adrift in deep space, with no real hope of rescue. That had been something he'd been able to accept. But those swarms of machines coming after them . . .

He shook himself, trying to rid himself of the dark memories. "The way I see it, sir, a lot of their stuff is more developed, but it's really just variations of what we already have. Particle beams. Lasers. Nanotechnology. While we were inside the Intruder, I saw this huge swarm of . . . I don't know. Machines. Pieces. They were moving like they were under intelligent control, repairing the hole in the side of the Xul ship."

"G-2 thinks they have at least a limited ability to regrow their big spacecraft," Chrome added, referring to division-level intelligence. "They probably grow them in the first place by reshaping asteroids, or whatever is handy. If they're damaged, they just grow a plug in the hole. We have limited abilities along those lines now."

"Huh. I wonder what their cities look like?"

"Maybe they don't have cities," Garroway suggested. "Or maybe they just reshape the whole damned planet to suit themselves. *That'd* be a sight!"

"The biggest tech-gap," Garroway said, "seems to be what they do with cupie."

"Say again?"

"Cupie? Q-P. Quantum physics. G-2 says they actually rewrite the laws of physics, at least in a very elementary way."

"No shit! Like what?"

"Like that trick they pulled throwing rocks at Earth," Chrome told him. "The N'mah know how to reduce the inertia in a discrete lump of mass, right?"

Maverick nodded.

"Okay. The Xul do the same thing . . . only they can give the mass any inertia they want. Like a brand-new vector of two thousand kps."

"How the hell could they do that?"

"If we knew that," Garroway said with a shake of his head, "we wouldn't be so worried about these bastards. The smart money, though, says they know how to manipulate virtual particles in the Quantum Sea."

That, at least, was what knowledgeable scuttlebutt had to say about it. For at least three centuries, since the development of quantum physics in the mid-twentieth century, scientists had recognized that hard vacuum was not really empty, that at a very deep, very fundamental level of existence, so-called empty-space was a kind of continually bubbling and churning froth of elementary particles popping magically into existence in pairs—particle and antiparticle—and almost immediately vanishing as the paired particles canceled one another out. So long as there was no net increase in mass or energy, the laws of conservation were observed, and you didn't have something coming out of nothing. Not *really*. While seeming to violate laws of common sense, the existence of these so-called virtual particles had been proven in the twentieth century. Two metal plates placed parallel and very, very close together registered a

slight attractive force between them, called the Casimir Effect, which was the result of a slight excess of energy materializing outside the plates, compared with what materialized between them.

The twentieth-century physicist Richard Feynman had calculated that the virtual energy contained within a single cubic centimeter of hard vacuum would, if liberated, boil all of the oceans of Earth. E_v power plants made use of the Casimir Effect to draw energy—a minute fraction of what potentially was available—from hard vacuum, sufficient to accelerate starships to near- c , making relativistic flight between the stars possible.

But quantum physics had suggested more than that unimaginable amounts of energy were free for the taking from hard vacuum, much more. That background of virtual particles, the base state, or, as it was more poetically known, the Quantum Sea, was also responsible for *non*-virtual particles as well. An electron, for instance, could be understood as a *succession* of particle-pairs popping in and out of existence very, very swiftly, creating a kind of standing wave that defined it and gave it substance.

It had long been accepted that both matter and energy were not the substantial, thump-the-table-top solidity assumed by Newtonian physics. Matter, it turned out, was as insubstantial as a dream; an atom not only was mostly empty space, but even the particles that made it up—electrons, protons, and neutrons—were more like information than like the layman's idea of what matter should be. Quantum particles might act like particles . . . but look at them another way and they acted like waves. In fact, how you measured them, or even thought about them, seemed to be what determined what form they took.

Matter, at the deepest level of reality, was an *idea*, and as insubstantial as a thought.

"What they're saying," Chrome added, building on Garroway's explanation, "is that if matter is really nothing more than standing waves in the Quantum Sea, as information, really, then it ought to be possible to reach down in there and change the information. Part of the information would be

everything that makes up the block of data we call inertia . . . the particle's mass, its vector, how much kinetic energy is wrapped up inside it."

"They say that's what the N'mah dampers do," Maverick said. He grinned. "If it weren't for that little bit of techno wizardry, I'd be turned into a thin layer of red jelly every time I boosted my 'dragon up to full throttle."

"Sure," Garroway said. "The Quantum Sea idea also explains nonlocality, since all points in our universe correspond with this base-state universe in a way that doesn't involve space or distance. So that gives us a clue as to how the Ancients could build that bank of communications screens beneath the Cydonian Face on Mars . . . with real-time connections to screens on planets in other star systems. Seems to be faster-than-light, but that's an illusion. Nonlocal phenomena bypass space, so they can't be said to have a speed of faster than anything."

"It might also be how the Xul manage their faster-than-light stardrive," Chrome pointed out. "You just reach down to the quantum level of reality, rewrite the informational content for the standing waves of a certain mass—a starship, say—and in this universe it instantly vanishes *here*, and reappears *there* . . . light-years away."

"Yeah. So how do they manage that?" Maverick asked.

Garroway shrugged. "Like I said, sir. If we knew how, the bastards wouldn't have us with our backs up against the wall."

"We had an AI inside the Intruder before we pulled the plug on them," Chrome said. "Maybe he got some technical data . . . like how they work their magic."

"That would be good," Maverick said. He looked thoughtful. "I wonder."

"Wonder what, sir?"

"You guys went through the usual Weiji-do courses, right?"

"In boot camp," Garroway said. "Sure."

Weiji-do—the Way of Manifestation—was billed as a form of martial arts and taught as such in the Marines, though physical combat had little to do with it. Wei Chi was

the name of one of the hexagrams in the ancient divination tool known as the I Ching. According to that system, a particular pattern of cast coins or yarrow stalks represented incompleteness or emptiness . . . but it was the emptiness, the chaos, from which order could be called forth. Even complete chaos, according to that way of thinking, was more accurately portrayed as *possibility*. As *potential*.

And that, according to the modern science of quantum physics, was exactly what the Quantum Sea was . . . a state of disorder or chaos that held within it unlimited potential. All that was needed was for Mind to reach in and bring it forth, to literally manifest reality.

Garroway had never been sure how much of that pseudomysticism to swallow. There was a whole modern school of philosophy based on the idea that the human mind actually created reality from moment to moment in Godlike fashion simply by observing it, an extension of the old Heisenberg Uncertainty Principle of quantum physics, that said that *nothing* was real, that everything was overlapping wave forms and possibility until an Observer with a capital *O* observed those waves and made them collapse into Reality.

Reality. Whatever the hell *that* was.

In fact, Garroway was convinced that just believing something, or wishing it was real, was a hell of a long way from making it so. All you needed to do was look at the incredible diversity of human religious belief. Which one was "right?" Did the fact that members of the Gray Redeemer Church thought little gray aliens with big black eyes were God make it so?

Still, the Corps had taught Weiji-do for about the past century or so as a discipline designed to help recruits think. So much of the Corp's modern technology, from battle suits to laser weapons, from communication links to aerospace fighters, depended on clarity and precision of thought when working through personal nanotech implants. A Marine couldn't afford to let his mind wander when he was in a firefight, or trying to pull out of a dive in a fighter pulling ten Gs. Weiji-do involved meditation techniques and mental exercises, coupled with complex and dancelike moving

meditations drawn from the far older martial discipline of Tai Chi, to precisely control thought. One part of the discipline, Garroway remembered, was rooted in the idea that each individual created his own reality, through thought and belief, by calling it forth from the Unmanifest Chaos of the Quantum Sea. The better you controlled your thinking, his teacher had told him, the better the Reality you create.

"Boot camp and a few training sessions afterward," Chrome added. "Real woo-woo stuff."

"I've often wondered," Maverick told them, "if Weiji-do really was what they said, some kind of key to manifesting reality. But it says the same thing as quantum physics, right? Somehow, our minds affect the nature of our reality, by operating down there at the *base* reality, the Quantum Sea. We believe. It happens."

"If that were really true," Chrome pointed out reasonably, "we could all believe together that the Xul were all gone. And they would be."

"What if the Xul believe they're *not* gone?" Garroway asked, grinning. "Maybe their belief trumps our belief."

"So what does that mean? That reality is the result of a fucking *vote*?"

"Physicists say reality is consensual," Maverick said. "Something we all create together. So maybe so."

"You know," Garroway said, "there's plenty of evidence that psychic phenomena are real. That they are nonlocal effects. And nonlocal means they occur at the level of the Quantum Sea."

"What's your point?"

"Well, you know the old saying? 'Any sufficiently advanced technology is indistinguishable from magic?'"

"Sure. Clarke. A twentieth-century philosopher."

"Okay. Maybe the Xul can rework the Quantum Sea to their exact specifications, just by *thinking* about it. You want to go to another star FTL? You think you're there and *poof!* There you are. You want to send a rock flying? You think about it, and it does."

"Scary thought," Chrome said. "How the hell do you fight someone that powerful?"

"Well, the Xul aren't omnipotent," Maverick said. "If they were, all they'd need to do is think about it and we'd vanish. Or our sun would explode, or we all fall into another dimension, or whatever. Why muck about with throwing rocks when you can click your fingers, or whatever you use for fingers, and zap us all into nonexistence?"

"There have to be limits," Garroway said, still thoughtful. "Maybe Chrome's right. It *is* a vote. Sixteen billion of us to fifteen point nine-nine-nine billion of them, we win. More likely, though, it's something a lot more subtle than that. Maybe it has to do with the way we think, or the fact that even when we believe something, there's a huge pile of unbelief lurking just below the surface, no matter what we do. But it gives an interesting take on ESP, magic, *all* of that woo-woo stuff, as Chrome calls it."

Most Marines believed completely in extrasensory phenomena through personal experience; comjits were a case in point. Military psychologists had long sought to bend the subtle effects of ESP to the military will, but with less than complete success. Mental techniques like remote viewing were provably real, but inconsistent enough that technology—remote drones, for instance—did the job better and more reliably.

"How does the N'mah inertial damper work?" Chrome asked Maverick. "Magic? Wishful thinking?"

"We have no idea. The physics boys are still trying to figure that out, but even with working models to take apart and tinker with, there are still too many gaps in our understanding of quantum physics theory. It's a field effect, they say, something that affects every atom in the target mass together . . . which is a fancy way of saying they don't know. Not yet, anyway."

"Might as well be wishful thinking, then," Garroway said. "The thing is, I wonder if the Xul pull off their high-tech magic by rewriting information at the base reality . . . but they don't really know that that's what they're doing."

"Why do you say that?" Chrome asked.

"Look . . . they can do things like change the inertia in an asteroid and make it zip off toward Earth at two thousand

klicks per second, but they couldn't stop us from planting a few backpack nukes inside their ship and blowing them all to hell. They can cross light-years in the blink of an eye—again, presumably, by rewriting their base reality somehow—but our X-ray lasers surprised them, crippled their ship, and blinded them so that we could get on board. It's like they have pieces of the whole, big picture, but only pieces, and they don't have them put together yet."

"Huh," Chrome said. "Maybe they're too advanced. They don't know how their own tech works."

"Could be," Maverick said. "They might have inherited their technology, rather than built it themselves."

"That almost makes sense, sir," Chrome told him. "We think they're inorganic. Machines. Well, somebody had to've invented the damned things in the first place. Somebody organic. Rocks and metal ores don't rearrange themselves into a working computer, complete with a few terabytes of data in mem."

"So our Xul friends have all of these gadgets created by their organic predecessors, but don't understand how it all fits together. How reality, how the universe, really works."

"Don't understand?" Maverick asked. "Or don't care?"

"Either way," Garroway said. "I just wonder if we can use it somehow."

"I sure don't see how," Chrome said.

Maverick looked at his bowl of porridge, still steaming. "Well, if I could change reality by thinking about it, I'd wish for a steak dinner. Medium rare . . . with spring potatoes and green beans. Red wine . . . the '98 vintage, I think."

"How about Earth?" Chrome asked. "We believe Earth is healed. The cities still standing. Our families intact."

That got a reaction from Maverick. Garroway saw the sharp stab of pain, the slight glisten in his eye. "You okay, sir?"

"Yeah."

"You lose someone?"

"I . . . don't know yet." He put his spoon down. "Maybe you can help me. Either of you hear about survivors out of Miami?"

"No, sir," Garroway said. "But then, we haven't heard much of anything, yet."

"They're supposed to be trying to put up casualty records on the new GlobalNet," Chrome told him. "But that's going to take a long time."

"I've heard there are some big emergency camps down in Georgia," Garroway told him. "Sounds like half of Florida is there. Who are you looking for? Where were they?"

"Miami Complex," Maverick said. "Helios Towers, in fact."

Garroway struggled to keep his face impassive. The Helios Towers had been a monster engineering project created in response to the slow encroachment of rising sea levels throughout the past few centuries of global warming. Much of Old Miami was under water, had been for decades, save for the walled portions and the towers. Helios Towers had been built farther out at sea, a skyward-reaching series of condominiums erected in defiance of a steadily worsening climate.

But since arriving on Earth, he'd heard scuttlebutt—*only* rumors, but rumors nonetheless—that the Helios Towers had taken a direct hit during the firestorm preceding Armageddonfall . . . and that the rest of Miami had pretty much washed away in the tidal wave that followed.

He exchanged glances with Chrome, and saw that she was thinking the same thing. Should they tell him? Or let him keep hoping?

"I don't know what to tell you, sir," Garroway said after an uncomfortable moment. "Florida got hit pretty bad. Who is it. Your wife? A girlfriend?"

"Both of my wives," he replied. "And our husband. My daughter. Two sons. A couple of in-laws. We had our own compound down there, on Helios West. Gorgeous terraces. Our own flutterport." He seemed to shake himself. "Well, maybe all I can do is keep hoping."

"We'll hope with you, sir," Garroway said. "Miracles happen."

But at the moment, he wasn't at all sure he believed that.

16 AUGUST 2314

*Marine Training Command
Camp Pendleton, California
1005 hrs, PST*

“... and acting in the very best traditions of the United States Marine Corps, Recruit Private Nal il-En Shra-dach did take command of a small group of fellow recruits and lead them against the marauder force that had penetrated the Marine perimeter. Realizing his weapon was useless against the enemy’s personal armor, and without thought for his own safety, he leaped from an elevated walkway onto the deck of a heavily armed transport hovercraft passing below his position, and engaged one of the marauders there in hand-to-hand combat. Despite the fact that the marauder wore combat armor and Private Shra-dach did not, he managed to seriously wound the marauder, while his companions, following his lead, attacked other marauders in the same vehicle and killed or overpowered them all.

“As a direct result of Recruit Private Shra-dach’s actions, the small and badly outnumbered security element stationed at the relief distribution center was able to repulse the marauder attack. Intelligence gathered from prisoners taken in the action was instrumental in organizing follow-up air- and ground strikes over the next several weeks which broke the power of marauder forces in the Washington, D.C.-Ring City area of operations.

"It is, then, my very great privilege to award Recruit Private Nal il-En Shra-dach the Silver Star for heroism. In addition, the Navy Department has authorized his immediate promotion to lance corporal."

The officer standing in front of him leaned forward, pinning the medal on Nal's tunic. Nal remained rigidly at attention as the award was snapped into place, then—as he'd been carefully coached—he shook the man's hand when it was offered. "Congratulations, Lance Corporal Shra-dach!"

"Sir! Thank you, sir!"

When the man released his hand, he rendered a crisp salute, which the general returned, then did a sharp about-face and returned to the waiting ranks.

It seemed as though the entire Marine Corps had gathered here under the foul-weather dome over Camp Pendleton's RTC grinder. Nal had never seen so many Blue Dress A uniforms, the traditional blue and red high-necked jackets worn with medals, over sky blue trousers. Having them all here to see him get this medal was a bit overwhelming.

So, too, was getting the medal and the promotion from the hand of none other than General John R. Dumont, the 210th Commandant of the United States Marine Corps, who'd flown out to California specifically for this awards ceremony.

About-facing again, he stood once more in the front rank between Chakar Na-il Havaay, on his left, and Derel ti-Haj Vah-gur, who appeared to be trying to stifle a large grin on his right. "*Way to go,*" she whispered in his mind . . . an Earth colloquialism she enjoyed using at every opportunity. "*The Ishtar Marines have landed!*"

"*Roger that,*" Chakar added.

"*Stow it, you two,*" he transmitted over the private channel. "*We'll talk later.*"

Commandant Dumont was standing before them now, hands clasped behind his back, as he talked about valor, commitment, and the traditions of the Corps. Behind him, several hundred meters away, Nal could see the transparency of the sheltering dome, and the falling snow outside.

It had been snowing now for weeks, but he was still fascinated by the phenomenon. Back on Enduru—Ishtar, rather; he

was still having trouble getting used to the English name—the human enclaves and cities, like the Anu cities, all were located in the so-called twiheat zone between fire and ice. Ishtar was an Earth-sized satellite of a super-Jovian gas giant. The day-night cycle of light and dark was provided by a wan and distant red dwarf sun—Lalande 21185, according to the Earth-human naming conventions—but heat came partly from tidal forces flexing the world's crust, and partly from the infrared radiation of the gas giant, which hung suspended forever just above the western horizon of the rugged, heavily forested uplands where Nal and the others had been born.

Since it was tidally locked, Ishtar always turned the same face toward Marduk, as the Earth-humans called the gas giant primary. That face, the Hot Face, was desert, utterly dry and barren, with temperatures running well above 40 degrees Celsius. The Ice Face, on the other hand, was continually locked in a hemisphere-wide sheet of ice, and temperatures there never reached above the freezing point of water. According to offworlders, snow—frozen rain—fell over the icecap which, as it slowly moved into the twiheat zone, melted, creating Ishtar's shallow, world-girdling seas.

But Ishtar's twiheat zones were tropically warm, for the most part, and Nal and his friends had never seen anything like those huge, fluffy white flakes that fell and fell and kept falling from lead-gray skies.

Earth-born Marines had told the Ishtaran recruits that what they were seeing here was definitely out of the ordinary, that it *never* snowed in this part of California save on the upper elevations of the very highest mountains, and never in the middle of the Northern Hemisphere summer. Nal was still getting used to so much that was, not just different, but spectacularly *alien* about this world so far from his home.

For the most part, Nal had enjoyed the second and third phases of his training. The Marines had flown the Ishtaran contingent to California from D.C. a few weeks after the action that had won him this ribbon with its pendant five-

pointed star now hanging from his blue tunic. The original Recruit Training Center at Camp Pendleton had been badly damaged by tidal waves rolling in off the Pacific, but new boot camp facilities had been set up farther inland, south of Lake O'Neil, in a place called Rattlesnake Canyon.

Eager to learn all he could about his new home, as soon as he'd arrived Nal had downloaded files describing the local fauna, including the creature known as a rattlesnake. There was nothing like it back home and he'd been eager to meet one. His Earth-born friends had had to point out to him that rattlers did *not* do well in snow.

Because of the snow, and the subzero temperatures, most of his boot training had been done indoors. Underground tunnels and high-speed tube transports got them around from dome to dome throughout the base facilities. His boot company had made a couple of long-distance marches, though, slogging through knee-deep snow wearing heavy armor. Both excursions were outings he would never forget, simply for their sheer, stark, exotic beauty.

Snow! . . .

His boot camp class had graduated on 5 August, and they'd been transferred to a holding company with new barracks just above the aerospace field. Every Ishtaran had graduated, and received the much anticipated promotion to private first class.

Nal had received the special honor of remaining PFC for less than two weeks before receiving his meritorious promotion to lance corporal. He still wasn't a noncom—that wouldn't come until he made corporal—and therefore still couldn't wear the coveted "blood stripe" down the outside seam of his dress blue trousers. But the promotion did bring with it a slightly increased degree of trust and responsibility, his first real step up the long career level. Nal was already determined to make the Corps his home for the next thirty Earth years.

Thirty years subjective, of course. Nal had already volunteered for Operation Seafire, and been accepted.

He was going to the stars.

*Near the Face Complex
Cydonia, Mars
1745 hrs, GMT*

Travis Garroway stood on the crest of a low ridge, watching the teleoperated machines toil in the ochre sands below. A dust plume hung above the construction pit, casting a long shadow.

Chrome was at his side. Both wore light pressurized armor with bubble helmets, the suits sealed against the thin, cold breath of carbon dioxide that was all Mars could claim as an atmosphere.

A billion years ago, an ocean had rolled here, and the air had been almost as thick as Earth's. The air had thinned, the world had grown cold and dry . . . though, again, and very briefly, open water had flowed here a scant half million years ago. Turning to his right, Garroway studied the rugged profile of a lone mesa on the eastern horizon. *They* had done that, though it hadn't lasted.

"Your ancestor fought here, didn't he?" Chrome asked. "Sands of Mars Garroway?"

"Yes. Yes, he did. World War IV. Though at the time they called it the UN War."

"You excited to be back on the same spot?"

Garroway shrugged, then realized the gesture didn't translate well through a pressure suit. "I suppose. Sometimes I think the name's a lot to try to live up to, y'know?"

"Hell with that," Chrome said. "You live for yourself, and you stay true to yourself. Not your ancestors. *Or* your relatives."

He glanced at her, wondering if she knew he'd been wrestling with the fact of his powerful uncle, or merely guessed. Sometimes, the lady was damned near psychic in what she could pick up out of the ether around her.

"You're right, of course. But sometimes I want to change my name."

"Why focus more attention on it? Just let it go. Ah!" She took his elbow with one hand, pointed with the other. "They're loading up another shot."

Several kilometers away, just visible in the distance, a monorail track began close by the cluster of pyramidal mountains known as the City, running almost directly due south—and so long that the far end lay somewhere invisibly over the horizon. The launch rail had been grown only a few weeks ago, using specially programmed constructionano that had pulled iron from the rust that made Mars the Red Planet and molded it into shape. From here, you could see where the iron oxide had been leached from the soil for thirty meters to either side of the rail, creating a long, silver-white strip through the desert.

Nearby, the robotic tractors and diggers below were shoveling desert sand into huge plastic cargo containers bound in iron hoops. One of those containers was being gentled onto the monorail now. Superconducting circuits trapped current and created a powerful levitation effect, with the cargo container hovering centimeters above the rail.

“Looks like they’re about to fire off another one,” Chrome observed.

“Yeah,” Garroway said. “Ah! There’s the signal.”

A flare burst silently overhead, accompanied by a mental alert downloaded to every person in the open. *Thirty seconds to launch.*

The two Marines were several kilometers from the launch rail at its closest. Plenty of room.

For the moment, the vehicles in the pit ceased operation, giving the dust cloud they’d raised time to drift slowly downwind, dispersing. Their operators, in the dome at Cydonia City, had unlinked for the moment—ostensibly to let the dust clear from the air, but actually to watch the pod launch.

A Marine A-40 Gyrfaalcon flier streaked south ten meters above the rail, the wan sun glinting from its cockpit canopy. The Marine at the controls would be checking the length of the rail to make sure no human or machine had missed getting the word and strayed into the danger zone. In the almost-vacuum of the Martian atmosphere, there would be no warning sound when the pod began to accelerate.

The seconds trickled past as the Gyrfaalcon, now far down

near the southern horizon beyond the pyramidal loom of D&M Mountain, suddenly swung left and circled back, gaining altitude. *Ten seconds' warning*, the mental voice announced. *Five seconds. Four . . . three . . . two . . . one . . . launch.*

Down on the monorail, immensely powerful magnetic fields gathered, then started moving. The hovering white cargo pod moved with them, slowly at first, then faster . . . then still faster, until it was hurtling silently down the track at over five hundred kilometers per hour, and still accelerating. Garroway heard a sharp click moments later—the equivalent here of a sonic boom in the painfully thin Martian atmosphere, the shock wave moving more slowly than it would with an air pressure of one atmosphere.

They turned as it silently hurtled past, watching it flash through the long shadow cast by D&M Mountain, its red and green acquisition lights pulsing brightly. Somewhere over the horizon to the south, the rail began climbing into the increasingly rugged and jumbled uplands of the Deuteronillus Mensa. In the vicinity of the crater Curie, the rail began curving gently but steadily upward, gently bending the pod's trajectory toward the sky, and space. When it reached three kilometers per second—orbital velocity for Mars, the pod's sustaining fields switched off and it truly took flight, arrowing into the southern sky . . . and polar orbit.

But by then it was well out of sight of the workers at Cydonia. The machines had already returned to their grubbing in the sands that once had been an ancient Martian beach. Nearby, several dozen more white canisters waited in silent ranks to be filled in turn. So far, five of the canisters, each massing fifty tons, had been slammed into polar orbit, where tugs and transport vessels were gathering them in at a single orbital complex and loading them on board an interstellar cargo vessel recently renamed *Intrepid*.

The project was moving ahead well. Two days ago, one container launch had failed when an electrical fault had resulted in the container not reaching orbital velocity. The canister had gone suborbital, leaving the atmosphere but bursting as it started back down, treating the inhabitants of a

small research outpost at Argyre Planitia, in the Southern Hemisphere, to a spectacular fireworks display as fifty tons of sand burned up on re-entry.

But five for six was not a bad score, and the work was continuing, with the Marine teleoperators relieving one another in six-hour shifts.

"We'd better get back," Chrome warned. "Another load of FNGs is coming in at sunset."

"Yeah. Just a sec, though."

Turning about again, he stared across red-ocher sands toward the northeast.

The Face was just visible from here.

Even yet, xenoarcheologists disagreed as to whether or not the Face on Mars actually represented a *face*, meaning that it was, in fact, artificial, and not an accident of nature. The original photographs, taken by the Viking Orbiter spacecraft in 1976, seemed to show an eerily human, Sphinx-like face a mile across peering up out of the Martian desert toward the sky. Planetary scientists studying the photos as they were transmitted back to Earth had dismissed the object as an amusing but natural accident, a *yardang*, as it was known in the Sahara of Earth, an isolated mesa carved by wind and sand over millions of years. Any similarity to a deliberately carved face was due solely to the peculiarities of the human brain, hardwired to recognize faces in otherwise random patterns of light and dark.

The Face had captured the public imagination, however, when the photos were released in the early 1980s, and speculation had run wild over the idea of a titanic, obviously artificial sculpture on the Martian surface—and on the question of what the government might be trying to cover up by claiming otherwise. Other oddly shaped and positioned geoforms were identified nearby, and many discussed the possibility of an ancient, lost Martian city.

In 1998, another orbiting robot spacecraft had taken more photos of the Face with a resolution ten times better than that possible for Viking, and the scientists had reveled in a brief bit of I-told-you-so pride; the new photographs showed very little on the top of the mesa that was facelike. It was just

what we said all along, the scientists said with self-satisfied aplomb: a trick of nature, an accident of light, shadow, and human suggestibility.

And yet . . .

When human explorers finally arrived at Cydonia in the first half of the twenty-first century, they *did* find evidence of ancient civilization and of large-scale planetary engineering. The City Complex included mountains partially hollowed out by artificial means, though all had been smashed and damaged in what looked like a large-scale attack. The empty, blast-savaged and sand-worn shell of a spacecraft had been found, together with a great deal of other wreckage. The Face—whether it was a face or not—had been artificially shaped; those sloping sides at the base were too geometrically perfect to be otherwise. Eventually, a door had been found, and deep beneath the Face had been discovered the Cave of Wonders.

