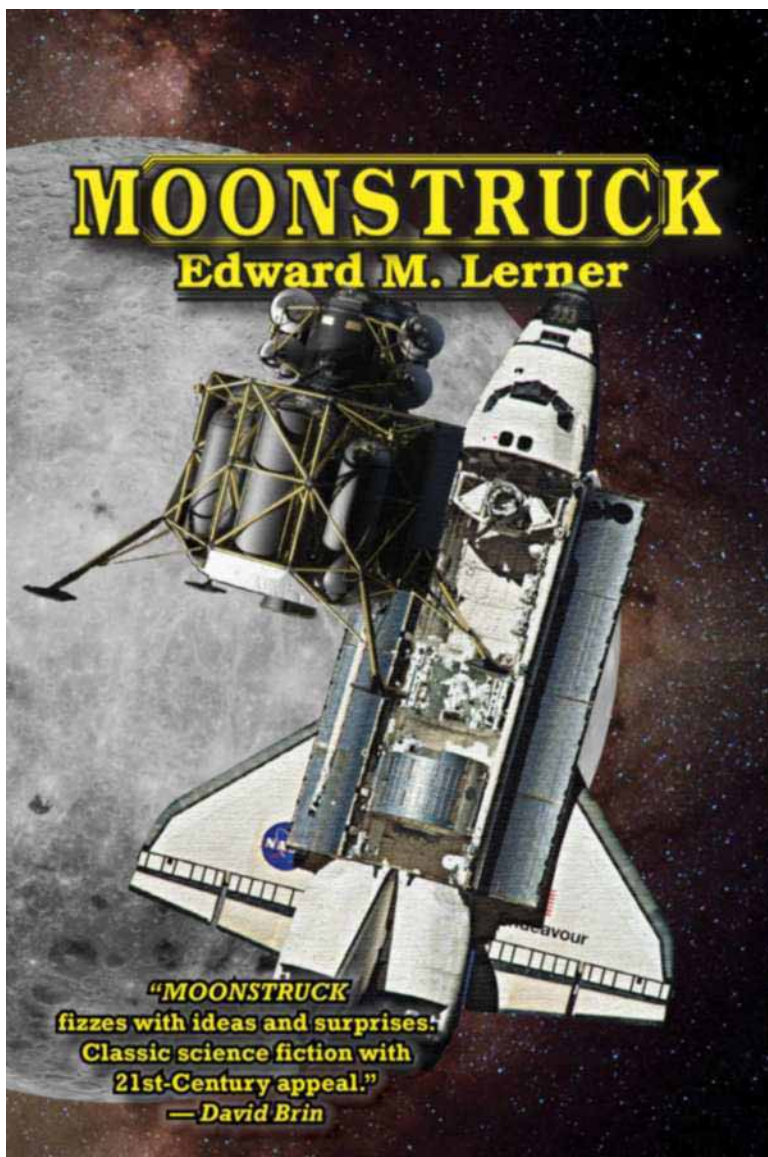


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Books by Edward M. Lerner

Probe *

Moonstruck *

Creative Destruction (collection)

Fools' Experiments

Small Miracles

InterstellarNet: Origins **

InterstellarNet: New Order **

Countdown to Armageddon / A Stranger in Paradise (collection)

With Larry Niven

Fleet of Worlds

Juggler of Worlds

Destroyer of Worlds

Betrayer of Worlds

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Foreword

Through the completion in 1991 of my first novel, *Probe*, my work as a technologist had been mostly in telecomm (at Bell Labs) and large-scale automation systems (at Honeywell). Soon after delivering the final manuscript of *Probe*, I made a major career change. I accepted a position at a major aerospace contractor, Hughes Aircraft, to pursue opportunities within NASA.

Day jobs don't get much cooler for an SF author.

I began *Moonstruck* in 1993, soon after Hughes won a big NASA contract. And after working on *Moonstruck* in fits and starts—I stopped. The new job that was furnishing such great background for science fiction had left me without time to write. Oh, the irony ...

Nearly a decade passed before I got back to it. By then I'd worked in aerospace for seven years. I'd "flown" (and crashed) NASA's space-shuttle training simulator. I'd gone through NASA's space-station-training simulator. I'd met a couple astronauts. (I hadn't yet seen a shuttle launch. That didn't happen, in fact, until a few months ago. Had I delayed much longer, I'd have missed my chance. As I write, a mere three launches remain before NASA retires its shuttle fleet.)

The shuttle *Columbia* met with disaster during reentry in January 2003. I opened *Moonstruck* "a mere three missions into the post-*Columbia* resumption of shuttle flights"—writing while no one knew when (or if) the shuttle fleet's flight hiatus would end. That made *Moonstruck* a near-future novel when I wrote it and an alternate-history novel now. The "future" of the story has, by only a few years, passed, and so you will encounter the occasional anachronism—like VCR rather than TiVo, and

film used as a metaphor, and flat-screen TVs the exception—but nothing to effect the story.

Moonstruck is a novel of First Contact—that is, a story in which humans and aliens first meet. (How's that as a divergence point between the “real” and an alternate timeline?) I first dabbled with First Contact in *Probe*, taking it in a quite different direction. The two novels went to different physical places, too. Having learned much between books about the shuttle and crewed spaceflight, I set major sections of *Moonstruck* off-world.

