Solar Plexus
by James Blish

Brant Kittinger did not hear the alarm begin to ring. Indeed, it was only after a soft blow had jarred his free-floating observatory that he looked up in sudden awareness from the interferometer. Then the sound of the warning bell reached his consciousness.

Brant was an astronomer, not a spaceman, but he knew that the hell could mean nothing but the arrival of another ship in the vicinity. There would be no point in ringing a bell for a meteor—the thing could be through and past you during the first cycle of the clapper. Only an approaching ship would be likely to trip the detector, and it would have to be close.

A second dull jolt told him how close it was. The rasp of metal which followed, as the other ship slid along the side of his own, drove the fog of tensors completely from his brain. He dropped his pencil and straightened up.

His first thought was that his year in the orbit around the new trans-Plutonian planet was up, and that the Institute's tug had arrived to tow him home, telescope and all. A glance at the clock reassured him at first, then puzzled him still further. He still had the better part of four months.

No commercial vessel, of course, could have wandered this far from the inner planets; and the UN's police cruisers didn't travel far outside the commercial lanes. Besides, it would have been impossible for anyone to find Brant's orbital observatory by accident.

He settled his glasses more firmly on his nose, clambered awkwardly backwards out of the prime focus chamber and down the wall net to the control desk on the observation floor. A quick glance over the boards revealed that there was a magnetic field of some strength nearby, one that didn't belong to the invisible gas giant revolving half a million miles away.

The strange ship was locked to him magnetically; it was an old ship, then, for that method of grappling had been discarded years ago as too hard on delicate instruments. And the strength of the field meant a big ship.

Too big. The only ship of that period that could mount generators that size, as far as Brant could remember, was the Cybernetics Foundation's Astrid. Brant could remember well the Foundation's regretful announcement that Murray Bennett had destroyed both himself and the Astrid rather than turn the ship in to some UN inspection team. It had happened only eight years ago. Some scandal or other ... Well, who then?

He turned the radio on. Nothing came out of it. It was a simple transistor set tuned to the Institute's frequency, and since the ship outside plainly did not belong to the Institute, he had expected nothing else. Of course he had a photophone also, but it had been designed for communications over a reasonable distance, not for cheek-to-cheek whispers.

As an afterthought, he turned off the persistent alarm bell. At once another sound came through: a delicate, rhythmic tapping on the hull of the observatory. Someone wanted to get in.

He could think of no reason to refuse entrance, except for a vague and utterly unreasonable wonder as to whether or not the stranger was a friend. He had no enemies, and the notion that some outlaw might have happened upon him out here was ridiculous. Nevertheless, there was something about the anonymous, voiceless ship just outside which made him uneasy.

The gentle tapping stopped, and then began again, with an even, mechanical insistence. For a moment Brant wondered whether or not he should try to tear free with the observatory's few maneuvering rockets—but even should he win so uneven a struggle, he would throw the observatory out of the orbit where the Institute expected to find it, and he was not astronaut enough to get it back there again.

Tap, tap. Tap, tap.

"All right," he said irritably. He pushed the button which set the airlock to cycling. The tapping stopped. He left the outer door open more than long enough for anyone to enter and push the button in the lock which reversed the process; but nothing happened.

After what seemed to be a long wait, he pushed his button again. The outer door closed, the pumps filled the chamber with air, the inner door swung open. No ghost drifted out of it; there was nobody in the lock at all.

Tap, tap. Tap, tap.

Absently he polished his glasses on his sleeve. If they didn't want to come into the observatory, they must want him to come out of it. That was possible: although the telescope had a Coude focus which allowed him to work in the ship's air most of the time, it was occasionally necessary for him to exhaust the dome, and for that purpose he had a space suit. But be had never been outside the hull in it, and the thought alarmed him. Brant was nobody's spaceman.

Be damned to them. He clapped his glasses back into place and took one more look into the empty airlock. It was still empty with the outer door now moving open very slowly... .

A spaceman would have known that he was already dead, but Brant's reactions were not quite as fast. His first move was to try to jam the inner door shut by sheer muscle-power, but it would not stir. Then he simply clung to the nearest stanchion, waiting for the air to rush out of the observatory, and his life after it.

