The Imagination Trap

ONE

Professor Carl Diepenstrom, Director of Tau Research Corporation, switched off the intercom.

"Well, at least he's come to see us, Paul."

Paul Porter nodded. "I thought he would. Eric Brevis can't resist the lure of curiosity any more than we can. In fact, if we can score with him, it will be on that very point."

"I see." Diepenstrom raised his large and greying head and studied Porter seriously for a moment or two. "And you still think it vitally necessary that we go through with this project, Paul?"

"You know it is. It's the only chance we have. We can't continue with the present research line. It isn't humanitarian, and it isn't giving us a glimpse of a coherent pattern. Besides which, you know how the Government's attitude is hardening."

"Yes, I know it," said Diepenstrom gravely. "And that's the reason I've backed you as far as I have. I can't see any practical alternative. But I'd be happier if it didn't have to be you who went out there. Tau Research can't afford to lose you, Paul."

"There won't be any Tau Research if this project folds. Anyway, I don't think the risk will be too great—not if we can persuade Eric Brevis to join the team."

"You think a great deal of Dr Brevis, don't you?"

"I do. He has an intuitive understanding of the irrational, and that can be a prime factor for survival under extreme Tau conditions. With him on the team we have a very real chance of making a breakthrough."

"Very well," said Diepenstrom. "If you want Dr Brevis, you shall have him. But you'd better leave the interview to me. It may just be that he isn't very willing to offer his life for somebody else's cause. In which case he will have to be . . . ah! . . . persuaded."

As the psychologist entered the room, Diepenstrom rose in greeting.

"Dr Brevis, thank you for coming."

Brevis seated himself carefully and took a cigar from the offered box. "Being in receipt of such an intriguing communication, I could scarcely have refused."

Diepenstrom repressed a mischievous smile. "That was, shall we say, contrived. Curiosity is a force far more potent than most people allow."

Brevis studied the Director's face carefully for a moment. "True," he said. "Though I don't think you asked me here just to discuss the psychology of curiosity."

"Indeed not. I wanted to discuss the possibility of death."

"Whose death—yours or mine?"

"Yours."

Brevis exhaled sharply. "I suppose there's some sense in this cryptic nonsense?"

"There is indeed, my dear Doctor, and shortly I'll tell you what it is. But first let me enquire how much you know about Tau?"

"Not very much. I know it's a system in which solid bodies are resonated in such a way that their atoms can pass through the spaces in the atomic structure of other solid bodies. I know you use the method for transport, bringing the big Tau ships to resonance and then driving them through the earth by the shortest mean path to their destination."

"Go on," said Diepenstrom.

"I know also that in its resonant state such a ship passes into an inter-atom domain called Tau-space which is incongruent both physically and psychologically with conditions existing in normal space."

"That will do for the moment," said Diepenstrom. "I recall that you were concerned with Paul Porter on the epic voyage of the old *Lambda I* Tau raft. I also recall that the impact of some of the things you discovered on that journey caused a radical re-thinking of some major portions of the Tau concept. I put it to you, Dr Brevis, that this is a remarkable record for one who claims very little knowledge of Tau techniques."

"Suppose we come to the point," said Brevis abruptly.

"I was just going to," said Diepenstrom. "Does the phrase deep-Tau mean anything to you?"

"No."

"Then I'll tell you. Deep-Tau is the Tau-space analogue of conventional deep space. We are actively researching into the possibility of achieving interstellar spaceflight by travelling in the Tau-space analogue."

"I don't see . . ." said Brevis.

"Let me finish first, please. Now, deep-Tau as an alternative to conventional spaceflight promises some remarkable advantages in simplified technique. Indeed, it may be the only technique to make star travel possible. Superficially, deep-Tau travel would appear to be easier than terrestrial Tau work. Unfortunately there are a number of impossible and irrational reasons why this is not so."

"I fail to see," said Brevis, "what all this has to do with me."

"A great deal. The present pattern of Tau research consists of sending manned telemetry probes into deep-Tau. We've sent some twenty-four to date. Some have returned and some haven't, but each has piled paradox on paradox—and each has cost the life of the probe pilot. Now we're approaching our last chance. If we fail, the Government will probably close down our activities completely. Such an action would be a setback to this research from which it might never recover."

"So?"

"Paul Porter wants to take a four-man vessel fitted out as a laboratory into deep-Tau, and he wants you to go with him. It's my job to persuade you to go, while at the same time leaving you in no doubt that to do so is tantamount to committing suicide."

"So that's it! I refuse, of course. I still have the scars to show from the last time Paul Porter took me into Tau."

"I have a contract here on which you can write your own price for one successful deep-Tau vector."

"No, Professor. If Paul wants to seek an anguished grave in the corner of some dark and twisted hypothetical continuum, that is his own affair. I've no such ambition."

"A fair statement, Dr Brevis. I appreciate your position. Faced with the same situation, I should probably adopt a similar standpoint. Let me thank you again for coming, and apologize for wasting your time."

Brevis watched him narrowly for a moment. "What are you up to, you old fox? You aren't a man to accept defeat that easily."

Diepenstrom raised his ponderous head. His smile was a mere ghost haunting the corners of his mouth.

"Ah, yes! There was something else. I'm glad you reminded me. While you're here I wonder if you'd care to see some of our deep-Tau exhibits."

"Seeing the whole point of this interview seems to turn on this apparent afterthought, I have no objection. But I warn you that nothing you can show me will make me change my mind."

"Perish the thought, my dear Doctor. I merely wish to show you our little museum of paradoxes. I think you'll find them rather fascinating. Would you care to step this way?"

The vaults beneath Tau Research were olive-drab and vast in extent, and the footsteps of the

two men echoed hollowly down the steel and concrete corridors. Brevis had previously had no idea that Government influence extended to the point of including armed servicemen alongside Tau Corporation's own formidable security force. The two men were checked and counter-checked at each level and intersection with a meticulous care which placed a sinister stamp on the ultimate importance of the project.

Brevis smiled wryly. "If I have as much trouble getting into Heaven as we've had getting into here, I don't think I'll bother."

"Don't worry," said Diepenstrom. "The qualifications for entry are somewhat different—one might almost say mutually exclusive."

"That's a rare piece of cynicism."

"Wait," said the Director, "until you've seen what we have to show you. There are more things in Heaven and on Earth than are dreamed of in your psychology."

They reached the appointed door, and Diepenstrom withdrew the bolts with a heavy clatter and stood aside for the psychologist to enter.

"This is one of the ten or so probe vessels which we have been able to recover. It came back to us on an automatic-recall vector from deep-Tau, and it's not the least of our curiosities."

Brevis entered the room and walked around the exhibit, his face registering a *melange* of fear and fascination.

"What sort of trick is this?"

"No trick, Doctor. Simply one of those things that we at Tau Research have had to learn to live with."

"And the pilot?" Brevis asked at last the question he had been avoiding.

"He came back alive but died in hospital. He was completely to scale with the craft. He was desperately mad and measured exactly one and a quarter inches tall. Do you want to see any more?"

"Not just now. One has to learn to re-adjust."

"You're not feeling ill, are you?"

"No. I was just thinking what a remarkable character your pilot must have been."

"You've got beyond me there," said Diepenstrom, with sudden interest. "What did you have in mind, Doctor?"

"I was reflecting that you sent him into a complex so vast that it doesn't include the limiting concept 'universe'. The wonder to me is not that he came back minute, but that he didn't come back microscopic."

A trace of light flickered across Diepenstrom's brow.

"I think you're on to something, Dr Brevis. Paul Porter was right. You do have an intuitive understanding of the irrational. Won't you have second thoughts about joining our team?"

"Damn you, Diepenstrom! You've pushed the ball right into my court."

"I merely showed you the ball. You did the pushing."

"But you knew which way it would roll."

"Certainly. With the pitch inclined at an angle of forty-five degrees in the right direction, I could scarcely miss. It's what I call an imagination trap. Give an expert an outstanding problem in his own field, and you have one of the most infallible mousetraps ever devised. Now suppose we go upstairs and sign that contract?"

"I still haven't said I agree," Brevis said.

"No, but you will. You see, if you walk out now you'll always be haunted by the vision of the Tau probe vessel which came back only twenty-two inches long and with a pilot not as big as your thumb. I don't think a man with your imagination could live with himself with that problem unresolved."

"It would appear," said Brevis, "that I am now working for Tau Corporation until death do us part—unless I misread the small print at the bottom of the contract. Although, if I have your intentions divined aright, that mayn't be a very long-term prospect."

Porter turned with a smile from the drafting machine. "I take it that you have just concluded an interview with Diepenstrom. He tends to induce that depressive attitude in interviews. Anyway, glad to have you join the team, Eric. On the type of project we're planning we're going to need all the expertise we can get."

"Even in psychology?"