Leveraging the Earth Observing System part of my NASA experience, *Moonstruck* is also a novel of climactic disaster. (A little carbon dioxide? Trust me, things can be much worse.) And *Moonstruck* was also my first exploration of nanotech, a theme to which I would return—in a very different context—in *Small Miracles* (a few novels later).

In short, by the time I got back to *Moonstruck*, I had lots of ideas yearning to be free.

They're out again and in your hand. Enjoy.

Edward M. Lerner
December, 2010

PROLOGUE

“T minus five minutes, and holding.”

It wasn't even ten in the morning, but the day was already hot. Kyle Gustafson squirted another dollop of sunscreen into his palm, then rubbed his hands together. Smearing it over his face and neck, he grimaced: he reeked of coconut oil. He made a mental note to avoid all open flames until he showered.

Kyle had a Scottish-American mother and a Swedish-American father, a combination that Dad called industrial-strength WASP. He didn't belong below the forty-fifth parallel, let alone outside beneath Cape Canaveral's summer, subtropical sun—but he never missed an opportunity to witness a launch. His job helped: who better than the presidential science advisor to escort visiting foreign dignitaries to Kennedy Space Center?

“You could wear a hat, my friend.”

I look really stupid in hats, Kyle thought. Turning toward his Russian counterpart, he suppressed that answer as impolitic. Instead, he changed the subject. “Sorry for the delay, Sergei. The hold is built into the schedule to allow time for responding to minor glitches.”

“T minus five minutes, and holding.”

His guest said nothing. Sergei Denisovich Arbatov was tall, wiry, and tanned. He'd been born and raised in the Crimea, the Black Sea peninsula once popularly called the Russian Riviera. That nickname had gone out of vogue when the USSR self-destructed, and an independent Ukraine had made it clear that ethnic Russians were no longer welcome. In 1992, Sergei had moved his family to Moscow, where he'd moved up rapidly in the new, democratic government. It wasn't clear to Kyle how Sergei avoided the Muscovite's traditional pallor—unless it was by finagling trips to Florida.

“T minus five minutes, and counting.”

The single-word change in the announcement made Kyle’s pulse race. Across the plain from their vantage point at the VIP launch viewing area, *Atlantis* shimmered through the rising waves of heated air.

The shuttle on Launch Pad 39B stood 184 feet tall, the dartlike body of the orbiter dwarfed by the solid rocket boosters and external fuel tank to which it was attached. All but the tank were white; the expendable metal tank, once also painted white, was now left its natural rust color to reduce takeoff weight by 750 pounds.

“T minus four minutes, thirty seconds, and counting.”

Kyle continued his standard briefing. “The gross weight of the shuttle at launch is about 4.5 million pounds, Sergei. Impressive, don’t you think?”

“Apollo/Saturn V weighed a half again more.” The gray-haired Russian smiled sadly. “We never made it to the moon, and you Americans have forgotten how. I don’t know who disappoints me more.”

Kyle had been thirteen the night of the first moon landing. Afterward, he’d lain awake all night, scheming how he, too, would sometime, somehow, make a giant leap for mankind. The idealist in him still shared Arbatov’s regrets. Many days, only that boy’s dream sustained Kyle through Washington’s game-playing and inanity. *Someday*, he told himself, *he would make it happen*.

Someday seemed never to get closer.

“T minus four minutes, and counting.”

Nervously, Kyle ran his fingers through hair once flame-red. Age had banked the fire with ashes, for a net effect beginning to approach salmon. Too late, he remembered the sunscreen that coated his hands. “We’ll go back, Sergei,” he answered softly, speaking really to himself. “Men will walk again on the moon. Will visit other worlds, too.” He shook off the sudden gloom. “First, though, we’ve got a satellite to launch.”

“T minus three minutes, ten seconds, and counting.” Loudspeakers all around them blared the announcement.

The Earth’s atmosphere is effectively opaque to gamma radiation. In 1991, to begin a whole new era in astronomy, *Atlantis* had delivered the

Gamma Ray Observatory to low Earth orbit. After years of spectacular success, the GRO had had one too many gyroscopes fail. NASA had deorbited it in 2000, in a spectacular but controlled Pacific Ocean crash.

Now another *Atlantis* crew was ready to deploy GRO's replacement. Major Les Griffiths, the mission commander, had proposed that the mission badges on the crew's flight suits read, "Your full-spectrum delivery service." The suggestion was rejected as too flippant. A mere three missions into the post-*Columbia* resumption of shuttle flights, American nerves remained raw.

"*Da.*" Arbatov turned to the distant shuttle. He sounded skeptical. "Then let us watch."

The remaining minutes passed with glacial slowness. Finally, a brilliant spark flashed beneath *Atlantis*. Golden flames lashed at 300,000 gallons of water in the giant heat/sound-suppression trench beside the launch pad, hiding the shuttle in a sudden cloud of steam. Kyle's heart, as always, skipped a beat, anxious for the top of the shuttle to emerge from the fog. A wall of sound more felt than heard washed over them. Faster than he could ever believe possible, no matter how often he saw it, the shuttle shot skyward on a column of fire and smoke. Chase planes in pursuit, it angled eastward and headed out over the ocean. The sound receded to a rumble as he shaded his eyes to watch.