The outer door of the airlock continued to open, placidly, and still there was no rush of air—only a kind of faint, unticketable inwash of odor, as if Brant's air were mixing with someone else's. When both doors of the lock finally stood wide apart from each other, Brant found himself looking down the inside of a flexible, airtight tube, such as he had once seen used for the transfer of a small freight-load from a ship to one of Earth's several space stations. It connected the airlock of the observatory with that of the other ship. At the other end of it, lights gleamed yellowly, with the unmistakable, dismal sheen of incandescent overheads.

That was an old ship, all right.

Tap. Tap.

"Go to hell," he said aloud. There was no answer.

Tap. Tap.

“Go to hell,” he said. He walked out into the tube, which flexed sinuously as his body pressed aside the static air. In the airlock of the stranger, he paused and looked back. He was not much surprised to see the outer door of his own airlock swinging smugly shut against him. Then the airlock of the stranger began to cycle; he skipped on into the ship barely in time.

There was a bare metal corridor ahead of him. While he watched, the first light bulb over his head blinked out. Then the second. Then the third. As the fourth one went out, the first came on again, so that now there was a slow ribbon of darkness moving away from him down the corridor. Clearly, he was being asked to follow the line of darkening bulbs down the corridor.

He had no choice, now that he had come this far. He followed the blinking lights.

The trail led directly to the control room of the ship. There was nobody there, either.

The whole place was oppressively silent. He could hear the soft hum of generators—a louder noise than he ever heard on board the observatory—but no ship should be this quiet. There should be muffled human voices; the chittering of communications systems, the impacts of soles on metal. Someone had to operate a proper ship—not only its airlocks, but its motors—and its brains. The observatory was only a barge, and needed no crew but Brant, but a real ship had to be manned.

He scanned the bare metal compartment, noting the apparent age of the equipment. Most of it was manual, but there were no hands to man it.

A ghost ship for true.

“All right,” he said. His voice sounded flat and loud to him. “Come on out. You wanted me here—why are you hiding?”

Immediately there was a noise in the close, still air, a thin, electrical sigh. Then a quiet voice said, “You’re Brant Kittinger.”

“Certainly,” Brant said, swiveling fruitlessly toward the apparent source of the voice. “You know who I am. You couldn’t have found me by accident. Will you come out? I’ve no time to play games.”

“I’m not playing games,” the voice said calmly. “And I can’t come out, since I’m not hiding from you. I can’t see you; I needed to hear your voice before I could be sure of you.”

“Why?”

“Because I can’t see inside the ship. I could find your observation boat well enough, but until I heard you speak I couldn’t be sure that you were the one aboard it. Now I know.”

“All right,” Brant said suspiciously. “I still don’t see why you’re hiding. Where are you?”

“Right here,” said the voice. “All around you.”

Brant looked all around himself. His scalp began to creep.

“What kind of nonsense is that?” he said.

“You aren’t seeing what you’re looking at, Brant. You’re looking directly at me, no matter where you look. I am the ship.”

“Oh,” Brant said softly. “So that’s it. You’re one of Murray Bennett’s computer-driven ships. Are you the Astrid, after all?”

“This is the Astrid,” the voice said. “But you miss my point. I am Murray Bennett, also.”

Brant’s jaw dropped open. “Where are you?” he said after a time.

“Here,” the voice said impatiently. “I am the Astrid. I am also Murray Bennett. Bennett is dead, so he can’t very well come into the cabin and shake your hand. I am now Murray Bennett; I remember you very well, Brant. I need your help, so I sought you out. I’m not as much Murray Bennett as I’d like to be.”

Brant sat down in the empty pilot’s seat.

“You’re a computer,” he said shakily. “Isn’t that so?”

“It is and it isn’t. No computer can duplicate the performance of a human brain. I tried to introduce real human neural mechanisms into computers, specifically to fly ships, and was outlawed for my trouble. I don’t think I was treated fairly. It took enormous surgical skill to make the hundreds and hundreds of nerve-to-circuit connections that were needed—and before I was half through, the UN decided that what I was doing was human vivisection. They outlawed me, and the Foundation said I’d have to destroy myself; what could I do after that?