"Especially in psychology—and your own understanding of the irrational. Eric, we're going into a complex which doesn't begin until a point way beyond where our physics ends—out into a region from which nothing vaguely rational has ever been recovered. What happens to things out in deep-Tau is completely beyond our experience. That's why I feel a sight happier to know you're going to be alongside."

"I'm with you, Paul . . . although just now I'm damned if I can think of a convincing reason why. What's the big attraction about going into deep-Tau anyway?"

"Because it's there, I guess. Man isn't built to live happily on the edge of the unknown. And if we're ever to get to the stars, then deep-Tau is the only possible route."

"Not spaceflight?"

Porter was slightly amused. "Hardly. Unless there are some very radical changes in our concept of normal physics, we don't have either the engines or the power sources necessary to make such a journey in man's lifetime. And we probably never will have. Mass-energy relationships alone rule that out quite firmly."

"You've just shattered my dream of the space age," said Brevis.

"Except for a ruinously expensive exploration of the Solar system, it never was more than a dream," said Porter.

"But doesn't that apply to deep-Tau travel also?"

"Not completely. In Tau-space there are no gravitational gradients to overcome, and mass-energy relationships and some aspects of Relativity don't hold strictly true. Don't ask me to show you the maths, because we're still trying to understand it ourselves, but Tau-space provides us with a potential medium in which we can circumvent a lot of the physical absolutes which make conventional interstellar spaceflight an impossibility. Even the speed of light is no longer a limiting velocity."

"But aren't the power requirements still prohibitive?"

"They're high, but they don't climb to infinity or anything like. Even today it's theoretically possible to build a ship which could make a thirty-two light year round trip through deep-Tau to Altair and back under its own power."

"Phew! I begin to see the attraction."

"Precisely," said Porter. "If we can't reach the stars via Tau-space then it's doubtful if we shall ever reach them. But standing in our way is a set of problems so imponderable that we don't know how to begin to start to solve them."

"How much do we know about these problems?"

"Lamentably little. Apart from the monstrosities in the vaults which came back on automatic-recall vectors, all our information is limited to transmitted verbal and telemetered material gathered during the first few hours of a probe vector run—that is to say, before the vessels achieved the speed of light."

"So the speed of light is a limiting velocity?"

"Not in the usual sense. Neither is it a failure of communication due to Döppler effect. This is something truly frightening in its implications."

"Go on!" Brevis said, noting the look in Porter's eyes.

"When the probe vessel reaches the velocity of light our receiver here at Tau Research breaks down. The probe continues to transmit, but we can't receive its signals."

"I don't understand," said Brevis.

"Neither do we." Porter's face was haunted. "Their signal strength increases to such proportions that the current actually fuses the terminal elements of our receiver. Millions of amperes are involved."

"But how can that be?"

"I don't know. But the implications are terrifying. If we can receive such power over such a distance . . . then what must have happened to the ship itself? Such a condition presupposes that the ship's transmitters are happily modulating beamed power equal to the output of a pretty fair-sized star."

TWO

"Well, that's the ship, Eric. We're calling her *Lambda II* after Rorsch's original Tau raft."

Brevis looked down. "And there the similarity ends," he said.

They were on the balcony of Tau Research's main assembly shop, and below them the huge vessel, running almost the length of the facility, returned the solid glint of flawlessly polished metal. Even now a group of fitters was engaged in burnishing the plating with great attention, against the possibility of its eventual emergence into the rays of some strange and alien sun.

"It looks more like a spaceship than a Tau craft," said Brevis.

"That's effectively what it is—a spaceship built around the largest and most stable Tau-spin generator we could find. We've made it capable of operating in either Tau or real space environments in the hope that we may achieve the easy transposition from one to the other. We've proved such a transposition is possible in vacuum without the necessity for a grid."

"I'd no idea you were planning anything on this scale."

Porter shrugged. "It's our last chance, Paul. Tau Corporation is staking everything on this gamble. We've spent twenty-one and a half million on *Lambda II* so far—and it could have been five times that much except that the Nuclear Energy Authority donated the reactor design and provided the fuel. The Rorsch generator was diverted from a luxury Tau liner already under construction, or we could easily have spent another three million on that."

Bevis looked slightly dazed. "And this type of money is readily available?"

"A hundred times that, if necessary. The project is that important. The proof of the project is whether we can go out into deep-Tau and come back alive. Any facility which might aid us in doing just that is ours for the asking."

Brevis nodded. "If only we knew in advance what to ask for," he said.

Immediately below them now the four snow-white ceramic tubes of the thrust jets gave a shrewd hint of the capacity of the drive reactor, cunningly contrived to conform to the hindshape of the hull itself. Many large industrial cities had less power than this at their disposal. Almost centrally along its length the hull bulged into a globe wherein was situated the mammoth Rorsch generator, originally designed to induce Tau-spin in a luxury craft of nearly a hundred times the mass displacement of its present charge.

The front of the ship was blind, save for antennae and the scanning and sensing devices feeding the instrumentation which had to serve in lieu of eyes. The only concession to the need to physically observe was the blister atop the ship, which emerged through the heavy shielding protecting the ship's occupants from the unwelcome psychic molestations of the raw Tau environment. Apart from that, the hull was featureless.

"We'll go in later," said Porter. "First I want you to meet the rest of the team. I know they're very curious about you."

"Curious?"

Porter smiled briefly. "I could have been forgiven for picking a cosmologist, a nuclear physicist, or a radio-astronomer—in fact a man specializing in any of the hundred or so branches of physical science with which we get involved in deep-Tau work. But when I announced I was bringing in a far-out psychologist, reactions ranged from the incredulous to the hostile.

"The objections weren't too serious, of course. We needed a qualified medic aboard, and that factor plus your previous record in Tau made you the natural choice anyway. But Tau pilots especially are somewhat sensitive of implied criticism of their mental balance. Not unreasonably, I suppose, when we expect them to come to meaningful decisions in what is essentially an irrational environment."

"I promise you I'll tread lightly," said Brevis.

The others were already in the office when they arrived. Porter kept the introductions brief. Sigmund Grus, fortyish, a Tau Research senior physicist, heavy, Germanic save in all but accent. He was every inch an applied intellectual, with a rational solidity behind his thinking which matched his frame.

The second was Pat Driscoll, senior Tau test pilot. An altogether different character. In his early thirties, he was nervous and apparently unsure of himself. Though his face registered his thoughts on the trend of the conversation, he only once allowed himself to speak, and then did so with such embarrassing over-emphasis of point that he confused himself in mid-sentence and trailed back into pathetic silence.

After two hours the meeting broke up, they having summarized for Brevis' benefit the duties and responsibilities of each man on the team. Brevis alone had no set duties. While the others concerned themselves with the machines and mechanics of the trip, his concern was solely with the functioning of the men.

Afterwards Brevis and Porter went down to the ship. The psychologist had to familiarize himself with the various equipments controlling the temperature, humidity and composition of the ship's atmosphere, and the devices provided to assist survival against various levels of potential catastrophe. Also it was left to him to equip the tiny hospital room and operating theatre, and to decide what medicaments and drugs should be carried. Porter showed him his quarters and provided him with the necessary charts and layouts.

"By the way, Eric, what do you make of the others?" Porter slipped the question in apparently casually as they turned to leave, but there was no doubt it had been long in his mind.

Brevis shrugged. "I was going to take that up with you. I take it they were picked for their specialities rather than their suitability for an exploratory voyage of this kind."

"Very much so. We don't have any mental and physical supermen with sufficiently advanced Tau knowledge, and it would take too long to train some. Therefore we compromised. We took the most technically able men who also had practical Tau operating experience, and threw in a full-time psychologist to balance the equation. Unorthodox, I know, but it's only one of the compromises we've had to make in getting a project like this off the ground."

"Mm!" said Brevis. "Ordinarily the only man I'd recommend for a venture of this magnitude would be yourself. Sigmund Grus is sound enough, but he'd be better left in his own laboratory with his wife to meet him in the car. But I'm more than a little dubious about Pat Driscoll. He's a man who lives inside himself too much. I'd imagine his I.Q. is something quite fantastic, but he's introverted almost to the point of being unable to communicate. I certainly can't recommend exposing him to stressful situations. He's a weak link, Paul."

"But he's also the best and most experienced Tau pilot available. He has over a thousand vector runs to his credit, many of them on unprogrammed exploratory runs. Take it from me, Eric, there's no pilot on Tau Corporation's payroll better suited than Pat Driscoll to handle this trip."

"I'll take your word for it. But at least you can't say you weren't warned."

"Exactly what are you afraid of, Eric? Every man on this team has already proven his capability of working and surviving under extreme Tau conditions. You can't have a better criterion than that."

"No, except that I suspect both you and I are already quite certain that the extremes of the Tau-state influence aren't going to be our greatest hazards. Else, Paul, why did you include as your medic someone who was also a far-out psychologist?"