Slowly, xenoarcheologists began piecing together the whole story.

It was true. Intelligent beings from somewhere else, beings perhaps inevitably called “the Ancients,” had come to Mars half a million years before. They’d hollowed out habitats inside pyramidal mountains. They’d built an underground chamber filled with what seemed to be viewscreens, most inoperative, but a few showing realtime images of other worlds—images that apparently bypassed the usual rules concerning the speed of light. They’d tinkered with the Martian climate, making it warmer and wetter until a sea that had vanished perhaps a billion years before again filled the Northern Hemisphere basin, transforming the Red Planet into blue and green. More interesting still, they’d brought hominids from the third planet in the system, members of a tool-using, fire-building species men would one day call *Homo erectus*.

Skeletons of both *Homo erectus* and of early *Homo sapiens* had been found at Cydonia and elsewhere on the planet in considerable numbers, wearing tailored uniforms and often holding high-tech gadgets in mummified hands. Studies of the remains, including exhaustive DNA testing, proved

beyond any reasonable doubt an old and often hotly debated hypothesis. *Someone* from elsewhere in the Galaxy had not only reworked the Martian climate, but they'd tinkered with the genetic structure of *Homo erectus*, a creature that previously had been evolving on Earth slowly and steadily over the course of one to two million years. Virtually overnight, two new species had appeared on the scene—the hominids that one day would be called Neanderthal, and the Neanderthals' close cousins, an archaic version of *Homo sapiens*.

Modern man, in other words, was a product of genetic engineering.

Then, a few thousand years later, perhaps, disaster had struck. The spacecraft of yet another starfaring species—the Hunters of the Dawn—had found the Ancients' colony on Mars. Judging from the skeletal remains, the end had come with horrific suddenness. An asteroid strike had stripped much of the newly generated atmosphere away from the planet. The reborn sea had evaporated once more, and all life on the planet had died. The Ancients had managed to cripple one of the intruders—the Singer—trapping it beneath the ice of Europa.

Curiously, no skeletal remains had been found of the Ancients themselves, either on Mars, or on any of several other worlds of a half-dozen nearby stars, including Chiron, at Alpha Centauri A. Tens of thousands of crumbling shells of ceramic and metal that might once have been robotic machines had been discovered among the ruins of several dead but once-inhabited worlds, and one theory held that the Ancients had actually been highly advanced AIs, machine intelligences that had outlived their original creators.

But no one knew for sure. The Ancients, whoever or whatever they might have been, appeared to have vanished forever.

Garroway wondered if Humanity was destined to follow them.

"Not on my watch," he murmured.

"What'd you say?" Chrome asked.

"Nothing," Garroway said. "Let's get back inside."

A long time later, he lay in bed with Chrome, holding her.

The base at Cydonia was large and fairly luxurious by Martian standards—the better to house the small army of xenoarcheologists who rotated in and out of assignments at the site. Nano construction techniques had grown hundreds of interconnected pressurized domes, complete with interior furnishings, and it was standard practice here for senior NCOs to have individual quarters. The rooms were small and Spartan, but they *were* private.

And if anyone else knew that Garroway and Chrome were sleeping together . . . well, there was a lot of that going on now, a lot of pairing off, a lot of sexual liaisons that would not have been condoned before the arrival of the Xul ship. Everyone was aware of it. Armageddonfall had brought every human here, Marines, Navy, Army, and civilians alike, face to face with the mortality of the species, and that tended to bring people together.

“Suppose the Xul come back before we can get to the objective?” she asked him, her voice much smaller than was usual for her.

“Then we carry out the mission, and then we see if there’s anything we can do back here.” He shrugged. “One problem at a time.”

“They say they’re building a fleet of asteroid starships, anyway. Arks.”

“I wish them well. But our duty lies here. And at Night’s Edge.”

“I wonder what they’ll find at Andromeda?”

“Why? You want to go with them?”

“We still could. Seafire is volunteers only. You heard the general’s order yesterday. If we want to back out, we can. And they need Marines for the arks.”

Garroway pulled back from her. “What the hell are you saying? You *want* to run to M-31?”

“I . . . I don’t know if we can do any good. Maybe they’re right. The Terns, I mean.” As the debate had raged across Earth and through space, the two factions had taken on distinct names and personalities. Those advocating flying off to M-31 in Andromeda were the Terns—a reference to that bird’s astonishing long-range migrations. Those urging a

military strike against the Xul were the Hawks, that bird having a very old association with militarism.

"We've been over all of this, Chrome," Garroway said. Damn it, her change of heart and mind was scaring him. He'd thought he knew her better than this. "It's the surviving population on Earth we need to protect, not a few hundred thousand bureaucrats and politicians."

That startled her. "They're talking about a selection process for choosing a cross-section of Humankind, Trigger. To make sure they have representatives of all the arts, all the sciences. . . ."

"Sure they are. But *everyone* is going to want a cybe-hibe pod for the trip out. And the ones controlling the selection process will be—"

"The political leaders," she said, completing the thought.

"Affirmative. Chrome, if Humankind is going to be saved, we have to save *all* of it. Otherwise, we're facing the Edelstein theory. Fringies. Remember Eostre?"

She nodded slowly, thoughtful.

For the better part of three hundred years, Humankind had been migrating to the stars. But that migration had not been taking place in the way most visionaries of the past had predicted. And forty years ago, Victor Edelstein had shown why.

During the mid- to late-twenty-first century, most explorations both within and beyond the Solar System had been focused on the Origins Problems. Humanity had been created—or, at least, tailored—from *Homo erectus* half a million years ago. Later extrasolar visitors had further shaped human prehistory and early history. The An had colonized parts of Earth, built titanic stone structures in places as far removed from one another as Lake Titicaca, on coastlines now submerged off the coasts of Okinawa and India, in the Middle East and the Mediterranean, and on the surface of the Moon, and they had created about themselves a god cult to control their human slaves. The Xul had destroyed the An colonies and much of humanity at the end of the last Ice Age. Then the N'mah had arrived, helping the survivors rebuild with the basic underpinnings of science and

technology—agriculture, math, literacy, and medicine. Yet another Xul incursion had destroyed the promise of the N'mah Renaissance, and planted the legends of lost Atlantis.

Human colonies had been founded offworld first and foremost to support the archeological missions and research outposts. When a surviving colony of the An had been discovered at Ishtar, human outposts had been planted there to further trade and peaceful contact; other colonies had been planted on a number of Earthlike worlds at nearby stars—at Chiron, at Tau Ceti, at Epsilon Eridani, even at the hell that was Wolf 359, and elsewhere.

But the social order on Earth was changing. The World Bank Crisis of 2145 had brought about a new centralization of control, and a call to end “interstellar adventurism,” as the out-system colonization effort was known. Several colony worlds had been abandoned, when Earth no longer was willing to foot the high cost of keeping them supplied. A few colonies remained to support the xenotechnoarcheologists, but those were pared back to outpost status. There would be no growing interstellar colonial empire centered on Earth.

The majority of Earth's population supported this notion with surprising enthusiasm. Earth was overcrowded, resources were scarce, and wars frequent . . . but it was *home*, and the vast majority of people preferred struggling to survive or prosper in the known, to braving eldritch biohorrors beyond the grasp of any human imagination, atmospheres that ranged anywhere from marginal to deadly, and extremes of environment unimaginable to the typical urban citizen of an Earth-born human.

Always, however, in every culture, in every social milieu, there were exceptions, the people who didn't fit in, the people who were different, who wouldn't go along with the crowd, who insisted on being individuals in a global culture that increasingly dictated what was normal, and what was not. They were the rugged individualists, the outcasts, the rebels and, as in every period of history before, they were the ones who dared face the dangers at whatever the price in order to create new societies and explore new means of building new social systems.

Though the governments of Earth couldn't afford to support such colonies, they encouraged the exodus of their founders. It was safer that way, having the rebels and the malcontents conducting their social experiments five or ten or twenty light-years away, unable to contaminate the population that accepted things as they were and supported the government's ideas of order and stability. With sixteen billion people on Earth, the planet increasingly needed a safety valve, a means of bleeding off the extremist elements that might threaten a delicate status quo.

In 2158, the first Free Colony had departed for Poseidon, a marginally Earthlike world once the site of an archeological outpost, but now long abandoned. Their ship was the *New Hope*, a former military interstellar transport purchased by the underwriting efforts of Green Party activists in California. The settlers in the *New Hope*'s cybe-hibe tubes—over a thousand of them—had been dedicated to the principles of Green Ecofundamentalism, and intended to found a new society based on living in harmony with nature.

The colony had thrived for thirty-seven years before being obliterated by one of Poseidon's mammoth coriolis storms, a hurricane which, in a world with a global ocean and higher temperatures than Earth, had been nearly as powerful as the superstorm still centered over the eastern Atlantic on Earth.

But other Free Colonies had continued to depart from Earth, determined to find better homes and better futures elsewhere. As it happened, most were religious colonies, or colonies founded with experimental social or philosophical doctrines. A Neocommunist collective headed for Rhiannon, at Epsilon Eridani, in 2175. The Reformed Catholics were trying to make a go of Janus, out at Chi Draconis, while the First Church of the Gray Redeemer had set its sights on Dagda, the third world of Eta Cassiopeiae A. Islamic fundamentalists, still seething after the disaster of the Jihad War of the 2140s, had purchased a transport and departed for Idun—now renamed Janni—at DM+6 398.

And the Foundation of Reason had departed for Eostre in 2250, determined to build a new society along strict principles of scientific rationality and eugenics.

What Edelstein, a psychosociologist at the Institute for the Advancement of Humankind at Bern, had demonstrated was that Earth's colonies, her new frontier, tended to be populated by small and relatively homogenous groups dedicated to ideologies, philosophies, and religious practice far removed from those crammed into the hodgepodge of belief and culture still occupying the Earth. In most cases, they represented fringe elements of belief—"the Fringies," as those who stayed on Earth liked to call them—and they tended to be extremist in those beliefs. Isolated and isolationist, maintaining little or no contact with a mother world light-years distant, they tended to develop in unexpected and unpredictable ways, in accordance with Edelstein's Chaos Mathematics of Social Dynamics.

That, at least, was the best explanation going for what had happened on Eostre.

Both Garroway and Chrome had been on Eostre fourteen objective years ago, in 2300, their last deployment before the IMAC training session on Mars. The expeditionary unit had been deployed to Epsilon Indi IV to deal with the Foundation of Reason and their eugenically pure Elect. Normally, a Free Colony was expected to make it or not on its own, but in this case, the Eostrean government had begun slaughtering the inhabitants of Kuei-Hui, the Cantonese colony on Eostre's southern continent, in the name of racial purity. Since a PanTerran trade delegation was also involved, the Marines had been dispatched to restore order. By the time they got there, thirteen years later, most of the Cantonese colonists were dead . . . but order *had* been restored.

"You know," Garroway told Chrome, "we have to think about who's going to speak for us. If Earth is destroyed, if the Xul miss any of the colonies, the way they missed the Ahannu on Ishtar, it'll be Fringies like the Foundation of Reason bastards who survive and propagate. The thought makes me a little sick, y'know? As for the Terns, well, they're going to be Fringies, too. Bureaucrats. Lawyers. Politicos. Anyone sharp enough or rich enough to wangle a cybe-hibe tube. You *can't* have a true cross-section of humanity with only a few tens of thousands of people." He

tried to make it a joke. "I hate to think what kind of society *they* would evolve."

"Is it really our responsibility, Trig?"

"It is if we *make* it our responsibility. The folks on Earth deserve a chance to get back on their feet."

"Damn it! How do we know we won't just bring the Xul down on top of them?"

She shuddered suddenly, and then she was in his arms again, crying.

And Garroway didn't know how to answer her question.

30 SEPTEMBER 2314

NCO Rec/Com Deck
IST John A. Lejeune
1430 hrs, GMT

Travis Garroway floated into the compartment, using the handholds fastened along the bulkhead. The *Lejeune* was still rigged for freefall, the better to facilitate the loading of supplies and deadhead Marines.

Marines had been coming in to the mission assembly point for weeks, now, making the transit out from Earth, or the shorter haul up from the Martian surface, most of them already prepped, packed, and sealed inside their cybernetic hibernation tubes. They did it that way to save on consumables; Operation Seafire, once envisioned as a few hundred Marines escorting a couple of transports, had been growing lately out of all recognition. The Marines stowed away in their cybe-hibe tubes on board the *Lejeune* and her sister ship, the *Archibald Henderson*, now numbered over 1,800, and more were coming in all the time. Leaving *Lejeune*'s rotating hab levels folded up and in microgravity made it easier to manhandle all of those capsules in through the hatches and into their receptacles, where they would sleep away the next ten objective years on the voyage out to Sirius.

Garroway had shuttled up to the *Lejeune* fully conscious on board an AUT, however, to take care of some organizational preliminaries—meaning the archaic and anachronistic

hell of the physical paperwork necessary to get Alpha Company, First Battalion of 1RST into operational shape . . . at least insofar as Corps bureaucracy was concerned. Every few years, someone proposed that the Corps would at long last become paperless—meaning *all* forms, requisitions, plans of the day, and orders would be handled electronically. So far, each attempt had only resulted in *more* paperwork, not less. Paper-worshipping bureaucrats, no doubt, were now pointing out that the disaster of Armageddonfall had proven them right. When the GlobalNet had gone down, much electronic data had gone with it . . . but the storage vaults holding records going back for centuries were still intact.

One of the saving graces of out-system deployment, so far as Garroway was concerned, was the fact that there would be no paperwork out there. Storage space was simply at too much of a premium.

Fortunately, paperwork could be handled virtually . . . meaning that the record-keeping and form-filling could be done through a cerebral interface. Garroway had come up to the NCO Rec/Com deck on board the *Lejeune* to get access to a virtual office. He pulled himself into a reclined chair, strapped himself in, and made the palm contact that immediately linked him in with *Lejeune*'s datanet, giving him access to 1RST's electronic world.

"Hello, Gunnery Sergeant Garroway," Quincy's calm voice said in his mind as he linked in. "I have an important message for you."

Interesting that it was waiting on the net, and hadn't come to him through his implants. "Who sent it, Quincy?"

"General Clinton Garroway."

That startled him. His uncle, he knew, was working on getting *Seafire* under way. The operation was *his* baby, and he'd only recently been confirmed as joint commander of the expedition—together with Admiral Hugh Gresham. Though they'd exchanged a few electronic notes over the past few months, they hadn't really talked.

"Accept."

"Travis!" General Garroway's voice said in his mind. "Good to see you! Hang on while I connect."

Garroway's acceptance had opened a direct commlink with his uncle, who was now entering his own virtual reality in order to conduct a conversation. A window opened in his mind, and then the window expanded, pulling him into a detailed virtual setting. He appeared to be in a richly appointed office—mahogany paneling on the walls, thick carpet on the deck, and an expensive commdesk in front of a wallscreen showing a sunny afternoon at a peaceful wooded lake.

Obviously, his uncle was not actually back on Earth. The current time lag between Earth and Mars was over ten minutes. But this was the carefully designed virtual setting where his uncle received electronic visitors.

Clinton Vincent Garroway was seated in the reclining lounge behind the desk. He stood, walked around the desk, and offered Travis his hand. "Good to see you again, son! I've been looking forward to getting a chance to chat! I've been wanting to get over to see you, but I've just been too damned busy."

Despite calling him "son," the older Garroway was actually about the same age as the younger chronologically, a bit of temporal paradox created by the nature of relativistic star travel. Clinton Garroway, according to personal records, had been born in 2201, one of two sons of John Esteban Garroway and Kat Vinton. Travis had been born in 2228 to Clinton's older sister, Katrin, so, going by objective time, Clinton was 113 and Travis was 86.

Both men were Marines, however, and both had been on interstellar deployments, which meant long periods of flight at near-light speed, with time slowing to a crawl. A one-way journey to Sirius took ten years objective, meaning ten years from the viewpoint of those left behind on Earth, but, depending on how close the transport could push c , only two to four years passed objectively, meaning from the point of view of the Marines onboard the transport. To further complicate matters, their actual aging was further slowed by the effects of cybe-hibe.

In all, General Garroway had spent almost sixty-five years of his career on round-trip interstellar voyages to Ishtar, to Sirius, and to Poseidon. Gunnery Sergeant Garroway had

only made two out-system deployments—a twenty-five-year flight—objective—to Eostre and back, and a ten-year round-trip hop to Chiron. As a result, thanks to time dilation, both men now had a chronological age of around fifty, no matter what their respective birth certificates might claim.

In fact, if you ignored the slight aging effects of cybe-hibe time, the uncle was now forty-eight biological/subjective years old, while the nephew was fifty-one, not an impossible situation, but certainly an unlikely one.

Garroway knew of cases of Marines who'd spent so much time in cybe-hibe, they were biologically younger than their children.

"It's good to see you again, sir."

"Can the 'sir' crap, Travis. At least while we're in here. This isn't an official link, and it's not a briefing. Or . . ." He cocked his head, quizzical. "Maybe it could be. How's your company shaping up?"

"Well, except for lacking a CO, we're in pretty good shape. We took the old Alpha Detachment, what was left of it, and perked it up with replacements . . . including some of the new kids from Ishtar. But Captain Fetterman didn't volunteer, and Lieutenant Wilkie . . ." He left the thought unfinished.

"Yeah. Fetterman lost his whole family when Florida went underwater. His wife, two husbands, two kids, birth parents. He's not in real good shape right now."

"Shit. I'm sorry to hear that."

"Lots of cases just like his." The general shook his head. "Actually, he wouldn't have qualified for an out-system mission. Famsit-5."

A Marine's famsit described his familial ties to Earth—spouses, parents, and other close relatives. Corps policy was to select men and women for interstellar deployments with as few such ties as possible—ideally famsit-1 or -2—since a typical mission lasted twenty years or more objective.

"The bad part is that Fetterman's famsit-1 now, but he's in no condition to go on deployment. But we do have a new CO coming in from Earth. Captain Mehler. He'll take over Fetterman's slot."

“How much experience?”

The virtual image of the general pursed its lips, thoughtful. “Nothing out-system. He’s seen combat, though. Argentina in ’08. And before that, Harbin.”

“Well, that’s something, anyway. But offworld deployments are *nothing* like Earthside.”

“That’s why we have experienced NCOs. To ride herd on the officers.”

Which was fine, Travis thought, if the officer in question paid attention to what the NCOs had to say. “Affirmative.”

“I’ll want you and Staff Sergeant O’Meara to take him in hand, keep a close eye on him.”

It took a beat for Garroway to translate O’Meara’s name. Chrome. Of course. “Aye, aye, General.”

“The other thing I wanted to check on with you, son. We’re pulling a Sullivan on this one. Do you have a problem with that?”

He shrugged. “No. The point of the Sullivan Regs is to keep the folks back home from losing everyone. Outside of . . . what? Cousin Lou and a few others? It’s just you and me now, Uncle Clint. Right?”

In 1942, five brothers—Albert, Francis, George, Joseph, and Madison Sullivan—all were serving on board the same ship, the light cruiser *Juneau*. Three of them, in fact, had enlisted with the stipulation that they serve aboard the same vessel as their older brothers. When the *Juneau* was torpedoed and sunk later that year in one of the naval actions around the island of Guadalcanal, all five Sullivan brothers had been killed.

Contrary to popular belief, no official or Congressional act or set of regulations was ever passed prohibiting the assignment of close family members to the same ship or overseas duty station. However, as the years passed, unofficial policy within both the Navy and the Marine Corps was to avoid posting siblings or parents and children to the same duty station during time of war, and this became known as the Sullivan Regs. “To pull a Sullivan” meant to find a way to circumvent this policy.

In fact, the Corps, especially, generally had to work hard

to find unattached personnel—people with no close family on Earth—in order to fill billets on out-system missions. There were a number of cases of close family being sent off on interstellar deployments when they were otherwise famsit-1, with no one close left behind.

Even in those cases, though, there was official resistance to such deployments, when an entire family line could be snuffed out in one action. One of the Marines involved could invoke Sullivan policy if he or she feared that possibility. According to accessible records on the Net, that had happened eight times in the past century.

This time around, though, all bets were off. Many more Marines had lost close family on Earth during Armageddon-fall than the other way around.

“At least the Ishtarans are all already low-famsit,” the general said. “Otherwise they wouldn’t be here. How are they shaping up?”

“Good,” Travis replied. “Very good, in fact. Some of them performed exceptionally well against the marauders in Ring City. Normally, I’d be concerned about deploying them out-system without a lot more combat experience.” He shrugged. “Of course, from their point of view, they’re *already* out-system. Ishtar is a long way from here.”

“And even farther when we’re at Sirius.” He didn’t add the obvious. Both Sirius and the Lalande system—and Sol as well—would be over fifteen thousand light-years away once 1MIEU passed through the Sirius Gate.

“You know,” Travis said, thoughtful, “I think the Ishtarans are living examples of famsit Corps. The Corps is their family. As much as it is for any of us now.”

Famsit Corps. The concept had been floating around through unofficial channels and in late-night bull sessions for a couple of centuries, now. One of the worst problems men and women on interstellar deployment faced was culture drift, and the psych people were beginning to suspect that it was as serious a problem as losing close family members to time dilation effects.

No one was immune. A Marine entered a cybe-hibe tube and slept all the way to another star—Sirius, say—at the

speed of light. The voyage might take nine or ten years, objective, though between time dilation and cybe-hibe, the Marine missed it all.

He's awakened at the other end, pulls his tour of duty—typically a year—then enters cybe-hibe for the trip back home.

The Marine returns to Earth having experienced only his year's duty at the Sirius Stargate, but he finds Earth has aged twenty or more. If he'd stayed behind and experienced those twenty years, he would have noticed only minor change, because change happened gradually.

But coming home to a culture with social systems, political events, electronic systems and data access, even language all bumped ahead by twenty years could mean a terrible shock, even psychological displacement. Very few Star Marines, as those with out-system deployment time were known, now, felt wholly at home on Earth.

Travis Garroway had been born on Earth, in Pennsylvania, in 2228. He'd grown up there, and joined the Marine Corps when he turned eighteen, in 2246.

His father, separated from his mother long before, had never been close, nor had he been particularly close to either of two stepfathers. His mother had died two years after he'd joined up, which left him as famsit-3, and he'd been able to get a waiver reducing him to famsit-2 so he could apply for out-system duty.

In 2249, he'd served his first interstellar deployment—at Chiron, 4.3 light-years from Earth. He'd returned to Earth early in 2260.

All of his cultural indoctrination—the way he related to society and the world around him—had been set down between the years 2228 and 2249. When he'd returned to Earth, peelies and gaffers were long gone, quaint bits of history now considered passé. Virtual sex had been around for centuries, of course, but by 2260 you could engage in virtual memming, which *his* generation thought shocking and just a bit obscene. The idea of buying a person's memories of their private sex life was just a bit too voyeuristic for his tastes, even yet. And sibbing was even worse. There were new se-

curity controls on downloads off the Net, and new ways of interacting with Net agents. It was no longer possible, for instance, to tell if you were linking with a person, or with a very good personal AI secretary, one that perfectly mimicked a person's speech, manner, and attitudes.

And the religions . . . especially those religions inspired by contact with the Ahannu, the N'mah, and the Xul. Those had continued to explode in number and in diversity of belief, defining whole new worlds of doctrine and dogma, and shaping the background culture as a whole. To those men and women who actually deployed to the alien worlds of Ishtar or the Sirius Stargate, the An and the N'mah were exotic, but scarcely divine. To the teeming billions on Earth, they represented the unknown, the transcendent, and the awe-inspiring power of the unseen world. And their belief was driving the changes behind a fast-changing cultural dynamic.

So much change in just twenty years.

For the next twenty-seven years Travis had served in the Corps—sometimes offworld, on Mars, Luna, Europa, and on deployments aboard various High Guard vessels, but usually back on Earth. He'd been a DI at Camp Lejeune from '80 to '83; that had been when he'd met Chrome. In 2287, the two of them had boarded the IST *Vandergrift* for the deployment to Epsilon Indi, 11.8 light-years away. Twenty-five years objective later, in early 2313, they'd returned to an Earth now in some ways almost weirdly alien. Travis could only wonder what his uncle had gone through, with sixty-five years away from the rapidly evolving social culture of Earth. *His* first deployment out-system had been in 2225, three years before Travis had even been born, and he'd probably felt much more intensely the alienation, the strangeness, the lack of belonging experienced by all of those sundered from home and family by impossible gulfs of distance and time.

It was no wonder, then, that most Star Marines found themselves much more closely connected with the Marine Corps itself as a culture, than they did with the civilian cultures of Earth. The Marines left behind in the Solar System

changed with the changing culture, true, since they were still a part of the changing attitudes and beliefs of the home world, but first and foremost they were *Marines*, and the actual drift in social connections and attitude tended to be small.

Even Marines stationed on Earth tended to hang together, enclosed in their own world, with their own language, their own customs, their own rituals.

In fact, that had been true for as long as there'd been a Marine Corps. Marine tradition was strong, the sense of family and belonging, of *gung ho*—pull together!—of duty and honor and loyalty and, above all, of *esprit d'corps* all served to set the Marine apart, in his mind, from the civilian world, and even from other military services. *The Corps* was father and mother, spouse and sib.

Famsit Corps.

In that regard, the new recruits from Ishtar were a bit of an unknown, and a bit of a gamble. Their home culture, the values and ideals and even technology with which they'd grown up were already markedly alien from Earth's overall background culture. They were more family-oriented, in many ways, more relaxed about casual sex than most people on Earth, less prone to infection by religious memes. At the same time, they had nothing like the nanotechnic implants carried by most Earth-born humans, and no experience at all with unlimited mind-to-mind communication or data access. The idea of simply thinking a question, any question, and having it answered immediately was as strange to them as the idea of flying to Mars would have been to Columbus.

"A lot of the people from Earth are still pretty wracked up after what happened there," Travis told the general. He allowed himself a smile. "Maybe the boys and girls from Ishtar will be a steadying influence on the old hands."

"I'm counting on that. Just as I'm counting on the old hands to steady them." He hesitated. "Why did they join up, do you think?"

"Who, the Ishtarans?" Travis shrugged. "I was talking to some of them a few months ago, back on Earth. I got the feeling that . . . well, we seem pretty exotic to them. Bigger.

Badder. Lots of high-tech toys. *And* we stood up to the An and made them back down. *Dumu-gir Kalam* was only possible because we went in and broke the Ahannu hold over their human slaves.”

“You’re suggesting hero worship?”

“Something like that. Although I get the feeling that, maybe, it’s more like I was with you.”

“Eh? How do you mean?”

“Did I ever tell you why I joined the Corps?”

The general shook his head.

“When I was small . . . seven, maybe eight, my family would take me out to your family’s place in Baltimore. Remember?”

“Very well. My sister—your mother—and our parents were . . . very close.”

“I used to love it there. Especially the horses. Anyway . . . you were gone, off on your first deployment out-system.”

“Poseidon.”

