Traveling a hundred times as fast as Apollo, the nearest star is a millennium away. What if aliens from there tried to come here? A lot can go wrong in a thousand years. An interstellar probe decelerates into earth orbit. Nothing happens. An astronaut team discovers why. Its crew died in transit. Exposed to whatever killed the aliens, can NASA let the explorers come home? Quarantined and running out of air, how can they survive?

**Dead Astronauts**

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Interstellar Flight

If Moses had launched the Lost Tribe of Israel into space at Apollo speeds, they would be a quarter of a light year away today. They would still need another eighty thousand years to reach our nearest neighbor star. A lot can go wrong in eighty thousand years.

If Moses could have launched them ten times as fast, they would be over halfway there by now. At a hundred times as fast, the trip would still last the better part of a millennium.

Moses couldn’t do that then. We can’t do it now. Maybe our neighbors could. What if they do? Even a thousand years can be a long time. A lot could happen along the way.

An interstellar probe decelerates into earth orbit. Nothing happens. An astronaut team discovers why. Its crew died in transit. Exposed to whatever killed them and coming down with something, can NASA let the astronauts come home? Quarantined and running out of air, how long can they last?
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CHAPTER 1

He’d never make general after this fiasco. Colonel Rex Stone watched the horizon swallow the glowing asteroid. He’d be on the dark side of the planet; his instruments would just miss the event of the millennium. For months, the world had watched the strange object hurtling out of the southern sky. Within an hour, it would thread the needle between the earth and its moon. Closest approach would occur on the other side of the planet. By the time his International Space Station swung around again, the alien object would be halfway back to the moon.

 Lesser instruments in better positions were on-line waiting for the asteroid. Army flying telescopes were filming from peak altitudes; Navy radar was staring straight up. They’d get the best data; the Air Force would get the dregs they left behind.

 The wall of monitors taunted him. The Space Station displays were blank; his premier instrument would see nothing. Rex shook his head. This wouldn’t happen with a modern Space Force—one ready to deploy anywhere anytime.

 Live television feed on the top left screen still showed Rex at the command console. Clean cut, crew cut—he approved. He was the image of his boyhood idol, John Glenn the astronaut/senator who had nominated him to the Air Force Academy. The piercing brown eyes of a younger fighter pilot screamed his intelligence. Thank God for Botox! Here was the picture of a charismatic leader. If the mission had succeeded, they’d have had to make him a general—the first general of the new Space Force.

 A dot, blue like a natural gas flame, jittered in the centers of a few monitors. Live coverage shifted to a split screen. White stars streaked across black backgrounds as the cameras tracked the asteroid.

 At last, the Hubble Telescope display lit up. A couple of hours of Hubble viewing time for Rex’s mission had taken Congressional
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intervention. NASA had negotiated a package deal: Dawn Thomas and their telescope. She was Hubble’s mother. Officially, Dr. Dawn Thomas was the Hubble Chief Scientist; no one fed anything to her telescope without her approval. Rumor had it she’d responded, “Especially not some over-the-hill fighter jock…” to Rex’s mission proposal. She’d rather do it herself. Her Hubble Telescope was the only mission item not under his direct command.

Dawn had sat right there beside him withholding her instrument until the last possible second—allegedly to conserve cooling. She claimed the telescope had trouble looking so near the sun.

A fuzzy three-lobed clump filled the picture before it flashed white. “Oh great!” Rex slapped the Hubble monitor. It didn’t respond. After all that, Dawn must have pointed the damn thing at the sun, he thought. Then he noticed the other screens: they were white too. “Must have exploded again—and we missed it,” he grumbled. It had happened a couple of times out there in deep space. When the object impacted something, its xenon plasma sheath had erupted. With all the clutter of near space, he had warned them another collision was inevitable. They should have been prepared.

“Let me take a look.” Dawn pushed off and floated closer to squint at the yellow numbers scrolling across the white images. “I think my guy is out for the duration.” She thumped the Hubble screen. “How long before yours recover, Colonel?”


