

Chapter One

He could see four or five thousand buffalo, one of the small herds. They stretched out in a long line below him, wide enough to fill the shallow valley along this side of the river, coming partway up the sides of the hill, not fifty meters from where he stood. The sky was its perpetual blue-grey, as clear as it ever got at this latitude, though the sun was almost bright. Late winter snow, churned into a dull brown mass by the buffalo where they trekked along the valley floor, nonetheless glinted along the tops of the hills. Weather forecasts said more snow was coming. It was Friday, April 12.

He leaned on the railing, looking down, the windows of the research station behind him. He liked the solitude of the open sky of the National Buffalo Commons. Though he had many painful memories associated with these plains, they could fill the void inside him in a way that no place else could. He had grown up not too far away, back when people used to live out here. Now there were only the stations - small shelters where scientists could study the herds as they migrated, or where people with enough connections could escape for a few days.

The Commons had been borne of the fire-flu, with so few people left out in the great northern plains after it was finally all over that it was a relatively simple matter to just turn things back over to nature. Effectively, that happened a few short years after the flu swept around the globe. According to law, it was codified almost a decade later in the late Twenties, after the Restoration was complete and the country was once again whole -- expanded, actually, to include what had been Canada, minus independent Quebec. Hard to believe that was more than twenty years ago.

>click<

>click<

With a slight sigh, he lightly pressed the small wafer under the skin between his left ear and jaw. He spoke out loud, though his voice was just above a whisper. "What do you want, Seth?"

"Sorry to bother you, Jon, but you'll need to come back immediately. Business. I've made the arrangements. Transport waiting for you in town, take you to Denver. Then commercial flight home." Audio only. That meant a lot. Tighter beam, easier to encode and keep private. Security protocol.

He wondered if something had gone wrong with the Hawking, the experimental long-range ship undergoing trials, based out at Titan. That was about the only thing he could think of that would require his cutting short his first vacation in four years. No use in asking. "All right. Give me a few minutes to pack my things, and I'll get started."

"Understood."

"And contact my family, let them know I'm on my way back. "

"Will do. Anything else?"

"Not at present. See you when I get there."

>click<

He paused there at the railing, right hand manipulating the thin-film controls under

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James T. Downey

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the skin on the back of his left hand. Looking out over the herd of slowly moving animals, a see-through display came up before him. Only he could see it, of course, since it was just a function of the contacts he was wearing, being fed information from his personal computer. Nothing new on the nets. So, whatever the emergency was, it wasn't public knowledge yet. He turned, opened the door to the station, and stepped inside. Gathering his things, he powered-down the station and went out to the snow skimmer.

At the airport he picked up the local net, found his 'transport': an ancient 787 on a cargo run. The human pilot was waiting for him inside the jet, a young woman of vaguely Asian heritage.

"Hi. Have a seat while I finish here." She gestured at the seat beside her in the cockpit. Jon stuck his bag in the bin behind them, settled into the seat, strapped in. Most of the instruments looked like they still worked, though labels were worn bare and screens were scratched and dusty.

She sat relaxed in her chair, looking at nothing he could see, left hand playing across the back of the right. Occasionally she said a word or two in a low voice, not bothering covering her mouth for privacy. After a moment she looked over at him, swivelled her seat a bit to face him. "Sorry, needed to check some things with the expert for this jet. Kind of a slow-witted creature, just an M-series." She stuck out a hand, "Name's Amy Fisher."

Jon reached out and shook hands with her. When their hands touched, the palmkeys exchanged the usual 'business card' information, but out of politeness he said, "Jon Thompson. Glad I have someone to talk with on this trip."

"Pleased to meet you. Likewise." The engines fired up, the jet started moving toward the runway. She didn't look away from him, though for a moment her attention was diverted. Clearly, she was still monitoring the expert's handling of the jet. As the plane turned onto the runway, built speed toward takeoff, she focused on him again, "Settlement Authority, eh? I wondered who was behind this. I never have passengers."

"Yeah, sorry 'bout that. Something came up, so they booked me on the first plane out."