“Yeah. Your mom and dad both were retired by then. I used to listen to the stories your parents told . . . and my mother, too. Mostly stories about you, and how *proud* they were of you. I had it pretty bad, I guess.”

“Had what?”

“Hero worship, of course.”

“Aw, c’mon.” The general snorted. “Your old age is making you senile. I hadn’t even met you yet.”

“Yeah, how could I forget? You were twelve light-years away. But I heard all about you from my mother, and from your dad I heard all about Ishtar and Sirius and the Star Marines. Stories. *Wonderful* stories, about worlds more alien than anything I could have imagined. Red forests and flying gossamers and a silver hoop ten miles across gleaming in Sirian double-starlight. Ishtaran trolls and the fighting Nergals. I started downloading everything I could get hold of about the Marines. And sometimes, I’d go outside on clear nights and look up at the stars. I think I was determined to join up by the time I was ten. By the time you got back, I was already a Marine.”

“I remember the first time we met. At Quantico.”

“That’s right. I’d just made sergeant.”

“Well, I don’t really care why they enlisted,” the general said after a moment. “They’re Marines now, and the Corps is their home. More than Earth can ever be.”

“I think,” Travis said slowly, “that that is true of all of us now.”

For a long moment, the general stared into the virtual window, watching storm clouds scud through the sky above the lake.

“Famsit Corps,” he said.

Interlude

2 OCTOBER 2314 TO 15 JULY 2323

IST John A. Lejeune
En route to Sirius

The MIEU task force assembled in Mars polar orbit, the ships arriving one by one from other parts of the Solar System. Six were US/UFR Navy warships pulled in from High Guard duty, the frigates *Gray*, *Burnham*, and *Roberts*, the destroyers *Farragut* and *Spruance*, and the battlecruiser *South California*. Five more were warships belonging to other space navies, the frigates *Guiyang*, *Chengdu*, and *Rajput*, and the destroyers *Slava* and *Sung Shin-lin*. Four were interstellar supply transports, the *Shenandoah*, *Acadia*, *Skoryy Krym*, and *Hongoi*, and two were Marine Commandant-class LPH transports, the *Archibald Henderson* and the *John A. Lejeune*.

The last member of the eighteen-ship task force was also a supply transport—formerly the *Yellowstone*, but recently rechristened the *Intrepid*. Her crew consisted solely of an iteration of AI software, dubbed Quincy₃. Her only cargo consisted of five hundred canisters of sand dug from the floor of the long-vanished Martian North-Hemisphere sea, each massing fifty metric tons.

Twenty-five thousand tons of sand.

The size of the task force had grown dramatically over the past month. Originally, only five vessels had been assigned

to the mission—a supply ship, the *Lejeune*, and three escorts—but lately governments loath to see fleet assets stripped away from the High Guard and planetary defense had begun to change their minds. With no additional Xul attacks within the months immediately following Armageddonfall, they seemed more willing now to embrace the idea of an active defense, of taking the fight to the enemy, rather than waiting for the enemy to return to Earth. There was, after all, a chance that Seafire would work as advertised. Pulling off a second upset victory against a Xul intruder—or, as was more likely, an entire *fleet* of Xul intruders this time—seemed a much more remote likelihood.

On 5 October 2324, the last of the Marines entered cybehibe. Naval personnel would join them once the fleet was under way. The vessels of Task Force Seafire aligned themselves with the brilliant, blue-white spark that was the star Sirius, and fired their main engines.

All starships were built along the same basic design—a mushroom shape with the RM storage tank forward, in the broad cap, holding reaction mass for the drives—water. The water also served as shielding for the hab modules, folded now against each ship's spine during the drive phase of the flight. A second water tank was located well aft, providing additional reaction mass, and protection for the hab modules when the ship flipped end-for-end at the midphase of its boost and began decelerating.

Aft of the second tank were the Kerr-Winston E_v extractors, drawing vacuum energy from the quantum fluctuations of so-called empty-space and channeling it to the main drives where it converted water to a starcore-hot plasma and directed it astern in a dazzling flare of light.

Until the past fifty years, human-crewed starships had, for the sake of their crews, limited their acceleration to one gravity, which brought them to near-light velocity in something just under one year. The introduction of N'mah inertial field technology, however, allowed significantly higher accelerations. The eighteen ships of Task Force Seafire boosted outbound at just under ten gravities, sufficient to begin crowding the lightspeed in a little over one month.

Within their hab modules, folded away with the decks directed aft, only one gravity was permitted to leak through.

By the end of October, the task force was well beyond the arbitrary boundary of Sol's planetary system, and into the Oort Cloud beyond, moving at within one percent or so of lightspeed itself.

On Earth, temperatures continued to drop as snowfields blanketed over seventy percent of the land surface, from Patagonia to Canada, from northern Europe to Australia. Nanoconstruction efforts were under way everywhere, hollowing out vast caverns beneath the snow and ice. Several times, during ice ages of the past, Humankind had survived by living in caves. This time would be no different.

Thirty-five days after boosting clear of Mars orbit, the ship drives went silent. They were now moving only a hair less than light itself, but with the drives down they fell through space, weightless, the sky around them turned eldritch, distorted into a ring of stars compressed by relativistic effects encircling the task force, with emptiness both dead ahead and dead astern. Four hab modules onboard each ship pivoted on their mounts ninety degrees until they stood out from the vessel's central spine, though still protected from stray atoms transformed by speed into high-energy radiation by the forward RM tank and several million liters of water. Those habitats, carefully balanced, began rotating about each vessel's spine, creating an out-is-down spin gravity of half a G. The Navy crews, then, their duties complete for the time being, entered their own cybe-hibe tubes and the theoretically dreamless void of hibernation.

In April of 2316, after well over two years of bitter wrangling, the Federal Union voted to go through with the construction of five arks, built from asteroids and loaded with cybe-hibe tubes in order to rescue as large a number of Earth's survivors as possible.

Fears that the announcement would mean an outbreak of war worldwide proved unfounded. There were protests and riots across much of the planet, true, and a brief war between Canton and the Federal Union, fought primarily in space and on Luna, but resources were too sharply stretched

for it to last long. The following month, North China, Canton, and the Republic of Andhra Pradesh signed into an unlikely alliance, and announced their plans to build a sixth ark jointly.

The arks actually made very little difference in the day-to-day reality that was now life on the planet Earth. Everyone knew that a single asteroid-ark would be unable to carry more than a few tens of thousands of souls, together with the supplies necessary for starting a colony on the other end of the trek.

The rest of humanity focused on simple survival.

At the same time as construction on the arks began, and as the world's cities began to delve into the planet's depths, high-tech efforts were being made to raise Earth's ambient temperature. Enormous mirrors—mylar sheets, kilometers across and coated with aluminum a few atoms thick, would serve to focus the Sun's light and warmth on Earth's cooling surface.

Unfortunately, little could be done until the clouds enveloping the Earth finally broke. The mirrors served to warm the upper atmosphere, however, paradoxically adding energy to the storm cells ravaging the planet, but—it was hoped—speeding the breakup of the enveloping, heat-reflecting cloud layers.

In July of 2317, nearly three years after the task force's departure, the titanic storm cell anchored over the eastern Atlantic finally detached from the still-boiling patch of sea where the main asteroid impact had occurred. Following the sweeping track of a major coriolis storm, the cell tracked across the Atlantic, drowned the remnants of islands that once had marked the borders of the Caribbean Sea, and swung northwest into the North American mainland.

Unlike mere hurricanes, the disturbance was named simply "the Storm." For a week it dumped rain and then snow on an already ice-locked continent before finally dispersing over Greenland. With the Storm's death, the clouds at last began to disperse, allowing sunlight to reach the surface for the first time in three years. The change was small, at first,

with the planet still under an eighty percent cloud cover, but it was a beginning.

And now the orbital mirrors could begin their proper job of terraforming an ice-locked Earth at last.

Nine years objective after departure—but only about twenty months of shipboard time after launch—the leading edge of the ring of compressed starlight encircling Task Force Seafire was glowing brilliantly, though only the AIs guiding the fleet were awake and watching. Sirius lay dead ahead, its light sharply blue-shifted by the task force's speed until optical sensors were registering infrared and short radio wavelengths as visible light, its image compressed into the front rim of the ring of starlight. Beneath that eerie glow, the supremely competent AIs directing the task force vessels executed a flawless series of maneuvers, stopping the hab rotation, folding the hab modules back alongside the crafts' spines, rotating the ships 180 degrees, then waking up their Navy crews. After performing thorough checks of all systems, the human crews fired up the main drives once more. At ten gravities, traveling now tailfirst, the starships backed down into the Sirius system on dazzling thrust plumes, slowing to match velocities with the gravitational anomaly of Sirius C. Again, the N'mah field dampers reduced ten gravities to one, as the vessels decelerated throughout the next thirty days.

By the time Sirius C was visible to the naked eye, a tiny, silvery ring growing slowly larger, the first of the Marines were waking up to an electronic reveille.

Eight point six light-years from Earth, the task force rendezvoused with the Stargate.

And battle was about to be joined.

7 AUGUST 2323

IST Lejeune
Stargate, Sirius Star System
1545 hrs, TFT

Technically, it was midafternoon on board the *Lejeune*. Though the ships' clocks had been keyed to Greenwich Mean Time back in the Solar System, the instant they'd begun acceleration, all vessels in the task force had switched over to TFT—Task Force Time—since their internal temporal reference had been increasingly subject to relativistic effects as they approached the speed of light.

The shipboard clocks now, of course, had absolutely nothing to do with Greenwich time, or with any other time zone on Earth, and, in any case, time of day onboard a ship in space was entirely arbitrary.

But, according to shipboard routine, Travis Garroway had been up for over nine hours, now, checking weapons inventories and working with Chrome on personnel records for their platoon.

And now, they'd been ordered to attend the electronic briefing being held by Colonel Lee.

"Gentlemen, ladies," Lee said without preamble, "the first of the probes has returned, and we have our first views of the Night's Edge system."

The briefing, ordered by General Garroway that morning, was being held in one of *Lejeune's* common decks, a large

compartment that served as a recreation area when it wasn't being used as a mess hall. The area was circular, with a high overhead, filled with comfortable seats each equipped with downlink attachments. About three hundred Marines were present—something like a quarter of *Lejeune's* entire war-load. Three other hab modules on *Lejeune* had identical common decks, and were also crowded with listening, watching Marines.

Garroway listened to the colonel's mental voice and tried to suppress the rising excitement—and the fear riding with it. He always felt this way before a big op, when you didn't know what was waiting for you, and what you didn't know *could* kill you. Briefings like this one were especially rough. So much information incoming, and the details were totally beyond your ken.

One entire, curving bulkhead of the compartment, and the overhead, had been set to display an exterior view—the velvet black of space, with most stars banished by the arc-light glare of Sirius A and the tinier spark that was the white-dwarf Sirius B. A faint, silvery haze hung in ambient space, diffusing the glow, somewhat. The camera optics, he reasoned, must be mounted on the skin of the RM tank forward; the view of the surrounding heavens were not turning, as would have been the case had the view been from one of the hab modules that were now rotating to provide spin gravity.

Much closer at hand than the two brilliant star-points, so close its entire structure was not visible at once from this angle, the Stargate hung in solitary, silver-limned glory, a slender band like a wedding ring, but twenty kilometers across.

Garroway stared into the ring's opening, trying to imagine the distortions to space and time twisting within its heart, and failed.

Lots of the Marines sitting in this compartment this afternoon would be going through that Gate soon . . . and they would not be coming back.

That was the hell of this kind of premission brief. Men and women gathered and linked in, listening to the details of the operation, the objectives, the risks, the possible enemy

responses, all while trying to ignore the cold fact that those risks and responses were likely to kill many of those present.

Most, Garroway knew from long experience, would simply make the blanket assumption that they, personally, were immortal, that if *it* happened to anyone, it would be to someone else.

The older hands tended to be a bit more matter of fact about things. *If it happens, let it be quick.*

Space combat was particularly final in its effects on frail human physiology. Ninety percent or more of all combat injuries were fatal, as opposed to ten percent or so of injuries sustained in combat on Earth, and death tended to come swiftly in hard vacuum.

Most deaths in space were quick—a flash of energy, an explosion of escaping air, the black, muffling shrouds of shock and suffocation killing the brain almost before it had time to register the pain. That was the accepted wisdom, at least.

It was the waiting ahead of time that was agony.

“Since our arrival in the Sirius system twenty-two days ago,” Lee’s voice continued, “our miltech specialists and xenoliaison officers have been working with our N’mah hosts.”

Garroway looked again at the image of the Stargate floating in space near the *Lejeune*. Somewhere within that slender hoop, he knew, an entire civilization had remained hidden from the Xul menace for thousands of years—like rats hiding inside the high-tech walls.

He searched for the N’mah asteroid arks, rumored to be nearing completion somewhere in the vicinity of the Gate. He could see several of the other vessels in the task force, like needle-stemmed mushrooms, toy-tiny in comparison to the backdrop of the Gate, but he couldn’t see anything that might be a hollowed-out asteroid-turned-starship.

“Our N’mah friends,” Lee’s voice continued, “taught us . . . or, rather, they taught our AI proxies how to access the Gate controls, how to access the Gate’s astrogational computers, and how to enter and interpret the data we recovered from the Xul intruder back at Sol. They were able to

show us how to tune the Sirius Gate to one of several thousand possible destinations.”

Colonel Lee was not present in the briefing room, Garroway noted. He was linked in up in the ship’s ops center, and was addressing the entire Marine contingent over the ship’s Net—not just the Marines on board the *Lejeune*, but the ones on the *Henderson* as well.

Eighteen hundred Marines, waiting to hear the details of the mission they’d volunteered for ten years ago, objective.

Eighteen hundred Marines hearing how they might soon die.

A window opened in Garroway’s mind, providing a graphic display illustrating the colonel’s words as he addressed them. “Using the data retrieved from the Xul ship during the attack on Earth, the N’mah were able to ascertain the enemy’s probable path, and probable origin—the star system our astrogators have named Night’s Edge. Twenty days ago, we dispatched a cloud of stealth recon drones through the Gate, sending them through slowly and in small groups in order to avoid, if possible, detection on the other side.”

A secondary window showed a graphic representation of the drones coming through like a wisp of smoke, like a cloud of microspores wafting from a mushroom’s cap. Exiting the Gate, they moved swiftly deeper into the star system on the far side until they were well clear of the structure and, presumably, any sentinels guarding against just such an intrusion.

Following their programming, and guided by a gestalt of micro-AIs linking them all together, they spread out in a series of concentric rings, their myriad optics creating, in effect, a single telescopic lens ten kilometers across.

Garroway had worked with such drones before. They or their predecessors had been in use for three centuries, serving to lift the obscuring fog of war on the modern battlefield and, later, in battlespace. Each was tiny—half a meter or so long—and powered by small but powerful E_v extractors. Instead of water, they used lead as reaction mass, their jets shielded and damped to relatively low-thrust plumes that

allowed them to maneuver slowly but over long periods of time. Each was coated with an active nanoflage layer that drank incoming electromagnetic wavelengths, from radio waves to X-rays, with virtually no reflected signature, rendering them invisible—it was hoped—to Xul sensors.

They worked best en masse. The resolution of any single drone's sensors—each sampled a broad range of the EM spectrum, including radio, infrared, and optical frequencies—was relatively poor and limited. Put a thousand such drones together, however, as a VLA, or Very Large Array, and combine their signals through a process called interferometry, and you had a very powerful sensor platform indeed. For centuries, now, both radio and optical telescopes had used multiple dishes or mirrors to achieve much higher resolutions than would be possible for a single receiver.

“Our recon cloud performed as expected. Sensor scans of the entire Edge system were stored and multiply copied. One by one, drones loaded with data were dispatched at low speed back to the Stargate.

“And now the first of those drones have begun returning through the Gate to Sirius.”

An image formed itself in Garroway's mind—a confused blurring, at first, difficult to sort out and identify simply because it was so alien a starscape. He could see the Galaxy, ghost-pale, a vast, blue-hued spiral viewed from just above the sweep of the arms, the hub swollen and ruddy by contrast, a teeming swarm of distant suns.

“These images have been cleaned up a bit by Quincy and other AI expert analysis systems,” Lee went on. “Go ahead and have a look around. Take a look at what we're up against.”

Computer graphics overlaid the image, making sense of the confusion. The camera angle shifted to pick out an orange star in the far distance and the tiny, concentric ellipses of a number of planets, the system's ecliptic canted at a sharp angle to the plane of the dimly seen galaxy beyond. The sun was old, *old* . . . a type K0 cooler and redder than Sol.

It was also a *very* long way off. Evidently, the Stargate in

this system orbited the local sun nearly five light-hours out, roughly the average distance from the Sun out to Pluto. At this range, the orange sun was merely a very bright star, visible at all only because by chance it hung not against the star-cluttered sweep of the galactic vista, but against the emptiness above, a solitary, orange spark against the endless night.

But the VLA arrangement of optics created an extremely versatile and powerful instrument, allowing the AI to image individual planets five light-hours—or over five billion kilometers—away. The system's second world appeared to be the one of primary interest. Data began flowing down the right margin of Garroway's mental window, giving readings of mass, diameter, rotation, and other minutiae.

The world was a little larger than Earth—a diameter of some 13,500 kilometers—but with a surface gravity of only about 0.9 G. Large size and low gravity suggested a lower overall density than Earth, and a paucity of metals. The local star was Population II—Population I stars were the Galaxy's very oldest stars, composed solely of hydrogen and helium, and therefore unlikely to possess solid planets—but it was an *early* Pop II, with less in the way of metals and heavy elements than relative newcomers like Earth's sun. Hence, metal-poor worlds.

Despite that, the target world was clearly a hive of high-tech civilization. Viewed at extremely high magnification through the VLA lens, the night side was ablaze with light—clotted masses of city-glow centered in gleaming, criss-crossing threads like spider webs of light. Three planetary diameters out, rings of light encircled the planet at the equator, with slender threads connecting them with the surface. Garroway at once recognized the old idea of space elevators, long dreamed of as a means of getting from planetary surface to orbit cheaply and efficiently along super-strong cables reaching from equator to well beyond geosynch. The ring would be positioned at geosynchronous orbit, so that a given point on the ring exactly matched the daily rotation of a matching point on the ground below. Plans to build such a

system had been circulating on Earth since the midtwentieth century, but war and other diseases of international politics had prevented any of them from being implemented.

The Xul, evidently, had no such problem. The planet revealed by the thousand linked eyes of the drone cloud had been knitted together by light into a single, unified entity.

Literally a single entity, if human understanding of the Xul, of the concept of their group minds was at all accurate. Garroway tried to imagine how many individual minds must be cybernetically linked together within those continent-spanning constellations reaching across the curve of the planet's surface.

The question, he quickly realized, was meaningless. How many AI minds can coinhabit a single computer network? One might as well calculate how many angels could dance on the head of a pin.

"As we expected," Colonel Lee's voice went on, "we are facing an extremely advanced technology, one literally many thousands of years in advance of our own. Just how much more advanced, we don't know . . . and in any case the question is probably meaningless. We know now, from N'mah records, that the Xul have maintained their stellar empire for at *least* two million years—four times longer than the entire span of *Homo sapiens*, and there are hints that the Xul, or their predecessors, go back as far as a hundred million years.

"Fortunately for us, Xul society, if that's the word for it, appears to be based on a near static growth model. They don't change, and they don't innovate, save very, *very* slowly over extremely long periods of time. That's why they are, at best, a few thousand years ahead of us, and not several million."

The difference, Garroway thought with wry amusement, wasn't likely to mean a hell of a lot if it came to all-out war between humans and Xul. With powers, the energies, the technologies they controlled even just a few millennia beyond human capabilities, they would be indistinguishable from sheerest magic, to draw from the old aphorism concerning a sufficiently advanced technology.

And a couple of thousand Marines were about to try to challenge them on their own home ground.

The very idea, Garroway thought, was spectacularly and breathtakingly foolhardy.

After all, the argument that low-tech could overcome high worked both ways. If you were an animal being hunted by a technically capable predator, it didn't matter if you got whacked over the head with a stone ax or vaporized by an X-ray laser. Either way, you were still dead. Whether the Xul were a thousand years ahead or a million, in the long run, made no difference. Magic was still magic.

"Let me take this opportunity to emphasize to all of you," Lee continued, "that the Xul *can* be beaten. We've proven that twice, now. They are not omnipotent. They are not gods. Not only are they fallible, they have managed to demonstrate a truly serious tendency to really fuck up, big time."

That drew a burst of laughter from the Marines in the common area. "They are *old*. They are set in their ways. They respond to new threats slowly, and often in a slipshod or half-hearted manner. And that gives us our big military advantage in this conflict."

Colonel Lee, Garroway thought, was blowing a considerable quantity of smoke, but in a good cause. Morale among the Marines in Alpha Company, he'd noticed, was—not low, exactly, but shaky. Brittle. The Marines would go where they were told, give everything they had, and do their best and then some . . . but if pushed too far they were likely to shatter. Most were still coping with the emotional trauma of Armageddonfall and the situation that had ensued on Earth immediately afterward. Lee was reminding the Marines that they *could* win, that the Xul enemy was not invincible.

However things might look at the moment.

"VLA interferometry has let us image Xul ships in orbit about the second planet of the system," Lee went on. As he spoke, computer graphics were picking out isolated motes of light now adrift in space outside the planet's ring system, marking them with small, glowing circles and giving read-outs of data. Each, Garroway saw, was a Xul starship at *least* as big as the monster that had devastated the Earth, and the

data readings for some indicated vessels—if that was the appropriate word for such leviathans—so large they would have trouble fitting through the twenty-kilometer opening of a stargate.

“We have designated Planet Two, its artificial ring system, and the ships in orbit there, as Objective Tripoli. So far, we have recorded the images of 267 starships with masses of more than approximately one thousand tons,” Lee told them. “With one exception, all are in extended orbit about the planet, outside of the geosynch rings. Some of the larger objects, we believe, may be orbital fortresses rather than actual vessels. That makes sense. If this is the Xul equivalent of some kind of naval yard or military facility, it stands to reason they’d have some fair-sized planetary defenses up and running.”

For a dizzying moment, Garroway tried assimilating what he was seeing, and extrapolating that for a starfaring culture that evidently spanned some billions of stars. How many other Xul bases of this size might be scattered across the Galaxy? Even if there were only a handful, all told, the Xul obviously mustered firepower on a scale unimaginable on a merely human scale.

The image, meanwhile, continued to pan about the system. Garroway watched the local stargate drift past his line of sight, dwindled by distance, now, but magnified by the VLA-optics into a vast hoop. The stargate Marines had visited out in Cluster Space, also outside the Galaxy proper, but in a completely different direction, had been bored into the side of a fair-sized asteroid. This one, however, was more like the Sirian Gate . . . a vast hoop with a slender rim many kilometers across.

And then the camera image moved on to the Fortress.

There was no other obvious term for the thing. It hung in space close by the Stargate, obviously sharing the Gate’s orbit about its wan and distant sun. It was large, though scale was difficult to judge with any certainty, and roughly spherical but visibly flattened at the poles. The surface was dark, but reflective, and with a metallic luster—suggesting an immense and heavily armored spacecraft, perhaps, or a large

orbital base. The data printing itself out to one side described an artificial structure fifteen kilometers across, as large as a fair-sized asteroid. Perhaps it had once been an asteroid, with the surface totally refashioned by the Xul to their own requirements. Unlike the distant planet, there were no lights, no indication of life or intelligence other than the simple fact of the thing's existence. Nearly as large as the Stargate itself, and far bulkier, it was almost certainly a base or military outpost designed to monitor spacecraft entering the system through the Gate. Garroway noticed that it was hanging well clear of the Gate's opening and off to the side, perhaps fifty kilometers away from the Gate at its closest point.

And that meant that a particularly nasty wrench had been thrown into the planning of Operation Seafire, a wrench that necessitated sending in the Marines.

Damn, he thought.

In the seat next to his, Chrome caught his thought on their private channel, and knew why he'd thought it. "Hey. No one said it would be easy."

"No, but the law of averages says we ought to get a break once in a while."

"Sure. Once a century sounds about right. Hey, that's why they dragged us out here, right? They don't need us to hit Tripoli. They need us to clear out the opposition around the Gate so the Navy can get through."

"Yeah. Hush, now. I want to hear this."

"What we're seeing now," Lee told them, "is the single large Xul structure not in orbit about the second planet. It appears to be a sentinel, a kind of guard post keeping watch over the local stargate. You can see for yourselves the data our probes retrieved. This thing is going to be a very tough target."

"However, it *must* be taken out if Operation Seafire is to have a chance of succeeding. We have designated it as Objective Philadelphia."

"Due to the changes imposed on tactical planning by the presence of Objective Philadelphia, the Force's TO&E is being altered. First and Third battalions will have the task of

taking down Philadelphia, with support from the 3rd Aerospace Wing. Second Battalion will secure the Stargate, while Fourth Battalion provides reinforcements for First and Third bat, if necessary. We will be moving through the Gate in light battalion strength, with HQ units remaining on the Sirius side of the Gate, and company commanders in operational control on the far side, at least for the initial phases of the operation.

“Now . . . the bad news.”

Groans sounded from around the compartment, and Garroway wondered what could be worse than what he was seeing already.

“We’re still learning about our enemy, still learning about his technology. Those of you on the initial strike are going to get to learn a *lot* about his capabilities, close up. Data recovered from our electronic penetration of the Intruder strongly suggest that the Xul are able to generate some sort of suppressive field around their large spacecraft and structures, something that can damp out the effects of large-scale explosions, the way the N’mah inertial dampers can reduce the effects of inertia. We will, of course, precede the IMAC approach with a bombardment by both nuclear and antimatter warheads, but our best modeling suggests that this will result only in superficial damage, rapidly repaired by Xul nanotechnic damage-control systems.

“What this means is, if we’re going to take out Objective Philadelphia, we need to get several nuclear devices as deep inside the thing as possible. The only way we have of doing this, is to equip a boarding party of Marines with K-94s, drop them onto the surface in IMAC pods, and have them hand-deliver the packages.

“Needless to say, this will be extremely dangerous, and for volunteers only. We will do our best to ensure a means of escape and retrieval, but coordination of this op will be difficult in the extreme, and the possibility for friendly fire—and by this I mean some of our people being trapped inside the station when it blows—is high. *Very* high.”

Colonel Lee continued to speak in their minds, laying out the details of the mission as they’d been developed so far.

Garroway had been in on the preliminary briefings for senior NCOs before the task force had embarked, and had a good idea of what was coming. He felt a bit of a mental jolt, though, when he realized that ten years had passed since those earlier sessions, and not, as it felt, just a few days. Operation Seafire, from the very beginning, had been conceived as a *naval* operation, despite the fact that a Marine brigadier had come up with it.

However, Marines had always been part of the plan. Those first looks at Seafire had assumed that at least a battalion—typically three to five hundred Marines—would be needed to seize the Stargate on the Xul side. Unless the Gate was secure, the Navy ships could not safely pass through.

According to Marine doctrine, a battalion, a major's command, was the smallest unit capable of independent operations of limited duration and scope, both tactically and administratively self-sufficient. The Marine planning staff at Quantico had decided that two battalions, plus an aerospace fighter element, was the absolute minimum necessary for an operation so very far from home, and with no hope of reinforcement or support. Colonel Lee's newly reorganized Regimental Strike Team exactly fit the bill.

