Out of the Vortex

by Stephen White, 1951–

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At a distance of thirteen and a half astronomical units, Tau Ceti—a smaller star than Sol, with only a little more than half its luminosity—provided very little light. But that light was sufficient to enable Commander Ian Takeda, RSN, gazing at the viewcreen in HMSS HAWKE's bridge, to glimpse the shuttle that had departed the hollowed-out asteroid that was Washington Station.

"Here he comes, Captain," said Lieutenant Commander Caitlin Malone, the first officer, unnecessarily.

"So I see, Number One," said Takeda with a nod. He was a tall, slender, aquiline-featured man, the Japanese half of his ancestry manifested mostly in high cheekbones and dark eyes. He was also quite young for his rank, and HAWKE was his first command. She wasn't one of the mighty dreadnoughts of space—the first through third rate ships, in terms of the old rating system that the Royal Space Navy had resurrected from the age of sail to avoid confusion with modern wet-navy ship types—but rather a Benbow class fifth rater, suitable for cruiser-type duties. But Takeda hadn't yet outgrown a thrill of pride whenever he

saw her, with her sleek aerodynamic lines suitable for atmospheric transit, and the flag that adorned her flank—the Union flag of the Britannic Federal Empire.

At the moment, however, that pride was in abeyance, as was everything except disgruntlement with the mission he had been assigned.

Divining the skipper's mood, Malone essayed a pleasantry. "Being a New American, I'll wager he's relieved to get off Washington Station. I mean, a name like that…"

Takeda smiled briefly. "I've been assured that he isn't one of the diehards."

Malone turned thoughtful. "I suppose it wasn't really the most tactful possible choice of a name for the Navy's base in this system."

Takeda said nothing. He himself was from the Viceroyalty of North America—specifically, from the Dominion of Oregon that occupied the Pacific coast between Spanish California and Russian Alaska. (His paternal grandparents had been among the refugees who had flooded Oregon when Japan had been bloodily incorporated in Greater China.) So he understood what the first officer meant. Where he came from, George Washington was revered for having accepted the rapprochement that had resolved the First American Rebellion five centuries earlier, and then having suppressed the rebel holdouts led by Benedict Arnold. But New America, the habitable lesser component of the binary planet system occupying Tau Ceti's fifth orbital position, had been colonized by irreconcilable North American separatists. Arnold was their great historical hero, and they ranked Washington with Judas Iscariot.

And now, Takeda thought, *instead of doing the kind of work my ship is intended to do, I've been ordered to chauffeur some New American scientist out to the middle of nowhere.*

"Well," he sighed, "he's almost here. I'd better go down and meet him. You have the conn, Number One."

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Elijah Willett, Ph.D., was a slight, middle-aged man of no great stature, with a narrow face and mild, pale-blue eyes. A couple of assistants followed him out of the airlock, bearing luggage and crates of apparatus.

"Permission to come aboard, Captain?" asked Willett with a smile. "Is that the correct formula?"

"Close enough." Someone, thought Takeda, must have told him that a ship's commanding officer was addressed as "Captain" even if he was a mere commander in rank. They shook hands.

There was, Takeda reflected, always a certain awkwardness in dealing with New Americans, given their anomalous relationship with the Empire. Their ancestors had traveled to Tau Ceti in suspended animation, their fifty-year voyage humankind's first and only slower-than-light interstellar colonizing expedition. They had arrived at their destination a little over a century ago, only to find that while they had slept their way to the stars the Bernheim Drive had been invented on Earth. The discovery that the Empire they had sought to escape was already established in their promised land was something from which they still had yet to recover. However, the Empire had been quite reasonable about it, allowing them to set up their colony and permitting it a unique semi-autonomy, with a standing

offer (never accepted) of Dominion status. It was an arrangement the New Americans were able to live with, save for the Sons of Arnold, an organization which advocated full independence… and which, as had recently come to light, included an extremist faction prepared to go beyond mere advocacy.

"I'm under orders to afford you every possible assistance compatible with the safety of my ship and crew," said Takeda. "But I must say I'm somewhat in the dark as to the purpose of this expedition of yours."