"Not a problem." She was more curious than suspicious. In this era of extreme decentralization and individualism, the USSA was one of the few exceptions to the almost complete lack of a federal government. Only the National Security Apparatus, of which it was an offshoot, was larger. The NSA handled all aspects of security, from national defense to what little domestic policing was needed beyond the local level. People tolerated it as a necessary evil. The Settlement Authority had responsibility for American efforts in space, beyond the normal commercial traffic around Earth. It coordinated with the Europeans and the Japanese in their spheres of influence, and helped everyone get along with the Israeli settlements on the Moon. It was seldom that most people came in contact with it directly, though of course the news about what was going on 'out there' was familiar to most everyone.

"Your intro says 'Outer System Admin'. Like Titan and Europa?"

“Yeah. Primarily Titan, though the combined settlement on Europa is also nominally under my jurisdiction.”

“Huh.” She paused, glancing at something only she could see. It didn’t seem to concern her. They were airborne now, the jet had leveled off, things would be routine. “So, don’t mean to pry, but what do you do?”

“Mostly coordinate resources, make sure that the people and things which are needed for the different facilities are available. Work with the rest of the USSA staff to set policy, see that the goals of the government are met.”

“Been out there?”

“Near Earth quite a few times, since all of our teams depart from the stations after collecting the personnel and equipment they need. Mars and the Moon a couple of times. Titan Prime and Europa once each. How about you?”

With the numerous large stations in Near-Earth orbit, it was fairly common for people to have been up, for business or even the occasional vacation. “Yeah, I have relatives on Mars. Been there. They tried to convince me to stay, but I don’t really have any skills necessary for it, and the whole Japanese ‘group’ thing isn’t for me. Been American for too many generations. ”

“Understood.” The Japanese settlement of Mars was proceeding apace. It wasn’t so much settlement as an actual attempt to terraform the planet, one small piece at a time, starting near the South pole and moving outward in a spiral pattern of hexagonal cells. They were, in essence, enclosing the entire planet in a greenhouse of glass fabric and golden plasteel. It was going to take generations to finish, even using mass microbots and fabricating the construction materials from the Martian sands. Tens of thousands of the specially programmed microbots, a few centimeters long and a couple wide, would swarm an area, a carpet of shifting, building insects. The walls would rise, the supports for the ceiling a thousand meters overhead would almost seem to grow. As each cell was finished, it was sealed, joined to the adjacent cells, and then the microbots would move on. Under the greenhouse, heat was allowed to build, water vapor from the subsoil released, oxygen processors worked, a breathable atmosphere established. It was a phenomenal undertaking, and they were doing it with a single-mindedness which most Americans couldn’t fathom. The Japanese cultural tendencies toward a group-mentality, a collective effort, were heightened by the whole experience of surviving the disasters of the first part of the century. It was how they coped.

Jon continued, “I went there to study their approach, see how they are using microbots for the construction of their cells. Brilliant. Some of the techniques are ones we have adapted for Europa, and to a lesser extent the prospectors on Titan use ‘em, too. So I wanted to see it first-hand. Damn impressive.”

She nodded. “Yeah, it is. Fascinating to watch them encase an entire planet in glass. Still, even with a language program running, I didn’t feel like I fit into the group. Not my style. Felt claustrophobic, even though the ceiling of the cells is so far up, and population density is very low.” She flinched at the thought.

He looked out the window of the cockpit, at the snow glowing on the tops of the

Rockies in the late afternoon sun, the sky almost clear for once of the perpetual haze of dust in the upper atmosphere. This happened sometimes when a front moved through, reminding him of the mornings of his youth, when the sky out here was still clear and brilliant blue. Back then, you could even see the Milky Way at night. The fine dust kicked up by the nukes in the Far East changed all that, just as it had shifted the planet's albedo and subtly altered the climate. Now at night, you were lucky to be able to make out the brightest stars with the naked eye, and only then if you were outside of a city.

"Well," she said, "it won't be too long before we're there. Got all your connection information?"

"Oh, yeah. My expert is pretty good at handling such things - leaves almost nothing to chance."

At the Denver airport he had plenty of time to make his connection to Toronto. The Superjet 939 was more than twenty years old, but still very serviceable, and the flight only took about two hours, moving from late afternoon in Denver into darkness over the Midwest, arriving in Toronto at about 7:00 local time. He decided to nap during the flight, being reasonably sure that the next few days would be very demanding. He picked up a meal at the airport and ate in the car on the way over to his office, relaxing and watching the city roll by around him.