"I did destroy myself. I transferred most of my own nervous system into the computers of the Astrid, working at the end through drugged assistants under telepathic control, and finally relying upon the computers to seal the last connections. No such surgery ever existed before, but I brought it into existence. It worked. Now I'm the Astrid—and still Murray Bennett too, though Bennett is dead."
Brant locked his hands together carefully on the edge of the dead control board. "What good did that do you?" he said.
"It proved my point. I was trying to build an almost living spaceship. I had to build part of myself into it to do it—since they made me an outlaw to stop my using any other human being as a source of parts. But here is the Astrid, Brant, as almost alive as I could ask. I'm as immune to a dead spaceship—a UN cruiser, for instance—as you would be to an infuriated wheelbarrow. My reflexes are human-fast. I feel things directly, not through instruments. I fly myself: I am what I sought—the ship that almost thinks for itself."
"You keep saying 'almost,' " Brant said.
"That's why I came to you," the voice said. "I don't have enough of Murray Bennett here to know what I should do next. You knew me well. Was I out to try to use human brains more and more, and computer-mechanisms less and less? It seems to me that I was. I can pick up the brains easily enough, just as I picked you up. The solar system is full of people isolated on little research boats who could be plucked off them and incorporated into efficient machines like the Astrid. But I don't know. I seem to have lost my creativity. I have a base where I have some other ships with beautiful computers in them, and with a few people to use as research animals I could make even better ships of them than the Astrid is. But is that what I want to do? Is that what I set out to do? I no longer know, Brant. Advise me."
The machine with the human nerves would have been touching had it not been so much like Bennett had been. The combination of the two was flatly horrible.
"You've made a bad job of yourself, Murray," he said. "You've let me inside your brain without taking any real thought of the danger. What's to prevent me from stationing myself at your old manual controls and flying you to the nearest UN post?"
"You can't fly a ship."
"How do you know?"
"By simple computation. And there are other reasons. What's to prevent me from making you cut your own throat? The answer's the same. You're in control of your body; I'm in control of mine. My body is the Astrid. The controls are useless, unless I actuate them. The nerves through which I do so are sheathed in excellent steel. The only way in which you could destroy my control would be to break something necessary to the running of the ship. That, in a sense, would kill me, as destroying your heart or your lungs would kill you. But that would be pointless, for then you could no more navigate the ship than I. And if you made repairs, I would be—well, resurrected."
The voice fell silent a moment. Then it added, matter-of-factly, "Of course, I can protect myself."
Brant made no reply. His eyes were narrowed to the squint he more usually directed at a problem in Milne transformations.
"I never sleep," the voice went on, "but much of my navigating and piloting is done by an autopilot without requiring my conscious attention. It is the same old Nelson autopilot which was originally on board the Astrid, though, so it has to be monitored. If you touch the controls while the autopilot is running, it switches itself off and I resume direction myself."
Brant was surprised and instinctively repelled by the steady flow of information. It was a forcible reminder of how much of the computer there was in the intelligence that called itself Murray Bennett. It was answering a question with the almost mindless wealth of detail of a public-library selector—and there was no "Enough" button for Brant to push.
"Are you going to answer my question?" the voice said suddenly.
"Yes, Brant said. "I advise you to turn yourself in. The Astrid proves your point—and also proves that your research was a blind alley. There's no point in your proceeding to make more Astrids; you're aware yourself that you're incapable of improving on the model now."
"That's contrary to what I have recorded," the voice said. "My ultimate purpose as a man was to build