Willett's blue eyes sharpened. Takeda had never pretended to be a master at concealing his emotions, and he suspected the scientist had detected his lack of enthusiasm for this mission. But when he spoke, his voice was mild.

"Well, Captain, I'll do my best to enlighten you. If we could go somewhere…"

"Certainly." Takeda turned to a yeoman. "Take Dr. Willett's assistants to their quarters. Doctor, let's adjourn to my cabin."

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As soon as the door of Takeda's cabin slid shut behind them and they sat down, Willett spoke in the same mild tone. "Captain, correct me if I'm wrong, but I can't avoid the impression that you're not altogether happy with your orders."

Takeda didn't bother with patently insincere denials. "It's nothing personal, Doctor. But this ship is here as part of the Navy's general buildup in the Tau Ceti system since the recent events that have brought to light the existence—and hostile intentions—of the Gharnakh'sha. Our job is to patrol this system against any further funny business on their part."

"We're not technically at war with the Gharnakh Unity," Willett pointed out.

"We might as well be! We've learned that their aim is to undermine the Empire and build up the Islamic Caliphate, which they consider less of a threat to their precious fossilized social system. Before we destroyed it, they had a secret base here for the express purpose of working to our detriment in league with the Caliphate and," Takeda added pointedly, "with the Sons of Arnold's terrorist elements."

Willett reddened slightly, for Takeda had touched a sore spot. "Captain," he said evenly, "there are always extremists, who are an embarrassment to the majority. As I'm sure you are embarrassed by those in the Empire who, rumor has it, are willing to throw New America to the wolves—or, rather, to the Gharnakh'sha—in order to buy peace—"

"You said it yourself: that's just rumor," said Takeda stiffly. "My very presence here is an earnest of the Empire's commitment to defend the Tau Ceti system."

"And you'd like to get back to doing that job," said Willett with a smile. "Well, to a certain extent you are going to be doing that job. It is precisely because of the possibility of inimical alien activity in this system that a warship, rather than some unarmed research vessel, has been assigned to my project."

"But Doctor, I'm still not clear on just exactly what your project *is*."

Willett leaned back in his chair and steepled his fingers. "Captain, have you ever heard of Jonas Yoder?"

"I can't say I have."

"Hardly surprising. He was a New American physicist of a generation ago, widely regarded as a genius but also as something of a crank."

“What sort of crank?”

“Partly it was a matter of his politics. Though not an advocate of violence, he was an opponent of the Imperial connection, declaring often and loudly that the failure of the First American Rebellion was a tragedy.”

“I thought that was the general opinion on New America,” Takeda couldn’t help interjecting.

“Let’s just say he was more vociferous than most. In addition, his theories were unorthodox to say the least.” Willett hesitated. “He was interested in—no, obsessed with—the concept of alternate realities.”

Takeda blinked. “The concept of what?”

“It’s very difficult to explain.” Willett visibly organized his thoughts. “Without going into a lot of theoretical physics—”

“Please don’t,” said Takeda hastily. “My physics is strictly of the practical variety.”

“Very well. To put it as simply as possible: for every decision that can be made between two alternatives, both are made, and… well, the universe splits in two.” Willett looked pained. “Both states of reality are equally *real*.”

“As far as I can see, only one of them is,” said Takeda dubiously.

“Well, you see, upon the collapse of the wave function—”

“Uh… Doctor…”

“Sorry. What it means is, the observer only sees one such state of reality. But branching realities are basic to quantum mechanics.”

“So as I understand it, you’re saying that there’s a universe where the Persians won at Marathon and the present-day world is living with the consequences of that. And another where the Spanish Armada carried it off. And another…” Takeda’s skepticism-dripping voice trailed off as understanding dawned.

“I see you’ve grasped it,” said Willett with a smile. “Yoder was imagining a reality in which the First American Rebellion was not patched up, and the colonies won their independence. He was convinced that such an alternate universe must exist.”

“Sounds like the wish was father to the thought,” said Takeda drily. “And at any rate, it could never be anything but a theoretical possibility—a subject for daydreaming.”