The USSA building, like most other structures built in the last decade, made use of the engineering and aesthetic innovations which resulted from the 'New Earth' colonization efforts. Above ground, graceful arches of plasteel supported glass fabric, making the building seem like some gigantic percussion instrument. Tonight the fabric was opaque over most of its surface, a dull white in the early evening darkness. Unlike most recent buildings, this one had more of its useable space below ground than above, and incorporated other passive defensive designs. In addition to the crazies, such as the Edenists, there were still a few people who didn't much care for any form of government, even one as loose and generally libertarian as the restored US. And the Settlement Authority was potentially a target for such people, since it had very tight control over who emigrated to the few established bases on the other worlds. Jon looked forward to the day when enough of the groundwork was established, and they could turn much of the real colonization effort over to private enterprise. Another decade, maybe two. He was young enough, he hoped to see it happen.

He cleared through Security, where a message was waiting for him to continue straight to the conference room, that there was a meeting scheduled to begin shortly. 'Yeah, right', he thought and headed for his office. It would only take a couple of minutes to check in with Seth and get some information so he didn't walk into the meeting completely in the dark. Crossing the broadcast threshold, he felt his personal computer system link into the rich data environment of the USSA headquarters. It was like being immersed in a pool of warm water, with all the information flowing around him through shaped transmissions, designed to travel only within the confines of the secure building. Seth's apparent image

materialized beside him, keeping pace with him as he walked briskly to his office.

"Hi boss."

"Hi Seth." Jon just talked to the not-quite thin air next to him. It was common enough to see people walking through the halls, or sitting at their desks, chatting with someone invisible. He could have Seth give him the feed for the images of the other experts, and see their ghostly manifestations, if he wanted, but mostly he just respected the privacy of others and didn't bother.

His expert was one of the best, one of only a few hundred based on the new semifluid CPU technology that surpassed the best thin-film computers made by the Israelis on the Moon. But it was a quirky technology, just a few years old, subject to problems that conventional computers didn't have, and still not entirely understood. Even less settled was whether the experts based on this technology could finally be considered to be true AI. The superconducting gel that was the basis of the semifluid CPU was more alive than not. The computer was largely self-determining: once the projected energy matrix surrounding the gel was initiated by another computer, starting the sequence that got the CPU working, the computer itself took over the extremely complex task of managing the development and functioning of the matrix. Building on the initial subsistence program, the computer would learn how to refine and control the matrix to improve its own 'thinking'. The thin-film computers had long since passed the Turing test, and these semifluid systems seemed to be almost human. But did that constitute sentience? Jon considered it to be a moot point, of interest only to philosophers and ethicists.

Seth's image, slightly more opaque than smoke, but still more transparent than not, was that of a man, dark complexion, black hair, probably Mediterranean, about 30 years old. Seth had explained some time back that he chose the image to reflect some of the Biblical and historical references to the name (which had been assigned to him by the firm which built him). Of course, there was no real reason for him to bother with an image at all, but he did this as a simple courtesy to his human co-workers, whenever possible. Most experts followed this convention. Most people appreciated it.

They had arrived at his office. Jon sat behind his desk, Seth stood in front of it. The expert said, "The rest of the designated staff is already in the building. I told them that you weren't here yet, but Security will get around to letting them know of your arrival any moment now. "

Jon nodded. "Thanks. So what's the meeting about? What happened?"

"Well, I'm actually not supposed to tell you. But . . . Dr. Jakobs tried to contact you this morning. After hearing her message, I bounced it up to Director Magurshak. They found something on Titan. An artifact." Seth paused, looked down at his hands, "a nonhuman artifact."

Jon sat there for a moment, trying to digest what Seth said. According to what pretty much everyone thought, it wasn't possible. SETI, OSETI, META and BETA had pretty much settled that question for most scientists decades ago, and twenty years of settlement efforts throughout the solar system hadn't changed anyone's mind. Even with the Advanced Survey Array out at Titan Prime searching nearby systems for good settlement prospects,

there had never been an indication that there was an intelligent, technologically advanced race anywhere within earshot. Let alone one that had visited the neighborhood.

Seth knew Jon well, didn't let the silence wait. He looked back up, eyes level and unblinking, "It isn't a hoax. The artifact is definitely nonhuman, or at least non-contemporary human. Mr. Sidwell found it out near his base. Dr. Bradsen will have as much a report on it as is available, which isn't much."

Jon shook his head. "Sweet Jesus. It isn't possible, is it?"