“Army! Air Force! Who cares?” She threw up her hands. “Can they get anything?”

“Visible cameras were last minute add-ons to the Airborne Surveillance Testbed,” he said, “the AST technicians probably aren’t proficient with the new equipment yet. We may have to wait for our guys downrange. Maybe they can get some pictures after AST hands off to them.”

Dawn pointed at the bottom row of screens. “Radar is still getting something.”

“Just a big blob, that’s all. The plasma bubble got bigger when the target blew up; they still can’t see inside.”

“Can you blow the radar image up?” she asked.
“Sure.” Rex bent over his console and clicked his way through to the radar image control panels.
Dawn studied the lumpy cloud filling half the screen. “It looks like a Valentine. Can you bring us in tighter?”
The cloud wafted to the right. “Better not, I’m losing it already.” Rex switched back to the wider view; the blob was fainter and drifting off-center. “They’re sluing too fast.” Radar went blank.
More monitors switched on. The baton had passed; the second tier observers were searching. White dots traced arcs on black backgrounds. The whole wall displayed an empty sky.
“Colonel Stone,” a thick accent in his earphones intruded, “this is Moscow Control: ground facilities have lost your target.”
“We noticed,” he muttered.
“They are attempting to reacquire—“
“The Station will be in position to support the search in forty minutes. Request permission to—“
“You are authorized to proceed at your own discretion.” Moscow’s transmission ended.
Dawn’s taunt echoed Rex’s thoughts. “How do you lose something that big?”
“I don’t know. It veered off the trajectory I calculated.”
“How could it? It’s undergraduate orbital mechanics.”
“It’s not that simple. This thing falls up.“
She turned and looked at him like something that had just crawled out of her salad. “Huh?”
“There’s more than simple gravity going on out there. When the asteroid decelerated into the sun, it was falling up. Besides, it must have hit something out there—something big.”
“Could it have shattered?” she suggested.
“We may never know. With the Space Station on the wrong side of the planet, we had to put in the second string. If we’d had the space plane, we could have put right equipment in the right place at the right time.”

Rex watched Dawn push off the ceiling and drift back to her console. “Whatever,” she mumbled. She bent over the keyboard redirecting her instrument to scan for the lost body.
Asteroid rise was minutes away. If the target followed the predicted trajectory, it should appear in the northern sky as they rounded the earth. If the explosion had knocked it off course, it would still be in the neighborhood somewhere. How far could it stray in forty-five minutes?

He’d search for it. Rex had commandeered every instrument that could be turned to look above the horizon. The Mission to Planet Earth would have to stand down; it was an all-astronomy day. The Station’s five geologists could catch up on their data, or their sleep, or their housekeeping. He and Dawn were in charge.

The shocked asteroid would be glowing at a few violet and ultraviolet wavelengths. Rex would have liked to scan the sky for those colors and see the asteroid’s distinctive glow against a vanilla background. The hyperspectral telescopes weren’t that user-friendly. They were programmed for a snail’s pace search at a hundred wavelengths. The lost asteroid would be faint, moving fast, and shining through the stratosphere: he’d never find it that way—that took too many photons. Too many photons took too much time. He programmed a broadband sky survey. The asteroid—or whatever was left of it—had to be somewhere in a narrow footprint around his original trajectory. Any glow or glimmer not in the NASA database could be the target; he’d home in on it and grab all the data he could.

Monitors switched on as soon as the tip of the target area rose over the horizon. Instruments painted an arc of white dots on a black background. There were no flashing red circles—no unidentified objects anywhere.

Rex widened the search area. A wall of white flecks mocked him. The only red spots he could see were in the Gordian wire bundle behind the monitors. The astronomy control center had been kluged together for the xenon asteroid mission. Monitors were bolted into lab racks along one wall and wires duct taped along the passageway from the regular instrument labs. It was unprofessional; it was a safety violation; but it was temporary. Dawn and Rex focused on the screens and waited.