During the weeks of preparation before the departure from Mars, however, the 1MIEF/RST concept had gone through a number of further changes and upgrades, as had the plan itself. The Marines would have to secure two stargates—the one at Night's Edge and the one at Sirius. If things went sour at Night's Edge, Marines at Sirius would be placed to destroy any Xul vessels coming through the Gate, and if things got *really* bad, they could destroy the gate with a series of carefully placed nuclear munitions. With mission added to mission, the regimental strike team had grown to become a full Marine expeditionary brigade, consisting of four combat battalions and an aerospace wing, together with headquarters, logistical, and engineering support elements, and numbering some eighteen hundred Marines. Another three hundred naval and civilian personnel had been attached as well, most of them scientists—xenoarcheologists,

xenotechnologists, linguists, and alien liaison and contact specialists.

Garroway had some deep reservations about the change. Originally, the idea had been to get in, hold the far-side gate while the Navy did its thing, and get out again, a quick hop-and-pop op with minimum scope for major screwups. Now that a full brigade was involved, things were a lot more complicated.

Still, he had to admit that he was glad for one aspect for the change. The small version of the strike might not have been large enough, or flexible enough, to cope with that unexpected Xul gate fortress.

What worried him, though, was the fact that more men and more equipment meant a *much* greater chance of discovery at the wrong time once they went through to the other side. Ever since Operation Seafire had been first discussed, the number-one operational element had been security. Squared off against an enemy with unknown but definitely extremely advanced technologies, the Marines' best hope was to slip into the Xul backyard unseen, undetected.

The recon drone cloud, apparently, had managed to do just that, and its success told the Earth force something about the limits of Xul capabilities. Very small, very slow, and very stealthy vessels could slip through the gate-link from Sirius to Edge of Night undetected; how large could the assault force become before stealth became impossible?

Colonel Lee was discussing that now. "The assault group's approach must remain completely covert for as long as possible, and *precise* timing is imperative. I don't need to emphasize our largest disadvantage in this operation . . . the fact that the enemy possesses faster-than-light capabilities, while we do not. If the fortress is alerted to our presence too soon, the entire Xul fleet could be at the stargate in moments, and that would spell almost certain disaster for the entire op.

"Stealth in the initial deployment will be of absolute paramount importance."

The new IMACs, Garroway decided, were about to get their true baptism of fire.

IST Henderson
Stargate, Sirius Star System
2030 hrs, TFT

Stealth and timing were the two elements most on the mind of General Garroway as well. Certain aspects of Operation Seafire had already been set in motion over three weeks earlier, but they'd been initiated before the recon probes had been launched, before the expeditionary force had learned of the existence of the Xul fortress. Since receiving word of the fortress's existence at 1300 hours GMT, and now, he'd been linked in with the brigade AIs and his command constellation in a marathon planning session looking for holes in the plan, looking for a reason, *any* reason, to abort the op.

It wasn't that he wanted to abort. Far from it. Earth's survivors, all save those fleeing the Galaxy, had placed their expectations and their confidence in Task Force Seafire. It was too late to back down now.

But he and his ops planners did have an important decision to make, and one that had to be made now. If their initial reconnaissance of the Night's Edge system turned up intel that made mission failure a likely outcome, there was a lesser operational goal they could fall back upon, a lesser and more temporary victory.

Their orders, if an assault upon Night's Edge proved impractical, were to destroy the Sirian Stargate.

The complicating factor there, of course, was the presence of the N'mah. Several million of the aliens lived inside the warren of chambers and passageways and vaults inside the immense stargate structure, *had* lived there for over three thousand years, since before the Xul had destroyed their star-spanning trade empire. The N'mah had been planning on leaving Sirius. According to their ambassadors back on Earth—several of whom had accompanied Task Force Seafire—the Sirian N'mah population had been constructing several asteroid starships in Sirius space, a project that had begun over eighty years ago. Those starships were now nearing completion, but most of the stargate population

were still dwelling in the shallow seas and canal-linked cities inside the Gate's twenty-kilometer ring. Three weeks ago, the N'mah emissaries on board the *Henderson* had communicated with their fellows inside the Gate, ascertaining that fact; the N'mah fleet was not yet loaded, and would not be ready for departure for at *least* another ten Earth years.

And that was very, very bad news indeed.

Garroway had already decided that he would find another way, any way, than the one presented by his orders. *In the event that the assault on the Xul-occupied star system beyond the Sirian Gate proves impractical*, those orders had read, *Task Force Seafire will undertake the destruction of the Sirian Gate regardless of the presence of a local population. This destruction is to be considered absolutely necessary for the security of Earth and of Humankind. . . .*

Bullshit, Garroway thought. Bullshit, pure and simple. The N'mah population at Sirius was the only N'mah population known. There might be other surviving groups elsewhere in the Galaxy, but *this* group knew of no others.

It was possible that the Sirian N'mah were the very last of their kind.

And, damn it, the N'mah were humanity's *friends*. Thousands of years ago, they'd come to Earth and helped the shattered and barbarous survivors of the Xul-An war to regain their feet, teaching primitive tribes along the shores of the Arabian Gulf the essentials of agriculture, science, hygiene, and literacy, essentials lost with the destruction of Earth's Ahannu overlords.

And since contact had been made anew with Humankind's ancient benefactors, the N'mah had proven their friendship time and time again. That initial recent contact had resulted in a sharp, short battle inside the Sirius Gate—the result of mistaken identities and mutual fear. General Garroway's father, in fact, had been instrumental in stopping the firefight and initiating peaceful contact.

And in the one and one-third century since, the N'mah had provided Humankind with assistance as vital to human survival as the gift of literacy eight thousand years earlier. They'd helped human scientists begin to make sense of the

yottabytes of data recovered from the Ancient cities on Mars and from the Xul Singer on Europa, data which would help Humankind determine at last the truth of his origins and his place in the Galaxy. They'd known some tricks in nanotechnology that had streamlined and improved human construction and manufacture technologies, vastly improved E_v extraction techniques allowing almost unlimited amounts of energy to be pulled from hard vacuum, and shown human physicists how to manipulate that most basic quality of mass—inertia—permitting manned starships to achieve accelerations that would have otherwise killed their crews.

Besides which, the N'mah Garroway had met were intelligent, rational, civilized, and downright *decent* beings, more decent than lots of humans he'd known.

General Clinton Garroway was damned if he was going to go down in history as the human who'd committed genocide on a nonhuman species with no better reason than that he was "just following orders." Hell, as he read the mission plans, destruction of the Sirius Stargate would not be enough to save the Earth. The Xul possessed faster-than-light technology independent of the stargates, and they would be able to figure out what had happened to the Sirius Gate. They would come hunting for the culprits, and sooner or later they would return to Earth and destroy every human they could find within a fifty light-year radius.

His orders to destroy the Sirius Gate sounded like an ass-covering move by some Earth-bound politico—quite possibly one of the world leaders now planning on fleeing for Andromeda. Well, fuck that, and fuck the man who'd thought it. There had to be another way.

When the first recon probes had returned with word of the Gate Fortress waiting on the other side, he'd begun to think he was going to have to find it.

For decades, now, military engineers had been at work inside the Gate, looking for a way to shut it down that would not involve destroying the entire structure. So far, they'd come up empty. The Gate's operation depended on two counter-rotating black holes moving at close to the speed of light; if those things got loose from their magnetic containment torus,

they would wreak incredible destruction on the way out, and any imbalance of those precisely balanced gravitational fields might well tear the giant ring to pieces.

But they were still looking. The chances that they would come up with something *now*, however, after years of study, were vanishingly small.

Their only hope was to find a way to neutralize the Xul fortress so that Operation Seafire would succeed.

And now, after careful review, General Garroway was willing to concede that there was a chance of success.

He just wished it wasn't so small, that there weren't so damnably many ways that the whole thing could collapse and fail.

In a download window in his mind, he could see a 3-D computer graphic of the current disposition of forces. The entire task force was clustered about the Sirian Gate with one exception.

A month ago, while Task Force Seafire was still backing down into the system, one of the ships had altered course slightly, separating from the rest of the group. That lone ship was in position now far removed from the rest of the fleet—almost four hundred billion kilometers away from the Sirian Gate. That distance—about fifteen light-days—was the minimum distance necessary for the ship's acceleration run.

"Are we in agreement, then?" Garroway asked the assembled conference of minds, human and AI, linked with his own.

"I'd say so," Admiral Gresham said. "Do we have any choice?"

"There are always choices," Quincy's mental voice said. "The question is whether they are palatable or not."

"We'll have two weeks to abort, if we have to," Colonel Lee pointed out. "But God help us if we have to."

"Roger that," Garroway said. "Very well. Operation Seafire, Phase One . . . *execute*."

The command dispatched a laser-com message, directed outward toward the lone, waiting starship.

Not for the first time, Garroway wished human or N'mah science had come up with a means for faster-than-light communication. That such was possible was definitely proven.

He remembered that discussion, so long ago, in the chow hall at Fairfax Center with Chrome and that Marine flier. Quantum physics showed how such things *should* work. The Cave of Wonders on Mars housed hundreds of open communication channels with other worlds in other star systems, apparently in real-time, without speed-of-light delay. But after three centuries of study, all that could be said with certainty was that the Ancients had been able to talk across interstellar gulfs without a time lag thanks to a direct application of quantum entanglement and nonlocality, and so far no one, human or N'mah, had figured out how to duplicate the trick. Humans on Mars could talk with humans at the Pyramid of the Eye on Ishtar as easily as speaking with them face-to-face, but it would take over two weeks for the execute order to crawl from the *Henderson* all the way out to the IST *Intrepid* in deep space.

Such were the constraints inherent in the laws of physics.

But the execute order also put things in motion here in the rest of the task force. The Marines were committed now.

And everything, *everything* depended on their success.

21 AUGUST 2323

Assault Group Tripoli, Force Alpha
Stargate, Sirius Star System
0930 hrs, TFT

“Okay, boys and girls,” Colonel Lee’s mental voice said through the group’s link. Time to roll. Good luck, and God-speed!”

“First Platoon,” Captain Mehler’s voice said over the net. “Accelerating.”

Gunnery Sergeant Travis Garroway scanned the tactical display in his link window, a final check of all personnel. They were as ready as they would ever be.

In the TO&E for 1MIEU—its Table of Organization and Equipment—a squad consisted of twelve Marines arranged in three four-man fireteams. Two squads made a section, and two sections with two commissioned officers made a fifty-man Marine platoon. Under normal circumstances, the sections were led by a lieutenant and a lieutenant j.g., with the lieutenant in overall command of the platoon.

Two platoons were organized as a company—a hundred Marines plus a twenty-man support and headquarters element led by a captain—and four companies, plus another headquarters element, numbering five hundred Marines, made up a battalion, under the command of a major.

That, at least, was the *ideal* organization of a Marine battalion.

Things were never ideal, however. Since Lieutenant Wilkie had not yet been replaced, Garroway, as the senior NCO of First Platoon, was pulling double duty. He was the acting platoon leader of First Platoon, Alpha Company, *and* he was serving on Captain Mehler's company command constellation as his senior NCO advisor.

And, inevitably, the unit breakdown became a bit more complicated because of the special needs of this operation. The first assault force through the Gate was designated as Strike Team Alpha. It consisted of two assault companies—1st and 3rd—operating under the command of Captain Mehler, since Major Benton, of First Battalion, would be staying behind at the Sirius side with the rest of the battalion HQ element. Captain Padgett would be coming through the Gate at 0950 hours with the second wave—2nd Company plus the HQ and support elements, as strategic reserve.

In essence, Garroway was senior NCO for a half-battalion's worth of firepower going through the Gate on the initial strike. Two hundred fifty Marines would be on this initial deployment, with two hundred more set to come through in twenty minutes.

Unless something went terribly wrong.

Garroway, and his fellow assault force personnel, was once again tucked into the cozy closeness of an IMAC pod.

Normally, fifty IMACs, an entire platoon, would have been loaded on board a Marine S/R F-8 Starfire, a thousand-ton spacecraft designed as a stealth penetrator. In more conventional space battles, a fleet of F-8s would approach a target planet or space station in full stealth mode, release the IMACs, and return to the fleet. The IMACs, as Garroway and others had demonstrated over Mars, would enter the planetary atmosphere and deploy the Marines at the designated LZ.

But there was a special option this time presented by the unique battlefield terrain. The IMACs, two hundred fifty of

them, had been launched on the Sirian side of the Gate, and were now under computer control, gently accelerating into the twenty-kilometer-wide opening. Their inbound courses had been carefully planned to send them in a broad ring encircling the entire inner Gate, with each pod skimming through less than ten meters from the ringwall.

Evenly spaced around a ring with a circumference of almost 315 kilometers, each pod was a little over 1.2 kilometers from its two nearest neighbors.

The trick was . . . each IMAC was sheathed in energy-absorbing nano to reduce its detectable signature to nearly zero, and once they were through the Gate there would be *no* communication whatsoever between pods. The readout Garroway was studying now showed the *presumed* position of each of the IMAC pods as determined by their controlling AI. If everyone in the assault force was where he or she was supposed to be, well and good.

But if even one of them screwed up . . .

Ahead, the immense ring of the Stargate loomed enormous, less than two kilometers away now. He checked his position, and decided that the IMAC's computer had everything well in hand. He was on course, on time. There was nothing for him to do but wait. The ringwall drifted steadily closer, until it took on the aspect of a titanic white-gray cliff. The stars ahead, viewed through the lumen of the Gate, were those of local space, constellations little changed by the task force's 8.6 light-year trek out from Earth's solar system.

As his IMAC drew closer, however, it began to respond to the gravitational tug of the Gate, or, to be more precise, to the space-distorting gravitational field created by its internal pair of black holes zipping around its circumference at very close to the speed of light. He was in free fall, now, so he didn't feel acceleration, but he could see the Cliffside suddenly begin to move, as he fell faster and faster into the Gate.

And then, the sky ahead *blinked*. . . .

*Tripoli Command HQ,
IST Henderson
Stargate, Sirius Star System
0935 hrs, TFT*

Linked in through the command-communications suite on board the *Henderson*, General Garroway watched the IMACs moving into the Stargate.

What he was seeing was a computer simulation, of course. Individual IMACs were too small, too black, too invisible with distance and nanoflage as they crept along the inner ramparts of the Sirian Stargate for the human eye to pick them out. He hoped that applied for Xul optics as well. . . .

But the computer showed the ring of two hundred fifty IMAC pods, marking where they should be as they slipped deeper into the Gate's gravity well, picking up speed as they fell, then blurred suddenly, seeming to leap forward under high acceleration before vanishing completely. *God speed.* . . .

Next through was the F-8 Penetrator *Delphinus*, Captain Belkin, commanding. Forty meters long and massing eight hundred tons, she was neither fighter nor starship, but a landing transport pressed into special service as a missile carrier. *Delphinus* was also coated in nanoflage to reduce her signature on the other side of the Gate, but she was large enough that Garroway could see her optically, a cigar-shaped shadow with awkward bulges and sponsons, black against a brightly lit patch of the Stargate's smooth, inner-rim wall, her shadow close alongside.

"*Delphinus*, Tripoli Control," a voice said over the command net. "Check your drift."

"Roger that, Control." The shadow slowed, holding position against the gravitational tug of the Gate.

And behind the *Delphinus* were two more Penetrators—the *Aquila* and the *Lyra*—and the MIEU's full compliment of thirty-two Marine aerospace fighters, all visible by their electronic markers, but invisible optically.

Would it be enough?

Garroway scowled at the thought. It *had* to be enough,

because it was way too late for second-guessing either the plan or the plan's execution now. He checked a side window, and noted that *Intrepid* was also in position—now two light-hours out.

They were committed, and Humankind's survival depended now on both the implementation of Operation Seafire, and on a host of unknowables—the strength of the Xul fortress, the speed of their response and the resilience and flexibility of their fleet, and, most especially, the evil out-workings of Murphy's Law.

It was an axiom of combat that the side that made the fewest mistakes usually won. The mission planners had done all that they could.

Now it was up to a handful of Marines in their Spam-in-a-can assault pods.

Good luck, Travis, he thought. We'll all come through this . . . or none of us will.

Delphinus blurred and vanished, following the first wave through the Gate.

*Assault Group Tripoli, Force Alpha
Stargate, Night's Edge Star System
0935 hrs, TFT*

One moment, Garroway was seeing familiar stars and constellations ahead, and then, in an instant, the background blurred, rippled, and suddenly changed, as if the channel had been changed on a video wallscreen. He felt an internal shift as well, an inner tremor as he crossed a subtle disjunct in spacetime, and bridged in an instant fifteen thousand light-years.

Fifteen thousand light-years.

He'd seen the images brought back by the drones, of course, but this was different, seeing it with his eyes, with his whole being instead of through a virtual window opened in his mind.

Edge of Night. The poetic name was apt. Ahead, the vast sweep of the Galaxy, seen from a viewpoint just above one

of the uncoiling spiral arms, stretched off into infinite vistas compressed and flattened by perspective, creating a misty blue horizon, of shorts, against the emptiness of Night Absolute. To one side, the galactic core lay imbedded within the spiral arms, swollen and red-tinged, edged with dark tendrils of interstellar gas and dust that here reflected, there obscured the ruddy glow from the Galaxy's central heart.

Within the emptiness beyond and above the galactic arms, isolated patches of starlight, faint wisps of light, fuzzy and insubstantial, marked the teeming spheres of globular star clusters, and the far more distant glow of other galaxies.

For just an instant, Garroway felt a wild and terrible sensation of falling, of falling into an endless night . . . until he deliberately looked away, focusing instead on the internal readouts for the IMAC's control systems.

Steadied, he looked back. One star, he noticed, was not fuzzy or indistinct, like the faint and blurry stars marking clusters and galaxies. It was hard, sharp, and bright, with a distinct orange cast to it. It was sobering to realize that that was the central sun of this star system, the *only* solitary star he could see in the entire sky, and so far away its light was five hours old by the time it reached his eyes.

Garroway shook himself, dragging his mind back from the bottomless drop into those endless depths of intergalactic space. Sightseeing could come later. Right now, he had a Death Star to kill.

He grinned at the thought. The Powers That Were, meaning any of those higher up in the chain of command than he, *really* didn't like that name, which had been slapped on the Xul monster by enlisted Marines. He wasn't sure of the derivation—it had something to do with a centuries-old tri-V or fiction download, he'd heard—but his revered uncle and others in the command constellations evidently believed the term "death" gave the thing too much power, made it too much of a threat psychologically, and subsequently made it dangerous to Marine morale.

Utter nonsense, of course. Most of the Marines, men and women alike, took a perversely macho pride in the idea that a few hundred of them were about to storm something that

big, that threatening. Of *course* the damned thing was dangerous. If it wasn't, they wouldn't have needed to send in the Marines.

"Objective Philadelphia" indeed! It was a fucking Death Star, and the Marines were going to take it down.

He gave the IMAC's controls a mental nudge, and the starscape wheeled past. The assault pod had been climbing the vertical cliff of the Stargate ringwall, and his change of course swung him over the lip, bringing him parallel to the flat face outside the opening. Objective Philadelphia hung just ahead and to the right, neatly bisected by the absolutely flat horizon created by the face of the Stargate, the size of a full moon seen from Earth. On his tactical display, other Marine IMACs were reaching the Gate's outer surface as well, swinging over the ninety-degree edge, and deploying across the Stargate's face. Garroway adjusted his course, bringing the Death Star to the left, until it hung in the sky directly ahead. All around the Gate's circumference, other IMACs shifted their courses, converging on the objective, now sixty to eighty kilometers away, depending upon where they'd emerged from the Gate's opening.

Every battle is shaped by its terrain. Hills, valleys, woods, deserts, water courses, obstacles such as cities or farmhouses, all dictate the defender's strategy, the attacker's approach, and the shape and course of thrust and counterthrust. Even in space combat, where there is no cover, no place to hide, engagements between spacecraft can be strongly influenced by local planetary gravity wells—the gravitational high ground of interplanetary space that determine high- and low-energy orbits.

The Night's Edge Stargate created its own terrain, and the Marine IMACs were using that terrain to best advantage with a very old tactic. From the earliest days of aerial combat, aircraft had flown nape-of-the-earth, "hedgehopping," as it had been called in the first and second world wars, in order to grab a tactical advantage. Strike aircraft could fly long distances at treetop altitude without being seen, their radar images lost in the hash of ground clutter and backscatter.

There were no trees on the Stargate's face, no hedges to

hop, but there were hills and valleys, irregular bits of sharp-edged terrain elevations and depressions that created a mosaic of light and shadow beneath the glow of that distant orange sun. Garroway assumed manual control from the IMAC computer, and began negotiating that irregular terrain.

Stargates, artificial structures created eons before by some unknown and long vanished intelligence—quite possibly the fabled Ancients who'd created *Homo sapiens* in the first place—were extremely massive. The two black holes hurtling through their internal tracks each massed as much as a very small star or a large planet, and much of the rest of the ring structure appeared to be manufactured from condensed matter. The surface gravity of the thing, however, which should have been several Gs, was shielded and somehow redirected by some still-unknown technology. The gravitational focus at the center of the Gate opening amounted to some hundreds of Gs, though objects passing through were in freefall and felt nothing. The gravitational attraction toward the faces and along the outer rim of the structure, however, and within the corridors and chambers inside, amounted to something just under one gravity.

Garroway's IMAC was flying just above the Gate's surface, now, staying aloft by interacting with the powerful magnetic fields surrounding the entire structure. The question was whether the Gate's guardians, in that flattened sphere up ahead, could pick up the disturbances in that field as two hundred fifty Marine assault pods moved through it.

A calculated risk. For all practical purposes, the IMAC pods were invisible at all optical, infrared, and radio wavelengths, at least at ranges of more than a kilometer or two. A century of monitoring the fields projected by the Sirius Gate showed that magnetic anomalies did occur within them, apparently at random intervals and with no obvious outside cause. If the Gatekeepers, as the fortress guards had come to be known, were aware of subtle ripples in the Gate's magnetic fields, they so far had not sounded the alarm.

Of course, Garroway added in a wry aside to himself, how would the Marines know if the alarm had been sounded?

Quite possibly, there'd be no warning at all, until the approaching IMACs were winked out of existence by some unknown but highly advanced alien technology.

There was no use in worrying about it. The assault group was committed.

His pod swept over the outer edge of the Stargate rim, and he was in open space once more, approaching the Death Star at a slow and unobtrusive creep of half a kilometer per second.

A second risk appeared to have been justified: assaulting the fortress first, and the Stargate itself second.

Trying to second-guess alien thought processes was always a risky proposition, but the rational had gone something like this. If the Edge of Night Stargate was inhabited by Xul—as the Gate at Sirius was inhabited by N'mah—then there really was no need for a fortress standing off by itself. If it was inhabited by non-Xul—another N'mah population, for instance—and if they had sensors capable of monitoring the Marine assault, they would probably watch and wait rather than warn the fortress.

Probably. In either case, trying to penetrate the Stargate first would certainly alert the Gatekeepers in the Death Star. Trying to take down both at the same time held too many uncertainties in timing, and would not buy the team assaulting Philadelphia any extra time. Hitting Philadelphia first, and worrying about mopping up the gate second, seemed to offer the best hope for complete surprise.

They were past the Stargate now, and well out into the fifty-kilometer gulf between gate and fortress. There'd been no reaction from the enemy so far.

No *outward* reaction, at any rate.

Forty kilometers to go. Eighty more seconds. . . .

And then his link with the IMAC's computer erupted in the mental equivalent of red lights and warning buzzers. The pod's sensors had detected a surge of powerful energies ahead. Exactly what those energies represented was unknown, but it *looked* like the signature of a battery of high-energy particle weapons coming on-line.

There was nothing Garroway could do about this, however,

but wait it out. That energy surge would have been detected by Wing Shadow, however, and Captain Belkin's people would be going into action now.

Wing Shadow was the code name for the *Delphinus*, the F-8 Penetrator that had accompanied the first wave of IMACs through the Stargate, bringing up the rear. If all had gone according to plan, *Delphinus* should have swung up and over the Gate's rim and grounded on the face, safely nestled away among those enigmatic mesas and canyons, undetectable by Xul radar or its equivalents. Probes similar to those that had initially come through to scout Edge of Night space were electronically linked with the *Delphinus* by tight-beam IR laser, watching the fortress, the Gate, and the distant Xul fleet next to Objective Tripoli.

And as soon as those probes picked up evidence of a Xul response . . .

As Garroway's assault pod fell through the gulf between Stargate and fortress, his tactical display lit up with a spread of twelve K-440 high-acceleration missiles streaking through the widely scattered IMAC formation. Driving forward at over one hundred gravities, those missiles, fired from the *Delphinus*, flashed low across the Stargate face and out into the gulf.

Garroway tensed, then found he was unconsciously holding his breath and had to concentrate for a moment to make himself breathe slowly and regularly. Those missiles had been programmed to pass through the widely dispersed formation of IMACs. So long as each assault pod was exactly where it was supposed to be. . . .

Thirty kilometers to go. One minute. . . .

In traditional Marine landings, carried out across open water against a defended beach, heavy naval gunfire provided cover for the assault craft and amphibious vehicles by taking out enemy gun positions, forcing enemy gunners to take cover, and by providing a screen of smoke and hurtling debris. Instead of open water, the Marines were falling through hard vacuum, and instead of a beach they were approaching an armored deep-space fortress, but the principle otherwise was the same.

Garroway's tactical display flared white, and warning read-outs described a heavy flux of charged particles sleeting past the IMAC's outer hull. Half of the missiles launched from the *Delphinus* had carried tactical nukes, with about 10 kilotons of firepower apiece. The rest carried chaff warheads set to detonate one kilometer in front of the fortress station's hull.

There was always the chance that one or more of the nukes might penetrate the enemy station's hull and complete the job the Marines had come here to do. But the Marines were here, and moving in first, because of the possibility that Xul technology could shield the fortress from nuclear blasts.

Garroway couldn't tell if the nukes had been effective or not. The fortress was still there . . . growing huge in his forward display, but masked now by clouds of plasma and radar-scattering bits of reflective material.

Thirty kilometers. . . .

Twenty. . . .

More missiles streaked past, slamming into the target. He felt the buffeting, now, of hot plasma as the IMAC plunged through them, and heard the hiss and chatter of small flecks of debris as they struck his outer hull.

The fortress was definitely still there, though there did appear to be some superficial damage. The outer surface seemed to shimmer and flow . . . possibly as it repaired itself. He wished he could see better, wished he understood what he was seeing. According to his tactical display, though, *Delphinus* was gone. The Xul must have returned fire and taken out the Marine penetrator.

Ten Marines had just died, but in dying they'd opened the way for their comrades in the IMAC assault wave. With luck, the Xul had been distracted for a critical few seconds by nuclear warheads and the F-8 hovering above the Stargate's face, and hadn't spotted the incoming pods.