In the subsequent months of preparation the tension slowly mounted. Brevis had ample time to observe its effect upon his fellow team members. He found nothing to make him revise his original conclusions as to their psychological suitability, but he rapidly acquired a respect for their technical competence. Sigmund Grus, particularly, impressed him with his detailed understanding of the craft and all its installations.

Two major landmarks measured the progress towards the final departure time. The first was the bringing of the *Lambda II*'s reactor up to criticality, and the second was the successful proving trial of the giant Rorsch Tau-spin generator. Then the only stage left was the towing of the craft from the assembly shop to the adjoining bay where lay the immense Tau terminal grid which would launch its charge into the unknowns of the deep-Tau continuum.

When this operation too had been completed, the air of expectancy and tension rose like a fever. Whether for success or disaster, the die was already cast. Any inherent faults and shortcomings in the ship were both unknown and scarcely alterable. This was the machine, the physics and mechanics of the project. From this point on the emphasis was very much on the men.

In the eighteen hours of countdown every conceivable item of instrumentation, control and communication was re-checked, and double checked. The huge Rorsch generator, unstable in standby state, responded magnificently on ready-state power, and gave every promise of a fault-free operating condition. The reactor performance was well above specification, and the ship computer had long been soundlessly exchanging its fantastic number sequences with its communication counterpart in the Tau Research information centre.

At two hours to take-off, the team had their final assembly. The atmosphere was so highly charged emotionally that the image of the voyage had assumed epic proportions before it had even begun, and Brevis signalled to Porter to close the hatches early to quieten the tension. Their departure into such a radical unknown as deep-Tau was a psychological vortex which those who experienced it would never quite forget.

With the hatches closed and the occupants insulated from the outer activities except for the electronic chatter of check and counter-check, the tension within the ship swiftly subsided. It was replaced by an immediate sense of identity with the ship and its purpose. Porter took the control room, Driscoll the blister. Grus, having re-run a check-out exercise on the reactor, hastened to his beloved computer where the instrument data was being processed into an endless electronic digest which could be all the world outside might ever know as to their fate in deep-Tau.

Brevis, his instrumentational chores completed, found himself suddenly at a loss, and retired to his bunk to lay, half resting, mentally reviewing what he knew of the strengths and weaknesses of his companions, and listening to their conversation on the intercom set.

"Zero minus ten minutes." Porter's voice over the loudspeaker was a clear, precise, ritualistic chant. Perfectly controlled. No sign yet that his subconscious had fully absorbed the

impact of the situation.

"Tracking stations Pi and Sigma receiving our beam and locked on," said Grus. Sigmund Grus—his strength was that he probably never would perceive the deeper significance of the situation. As the flesh served to cushion his body, so his technology cushioned his mind. But pity him on the day when some inexorable reality leaned down to crush him.

"Seventeen point nine times ten to the minus eleven. Sigmund, I'll need help with the tensor analysis." That was Driscoll. His psyche knew where they were going . . . had known it for a long time . . . had soaked itself in a little acid-pit of dread. But when your psyche has a wound in it as deep and raw as his, you can't bear to be far away from the possibility of death for long. Nevertheless you can still leave sweat, grey upon the pillow.

And himself? How much of the unknown could he take? No use to worry. The unknown and the irrational was his speciality. His drugs had taken him through stranger exercises of the mind than anything deep-Tau might have to offer. Perhaps.

"Three minutes," said Porter's voice. "This will be a two-part take-off. We will adopt the Tau state but remain on the grid until the computer has cleared the course co-ordinates. Eric, if you want to do any preliminary work on the Tau phenomena you'd better join Pat in the blister right away."

Brevis leaned to his microphone. "Check!"

He made his way to the blister directly. Somewhere down the corridors as he walked, the ship made a perfect transition from real space into Tau, becoming coexistent with the molecules of the air which rushed in to fill the void it had left on the grid. But deep within the ship the transition was indetectable. In the blister, beyond the screens, it would be different. Very different. He halted before the heavy blister door and wiped the sweat from his palms. The reaction of unshielded Tau influence with certain centres of the brain gave rise to hallucinatory images so strong that they equated fairly well with all a man could ever know of reality.

He shouldered the door open, watching the telltales on the wall to give him an indication of the position of the screens set mazeform to shield the emanations of the blister from the ship. The room was dark, but three steps sufficed to place him in the maze and from there he could proceed by fingertip location of the route. But as his head cleared the final screen he again stopped, breathing heavily with part fear and part wonder.

Although their spatial analogue was still the black iron of the grid in the confines of Tau Research, nothing of this was visible. Instead, the blister seemed to be an island floating in alarming isolation in the midst of a pink waste which was the characteristic image of the Tau Gamma mode of resonance. But the knowledge of its origin in no way lessened its scope and awesomeness. Here was space, limitless in a way no real-space panorama could ever be.

Nothing was visible above or below, nor on any side, save for a shifting pink radiance which had no apparent source and which closed around from all sides. Brevis knew this to be subjective illusion, and that even if he closed his eyes the impression would remain. But he could not rid himself of the vertigo or the feeling of profound insignificance which the scene impressed upon his mind.

Driscoll's familiarity, however, had made him more immune. He was already at work under the blister's dome with refractometer, spectrum analyser, polariscope and sighting apparatus, relaying vector and tensor co-ordinates to Grus to form the basis for the calculation of the course. Brevis was fascinated. Driscoll was setting up line, angle and point relationships by purely visual reference to the Tau-domain image beyond the blister, fixing point co-ordinates to seven decimal places as though they were physical absolutes. But how the information was determined, or how it could be established with such accuracy from the Tau image, he was unable to decide. In this he sensed the reason for Driscoll's inclusion in the

team. The ability to interpret the Tau image in terms of mathematically usable quanta was indeed a facility worthy of respect.

Brevis had no idea at all how it was achieved. If any features were visible at all, they were vague features of contrasted intensity in the illuminated field, like some cosmological X-ray diffraction pattern, which Driscoll could read with expert eyes and from which he established his axes and points, as though drawing an elaborate imaginary three-dimensional spider-web across the pink backdrop of unreality.

Finally Sigmund Grus was satisfied.

"That's all we need for now, Pat. Computation time is about seven minutes. Paul, I can give you a deadline in ten minutes."

"Right." Porter's voice cut in on the communicator. "Primary acceleration will exert an apparent force of a half gravity in a direction parallel to the long axis of the ship. This is not a measure of the acceleration rate but a gravitic nuclear reluctance effect which will dissipate rapidly as the ship leaves the Earth's magnetic field. Eric, you won't have experienced this yet, but just brace yourself against a stern bulkhead until it passes. Sigmund, I'm handing control to the computer. As soon as the course is taped you can give her the gun."

THREE

Bred in a world used to the statistics of the crushing acceleration gravities of rocket spaceflight, Brevis had earlier envisioned their leap towards light-speed velocities would be a prolonged spell of suffering in an acceleration couch. But in the modified physics of the Tau domain their actual departure was a physical anticlimax. The half gravity Porter had promised proved no more than a gentle push against the wall, a force against which he could move and lean quite easily. The effect was as if the room had rotated slightly on its axis so that the wall on which he leaned inclined back at an angle and the floor sloped upwards. After a few minutes both wall and floor returned to the normal.

When conditions had stabilized and the Tau image remained unchanged, Brevis left the blister and went to the control room where the activity was now centred. So effortless had been the moment of departure that he was inwardly slightly sceptical that they had already achieved a velocity greater than a conventional rocket could ever hope to match. It was also incredible that they could have developed a rate of acceleration beyond the structural endurance of any known material operating in a real-space environment.

Even in the control room the air of unreality grew no less. The T-Döppler radar and similar devices meant things to Porter and the computer but to Brevis' untrained eye gave no more sensible indication of speed now than they had when the ship was at rest. As their speed climbed to measurable fractions of that of light Brevis was completely at a loss to convince himself of any condition other than that of being completely at rest. He finally dismissed the problem and turned his attention to his own charges—the human components of the ship.

And it was here he discovered, at least in Grus and Porter, that the sense of speed and the fear of it was very much in evidence. What Driscoll thought he absorbed into himself, but the tension rising in the other two was a minute by minute tightening of a spring. Real-space physics postulated the speed of light to be a physical absolute, which nothing could transcend. But in less than four hours they and their ship were going to challenge that barrier at a velocity nearing three hundred thousand kilometres a second. Then something was going to have to give—ship and men, or physical absolute, and nothing in their experience could guide them as to what might follow. Brevis reflected curiously that while both men had dared to penetrate so far into the field of Tau physics they still had an inbred fear of transgressing the absolute of light speed.

Occasionally he returned to the blister, but the Tau Gamma image held steady and inscrutable save to Driscoll's eyes as he occasionally took reference readings from the pink transience to verify the computed course. The psychologist noted that the image was growing in intensity, and hardening in such a way that on entering the blister the image would snap into view rather than simply become apparent as a visual image would. Also its influence extended farther into the screen maze.