Nothing happened.
Months tracking the asteroid only to miss its ten minutes of glory—he’d blown it. Forty-five minutes earlier or forty-five minutes later, the Space Station would have grabbed a ton of data and he’d have been a hero. But it wasn’t. The Station had been behind the earth when the thing passed; his back up got skunked, and nobody got anything. It happened on his watch; it was his fault.

With proper equipment, he could have accomplished the mission. The Space Station could only be in one place at a time, and that turned out to be the wrong place. Expanded space coverage was limited: response times were in years and some orbits were tough to reach. The shuttle was fine when Spiro Agnew’s team conceived it, but the space program had outgrown it. The Orion capsule was a step backward when Bush proposed it. Even worse after it was emasculated in one budget cut after another. It was just an overgrown Apollo capsule. How many times had he preached that the Pentagon needed the flexibility of a space plane that operated from normal airfields? With it, a U. S. Space Force could deploy to the right place at the right time anytime.

They wouldn’t make him a general for I-told-you-so. Generals were winners. They ran big programs that got big results. Rex Stone would be coming home empty handed.

He broadened the footprint more. The asteroid had to be there somewhere. Every minute he lost, it flew a few thousand miles further away carrying priceless data with it. Still the computer recognized every glimmer on the screen. The fuzzy shadow crawling up the monitor was the earth; the asteroid’s footprint was setting.
CHAPTER 2

Rex glanced over at Dawn. It was rumored she was female, but she hid it well. At five seven her height was gender neutral. Beige blonde hair pulled tight in a ponytail wasn’t distinctive at NASA—a lot of NASA nerds wore their hair that way. Her tan one-size-fits-all jumpsuit offered no clue about the body inside. You could hide a skank or a supermodel in there, but Rex doubted she had.

No jewelry, no makeup, no nail polish—but somehow feminine. Her skin was soft and smooth with the first lines of forty-something at the corners of her eyes. If her body fulfilled the promise of her face, Rex guessed it would be on the plus side of slender with a slight figure. She’d probably clean up pretty well, maybe to a seven. It was going to be a long six months—she’d be a ten by the end of it.

Dawn was concentrating—programming Hubble to take one last look when it rounded the earth again. Her large blue eyes locked on the screen, her lips moved as her fingers raced across the keyboard.

The din of compressors hammered at Rex when he took off his headset. His head throbbed. He could use a beer—a beer and a cigarette—about then. What the Space Station really needed was a bar, he thought. He slipped in a pair of earplugs and closed his eyes. That was as good as it was going to get until he got home.

A jab at his arm roused him. Dawn pointed to her earphones and lip-synched “It’s for you, Colonel.”

He nodded. He hoped it wasn’t some two-star calling to cover his own ass. Oh what the hell. He slipped his headset back on and took the call. “Stone, here.”

“Houston Mission Control, Colonel,” a familiar drawl greeted him. “We have a possible sighting of your target.”
“What have you got?”
“It was seen over the North Pole by—“
“Being pulled by eight tiny reindeer, no doubt,” Rex interrupted.
“The asteroid couldn’t be that far off track.”
“No, Colonel. This one looks credible.”
“Go ahead, Houston,” Rex said as he motioned to Dawn to listen in.
“An Army Scout rocket picked up a glint of blue plasma through the Aurora Borealis. The spectrometer aboard identified xenon lines superimposed. An alert operator called NORAD.”
“What did NORAD have to say about it?”
“Their radar didn’t find anything coming over the pole, so they called us.”
“Can you give us a vector from the Scout sighting, Houston?”
“Affirmative,” Mason Dixon, the voice from Mission Control, paused, “We’ve transmitted the geometry to your computer. It’s pretty crude, Colonel. Scout optics have a wide field of view.”
A black-and-white line sketch popped up on Rex’s monitor. The sphere with an arrow through it represented the earth. A cone emanating like a megaphone from its north pole bounded the suspicious sighting. “That’s a big chunk of real estate, can you pin it down any, Houston?”
“NORAD radar didn’t find anything below one-hundred-and-eighty miles. They’re searching higher.”
“Thanks, Houston, let us know what they find. We’ll take another look when we come around the bend again. By the way, did the Army tell you how fast the thing was moving?”
“Negative,” Dixon responded, “it’s not that good a spectrometer.”
Thanks a lot, Rex thought. The Army! If every Highway Patrolman in the world can read speed, why can’t an Army tech?
“Thanks, Houston, we’ll keep searching.”
Rex looked over at Dawn; she had the same cartoon on her screen. “What did you think of all that?” he asked her.
“I don’t know.” She shrugged. “What was the Army doing with the Aurora anyways?”
“Trying to figure out what happens to the atmosphere when it’s hit with radiation. With the solar wind lighting up the sky up there, they’ve been using the North Pole as a giant radiation chemistry lab since Eisenhower was in office.”

