

# ***Destination Azahar***

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CONTENT: MF ScFi

UNIVERSE: The Swarm Cycle

## ***Chapter 5 - Delayed Dreams***

The spine of *Copernicus* was laid down as a K'treel class explorer but it wasn't yet completed when production of K'treel class ships was finally cancelled. Rather than being scrapped, it was completed as a deep-space observatory that was never intended to enter a planetary system during a mission, much less enter an atmosphere. The shuttle bay was completed as a machine shop and gymnasium. It had no armament, but the same amount of weight was taken up with instrumentation.

*Copernicus's* original mission was the detailed mapping of the Orion Spur outward from Earth to create accurate navigation charts of the Spur by getting closer views than were possible from Earth. Those observations showed where a star group was centuries ago, and the war against the Sa'arm required much more current astronomical information. *Copernicus* was equipped with a Hubble-class telescope that was thirteen meters long and a bit over four meters in diameter, or roughly forty-two and a half feet by fourteen feet. At 11,110 kilograms the huge reflector weighed almost as much as the 25,000 pound plasma torpedo launcher that would have been installed in the nose of the ship. This instrument was almost useless for the ship's primary mission, but it would allow some unique observations of the Galaxy core as the ship moved across the Spur. It was viewed as a good bit of dead weight by the mission planners, but it was a fancy toy that would help keep a group of astronomical geeks from going off their rockers with the duller aspects of a long mission.

Adjacent to this large optical telescope was a small X-ray telescope that was about the size of a five-centimeter reflector. A pair of sixty-centimeter telescopes was mounted on each side of the ship where you would have expected to find phased-beam projectors. These four precision instruments insured that the ship had accurate position references for the charting observations and provided wide-angle views of closer objects that were not possible with the primary telescope.

The assortment of sensors and options built into the ship allowed it to image almost everything in the infrared to x-ray range. Six of the pod positions, three down each side, could accommodate retractable radio telescope antennas and additional low-power optical telescopes. If an object had much of an electromagnetic footprint, the equipment on *Copernicus* could probably record it.

Despite its K'treel origins the ship did not even have a hint of vestigial wings. It had mounts for three pods along the 'belly' of the unique craft. Where the K'treel could only carry nine pods, *Copernicus* accommodated a total of twelve standard pods arranged in three bands of four pods.

The Captain of *Copernicus*, Lieutenant Charles Kozlowski, and his crew had completed their six-month training course at Persephone in nine months. Their training was delayed at the halfway point while four of the crew delivered babies. With the classroom work and simulator training behind them Kozlowski's highly motivated crew had no trouble successfully accomplishing the objectives of their shakedown cruise. The shipyard observers had noted a short list of discrepancies that were quickly resolved at the completion of the cruise. None of the issues warranted a follow-up cruise. Captain John Ormskirk formally turned *CSS Copernicus* over to Lieutenant Kozlowski amid little fanfare.

Rather than being allowed to boldly go where no one had gone before, Kozlowski had been instructed by Admiral Hargreaves to proceed to Dothan for equipment and additional personnel. He was then to depart Dothan within two weeks of his arrival and locate a system suitable for colonization on the opposite side of the Sa'arm incursion, one that was within two months travel of Earth for a standard colony transport under normal acceleration. Once such a planet was found he was to begin constructing a colony infrastructure.

That was all that the orders specified, "...begin constructing a colony infrastructure." None of his requests for clarification had resulted in anything more specific. His argument that *Copernicus* was not configured to create a colony fell upon deaf ears. Admiral Hargreaves had other fish to fry and didn't elect to add any detail to the assignment. He felt he had given sufficient guidance for such a low-priority resource.

This last-minute development squelched the majority of the excitement and motivation of the officers and crew of *Copernicus*. They really didn't want to take on a task usually assigned to a K'treel-class ship. They weren't a K'treel ship even though they were about the same size. They really didn't want to go looking for a habitable world when they could be out there, quite literally, mapping the stars.