"Kyle!"

The American reluctantly returned his attention to his guest. Arbatov still stared at the disappearing spacecraft, one of the mission-frequency portable radios that Kyle's position had allowed him to commandeer pressed tightly to his ear. Kyle's own radio, turned off, hung from his wrist.

"*Nyet, nyet, nyet!*" shouted the Russian.

The presidential advisor snapped on his own radio. "Roger that," said the pilot. "Abort order acknowledged." The hypercalm, hypercrisp words made Kyle's blood run cold.

A speck atop a distant flame, the shuttle continued its climb. The far-off flame suddenly dimmed; the three main engines had been extinguished. *What the hell was happening?* "Shutdown sequence complete.

Pressure in the ET”—external tank—“still rising. Jettisoning tank and SRBs.” Unseen explosive bolts severed the manned orbiter from the external tank; freed from the massive orbiter, the tank and its still-attached, nonextinguishable, solid-fuel rocket boosters quickly shot clear. The manned orbiter coasted after them, for the moment, on momentum.

Clutching their radios, Kyle and his guest leaned together for reassurance. “Pressure still increasing.”

Light glinted mockingly off the sun-tracking Astronaut Memorial, the granite monolith engraved with the names of astronauts killed in the line of duty. It seemed all too likely that the list was about to grow by five more names.

“Pressure nearing critical.” He recognized the voice from Mission Control. “Report status.”

What pressure? In the ET? Was it about to blow? Two Sea-Air Rescue choppers thundered overhead as he did a quick calculation. *The ET must still contain at least 250,000 gallons of liquid hydrogen!*

“Beginning OMS burn.”

The distant speck regrew a flame—had the orbital-maneuvering-system engines ever been fired before inside the atmosphere?—and began banking toward the coast. Unaided by SRBs, its main engines unusable without the ET, the orbiter seemed to lumber. Seemed mortally wounded. “Suggest my escorts make tracks.”

“Pressure at critical. Crit plus ten. Crit plus twenty. Twenty three. Twenty four.”

An enormous fireball blossomed above the escaping orbiter. From miles away, Kyle saw the craft stagger as the shock wave struck. “Tell Beth that I love her.” The distant flame pinwheeled as *Atlantis* began to tumble. Moments later, the roar and the shock wave of the blast reached the Cape, whipping Kyle and Sergei with a sudden gale of sand and grit. The distant spark extinguished as safety circuits shut down the tumbling craft’s rocket engines.

The orbiter began its long plunge to the sea, with both chase planes diving futilely after it.

Like its mythical namesake, the orbiter *Atlantis* slipped beneath the silent and uncaring waves to meet its fate.

GIFT HORSE

CHAPTER I

Without warning, the Toyota pickup swerved in front of Kyle. He tapped his brakes lightly—this near the I-66 exit to the Beltway, such maneuvers were hardly unexpected—and gave a pro forma honk. The yahoo in the pickup responded with the traditional one-fingered salute. The truck's rear bumper bore the message: Have comments about my driving? Email: biteme@whogivesashit.org.

Such is the state of discourse in the nation's capital.

Sighing, Kyle turned up his radio for the semihourly news summary. There was no preview of this morning's hearing. That was fine with him: he'd never learned to speak in sound bites. If the session made tomorrow's *Washington Post*, his testimony might rate a full paragraph of synopsis.

The good news was: today's topic wasn't the *Atlantis*.

Reliving the disaster in his dreams was hard enough; the science advisor's presence had also become de rigueur for every anti-NASA representative or senator who wanted to use the disaster to justify ending the manned space program. *Challenger*, *Columbia*, and now *Atlantis* ... after three shuttle catastrophes, they spoke for much of the country. By comparison, today's session about technology for improved enforcement of the Clean Air Act would be positively benign.

As traffic crept forward, he tried to use the time to further prepare for the senatorial grilling. He knew the types of questions his boss would have posed to ready him: What would he volunteer in his opening statement? What information needed to be metered out in digestible chunks? Whose home district had a contractor who'd want to bid on the program? Who was likely to leave the session early for other hearings? All the wrong

questions, of course, when Kyle wanted to talk about remote-sensing technology and computing loads. There was too little science in the job of presidential science advisor.

In any event, he had to swing by his basement cranny in the OEOB for last-minute instructions. He turned off his radio, which was in any event unable to compete with the bass booming from the sport ute in the next lane.

The Old Executive Office Building was as far as Kyle got that day—or the next one. About the time he'd traded witticisms with the driver of the Toyota pickup, the emissaries of the Galactic Commonwealth had announced their imminent arrival on Earth by interrupting the TV broadcast of *A.M. America*.



The White House situation room held the humidity and stench of too many occupants. Men and women alike had lost their jackets; abandoned neckties were strewn about like oversized, Technicolor Christmas tinsel. Notepad computers vied for desk space with pizza boxes, burger wrappers, and soda cans.