“And they still don’t know?”

“Old soldiers never die, you know.”

“I guess not … anyways, your original trajectory puts the thing out here where I’m scanning.” She poked the air above her monitor. “It would have to have slowed way down to still be anywhere back here.” Her finger dropped back to the sketch on her screen. “I don’t think I believe a collision that hard, but—”

“It’s a long shot, but it’s our best shot. Is your guy ready to look for it?”

“It’s twenty minutes to a safe look angle that close in. Before that, earthshine will blind me.”

“Can you drift south while we’re waiting?”

She nodded.

“I’ll do some geometry with the Alaska sighting and propagate it forward in time. If we’re lucky, we’ll find the target there when we come over the hill.” A new shape flashed on their screens—a truncated cone, wider than the first and a planet-length north.

Monitors switched on as the target volume rose into view. Rex watched and hoped as his instruments mapped emptiness. White sparks peppered black backgrounds—all objects recognized by the computer. No red marks signaled anything unusual there.

Distance slowed the radar search. Signal to noise ratios were down; dwell times were longer. Space Station radars were maxed out. Blank screens mapped vacuum.

In twenty minutes, they would be able to see the whole zone. Rex wrung his hands while he waited. This was the Space Station’s last chance; after this revolution, the xenon asteroid would belong to the astronomers.

“Yes!” Rex pointed at a smudge on the Hubble monitor. “You found it!”

“Afraid not,” Dawn shook her head. “I’m down to geosynchronous altitudes; that’s just one of the Global Positioning Satellites.”
“Why is it so fuzzy?”
“That’s the best I can do at close range. Hubble is far-sighted, you know.”
Rex slumped in his chair and watched emptiness unfold across the wall of monitors. The target wasn’t there. “I don’t see it,” he admitted. “We’d better look farther north.”
Dawn smirked and returned Hubble to searching her way.
The horizon rose up and swallowed the target zone; the xenon asteroid wasn’t there. How could he have lost it? Could it have skipped off the atmosphere? …or vaporized in the collision? He just didn’t know.
The asteroid was long gone; it was time the Space Station returned to normal. “Colonel Stone here,” he announced to the crew, “we appreciate the loan of your instruments. The astronomy mission is now complete. The Space Station may resume its regular activities.”
For Rex, regular duty was pilot duty. Driving the Station was as dull as driving a military transport. It roared like a turboprop in a hurricane. It handled like an iceberg. With only a few small thrusters, there wasn’t much he could do; with autopilot, there was even less to do. It would be a long six months, but it would earn the astronaut merit badge he’d need someday.
“Might as well, there’s nothing to look at around here.”
“Rotten luck: all Hubble got is one frame before the thing erupted, and it’s no great shakes.”
“That…and a couple of long shots from AST—can’t imagine the analysis taking long. Let’s get started.”
“It’s a blob. You could waste the rest of the afternoon on it. Run the pictures through all the image enhancement software in the world; in the end, it’ll still be a blob.”
“You never know ‘til you try.”
“You go ahead. I’ve got a telescope to run. That’s what I signed on for—six months of real science with no phones, no committees, and no meetings. The xenon asteroid was a bonus, but my plate was already
full without it. We put some fascinating observations on hold; I need to put the Hubble back on line and catch up with them.”