"Well, it doesn't fit our current paradigm, but given that it exists, it seems to be very possible. Now you can see why this couldn't be discussed over an open line, whatever the encryption." Seth's image tilted his head slightly, as if listening to something in the distance.

"Sidwell found it?"

"Yes, some ten days ago. Didn't bother telling anyone at Titan Prime until yesterday. Susan Jakobs sent down a small crew of the science staff to confirm, and they decided against doing anything else until they got word from the brass here." Seth paused, a slight frown passed over his face. "Security has informed Director Magurshak that you're here. He wants to get the meeting started as soon as you can get there, but will meet with you privately before you go in."

"OK. Tell him I'm on my way." Jon got up from his desk, stepped out the door and down the hallway toward the conference room. Seth followed.

Waiting in the hallway outside the conference room was a tall man, solidly built. Ted Magurshak was more than a dozen years older than Jon, approaching sixty. His hair now mostly consisted of a fringe of salt and pepper on the sides; he chose not to use any of the baldness treatments because he liked the look it gave him, added a sense of being older than he was. And in a world where there were few people over the age of 65, and almost none over 70, age was very highly regarded. Not that he needed this, since as the head of the USSA he was known and recognized, and even highly respected, by most people.

They shook hands, warmly. Magurshak spoke first, "I assume Seth told you what's happened."

Jon glanced at his expert, smiled slightly. "Yeah, briefly."

"Well, given the significance of this, I want you to head the mission to investigate the artifact. Susan Jacobs is good, but has her hands full with managing Titan Prime. And we need someone on site who can make the necessary executive decisions, given the time-lag in communications."

"Makes sense," Jon said. "Have you had time to consider personnel yet?"

"No, but I have discussed it with Don. He already has some thoughts on the scientific component."

Jon nodded. "Yeah, he's the one to handle the field work. That's fine. We work well together."

"Good. But I want you to be thinking about who else to take. People who won't be prejudiced by their own narrow field of technical expertise."

"That's a good idea," Jon said. He looked to Seth. "Put together a preliminary list

of possible disciplines. There should be some guidelines available on the subject in the old NASA files.”

Seth nodded. “That will take a little bit of time, but I’ll get started on it.”

“Anything else before we go in?” Jon asked Magurshak.

“No. Let’s get this started.” Magurshak opened the door to the conference room, and went in.

Jon followed, looked around the room as he entered it. Only enough chairs for the half-dozen people attending the meeting, arranged in a small circle. After he settled in, a word to Seth allowed him to see the other experts for the rest of the staff just behind and to the side of their respective chairs.

Most of the people he knew well. Magurshak, of course. And not surprisingly, Jen Grant, the Chief of the National Security Apparatus. Owen Roberts, the USSA Spaceflight Operations Administrator. Don Bradsen, the USSA Research Coordinator. And sitting next to Don a man who looked vaguely familiar, someone he felt that he should know. A moment later it came to him: Robert Gish. It made sense in a weird sort of way.

Ted Magurshak looked around the room, then started the meeting. “Karen couldn't be here. She is en route to Mars, a courtesy call to her Japanese counterpart. I’ll get her up to speed later.

“Well, as you all know, we got a bit of rather unexpected news today. A gel prospector on Titan found something on the edge of his station. Something artificial, and not something that we put there.” He looked first at Jon, then to Don Bradsen, the USSA Research Coordinator. “Jon had the bad luck to be on vacation when the news came in, so I asked Don to handle the initial report. Don, I'd appreciate it if you could tell us what we know at this point.”

Don Bradsen was tall, thin, with a short mop of blond hair and very pale skin. He was in his late 30's, but could be mistaken for being ten years older. A geophysicist by training, he was responsible for USSA research efforts, with a primary focus on locating other habitable planets in nearby solar systems. He looked from Magurshak to the rest of the room, then said, “We don’t know much, to be honest. On the first of the month one of the solo prospectors on Titan, name of Darnell Sidwell, found something. Or rather, his micros did. He had them working in a ridge of tholin, looking for a vein of gel. They ran into some difficulty with the vein, couldn't find it even though resonance showed that it was there somewhere, but also couldn't identify what was stopping them.”

“Yeah,” said Jon, “that happens pretty often out in the field, microbots not being very bright.”

Bradsen nodded, continued, “Sidwell noticed the difficulty, and investigated. He found the artifact, half a dozen meters under the surface, just above a burl of gel.” Bradsen played his fingers over the back of his hand, and a holo image appeared in the center of the room.