The strength of the hallucination was now beginning to overpower the visual, so that the blister layout and Driscoll's instruments were all assuming an apparent transparency through which diffused the pinkness of the surrounding image. Even Driscoll and himself were becoming translucent and losing definition under the influence of the Tau emanation. And, while the others were inwardly fearing the approach to the light barrier, Driscoll's fear was more apparent in the blister, where the shaping and intensification of the image was a tangible portent of the unknown into which they were headed.

"I don't like this at all, Paul," said Driscoll at last. "Signs are that this image is growing unstable as our velocity increases. I don't know what it will break into, but it won't be a simple mode jump."

"Is that bad?"

"At this intensity the image is tolerable at the moment because it's unchanging. But if it breaks to a living pattern it could become a nightmare in here. And if it breaks fast we might not even make it to the door."

"How so?"

"It can flay the senses out of you in seconds if you catch a rogue run of images. And since it can enter and confuse the brain even when you're unconscious, it can interfere even with the autonomic nervous system. Then it becomes a killer. I'd say it was a killer Tau storm that's brewing now."

"Then let's get out," Brevis said.

"You go. I've got to take a few more readings while I can still see the instruments."

"Then do me a favour," Brevis said. "Leave the communicator open and report not less than once a minute. Miss a minute and I'll be back here to get you out."

"Thanks, Eric. I'll do that. You've just five minutes if you want to be in the control room when we hit the light barrier. I think this image will split wide about then, and it may be preferable if one of us is elsewhere than in the blister when that happens."

A simple indication. Two blips on the face of an oscilloscope, crawling inexorably together. One blip indicating the speed of light, the other giving ship speed. The space intervening represented the amount by which the ship velocity lagged behind that of light. A narrowing difference. An approaching unknown.

Two blips crawling together. Now two centimetres apart, now one, with the basic tenets of real-space physics stacked high against the odds of their meeting, and the ingenuity of man pushing fearfully in favour of their passing.

The sweat stood broad on Porter's brow. Grus' fingers deftly laid mathematical expressions on the keyboard of a computer input. He too was near to breaking under the strain, but syphoned his nervous energy constantly into symbolic equations representing the event. The separation between the blips closed to a few millimetres, then to a hairsbreadth spacing which seemed to endure for an eternity. Then, just as it seemed that the absolute velocity of light was going to remain inviolate, the blips passed one another. And concurrently the men experienced an indefinable shiver which ran throughout their bodies as if every cell had undergone some transition yet still emerged whole and undamaged.

Porter rapidly checked his instruments and confirmed that they had indeed passed the light barrier, and that their rate of acceleration was still increasing. The detectors told of a million

kilometre light flare they had wakened in the emptiness of space, but this evidence, was purely metered information, and inside the ship human senses were still totally unable to appreciate the fantastic velocity of their passage.

But Brevis had anticipated the sudden cessation of Driscoll's voice over the intercom. Without pausing to share with the others the relief and triumph of the moment he rushed back through the corridors to the blister. As he passed through the screens he was aware, even before he could see it, that the image had broken. The kaleidoscope of lights that hit him as he reached the end of the maze shocked his senses, and he would have lost orientation had not his shoulder still been in contact with the lead slab of the screen.

Driscoll was immediately in front of the entrance, invisible now against the strength of the hallucination, but presumably standing fascinated by the living diorama of the now overwhelming Tau image. When Brevis grasped his arm he woke as though from sleep, and allowed himself to be led through the maze like a blind man. Outside, Brevis inspected him closely.

"Are you all right? How do you feel?"

Driscoll bit his lip and smiled wanly. "As well as can be expected. I guess I stayed a little longer than I should." His face was deathly white.

Brevis nodded. "That's a fair summary. I want you to go to your cabin, Pat, and rest for a while. I'll give you a sedative that'll put you to sleep for a few hours. And I don't want you to go back into the blister again until you've checked with me. I knew a rogue Tau image was vicious, but I'd not expected it to have that sort of effect in so short a time."

Driscoll's eyes searched the psychologist's face, and he seemed about to say something when a sudden wave of nausea and dizziness caused him to sway and clutch at his head. Thereafter he leaned heavily on Brevis' arm all the way to the cabin.

Though the light barrier had been passed, the tensions were still very much in evidence. They were now facing the great unknowns, a tiny, impudent, splint of metal and humanity fleeting at super-light speed across the analogue of interstellar space. The probes had previously achieved this condition also—but the few that had ever returned now formed a mind-twisting collection of physical paradoxes in the grim museum vaults of Tau Research. But there were no answers yet as to what had happened to the probes or why.

Men and computer constantly scanned every available bit and digit of instrumental data, searching for some clue to the mystery. But both mechanisms and men failed to identify anything amiss with the project. All known functions were staying well within their designated parameters, and thirty times a second the computer completed its checks and returned a negative comment. Grus let the printout tape slip by him unnoticed. Its detail was irrelevant. Although the computer was satisfied, none of the men could confess to being free from the nagging apprehension that they had already penetrated past the point of no return. But whatever the factor which had been added or taken away, it was neither recordable nor encompassed by their systems of detection.

Drawn by a certain fascination, Brevis returned once to the blister maze and cautiously sampled the now rampant image. It blazed in his head and formed such frightening confusion that he was forced to retire without gleaning anything of value from the experiment. As he was returning to the control room he found Sigmund Grus bending close to the floor in the corridor, examining something. He moved to pass, but the physicist motioned him back.

"Careful, Eric! There is something here I don't understand. See there—a tiny light shining."

Without Sigmund's direction Brevis would not have noticed the phenomenon for himself, so minute and intangible did it appear. But following the line of the indicating finger he found the object, and paused in wonder. In the corridor, unsupported and apparently unaffected by the airstream from the ventilators, drifted a minute splint of light, like a luminous dust mote. It

took him several seconds to realize that the object was in fact incredibly small and that it was visible mainly by virtue of its extreme brilliance. It was difficult to imagine how such a degree of radiation could be sustained by anything so lacking in size.

"What is it?" Brevis asked at last.

"It could be a projection of something from real-space into Tau—a sort of breakthrough of atomic condition."

"I thought that was impossible."

"It's barely possible, even in theory. Projection requires an extreme degree of excitation on the part of the basic atom—a very extreme degree, I can assure you."

"How extreme?'

"The excitation state involved in nuclear fusion, at least." Grus appeared thoughtful. "But something tells me this isn't a simple projection. This is something new. Such a thing should never exist, even as a projection. You couldn't have a self-sustaining fusion reaction that small."

He produced a pencil and probed the splint carefully. It did not move, but seemed rather to penetrate the pencil and emerge unchanged. He examined the pencil in silence.

"I don't like this at all," he said finally, holding the pencil up to the light. "Would you fetch Paul?"

Porter came without comment. The top-line frown reflected the fear which was already clawing deep in his guts, and the new phenomenon could add no more or less to the burden of responsibility he was already carrying. Brevis watched him carefully for signs of hysteria, and was relieved to find none.

When they reached the corridor Sigmund had extinguished the overhead fluorescent panels, and was observing his discovery against the background under the dim illumination of the tritium safety lamps. In this setting the splint burned inconceivably bright for its size, casting a clear glow on the bulkhead.

"Don't touch it," Grus warned. "It could be dangerous. I want to try a test."

He went off to the laboratory and returned with a square of fine tungsten foil. He passed this several times through the point of light. It remained unmoving. Then he ran to the optical room and closed the door. A minute later he was back.

"Holes right through," he said. "I don't think this can be a projection. Its heat is incredible but the holes it makes are so minute that they're hardly capable of being resolved with our microscope. Nothing that small should possess that sort of energy. Paul, I want to do a spectrum analysis on this thing."

"I'll help you," Porter said. "But we'll have to dismount the spectrograph and fetch it out here since we can't pick that thing up."

"Can I assist?" Brevis asked.

"Not much at the moment, Eric. We've some delicate work ahead of us, and its specialized. We'll let you know our findings when we're through."

Brevis nodded and returned to his cabin. He had the curious impression that both men already suspected and feared what their findings would be. He checked through his stocks of tranquillizers in the store-cupboard and wondered just how long such mental and intellectual strain could be offset by purely chemical means. At some point a psyche was going to refuse to be pacified by drugs, and when that point came somebody was going to snap. Driscoll was already showing signs of breaking up. And who next?

It was about an hour later that Porter knocked on his door.

"May we come in?"

"Do." Brevis pulled down the other bunk to form a seat and beckoned him in. Grus followed, still studying the long strips of photographic paper from his instrument. His hands

were trembling.

"We've found what it was, Eric." Even at that point Porter was reluctant to put a name to his fear.

"I think I already know," said Brevis quietly. "It's a star."

"You knew?"

"I guessed about the same time that you did. But I was expecting it. You weren't."