“Ah, but that brings us to the most controversial of Yoder’s ideas. He believed it was possible to access alternate realities. And he was fanatically determined to do so, and make contact with a universe where, by his lights, things came out right in North America five hundred years ago.”

Takeda could only stare.

“The idea was dismissed by his colleagues as twaddle, and it destroyed his academic career,” Willett continued. “But he didn’t let that stop him. He had enormous inherited wealth, and he squandered all of it on a specially equipped spacecraft and a great deal of strange and seemingly useless equipment. Accompanied by a few disciples, he set out for the outer reaches of the Tau Ceti system. Captain, could you call up a system display?”

“Certainly.” Takeda activated his desk computer, spoke instructions, and a holographically projected image of the Tau Ceti system appeared in midair above the desk.

Takeda's mind automatically superimposed over it the imaginary clock-face that was still used for bearings even though digital clocks had been universal for a couple of centuries. Tau Ceti was at the center, surrounded by the orbits of its close-in family of planets. Much farther out, Washington Station was at a bearing of about seven o'clock, lying within the extensive "debris disc" that circled Tau Ceti between the radii of ten and fifty-five astronomical units. The latter was about how far out the display extended.

Willett pointed outward from the center on a bearing of three o'clock—which, Takeda recalled, was where the Gharnakh base had orbited, at sixteen astronomical units from Tau Ceti. "According to Yoder's theory, the alternate reality linkage device he intended to construct would work best outside any significant gravity field. So he proceeded outward along this bearing, intending to go well beyond the outermost limit of the debris disc. He remained incommunicado after declaring that his next report would silence his detractors. But nothing was ever heard from him again."

"Was a search conducted?"

"Yes, after a time. But the volume of space involved was so vast that it was hopeless. Nothing was ever found. It was surmised that Yoder's experiments had gone awry and destroyed his ship."

Takeda shook his head, puzzled. "This is all very interesting, Doctor. But I still don't understand its relevance to your expedition—and my orders."

"New facts have emerged recently—facts sufficient to arouse the interest of even the Admiralty. Hence your orders. You see, one of our observatories recently detected what were believed to be indications of a hitherto unknown planet orbiting Tau Ceti out beyond the debris disc. A ship was sent to investigate. The supposed planet turned out to be a chimera. But, purely by accident, the vessel's sensors detected a seemingly inexplicable flux of exotic energy still farther out—in this direction." Willett again indicated the three o'clock bearing.

"Are you saying it's thought that this may be linked to Yoder's experiments? That he may actually have succeeded in creating some kind of… gateway, and that it may still be open?"

"That is precisely what I am going out there to determine."

Takeda grew thoughtful. "You know, Doctor, it may surprise you to learn that history has always been an interest of mine. And nothing I've ever read has given me any cause to doubt what I, like all of us, was taught in school: that the First American Rebellion never stood a chance, and that the peaceful settlement on the basis of imperial federation was the best possible outcome. In fact, the more history I read, the more I'm convinced of that second part. Empires evaporate if they get too big relative to their power base. That would eventually have happened to the British Empire if its power base had remained limited to just one little island. As it was, North America and, later, other colonial countries were incorporated into a power base that grew to keep pace with the Empire's expansion."

"Much as Rome incorporated other city-states on a basis of dual citizenship."

"Exactly." Takeda felt the pleasure a history enthusiast always feels at discovering a kindred spirit—rather like a Mason encountering another Mason. "Now, if that peaceful settlement hadn't happened, the only alternative I can see is

that the war would have dragged on, with more bloodshed leading to more bitterness. So after the inevitable British victory, a harsh, repressive rule would have been imposed, with mass treason trials, wholesale hangings, no more local self-government, and the American colonists left as sullen, unhelpful subjects—a calamity for everyone concerned."

"I think I understand what you're saying, Captain. If Yoder did succeed, he probably found a universe he liked even less than this one." Willett paused. "But are you certain the British victory was inevitable? What if, somehow, the Rebellion had succeeded?"

Takeda made a dismissive gesture. "Oh, come, Doctor! I know you're a New American, but you're also a rational man. Everyone knows the rebels couldn't possibly have won—that's the consensus of all reputable historians. A large portion of their own population wasn't behind them. The British had total command of the sea and the most highly professional army on the planet. And even if by some miracle the rebels had won their independence, their *United States of America* would never have lasted. They undoubtedly would have fragmented into a patchwork of squabbling little agricultural states, pawns in the geopolitical games of the European powers."