In clusters of two and three, the crisis team muttered in urgent consultation. A few junior staffers sat exiled in the corners, glued to the TV monitors. Everything was being taped, but everyone wanted to see the aliens' broadcasts live. Watching a new message, even if it differed not a whit from the last twenty, provided momentary diversion from the many uncertainties.

Neither Kyle's PalmPilot nor the remaining pizza had wisdom to offer. He looked up at the entry of Britt Arledge, White House chief of staff and Kyle's boss and mentor. The President's senior aide could have been a poster child for patricians: tall and trim, with chiseled features, icy blue eyes, a furrowed brow, and a full head of silver hair. Within the politico's exterior sat a brilliant, if wholly unscientific, mind. Arledge's forte was recognizing other people's strengths, and building the right team for tackling any problem.

Kyle wondered whether his boss's legendary insight extended to the

Galactics.

“So what have we got?” Britt asked

Kyle parted a path for them through the crowded room to the whiteboard where he'd already summarized the data. The list was short. “Not much, but what we do have is amazing.

“The moon now has its own satellite, and it's two-plus miles across. Not one observatory saw it approaching. Once the broadcasts started and people looked for it, though, there it was.”

Arledge had raised an eyebrow at the object's size. The NASA-led international space station, two orders of magnitude smaller, was still only half built. “But they can see it now.”

Kyle nodded. “It's big enough even for decently equipped amateur astronomers to spot.” Far better views would be available once STI, the Space Telescope Institute in Baltimore, finished computer enhancement of various images. Too bad the supersensitive instruments on the Hubble Space Telescope would be struck blind if it looked so close to the moon. “To no one's great surprise, it doesn't look like anything we've ever seen. Or ever built. The way that it simply *appeared* suggests teleportation or subspace tunneling or some other mode of travel whose underlying physics we can't begin to understand.”

“What else?”

“You've seen the broadcasts, obviously.” At Britt's shrug, Kyle continued. “That's a pretty alien-looking alien. Also, White Sands, Wallops, Jodrell Bank, and Arecibo *all* confirm direct receipt from the moon of the signal that keeps preempting network broadcasts. Overriding network satellite feed, to be precise.

“So far, that's it. I suspect we'll know a lot more soon.”

“Commercial,” called one of the exiles.

At the burst of typing that announced redirection of the signal, everyone turned forward to the projection screen. A famous pitchman vanished from the display almost so quickly as to be subliminal (it was enough to make Kyle think of Jell-o), to be replaced with the increasingly familiar visage of the Galactic spokesman. No one could read the expression on the alien's face, not that anyone knew that the aliens

provided such visual cues, but Kyle found himself liking the creature. What wonderful wit and whimsy to present their announcements only during the commercial breaks.

“Greetings to the people of Earth,” began his(?) message. “I am H’ffl. As the ambassador of the Galactic Commonwealth to your planet, the beautiful world of which we were made aware by your many radio transmissions, I am pleased to announce the arrival of our embassy expedition. We come in peace and fellowship.”

Kyle studied the alien’s image as familiar words repeated. The creature was vaguely centaurian in appearance: six-limbed, with four legs and two arms; one-headed; bilaterally symmetric.

Any resemblance to humans or horses stopped there. His skin was lizardlike: faintly greenish, hairless, and scaled. The legs ended in three-sectioned hooves; the arms in three-fingered claws better suited to fighting than to making or manipulating tools. A wholly unhorselike tail—long, muscular, and bifurcated, with both halves prehensile—appeared to provide counterbalance to the elongated torso. The head had four pairs of eyes, with a vertical pair set every ninety degrees for 360-degree stereoscopic vision. A motionless mouth and three vertically colinear nostrils appeared directly in the torso. The best guess was that H’ffl both spoke and heard through tympanic membranes atop the head.

“Our starship has assumed orbit around your moon. Two days from today, at noon Eastern Standard Time, a landing craft will arrive at Reagan National Airport in Washington, DC.”



The control-tower radar at Reagan National tracked the spacecraft from well off the Atlantic coast to touchdown. The blip was enormous: the “landing craft” was larger than an Air Force C-5 cargo carrier. (That heavy-lift air transport had been dubbed the Galaxy ... *how ironic*, Kyle thought.) Fighters scrambled from Andrews AFB reported a lifting-body configuration: a flattened lower surface in lieu of wings. The turbulence behind the spacecraft, visible to weather radars, suggested powered descent.

The spacecraft swooped into sight, following the twists of the Potomac River as agilely as a radio-controlled model plane. The Air Force officer to Kyle's right scowled. "What's the matter, Colonel? You'd rather they fly over the city?"

"I'd rather that their ship wasn't so maneuverable."

Comparing capabilities? Kyle recalled the size of the mother ship in lunar orbit, and stifled a laugh.

Civil air traffic had been diverted to Dulles International; the Galactic vessel shot arrowlike to the center of the deserted field, settling onto the X of two intersecting runways. A mighty cheer arose from the throng that nothing short of martial law *might* have kept away. The shouts faded into an awkward hush as thousands realized that nothing was happening.

Kyle hurried to the tower elevator, descending to join the coterie of welcoming dignitaries. They were already boarding the limos that would drive them to the Galactics' vessel. He wound up in the last car, between a deputy undersecretary of State and an aide to the National Security Advisor. The woman from Foggy Bottom studied papers from her briefcase.