“This isn't it. It seems that we can't get a picture of it, nor really tell that it is there with any of the equipment available on Titan.”

“So what are we seeing?” asked Jen Grant, the severe Chief of the NSA.

"This is just a mock up, sent down with the rest of the report from Susan Jakobs. It is even difficult to look at, they say. Height almost a meter, and about a meter across the roughly hexagonal face. The edges are fuzzy, indistinct. A deep grey color, somewhat mottled. No protrusions, inscriptions, or obvious way to open it, if it can be opened."

Bradsen touched the back of his hand, and the holo seemed to retreat, becoming smaller. From this vantage it could be seen hovering above a dull silver-grey burl of gel. "It doesn't seem to be doing anything, just floats a little over a meter above the burl. Sidwell left it where he uncovered it, and the burl as well."

He allowed the image to hang there, rotating slowly so that everyone could see it. For a long minute there was silence, and he continued. "Sidwell didn't tell anyone about the discovery for ten days, said he wanted a chance to figure it out before we got involved."

Jon shook his head. "That's typical. Sidwell is a bit of an old coot. He's about 80, close as anyone can get him to admit. That alone makes him noteworthy. But he has been at the forefront of exploration all along, having started with the Israeli colonies on the Moon, and was one of the first prospectors to establish himself on Titan."

Bradsen nodded. "Fortunately, he doesn't seem to have done it any damage, nor it him. He left it where he found it, but put up a temporary shelter, complete with airlock and security, though he says he never got out of his environment suit when he was inside the shelter. Eventually, he did contact Titan Prime. Just walked into the Administrator's office yesterday afternoon, shut the door, and told her to turn on her security screen.

"At first Susan Jakobs thought that he was nuts, and he agreed to a full medical and psychological work-up. No deviation from any of his baseline stats. Susan sent a team consisting of some of the research science personnel back to his base with him to check out his story, see if they had better luck in getting an image of it than he did."

"Evidently not," said Grant.

"They don't really have the appropriate equipment for this sort of problem. Using what they have, they couldn't get an image of it on any wavelength, can't measure anything radiating from it, and it just seems to absorb any scanning energy. They were reduced to taking measurements of it with rulers, making visual observations, then sketching this mockup. Sidwell told them that he had tried to touch the thing, but got no sensation, just a 'thickness' at the end of his fingers through his suit, like he was pushing into some type of gelatinous mass. They decided to not repeat the experiment, nor to try and move it, until they got in contact with us. That is pretty much what we know so far."

Magurshak looked around the room. "Or at least as of about seven hours ago. As soon as I digested Susan's message, I sent back a reply. Communication lag is about ninety minutes each way; unless there is an emergency, her next report should come in about 11 tonight. I figured that would give us time to assess the situation, and her to implement my preliminary instructions.

"I told her to put a quarantine on it. Keep her team watching it, in pairs, with a remote team watching them. Do nothing else to change the situation until we had a chance to figure out where to go from here. Comments?"

Jen Grant spoke, a quiet, low voice, one which was used to commanding attention.

"This whole matter needs to be treated with the utmost caution and secrecy. 'Need to know' only. The impact that this will have on the country is unclear, though my expert," she absent-mindedly gestured to the semi-solid ghost standing behind her, "says that there's a high probability that at least some factions could erupt into violence, which could cascade. And that's just the domestic situation. We need to know what we have, so far as we can, before we start the process of telling people anything about it. The President agrees completely. I'll have my expert communicate with each of yours the protocols for keeping security."

Silence followed the sound of her voice. After a moment Magurshak looked around the room and said, "OK, people. What are your thoughts? Let's break this down into immediate steps, and midrange. Long range can wait until the situation matures."

Don Bradsen spoke again, "Well, first we need solid scientific data. Get a crew up there ASAP with appropriate equipment, find out what the thing is."

The man sitting next to him got up, stepped up to the holo of the artifact still rotating there in the center. Robert Gish was a little unkempt, his beard untrimmed, his dark hair matted. Unusual for this day and age, he was out of shape . . . almost flabby in appearance. His scientific reputation was as unconventional as his looks. More so. He had been responsible for the radical change in long-range sensing which led to the development of the Advanced Survey Array. Nobel Prize stuff. A true genius, not just brilliant but able and willing to make leaps that took others years to understand. Which was why Bradsen had him here: Gish had been saying for decades that there was other intelligent life among the stars. Saying it so loud and so often that he was considered a crank, since he had no proof and couldn't even really explain why he believed it to be so, at least in a way that others could accept.