"Well, Captain," said Willett with a smile, "it's just barely possible that we may resolve some of these questions."

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Washington Station orbited well outside Tau Ceti's "Secondary Limit," beyond which the Bernheim Drive could warp space around a ship, enclosing it in a space-time bubble not limited to the velocity of light. But going superluminal within Tau Ceti's debris disc was frowned upon—the density of space detritus was low, but any collision with a substantial object could damage or even wreck the drive. And, at any rate, it took some very careful piloting to not overshoot one's objective across mere interplanetary distances.

Thus it was that HAWKE accelerated outward in slower-than-light mode, with the drive folding space and thereby reducing normal gravity in front of the ship. Still, at four hundred gravities of pseudo-acceleration (fortunately unfelt by the ship's occupants, who would have been in a state of free fall had it not been for the artificial gravity generators) the voyage was not a long one.

Willett explained that Jonas Yoder's ideas for an alternate-reality linkage device were related to the drive. "We don't know the details," he admitted. "Yoder was very secretive, and he took all his notes with him when he departed. But it seems to have something to do with the fact that the drive changes the shape of space around the ship by wrapping negative energy around it. Negative energy, like negative mass, is allowable only in the microcosm—the domain of quantum mechanics. But of course you know all this."

"Yes," Takeda nodded. "Tapping into that subspace for usable negative energy was the greatest problem Bernheim had to overcome."

"Well, Yoder was convinced that there was at least one other exotic energy state—he never publicly discussed its exact nature—that could be utilized for his purposes. Possibly it was this that the survey ship detected. The instruments that I've asked you to have connected to this ship's sensor suite are designed on the

basis of the readings that ship recorded—and now we know the exact region of space in which to search."

As it turned out, however, HAWKE's own sensors were the first to detect the phenomenon. Not long after they passed beyond the outermost limits of the debris disc, the gravitic scanners revealed an intense gravity field—evidently artificial gravity, since there was no large mass to account for it.

"The survey ship's report mentioned nothing about this," fidgeted Willett.

"They wouldn't have had Navy grade long-range gravitic scanners," Takeda reminded him. "They detected this *exotic energy flux* by other means before they were close enough for their civilian gravscanners—if they had even those—to pick up this gravity field. Mr. Malone is doing a detailed analysis of the readings, and he should have some answers for us soon."

After consultation with the ship's sensor ratings and the technicians Willett had brought aboard, the first officer approached the captain's chair, frowning. "Captain, we've now got readings on Dr. Willett's equipment that match what was reported. But as for the G-field… we're still not close enough to detect what's generating it. But it's a very intense one—an odd kind of gravitational vortex. And it's… anomalous."

"Explain, Number One."

"As I said, sir, it's very strong—but it somehow reverses itself."

"What does that mean?" Willett wanted to know.

"It's a matter of a ship's vector. If you're heading into it, it will suck you in toward the center. But if you were headed outward *from* the center, it would shove you out. Spit you out, really."

Takeda felt he must be missing something. "How could that be? And how the devil would anybody be heading out of it?"

"Unknown, Captain. It's a complete mystery to Dr. Willett's people too."

"You say you can't detect a generator yet?" Asked Willett.

"No, Doctor. But I can tell you this much. Your people gave me the specifications for Jonas Yoder's ship, and if it were that size we *would* be able to detect it. It's simply not there."

"Is there any sign of wreckage?"

"No, and even if there ever were any, I doubt if we'll find it now. I imagine it would have long since been drawn in by the gravity field. But we won't be able to do a real search for it until we get closer."

"Which we are going to do with great caution," Takeda stated firmly. "We won't head straight down the gravity well, of course. We'll go into a hyperbolic orbit of the… phenomenon, passing its center as closely as possible without getting within its Primary Limit."

"Aye, aye, sir," said Malone. The "Primary Limit" was defined by a gravitational force of 0.1 Earth G; any stronger and the Bernheim Drive would not function even in slower-than-light mode. "I'll instruct the helmsman. Of course, it goes without saying that this will bring us well within the Secondary Limit."