Rex studied the Hubble frame by himself. A three-lobed cloud masked anything inside. The background was familiar from his thesis at Arizona—four years searching the sky for brown dwarfs. Even with the contrast turned up, he saw no strangers there. Whatever had hit the asteroid was too faint for human eyes to see; maybe the computer could find it.

Hubble looked back in time. Halfway across the universe and five billion years ago, one young star system sawed through another. The image of carnage flickered on Dawn’s monitor. Ghost galaxies collided; stars exploded where one ripped into the other. The picture was underexposed. She reprogrammed her telescope to stare—accumulate light open-shutter for another hour. A parasite would siphon off light for a spectroscopic autopsy of young stars shattered.

“I’m going to grab some lunch. Do you want anything?” she offered.

“Sure, why not?” Rex grimaced. NASA food was worse than airline food. The cafeteria was a microwave; the pantry was a locker bolted between two aluminum I-beams across the room.

“Chicken, beef, or fish?” Dawn summarized the plastic pouches on the shelf.

“Surprise me.”

Salt-free, texture-free—the lukewarm paste in his mouth tasted chalky like a protein shake. That flavor had been the worst part of bulking up for football at the Academy; Rex still hated it. “Okay, which one was it?” he asked.

“Does it matter?”

“You’re right, it’s been that kind of day.”

“Tough break on the asteroid—did you manage to get anything out of the Hubble picture?”
“No, I fiddled with it, then I fed it to a couple of image enhancement codes. I tried your NASA software—nothing. The CIA package did no better—“

Dawn shook her head. “It shouldn’t have; the math is pretty much the same in both of them.”

“That makes sense, I guess. I had never thought about it.”

Rex squirted his water bottle into his mouth to chase the aftertaste of lunch. “I had no better luck calling home this morning. It was 9:30 and I forgot the girls had their first class at 10:00. Ten o’clock! College ain’t what it used to be; reveille was at oh-six-hundred back at the Air Force Academy—“

“And you walked barefoot through the snow to class too, I bet.”

“Okay! Okay!” He raised his arms in mock surrender. “How about you? Sun’s up on the West Coast. Are you going to squeeze in a call home between observations?”

“My cat doesn’t expect me to call; my ex would rather I didn’t.”

The call-waiting icon flashed on their computer screens. “Then that’s not for you,” Rex said.

“I didn’t give anybody my work number. It’s probably your wife.”

Rex toggled the privacy button off and answered the call.

“Colonel Stone,” an eastern accent addressed him. “This is Moscow Control. An unidentified object sighted over the Pacific may pose a navigation hazard to the Space Station. Initial reports indicate there is a potential for collision during your next pass over the Atlantic. Mission Control recommends you proceed with your navigation radar in long range mode.”

Rex hated nebulous threat briefings. “Do you have more specific information, Moscow?”

“No, Sir, the amateur reports are unreliable and ground tracking stations haven’t acquired it yet. It is visible to the naked eye, and the track of the sightings is consistent with polar orbit. Worst case scenarios have a large object passing over Antarctica and coming at you out of the south.”

“Roger that,” Rex acknowledged. “Bandits at three o’clock.”

“I beg your pardon.”

“Never mind. Who are these guys?”
“The origin is unknown, Colonel. Satellite surveillance has picked up no unexplained launches. We haven’t intercepted any transmissions from the thing. We don’t know what it is. We don’t know where it is. We’re not even certain that it is. To be safe, Mission Control suggests you run with your radar wide open.”

“How long before you can refine the trajectory?”

“Ninety minutes, Sir. Projections put it over the Atlantic and out of range of land assets on this pass. We estimate first access with Siberian radar in fifty to sixty minutes as it comes over the pole.”