Lieutenant Kozlowski had been an astronomy professor at the University of Arizona when "Average Joes XIV" was aired. He found himself in a pickup the following week and had spent almost a year as the navigator on a colony ship, interfacing with and learning from the Darjee crew. He knew nothing of construction. His passion was astronomy, and he had lobbied to be assigned to a ship that would be doing astronomical research. He and his crew were accomplished astronomers, not engineers, and certainly not construction workers.

Kozlowski's First Officer, Lieutenant (j.g.) Alec Atanas, was also a former astronomy professor. The lieutenant shrugged before remarking, "No one can argue if we just install an AI, pod anchorages, atmosphere processors, a power grid, and a raw materials

distribution system for replicators. Sewer and garbage recycling systems wouldn't be out of line either, although the pods can typically handle those little details. About the only other thing colonists would need are industrial replicators and jobs."

Kozlowski shook his head, "We only have twelve pod mounts, Alec. We don't have enough cargo space for all the equipment that would be needed for the number of colonists that even a single *Aurora*-class transport could bring."

"No, but if we can get an industrial class replicator and a half-dozen or so machine-shop replicators, then we can build everything we need on-site," Atanas suggested. "All we need is a sample or replicator data files and raw materials to feed the replicators. A planet without raw materials would be a bust anyway."

Kozlowski laughed, "How are we going to carry an industrial replicator, Alec? Strap it to the belly of the ship? They're much too big to fit through any of the cargo doors!"

Atanas again just shrugged, "Maybe I can break it down and stuff it into a pod or two. But we can probably build one on site."

Kozlowski asked Atanas, "Have you figured out how we're going to get to the surface of a planet from a deep-space vessel that has no shuttles? Habitat pods are great lifeboats and can make a one-time soft landing on most planets, but they can't get back into space on their own. I guess we could put a nexus in one to get planet-side and back, or were you thinking of carrying a few kilos at a time in the captain's gig?"

A smiling Atanas answered, "We can reconfigure the aft dorsal pod as a replacement hangar that can accommodate three Galileo shuttles, which I've also arranged to have waiting for us at Dothan. That'll give us a leg up in surface surveys for minerals and such. I also have a configuration for the center ventral pod to serve as a hangar for a pod lighter and we can even squeeze a fusion powered payload assist module into the pod with the lighter."

Kozlowski gave Atanas a puzzled look. "A PAM? Whatever for?"

An unperturbed Atanas replied, "One of the first things that any colony needs to manufacture is habitat pods. What better way to get raw materials to an orbiting factory than by strapping a PAM onto an asteroid?"

Kozlowski shook his head. This was not the kind of assignment that his people were competent to accomplish. Maybe something or someone would turn up at Dothan.

After Kozlowski had exhausted all avenues of appeal to clarify their orders he reluctantly approved the requisitions Atanas had prepared and forwarded them to headquarters on Dothan via a scheduled supraluminal drone. With the crew's personal pods secured and everyone aboard, *Copernicus* headed to Dothan to load the requested equipment and

supplies. Four of the crew's concubines were scheduled for sleep training as shuttle pilots during the short trip.

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About halfway to Dothan Lieutenant Atanas awoke to find his morning erection being used as a substitute shuttle control stick as Debra playfully jockeyed the make-believe shuttle and finally guided it into a fur trimmed hangar. The pair were laughing too hard for a serious fuck until Atanas rolled on top and started stroking his length in and out of Debra's slick tunnel.

When her sister concubine, Winifred, later asked Debra, "Have you mastered getting the shuttle into the hangar?" Debra spewed orange juice out her nose in a failed effort to not make a mess. It was fortunate that Alec had not yet taken his first sip of hot coffee because he, too, began laughing uncontrollably.

"What did I say?" a very confused Winifred asked.

Alec caught his breath before Debra, who had jumped up to clean both herself and the table. "Deb was playing 'park the shuttle' with me when I woke up this morning."

Winifred was puzzled for a moment and started to ask "Wha..." when it dawned on her that 'park the shuttle' was a variant of 'hide the salami' and her giggles added to the mirth encountered by Judy and Mary when they appeared with babies at their breasts.