Stepping from the car, Kyle obtained some new data: the concrete beneath the landing legs of the spacecraft was broken. That thing was *heavy*. The shout of greeting must have drowned out the report of the runway cracking.

The welcoming party formed two concentric arcs facing the spacecraft, heavy hitters up front, aides and adjutants in back. Kyle took a spot in the second tier, vaguely pleased with his position: his craning at the ship was less obtrusive this way.

Away from the crowd, only the creaks and groans of the ship cooling down from the heat of reentry broke the silence. The sun beat down unmercifully. Kyle tried to memorize details of the ship—shape and proportion, aerodynamic control surfaces, view ports, thrusters and main engines, antennae—even though photographers around the airport and in helicopters overhead were busily capturing everything with telephoto lenses. Sensors hastily installed in the limos were measuring and recording any radiation from the ship.

His overriding impression was one of age, that this ship had been around for a while. Why? After a moment's thought, he focused his attention on the skin of the ship. Under the cloudless noon sky, not a bit of surface glinted. He wasn't close enough to be sure, but the shadowed underbelly of the ship seemed finely pitted. How many years of solar wind had it withstood? How many collisions with the tenuous matter of the interstellar void? Beside him, the diplomats were absorbed in their own unanswered, perhaps unanswerable, questions.

And then, at long last, with soundless ease, a wide ramp began its descent from the underside of the alien ship.

CHAPTER 2

The ramp struck the concrete runway with a solid *thunk*. The walkway faced about 20 degrees away from the crowd, a shallow enough angle that no one moved. Necks twisted and craned slightly toward the shadowed opening. An inner door—an airlock port?—remained closed.

Kyle snuck a peek at the meter in his pocket. The counter showed an increase in radiation levels since the ramp had descended, but not enough to worry about. Still, he chided himself for losing the argument that the welcoming party wear dosimeters. That battle lost, he'd done the best he could: the meter in his coat would beep if his cumulative exposure exceeded a preset threshold.

Inference one, he thought, eyeing once more the cracked runway. *Radiation plus massive weight, enough weight for a major amount of shielding, denote nuclear power.* Then a sharp intake of breath from the diplomat beside him returned Kyle's attention to the ramp. As he watched, the airlock door cycled silently open.

Four aliens cantered down the incline, their scales iridescent in the sunlight. The ramp boomed under thudding hooves, with a tone that reminded Kyle of ceramic. The creatures halted on the runway at the base of the ramp. For clothing, each wore only a many-pocketed belt from which hung a larger sack like a Scottish sporran. Only slight variations in skin tone, all shades of light green, differentiated them. Each

had about twelve inches on Kyle, himself a six-footer.

The aliens didn't turn toward the human dignitaries. If rude by human standards, the position nonetheless made sense: a face-to-face stance would have given a good view to only one pair of eyes. *They're not human*, Kyle reminded himself. *For them to act like us would be strange.*

One of the aliens walked slowly toward the awaiting humans. Pads on the bottom of his hooves rasped against concrete. Extending both arms, hands open, palms upward, the alien stopped directly in front of Harold Shively Robeson.

"Thank you for meeting me, Mr. President," said the creature, the bass voice rumbling eerily from the top of his head. "I am Ambassador H'ffl. I bring you greetings from the Galactic Commonwealth."

The President reached out and clasped one of the alien's hands. "On behalf of the people of America and planet Earth, welcome."



So many mysteries; so little time.

Kyle stood in the White House basement command post of the science-analysis team. There was no place on Earth he'd rather be, except possibly upstairs in the Oval Office where the President and sundry diplomats met with the F'thk themselves. Should he be here, helping to make sense of what data they already had, or there trying to gather more? The obvious answer was: yes.

"How's it going?"

He'd been staring at a wall covered with Post-It notes. Each paper square bore, in scribbled form, one comment about the aliens. As he turned to the doorway where Britt Arledge had appeared, one of the drafted wizards from DOE did yet another reshuffle of the stickies. Two more squares, green ones, denoting inferences, appeared between the rearranged yellow factoids. One of the relocated squares, its adhesive dissipated by too many moves, fluttered to the floor. A secretary scurried over to rewrite its content on a new sheet.

Kyle gestured over his red-eyed boss, wondering who looked more exhausted. "We're learning."

Britt nodded; it was all the encouragement Kyle needed. “For starters, our guests have a fusion reactor aboard their landing craft. That technology alone would be invaluable.”

“Is that so?” The response was nearly monotonic; Arledge seemed singularly unimpressed. “The F’thk didn’t mention that.”

“Gotta be.” Kyle warmed to his subject. The meter he’d taken to National hadn’t differentiated between types of radiation, but the gear he’d had stowed aboard the limos was far more sophisticated. The drivers, following his instructions, had parked the cars in positions well spaced around the spaceship. “There’s definite neutron flux at the back of the ship and magnetic fringing like from a tokamak quadrupole.”

“Uh-huh.”

“Magnetic-bottle technology to contain the plasma, and lots of shielding to protect the crew. Tons and tons of shielding, Britt. You saw what their ship did to the runway.”