Reaching out as though he was going to touch the object, he said quietly "We know what it is. It is a crack in our shell."

Hand still hanging there on the apparent surface of the artifact, he lifted his eyes, and spoke up, as though he wasn't aware that he had previously said anything aloud. "We must be careful. Whoever left this didn't expect us to find it, and may not much like that we did."

Don Bradsen looked skeptical. "The thing was under a layer of tholin that has taken thousands of years to precipitate out of Titan's atmosphere. Sidwell reported that there was no evidence of the artifact having been buried by artificial means. It was evidently parked there, and the tholin deposited around it over a prolonged period of time. I doubt if it is much of a threat."

Jen Grant glanced at Gish, said, "We still need to take steps to secure the artifact, no matter what. It isn't an unreasonable precaution to position some defensive capability near the site, or in orbit above it."

Magurshak said, "But let's keep some perspective on this. It's been there at least as long as we have, and hasn't taken any hostile action against us. The fact that nothing happened to Sidwell as he excavated it tells us a lot."

Grant nodded. "True, but even so. . . Besides, we may need to protect it from others. This is an incredible discovery, and we have to defend our interests."

Magurshak considered this for a moment, but said nothing in response. Instead, he looked to Jon. "Anything you can tell us about the situation on Titan? How easy will it be for us to get a team up there to investigate this thing without alerting anyone who doesn't need to know?"

"It's doable, though we should keep our numbers down. Titan Prime is compartmentalized enough that if we're careful, few people will need to know what our team is up to, though of course they'll be aware that something is going on."

Magurshak looked around the room. "Right, and that's what we'll do. Jon is going to head the overall mission. Don will be in charge of field research. Take whoever you think you should have, but keep the number down as much as possible. Any thoughts on mission personnel?"

Bradsen went first. "We've already got some fine minds available on Titan Prime, thanks to the ASA research facility, and can tap them for some of what we need. That'll disrupt the scheduled research, but I think this takes precedence. In addition, I want a high-energy plasma person. I'd like to have Soukup, who's in the area on the Hawking project, trying to get the Apparent Gravity drive to behave. Also, a particle person. And Gish, of course. Maybe also a team from the biological sciences."

Magurshak nodded. "Jon, who else do you want to bring in on this?"

Jon sat for a moment, looking at the holo in the middle. He didn't respond directly to Magurshak, instead looked to Jen Grant, "Secretary Grant, your agent . . . can we have someone who has practical experience with evidence collection and crime scene protocol?"

"Certainly. I'll make sure you get someone who has extensive training in investigation and analysis. But do you think that it will matter? Sounds like this prospector has pretty well ruined any chance of getting information from the surrounding environment."

"It might matter. I don't know. But it couldn't hurt." Jon paused, and considered a file Seth had downloaded for him, then went on, "I've had my expert do a preliminary search through the old NASA archives. I recalled that they had a protocol for dealing with such potentialities, and I doubt that anyone else has really thought much about it since the turn of the century.

"In addition to Don's field team, the preliminary search suggests that another component should be theoretical, a mix of disciplines so that we can get as broad a spectrum of experience and mind-set as possible. Probably we should have an expert in computer technology. A cultural anthropologist. Someone with a background in game theory and communication strategy. An artist or two. We'll see if a more thorough survey of the NASA material has any good suggestions beyond that. I'll get to work identifying appropriate individuals."

Magurshak nodded. "Good. Owen, how's transportation look?"

Owen Roberts, the head of the USSA Spaceflight Operations, was almost the same age as Magurshak. He was of a stocky build, medium height. His dark face was broken by a brilliant white smile. He was well known for that smile, an excellent administrator who could also talk practical engineering and spaceflight with his staff. He himself had been

directly instrumental in getting the Fusion-Plasma drive translated from theory into functionality over a dozen years ago.

“We have a couple of ships available and ready. Change a few schedules, delay some routine re-supply to make room for the other equipment we’ll need . . . no one will really notice. We can be ready to leave in a couple of days.”

“What’s flight time look like?”

“Depending on the amount of mass from the research equipment, and the number of people . . . well, if we split it into two ships, they should be able to get to Titan Prime in eight to ten days.”