machines like this. I can't accept your answer: it conflicts with my primary directive. Please follow the lights to your quarters."
"What are you going to do with me?"
"Take you to the base."
"What for?" Brant said.
"As a stock of parts," said the voice. "Please follow the lights, or I'll have to use force."
Brant followed the lights. As he entered the cabin to which they led him, a disheveled figure arose from one of the two cots. He started back in alarm. The figure chuckled wryly and displayed a frayed bit of gold braid on its sleeve.
"I'm not as terrifying as I look," he said. "Lt. Powell of the UN scout Iapetus, at your service."
"I'm Brant Kittinger, Planetary Institute astrophysicist. You're just the faintest bit battered, all right. Did you tangle with Bennett?"
"Is that his name?" The UN patrolman nodded glumly. "Yes. There's some whoppers of guns mounted on this old tub. I challenged it, and it cut my ship to pieces before I could lift a hand. I barely got into my suit in time—and I'm beginning to wish I hadn't."
"I don't blame you. You know what he plans to use us for, I judge."
"Yes," the pilot said. "He seems to take pleasure in bragging about his achievements—God knows they're, amazing enough, if even half of what he says is true."
"It's all true," Brant said. "He's essentially a machine, you know, and as such I doubt that he can lie."
Powell looked startled. "That makes it worse. I've been trying to figure a way out—"
Brant raised one hand sharply, and with the other he patted his pockets in search of a pencil. "If you've found anything, write it down, don't talk about it. I think he can hear us. Is that so, Bennett?"
"Yes," said the voice in the air. Powell jumped. "My hearing extends throughout the ship."
There was silence again. Powell, grim as death, scribbled on a tattered UN trip ticket.
Doesn't matter. Can't think of a thing.
Where's the main computer? Brant wrote. There's where personality residues must lie.
Down below. Not a chance without blaster. Must be eight inches of steel around it. Control nerves the same.
They sat hopelessly on the lower cot. Brant chewed on the pencil. "How far is his home base from here?" he asked at length.
"Where's here?"
"In the orbit of the new planet."
Powell whistled. "In that case, his base can't be more than three days away. I came on board from just off Titan, and he hasn't touched his base since, so his fuel won't last much longer. I know this type of ship well enough. And from what I've seen of the drivers, they haven't been altered."
"Umm," Brant said. "That checks. If Bennett in person never got around to altering the drive, this ersatz Bennett we have here will never get around to it, either." He found it easier to ignore the listening presence while talking; to monitor his speech constantly with Bennett in mind was too hard on the nerves.
"That gives us three days to get out, then. Or less."
For at least twenty minutes Brant said nothing more, while the UN pilot squirmed and watched his face hope-fully. Finally the astronomer picked up the piece of paper again.
Can you pilot this ship? he wrote.
The pilot nodded and scribbled: Why?
Without replying, Brant lay back on the bunk, swiveled himself around so that his head was toward the center of the cabin, doubled up his knees, and let fly with both feet. They crashed hard against the hull, the magnetic studs in his shoes leaving bright scars on the metal. The impact sent him sailing like an ungainly fish across the cabin.
"What was that for?" Powell and the voice in the air asked simultaneously. Their captor's tone was faintly curious, but not alarmed.
Brant had his answer already prepared. "It's part of a question I want to ask," he said. He brought up against the far wall and struggled to get his feet back to the deck. "Can you tell me what I did then,