“Okay.”

“On our own, we *may* have practical fusion in fifty years.” Thinking, suddenly, of the distant mother ship, two-plus miles across, he nervously ran both hands through his hair. “Momma must have one big fusion reactor aboard.”

“Oh, I doubt it,” said Britt, a cat-who-ate-the-canary grin lighting his tired face. “My friend H’ffl says it uses matter-to-energy conversion. He wondered if we have antimatter.”

Antimatter! No wonder Arledge was so unimpressed by his own news. “Fleetingly, for research, and then only a few subatomic particles at a time. Nothing you could power a spaceship with.” Or a light bulb, for that matter. A flurry of new Post-It notes suggestive of more progress distracted him. “What was that?”

“I asked, is antimatter dangerous? H’ffl says it’s standard practice to park antimatter-powered vessels in the gravity well of an uninhabited moon when near an inhabited planet. Something about protecting against the remote likelihood of a mishap. Does it make sense for them to keep the mother ship out by the moon?”

“Yes, it’s dangerous, and I don’t know. Equal amounts of matter and

antimatter *do* convert totally to energy, at efficiencies far greater than fission or fusion. Orbit just a thousand miles above Earth, though, and there's no atmosphere whatever. No friction. Even without engines, a ship would circle forever. If, for some reason, it blew up, there'd be beaucoup radiation, but nothing—I should do some calculations to confirm this—nothing the atmosphere wouldn't effectively block.

“So, no, I don't see any reason to stay a quarter-million miles away. Then, what do *I* know? It's not like Earth has technology remotely like theirs.”

The chief of staff persisted. “Is the mother ship a danger where it is? What if it crashed on the moon?”

“A really big crater, as if one more would matter. The point is that won't happen. The moon has no atmosphere. Any orbit higher than the tallest lunar mountain should last forever.” Kyle had fudged a bit for effect: given enough time, he suspected, gravitational perturbations from lunar mascons or other planets, or tidal effects of the Earth, or solar wind would have disastrous effects on an orbit that low. None of which applied, in less than geological time, to the altitude at which the F'thk ship actually orbited the moon. One glance through a telescope had convinced him that the mother ship wasn't ever meant to land.

“The President will be relieved.”

When had the Post-It notes stretched around to a second wall? “What else can I tell you?”

“Nothing, really—I was mostly making conversation. I actually came by to invite you to dinner.” He waved off Kyle's protest. “A state dinner, upstairs, tonight at eight. Perhaps Ambassador H'ffl or one of his companions can enlighten you on F'thk orbital preferences.”



Something was odd about the ballroom, thought Kyle, something other than the green aliens making chit-chat with Washington's elite. What was it? He settled, at last, on the absence of hors d'oeuvres. The F'thk would not eat in public: they said that trace elements in their food were toxic to terrestrial life. White House protocol officers had then decreed that the

humans wouldn't eat either.

Some dinner! He wished someone had mentioned this decision before he'd arrived. He'd gone home to change into a tux; any nuke 'n puke meal from his freezer, if not up to White House banquet standards, still would've beaten fasting.

He sipped his wine; the F'thk with whom he and a gaggle of civil servants were talking held tightly to a glass of water. The microcassette recorder in Kyle's pocket was hopefully catching the entire conversation. If not, well, he'd handed out others.

"You've been very quiet, Dr. Gustafson. I'd expected more curiosity from a man in your position."

Kyle needed a moment to realize that the comment had come from the alien. Earth's radio and TV broadcasts had served not only as beacons but also as language tutorials—lessons the F'thk had learned extremely well. "Lack of curiosity is not the problem, K'ddl." Despite his best efforts, a hint of vowel crept into the name. "Quite the opposite. I have so many questions that I don't know where to begin."

"Oh, God," whispered a State Department staffer behind him. "He's going to babble in nanobytes per quark volt."

Kyle ignored the crack, his mind still wrestling with the afternoon's conversation about the mother ship. "I'm puzzled about one thing. Why keep the F'thk mother ship in lunar orbit? It seems excessively cautious."

Swelling violins from the chamber orchestra—*Mozart*, Kyle thought—drowned out the alien's response. He shrugged reflexively, realizing even as he did it how foolish it was to expect the alien to understand the gesture.

Except K'ddl did. "I said, it's not F'thk. The mother ship is Aie'eel-built. They fly it, as well." The alien made a periodic rasping noise which, Kyle decided, must be a form of laughter. "You thought it coincidental that the Commonwealth's representatives were so humanlike? You would consider the Aie'eel so many headless, methane-breathing frogs. The Zxk'tl and the #\$\$%^&"—Kyle couldn't even begin to organize that last sound burst into English letters—"and other crew species aboard the mother ship would seem less human still.

“We F’tlk were chosen as the emissary species because we so closely resemble you. We are accustomed to similar gravity, temperature, sunlight, and atmosphere.” He hoisted his still filled glass and took a drink. “We are even both water-based.”

That was when too much wine on an empty stomach betrayed Kyle. The room spun. His ears rang. Visions of ... things ... too inhuman even to lend themselves to description assailed him. All thought of orbits and exotic energy sources fled. He missed entirely the last comment K’d dl made before turning his attention to another White House guest.