“Right. Well, let’s leave it there for now. I think everyone has an idea what they need to do next. Coordinate with Jon, he’ll keep me informed. Meet back here in three hours if you want to hear Susan’s next report, go home and get some rest if you think you can.” Magurshak touched the back of his hand, and the holo disappeared.

Jon sat in his chair as the others filed out of the room, waiting to talk with Magurshak. When the room was empty, he asked, “So, how did Susan sound in her report?”

The older man leaned back in his chair, stretched, shook his head a little as though to try and clear it. “Well, check it for yourself, but I think she was somewhat stunned. First time in a long time I’ve heard any uncertainty in her voice.”

“That’s not hard to believe. I think this is going to have us all a little rattled for a while.”

“And how’re you doing?”

“Well, surprised by the news, of course. Can’t say that I ever expected to be dealing with something like this.”

Magurshak nodded. “Sorry to pull you off vacation.”

Jon smiled slightly. “I wouldn’t want to miss this. No sweat. But you owe me the time off when I get back.”

“You got it.”

“Look, I need to go and start considering the rest of the team, see who is available on such short notice.”

“OK, see you at 11.”

For the first hour Jon reviewed the initial report from Susan Jakobs, went through the attached files on Darnell Sidwell (including the medical and psychological profiles, before and after his discovery of the artifact), as he had Seth scouring the NASA files and anything else he could think of for suggestions on how to deal with the discovery of an alien artifact. Magurshak had been right; Susan sounded a little unsure, almost a little in awe. But she was still her usual thorough and professional self. He was certain that she would be able to handle things until the rest of the team arrived.

Seth compiled a report on the information he found after searching through millions of documents buried in the NASA archives. Jon also had him do a review of film and literature from the previous century, since scenarios of alien contact had been a popular

mainstay of the culture. Even though much of the material would be complete trash, Jon hoped that his expert would be able to find a few helpful ideas on how to handle the situation they found themselves in. He and Jon went through the report, started outlining potential candidates for each of the positions Jon wanted to fill. Just as Seth was making the connection to the first of these, Owen Roberts called and then came into Jon's office.

"How's it going?" he asked as he helped himself to a seat.

Jon set down the notepad he was using, looked up. Jon tapped his pad with a finger. "Seth went through all the old NASA files, also all the scientific and popular literature up until the fire-flu. The scientific stuff, like the NASA documents, had some good things to say. But almost all the popular literature had such a discovery being the prelude to some great invasion or calamity. Everyone involved is supposed to get eaten, or taken over by the aliens, or something equally horrendous. And since I have to select the team to go out there, and lead it myself . . ."

Roberts chuckled slightly. "I see the problem. So, what are you going to do about it?"

Jon sighed, "I guess just tell my family not to expect me back from Titan. I'm sure they'll take it well; my room has been one of the most coveted in the compound."

Smiling, the engineer said, "I just wanted to come in to confirm what you thought you might need in terms of transportation. As I said, we have two ships ready, the da Vinci and the Planck. But I can bring in another ship from Europa ahead of schedule if you think you'll need the tonnage."

Jon looked down at his pad, the notes he had made there. "It depends on how much equipment Bradsen needs to bring, but I think those two ships should be sufficient. I think we'll have about a dozen people, and all the gear."

"I'll check with Don, then. Space for the people won't be a problem; each of those ships can easily handle more than that number in addition to crew without crowding. Any other special needs you'll have?"

"Well, Grant made it pretty clear that we'll need arrangements for security. She'll probably want to send a small contingent of marines, but I'll convince her to keep it to a minimum. And probably a fusion weapon or two. But those things aren't very big, nor carry a lot of mass. Shouldn't present any difficulties." He paused, considered. "There is one other thing: I want to take Seth with me."

At this point Seth flicked back into view, and both men glanced at him. "Are you sure about that, Jon?" he asked.

"Yes. I realize what it means for you, to be nonfunctional for the duration of the trip out, but I may need you there."

Roberts narrowed his eyes a little, but nodded. "There's also a risk just in transporting him. That matrix, even in lockdown mode, doesn't respond well to changing inertial fields."

"Yes, I know. But there is only one gel-based expert out at Titan Prime, and he is busy helping Jakobs administer the station. Seth will be a real asset. It's worth the minimal risk. Do you agree, Seth?"