When it looked like Judy was about to ask what was going on Winifred cut her off with, "Don't ask." When disappointment registered on both of the women's faces, Winifred sighed and explained, "Debra kept overcorrecting in the trainer yesterday, and I simply asked if she had mastered parking the shuttle and the two of them busted out laughing. Debra was being Debra in bed this morning, practicing 'park the shuttle' using Alec's cock as a shuttle joystick. I'm sure you can guess which orifice was the hangar."

The two mothers just rolled their eyes. Their knowing expressions indicated that they were not surprised that neither Alec nor Debra had passed up an opportunity to be silly. They had also seen Debra's narrow 'landing strip' of neatly trimmed pubic hair pointing the way to her clitoral hood and the other treasures in the folds of her plump labia.

Kozlowski and Atanas were the only crew of *Copernicus* with CAP scores greater than 7.0 and each had been given permission to get two of their concubines pregnant when they were first transferred to deep-space exploration. It is not typically required to obtain permission before a sponsor gets one of his concubines pregnant, but the concubines who would ship on the *Copernicus* were expected to be trained and participate in the operation of the ship. It had taken the two officers almost a year to complete prior commitments, get a crew together and trained, and be assigned to a ship. Their first mission was expected to take five years, but wouldn't start until they finished this little errand for Admiral Hargreaves.

Atanas couldn't help snickering when Kozlowski asked how the shuttle training was progressing when he arrived on the bridge to relieve Atanas at noon. The captain tried not to laugh when Atanas explained his reaction.

In his best mock indignant voice Kozlowski complained, "You and that girl are going to embarrass this ship yet."

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Constance McKinsey was a bit startled when a voice with a distinct southern drawl appeared in the air. "Good afternoon, Mizz McKinsey. What can I do for you?"

A very confused Constance stammered out, "I'm sorry. I was trying to reach Mr. Nguyen. There must be some kind of mix-up in the connection."

There was a friendly laugh followed by, "This happens to me all the time. I know I don't sound like someone named Tuan Nguyen should sound like, but I assure you I am Tuan. Now, what can I do for you?"

It took Constance a few seconds to reorient her thoughts. "Actually, I'm hoping you will permit me to contact Celeste McCreless. She and I worked on the same project a few years ago, and I'm wondering how she's been and if she would be interested in working with me again."

Constance could feel Tuan stiffen in the short silence before responding, "Celeste doesn't go by that name any longer. Her priorities are different now. She does as she's told rather than as she pleases."

"Yes, of course. I truly apologize. I had no intention of usurping your authority. I'm just not used to the new roles everyone around me has since lunchtime yesterday." Constance didn't stick her foot into her mouth very often, and was not practiced at recovery. "It's hard to believe that was a bit over twenty-four hours ago. Please, give me a chance to apologize appropriately."

"I have just left an interview with the captain of this ship and have some ideas that I simply have to share with another engineer before I explode. I know that you are also an engineer, but I know Celeste by more than reputation and hoped to discuss some concepts with her before going further. I really need a reality check in the midst of the unreal turn my life has taken."

Tuan allowed his ruffled feathers to sink back into place. "Of course, all of us are out of our element in these times of turmoil. Perhaps you can join us for diner this evening. I also have a concubine formerly known as Margret Asbury. The three of us have been working together for a number of years. We might be able to find a quiet corner in the

cafeteria, or we can meet in my quarters even though I'm not really organized well enough to entertain guests properly."

Constance was regaining her confidence, "I'd rather not wait that long. My quarters are no better organized than yours, I'm sure, but I'm confident that I can safely leave my group in our pod for a bit. May I join you in your pod before dinner? I promise not to take up a great deal of your time."

Tuan was intrigued. He knew this woman's reputation as a tough competitor. He never got the opportunity to step in and save the day when she did a job, and she didn't leave unhappy customers behind who could be courted by his marketing staff. "Sure. If you promise not to notice the chaos, then please join me in Blue Seven."

"Great!" Constance replied, "That's barely out of sight down the corridor from my pod. I'm in Blue Twelve. I'll be there in a couple of minutes."