The tape recorder in Kyle’s pocket, however, was made of sterner stuff. K’d dl had added, “I do not wish to offend, but no F’tlk would ever invent such dark nights or such a paltry number of moons.”



Two sandwiches and four cups of coffee later, Kyle felt almost himself again. He ignored the disapproving sniffs of the White House chef. It was unclear, in any event, whether the criticism dealt with Kyle’s plebeian taste for peanut butter or his part in that afternoon’s delivery to the kitchen of so much bulky equipment. So many instrument-covered counters ... perhaps it was just as well that dinner for three hundred had been canceled.

A Secret Service agent turned waiter for the evening came through the double doors, a single half-empty glass on his tray. “One of the aliens set this down. K’d dl I think, but I can’t really tell ’em apart yet. Sorry it wasn’t any fuller.”

Kyle nodded his thanks. “Doesn’t matter. It’s more than we need.” He tore the sterile wrapper from an eyedropper, then extracted a few milliliters from the alien’s glass. The sample went into an automated mass spectrometer.

The analyzer beeped as it completed its tests. The color display lit up, chemical names and their concentrations scrolling down the screen. Water. Very dilute carbonic acid: carbon dioxide in solution, basic fizz. Traces of calcium and magnesium salts. Kyle compared the list to a sample taken before the aliens had arrived. As best he could tell, the

glass contained pure Perrier.

“Kyle?”

He turned to the casually dressed engineer, a friend from the nearby Naval Research Labs, who’d spent the evening in the kitchen. “Yeah, Larry?”

“The air samples are different.” To an eyebrow raised in interrogation, Larry added, “Check the plots yourself.”

Kyle rolled out two strip charts, one annotated “6:05 p.m.” and the other “9:00 p.m.” Spikes of unrecognized complex hydrocarbons appeared on only the later sheet. If what passed for alien saliva held no trace of metabolic toxins, apparently their exhalations did. Still, the nine-o’clock spike seemed somehow familiar.

Ah.

“Can I bum a cigarette, Lar, and a match?” Kyle lit up clumsily, almost choking as he inhaled. Waving away the suddenly solicitous engineer, he took a more cautious drag. He directed part of this lungful into a test tube, which he quickly stoppered.

Larry, catching on quickly, ran the latest sample through the mass spectrometer. The resulting strip chart, marked “10:11 p.m.,” soon lay beside the others.

The evening’s addition to the White House air was simply tobacco smoke. Whatever toxins the aliens ate didn’t appear in their breath, either.

Kyle poured a fresh cup of coffee, only in part to wash the unaccustomed and unwelcome smoke residues from his mouth. He also hoped for a caffeine jolt to settle jangled nerves. First, the conundrum about the aliens’ inconvenient orbit around the moon; now, undetectable toxins.

He wondered when, or if, his study of the aliens would begin to make sense.

CHAPTER 3

H'ffl Is Father of My Baby

—*National Investigator*

UFO Sightings Precede F'thk "Arrival"

—*Star Inquirer*

Satyr-like F'thk Are Devil's Spawn

—*yesterday's most popular dialogue on the
Modern Revelations News Group, AmericaNet*

F'thk Evaluate Earth for Commonwealth
Membership

—*Washington Post*

Between two parallel lines of the Marine honor guard, a ramp descended from the Galactics' ship. What looked like a Hovercraft floated down the incline, any noise that it may have been making drowned out by the crowd. Four F'thk and a large cylindrical object filled the house-sized vehicle's open rear deck. The one-way glass of the front compartment gave no clues as to the species of the driver. From the shortness of the cab, it seemed unlikely that the driver was another F'thk. Then again, maybe there was no driver.

At a stately ten miles per hour, the craft slid across the runway toward the George Washington Parkway. Four Secret Service cars pulled out in front of it; limos and more Secret Service fell in behind to complete the motorcade.

At that speed, it'd be a while before the aliens arrived here at the Mall. Kyle moved the inset TV window to the back of the palmtop computer's display before turning to his companion.

Darlene Lyons was quietly attractive, with twinkling brown eyes, a daintily upturned nose, and full lips slightly parted in a smile. In faded jeans and an even more faded Metallica T-shirt, her black hair flowing to the small of her back, she looked not at all like the business-suited and bunned diplomat with whom he'd shared a limo to the airport on Landing Day. Then again, it wasn't as if he routinely wore cutoffs, a sleeveless sweatshirt, and an Orioles cap to the OEOB. Alas.

"I'm glad you joined me."

"I'm glad you asked. You were right, too. I'll learn a lot more watching people during the ceremony than seeing it live myself." She raked both hands, fingers splayed, through her lustrous hair. "Though I wouldn't have minded selling my ticket for the grandstands."

Laughing, Kyle tapped a query into the comp. As they watched, the bid on eBay for a bleacher seat popped up another \$300, to over fifteen grand. "I don't think the Secret Service would've gone for either of us scalping a seat on the presidential reviewing stand. Besides, this way I'll have something to tell my folks the next time they try to impress me with having been at Woodstock."