"But a star . . ." said Porter, and his voice was ragged. "It's a spectral G-type sun, similar to Sol. It could measure perhaps a million miles across. And it's out there in the corridor like a point of light so small you can hardly measure the holes it makes. Christ, Eric, if that's a sun out there—what size does that make us?"

FOUR

Putting his empty glass unsteadily back on the table, Porter pushed the hair from his face.

"I still don't see how you could have anticipated this, Eric."

"Not exactly this, but I was prepared for something of this nature. I saw the Tau probe vessel which came back only twenty-two inches long. This is part of the same pattern. Somehow, Paul, entry into deep-Tau cuts things adrift not only from the universe but from the controlling physical constants of the universe. I've no idea how long the ship is now, but if you want to try the calculation, start by using light-years instead of metres."

"And yet you aren't frightened silly at the prospect?"

Brevis refilled the glasses from the bottle on the table.

"No. So far the survival threats here are purely intellectual ones. It would take a well-trained mind to appreciate that we three, sitting here drinking whisky, regard ourselves as being close to death. And if asked what form of death, we none of us could even define it."

Porter watched his face carefully for a moment. "You're dead right of course. We've come unstuck from the universe, certainly, but so far it's panic not physics which is most likely to kill us. Sigmund, have you enough data to calculate our size from the dimensions of that star, assuming it's a regular G-type dwarf?"

"I'll work on it," said Grus. "But there's a more urgent problem first. That star must have entered through the hull, and therefore left a puncture. I think our first concern must be the preservation of our atmosphere."

"If the holes it made in the hull are no greater than those it made in the foil, the air losses won't be measurable."

"True. But that's only a simple G-dwarf. What happens if we run up against a giant like Betelgeuse? That would make a hole we couldn't afford to ignore. I suggest we try to navigate in a direction away from the island universes until we've some idea of what we're up against."

"Good point," said Porter. "I'm going up to the control room to see if we can get sufficient information from the instruments to give us a bearing on a relatively unpopulated region of space. I could use Pat's help, Eric. Is he still sleeping?"

Brevis glanced at his watch. "I gave him a sedative about four hous ago. He should be out of it by now. I'll go and wake him."

"Get him to join me in Control. We've got instrumentation for detecting stellar objects in real space, but whether it can detect star systems the size of meteorites projecting into Tau is a rather different problem. Is it possible to use the blister?"

Brevis shook his head. "That's completely out of the question. The Tau-psychic interaction in there is so strong it would drive a man senseless in fifteen minutes, and kill him in thirty."

Porter nodded his acceptance of the fact and went out of the door. Brevis' own intention of following was delayed by a sudden gesture from Grus towards the end of the room. Through

the wall of the cabin another star had drifted, and they both paused in fascination as the tiny splint of light cleared the mirror of the table top by a centimetre and neared the whisky bottle standing in its path. Brevis moved to take the bottle out of the way, but Grus stopped him.

"Wait, Eric. There's something we need to know."

The splint touched the bottle and penetrated slightly into the glass. Then with a crash the bottle shattered, scattering liquor and glass on to the table and the floor. The star, apparently unaffected, continued its slow, amazing journey across the room.

"Bad!" said Grus. "We none of us dare sleep with those things drifting through. At best they could be painful, at worst, lethal. Can you imagine waking with one of those entering your temple? Even walking into one could cause a pretty nasty injury." He glanced around him. "And it's only a matter of time before one of them cuts some wiring or hits something vital. And . . . Oh my God!"

Brevis was caught by his sudden spasm of alarm.

"My God!" said Grus again. "I've been worrying about the heat and visible spectra, but those things must be chucking out hard radiation as well. Not only could they be a fair biological hazard, but if one of them gets into the computer it'll flip every solid-state device in the whole assembly. The whole control system will go haywire, to say nothing of the loss of the computer function. You'd best get Pat up to Control fast. I'll try and get a radiation check on this one, but unless I miss my guess we've a death threat far more tangible than panic already with us."

Brevis tried to raise Driscoll on the intercom, but failed. Carefully avoiding the star in the corridor he ran to Driscoll's cabin. It was empty. The sheets on the bed were still warm, but not too recently occupied. Swiftly he checked the few other likely places. They were similarly bare. Then he flipped the emergency communication button.

"Paul! Sigmund! Is Pat with you somewhere?"

"Not here," said Grus.

"Nor in Control." Porter's voice carried a note of alarm. "What's the matter, Eric?"

"I've an idea the damn idiot's gone back into the blister. The image there is so ultra-real it's almost addictive. I've noticed a similar tendency in myself. Once you've experienced it you can't let it alone."

"Damn!" said Porter. "Have you tried him on the intercom?"

"He must be hearing my voice now," said Brevis, "but if he's in the blister he won't respond because the Tau image will represent the dominant reality. Pat, for God's sake, if you can hear me, answer!"

The set returned only silence and little electronic sounds gathered from various parts of the ship.

"Then he'll have to stay there until the course is re-set," said Porter.

"No. He could have been there ten or fifteen minutes already. Leave him exposed for as long again and we won't need to fetch him out. Just paint R.I.P. on the blister door and pack his effects for his relatives. That's a killer image in there. I'm going to try and help him."

Without waiting for Porter to reply, Brevis ran directly to the blister door. It was slightly open, though he knew it to have been closed the last time he had left. The telltales on the wall indicated that the screen maze inside had been altered or damaged. This in itself was sufficient to show that Driscoll had entered and therefore needed help.

Before he could enter, Grus arrived. Porter was close behind. Porter summed up the situation with a quick glance, and turned to Brevis.

"I can't let you go in there, Eric. Pat'll have to take what's coming to him. I daren't risk losing you too."

"And we daren't risk losing Pat—not if we ever want to find our way home again. He may be unconscious, but I doubt if he's dead yet. There's still a chance of getting him out alive.

Later there won't be."

Porter came to a sudden decision. "Very well. But you go in with a rope around your waist. You'll have five minutes, and then we'll haul you out if necessary. And try not to fall down among the screens or you might get hurt on the way out."

"If you insist." Brevis stood submissively while Grus fetched a rope from the store-room and fastened it round his waist. Porter caught him by the shoulder.

"Five minutes, Eric—and good luck!"

Brevis shouldered open the heavy door and entered. It was quite dark inside, and, as the telltales had indicated, the internal screens were disarranged. All he could see initially was a fuzz of diffused polychromatic light which crept around the disordered lines of the lead panels. Seeking orientation, he moved back to the wall and sought the light switch.

As his fingers moved the toggle he was engulfed by a wave of vibrant, dancing, idiotic, multi-coloured patterns, which swarmed in front of him like a living kaleidoscope. The imagery trapped his senses in a mesmeric focus which almost robbed him of his power to react. Mercifully the toggle remained under his fingers and he snapped it off urgently, thankfully relaxing in the return of darkness.

"Are you all right, Eric?" Porter's voice sounded a hundred times farther than it should.

"Just about," said Brevis. "Deep-Tau emanation and A.C. lighting make a formidable combination. I couldn't stand that for long. I'll do the rest blind."

Slowly he found the screens and devised a path between them and across those which had fallen, scowling at the thought of the psychic paroxysm which had driven Driscoll to attack the heavy screening with such irrational violence. The edges of the lead sheets appeared fuzzed and burred with a polychrome haze which grew stronger as he entered through the maze and hinted at the violence and turbulence of the Tau-psychic effects rampant in the blister proper.

He searched each area urgently with his hands, hoping that Driscoll had fallen between the screens and away from the awful aura ahead. But he knew in his heart that this would not be so, and he felt a wave of fear at the prospect of having to penetrate finally into the unshielded extravagances of the raw Tau influence.

When he turned the last corner into the blister the wave of imagery and sensation tore down at him apparently from all sides, swamping his senses and leaving only the single core of his objective mind to guide him in his purpose.

Dazed by light and form and colour, his eyes attempted to follow and analyse the geometrically untenable planes and images as he trod apparently through a macrocosm of chaos which only his iron resolution reminded him was the blister floor. His mind seized on the shattering images and attempted to rationalize them into meaningful terms and comprehend the semantic substance with which every line of light was seeded. Every now and again his imagination became caught in a snare of some intriguing speculation, and he had to wrench his mind free with almost physical effort, knowing the deadly penalty for indulgence.

He could understand now the fatal attraction of the Tau images for Driscoll. The brain received the images direct, without the filtration and attenuation of the normal human senses. The mind was released from the mundane bonds of limited sensory experience, and could swing, undamped, in domains of previously unfathomable concepts, without the distractions and reflexes of the body.

A savage jerk under the ribs brought his own wandering thoughts back to focus on his mission. He stumbled over Driscoll's body on the floor, but fortunately did not fall. He could see nothing of the form he caught up to his shoulders, only the variegated colours of the quasi infinities which clawed at his mind with snags of intangible steel.