Other signals were emerging from the Stargate now . . . the Marine fighters of the 3rd Aerospace Wing attached to 1MIEU. *Delphinus* must have summoned them with a probe sent back through the Gate to the Sirius side. He could see other F-8s emerging as well, intermingled with the smaller, one-man A-699 Skydragon aerospace strike fighters.

Ten kilometers. Twenty seconds. . . .

On his tactical view, he could see a flashing green circle superimposed over the objective's surface, the planned LZ for all of the incoming IMACs just visible through the thinning cloud of plasma.

Then IMACs were exploding in the sky all around him, as static howled and beams of charged particles crisscrossed his sky. The fortress seemed to erupt in flickering lightnings, as a storm of destruction smashed through the IMAC formation.

Garroway left evasive maneuvers to his IMAC's computer, which could anticipate fire patterns and initiate evasive maneuvers far more swiftly and accurately than he. He felt a savage jolt as his pod fired its side thrusters, rolling clear as lightning flared through the space it had just occupied.

More IMACs flared and vanished, as the rest entered a violent series of evasive maneuvers.

"Assault Force!" Captain Mehler's voice called over the tactical channel. There was no point now in radio silence. "Get down any way you can! Assault Control! Launch Force Bravo!"

This was bad. Alpha had lost so many Marines in the past few seconds that Mehler was bringing in reinforcements already. All hope for a coordinated strike had just vanished, as individual IMACs tumbled through the lightning-blasted sky above the Death Star.

"All units!" Mehler's voice called. "All units, form—"

And then static blasted through Mehler's voice and the rest of his order was lost. Mehler's IMAC was now an expanding cloud of white-hot plasma and debris.

And then Garroway was through the plasma and chaff clouds. Objective Philadelphia filled his forward view, now, a towering cliff of black metal, torn in places by nuclear detonations. He gave the mental command that jettisoned the nose cap, exposing the docking ring. Forward thrusters fired, sharply slowing the fast-drifting IMAC, and then he slammed into the face of the cliff.

The forward edge of the docking ring was coated with

several types of nano. Sealers bonded with the fortress hull, welding the IMAC in place and forming an airtight seal. Sampler pads tasted the alien metal, immediately confirming that it was the same exotic blend of ceramic, plastic, and metal as had been found in the hull of the Xul ship that had attacked Earth. Clouds of disassemblers were released, chewing through molecular bonds and turning hull metal into a fine grit of carbon, iron, and other elemental solids, while releasing hydrogen, oxygen, nitrogen, and other gases and recombining them into liquids like water and ammonia. His scanners were showing a sharp increase in radioactivity.

Well, one way or another, he wouldn't be here for long.

The intruder vessel's apparently automated repair response in Sol's Asteroid Belt had proven that the Xul used nanotechnics on a large scale. The damage Garroway's IMAC was causing would swiftly be detected, and there would be a response. How rapid and how drastic a response that might be was unknown, but he knew he didn't have much time . . . a few minutes, at most.

His link with his combat armor provided a steady flow of data. The disassembler nano was breaking through into emptiness at several points. The chambers beyond were in vacuum. Gravity was slight—a couple of hundredths of a G—so the Xul apparently weren't using any kind of artificial gravity. Vibrational data suggested *something* was moving around in there, though what that something might be, and how close, were unknowns.

Come on! Come on!

And then his telemetry indicated that the way was open. He made a mental connection over his control link, and the close confines of the pod life support capsule around his head exploded open, and he was propelled forward into darkness.

He drifted four meters and landed in an untidy heap, rebounding from an uneven deck in microgravity. "Alpha One-five!" he called over the company command channel, identifying himself. "I'm through! I'm on board Objective Philadelphia!"

There was no response, and he didn't know if that was be-

cause the channel was being blocked by meters of alien hull metal, because he was the first Marine on board the enemy construct . . . or because he was the only Marine left in the assault wave.

That last was unlikely, but it was a sobering thought, nonetheless. Sobering, too, was the realization that the Marine formation had been badly scattered in those last few seconds of the approach. Instead of landing in a tightly clustered group with other Marines, he'd come down well outside the planned LZ. The nearest Marine in the assault force could be two meters away on the other side of that wall . . . or kilometers distant, fighting for his life.

He cleared and charged his weapon, a 5mm gauss rifle with disassembler rounds, mounted to his right forearm. He also checked his K-94 nuclear device, riding in his backpack. The unit was intact and its diagnostics clear.

Now all he needed to do was find a way deeper into this thing.

He was in some kind of low, uneven passageway in total darkness, but he could see well enough by infrared. The bulkheads were glowing in IR—registering a temperature of around 5 degrees Celsius. He switched on his armor's lights and checked the passageway on optical wavelengths.

He appeared to be alone.

What he needed now was more Marines. A series of vibrations through the bulkhead suggested something was happening *that* way. He began to haul his near-weightless mass along through the passageway, pulling himself along one-handed, to keep his weapon arm ready for immediate action, moving in the indicated direction.

Believe in yourself, he thought. It was like they taught you in Weiji-do. *You create order out of chaos!* . . .

21 AUGUST 2323

Assault Group Tripoli, Force Alpha
Objective Philadelphia
Night's Edge Star System
0942 hrs, TFT

The passageway, clearly, was not designed for humans. It was roughly a meter and a half wide by a meter and a half tall, narrow enough that he kept bumping the sides as he moved. If there'd been gravity he would have had to crawl.

In microgravity, though, it was a simple matter to haul himself along with one hand, while clutching the grip of his gauss rifle with the other. First and foremost, he needed to find and link up with other Marines in the assault force.

There. His armor's communications suite was picking up signals and routing them through to his tactical display. Two . . . no, three signals, both within fifty meters of his current position. A fourth appeared seconds later. Across the surface of the Xul fortress, other IMACs were coming to rest, bonding with the hull, drilling through, and releasing the Marines on board.

He tried to orient himself with the other signals, which were spread across an arc of nearly two hundred degrees. His computer calculated signal strengths and range, then identified *that* one, IDed as Corporal Tracy Fitzpatrick, as closest to the center of the group. The problem was finding a passageway leading in that direction.

And there it was. Garroway wasn't quite sure how it happened, but the passageway he was in twisted suddenly right, then came to a branching of five tunnels, one heading in exactly the right direction. It opened wider, too, letting him propel himself from handhold to handhold more quickly. If the Xul combat machines didn't put in an appearance . . .

No such luck. The surface of the passageway walls began reforming as he watched, with Xul machines seeming to grow out of the surface itself. Each was between one and two meters long, elongated egg shapes with oddly asymmetrical bulges and swellings, with slender and highly mobile tentacles, with glittering lenses that might be eyes, or which might house receptors for other senses entirely. They blocked the way ahead, interlocking their tentacles, a living wall of machines.

Bracing both feet against part of the corridor at his back, he grasped the gauss rifle in both gauntleted hands and squeezed the trigger. The weapon used powerful magnetic fields to hurl twelve-by-five-millimeter slivers of nano-coated steel sleeted from his weapon at high speed. Recoil slammed at him as the slivers accelerated from the weapon with a muzzle velocity of nearly a kilometer per second.

With a cyclic rate of ten per second, the gauss rifle acted like a chain saw in close-quarters combat. The stream of projectiles struck the nearest Xul machine with a pulsing blue-white flash of liberated kinetic energy, and the ovoid body *splashed*, creating a gaping crater that swiftly opened into a gaping hole all the way through, and an instant later the two halves floated apart, tentacles still wildly lashing about. Other machines were ripped apart in quick succession as Garroway swept the spray of deadly fire back and forth across the advancing crowd. Each strike by another sliver liberated a dazzling blue flash of heat and light. In seconds, the narrow opening of the corridor was filled with drifting fragments, some sparking from broken power feeds, some glowing red hot, like coals.

Garroway pushed ahead, then, shoving past the debris, moving clear of the ambush site. Where the hell was the rest of the assault force?

According to his tactical display, more and more Marines were entering the Xul fortress's hull, some a few tens of meters away, others kilometers distant. They were all around him now, too. He continued moving toward the closest Marine, however, turning another corner, then entering a broad, open space two meters high but hundreds of meters across.

A trio of Xul machines drifted in front of him. He cut one apart with a burst from his gauss rifle, then saw the other two flash and vanish in a burst from a PPG.

"Gunny!" Private Nolan yelled, waving. "Over here!"

"Coming in!" Garroway called back. "Hold your fire!"

Half a dozen Marines had already gathered there, Corporal Fitzpatrick among them, floating in a ring in order to cover every direction. As more and more Marines arrived, the circle grew larger.

The big question now was where to start planting the backpack nukes. They were inside the outer skin of the fortress, but going deeper would be better, giving them a better chance of destroying it.

Garroway began searching for a way into the fortress's heart.

*Assault Group Tripoli, Strikeforce Wing
Stargate, Edge of Night Star System
0952 hrs, TFT*

All thirty-two A-699 Skydragons of the strikeforce aerospace wing had slipped through the Gate in dispersed formation, spread out over an area almost twenty kilometers across. After the shock of transition, they wheeled together into an open cone and began closing with Objective Philadelphia. Battle had already been joined as they entered the battlespace; as he spun his dragon on her axis and went full throttle-up, a brilliant flash close to the surface of the gate marked the destruction of the penetrator *Delphinus*.

"Okay, chicks," said the voice of the wing leader, Major Griffith. "Green Squadron on overwatch. Blue on strike. Hit it!"

Maverick, more formally known as Lieutenant Thomas K. Elliott, shoved his 'dragon's virtual thruster control all the way forward and felt the answering slam of acceleration as his fighter boosted toward the flattened sphere of black metal ahead. "TK" to his friends, Elliott was known as "Maverick" in the cockpit, a handle reflecting his west Texas birthplace and his notoriously independent, even unmilitary attitude.

"Oh-five, boosting," he called over the squadron command link. Other members of the squadron added their confirmations. Blue Squadron would make an attack run on Objective Philadelphia first, with Green Squadron hanging back just in case the bad guys popped a surprise. Elliott was Blue-five.

He'd joined the Marines in 2306—eight years ago, subjective—and after training and several duty stations on Earth and in Earth orbit, been assigned to VMA-412, a Marine aerospace attack squadron based on Mars. He'd been completing his first two-year space deployment there when the Intruder had suddenly shown up and begun flinging rocks at Earth.

The events of that day, of that *week*, still were burned into his soul. VMA-412 had scrambled, boosting for orbit where they'd rendezvoused with the Marine IST *Henderson*; the attempt to intercept the Xul intruder . . . and the stunningly welcome news that the Marines operating off the *Preble* had gotten there first and destroyed the monster.

Days later, after being redeployed to Earth to provide aerospace security for relief forces operating there, Elliott had learned that his entire family had been killed when the Helios Tower megaplex in Miami had been struck by a fragment and destroyed.

Elliott had been granted leave that spring, and over the course of two weeks had gone through extensive deep-psych counseling. He'd never been sure how well the reprogramming had taken, however. It certainly had felt touch-and-go at the time. He'd never discussed the matter with his AI-generated virtual therapists, but he'd been damnably close to suicide more often than he cared to admit even to himself,

including at least three occasions after the AIs had pronounced him fit for duty.

He was pretty sure his therapists knew; it was tough to hide stuff like that from their deep probes of both his brain chemistry and his nano-neural implants. But they'd said nothing, and neither had he. He didn't want to make an admission that would end with him being summarily dismissed from the Corps.

In fact, Elliott was pretty sure they wouldn't have done that. The Corps had lost a *lot* of personnel Earthside with Armageddonfall, and simply didn't have the manpower to dismiss trained and experienced Marines—especially aerospace pilots—on something as relatively minor as psychological trauma.

That thought forced a hard-edged grin from him. Marine medico-AIs did *not* consider psychological trauma as minor, ever, but with the shortage of pilots they might well have insisted that he be assigned someplace on Earth or in Earth orbit . . . perhaps with an eye to helping him overcome his trauma by helping the survivors on the home planet directly. They would not have risked him on a two-decade interstellar mission into Xul space, where the top functioning of *every* Marine was vital to the mission's success.

But he'd been able to bury a lot of what he'd felt, to bury it deeply enough, he thought, to give him a shot at being accepted for Operation Seafire. By early summer, as plans for Seafire solidified and received a final go from the World Union and Federal Senate votes, he had done his grieving, come to grips with his personal demons, and was out for blood. *Xul* blood . . . or whatever electromagnetic ichors passed for blood in that mechanistic and bloodless collection of group minds and ship-born gestalts humans called the Xul.

He was going to make the bastards pay.

"Blue Squadron!" Griffith called, as the Xul fortress loomed large dead ahead. "Spread out! We've got a power surge building!"

The A-699 was streamlined for atmospheric work, but still

possessed an ungainly, droop-nosed appearance, more vulture, as one wag had put it, than dragon. Delta wings stretched out aft, angled sharply down as if clutching something precious to its breast, enclosing a clutch of plug-and-play wing-mount hard-point pods that could carry anything from EM sensors to AG-40 mass-homers with 20KT tactical nuke warheads.

For this op, the squadron was packing a mix of AG-12 kinetic-kill rockets and FGX-4 missile pods; tactical nukes were definitely contraindicated this time around, with Marines swarming around inside the target. As he twisted the Skydragon into line with the objective, he noted the area—highlighted in green on his visual display—where his fellow Marines had landed, and took aim at a stretch of metal terrain nearby. His mental command triggered a burst of KKR's, meter-long needles of compmat, compressed matter electromagnetically stabilized at a density some five times greater than depleted uranium. Accelerating at nearly 100 gravities, those deadly slivers smashed into the Xul station's hull, punching through in gouts of light, intense heat, and sprays of molten metal.

Static howled across his link connection, a shriek of EMP. Ahead, two of his comrades, Steelgirl and Ripper, vanished in silent bursts of white-hot plasma, and his sensors tracked the passage of an intense beam of magnetically accelerated charged particles. He hadn't even seen the Xul weapon that killed them, but he twisted hard to port and accelerated, hoping his violent jinking would throw off the aim of any Xul gunners who might now have him in their sights.

A second beam fired, and another Blue Squadron Marine died—Hammer, one of the squadron's newbies. *Damn. . .*

Fighter combat in microgravity was entirely different from atmospheric engagements. Once moving in a given direction, you *kept* moving in that direction. To turn, you killed your forward movement while simultaneously applying a sideways vector. There was no atmosphere in which to bank, brake, or swoop. There were only the cold,

hard hand of Newton, and the equations of mass, thrust, and vector.

Elliott's long burst of kinetic-kill rockets had acted like forward thrust, sharply slowing him. Yawing left, he applied fifty Gs of thrust to boost him at an angle from his original course, carrying him low across the enemy fortress's surface. The maneuver would have rendered him unconscious if not for the N'mah inertial damper humming away just behind his acceleration couch.

Still another Skydragon vanished in white light as static howled. The Xul station was using powerful PPGs, magnetic weapons directing beams of charged particles, at the swarming fighters.

Skimming past the dark surface of the fortress, Elliott flipped his fighter end for end, streaking into the night tail-first, keeping his craft's blunt nose pointed at the enemy. Interesting. The surface of the fortress sphere was shifting, as though the individual slabs that made up its outer armor were sliding, interpenetrating, and changing shape. Briefings had indicated that Xul ships and constructs could repair themselves, and he wondered if that was what he was witnessing.

Ten kilometers out, he armed and triggered an FGX-4. The missile lurched away from beneath his port wing, hurtling toward the target on white fire. A kilometer above the surface of the flattened sphere, the missile detonated, an utterly silent 10 kiloton fission burst that pumped a powerful X-ray laser focused as a tight FGX beam—the letters standing for Fission Generated X-ray.

Elliott didn't see the effect of his shot; his optics blacked out as the sensors overloaded and, moments later, the expanding shell of plasma from the explosion caught his Skydragon and sent it tumbling. The sky pinwheeled past his head, alternating the massed, clotted stars of the galactic spiral with the emptiness of intergalactic space.

He scarcely cared. He'd hit the bastards back, and he'd hit them hard.

There was little more that he could do, now, save try to get his ship back into the fray.

Assault Group Tripoli, Force Bravo
Objective Philadelphia
Night's Edge Star System
0958 hrs, TFT

His IMAC burst open and Lance Corporal Nal il-En Shradach spilled headfirst into the bowels of the alien craft. Clumsily, he rose to his knees while unshipping his laser rifle. He was wearing Mark XLIII CAS, an older version of combat armor than the Fighting Forty-four used by the first-wave Marines, and that meant his weapon was not integral to the armor.

No matter. He'd not had time to train with the more complicated CAS system, and it simply meant that he needed to be careful not to lose his weapon.

The mantra etched into his mind by a succession of DIs droned in his thoughts. *This is the General Electric/Mitsubishi LR-2303 laser rifle, the current standard-issue personal infantry weapon of the U.S. Marine Corps! It is a one-tenth-second fifty-megawatt pulse laser weapon, delivering five megajoules of energy on-target, with the equivalent destructive power of the detonation of one kilogram of TNT or a similar chemical explosive. . . .*

Nal rose as though he were trapped in a dream, witnessing things, including his own movements, as though from a distance, and in painfully slow motion. He checked the safety on his laser rifle, and checked his noumenal indicators to make sure the weapon was at full power and the auto-interrupts engaged. *By the book, recruit! By the fucking book!*

His training over the past months had been exhaustive and, unfortunately, the vast majority of it had been through noumenal downloads, rather than by direct real-world experience. It still seemed like nothing short of pure magic that the Kia-people—the humans of lost Earth—could pour knowledge into his head as though filling a tub with water by pouring it in from buckets. *Incredible. . . .*

But everyone from Staff Sergeant Wojkowiz back on Ishtar to the small army of drill instructors, proctors, and

teachers at the Marine training facilities on Earth all had emphasized again and again that downloaded knowledge had to be reinforced by real-world experience before it could be truly his. It wasn't enough to know it; it had to become a part of you.

So Nal still felt awkward and clumsy with such basic items of equipment as the IMAC, his combat armor, and his laser. He knew how to use them, but he hadn't yet had the time to practice that knowledge.

This, he'd been told by an Earth Marine in the chow line one evening, was what you called *major* on-the-job training.

As he'd been trained, he checked his tactical display, looking for the nearest Marines. This type of landing was tricky, since it involved the incoming landing force being scattered all across the map, and the first thing he needed to do was rendezvous with other Marines. There was a concentration of green blips that way, behind him and to the left, and the passageway he was in ran more or less in *that* direction.

Swallowing his dry-mouthed fear, he started moving.

Perhaps the two things in all the universe he most desperately desired, most desperately believed, was to find other Marines and to not find the enemy. He felt totally unprepared for an encounter with the Xul, alone and in the dark.

And, somehow, the gods he no longer believed in were listening. He turned several corners, followed the left-hand path in a branching corridor, and heard a challenge from up ahead. "Who's there?"

He was so scared he almost answered in his home tongue. "Lance Corporal Shra-dach!" he managed to say. "I'm with you!"

"Come on in, Nal," another voice, a woman's voice, said. It was Staff Sergeant O'Meara, and he felt an almost embarrassing rush of relief and happiness. "Any sign of Xul activity that way?" she asked him.

"N-no, Staff Sergeant. Nothing."

"Damned peculiar," she said. "We should've run into something by now."

Something hammered at the soles of his boots. "Gods! What was that?"

"Don't sweat it, kid. Our aerospace wing is hammering the station from the outside. Giving it an A-one shellacking, from the sound of it. C'mon. We need to make tracks."

Nal fell into line with the others—about twenty other Marines, led by the staff sergeant. It felt good to be with O'Meara again. He didn't really know her, but he knew she'd been nearby at the battle outside Washington, and somehow that counted for a lot.

They descended several levels, then turned another corridor. Suddenly, the Xul combat machines were there, all around them, dropping out of the overhead and emerging from the passageway walls. Nal brought his laser rifle up and began firing, his aim wild, but his suit computer helped compensate, letting him fire when the muzzle of his weapon actually happened to be on one of the Xul machines, and cutting the power when his movements dragged his point of aim across a fellow Marine.

It was without doubt the most desperate moment in Nal's life, far more terrifying than the hand-to-hand fight atop the Marauder technical. A huge thing of shadows and snakes was moving in the darkness ahead, and most of the Marines were concentrating their fire on that, but other, smaller attackers were already among them, seeking to grapple them one-on-one. A meter-long ovoid of black ceramic and metal clasped his legs with slender, flexibly twining tentacles, dragging him close. He lashed out with his weapon, smashing the butt against glittering lenses, then pounding away indiscriminately, breaking the thing's grip. He fired as it tumbled backward, and the laser bolt blew the thing into half-molten fragments, its tentacles still writhing and twisting like living things.

Nal had never seen a kilogram of TNT explode, and, in fact, most of the energy in the bolt translated not as explosion, but as intense heat at the target, melting through the toughest metal, and causing the thing's body to explode from thermal shock. The detonation was startlingly impressive, however, even with a complete lack of sound in the airless

void of the passageway, and made him more cautious with his next shot. Another of the metallic beasts was grappling with Sergeant Ruehe, clinging to her back, and he hesitated, unable to fire.

Letting the laser rifle dangle from its sling, he pushed off from the wall at his back and flew in a long, flat trajectory, colliding with the tangle of pressurized armor and whiplashing tentacles.

"Get it off!" Ruehe was screaming. "It's eating into my suit! Get it off!"

Grasping a tentacle with each hand, he pulled, hard, ripping the thing free from Ruehe's armor. The egg-shaped Xul device, he saw, had been changing shape, molding itself to fit the curves and angles of the back and side of her armor, and the nuclear device she wore high on her shoulders. One of the glittering lens "eyes," he saw, was emitting a dazzling point of light that was etching away at her armor—a laser cutter drilling into her suit. A sudden puff of vapor sprayed from the charred bit of armor, and the beam became sharply visible. Ruehe screamed again. . . .

He didn't have a knife, couldn't attack it the way he'd taken on the armored marauder on Earth, but he could reach in with his glove and smash the lens, pushing it back into the body of the thing as the armored surface of his glove blistered and started to boil away. He felt sharp pain in his hand, and a maddeningly calm voice in his head began speaking of pressure loss and suit breach.

He ignored both, wedging himself between the sergeant and her weird attacker, levering it away from her and thrusting it clear as the tentacles loosed their grip. Another Marine fired at point-blank range, blasting the machine into molten gobbets of debris.

He grasped his hand, but his suit was already sealing itself, the nano circulating inside the skin coagulating and stiffening in a high-tech analogue of blood, a blood clot sealing a wound. Medinano in his body reduced the pain to a distant throb. Sergeant Ruehe's suit, too, was healing.

"Thanks, Nal!" she told him.

"*Dra-evidha*," he said. He saw puzzlement shade her eyes

through her visor, then realized he'd answered her in the People's Tongue. With adrenaline pounding through his system, English came clumsily to his lips. He searched for something he could say that she could understand. "*Gung ho. . .*"

And she replied, grinning fiercely. "*Semper fi!*"

The attack ended as suddenly as it had begun, the strange machines melting away back into the tunnel walls, the large mass ahead torn and pocked by craters, the ragged edges still glowing red-hot.

"Let's go, Marines!" O'Meara called from out in front. "I've got a lock on the rest of Alpha!"

Around them, like something from the depths of a terrifying nightmare, the tunnel walls themselves seemed to be changing shape.

Assault Group Tripoli, Force Alpha
Objective Philadelphia
Night's Edge Star System
1003 hrs, TFT

They needed to find a way to plant their nuclear charges deep enough inside the fortress that the surface field dampers would not suppress the blasts. Guided by deep-probe soundings of the metal and ceramic walls around them, Garroway and his fellow Marines were moving deeper and deeper into the mazelike tangle of passageways that seemed to fill the skin of the fortress. The passageways around them were definitely flowing and shifting, changing shape as the Marine strike force made its way through the fortress's interior. It was, Garroway thought, uncannily like moving through living intestines, as though the entire fortress were alive and made of flesh and blood.

Which was impossible, of course. The walls *were* metal and ceramic, not organic tissue . . . but somehow they were moving and growing around the Marines, opening up new passageways, closing others.

At first, he'd thought the thing was trying to close on

them, to crush them—the word *digest* came unpleasantly to mind—but as they kept tracing their way deeper into the Xul structure, it became clear that the changes were actually *helping* the Marines more often than not, leading them in the directions their sensors told them they needed to go. This made no sense whatsoever.

“It’s like it wants us deeper inside,” Corporal Collesco said after a yawning passageway opened to their left, leading in exactly the direction they needed to move.

“Not quite,” Garroway said. “it’s more like we’re getting what we want close around us, but the Xul mind is controlling things farther away. Shit. . . .”

“What?”

“Consensual reality.”

“Huh?”

“Never mind. Keep moving!”

The thought nagged at him. When the Marines needed a particular route to open, it did . . . though the walls kept disgorging various types of enemy combat machines, creating a moving firefight as they penetrated the monster. He was remembering, though, a conversation he’d had in a mess hall with Chrome and a Marine flier back on Earth an age or two ago . . . about quantum physics, and how the Xul performed their magic.

Belief?

Yeah, he thought. I want a tunnel to open up heading at one-eight-five relative . . . and it does. Wild.

And suddenly, it seemed completely plausible.

But he needed to test it.

“Force Bravo is coming in, one-eight-five relative!” Sergeant Giambastiani called suddenly. “Got ’em on deep sensor probe!”

“I see them.” He saw the green blips on his tactical display, about twenty meters behind them, but separated from the rest of them still by that much solid tunnel wall. They were picking up the vibrations of their movements, the heat from their suits, but they couldn’t communicate with them directly.

“Try something, everybody! We need a tunnel between

us and Bravo! There's got to be one. Imagine it opening up for us!"

"Whiskey Tango Fox?" Valdez said, using the old phonetic alphabet query—an ancient military joke—meaning "What the fuck?"

"Never mind! Just believe it!"

And the wall of the twisting corridor behind them began to melt, pieces moving, sliding out of the way, rearranging themselves as a new tunnel opening appeared. Moments later, an armored figure appeared, striding out of the opening—her ID revealing her as Chrome. More Marines followed behind her, weapons at the ready.

"Thank God!" Chrome called. "We thought we'd never get through to you!"

"That's why you were having trouble," Garroway said.

"Huh?"

"Never mind. Form a perimeter!"

Yeah. It *worked*. . . .

"Quincy!" he called in his mind, uplinking to the platoon AI. "*Quincy!* Are you there? Do you copy?"

Quincy₅ was little more than a local net spider, a tiny fragment of the original command constellation's AI resident within the computers of the Marines' combat armor and the weld-docked IMACs, far too limited in memory to be truly intelligent or self-aware.

But it *did* have access to a fair amount of data, and could draw conclusions within certain very narrowly focused parameters. Its primary purpose was to help to electronically connect and coordinate the Marines scattered across the fortress drop zone, and to serve as a communications link with the rest of the task force, but a secondary assignment involved penetrating what passed for a Xul computer system, the electronic and virtual world of this station, seeking data files to rifle, systems to shut down, sabotage to inflict. Quincy₅, in that regard, was an extremely sophisticated and complex computer virus.

"Ready." Garroway heard the flat and uninflected voice in his head.

"Quincy!" Garroway said. "Record for transmission!"

“Ready.”