"Of course," Takeda echoed. "No matter. We'll have no reason to want to go superluminal." He turned to Willett. "Well, Doctor, maybe we'll have your answers soon."

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As they drew closer, the first officer's skepticism was confirmed. No trace of wreckage was found. At the same time, it became possible to detect a material object at the center of the gravity field. It wasn't a naked-eye object, and wouldn't have been even if it hadn't been surrounded by a region of slight visual distortion, with the stars behind it seeming to wave and flicker. But it was definitely there.

"Perhaps it's Yoder's device," Willett speculated.

"But how could anything that small be producing this field?" demanded Takeda. "Especially after all this time? You told me Yoder came out here a generation ago."

"The effect must be largely self-sustaining, with minimal assistance from the generator. Perhaps the two-way gravitational action somehow produces energy in a manner analogous to the 'tidal heating' observed on many moons of massive planets." Willett shook his head, dismissing the subject pending further observation. "Captain, are we going to get any closer to it?"

Takeda glanced at the nav plot. "Yes, we're not quite at perigee yet. Soon we'll—"

At that moment, a series of threat displays awoke, and a new icon appeared on the nav plot astern of them, about sixty degrees clockwise and moving rapidly out from the center of the vortex.

"Captain—" Malone began.

"I see it, Number One. Beat to quarters. And give me an ID of that ship as soon as you can get some sensor readings on it."

As the alarms whooped through the ship, the artificial gravity field took hold of the mysterious newcomer while it was still within the Primary Limit and began to bend its course into a counterclockwise orbit that would more or less follow HAWKE's.

"Where did it come from?" demanded Willett, staring wide-eyed at the icon that had sprung so inexplicably into being.

"I was hoping you'd be able to give me some help with that, Doctor." Takeda ordered himself to keep his voice level.

"Captain," Malone called out, "the sensor readings are in, and the computer has run them against our database. They don't exactly match any known ship."

"Go for similarities, then." Takeda swung toward the communications officer. "Mr. Chandra, raise that ship."

"I can't sir," Lieutenant Chandra reported. "Whatever this exotic energy field is, it's creating a lot of interference."

"Well, keep trying. Any luck, Number One?"

"Yes, sir." Malone's voice was crisp and emotionless. "The closest match is the big Gharnakh warship that we have data on. But that one was equivalent to one of our fourth raters. This one is somewhat more massive and has a stronger energy signature."

So it's almost equivalent to one of our capital ships... "Mr. Davison," Takeda snapped at the helmsman, "get us out to the Secondary Limit!"

Had they already been outside the Secondary Limit, HAWKE could simply have ducked into the safety of its warp field. As it was, Davison thought a command into the neural-induction helmet that mind-linked him with the ship's brain, and HAWKE surged under sublight pseudo-acceleration. But at appreciably the same instant, the Gharnakh ship passed the Primary Limit and proceeded to do exactly

the same thing. And it immediately became apparent that the Gharnakh'sha could pull at least as many Gs as they could… in fact, a few more.

"Captain—" a bewildered Willett began. Takeda shushed him with a peremptory gesture and thought furiously. As a fifth rater, HAWKE was armed primarily with laser weapons. Her reaction-drive missiles were useful against planetary targets or immobile orbital installations, but their puny few Gs of acceleration made them laughable in a deep-space engagement against ships with Bernheim Drives. He allowed himself to hope the same would be true of the Gharnakh ship, which after all wasn't quite of capital-ship size…

The hope died aborning as tiny red icons began separating from the large red one in the tactical plot. "Torpedoes," said Malone in a flat voice.

"So I see," said Takeda. "Torpedo" was a term of art for big missiles with overpowered Bernheim Drives of their own. In human space navies, only capital ships carried them. Evidently the Gharnakh'sha had slightly different ideas. He told himself that the ship he was up against couldn't possibly mount many of the things. But four of them were streaking toward HAWKE at what the computer said was almost nine hundred Gs. "Mr. Nichols, get a target lock on those torpedoes and fire at will as soon as they come within range."