Constance told Aswani where she would be and asked the AI to contact her if Aswani needed anything. She did a last minute inventory of her appearance and stepped into the companionway. She was standing in front of Blue Seven trying to decide how to announce her presence. There was no doorbell. She was about to knock when the door opened to reveal a smiling Celeste.

"Please, come in," Celeste invited as she backed away from the door. "Tuan sent me to greet you when the AI told him you were outside. We've cleared off a table in the den. Tuan has asked that Margret and I join the two of you. I hope that's all right."

"Yes, of course it is. I'd hoped that you'd be allowed to sit in." The implications of Tuan sending Celeste to greet her were not lost on Constance. He was being a gracious host who wanted his guest to be comfortable.

Tuan was standing when Constance entered the den. "Would you like some tea or coffee?"

"Coffee sounds good," Constance replied. Beverages were a typical social lubricant, even the non-alcoholic ones. Constance wasn't much of a social butterfly and when everyone was seated she started for the point. "What do you know about the Fleet Auxiliary?"

"I'm not sure I've ever heard of it," Tuan answered honestly. "It sounds like it's a branch of the Navy."

"I'm not sure about the organizational chart," Constance replied before taking a sip of the hot brew. "Good coffee," she remarked before continuing. "What I do know is that this ship is operated by the Fleet Auxiliary. Well actually, this ship is operated by the Darjee, but the captain and at least part of the crew are members of the Fleet Auxiliary. But the Fleet Auxiliary is also responsible for finding and developing colony worlds."

All three members of the Nguyen household sat forward. "Really," Tuan voiced the interest that all three displayed.

Constance nodded as she continued, "That would imply construction and manufacturing. When I remarked to Captain Cooper that these pods had to be manufactured somewhere she told me that they're constructed at colony worlds as the colony is being established."

Tuan smiled, "I'm sure that the Confederacy has been building ships and containers for longer than man has pounded two rocks together, but we just might be able to add some value to the process." He looked at his two ladies, "Would you guys be interested in doing something other than satisfying my sexual whims?"

Celeste and Margret laughed, but when Constance showed signs of being embarrassed Tuan quickly apologized. "That was crude. Please forgive me for being insensitive."

Constance shook it off and smiled, "In light of the activities that have been assaulting my senses since noon yesterday, a little blue humor can be forgiven. It's a brave new world and those who cannot adjust will not prosper. I assume you have an interest in becoming a part of the Fleet Auxiliary colonial manufacturing force. Since we share some common experience, can I interest you in joining forces with me?"

Tuan glanced at his companions before remarking, "Well ladies, it looks like we may have escaped Earth, but we haven't escaped working for a living."

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Like so many who had elected service in the Fleet Auxiliary, Ensign Tuan Nguyen's enhancements were somewhat restrained with regard to his stature. He bulked himself up a bit here and there, mostly there. He had the nanites add a few centimeters to his height just to get to a hundred and seventy-five centimeters (five foot nine inches). The same five-centimeter expansion allowed him to sport a twenty-centimeter (eight inch) cock. He would still be considered short by most of his high school classmates, unless they compared tally-whackers. He had fifteen years taken off of his age. His Asian ancestry made him look like a high-school kid again instead of an experienced project manager in his late twenties.

He had also gotten medical capsule time to complete the enhancements to his concubines Beatrice, Nancy, Celeste and Margret. Each had retained their basic build and bone structure, but they were brought to a youthful and healthy trim. Everyone was pleased with the results. Even the painfully thin Celeste reluctantly agreed that she was more comfortable with a bit of padding on her bones and didn't feel fat like she had feared she would.

During the three weeks it took *Asimov* to get from Earth to Dothan the two rival engineers from Mississippi, Ensign Constance McKinsey and Ensign Tuan Nguyen,

formally asked to join the Fleet Auxiliary and began their basic equipment training while in route. They learned a great deal about the capabilities of the medical bay's treatment tubes and the Darjee replicators. Not just the appliance units in their pods, but also the various size and capacity units from machine shop grade for small projects and industrial grade units that can produce a habitat pod a day up to a factory size replicator that can turn out a habitat pod every hour.