Again the rope caught at his chest, this time insistently. He hesitated, having no means of

gaining his bearings in the unchartable fantasies in which he was immersed. The rope had now become the sole link with another sort of reality, an invisible umbilical cord connecting him across the unknown to an isolated, dark womb of fear and apprehension which was the ship and its situation. He felt an irrational desire to slip the knot and not to return to the worry-shrouded oppression of shades with its precarious chance of re-birth.

The third pull of the rope was decisive. Before he could re-arrange his burden so as to get his fingers to the knot he was dragged forcibly against the screens and through them, until, near the end of the ruined maze, darkness closed down again and the mental turbulence grew quiet. Hands seized him in the darkness and slipped the body from his back, then thrust him outward into a different kind of light—the cold, fluorescent harshness of reality. He fell into the corridor and remained there for many seconds, shaking the images from out of his head, until Porter came and helped him to his feet.

"How do you feel, Eric?"

"Grim. But I think it will pass." He looked up and saw the door of the blister still part open. "But it's not a risk I'd care to take again. Can you fix that hatch permanently closed?"

"I'll weld it shut," promised Porter. He looked at Driscoll, now laid desperately unconscious in the gangway. "Not that it looks as if he'll be interested in it for a while."

"I wasn't thinking of him," said Brevis. "I was thinking of myself."

Outwardly, Porter's evasive manoeuvre seemed to be a success. His instrumental questing finally located a direction in space where the stellar population was obviously less. Breaking the pre-set course co-ordinates, he manually directed the ship in this direction. Miraculously both astral bodies which had entered the hull drifted slowly out through the fabric again without detectable damage to the vessel. Then they waited. No further cosmic intruders penetrated into the ship, and finally they relaxed.

This gave them the respite needed to consider their plight more logically. But internal tensions were creeping dangerously high. Brevis was more than anxious about the continuing stress and its inhibiting effect on the type of intellectual free-wheeling which the problem demanded.

Grus was tending to concentrate his energies on routine tasks, as though trying to convince himself that he did not have time enough to grapple with the major problem. Driscoll was being maintained in a state of light sedation after his experiences in the blister, and was therefore intellectually inactive. Even Porter was having difficulty in bringing his mind to a position of logical attack.

"The hell of it is," said Porter, "you can't even find a point from which to start solving a problem like this."

"You're not thinking too clearly, Paul," said Brevis. "You're allowing yourself to be fazed by the size of the concepts instead of looking for fundamentals. I'm no physicist, but the problem appears to me to be one of congruency. We've lost physical congruence with our own universe. We're no longer controlled by whatever factors control the size of things. Now, what factors do control the size of things, Paul? Why is anything the size it is, rather than a million times larger or smaller?"

"A good question," said Porter, "and way outside my field. I don't pretend to know the answer. The size of a thing is always relative. I suppose the nearest thing to absolute units are the sizes of the atoms and molecules from which matter is constructed. Aggregates of matter generate and are acted upon by certain forces—molecular binding forces, gravitation, centrifugal forces and the like, which roughly determine the mass-range which that type of object normally achieves.

"It's the interaction of possible states of matter, and the forces generated by them and acting upon them, which appears to control the size of everything in the universe. You can't

have a molecule as large as a star or a star as small as a molecule because either would be unstable."

"Then what happened to place us outside this control?"

"I don't know. We were in a state of Tau-spin resonance when we accelerated through the speed of light. It's beginning to look as though the Einsteinian mass-velocity relationship does apply in Tau, but in a peculiar way. Instead of the velocity being limited to that of light, we passed easily through the light barrier, but tore our own atoms free from the controlling influence of the universe instead. Effectively we're a universe in our own right now—still self-integrated, but unconnected with any other universe. And Heaven alone knows what factor is controlling our absolute size relative to the universe from which we started."

"Are we still in Tau-space?"

"The Rorsch generator is still running, but our molecular density is so low relative to the star stuff through which we're passing that it's doubtful if a true Tau state is being maintained."

"Can't we just reverse the process and drop back through the light barrier?"

"We're trying," said Porter, "but there's no indication yet that it's going to work. Since we cleared the star patch we've been winding down our speed—eighteen hours, and we still aren't much above light velocity now. So far our size has done nothing but increase slightly more. I'd guess that once our atoms were torn from the universe they found some arbitrary relationship of their own which is independent of velocity."

"That's a key factor," said Brevis. "This arbitrary relationship—I'm not convinced it's true. I suspect there's still some relationship between our present size and the size we were when we started. I think there must be some connecting link. Can we check this at all?"

"We can fling all our co-ordinates into the computer and see if we can spot a relationship. If there is a controlling principle it should show up as a function of something."

"Will you do that?" said Brevis. "If you can isolate the controlling factor it gives us a possible method of attack on the problem by attempting to reverse the issue."

"I'll get Sigmund on it right away. If we spot anything I'll let you know immediately."

FIVE

In this, Brevis had at least achieved his object of getting Porter to apply himself to the task. Once a line of investigation had been initiated Porter could be relied upon to follow it to its logical conclusion. Even if the research proved futile, he had at least set up the pattern of attack. He was not therefore surprised when Porter's next communication carried a note of enthusiasm.

"Eric!" Porter was speaking from the computer room. "I think we've isolated the controlling factor. The computer has thrown up an interesting set of constants which give an extrapolation back to the time of our breaking the light barrier. The constants are independent of velocity or distance from point of origin, but they are related to elapsed time."

"How does this affect us?" Brevis asked.

"Frankly it means the longer we stay in this state the larger we shall become. We're like the proverbial exploding universe. Where stars can now float through the ship, soon it will be galaxies. Can you imagine . . ."

"Shut up!" said Brevis sharply. "I'm trying to think. I don't believe this is any accident, Paul. It's rather what I suspected. Now think carefully. Is anything at all still tying us to the old universe? For instance, on what do we base our conception of measured time?"

"All our instrumentation is related back to the master oscillator. That itself is synchronized with . . . Eric, you may just be on to something. Look, I've got some checking to do. I'll call you back in a few minutes."

Brevis acknowledged the hastily broken connection with a raised eyebrow. His eyes automatically wandered to his precious drug cabinet. As an explorer of the human mind he had learnt the humility of the chemical modification of human outlook. Any mind-state could be conditioned for better or for worse by a few micrograms of the right substance in the bloodstream. He had drugs which could make his comrades accept their present situation with joy or equanimity, but nothing in any phial or bottle which could fire the spark of genius they needed to resolve the problem.

His reverie was interrupted by Porter's insistent buzz on the intercom.

"Eric, I've got a lead. Don't ask me how, but we're still receiving timing pulses from the Tau Research transmitters. A ten kilocycles square wave. Is this the sort of thing you were looking for?"

"It could well be. What do we do with it?"

"Use it to correct our own master oscillator. In effect we're using it as a time reference for damn nigh every time constant on the ship—clocks, transmitter, instruments, computer—the lot. The master oscillator crystal is pulling like hell, but it's still synchronized with the reference signal."

"So all our time referents are still tied to the old universe?"

"Effectively, yes. What do you suggest we do?"

"Turn the receivers off. Kill the signal."

"First let's consider what that's going to achieve. If the time constant has any bearing on the size of this ship, what happens if we cut adrift from it? We will lose our very last point of congruence with the universe. We're already adrift in the three physical dimensions. If we lose congruence with time also, our chances of ever getting back would appear to be remarkably slight."

"Something's controlling our size," said Brevis. "And the computer's proved it's no casual relationship. But that controlling factor has caused us to become about four light years longer than we started out. I would guess that somehow our size is attempting to compensate for an untenable time constant to which we are tied regardless of velocity. As I see it, our only hope is to break every possible link so that our size determinator is a purely arbitrary factor. Then we have a chance to do some research into instituting our own control."

"I think it's a hell of a risk, Eric. Better the devil we know than the one we don't."

"How much do we know about this devil called time Paul?"

Porter considered this in silence. "Very well! I'm turning the receivers off now. But I wish to hell I knew what you had in mind. I know there's something buzzing in that brain of yours."

"Perhaps. I'm wondering whether to take a gamble, based on something I saw in the vaults of Tau Research. When you can show that our size determinator is arbitrary I'd like to set up an experiment which I think might work. I think it stands a chance because I suspect that it was tried by somebody once before. Somebody who finished up one and a quarter inches tall."

There was silence for a long second. "At this stage, Eric, any idea is better than none. How do we set about it?"

"I need to tidy up a few details first. So I'll give you the proposition in its final form. And Paul . . . !"

"Yes?"

"I'd appreciate it if you'd keep this to yourself for a while. You understand why."

"Sure, Eric. The whole situation's a psychological bomb."

"Check! Get those receivers off and have Sigmund watch the computer to see if the linking factor is broken. When you're sure the time correlation has gone let me know—but quietly. Hullo, Paul, are you still there?"