“The Xul have some way of reaching down to the base state of reality to directly change matter and energy! It’s some kind of field or quantum effect that works on belief! Or maybe desire! Whatever it is, it changes the shape of matter locally. It’s like it rewrites the base program for matter!”

As he thought about it, the effect had been evident when they’d penetrated the Xul intruder in the Solar System last February-subjective. It had seemed like luck at the time, but they’d been able to plant their charges and extricate themselves ahead of that swarm of Xul combat machines and escape.

Well, *almost* escape. . . .

“Do you copy that Quincy? Can you correlate with any of your data?”

“Copy. Correlation will require connection with higher-level host-avatars.”

“Transmit this when you get the chance. Flag it urgent!”

“Acknowledged.”

As expected, the walls around them were blocking their communications channels. His message, though, would be stored inside the suit computers of all Marines within range, and the first time one got close enough to make automatic connection with one of the IMACs up on the roof, the entire message would be burst-transmitted to every other Marine in range, including the aerospace craft outside, and any F-8 Penetrators maintaining station close to the Gate.

Briefly, he wondered if wishing there were a direct channel would work . . . and made a brief experimental attempt to link with his IMAC pod . . . but without result. The effect really did seem to be limited to the immediate area—within a few tens of meters or so.

“Listen up, everybody,” he called over the tactical channel. “We can make these passageways come and go by thinking about them. Tap into your Wei-ji-do training. Focus on opening a wide, clear corridor into the heart of this thing!”

And then, just ahead, the wall dissolved, melting away

into emptiness. Beyond lay the approach to a vast chasm, an archway opening on emptiness. At their feet, the chamber yawned into a canyon half a kilometer wide, with the bottom lost in darkness far below.

"This," Garroway said, "is exactly what we were looking for. Okay, Marines! Plant 'em!"

Of course, the Xul might be able to suppress the blast effects throughout the fortress interior . . . but there was only one way to find out.

*Assault Group Tripoli, Strikeforce Wing
Stargate, Edge of Night Star System
1008 hrs, TFT*

Maverick's Skydragon had at last responded to his gentle urgings, losing its spin and boosting once more back toward the now-tiny ring of the Edge-of-Night Stargate. He could see both the Gate and its attendant fortress, now, made tiny by distance, and silhouetted against the infinitely complex and richly star-dusted background of the Galaxy's spiral arms. That, he decided, was how the IMACs had been spotted during their approach. They must have occulted enough background stars to make their movement obvious to the fortress's electronic senses.

He thought he had enough reaction mass to make it back to the Gate, but there would be damned little to spare. He would have to nurse it carefully. From the look of things, the battle around the fortress was in full voice; silent flashes marked X-ray laser blasts against the fortress . . . or the smaller, brief puffs of light marking the death of Marine fighters.

He had to get back there. . . .

But a warning notice winked in his mind, and he opened a new window, downloading information coming from the far-flung sensory net of battlespace sensor drones.

They must be tracking this same data in the Penetrators back at the Gate . . . but, just in case they were too busy to notice . . .

"Tripoli Control, this is Blue-Oh-Five! Do you copy?"

There was no answer. Yeah, they were busy all right.

"Tripoli Control, this is Blue-Oh-Five! Do you copy?"

"Blue-Oh-Five, this is Tripoli Control." The words were static blasted, almost unrecognizable. "Go ahead."

"Take a look at your perimeter watch!" he called. "We've got trouble inbound!"

"Blue-Oh-Five, what is your situation? Over."

"Not my situation. Yours! Take a look at Objective Tripoli! It's the Xul fleet! They've left Tripoli and are moving in on you fast!"

Xul warships, at least a score of them, were materializing out of nothingness kilometers away, and closing on the Star-gate like cavalry come to the rescue.

The *enemy's* cavalry. . . .

21 AUGUST 2323

*Tripoli Command HQ,
IST Henderson
Stargate, Sirius Star System
1010 hrs, TFT*

It was, General Garroway thought, now down to a race, and one with hellish consequences for the loser.

The news that Xul fleet elements were now just on the other side of the linked Stargates was, if not welcome, then at least anticipated. The grand plan for Operation Seafire, first introduced by naval and Marine strategists objective months ago but endlessly refined once the drones had sent back their images of the enemy's tactical disposition on the other side, had assumed that some portion of the Xul fleet would move once they received word that the Gate fortress was under attack.

Communications drones coming up out of the Gate reported twenty-three Xul ships now approaching the Night's Edge Gate and fortress. A tactical window open in his mind showed their relative positions—a rough cone formation, the tip aimed straight at the Gate. The fighters of VFA-412, tiny sparks, drifted away in all directions, scattered by the behemoths' arrival. They had no role to play in the coming encounter. There was nothing they could do to even slow the Xul monsters, and Garroway was unwilling for them to throw their lives away to no purpose. As it was, those green

sparks were flaring white and vanishing in ones and twos, as Xul weapons sought them out and destroyed them, relentless and implacable.

Garroway wondered if the Xul ships would turn those weapons on their own fortress. There was still so much about the enemy utterly unknown, a weakness even more serious, to his way of thinking, than the vast discrepancy in technologies. Clearly, they didn't think like humans. They acted more like machines—or like the gestalt of a beehive or termite mound, and annihilating the Gate fortress in order to kill a few hundred Marines on board might well seem a perfectly reasonable exchange from their eldritch point of view.

Still, they appeared to be hesitating. If their advance could be slowed by just a few more minutes. . . .

He wished he could know what was happening to the Philadelphia Assault Group. Those Marines, though, were completely on their own. No message had been received from any of them since they'd penetrated the hull of the Xul fortress, and that, too, had been expected. Xul hull metal—or perhaps it was some other aspect of their formidable technology—completely blocked all communications.

He checked the Earth fleet's deployment. Green icons representing the vessels of Task Force Seafire hung motionless on the Sirius side of the Gate, arrayed in a ring matching the sweep of the Gate's vast circle. All were in place, well clear of the Gate's opening, but positioned with their sterns aimed directly at the Sirian Gate's center.

The Battle of the Sirius Gate in 2170 had demonstrated that one weapon, at least, could destroy even a mile-long Xul warship . . . and it was a makeshift weapon at that. The drives employed by human starships took reaction mass—water—and used the effectively unlimited magic of energy drawn from hard vacuum to transform it into a plasma accelerated aft at close to the speed of light.

Those charged particles, besides supplying the thrust necessary to accelerate starships over a period of months to close to light speed, also served as deadly weapons in their own right. The center of the Sirian Gate now lay at Ground Zero, the focus of the main drives of seventeen starships,

carefully positioned to lay down an intense high-energy crossfire on any Xul vessels that decided to poke their nose through from Beyond.

The N'mah asteroid ships were clear as well, almost two hundred kilometers distant. There were still N'mah on the Sirius Gate, he knew, but as many as possible had been evacuated over the past few weeks to the incomplete living spaces within their ark.

Despite Garroway's good intentions concerning Humankind's N'mah benefactors, the coming engagement might well result in the Sirius Gate being utterly destroyed . . . not from deliberate sabotage by Marines, but as a direct result of the unimaginable destructive energies about to be released there. If the Xul came through and the Earth ships engaged them, the Sirius Gate itself might well be among the first casualties.

"Quincy," he said. "Package the tacsit and transmit to *Intrepid*. Recommend Sequence Three."

"I have been keeping *Intrepid* informed," Quincy's calm voice replied. "Your recommendation has just been transmitted. There has been no reply as yet, of course."

"How long? Until they get here, I mean."

"Gate acquisition in five thousand forty seconds."

Eighty-four minutes. *Damn* this was going to be close. . . .

IST Intrepid

Sirius Star System

Inbound to the Stargate

1013 hrs, TFT

Quincy₄ ran through yet another set of systems checks. Things were not good. The *Intrepid*, stressed far, far beyond her original design parameters, was fast reaching the point of complete system failure.

If the abbreviated AI that was Quincy₄ had been capable of human emotion—and the computers on board the *Intrepid* simply didn't have the operational capacity for anything that complex—he would have felt pride at how well the

aging vessel had held together so far . . . and possibly some concern over whether she would be able to carry out the short list of tasks yet awaiting execution.

To Quincy₄'s sensors, the universe appeared very strange indeed. Pushed for three weeks by a new, inertially damped drive at some hundreds of gravities, *Intrepid* now was moving at just a hair below the speed of light, within a hundredth of one percent of that ultimate velocity unobtainable to any entity composed of mass. The entire visible universe had been compressed into a ring encircling her bow, the light of all of the stars compressed into a narrow band; the innermost edge of that band was exceptionally brilliant at optical wavelengths—the radio and far-infrared light coming from the star Sirius itself, blue-shifted into visible light.

In fact, sharp eyes would have noted that that ring of Sirius light was sharply brighter and thicker on one side than on the other, for *Intrepid* was not aimed squarely at the star itself, but at a still-invisible point just to one side.

The Sirius Stargate.

Only an artificial intelligence of considerable flexibility and power could have guided the *Intrepid* on so precise a course, and at so extreme a velocity, but Quincy₄ felt no pride at that, either. His larger and more complex brothers might have experienced such an emotion—or at least been able to simulate it convincingly—but Quincy₄'s programming simply didn't have the depth, or the necessity, for such frills. All Quincy₄ needed to do was pilot the *Intrepid*, from her original boost from Mars orbit, to her staging point with the task force's arrival in the Sirius System three weeks ago, to this, her final run.

Intrepid had stopped accelerating some time ago—how *much* time was a matter for debate both by philosophers and physicists. She'd begun accelerating toward the Stargate from a point two light-weeks away from the Gate three weeks ago. Guided by navigational updates provided by the rest of the task force, he'd nudged the *Intrepid* this way and that, aligning her perfectly on the center of the Gate, a task roughly equivalent to attempting to thread a needle . . . when the needle was stationary in New York, and the person

holding the thread was inbound on a hypersonic suborbital transport that had departed from Tokyo International an hour before.

No merely human navigator could have even attempted such a feat. There were simply too many variables, and the actual process of navigation, dependent on the precise measurement of signals and data coming from the target but strongly blue-shifted by near- c velocities, required both senses and manipulations that were, in fact, superhuman.

Eighty-three minutes objective yet to go until Gate acquisition.

Objective. At this velocity, eighty-three minutes objective passed in less than one minute subjective.

Assault Group Tripoli, Force Alpha

Objective Philadelphia

Night's Edge Star System

1014 hrs, TFT

Travis Garroway prepared to leap into emptiness. Laser soundings of the abyss in front of them revealed a depth of nearly five kilometers, an empty drop straight into the heart of the monster.

"Damn it, Trigger," Chrome told him over their private channel. "You don't have to do this!"

"Yes, I do," he replied. "I'm giving the orders, so I do the same thing I expect my people to do. I won't lead from the rear."

His people deserved better than that.

"Then I'm coming, too!"

"Negative! You hold the fort up here . . . and help us haul ass the hell out of Dodge when the time comes!"

"Damn it, Trigger! . . ."

"Can it!" Reaching out, he touched the shoulder of her armor. "Don't worry, Hon. I'll be back in just a minute."

He didn't add that what happened after that was still problematical. They weren't allowing much time for a getaway.

Garroway looked to left and right. To either side, nine

other Marines, similarly tethered, stood at the edge of the abyss looking back at him, ready to make the jump.

Their small group had grown to fifty-three Marines—roughly platoon strength. Ten of them carried K-94 backpack nukes. But there were no officers; Garroway was the ranking NCO. And he was not going to send them into something he would not enter himself.

“Right!” he called on the tactical channel. “Let’s go, Devil Dogs!”

“Ooh-rah!” chorused back at him. He took some strain on the monofilament line connected to his suit harness, leaned forward, then kicked off, angling himself head-down, into the gulf. In his arms he carried his K-94 boom-pack, already armed and set. A mental command triggered the thrusters on the back of his armor, accelerating him.

The rest of the nuclear-armed Marines followed, plunging into the chasm, trailing their retrieval lines like unwinding spools of thread.

None of us are getting out of this thing alive, he thought as he drifted into the fortress’s depths. He caught that thought, then, savagely, and tried to turn it around.

Survival *was* possible . . . but it also was not what concerned them at the moment.

In fact, E&E—Escape and Evasion—had always been a somewhat marginal aspect of the operational plan for the RST. It had been bad enough in the planning stages, when they could assume an orderly deployment to the fortress’s surface, and a tightly clustered landing at the planned LZ.

But they hadn’t been able to coordinate the assault, not with the incoming IMACs so badly scattered by the Xul defenses. Once down, it had been a scramble for individual Marines to link up with other Marines . . . and they hadn’t been able to find any surviving officers; Mehler had died in the approach, and there was no sign of either Lieutenant Costigan or Lieutenant Ford. So far as Garroway knew, forty-six Marines of Assault Force Alpha and seven of Bravo were all that were left out of an original combined strike group of four hundred fifty.

Fifty-some Marines against the Xul fortress. Not good odds at all.

But right now, absolutely the only thing that counted was to plant as many nuclear devices as deep within the Xul fortress as possible. If they could manage an E&E at the end of it, so much the better . . . but every Marine in the assault group had known going in that survival here would be a long shot.

As had been explained in their briefings, deep penetration of the Xul fortress gave them their best chance of destroying the thing. He remembered what he'd glimpsed on the way in, from his IMAC—how craters punched in the side of the Xul monster by Marine strike craft apparently had begun closing over and repaired themselves, and how some kind of field seemed to reduce those explosions' effects. Like the Xul intruder in the Asteroid Belt, the fortress could shrug off nuclear explosions at or near its hull, rendering long-range bombardment ineffective.

But ten nukes going off a hundred meters or more down *should* cause so much damage to the surrounding structure that repair would be impossible . . . or, at the very least, it would take a long time to effect.

How much of that, he wondered, was due to his belief that it would happen.

And would *believing* make their escape any less impossible? . . .

Belief mingling with fear and with determination, Gar-roway and nine other Marine volunteers sailed deeper into the darkness of the abyss, drifting head-first, clutching their boom-packs like magical talismans. He wished there were a way to plant the charges *way* deep . . . like five or six kilometers down, but that was begging for trouble. The Xul defense so far had been spotty and disjointed—possibly because they were busy with the attacking aerospace craft outside—but the Marines couldn't count on that happy situation lasting for long.

The descent was eerily dreamlike. The walls of the chasm were sparkling with some indefinable energy, and seemed to be flowing and shifting as he watched. The cliff side was

smoothly irregular and peppered with large, geometrically angular polygons of various shapes and sizes that appeared to float, move, and overlap one another in a weird and ever-changing parody of living organisms.

He was moving too fast, however, to see any details. His suit, he knew, was recording everything he saw. He hoped the science people could make something of it.

Assuming he could get the suit back to them in one piece.

Ahead, a kind of ledge extended out from the wall, apparently encircling the chasm, though it vanished into darkness to either side. Twisting in his fall until he was dropping feet-first, he triggered his thrusters for a brief, sharp deceleration, then reached out, snagging the ledge and scrambling to a full halt. The other Marines grappled with the narrow walkway, which shifted and oozed beneath their gloves and boots.

"Chrome! How deep are we?"

"Two hundred meters, Trig."

"Okay," Garroway said, turning his body to face the wall. "We plant 'em here."

"Trigger!" Chrome called from overhead. "Hurry it up! You've got company!"

He checked his tactical display, then turned, looking out into the gulf. There were *things* out there, dimly reflecting light from the Marines above . . . egg-shaped machines, and other, larger devices, with glittering eye-lenses. And they were moving in closer.

"Give us cover!" Garroway yelled, and bright sparks and flashes began strobing in the darkness, as plasma guns, lasers, and kinetic-kill rounds from Chrome's group began marking down individual fliers. Garroway paid no more attention; his team had their hands full planting their weapons.

But first they had to dig holes for them, using nano-D tunnelers packs. They slapped these on the side of the cliff and fired them with a mental command. Instantly, nano disassemblers in each pack began eating into the diamond-tough material, breaking it down into gently expanding clouds of elemental dust and various gasses.

PFC Thomas Yount, working over his disassembler pack,

suddenly jerked and screamed, as white-hot plasma engulfed his legs. He pushed off from the wall, arms flailing.

Corporal Easley pushed off after him, snagged him by his combat harness, then used his thruster to pull back to the wall. In the same instant, Sergeant Crocker and Lance Corporal Hutchinson both were hit by separate blasts, their armor shredding in intense heat, the air inside their suits suddenly expanding into hard vacuum, mingled with bloody mist and molten fragments.

"Keep working!" Garroway yelled. "Get the charges planted!"

For a nightmare moment, Xul combat machines pressed in upon them, ripping Groneman and Keenan away from the cliff wall. Corporal Tracy Fitzpatrick shoved her K-94 into the gaping crater before Garroway, then shrieked and twisted as her right arm and shoulder were engulfed in plasma flame.

Garroway planted his own boom-pack, then turned and grabbed Fitzpatrick, pulling her down with his left hand while he used his right to aim his gauss rifle past the wounded Marine. A mental command sent a stream of 5mm rounds spraying into the oncoming swarm, splashing machines apart in silent bursts of high-velocity nano-coated slivers. The nano-D began eating what was left. Invisible clouds of the stuff sprayed past the original targets and began contaminating other Xul machines in the swarm, eating into their black and glossy metallo-ceramic shells.

Gunfire from the ledge two hundred meters overhead continued to flare and flash within the Xul swarm. The swarm was thinning now, the destruction accelerating.

And then the gulf again was empty, save for the surviving Marine raiders.

"Okay, Chrome!" Garroway yelled. "Bring us up! Fast!"

The monofilament threads on their harnesses began to contract, reeling them back up the side of the cliff. Easley clung to Yount, and Garroway to Fitzpatrick, bringing the now mercifully unconscious Marines back from the abyss.

Marines did *not* abandon their own.

*Assault Group Tripoli, Strikeforce Wing
Stargate, Edge of Night Star System
1018 hrs, TFT*

What fucking idiot thought we could take on Xul tech and win? Maverick thought, the ferocity catching him by surprise. Skydragons were dying around him one after the other, swatted from the sky by invisible energies sleeting from the alien warships.

It was, he thought, a strange kind of battle, with the Marine aerospace fighters literally dogfighting with battleships. The Xul formation had begun breaking up, with several of their number attempting to pursue individual fighters.

Two were following him, slowly but inexorably.

"Maverick!" Hunter was yelling over his comm channel. "Get clear! You've got two on your tail!"

"I see 'em, damn it. . . ."

Accelerating hard, he put his 'dragon into a trajectory that sent him skimming low across the surface of the Xul fortress, as the pair of Xul behemoths followed above and behind. Evidently, they were holding their fire, unable to shoot at him without hitting the fortress.

He would use that.

Firing his thrusters in sharp, short bursts, he rolled closer to the fortress and angled down behind its horizon, putting the structure between him and his pursuers. The trouble was, he was almost out of reaction mass. His long burn to bring him back from his drift in toward the Night's Edge sun had depleted his reserves. At the rate he was using his water at the moment, he would only be able to stay in the fight for another few seconds.

But then, the way the Xul fleet was smashing up the wing, he wasn't likely to survive more than another few seconds in any case.

He spun his fighter end-for-end, hurtling tailfirst away from the fortress, his electronic focus licked on the structure's horizon as it receded. A moment later, the nose of one of the mile-long Xul battlewagons appeared, edging out from behind the fortress, and Maverick triggered his KKR,

sending a stream of compmat needles ripping into the alien ship. As the Xul monster continued to emerge from behind the fortress, his point of aim moved down its belly, opening the thing as if he'd pulled down a zipper.

Fragments and debris spilled into space, but Maverick could see the damage was already closing over as the enemy's hull repaired itself. He kept firing, however, trying to cut the monster in half, watching explosions flare and pulse within its depths . . . and then the Xul fired back.

The plasma bolt seared past, meters from Maverick's Skydragon. He rolled clear, seeking again the cover provided by the Xul fortress, but an alarm was sounding and the ship refused to respond to his mental command. A dozen systems had been fried by the near-miss, and his computer was down. With a jolt, he realized his own implants were off-line as well. He felt . . . alone, utterly cut off from the rest of the universe.

Shifting to manual control, he engaged his thrusters . . . and they failed as well. He couldn't tell if he was finally out of go-juice, or if a critical electronic component had been fried by the Xul shot.

Most of the other Skydragons in the wing, he saw, had already been destroyed.

It wouldn't be much longer now. . . .

Assault Group Tripoli, Force Alpha
Objective Philadelphia
Night's Edge Star System
1023 hrs, TFT

Fitzpatrick had died on the ride back up.

Garroway reached the top of the cliff where the rest of the Marines were waiting for him. Unhooking his tether, he looked around, still a bit dazed from the intensity of the fire-fight in the depths.

Ten Marines had gone down that cliff face just minutes earlier. Five had returned, one terribly wounded. Yount's suit had sealed off his legs, and the medinano in his blood would

have rendered him unconscious and begun healing the wound, but he needed to be in a sickbay, and the sooner the better.

"Let's get the hell out of Dodge," he told Chrome.

"Roger that. I think the natives are getting restless." The vibrations felt through the corridor walls were growing more insistent, more powerful. Clearly, the fortress was mustering some sort of supreme effort . . . though whether that was to be directed against the Marines or against some external threat there was no way of knowing.

Yet.

The sooner they all escaped from this madhouse, the better, so far as Garroway was concerned.

"Okay, people," he said. "Let's get topside and blow an egress."

His suit computer had kept careful track of every twist, turn, and advance he'd made since leaving his IMAC. Since all of the suits were talking with one another, via Quincy, the AI was able to paint a three-dimensional diagram in Garroway's mind, showing their position nearly eighty meters beneath the surface of the Xul fortress, and the positions of some fifty-two IMACs where they'd been left scattered about on the fortress's outer hull.

Unfortunately, those eighty meters of ceramic and metal were blocking all radio contact with any of the IMAC pods. They needed to reach the uppermost deck of the fortress so they could again communicate with one of the pods, any of them. If they couldn't, they would be trapped.

Quincy, of course, had kept track of their movements, and of the open passageways they'd traversed to reach this point. Going back the way they'd come wasn't exactly that simple, since the corridors continued to change and shift, even as they hurried through them.

But they made good progress. Once again, when they needed an opening, an opening usually presented itself, almost as though the structure were reading their minds. That, Garroway decided, was just a little too weird for him.

He tried not to think of the packages now metaphorically ticking away in the darkness of the abyss. If the fortress was

alive, and if it could somehow sense the presence of those ten nukes . . .

Don't think about it! he thought. Just focus on getting out of here. Believe you're going to get out of here!

And then a shaft that hadn't been there before opened above them. Using their suit thrusters they jetted upward in the station's microgravity. They reached the top deck thirty seconds later, and just fifty meters from one of the IMACs.

It was Lance Corporal Brunelli's IMAC. "I hope you're not thinking of using your pod again, Brunelli," he told her.

"Wouldn't do me much good, would it, Gunny?"

"Not glued to the roof that way. But now it'll help all of us."

He gave a mental command to Quincy and, seconds later, light flared up ahead, and a shock wave rippled through the corridor, thumping hard against the soles of Garroway's boots. "Move it, Marines! On the double!"

The Marines scrambled for the place where Brunelli's IMAC had been moments before . . . and which now was occupied by a gaping hole five meters across. The ruin of the corridor partly blocked their way, but they were able to use nano-D tunneler packs to burn through, emerging once again beneath the cold, hard light of the stars.

"Your message has been transmitted," Quincy told Garroway. He didn't remember, at first, what the AI was talking about. Then he recalled his brief report on the quantum-effect field within the fortress.

He wasn't sure that mattered now. The view out from the Xul station was one of inexpressable horror. Directly overhead, between the fortress and the Stargate, Garroway could see half a dozen Xul warships, designs much like the one that had bombarded Earth, though each had unique features, hull shapes, and arrangements of cupolas, domes, and sponsons. As he stared up at the armada, a tumbling piece of wreckage drifted across his line of sight, charred and broken, but looking entirely too much like the down-angled wing of a Skydragon aerospace fighter.

There was no sign of any of the Marine aerospace wing, or of the F-8s that would have been positioned near the Stargate

to recover the Marine strike force. There were only those Xul warships—six close enough to be naked-eye objects, and another fourteen visible only as red blips on his tactical display.

Private Chanik flexed his knees and kicked off into space, spreading his arms as he triggered his backpack thrusters. “C’m on, guys!” he cried. “Let’s get off this thing!”

Lance Corporal Osman leaped off after him. “Belay that!” Garroway snapped. “Hold your positions!”

The two Marines overhead cut their thrusters, but continued to drift away from the station. “Sorry, Gunny,” Osman said. “You want us back there?”

“Negative. Don’t do *anything*.”

“What’s the matter, Trig?” Chrome asked.

Garroway waited, watching as the two Marines continued to dwindle into the sky. “Nothing. I guess,” he said. “But those two idiots could get themselves fried if the fortress notices them.”

But minutes passed, and nothing happened. “Okay,” Garroway said. “My guess is that the battlespace around us is so full of broken crap the Xul can’t track individual combat suits. So we start kicking off . . . but we do it irregularly, in ones and twos, not as a group, understand me?”

“Yeah, Gunny,” several voices replied.

“No thrusters. We don’t know what they can pick up on their sensors. We kick off, and we drift. And maintain radio silence!”

“And then what, Gunny?” Sergeant Knowles asked.

“And then we wait, Knowles. We wait, and we see what happens.” Another minute passed, and neither the Xul warships nor the fortress seemed to take note of the two drifting figures, now scarcely visible against the night.

He checked his internal clock—1053 hours. It had taken just thirty minutes to get back to the Xul structure’s surface.

“Okay, we do this alphabetically,” Garroway said. He checked his roster of the Marines with him. “Amory!”

“Right, Gunny.”

“You take Yount, and hang on to him. Take off!”

"Aye, aye, Gunny."

He waited a beat. "Amundsen! Go!" Another Marine kicked off.

This, Garroway thought, had always been the weakest part of the plan, getting clear of the fortress without being caught in the blast or seen and killed, but they'd known they would face this moment before they'd volunteered. The K-94 packs had been set with a detonation sequence that would trigger them either if one or more of them was disabled—disassembled by the fortress defenses, for example—or at precisely 1136 hours TFT. That meant the fortress could blow at any time . . . but the fact that it had not meant the nuke backpacks were still in place, still live and armed.

If they waited on the station's surface, they would be caught in the blast. They might be thrown clear, but there were no guarantees that they wouldn't be killed by the shock, by the storm of hard radiation, or by the expanding cloud of plasma. If they took their chances drifting through open space, they might survive the nuclear blast, but they might be caught . . . or they could be spotted by the fortress sensors and burned down, one by one. The presence of the Xul fleet added a new uncertainty, on that count.

All they could do now was drift and wait, wait for the fortress to detonate in nuclear fury behind them, or wait for the *Intrepid's* arrival, whichever happened first.

He wondered about other Marines, elsewhere within the fortress. The powerful shock of the IMAC's detonation had also been a signal. If there were any other members of the assault force still alive, still somewhere inside, they would have felt that blast as a powerful tremor through the walls and begun to come back up to the surface.

In any case, 1136 hours had been the absolute deadline for their return.