There was the briefest of pauses, and Jon didn't think that it was only for effect. Seth answered, "I concur. I can take additional precautions to download memory files and personality profile data into more stable storage, and we can have that as a backup in case something does get a little out of adjustment during transport. And I believe that I can be of help to you on site."

Roberts shrugged his shoulders a little. "Fine by me. I'll make sure to include you on the manifest, Seth."

"Thank you, Mr. Roberts."

As he left, the older man nodded to both Jon and Seth. "Let me know if anything else comes up. See you when the message from Titan Prime comes in."

Jon had about an hour to himself, during which time he and Seth tracked down most of the additional personnel he thought would make a good group. Of course, he couldn't tell them why he needed to interrupt whatever they were doing for a few weeks, but such was his reputation that most of them agreed to come to Toronto the next day for a meeting.

Just as he was finishing this work, and preparing to go meet with the others and see what the next message from Susan Jakobs would include, Jen Grant came into his office, unannounced. She was dressed as he had seen her before, in a simple business suit of quiet grey tones. Once she was in the room, he noticed again the thing about her that always made him a little uneasy: the way her gaze seemed to bore into people and things.

"Well, Secretary Grant. Please, come in, have a seat." Jon gestured to a chair.

"Shall we discuss Security needs for this mission?"

"Certainly."

"I have someone with me, waiting outside."

"By all means, ask him in."

Grant turned, stepped outside for a moment, reentered accompanied by a man, mid-30's, wearing the combat uniform of the NSA. "This man, Commander Anton Navarr, will be my Security liaison, and will be prepared for all contingencies. Commander, this is Jon Thompson, US Settlement Authority."

"Commander," Jon stood and shook the man's hand. Their palmkeys met, but Jon received nothing. Military. Needed a special encryption to activate. Jon noticed the small bulbs of pinhead cameras under the man's eyebrows. Also standard military cyberware.

"It's a pleasure to meet you, sir," said Navarr.

They sat. Jon spoke, "so, what do you think are the necessary precautions we should take?"

Grant looked to Navarr, nodded. The Commander said, "I've reviewed the situation, and discussed options with Secretary Grant. We feel that the appropriate defensive capability can be met with a relatively small force, the placement of one moderate-sized fusion device in the vicinity of the artifact, and another significantly higher-yield device some distance away. As a final precaution, one of our transport vessels will be kept in low orbit, unmanned."

Jon expected the fusion weapons, but the idea of using one of their few large transports as a crude plasma missile was a bit of a surprise. "Have you studied what effect

the impact of a fusion-plasma drive into a planetary body would have?”

“Of course, sir.” It was a simple, flat answer.

Jon sighed. Yep, that was their job. “And would anyone on Titan survive if such a thing were done?”

“Doubtful, sir. In fact, our models show that due to the reflective nature of the gel veins in the planet’s surface, there is a very high probability that Titan Prime would also be destroyed.”

The network of gel veins that ran through the moon seemed to provide some sort of protective bubble from the high energy fields of Saturn. The space station of Titan Prime was in orbit around the moon, close enough to stay in the ‘shadow’ it cast. Because of this effect, the Advanced Survey Array had been positioned at Titan Prime, combining a research facility with the support base for gel mining on the surface.

“Well, let’s avoid that, eh?” Jon tried a bit of a smile. Navarr returned it. Grant’s expression didn’t change. He continued, “How many people will you need to have in your contingent?”

“Eighteen, plus me, should be sufficient.”

“OK, fair enough. Owen Roberts will berth your troops, and handle your equipment.” Jon paused, “Ever been up there, Commander?”

“Not to Titan, sir. But I, and all of my people, have done a lot of training in space, including emergency survival on a small asteroid for a week. It was the major reason we were selected for this mission.” It was a proper military answer, but there was a hint of excitement in his voice. Jon liked the man.

Grant spoke, “I believe that there is only one other matter to discuss. After consultation with the President, I have her Directive that the military force is to be placed under your joint control, gentlemen. You will need to agree on the use of any of the defensive capabilities, unless one of you is incapacitated, in which case the other has sole authority to act as he deems appropriate. Copies of this Directive, and all the supporting protocols, will be passed to your experts.”

“I don’t think that it will be a problem. Remember, all of this is pretty hypothetical,” said Jon.

“But if it becomes reality, you won’t have time to check back with us. It is a prudent precaution.” Grant stood. The two men followed suit. “I believe that is it time for the next transmission from Titan Prime.”