Intercept inside thirty minutes—ninety minutes would be too late; he needed data in fifteen. “I have Aegis radar units returning from the xenon asteroid mission in the South Atlantic. Let me try them.”

“Very good, Sir. Please advise us of their results so we may refine our search parameters.”

“Thank you, Moscow Control,” Rex signed off. He switched to internal communication and announced, “Rig for evasive maneuvers.”

Dawn cinched her seatbelt tighter. She turned to ask why. Rex ignored her.

He hailed Ticonderoga over the military line for Project Xenon and ordered the executive officer to wake the captain.

“Ticonderoga, here,” a half-awake voice answered. “This is the captain speaking.”

“Captain Yengst, this is Colonel Stone USAF piloting the Space Station. We have an emergency and request Ticonderoga’s assistance.”

Dawn tensed when she overheard the word emergency. She flipped a switch to eavesdrop on the conversation.

“An unidentified object is reported on a collision course with the station. We need detailed radar data ASAP to take evasive maneuvers. Can you pick it up over the South Atlantic and transmit the information over the xenon project lines, Sir?”

“What is it, Colonel—some kind of interceptor? Whose?”

“Don’t know, Sir. Can you do it?”

“We can.”

“One more thing, Captain,” Rex interrupted Yengst before he could hang up.

“Yes?”
“Be aware that your data will be fed unfiltered to the Russians.”
“Thank you, Colonel; we’ll bear that in mind when we process our data. I’ll get back to you from the control room when we’re on-line.”
Rex switched back to local communication. “I’d better go up front and drive the bus,” he excused himself.
“I’ll watch the screens while you’re gone,” she answered. Her eyes fixed on the wall of comatose monitors. She didn’t look up.
The Navy radar screens flickered to life as he left the room.

A cramped space with a joystick and a bank of levers—the Space Station cockpit looked like something out of a Mercury capsule. The window was bigger, but the pilot was still spam in a can. The old-time scopes and gauges had been moved to the computer screen; a touch screen and keyboard had been added.
Rex screwed his six-foot frame into the seat. Careful of the joystick, he reminded himself. One touch would disengage the autopilot and turn control over to him; he’d be as busy as a sinner at a revival meeting until he turned it back on. He toggled the radar to wide search mode; an oblong rectangle stretched across the top of the cockpit screen. Nothing showed yet.
“Colonel Stone, this is Captain Yengst,” the voice in his ear said. “Ticonderoga is scanning, but hasn’t located you or your interceptor yet. Can you provide further information?”
“Yes, Sir,” Rex answered. “We should be the largest object in the sky when we appear northeast of you. The boogie is reported to be in polar orbit rising out of the south.”
“Okay, my people have something. Let me see.” Muted voices filled the silence. “No, that’s just you.”
Rex watched and waited. He saw nothing on the horizon, but that could change fast closing at five miles a second.
“Stone, Yengst here, we have something rising over Antarctica.”
“I see it on the screen,” Dawn’s voice interrupted.
“Houston Control here, Captain Yengst, is the Space Station in danger?”
“We don’t know yet, Houston. What? Wait a minute.” The Navy connection dropped off.

Captain Yengst came back on the air. “I’ve ordered my people to double check their findings. Preliminary readings indicate a large body or bodies traveling at orbital velocity. … Just a minute. … Yes, they confirm there are multiple large bodies—“

“How large is large, Captain,” Mason Dixon asked from Houston Mission Control.

“Two to ten times the size of your Space Station, Houston,” he answered. “We see four to six of them so far. Doppler radar can’t distinguish their speeds; they’re flying in tight formation.”

Dodging a swarm that big could take more divert capability than the Station had. Rex knew he’d have to jam on the brakes and swerve to miss it—but in what direction? “At what altitude, Captain?” he demanded.

“They’re fifty miles above your orbit for now, Colonel.”

“Thank you! Sir!” Rex breathed a sigh of relief.

“You’re welcome. Oh, by the way, Colonel, these are not natural objects. They’re smooth and geometric.”
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