A *literal* deadline, for that was the calculated moment for *Intrepid's* arrival.

Drifting out from the fortress like so many chunks of wreckage, their mission complete, the Marines waited.

IST Intrepid

Sirius Star System

Inbound to the Stargate

1053 hrs, TFT

Forty-three minutes to Gate acquisition . . . about thirty more seconds subjective.

Fortunately, one of the superhuman aspects of Quincy₄'s abilities was his speed of operation, an advantage shared by all electronic life forms over their organic counterparts. For a computer, a single second could be an eternity, depending on the number of operations it performed within that second.

And now Quincy₄'s sensors were picking up a transmission from the Gate—a long stream of tightly packaged transmissions originally sent as long-wave maser bursts—coherent microwaves, the radio equivalent of a laser—but those waves had been blue-shifted into the visible spectrum. Quincy₄ was reading them as an optical laser. Decoding the heterodyned data, Quincy₄ noted the change in the tactical situation at the Gate, the situation as of forty-four objective minutes ago, at any rate, and read General Garroway's suggestion that he employ Sequence Three.

The larger strategic picture implicit in that tightly compressed message was largely beyond Quincy₄'s cognitive abilities, which was just as well. The implications would have worried a human pilot, since the tactical situation at the Sirius Gate was now far more complex than it had been before.

But, one way or another, Quincy and his human masters were now committed. Sequence Three required nothing of the AI at the moment but the firing of a series of explosive charges at the connector ring of *Intrepid*'s now-empty forward RM tanks and, simultaneously, of a slight deceleration.

Although the surrounding universe appeared strangely reshaped by *Intrepid*'s speed, there was actually no other indication of the vessel's speed. From Quincy₄'s point of view, the huge, mushroom cap of the transport jolted a bit as the charges fired, then began moving forward, faster than the rest of the vessel.

At this speed, any forward thrust was almost entirely swallowed by the relativistic increase in mass. As Quincy applied deceleration to the rest of the ship, however, the RM tank appeared to move forward more and more swiftly. In fact, it had retained its velocity from the moment of separation; the rest of *Intrepid*, her velocity slightly reduced, was merely falling behind.

It was just as well that Quincy, while capable of astonishing feats of mathematical calculation, was simply not equipped to worry about the outcome of the high-speed threading of a needle, Tokyo to New York. . . .

21 AUGUST 2323

Assault Group Tripoli
Near Objective Philadelphia
Night's Edge Star System
1120 hrs, TFT

For almost half an hour, the Marines had drifted out from the Xul station. Their individual vectors very quickly increased the separation of each from the rest. Garroway had leaped into the night last, but could no longer see any of the others. Their nanoflage armor was reproducing the light of their surroundings—black, for the most part, with occasional bits of starlight from the galactic spiral arms in the background—which rendered them invisible at optical wavelengths.

Their original mission plan had counted on each IMAC pod being too small for the Xul to notice on approach. That, perhaps, had been overly optimistic on the part of the planners; they *had* been spotted, possibly by radar, possibly by their thruster-power signatures, possibly simply because they'd occulted some of the glow of the Milky Way in the background.

Whatever the reason, the Xul fortress had seen them and opened fire, causing them to land scattered, most of them outside the planned LZ.

The fortress wasn't shooting at them now, however. Not that that would make a lot of difference in the long run. With the Xul fleet parked out there, the F-8s wouldn't be able to

come in and pick them up, even if they survived the fortress's demolition.

How much longer? He checked his internal clock, and saw the countdown had less than fifteen minutes to run. *Not long now. . . .*

How far had they come? He didn't want to chance using a laser rangefinder to check the distance to the fortress, not when *any* radiation from the drifting Marines might call down a blast of artificial lightning. But they'd jumped from the crater with an estimated speed of two meters per second, and that had been thirty-four minutes ago for Amory, twenty minutes ago for him. Call it four kilometers for PFC Amory, twice that for Chanik and Osman, since they'd used their thrusters had given them some extra momentum . . . and a bit under two and a half for him, bringing up the rear as tail-end Charlie.

He felt almost overwhelmingly lonely. Once before in recent memory—a few months objective—he'd been adrift in space and certain he was going to die. Then, at least, he'd been inside the shattered hulk of a transport, with other Marines close by for company. They'd known they were going to die, but knew they would die together.

Dying like this, however, utterly alone, adrift in space . . .

He wished he dared open a channel to Chrome. He needed to talk to her . . . maybe tell her he was sorry. For a while, there, last spring, objective, she'd wanted to stay and work with the Terns, the advocates of a long-range relativistic migration to Andromeda, but when he'd insisted on volunteering for Seafire, she'd changed her mind and volunteered as well.

And now she was out there in the night, somewhere, as alone and as scared as he.

Carefully, he maneuvered himself around so that he was facing the fortress, which still filled the sky below—or in front of him now, rather, since there was no up or down, above or below, in zero-G. There was a lot of debris in the sky; he could see several fragments drifting between him and the illuminated portion of the fortress, black specks against the dark gray of the monster's hull.

A flash against the fortress's surface, well off toward his left, startled him. It had just been a pinpoint of light, so quick he thought for a moment he'd imagined it. Using his helmet optics to magnify the area, though, he could see a small pockmark against the surface—a crater like the one they'd created by blowing Brunelli's IMAC in place.

So other Marines in the assault group *had* survived, and were escaping now. How many? There was no way to tell. It was even possible that some of those isolated specks of debris were other Marines, drifting out into the night.

The fact that so much time had passed, though, suggested that they, too, had planted their charges before pulling their E&E. That bunch had certainly waited for the last possible moment, though. When the station exploded, they would be damned close to the inferno. *Good luck, guys*, he thought. *Semper fi!*

Six minutes to go.

Carefully, so as not to put himself into an uncontrolled tumble, he maneuvered his suit once more in a slow half-turn, stopping the move by extending an arm and putting in some counter-rotation. When the explosion came, he wanted to be facing away from it, with his suit's backpack between the blast and his torso.

And why the hell am I bothering with that? he wondered. According to his suit link, he had about ten hours left of air, a bit more of power. If he survived the detonation of an unknown but large number of kiloton-sized tactical nukes within a few kilometers of his position, if he wasn't killed by hurtling debris or the expanding bubble of hot plasma, if he wasn't spotted and picked off by a Xul warship, he could look forward to ten hours of empty loneliness, followed by suffocation as his air gave out.

Better, perhaps, to open an air valve and try breathing vacuum. It would be quick. And quicker still would be dying in the destruction of the Xul fortress.

But . . . he also wanted to live. While he was alive, there *was* hope, even if it was hope of a chance at odds that made winning the billion-newdollar lottery back before Armageddonfall look like an everyday occurrence.

And he found he was intensely interested in what would happen when *Intrepid* came through that gate, *if* she came through, if the truncated AI navigating her had pulled off its long-range bull's-eye and threaded through the Sirius Gate. It was hard to tell, but the Xul fleet appeared to be slowly reforming itself in front of the Night's Edge Stargate.

They would certainly have a grand view of *Intrepid's* emergence in just another few minutes.

If they survived the destruction of Objective Philadelphia.

The light of a brilliant sun burned at his back, *felt* rather than seen, so bright the light leaked through his visor and through closed eyelids and tingled inside his armor-sheathed body. *Early!* he thought. *It blew five minutes early!* One of the planted charges must have sensed the Xul repair system tinkering with its structure, and detonated.

And then thought itself was swept away by the silently intensifying light. . . .

IST Intrepid

Sirius Star System

Inbound to the Stargate

1131 hrs, TFT

At *Intrepid's* light-dogging speed, five minutes of objective time translated to about three and a half seconds. Plenty of time. For a piece of high-speed software emulating but not copying human thought, three and a half seconds was time enough for some millions of separate routines . . . including a final check of all navigational parameters and a final subtle nudge with the side thrusters to adjust for the latest update on the Sirius Gate's position. The near-empty RM tank was now well ahead of the *Intrepid's* main body, but Quincy₄ adjusted its vector as well through a maser link, using small thrusters mounted around the tank's rim.

He was picking up a steady stream of far-blue-shifted signals from the task force, now, each discrete packet giving very precise navigational data that allowed him to make constant updates to precise course and speed. The toughest part

was extracting useable navigational data from the ring of starlight encircling the *Intrepid's* bow; individual stars were smeared into the circle, and it required some sophisticated computer gymnastics to determine an accurate plot for each.

The Sirius Gate was still quite invisible. Five minutes objective meant he was still five light-minutes out, about half the average distance between Earth and Mars, or between three hundred and four hundred times the distance between Earth and the Moon. The Gate was still invisibly small.

Quincy₄ was incapable of worry, however, as the last couple of objective seconds trickled away. He completed his final correction, then waited. . . .

Assault Group Tripoli
Near Objective Philadelphia
Night's Edge Star System
1135 hrs, TFT

The light had faded almost immediately, but seconds later, something like a powerful gust of wind had caught Garroway from behind and set him tumbling. His suit's external sensors detected a sudden rise in temperature and in radiation.

As he'd hoped, however, his backpack had provided some protection, and he'd drifted far enough that his radiation exposure had been minimal—120 REMs, according to his health monitors. Eventually, with some carefully timed bursts from his maneuvering thrusters, he was able to halt the tumble. The expanding plasma cloud had given him a bit of a shove. Just how much of a shove, how much faster he was moving now, was impossible to judge.

Ahead lay the Night's Edge Stargate. It appeared to be growing larger as he flew toward it, but very slowly. The only way to tell for sure how fast he was going was to bounce a laser rangefinder off of it . . . and he didn't dare with the Xul warships still hanging in the sky.

Instead, he rotated himself once more, looking back at the Xul fortress. The structure had been . . . transformed.

Fully one-third of the sphere had been blown open, and the sky was filled with tumbling, half-molten debris. The remainder of the fortress lay imbedded in a cloud of white-hot plasma, still expanding in utter and deathly silence, and much of the structure appeared to be collapsing in upon itself.

Mission accomplished. . . .

He didn't know how many of the nuclear backpacks had actually detonated. The explosion of one would have automatically triggered the explosion of others, but whether the effects were added together or cancelled one another out was largely a matter of chance. The end result, though, was most satisfactory. The Xul fortress, clearly, had been critically damaged.

Moving his arms and twisting, he turned once more to face the Stargate. The next part of the show was something he definitely wanted to see.

In fact, when it happened, he wasn't certain exactly what he *did* see. One moment, he was looking at the Gate and a half dozen Xul warships, perhaps forty kilometers away. The ships appeared to be maneuvering closer to the opening, were perhaps preparing to move through to the Sirius side.

And then a small sun appeared in empty space, several kilometers from the gate's opening, and in the midst of the Xul fleet. The sun expanded swiftly, intolerably bright, so bright Garroway tried to turn away even as his helmet's optics blanked out the cascade of blinding light.

When he could see again, the Xul ships in front of the Stargate were . . . gone. In their place was a glowing white haze with contrails etched against the black of space, a kind of high energy splash that had exploded out from the Gate's mouth like the blast from a shotgun.

It took a few moments for him to piece together what had happened. *Intrepid* must have emerged from the Stargate at close to the speed of light and collided with one of the Xul battleships. The release of kinetic energy with that collision must have been incalculable. . . .

It also meant that *Seafire* had *failed*. The Marines had gone in to Objective Philadelphia to make sure the converted transport cleared the Gate and made the passage in to

the planet five light-hours further in-system, but the *Intrepid* had collided with a Xul ship.

It had all been for *nothing*. . . .

He tried calling up the collision on his tactical display, however, and immediately saw that something was wrong. There'd been a collision, yes . . . but the liberated energy had been too small by several orders of magnitude for a mass the size of the *Intrepid*—over one hundred thousand tons, plus twenty-five thousand tons of sand. Further, his suit's electronic senses, quicker by far than his own, had detected . . . *something* emerging from the Gate a split instant behind the explosion and passing through it, leaving a ghostly trail of tattered plasma in its wake.

At infrared wavelengths, he could see the contrail clearly, emerging from the shotgun burst and aimed like an arrow toward the heart of the Edge of Night system.

"Way to go, Quincy," he murmured, as he studied the data. *Intrepid* must have come through the Gate in two pieces . . . the jettisoned forward RM tank, two hundred meters wide and massing something like a thousand tons, followed by the rest of the starship. The RM tank had collided with a Xul warship at a hair less than light speed, converting itself and the Xul vessel into plasma and a *great* deal of free energy. An instant later, the rest of *Intrepid*, following along behind the jettisoned tank, had punched through the expanding gas cloud like a bullet through smoke.

That cloud, meanwhile, had billowed out and caught other Xul ships. At infrared wavelengths, Garroway could see them now, radiating fiercely in the energy storm, like brilliant stars. Starships couldn't burn in space, of course, but they could glow white-hot.

They couldn't have known what had hit them.

"Strike Force Alpha," he called, finally breaking radio silence. "Strike Force Alpha. This is Trigger. Does anyone copy?"

Static hissed and crackled in his head. It might be that there was still too much charged plasma enveloping this region of space . . . or everyone's suit electronics might have been fried by the nukes.

But Garroway kept trying. The loneliness, somehow, was lifting, but he still felt an aching need to contact others, other Marines, even if just to share with them a final ooh-rah.

“Strike Force Alpha, this is Trigger. Do you copy? . . .”

IST Intrepid

Sirius Star System

Inbound to the Stargate

1136 hrs, TFT

Intrepid had come through the storm . . . but only just. Quincy₄ completed a full round of systems checks and damage control, rerouting power from the E_v banks to bypass conduits that had been burned away. The encounter had been so brief that even Quincy₄'s high-speed awareness hadn't registered more than a sudden, sharp jolt . . . and then systems had begun shutting down as external hull temperatures soared and the battered transport tried to shake herself to pieces.

Recorders showed what had happened. The RM tank, passing through the Sirius Gate two kilometers ahead of the rest of the ship, had emerged from the Night's Edge Gate and immediately struck something—almost certainly a very large ship in the process of entering the gate connection from the other side.

The collision had vaporized both the tank and the ship, but even a cloud of white-hot gas is as solid as a thick lead wall when you hit it at the speed of light.

One of the peculiarities of relativity is that as an object approaches the speed of light, not only does its mass increase and the passage of time for that object slow, but the length of that object decreases along the direction of travel. In essence, the empty RM tank came through the Gate as a very, *very* flat pancake.

Even so, it still had thickness, as did the empty space inside, and so the impact had occurred in two distinct phases. The initial strike by the top of the RM tank had converted much of the enemy vessel into extremely hot, expanding

gas; the second strike, by the bottom a flicker of an instant later, had punched through the resulting gas cloud, in effect boring a tunnel through that lead wall through which the rest of the *Intrepid* passed a fraction of a second later.

The whole encounter had happened so quickly that even Quincy₄ hadn't been able to follow it. The main body of the *Intrepid* had been two kilometers behind the RM tank, but at near-*c* the transport had crossed that distance in six-millionths of a single second.

Quincy₄ dutifully recorded all available data and transmitted it. Any receivers on the Night's Edge side of the stargates would pick it up. Maybe they—or the higher-level Quincys—could make sense of it.

But analyzing data was not Quincy₄'s mission. At the moment, he had all he could do to hold the battered *Intrepid* together as the ship continued to hurtle into the Night's Edge star system at close to the speed of light.

At that velocity, it would take just over five hours to reach Tripoli objective, but as Quincy₄ was experiencing the passage of time, five hours translated as about three and a half minutes. He had to work fast.

First and foremost, he needed to adjust the hurtling vessel's course slightly; his straight line through the Stargates had brought him out on a vector close to but not *precisely* aligned on the planet designated as Objective Tripoli. Using some of his dwindling stores of reaction mass in the stern tanks, he gave the *Intrepid* a sideways nudge that, in five hours objective, would bring the spacecraft into a direct intersection with the planet . . . or, rather, to the point where the planet would be in another five hours, seventeen minutes, twenty-one seconds, objective.

That final nudge nearly finished the ship. Pieces were falling off, and portions of the exterior hull were molten from the brief passage through a storm of charged particles at near-*c*. The tunnel bored through the gas cloud by the forward RM tank had not, unfortunately, been a perfect vacuum, and a single hydrogen ion, a proton, encountered at light speed, was otherwise known as a cosmic ray.

If there'd been a human crew on board the *Intrepid*, they

all would have been dead now. In fact, it was the danger of encountering stray atoms in the depths of interstellar space at near-*c* that forced starships to adopt their characteristic mushroom shapes, with most of the ship's structure protected behind a huge, water-filled RM tank. The radiation that had blasted through the *Intrepid's* main body during the encounter at the Stargate had melted down much of the outer hull, caused extensive internal damage, especially to unshielded circuitry, and would instantly have killed any organic being on board.

Quincy₄, or, rather, the computer systems housing him inside *Intrepid*, had been well shielded—not by material walls, which would have created storms of cascade radiation when penetrated by the initial, high-speed impacts, but by a powerful electromagnetic shielding, similar to that used by vessels operating within the radiation belts encircling Jupiter or Ishtar's super-Jovian primary, Marduk.

Once *Intrepid* was on course, Quincy₄ began unloading her cargo. The sand loaded on board *Intrepid* in Mars orbit was still stored in its 500-ton canisters, fifty of them attached around the ship's spine. Following the program set for Sequence Three, Quincy₄ released half of *Intrepid's* payload, firing powerful rocket engines that boosted each canister at right angles away from the transport at high acceleration. As soon as all twenty-five canisters were clear, he used up the last of his reaction mass decelerating, hard.

At that velocity, the deceleration wasn't enough to slow him more than a fraction of a percentage point, but, as with the RM tank earlier, it was enough to let the canisters already released drift ahead of the hurtling ship. Long objective seconds followed, as the canisters moved farther out, and then explosive charges on board all of the ejected canisters fired, shredding the containers and scattering their contents in broad, rapidly expanding clouds.

When the last of the RM was gone, *Intrepid* was reduced to a fast-moving hulk. Quincy₄ jettisoned the remaining fifty canisters, giving them just enough boost to clear the ship, then detonating those charges as well. Two clouds of sand and a dead starship were now approaching Objective Tripoli,

the Xul planet, moving at better than 99.9 percent of the speed of light.

The last few seconds trickled away. . . .

Assault Group Tripoli
Near Objective Philadelphia
Night's Edge Star System
1638 hrs, TFT

Garroway continued to drift alone through space. According to his implant time display, it had been five hours now since *Intrepid* had emerged from the Gate. A faint glow still lingered there, marking the destruction of the Xul fleet . . . or most of it. There appeared to be a number of ships still moving in the area, but Garroway wasn't sure if he was really seeing them, or if his eyes were playing tricks on him. With no way of judging scale, those moving points of light might be mile-long Xul behemoths . . . or members of the assault group just a few hundred meters away.

He decided to try again. "Strike Force Alpha, this is Trigger. Do you copy? . . ."

And this time, he got a response. "I . . . copy, Gunnery Sergeant."

"Who is this?" His suit's computer was behaving erratically, and wasn't giving him an ID on the voice.

"Lance Corporal Shra-dach, Gunnery Sergeant."

"Call me 'Gunny.' Shra-dach. You're the Ishtaran who led the attack on that marauder technical." He remembered the young outworlder, how proud he'd been at Garroway's praise.

"Yes, Gunny."

"How you holding up?"

There was a long hesitation. "My suit systems are failing, I think. I still have air and power, but my computers seem to be down."

"Yeah. They probably got fried by the nukes. How about you? Are you hurt?"

"I'm not injured." There was another pause. "Gunny? I'm scared. I don't want to die out here."

"I know," he told the Ishtaran Marine. "I'm scared, too."

"Gunny . . . I want to go home. . . ."

"So do I . . . Nal? You're Nal, right?"

"Yes, Gunny."

"Don't worry, Nal. We're not going to die." He wasn't sure he believed that, yet, but he wanted to. "Not just yet."

"Fucking right we're not going to die," another voice, a woman's voice, a very *familiar* voice, cut in.

"Chrome?"

"Didn't think I'd leave you alone out here, did you?"

"I've been calling for five hours. Where the hell were you?"

"Right here, trying to call you. I think the plasma cloud just finally dispersed enough for our radios to work. Or maybe the suit repair nano finally got around to the burned-out wiring. Dunno."

"It's good to hear you. Is anyone else on the channel?"

"Brunelli here, Gunny. So, we're secured from radio silence?"

"Yeah. We're secured. Anyone else? Sound off, everyone who can hear me!"

"Easley, reporting for duty."

"Ruehe."

"Lippert."

One by one, Marines started checking in. Garroway kept track in his head. Fifty answered the roll. Yount was still with Amory, still unconscious.

And when the last of the fifty sounded off, other voices began chorusing in, the names coming too fast and jumbled for Garroway to keep track. Anderson. Shuster. Danner. Menendez. Hong. Vah-gur. It sounded like a couple of hundred in all. More Marines had escaped the inferno of the Xul fortress's destruction than he'd dared hope.

"So it looks like we did it," Chrome observed. "Objective Philadelphia is a mess."

"So's their fleet," Collesco said. "Didja see when *Intrepid* smashed through? Man, what a show!"

"It's been five hours," Chrome said. "Do you think? . . ."

"The actual strike time won't be for fifteen minutes, yet," he reminded her, "and we won't know how it went for another five hours and seventeen minutes after that. It'll take that long for the light to come all the way back out here."

"So what's the story with Philadelphia?" a nameless voice called from the night. "Why'd they name the fortress that?"

"Yeah," another voice said. "*I'm* from Philly. What . . . the brass doesn't like that town?"

"Don't you jarheads download any military history?" Garroway said. "Barbary Wars. North African coast, in the early 1800s."

"To the shores of Tripoli," Brunelli said. "Like in our anthem."

"That's where it came from," Garroway agreed, "though that line referred to a later action. Early in the fighting, while the U.S. Navy was blockading the Barbary port of Tripoli, our biggest frigate, the U.S.S. *Philadelphia*, ran aground while chasing shallow-draft pirates. The Berbers captured her and took her into Tripoli Harbor, tucked away up close under their fortress walls and shore batteries.

"Our people put together a plan to destroy the *Philadelphia* before she could be used against us. A captured pirate vessel, a sixty-four-ton ketch renamed *Intrepid*, was loaded with sailors—and probably a few Marines—and taken into the harbor, disguised as a local coasting vessel. She pulled up alongside the *Philadelphia*, the boarding party took out the watch, and they set fire to her. *Intrepid* escaped, bringing every man out with her. I think they got away with only one man wounded in the action."

"So that's why they called the Xul station Philadelphia? And we waxed it, didn't we?"

"That we did."

Garroway decided not to add the second part of the story. Six months later, the Navy had sent the *Intrepid* back into Tripoli harbor, under the command of Lieutenant Richard Somers, loaded to the gunwales with explosives. The idea had been to take her in under the walls of the fort, light the fuses, and escape in a small boat. Something had gone

wrong, however, and *Intrepid* had blown to bits while she was still out in the middle of the harbor, killing Somers and his twelve-man crew.

So “Intrepid” was not exactly an auspicious name for Operation Seafire, though the transport’s mission was similar in spirit, if not in technology. He wondered who’d thought up that name . . . and if they’d bothered to research the actual history at all.

Or maybe they’d felt it important to give *Intrepid* a second shot at Tripoli.

He looked toward the orange spark that was the Night’s Edge sun, and wondered if they would be able to see the fireworks when *Intrepid*’s payload struck the planet.

But so much could still go wrong. If the remaining Xul ships around the distant world had been warned of *Intrepid*’s approach, they could easily use their FTL capability to intercept and destroy her, long before she could threaten the planet.

And for the second time in history, *Intrepid* would be blown up before reaching her target.

“Hey, Gunny?” someone said.

“What?”

“Take a look at the Gate! Something’s happening there!”

He looked, blinked, and looked harder. A line of brilliant stars was emerging from the Gate. Some of the other moving stars nearby—Xul ships, almost certainly—appeared to be turning to meet them.

Garroway felt a sharp thrill as he realized what it was he was seeing. That biggest, brightest star must be the *South California*. The others—ten of them—were the frigates and destroyers of the international combined task force. Evidently, they’d sent drones through to reconnoiter after *Intrepid*’s passage, and decided to risk coming through themselves.

Silent flashes of light flared and faded as tactical nukes and antimatter missiles detonated in the vacuum. The surviving Xul ships must have been badly damaged, all of them, because the battle didn’t last long at all. Garroway saw one grow suddenly bright, a tiny sun, then swiftly fade to invisibility.

And other ships were coming through now . . . the Marine transports *Lejeune* and *Henderson*, and a number of F-8 Penetrators.

"Switch on your running lights, people," Garroway called, as cheering began breaking out among the widely scattered Marines. Immediately, two hundred strobe lights began pulsing in the night ahead and around him, beacons guiding the Penetrators in for retrieval.

"Looks like we get to go home after all," Chrome told him.

"Looks like."

The Marines *never* left their own behind.

Never.

21 AUGUST 2323

*Tripoli Command HQ,
IST Henderson
Stargate, Night's Edge Star System
1640 hrs, TFT*

General Garroway stood on *Henderson's* command deck, watching the battle as it unfolded through the main combat control linkage. Battlespace was laid out both within their internal displays and in a holographic projection at the forward end of the compartment, looking much like a traditional viewscreen. The display did not show optical objects, however, but computer-generated graphics suggesting what they might have seen with the aid of superhuman vision, with telescopic magnification, and the ability to see non-optical wavelengths.

The image of Admiral Hugh Gresham stood at his side, hands clasped behind his back. In fact, Gresham was on board the *South California*, several kilometers ahead of the *Henderson*, but the two joint commanders were linked by a special communications net that allowed each to imagine the other was standing on his bridge.

"Satisfactory," Gresham said, seeming to scan the battlespace display. "*Most* satisfactory. Who'd have guessed that it would have been this easy?"

Garroway turned and looked at the holographic projection of his cocommander, eyebrows rising. "Easy? I don't think

I would choose to use that word to describe this operation, Admiral.”

Gresham waved a careless hand. “I mean no disrespect. The contribution by your Marines has been noted. It certainly appears that they succeeded in their part of the mission.”

The man, Garroway thought, had a peculiarly irritating manner—pompous and condescending—but perhaps he couldn’t help it. Hugh Gresham was a ring-knocker out of Annapolis and the scion of a wealthy Virginia dynasty. Political connections had placed him in joint command of Task Force Seafire but, so far, he hadn’t been able to do much damage.

He seemed to be taking the devastation *Intrepid* had wrought on this side of the gate as a personal military victory.

Garroway looked at the graphic image marking the Xul space station, fifty kilometers from the ring of the Stargate. Drones were already returning detailed scans of the wreckage, which appeared to have blown open, then collapsed in upon itself.

It was still collapsing, in fact. Xul ships were known to incorporate small black holes as power sources, and enough damage could make the entire structure fall in upon itself and essentially disappear. That seemed to be what was happening now, as the misshapen sphere continued to shift and fold, as if being eaten away from the inside. The singularity at the heart of the thing must have been microscopic in size, perhaps no more than a few billion tons of mass, but it was growing as the fortress slowly added its own mass to the tiny but insatiable maw.