Bennett?"
"Why, not specifically. As I told you, I can't see inside the ship. But I get a tactual jar from the nerves of the controls, the lights, the floors, the ventilation system, and so on, and also a ringing sound from the audios. These things tell me that you either stamped on the floor or pounded on the wall. From the intensity of the impressions, I compute that you stamped."
"You hear and you feel, eh?"
"That's correct," the voice said. "Also I can pick up your body heat from the receptors in the ship's temperature control system—a form of seeing, but without any definition."
Very quietly, Brant retrieved the worn trip ticket and wrote on it: Follow me.
He went out into the corridor and started down it toward the control room, Powell at his heels. The living ship remained silent only for a moment.
"Return to your cabin," the voice said.
Brant walked a little faster. How would Bennett's vicious brainchild enforce his orders?
"I said, go back to the cabin," the voice said. Its tone was now loud and harsh, and without a trace of feeling; for the first time, Brant was able to tell that it came from a voder, rather than from a tape-vocabulary of Bennett's own voice. Brant gritted his teeth and marched forward.
"I don't want to have to spoil you," the voice said. "For the last time—"
An instant later Brant received a powerful blow in the small of his back. It felled him like a tree, and sent him skimming along the corridor deck like a flat stone. A bare fraction of a second later there was a hiss and a flash, and the air was abruptly hot and choking with the sharp odor of ozone.
"Close," Powell's voice said calmly. "Some of these rivet-heads in the walls evidently are high-tension electrodes. Lucky I saw the nimbus collecting on that one. Crawl, and make it snappy."
Crawling in a gravity-free corridor was a good deal more difficult to manage than walking. Determinedly, Brant squirmed into the control room, calling into play every trick he had ever learned in space to stick to the floor. He could hear Powell wriggling along behind him.
"He doesn't know what I'm up to," Brant said aloud. "Do you, Bennett?"
"No," the voice in the air said. "But I know of nothing you can do that's dangerous while you're lying on your belly. When you get up, I'll destroy you, Brant."
"Hmmm," Brant said. He adjusted his glasses, which he had nearly lost during his brief, skipping carom along the deck. The voice had summarized the situation with deadly precision. He pulled the now nearly pulped trip ticket out of his shirt pocket, wrote on it, and shoved it across the deck to Powell.
How can we reach the autopilot? Got to smash it.
Powell propped himself up on one elbow and studied the scrap of paper, frowning. Down below, beneath the deck, there was an abrupt sound of power, and Brant felt the cold metal on which he was lying sink beneath him. Bennett was changing course, trying to throw them within range of his defenses. Both men began to slide sidewise.
Powell did not appear to be worried; evidently he knew just how long it took to turn a ship of this size and period. He pushed the piece of paper back. On the last free space on it, in cramped letters, was: Throw something at it.
"Ah," said Brant. Still sliding, he drew off one of his heavy shoes and hefted it critically. It would do. With a sudden convulsion of motion he hurled it.
Fat, crackling sparks crisscrossed the room; the noise was ear-splitting. While Bennett could have had no idea what Brant was doing, he evidently had sensed the sudden stir of movement and had triggered the high-tension current out of general caution. But he was too late. The flying shoe plowed heel-foremost into the autopilot with a rending smash.
There was an unfocused blare of sound from the voder more like the noise of a siren than like a human cry. The Astrid rolled wildly, once. Then there was silence.
"All right," said Brant, getting to his knees. "Try the controls, Powell."
The UN pilot arose cautiously. No sparks flew. When he touched the boards, the ship responded with an immediate purr of power.
"She runs," he said. "Now, how the hell did you know what to do?"

“It wasn’t difficult,” Brant said complacently, retrieving his shoe. “But we’re not out of the woods yet. We have to get to the stores fast and find a couple of torches. I want to cut through every nerve-channel we can find. Are you with me?”
“Sure.”
The job was more quickly done than Brant had dared to hope. Evidently the living ship had never thought of lightening itself by jettisoning all the equipment its human crew had once needed. While Brant and Powell cut their way enthusiastically through the jungle of efferent nerve-trunks running from the central computer, the astronomer said:
“He gave us too much information. He told me that he had connected the artificial nerves of the ship, the control nerves, to the nerve-ends running from the parts of his own brain that he had used. And he said that he’d had to make hundreds of such connections. That’s the trouble with allowing a computer to act as an independent agent—it doesn’t know enough about interpersonal relationships to control its tongue.... There we are. He’ll be coming to before long, but I don’t think he’ll be able to interfere with us now.”
He set down his torch with a sigh. “I was saying? Oh, yes. About those nerve connections: if he had separated out the pain-carrying nerves from the other sensory nerves, he would have had to have made thousands of connections, not hundreds. Had it really been the living human being, Bennett, who had given me that cue, I would have discounted it, because he might have been using understatement. But since it was Bennett’s double, a computer, I assumed that the figure was of the right order of magnitude. Computers don’t understate.
“Besides, I didn’t think Bennett could have made thousands of connections, especially not working telepathically through a proxy. There’s a limit even to the most marvelous neurosurgery. Bennett had just made general connections, and had relied on the segments from his own brain which he had incorporated to sort out the impulses as they came in—as any human brain could do under like circumstances. That was one of the advantages of using parts from a human brain in the first place.”
“And when you kicked the wall—“ Powell said.
“Yes, you see the crux of the problem already. When I kicked the wall, I wanted to make sure that he could feel the impact of my shoes. If he could, then I could be sure that he hadn’t eliminated the sensory nerves when he installed the motor nerves. And if he hadn’t, then there were bound to be pain axons present, too.”
“But what has the autopilot to do with it?” Powell asked plaintively.
“The autopilot,” Brant said, grinning, “is a center of his nerve-mesh, an important one. He should have protected it as heavily as he protected the main computer. When I smashed it, it was like ramming a fist into a man’s solar plexus. It hurt him.”
Powell grinned too. “K.O.,” he said.