"Sorry. I was just thinking. I wonder what it's like to be one and a quarter inches tall?"

As he cut the connection Brevis noted that his own hands were shaking. The scheme which had formed in his mind in the course of the conversation was one born of desperation, and would involve the type of risk that only desperation could justify. That the idea had sprung from his own mind was a fascinating insight into the pressure of the fear which lay in his own subconscious. And, despite his words, it was not something he could discuss with either Porter or Grus. In fact, there was only one other person aboard likely to be able to follow his reasoning and appreciate the nature of the experiment.

Slowly his considerations formed into a practical plan of action. Some of the steps he was loath to take, but again the sense of desperation forced the conclusion that there was no other course. He knew now what drugs he could use and to what purpose.

Then he reached the point of decision, and moved swiftly. From the automatic kitchen he removed the coffee dispenser and doctored the first two charges of coffee concentrate. From the surgery he took a couple of pre-sterilized hypodermic syringes and two ampoules, which he concealed carefully in his pocket. And all the while he was watching the clock, knowing the shipboard habit pattern with such certainty that he could afford to let affairs take their own course up to a point where his active intervention was necessary.

The only new factor to be added was Porter on the intercom, his voice ragged and near hysteria.

"Eric, the time link factor's been broken. But we should never have switched off the receivers."

"Why, what the devil's happened?"

"It's the stars, Eric. My God, what have we done?"

"What's the matter with the stars?"

"I thought the instruments were broken, but it isn't that. I've checked. But the stars have all gone out."

Brevis verbally strove to quell the rising panic, playing for time. To ensure that the coffee reached its intended destination he collected it himself and took it to Grus and Porter, and stood for a moment while they tried to coax the computer to handle mathematical concepts of infinity for which no programmes would ever be available. The unmistakable smell of fear was heavy in the air. Brevis estimated that the knockout drug in the coffee would be effective in about five minutes, and was somewhat apprehensive when Porter decided to consult the micro-reader in his own cabin just before this time. He followed Porter discreetly, to be on hand in case he should fall on the stairs. But Porter continued safely almost to the cabin before he fell unconscious in the corridor.

Brevis caught the fallen figure under the armpits and dragged it in to the bunk. Baring an arm, he prepared a hypodermic syringe and made an injection. Then he stopped and looked about him. The ship seemed curiously still. Only the whispered rustle of the automatics and the slight sound of the air conditioning system broke the silence. There was no drive operating, not even for routine attitude or spin correction. Even the power hum had fallen to an inaudible level, and the Rorsch generator, working in such tenuity, had long since ceased to voice its characteristic harmonics. In these conditions he imagined he could hear the molecules in the walls around him creaking as they strained to find some controlling principle which would set their absolute as well as their relative size.

He went out into the corridor and then back up to the computer room looking for Sigmund Grus. The physicist was already asleep, his head resting on the console. Brevis moved him to the floor and gave him an injection as he had done with Porter. Then, satisfied, he left Grus at rest, and headed for Driscoll's cabin.

Driscoll woke up at his entry and propped himself sleepily up in the bunk, an unspoken question on his lips. Brevis seized his wrist and checked his pulse impatiently. Then nodded.

"Get up! We've got work to do."

Driscoll scowled at the abruptness of the address, but complied nevertheless, swinging into his working jeans, all the time his deep eyes trying to wrest information from Brevis' impatient face.

"Now what? What's going on?" Even waking from sleep Driscoll took it as axiomatic that something unusual was in progress.

"We're going into the blister. Paul's welded the door shut, so get a cutting torch and join me there."

"But Paul'll never . . ."

"Paul can't stop us. Nor Sigmund. I've got them both under sedation. Now I've got some work to do in the blister and I need your help. What's the matter—don't you dare?"

"You know how much I'd dare to get back in there." Driscoll's intelligence shone through the perspiration on his brow. "But God, Brevis, I hope you know what you're doing! Was it you who got me out?"

"Yes. That's how I know how much of it I can stand and how much you can stand. It should have killed you, but it didn't."

"After a while you learn to come to terms with it. The effect of Tau imagery is essentially akin to a drug experience. When it's as strong as we found it in the blister it can combine mescalin fantasy with opiate addiction. And there's a limit to what you can take and still retain your own volition. But you can prolong your tolerance by repeated exposure."

"This time," said Brevis, "there'll be no question of even trying to retain your own volition. We may have to go well beyond that point. The best we can hope for is that one of us can retain sufficient objectivity to complete the job."

"What job?"

"Getting the ship back into congruence with the universe from which it started."

Driscoll watched him narrowly for a moment or two. "I know you're not mad, Brevis," he said, "so you must have some idea behind what you're saying."

"It's more of a hunch than an idea. In the vaults of Tau Research I saw a probe vessel twenty-two inches long with a pilot to match. What intrigued me was not so much that he finished up at such a size, but why he happened to finish up at that particular size. I wonder now if I'm beginning to see an answer."

"Go on."

"My theory is this. His probe vessel, like ourselves, probably broke dimensional congruity with the universe due to some Tau phenomenon when passing through the light barrier. And like ourselves, by accident or design, he established that his size determinator was an arbitrary factor."

"Is ours?"

"It is now. We were apparently maintaining time congruency with the universe due to our dependence on Tau Research timing pulses. This link we've now broken. So we should have access to the same sort of control which I think the probe pilot used to correct the size of his ship."

"Which is what?"

"Imagination. Tau-psychic interaction is something we can prove to exist even though we don't yet understand it. The Tau hallucinations in the blister are part of it. An area of the brain, apparently located near the so-called pineal eye, responds directly to unshielded Tau influence, and there is evidence that certain aspects of Tau are mutually responsive to strong psychic states. I suggest that having realized the size determinator of his probe was arbitrary, the pilot went into the blister and attempted to mentally correct the size of his ship by reference to the Tau image. He literally thought his way back into near congruence.

Unfortunately he overshot the mark, but when you consider through how many orders of magnitude he probably descended, it was a feat of genius."

"My God, Brevis!" Driscoll was standing now, his eyes alight with comprehension. "I was in Control when that probe came in. You couldn't have known this, but the pilot was in the blister when it arrived. I got him out with a spatula and my thumb. I've had nightmares about it ever since."

"I guessed as much. But are you willing to attempt the same thing?"

"Of course. We don't have anything to lose, after all. And if it worked for him it should work for me. But I'm not too certain about you. After certain minimal exposure to Tau hallucination one tends to become . . . 'wedded', as we pilots say. But the honeymoon period is a pretty harrowing affair. I suggest you stay outside the blister and leave the manipulation to me."

"I would, but for one thing," Brevis said. "When you're pitting your own psyche against the truly infinite it takes a rare degree of dissociation to establish your own status accurately. The probe pilot underestimated himself with disastrous results. You're an outstanding introvert. Any error in your judgment will necessitate the use of a microscope to extricate us from this ship. Conversely, I have insufficient experience of Tau imagery to drop us through even one order of magnitude. But I do have enough training in psychological balance to correct us to approximately the right endpoint. As a composite we have a chance of bringing the size of the ship to a point where Paul and Sigmund may usefully survive."

Driscoll accepted the point without comment. "When do we start?"

"The sooner the better. The others will be out for about three hours, and the less imaginations we have working at once the more likely we are to succeed."

"Is that why you put them out?"

"I despaired of ever trying to convince them of the scheme which you have accepted almost without hesitation. That's why I approached you alone. I also put them out as a humane precaution which I cannot extend to either of us."

"Which is?"

"At our present size we could include a whole galaxy in the ship and never notice it. But when we start to descend through a few orders of magnitude you can imagine our predicament if we happen to include within the ship's structure even one solitary expanding star."

SIX

Seeing his unfamiliarity with the tool, Driscoll took the cutting torch away from him and cut deeply into the metal, causing a shower of burning metal droplets to cascade to the floor. Then he levered the still white-hot metal open with a bar, and forced the door back with his foot. But despite his exertions, the sweat that beaded his brow was of emotional rather than physical origin. He stood aside for Brevis to enter.

After their last desperate emergence very few of the screens remained standing, and the extremities of the unshielded Tau emanation seemed to burn off every angle and projection with an intensity which was almost audible. Brevis did not need to enter far to know that the savagery of the raw Tau influence was considerably greater than it had been even when he had almost succumbed while getting Driscoll out. Both his hope and his determination drained as the force of the situation hit him. Driscoll, coming up behind him, stopped abruptly, appalled at the intensity of the effect.

"Jesus! That will eat us alive. We could never function in there."

"You don't think we could stand it?"

"We might stay conscious, but it wouldn't be possible to think. It would be almost a complete mental wipeout with that degree of activity."

"Let's get outside again," Brevis said, "and see if we can find another angle on this."

Back in the corridor they closed the damaged door and leaned against it, thankful for the respite.