"Aye, aye, sir," the weapons officer acknowledged. From all the turrets that could be brought to bear, gigawatt X-ray lasers stabbed invisibly out across space. They were longer-ranged than the savage bomb-pumped X-ray lasers the torpedoes would generate when they detonated, which provided a window of opportunity for destroying them—not a wide enough window to suit Takeda.

Still, Nichols accounted for one of them promptly, and the icon of another began to flicker as its force shields overloaded. Takeda looked back at the nav plot. Even at their prodigious pseudo-accelerations, HAWKE and her pursuer were both struggling out of the gravity well.

"Number One, run a computer projection. Are we going to reach the Secondary Limit before the Gharnakh'sha catches us?"

"I just did, sir."

"And the answer?"

"Almost."

"I see. Thank you." Takeda decided not to tell Willett what that meant. In what passed for a face-to-face duel in space warfare, HAWKE wouldn't stand a chance. He would try to close the distance even more so he could use his fusion guns—short-range ship smashers. But that wouldn't save them. The Gharnakh ship undoubtedly mounted similar weapons; and even though the aliens' versions were believed to be less powerful, a ship that size would have a lot more of them.

Maybe I'll tell Willett after all. He has a right to know.

He was opening his mouth to speak when a new icon in the nav plot caught his eye.

This one, too, appeared out of nowhere, coming out from the center of the vortex, but it was only about thirty degrees astern of them. Thus, when the gravity field took hold and began to bend its course into a counterclockwise orbit, that projected orbit brought it between the Gharnakh'sha and HAWKE.

Takeda became aware that Malone was looking over his shoulder. "Another Gharnakh ship, sir?" she asked, unable to keep despair out of her voice.

“Maybe. Run an ID check—” But even as Takeda gave the order, it became superfluous. The Gharnakh ship, as though forgetting HAWKE’s existence, opened fire on the newcomer. That fire was returned, and the readouts jumped at the intensity of the energy being expended. At the same time, two secondary icons separated from that of the unidentified ship.

“Torpedoes?” Takeda demanded of the sensor officer.

“No, sir. They’re too big for that. More like manned spacecraft.”

“I see.” Neither the Royal Space Navy or any other known service favored the concept of fighters, or light assault craft. Evidently, somebody did.

“Captain,” Malone called out, “the ID check is completed. There is nothing in our database even remotely similar to this new ship. It’s a complete unknown.”

“Well, we know one thing about it: its doing us a bloody good turn by fighting the Gharnakh’sha.” Takeda reached a decision. “Mr. Davidson, reverse our acceleration and kill as much of our velocity as you can. We’re going to join this battle—or, rather let it catch up with us.”

“Aye, aye, sir.”

The closing of the range enabled one of the Gharnakh torpedoes to detonate before they could destroy it, but their force shields held the damage to acceptable levels. In the meantime, the secondary craft launched by the Gharnakh ship’s new nemesis went in like dogs attacking a bear. One of them was vaporized and the other reeled away, clearly disintegrating; but they had inflicted damage, and had drawn off enough Gharnakh fire to allow their mother ship to inflict still more, even though the greater firepower of its larger enemy was clearly wearing it down.

Then HAWKE came in range and began pouring in its own laser fire. For a sickening instant, Takeda thought they had been too late, for the new arrival could now no longer maneuver; gravity was taking control and drawing it inward. But it could still put out a certain volume of fire. Under that fire and HAWKE’s, the enemy was visibly wilting. Then they were within fusion gun range, and blinding discharges of star-hot plasma blasted down the last of the Gharnakh ship’s defenses. All at once, its force shields went down and a rapid-fire series of secondary explosions consumed it.

A series of damage control reports were rolling in, But Takeda hardly heard them. He was watching the nav plot, staring at the icon of the ship that had rescued them, as gravity pulled it down toward the enigmatic center of the vortex. It had already passed within the Primary Limit. There was absolutely nothing they could do for it. Even if it had some form of escape pods for the crew, those would also be drawn in. “Mr. Chandra, hail that ship if you possibly can.”