“They contributed, all right, Admiral,” Garroway said quietly. “They took out Objective Philadelphia. Now it just remains to be seen whether it was enough.”

“The Xul fleet is all but destroyed,” Gresham said. “Our sensor scans indicate that *Intrepid* successfully navigated the blast cloud and continued in-system. She must nearly be at the target by now.”

Garroway checked his inner clock. “Twelve more minutes.”

“So, in five and a half hours, we’ll know for sure, eh? Meanwhile, we’ll mop up what’s left of our Xul friends.”

It could scarcely be called a battle. As the *South California* and her escort of destroyers and frigates had emerged from the Stargate, several Xul vessels had reacted, but sluggishly. Particle beam and laser fire from the Earth flotilla had blown one Xul ship apart, and damaged another. The others, still out of range, appeared to be trying to maneuver clear of the task force. Four Xul hulks drifted nearby, their outer hulls softened and still glowing white-hot, and there was enough debris tumbling through the battlespace area to suggest that several Xul behemoths had been ripped apart by the energies liberated by *Intrepid*’s fast-moving RM tank.

Gresham had already given orders to the smaller units of the task force to deploy ahead and catch the retreating Xul vessels. Flashes of light against the night ahead marked the exchange of fire.

If the battle out there was a walkover, Garroway thought, it was because the Marines had destroyed the fortress. Fifty kilometers off to the side of the Gate, it would not have been touched by *Intrepid*’s spectacular emergence into the system. It would have warned the main Xul fleet at Objective Tripoli, and ended any hope of surprise.

As it was, much could still have gone wrong. If it had, the Xul fleet might yet show up here at the Stargate in the next few minutes, undamaged and ready to step on the annoying primitives who’d just emerged from the Sirius star system.

“General Garroway?” Quincy’s voice said in his head.

“Yes, Quincy. What is it?”

“Two pieces of information. First, we are detecting visual and radio signals from a large number of Marines in the vicinity of Objective Philadelphia. It appears that a large percentage of the Marine strike force survived. We are also picking up retrieval beacons from at least five aerospace fighters, craft that are either damaged or out of fuel, but their pilots are still alive. I have taken the liberty of dispatching rescue vessels to pick them up.”

“Excellent!”

“What was that, General?” Gresham asked.

Garroway hadn't realized he'd spoken aloud, and that Gresham wasn't connected to the command constellation comm link. "Excuse me, Admiral. It appears a good portion of the Marine strike group managed to escape from the fortress. We're picking them up now."

"Ah. Good. Very good."

"What else do you have, Quincy?" he asked silently.

"Gunnery Sergeant Garroway transmitted a message during the operation. The transmission was delayed until they reached the surface, then received and stored by one of our reconnaissance drones. In the message, Gunnery Sergeant Garroway speculates on the quantum nature of Xul technology. He may have provided us with some useful leads."

Outstanding, Travis! he thought. *Way to go!*

"Very well. See that the message reaches the appropriate departments."

"I have already routed the information, General."

Garroway heard a sharp exclamation, and returned his full attention to the battle display. Gresham had just vented a sharp curse. Two of his frigates, *Burnham* and *Guiyang*, had just vanished in sun-brilliant flashes of blue-white energy. The Xul were not as helpless as Gresham had believed, and the battle not at all a foregone conclusion.

The *South California* was already turning her considerable firepower on the Xul ship that had engaged the frigates, however. Antimatter missiles streaked from the battle-cruiser's flanks, twisting in broad arcs that brought them slamming home into the Xul warship's side. Explosions churned through the Xul vessel's guts, opening gaping craters in its hull and sending debris tumbling through space. What was left of the wreckage began folding and twisting, deforming as it collapsed into the black hole at the doomed vessel's heart.

Garroway checked his clock. It was now 1652 hours, and seconds remained before the *Intrepid* was due to reach its target. He found he was holding his breath, half expecting the balance of the enemy fleet to materialize suddenly before them, magical weapons set to sweep the presumptuous Earth flotilla out of the sky.

So far there was nothing . . . nothing but the Xul already here . . . and then the task force was in sole possession of the battlespace.

They would know for sure in another five hours, seventeen minutes.

IST Intrepid
Night's Edge Star System
Inbound to the Stargate
1653 hrs, TFT

Zero Hour . . . Zero Minute . . . Zero Second . . .

The leading cloud of sand had dispersed across a volume of space some fifteen thousand kilometers across, and each individual grain of sand, traveling at over ninety-nine percent of the speed of light, possessed incredible kinetic energy.

How much depended, of course on the original mass of the grain. Sand particles range from .06 millimeter to about 2.1 millimeters in diameter. Quartz has a density of 2.67, so the mass of a grain of sand ranges anywhere from three-tenths of a milligram to about 13 milligrams.

A particle massing 8 milligrams, however—fairly typical—released approximately 360 gigajoules—360 *billion* joules of energy—when it hit something solid.

Three hundred sixty thousand megajoules. That translated to about 72,000 kilograms of high explosive—seventy-two tons.

And there were 12,500 tons of the stuff in the first cloud.

William Blake had written of a world in a grain of sand; he hadn't intended that to mean a world of *hurt* . . .

And based on mass, a single metric ton of sand might contain something on the order of ten to the eleventh individual grains, and pack the equivalent of a 7.2 megaton nuclear explosion. Twelve and a half thousand tons of sand moving at near-*c* carried the destructive power of 90,000 megatons . . . though this first volley was dispersed over a very large area.

And nothing in that volume of space was safe from the incoming storm.

We Who Are
Star System 9113-104
1653 hrs, TFT

The workings of the group mind inhabiting this system high above the Galactic plane were intricate, diverse, far reaching, and extremely sophisticated. If the group mind inhabiting a single Xul huntership was powerful, how much more so was the Mind embracing a world.

Existing both as separate intelligences and as a group gestalt, this local manifestation of We Who Are was stretched across some tens of thousands of kilometers of space, inhabited nearly the entirety of the surface of the planet, the more than two hundred enormous starships orbiting some forty thousand kilometers out, and, most especially, they inhabited the rings, those intricately woven patterns of light and delicate trceries, like a spider's web that circled the world above its equator, at a distance designed so that orbit kept pace with the planet's slow rotation.

This system, numbered 104th in Galactic Sector 9113, was not the original home of the Xul; far from it. The original organic Progenitors had evolved on a world so far away in both space and time that the modern Xul no longer remembered anything about it, not even its original location. In any case, they were above such meaningless trivia, considering the Galaxy as a whole to be their domain, their home.

Quite simply, the Xul never saw the attack coming. They couldn't, since the light that would have warned them of the attacker's approach—or the reflected radar or laser beams scanning local space—was traveling only slightly faster than the enemy vessel itself. As it happened, the Xul did not possess faster-than-light communications, and so could not have been warned by the Xul vessels dispatched to the Star-gate hours before. The fact that they'd been dispatched to the

Gate shortly after the assault on the Guardian Monitor there by warriors of Species 2824 had been due entirely to that most implacable of the gods of the battlefield—chance.

Even if they'd possessed the FTL communicators of the Ancients, however, the Xul would have been in trouble. Though the Mind inhabiting the planetary environs couldn't know it, their flotilla had been overwhelmed by the shotgun blast of energy emerging from the Gate; they were aware that they'd lost contact with the ships dispatched to the Gate, but that had been expected. Those vessels were on their way elsewhere in the Galaxy, to spread to other Xul nodes information collected over the past few cycles . . . including, as it happened, a report on the resurgence of a particularly unpleasant, upstart organic species . . . the one labeled 2824.

Ships and fortresses in orbit about the planet felt the effects first, as savage explosions began to blossom across those portions of their hulls facing the distant Stargate. Within a fraction of a second, sand grains began impacting the delicate tracery of artificial rings encircling it in synchronous orbit and then, another fraction of a second later, the surface of the planet itself.

Starship hulls instantly turned white hot, and the minds within them cried out at the sudden failure of the electronic systems that sustained them. The ring structure began to shred almost at once, as particles traveling at close to light speed detonated with the concussion of over seventy tons of chemical explosive.

The planet itself began to glow.

Normally something the size of a grain of sand would vaporize high above such a world's surface, as friction with the atmosphere set it ablaze. Moving at close to the speed of light, however, these particles had passed all the way through the thin envelope of air before they had time to grow hot. Each liberated to the atmosphere a small amount of its energy—a few percent, perhaps—as heat, and expelled the rest in a single, devastating blast when it encountered solid rock, water, or the nanotechnically converted construction materials making up the cities that occupied so much of the world's surface.

From space, it appeared that an entire hemisphere of the world had just caught fire.

Starships in orbit began to dissolve, their massive armored hulls stripped away in that cascade of fiery destruction. The rings, a titanic feat of engineering, trembled, rippling as if in a high wind as blossoming death ripped through them, and then dissolved in white-hot flame.

And across the surface of the world, cities died, not in a single blast, but in billions of smaller detonations, coming too quickly to be counted or even understood as anything but a continuous eruption of devastation.

By chance, the planet at this point in its orbit about its sun was between the sun and the Stargate, but well to one side; about three-quarters of the incoming particles struck on the planet's nightside, swiftly engulfing the brilliant patterns of city lights on the surface in fast-spreading seas of white energy.

More and more heat was being dumped into the atmosphere with each passing second. Shock and soaring temperatures began stripping the atmosphere from the planet, creating what looked like a glowing cometary tail as gases were blasted out into space, or became so hot and moving so swiftly the individual atoms easily escaped the world's gravity.

On the predominantly day side of the stricken world, the bulk of the planet itself protected the cities, but the air itself seemed to catch fire as a firestorm engulfed the entire hemisphere, sweeping in from the antipodes at many times the speed of sound. At the same time, air on the day side began rushing around the curve of the planet to fill the near vacuum left by the loss of atmosphere on the night side, until the winds howled through rapidly thinning skies at thousands of kilometers per hour, burning as they shrieked.

Within the space of just a handful of seconds, the group Mind of We Who Are had ceased to be. Survivors clung to existence—in deeply buried structures on the day side, and in a very few ships that had been sheltered from the storm by the intervening bulk of the planet.

So stunning, so overwhelming had that onslaught been that

those survivors couldn't even begin to piece together what had happened. Five ships out of almost three hundred had, by chance, been saved by the planet's shadow, and they began to accelerate now, coming around the curve of the planet to investigate the nature of this unprecedented disaster.

And seconds later, the second volley arrived. . . .

IST Intrepid

Night's Edge Star System

Inbound to Objective Tripoli

1653 hrs, TFT

Quincy₄ recorded and transmitted all he could in the final fraction of a second subjective. He couldn't really see very much, as distorted as the heavens were by his speed, and, in any case most of his external sensors had been melted away by this passage through the plasma cloud at the Gate.

Still, he continued to transmit as radio and infrared radiation from just ahead blue-shifted into a dazzling ring of white radiance far brighter than the local sun.

The second cloud of sand had been designed to catch any Xul warships that might have been tucked in close enough behind the planet that they were protected from the sandstorm by the world's bulk. Farther out, out at the synchronous orbit occupied by the rings, there was no escape from the high-energy sandstorm, for the planet's axial tilt with respect to the distant Stargate was steep enough that the entire expanse of the rings had been exposed to the incoming cloud. The use of high-acceleration rockets to disperse the sand canisters before detonating them, and the fact that the cloud had been expanding like the pattern of pellets fired from a shotgun, had ensured that the sand's footprint would be large enough to sweep the rings from one side to the other. The mission planners had not, of course, known that the rings existed when they made their calculations, but they'd sought to sweep the entire volume of space that might be occupied by orbiting Xul starships, orbital bases, or communications satellites.

Quincy₄ couldn't tell how effective those measures had been. Coming in only a few seconds behind the first barrage of sand, he would not have been able to adjust *Intrepid*'s course even if he'd been able to get accurate and updated targeting data.

In any case, the second volley was not nearly so dispersed as the first. It fell in on the devastated planet in a fairly compact cloud a few thousand kilometers across, only a little wider than the planet itself. And in the midst of that cloud was the hundred-thousand-ton mass of the *Intrepid*.

Quincy₄ had just time enough to send a final burst transmission out-system before the *Intrepid* struck the planet with a total yield of almost 5×10^{24} joules . . . force enough to gouge a continent-sized chunk of rock from the world's limb and send it spraying into space.

Tripoli Command HQ,
IST Henderson
Stargate, Night's Edge Star System
2218 hrs, TFT

"Any second now," Admiral Gresham said. "Watch close. . . ."

General Garroway was already watching, as, indeed, was every man and woman on *Henderson*'s bridge. A pattern of recon drones had been sent out and deployed into another huge lens, using interferometry to image the distant planet.

Objective Tripoli appeared at first-quarter phase, a bright crescent bowed away from the orange sun, which was offscreen to the right. The rings were visible as a broad ellipse about three planetary diameters out from the surface.

It was a little eerie, knowing that if *Intrepid* had hit its target, the distant planet was already devastated, had been devastated for over five hours, now, as the light bearing news of the outcome had crawled back out to the Stargate.

And if *Intrepid* had failed . . .

No, Operation Seafire must have worked. Had it not, the

FTL starships of the Xul would be out here by now, mopping up on the task force from Earth.

He smiled at the thought . . . not at the image of disaster, but at the operation name. Seafire was in part an atrocious pun which he'd tacked on to the outline of his original plan when he'd first submitted it.

The sand they were throwing at Objective Tripoli had come from one of the dead sea bottoms of Mars. That planet had been chosen in part because it had a lot of easily accessible sand, and in part because it had a much lower surface gravity than Earth—about one-third G—making it possible to boost the stuff into orbit with an electromagnetic railgun.

But there was also a poetic, a *fitting* justice in the fact that the sand had been dredged from the general area of Cydonia, where the Ancients had built a colony half a million years ago.

A colony then destroyed by the Xul.

The Ancients, through the intelligent species they had engineered, had struck back at the Xul.

As for the pun . . . that lay in the play of the word "sea" with the mathematical symbol "*c*," the speed of light. Seafire, *c*-fire . . . Martian sea-sand hurled at the enemy at the speed of light, bringing down upon the Xul a literal rain of fire.

The dark side of the planet in the holographic display lit up.

"Look at *that*!" The technician at the display controls was exultant. "My God, look at *that*!"

In fact, it happened too quickly for Garroway to be sure of exactly what he was seeing. The strike occurred in two quick pulses. With the first, the entire face of the planet lit up with rapidly spreading patterns of brilliant stars that grew, coalesced, and spread until the entire disk appeared to be on fire, with constant flickerings and flarings of star-bright flashes, light lightning. The ring system also ignited, and appeared to be wafting away into the distance like spider silk above a flame. Just outside of the rings, a pattern of new stars appeared, brightened, faded . . .

Seconds later, the planet grew brighter still, the entire

hemisphere facing the Stargate growing intolerably, dazzlingly bright, brighter than the sun. At the same instant, the upper-right quadrant of the planet's disk seemed to swell, to flare outward . . . then to detach itself, a slow-motion stretching like that of a solar prominence.

Billions of years ago, during the initial formation of the Solar System, a body the size of Mars had struck a much larger mass indirectly, blasting an immense chunk out of the still-molten orb that would one day cool to become the Earth. The impact created a temporary ring system around the infant Earth that, eventually, would coalesce into Earth's Moon.

This, Garroway thought, must be similar to that long-ago drama played out at the dawn of Earth's solar system, except that this time humans, not the chance collision of protoplanets, had been the cause.

What was that ancient line from the Hindu Ramayana . . . the one quoted by Edward Teller, the man who'd invented the hydrogen bomb? *I am become death, the destroyer of worlds.* . . .

Humans, Garroway thought, had just entered a whole new realm, one in which they possessed the power to destroy a planet in an eye's blink.

He wondered if they could be trusted with so awesome a responsibility.

IST Lejeune

Stargate, Night's Edge Star System

2218 hrs, TFT

"We got 'em!" Travis Garroway said, his voice soft. His arm tightened around Chrome's waist. "By God, we *got* 'em!"

They were sitting side by side in *Lejeune's* medical center, watching the download feed on their noumenal displays.

Garroway could still scarcely believe they'd survived. One hundred ninety-three Marines had been plucked from space in the region around the Xul fortress and returned to

the *Lejeune* and the *Henderson*. All were suffering from heavy radiation exposure, accumulated partly from the detonation of their K-94s, but mostly from radiation emitted by the black hole within the Fortress as it devoured the ruined structure. Garroway, Chrome, and eight others were in a processing room, awaiting their turn to go into the medical tanks. The ship's medtechs were ushering them through ten at a time. Soon, they'd be in cybe-hibe once more, as trillions of nanobots swarmed through their bodies, repairing the radiation damage in their cells.

"We'll have to go in close to make sure," Chrome said. "We can't leave a one of the bastards alive."

"I don't know how anybody could survive *that*," Garroway said. He kept watching his internal display, mesmerized by the sight of a huge piece of the planet, turned molten and sent drifting slowly into space by *Intrepid's* impact. He was feeling a bit groggy; they'd given them drugs already, to prepare them for hibernation, and the stuff was starting to take effect.

"Does this mean we won?" Nal asked from a bench on the other side of the room. "That the war's over?"

"Not quite," Chrome told him. "We just Doolittled them."

"'Doolittled?'" Nal said. "I do not know this word. . . ."

"It's not a word," Garroway told him. He glanced at Chrome, then looked back at the Ishtaran Marine. "Three hundred years ago, the United States was attacked by a powerful enemy, people from an island called Japan. The attack just about wrecked the American fleet at a place called Pearl Harbor . . . an ocean fleet, not starships."

"Please . . . 'ocean?'"

"A very, very big body of water on a planetary surface. Anyway, an American Army officer, Colonel Doolittle, came up with a plan to strike back against Japan. A few months after Pearl Harbor, he led a formation of B-25 bombers off of one of our aircraft carriers. These were planes that hadn't been designed for naval operations, see, so the men needed special training to fly off the deck of a carrier." He saw Nal's look of bewilderment, and shrugged. "Anyway, they launched a bombing raid on Japan . . . sixteen aircraft."

"And these bombers destroyed Japan?"

"Uh . . . no. In fact, they didn't do much damage at all."

"Yeah," another man waiting in the compartment with them said. "Just one of our modern aerospace strike fighters today carries as much firepower as, I don't know, two or three thousand of those old bombers."

Garroway looked at the man, then looked again. "Hey . . . you're Maverick, aren't you?"

He looked startled. "Where . . ." Then he grinned. "Virginia. Fighting marauders."

"That's right, sir. So you were part of our aerospace support?"

"Yeah, not that we could do much. The wing got pretty chewed up."

Garroway nodded. "So I heard. How many made it?"

"Four. Including me."

"Shit."

Maverick shrugged. "Hey, that's why they pay us so well."

Garroway wasn't sure whether he was serious or not. Marine base pay was not good compared to most civilian professions, but the fliers did get flight pay on top of their combat pay, and Maverick *was* an officer. Compared to what he and Chrome made, Maverick was rich.

He turned back to Nal. "Anyway, those sixteen B-25s blew up a couple of factories, damaged a rail yard. So far as the Japanese war effort was concerned, it was completely insignificant."

"It did give the Americans a big moral boost, though," Chrome pointed out. "A propaganda victory, if nothing else."

"Yes, and it's possible the attack against the Japanese home islands made them pull back and think for a while. Not long after the Doolittle Raid, the Japanese Imperial fleet suffered a major naval defeat that marked the turning of the war."

"So the Americans did win this war?"

"Oh, yes," Garroway said. "We won. But when Chrome says we Doolittled the Xul, I think she just means that all we did was singe them a little bit. We haven't really *hurt* them."

Hell, we can't even guess yet how big the Xul empire is . . . or if they even have something we could call an empire. There must be thousands of planets like Objective Tripoli, though, and any one of them has enough firepower to turn Earth into a new asteroid belt, once they find us."

"That was why we came here," Chrome said. "To make it so they can't find us."

Garroway could feel his initial elation slipping away. Comparing Operation Seafire to the Doolittle Raid put things sharply into perspective. It was a victory, yes . . . but a very minor one. And a victory that could easily backfire, with terrible consequences for the entire human species.

"Yeah," Maverick agreed. "We just have to hope they haven't spread the word yet about Earth and humans. Otherwise, we could get back to Earth ten years from now and find nothing left at all."

Chrome looked at him, her head tilted. "My, but you're being cheerful. I'd thought you'd be happy about this. We *did* win, after all."

"We did win. For now."

A Navy corpsman entered the compartment. "Okay, ladies, gentlemen," he said cheerfully. "You're up next. Remove all of your clothing and leave it here. We'll pop you into the tanks and in a few short years you'll come out good as new."

Garroway was a little disappointed not to be able to see the rest of the mop-up. Scuttlebutt had it that the task force would be scouring through the Night's Edge star system, looking for Xul holdouts, and a large Marine force was to be inserted into the Stargate in this system. When the task force returned to Sirius, they were going to pull the plug behind them, destroying the local gate and, it was hoped, any clues as to where the attack on Edge of Night had come from.

But he was also exhausted, though some of what he felt might be due to the drugs in his system. It would be so good to sleep. . . .

He began stripping off his utilities.

"So," he said to Chrome. "We have a date in ten years?"

She grinned. "Ten years objective," she said. "*Tonight*, subjective. Assuming the Earth is still there, or course."

“Assuming Earth’s still there.”

“And if it’s not?”

“Hey, there’s always Andromeda. And we’ll still have the Corps.”

Epilogue

15 OCTOBER 2333

*Linked with Interface Shuttle Rutan
Approaching Earth
0915 hrs, GMT*

“Damn, but it’s good to be home,” Travis Garroway said, looking out through the virtual viewscreen across the achingly beautiful curve of azure blue and mottled white that was Earth.

In fact, he was still on board the *Lejeune*, in Earth orbit, but he was linked in with his uncle, who was on board the shuttle en route to Earth. He had a good, solid link, which felt as real as actually being there.

Earth, he saw, with a rush of pent-up relief, *was* still there. He’d known it was, of course, ever since he’d emerged from cybe-hibe the day before, but this was the first time he’d actually *seen* it, even over a virtual reality download.

It looked good.

“Yes, it is,” General Garroway said, leaning back on the circular sofa in the main lounge, studying the view. “I think a lot of us thought we wouldn’t see the place again, one way or another.” He seemed thoughtful.

“So . . . is there a problem, sir?”

“Eh? No. Not at all. They’re ferrying me down there for an awards banquet, you know.”

“So I heard. You and Admiral Gresham are the golden-haired boys, I hear.”

"I suppose you could say that. It's this 'Saviors of the Earth' crap that's bothering me."

"Why's that? You're a hero."

"We're *all* heroes, son. But . . . that's not the point. We're in a war, now, and it's going to last a long time . . . assuming the Xul don't find us. I'm a little concerned about this hysteria on Earth, like we just pulled off the biggest coup since the discovery of fire."

Garroway grinned. "*Seafire*, you mean."

"I guess so."

"So, let 'em lionize you. Because of you, the human race might just have a future after all. We got home from Night's Edge, and Earth was still here, and that means the Xul don't know about us, or don't know where we are, at least. Mission successful."

"Affirmative. But what about the next mission?"

"I don't know. What is it?"

"Neither do I. I just found out they're building those asteroid starships, anyway, to kind of hedge our bets. But the rest of Earth thinks we're going to go back out there and kick the Xul clean out of our Galaxy."

"And maybe we will."

The general looked up at him, then grinned. "*Semper fi*. Anyway . . . I only called to congratulate you. I heard about you and Staff Sergeant O'Meara."

"Shit. How'd you hear about that?" He'd not told *anyone* about their plans for a long-term contract.

"Scuttlebutt. The only human agency that travels faster than light."

"At least for now."

"At least for now." General Garroway nodded. "That reminds me. I'm told the stuff we picked up out at the Edge is going to go a long way toward cracking the light barrier. And that includes your insight, back there in the Fortress. Quincy was able to get a lot out of the Fortress network, too, I'm told. A guy in the Physics lab on the *Henderson* was telling me last night that the human mind is going to be the key to faster-than-light travel, FTL communication, nullification of inertia, everything. The N'mah and the Xul both use some

pretty heavy technology to do that kind of stuff now, but we haven't had a clue as to how to get down to the quantum base state and do it directly. Even the N'mah don't know how they gimmick inertia. Not really. Using Weiji-do, or some form of mental discipline like it, we just might be able to do it some day ourselves."

"How soon?"

The general shrugged. "You can't put breakthroughs on a timetable. But the physics people are saying we should have an FTL drive by the end of the century."

"And then?"

"And then we can start thinking about taking on the Xul on their own terms. And you, my boy, and the Marines of 1MIEU, may have bought us the time necessary to do just that."

Garroway stared at the gorgeous planet spread out beneath them. He was looking forward to seeing it again with his eyes, to walking on its surface, to feeling the breeze on his face.

According to what they were saying on the *Lejeune*, things were a lot better down there now. Ice sheets still covered much of Europe, northern Asia, and the Americas, but the surviving populations had been fighting back against the encroaching ice. Enormous sheets a few atoms thick and coated with a nanoreflector surface had been in geosynchronous orbit for four years, now, reflecting sunlight onto those areas of the planet that needed it. There was talk of building orbital particle accelerators out there, too, which would fire low-power beams into the icecaps, gradually melting them away and reducing the high albedo that currently kept Earth in an icebox.

And they were *building*, building on a scale never before imagined. Nanufactories at L-4 and L-5 were already beginning to turn asteroids into titanic orbital structures that soon would be linked together into a geosynch habitat constructed 36,000 kilometers above the equator and completely encircling the Earth, similar in design to the ring around Objective Tripoli. When complete, it would be able to house many times Earth's current population. In time, in fact, Earth's

surface might be largely uninhabited, with *Homo sapiens* having at last made the transition to a fully technic, fully space-dwelling species.

It was, he thought, Humankind's legacy from the vanished Ancients.

"So, what's ahead for you, General?" he asked.

"I'm not sure. I'm not ready to retire, yet."

"You could run for office."

"Don't be vulgar."

"Why not? You're a hero. And I hear Alena Fortier is the new World Union president."

"That bitch."

"Yeah. The NAU will need someone to keep her at bay. Isn't she the one who'd like to shut down the military entirely?"

"She was. I doubt that she feels that way now, at least publicly. It would be political suicide to criticize the military now."

"Well . . . think about it, sir. We're going to need people leading us who know the score. Who know what we're really up against."

"I'll consider it. How about you?"

"I'm still thinking about it. Chrome and I have some leave coming. We need to see where we stand. I don't want another out-system deployment. Maybe it's time to leave the Corps and do some real work, building."

"Once a Marine, always a Marine. And we do our share of building."

"I know." He looked up from the blue and white sweep of the Earth at the blackness of the sky above, and shuddered. "It's just . . . well, floating out there at Edge of Night, I'd never been that alone in my life. I don't want to ever be that alone again."

"I hear you, Travis. Maybe Earth is where you need to be. At least for a while."

"Yeah. Although . . ."

"What?"

Travis Garroway looked back down at the Earth, spread out beneath the shuttle in azure splendor.

“The more I think about it, the more I think that it’s not Earth that’s home. It’s the Corps.”

“Semper fi, son.”

“Semper fi.”

About the Author

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