"We've not much time, Eric. The level's rising all the while. Whatever we decide will have to be done soon. If it gets much stronger it'll strip us senseless before we can get through the screens."

"Can you think of anything at all which might give us a lead?"

"Given some sort of focal point or target on which to concentrate, it might just be possible to remain objective. But you'd never handle abstractions against that level of interference."

"Tell me something," said Brevis. "When I went into the blister to get you out, I put on the light at the door side of the screens. There was some Tau emanation leaking past the screens, and the interaction nearly blacked me out. Is this usual?"

"No." Driscoll's eyes were shrewd with their dark intelligence. "It isn't usual, but it happens sometimes. Occasionally in terrestrial Tau work the ship breaks from real time into the Tau temporal analogue. Under Tau emanation in a blister the light attempts to make the real-to-analogue transition and you get the same impression twice—once visually and once via the Tau hallucination. But the two signals are out of phase and set up a ringing pattern in the brain."

"I see," said Brevis. "That accounts for the patterning of the image."

"Probably. But it has its uses. The ringing sets up something similar to a mental moire fringe interference pattern from which an experienced man can read the time differential with almost micrometer accuracy. Using a narrow-band light source with controllable illumination, it makes a useful research tool."

"Have we got such a source?"

"We've got a mono-isotope krypton 86 discharge lamp in the blister. That's about the best available. With it you could detect an analogue-to-real time displacement of less than two milliseconds. Does that help?"

"It just might," Brevis said, "if you could use the lamp as your focal point and concentrate on correcting only the time differential."

"How would that help?"

"Since we broke the link with the Tau Research timing pulses, the ship analogue time has adapted itself to fit the same controlling constant as ship size."

"Are you sure of that?"

"Porter told me the stars had all gone out. This suggests there has been a time shift from real to analogue time. Our time scale is now so vast that normal light frequencies just don't register with us. It's too much of a coincidence that the stars disappeared just after the receivers were turned off. I surmise that if we can get one dimension back into congruity, the others will follow. After all, they're all now tied to the same controlling constant. Alter one dimension and the others must modify themselves to balance the equation."

Driscoll pulled his lip. "The whole theory's based on far too many assumptions."

"We don't have time to re-examine the data. Unless you've anything better to offer I suggest we go back in there and try it."

"You're right, of course. At this stage even a bad theory is better than none. And if we're going to die anyway, I know where I'd prefer to be."

Driscoll opened the door and walked towards the blister. Brevis followed, hiding his face in the shadow of Driscoll's fading silhouette—a shadow made surrealistic by the polychromatic

fuzz which made nonsense of the outline. The crackling lure of the bright imagery seized his mind and drained his volition. He followed like an automaton, with his eyes fixed on a narrowing area of darkness which was the small of Driscoll's back. And in his mind there nestled an even smaller and more rapidly reducing area of objectivity.

Driscoll was in the blister now. Forcing his hands to find and operate familiar instruments now entirely invisible because of the strength of the hallucination.

"Lamp on," Driscoll said. "It'll take a few minutes to warm. I'm sitting right in front of it. Make it easy on yourself. Go outside and wait."

"I'm staying," Brevis said. Unable to orientate himself with respect to the now unseeable blister layout, he sat down on the floor. At rest, the impressions overwhelmed him. The Tau images, suffering no attenuation through the limiting filters of the body, assumed an exquisite fidelity and "edge" which he found both intolerable and irresistible at the same instant.

There was no way now to shut out the startling excitations, nor any way to keep his personality contained. The Tau-psychic interaction continued through to fusion point, and its effect was one of mental dispersion, as though his consciousness was being distributed homogeneously into the surrounding phenomena. His mind and the Tau-space imagery momentarily seemed fused into one.

It was later that something left of himself tired of being alone and infinite, and tripped his attention to Driscoll's disembodied voice rambling in the midst of chaos. Only one phrase was sufficiently articulate to be understood—but that was sufficient to shock his mind back into narrower awareness.

"Brevis . . . stop fighting me. Is that what you want . . . infinity?"

In that instant of revelation Brevis forced his mind to withdraw from the fantastic rapport, and forced his muscles to carry him to his knees. As he did so a new form of image forced itself into his head—great sliding bands of alternate light and darkness, slipping, twisting, moving always downwards. Then he knew that his eyes had come within the range of the krypton lamp. This was the moire fringe effect, though what was visual and what was hallucinatory he was unable to decide.

But he was conscious that Driscoll was somehow forcing the bands downwards across the field of view, seeking a smaller pattern, a smaller differential between their time and the real time of the universe. The flickering bands cascaded to a blur of grey, then slowed as Driscoll paused for a closer examination of phase, angle and magnitude.

Brevis relaxed, and in doing so he lost the image of the moire fringe. The turbulent Tau image crowded over him again, slipping away on all sides in a torrential series of changing modes and characters breathlessly unlike anything he had previously experienced in Tau. Unable to regain his vision of the fringe, he attempted to remain a passive observer as the drunken kaleidoscope of subjective impression veered down an ever-narrowing funnel of restricted effect.

The thought formed hazily in his head at first, and then with a clear and rising panic, that Driscoll had lost control. The descent seemed too far and too fast, and they were gaining an impetus which it appeared impossible to halt. From the infinitely large, Driscoll's own introspection was threatening to drive them into the infinitely small, and they stood the risk of becoming voyagers in some untenable sub-nuclear domain.

Brevis attempted to extend his mind into correlation with the now fleeting image. But the relative velocity between the phenomenon and the speed of his own thought processes defied the contact and threw him back with a headful of sparks. And his panic grew to a certainty as the velocity of the descent increased still further as judged by the transience of the parade of imagery.

Once again he attempted to enter the battle, and this time his mind caught and held, but with a mental wrench that almost stripped him of consciousness. Then he was back again,

fighting to re-form the patterns of Tau image with which he had become acquainted through exposure to more normal states of Tau.

Then suddenly stasis, quietude, rest; a synchronous locking. He caught at the image and held it, and the whole scene stabilized in the rose-pink panorama of the Tau Gamma mode illusion. It seemed they had arrived.

It took him many minutes to collect his senses and to take stock of the situation. The intensity of the Gamma image was low, and the krypton lamp, now itself visible, provided sufficient illumination to draw out other real details against the pink hallucination. Stumbling to his feet Brevis located the switch for the blister's internal lighting. Immediately the normal details of the room became apparent and the pinkness shrank back to a mere ghost of an illusion.

Driscoll had slipped from the chair in front of the lamp and was now prostrate on the floor. Relying now on his eyes, Brevis sought a path through the disordered screens and dragged Driscoll out to the corridor. A swift examination suggested he was not dead but merely in a state of shock. Despite the urgency which the treatment of Driscoll seemed to merit, Brevis felt impelled to visit both Porter and Grus on his way to collect his emergency case. Both were still sleeping, but stirring and shortly due to wake.

It was only when he reached his cabin that his experience in the blister caught up with him. As he opened the door a brief confrontation of his own face in the mirror filled him with confused amazement. In attempting to correlate the death-white idiotic features which he saw with those of his normal image, the wonder and the horror caught up with him. He had a vague impression of falling as delayed shock drove the resistance from his body and tipped him into a pit of unconsciousness.

When he finally awoke, Porter was standing at his side.

"How do you feel now, Eric?"

"Weak," said Brevis.

Porter nodded. "It certainly took it out of you. But you'll be pleased to know that whatever you did was successful."

"You mean we've made it?" Brevis sat up. "We got back into congruence?"

"As near as we can tell. When Sigmund and I came round we found we were in a simple Gamma mode. We took the chance and dropped the ship out of Tau into real space. There we found everything according to the catalogue. We've been taking spectroscope and radio-telescope fixes on the identifiable primaries and radio-sources, and we've even managed to establish our position."

"How did Pat make out?"

"Fine. He recovered a lot quicker than you. He's back in the blister right now doing triangulation fixes for Sigmund, and feeling rather chipper about the whole thing. He estimates we can make the return trip without losing congruence as long as we don't tie our time constant to a fixed point of reference."

"With that I agree," said Brevis. "Our dimensional dilemma was a simple example of Tau-psychic interaction. The radio-pulses controlled our instruments and our clocks. From these we took our consciousness of time. It wasn't a condition of time appropriate to the separate universe we had become at that velocity, but we fondly imagined that time, at least, was real.

"It was our acceptance of that measured time which fixed it as a time constant as far as Tau-space was concerned. All the other physical dimensions then had to adapt in order to maintain the right mass-time relationship. I think for that we can steal Diepenstrom's term of an imagination trap—because that's precisely what it was. Next trip just let the time constant, and thus our time consciousness, drift with the ship. By the way, how far did we travel?"

"When you feel up to it, Eric, come down to Control and see the scanners. It's rather an

impressive sight. The Milky Way, seen from completely beyond its boundaries, is a rather frightening and a rather nostalgic thing to see."