“I’m trying, sir, but the interference—”

Takeda strode over to the comm officer’s station, nudged Chandra aside, and punched controls. A shriek of raw static answered. He spoke loudly. “Calling the unidentified ship in the Tau Ceti system: this is Her Majesty’s Space Ship HAWKE, Captain Ian Takeda. Please acknowledge, and identify yourself.”

He repeated it several times. Occasionally there were snatches of what might have been speech. Then, for an instant, there was a brief break in the static, and a voice was heard. It was speaking in English, but in an undefinable way there was something odd about it. Only a few words could be heard.

“*—and we’re fighting the Gharnakh’sha too. Who the hell are you? What’s—*”

Then, abruptly, the voice ceased as the static closed in again. An instant later, the viewscreen went blindingly white as what looked like a small nova flared into existence deep in the vortex. Then it faded out, leaving their eyes dazzled.

"Their powerplant went critical," Malone said quietly.

And even as he said it, various readouts ceased to register the findings of the sensor suite. The gravitational anomaly, with its accompanying field of unidentified exotic energy, was no longer there.

Willett sighed.

"I was right. The effect wasn't entirely self-sustaining. That explosion destroyed the physical object at the center—presumably Yoder's device. Now the vortex is gone, permanently."

It was true. Where it had been, the stars beyond now shone serenely, without the previous shimmering distortion of light-waves. HAWKE lay all alone in an undistinguished region of what might as well have been interstellar space, with Tau Ceti no more than a superlatively bright star.

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The damage control teams had contained all the ravages of combat, but some repair work still needed to be done. While it was in progress, Takeda ordered a search for any wreckage that might be adrift in the vicinity. A few chunks of the Gharnakh ship were found, but they yielded no useful information.

Then something more interesting turned up.

"Captain," Malone reported, "remember those two light attack craft, or whatever they were, that the second ship launched?"

"Yes. One of them was a total loss, but the other merely broke up."

"Well, we think we've found part of that second one's tail section. The tractor-beam crew is hauling it aboard now."

"All right," said Takeda absently, not looking up from the report he was reading. "You'd better go down and check it out."

"Aye, aye, sir." The first officer departed. After a moment, Takeda turned to Willett.

"You know, Doctor, we still don't know what happened to Yoder. And where did those two ships come from?"

Willett continued to stare at the empty viewscreen. He had been doing that a lot lately. "We'll never know, will we?"

Silence reigned for a time. Then Takeda's communicator chimed for attention. It was Malone. On the tiny screen, her face wore an odd expression.

"Captain, I'm down in the hold with the wreckage. I think you should come here and take a look at it. And… I *definitely* think Dr. Willett should too."

Takeda and Willett exchanged a puzzled look. Then, without a word, they left the bridge.

Malone showed them a sheet of metal, its ragged edges carbonized from heat. "It seems to be part of a vertical stabilizer," she explained. "Evidently the craft had aerodynamic flight capability."

Takeda studied it. There was a meaningless alphanumeric designation printed on it. But what caught his eye was an obvious flag. A curious flag, though, mostly occupied by horizontal stripes—thirteen of them, alternating red and white—

except for a blue rectangle in the upper left-hand corner with rows of white stars. Curious indeed . . . although it seemed to speak to something elusive in his memory.

"What kind of flag is that, Captain?" asked Malone.

"I don't know. Although… it seems to have a vaguely familiar look."

"It should," said Willett in a flat voice that caused both officers to turn and look at him quizzically. His eyes were haunted. "After all, Captain, you mentioned your interest in history."

All at once, it came to Takeda.

"The flag of the First American Rebellion's *United States of America* was something like this," he said slowly. "Although, as I recall, the blue area had a circle of stars."

"Thirteen, for the thirteen rebelling colonies," Willett affirmed with a nod.

"This one has—" Takeda did a quick count "—fifty."

He met Willet's eyes. Neither of them spoke. A shudder ran through him.

Malone looked from one of them to the other. Her look was almost pleading "Sir, what can it mean?"

"That's unknowable… and meaningless, really, because the vortex is lost forever. Whatever was beyond it doesn't exist, as far as we're concerned." Takeda took a deep breath and drew himself up. "Let's get back to the worlds we know."