Another reason went unstated. For the soon-to-be-appointed head of the soon-to-be-announced Presidential Commission on Galactic Studies, today was probably his last chance to get an unfiltered assessment of the public's mood.

As far as the eye or network helicopters *thp-thp-thp*-ing overhead could see, the Mall was packed. There would be other ceremonies like today's, of course, celebrations all around the world—Tiananmen Square tomorrow, Red Square the next day, Jardin de Tuileries the day after that—but today was different. Today was the first. Kyle and Darlene wanted to be in it, not just watching it. Judging from the crowd, much of the Eastern Seaboard had felt the same way.

He offered an elbow. "Shall we mingle?"

Giving only a snort in response, whether to the anachronistic ges-

ture or the impracticality of walking side by side through the crowd, he couldn't tell, she plunged ahead. He hastened after. Only by heading away from the National Gallery of Art, in front of which the Fellowship Station was to be placed, were they able to make slow progress.

"...Growing up as a ..." "... Incalculable opportunity ..." "...Soulless monsters..." "...Food around here?" "Devils..." "...To the stars?" Bits of conversation rose and fell randomly from the milling, murmuring crowd.

Devils and monsters? "Wait a sec." Kyle pivoted slowly, listening in vain for more of one conversation. "Did you hear someone mention monsters?" She shook her head.

He dug the computer out of his pocket. A few finger taps retrieved the sampling of today's headlines that had been radio-downlinked from the White House's intranet. He grunted as the tabloid headlines rolled into view. He'd come here to learn, and he had: however inventive these nutty headlines were, there really were people who believed them. A double tap on the AmericaNet entry made him blink in surprise: 547 postings just yesterday to the Modern Revelations news group. A quick scribble with the stylus across the touch screen, "F'thk OR alien OR galactic" matched only 403 of these entries; "monster OR creature OR devil OR demon OR satan" yielded 516 entries. Wondering if he'd missed any synonyms, Kyle wrote himself a softcopy note to check out this news group.

A roar arose from across the Mall. The crowd pivoted toward the National Gallery, aligning itself to the north like so many iron filings. People all around them retrieved their radios, portable TVs, and pocket comps. As one, they turned the volume settings to max.

Once more, the aliens had arrived.

The Hovercraft coasted gracefully to a halt at the presidential reviewing stand. A ramp slid from the deck area. A F'thk (Kyle couldn't decide from the small screen if it was one that he'd met) guided the cylindrical Fellowship Station down the slope. No longer partially obscured by the side of the Hovercraft, the cylinder could now be seen to have a flared base, a skirt for containing its own air cushion, perhaps. To yet one

more cheer, the cylinder settled to rest on the grassy surface of the Mall.

As the President completed his words of welcome and introduction, Darlene poked Kyle with a sharp finger. “Coming to Washington first. Odd, don’t you think?”

His home VCR was taping everything anyway. “So? They’ll see other capitals, meet other heads of state at other ceremonies, starting with Chairman Chang tomorrow in Beijing.”

“They’ve picked favorites, or seemed to, by coming to Washington, first. Why not New York and the UN?”

“Maybe they didn’t know about it.”

“Yeah, right. They speak perfect English—and French, Spanish, German, and Russian. People I respect say their Mandarin, Japanese, and Hindi are just as good. They made themselves folk heroes by interrupting only commercials. You really think they never heard of the United Nations?”

“You don’t buy that?”

“Hardly.”

“Does everyone at Foggy Bottom feel this way?”

Her look of disgust was eloquent.

So ... someone who didn’t take the aliens at face value. Someone whose thinking was, at the same time, orthogonal to his own. Kyle made a snap decision. “Congratulations.”

“For what?”

For being selected a member of the Presidential Commission on Galactic Studies. Trying to look enigmatic, he turned back to his computer screen, on which Ambassador H’ffl had just appeared.

“Ask me tomorrow.”



After speaking of fellowship and galactic unity for fifteen minutes, Ambassador H’ffl extended an arm toward the just-dedicated Fellowship Station. In one smooth motion, a talon sliced through the ribbon and depressed the single control button. The crowd didn’t go silent, that was too much to expect from what the media now estimated at 720,000

people, but there was a decided abatement of the din. An inset door in the station slid aside. H'ffl removed something that sparkled in the sunlight and handed it to President Robeson.

“On behalf of the Commonwealth, I offer you this orb, symbol of galactic unity. May the peoples of Earth soon qualify for membership.”

Renewed cheering drowned out much of the President's response. As Kyle and Darlene watched, H'ffl and his associates presented one orb after another to the assembled dignitaries. A phalanx of Secret Service agents, Park Service police, and DC cops held back the crowd while the VIPs filed back to their limos. Honking as it went, the motorcade receded.

Darlene and Kyle were among the lucky ones: they reached the Fellowship Station and received their orbs in only a bit over five hours. Each was an ever-changing crystalline sphere, resting in a metallic bowl atop a ceramic pedestal. It seemed a nice enough souvenir, if hardly worth the hoopla.



The next morning, an exhausted Kyle found an orb waiting on his desk. The note left beneath the galactic memento read: *When I told H'ffl about your new duties, he insisted that you get one of these. Britt.*

Continued in...
MOONSTRUCK

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