Shortly after *Asimov* arrived at the in-bound jump zone from Earth, Captain Cooper received a message from Rear Admiral Anthony Pirelli, Chief of Fleet Auxiliary Operations for the Dothan sector. The message prompted her to make a request of her ship's AI.

"AI, please ask Constance McKinsey and Tuan Nguyen to join me in my conference room in..." Cooper checked the position of *Asimov* and the orbital approach they had been assigned. "...thirty minutes."

"Ensign Nguyen is in sleep training." The AI replied, "Shall I interrupt him or can the meeting be postponed for another fifteen minutes?"

Cooper was slightly annoyed, but shook it off. "Forty-five minutes from now will be fine."

Tuan looked a bit ruffled even though he had quickly splashed his face with water and donned fresh clothes after his session in the training pod.

Captain Cooper greeted the stern, no-nonsense woman standing in her conference room, "Hello again, Ensign McKinsey." She then took in the friendly smile and relaxed manner of the other occupant of the room, "You must be Ensign Nguyen. Did I pronounce your name correctly?"

Nguyen accepted the extended hand, "Closer 'n most folk." Nguyen replied in a pleasant drawl that had Cooper blinking in surprise. She became another in a long line of people who voted that his voice did not come close to matching his face.

Cooper indicated the conference table that dominated the room. "Please take a seat. I received a message from Admiral Pirelli concerning the two of you. You seem to be just the people he's been looking for. Instead of going through the typical military training at Dothan, he's asked that you accompany an exploration ship that's about to leave Dothan to find a suitable planet and establish a colony."

Tuan glanced at Constance who answered for both of them, "This is just the kind of assignment we were hoping for."

"Good," Cooper replied. "Since the location has not yet been identified it cannot be assumed to have a breathable atmosphere or comfortable environment until terraforming is completed. The Admiral wants you to make a list of what you think you'll need to



establish a colony that will fit into seven standard pods, including accommodations for you and your concubines. His staff has prepared a list of typical equipment that's needed to develop a colony infrastructure. There's also an equipment requisition for your consideration and approval from *Copernicus*, the ship that will locate the colony site and deliver you to begin your work. I've made both documents available to you through the AI. You can review them in your quarters or from anywhere on the ship using your PDA."

Cooper stood. "Thank you for meeting with me on such short notice and accepting this assignment. I'll forward your acceptance to Admiral Pirelli. The list of equipment and supplies you require is due at headquarters as soon as we enter orbit above Haru."

In the corridor outside the conference room Constance remarked, "It's a good thing we did some 'what-if' brainstorming in the last couple of weeks. Five cargo pods are not a lot to work with."

Constance made a face when Tuan suggested, "We could squeeze our families into one pod giving us six for equipment and supplies."

"Let's see what you and your assistants can come up with before looking at that option. We should meet in my pod right after lunch," Constance spoke with practiced authority. "We only have a few hours to get our list hammered out."

Tuan just nodded and turned toward his pod without verbal comment.

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"The gigawatt reactor takes up most of the colony core pod. There's no room for anything else after the colony AI and its maintenance replicator are installed. The 138-kilovolt primary output will need rather substantial substations for most applications." Celeste was going through the lists of suggested equipment and making notes about space requirements for each item. "It's too bad that Constance doesn't want to crowd all of us into one pod. We wouldn't actually be all that crowded. Perhaps she'll be open to partitioning off part of our two habitat pods to warehouse some equipment."

"Well," Tuan vocalized the word as part of a long sigh. "On the plus side, both of us have Mark II pods making them self-sufficient for quite a long time. While we can be comfortable in half the space that we currently have, it could get claustrophobic after a few months. Let's see what we'll have to leave behind before we consider resizing our quarters."

Margret asked, "Can we assume that the ship will have whatever we need to get to the surface?"

Tuan consulted his PDA. "No. There's a small launch with four seats and a baggage compartment. I doubt it would be of much use. *Copernicus* is unique. It only has a

small medical bay and gymnasium that will be available to us, and both leave with the ship." Looking up from the display Tuan commented, "Looks like we may want to consider adding medical facilities to our pods. That wouldn't take too much living space away from these large accommodations."

"Damn, shuttle hangars and such are going to take up a lot of space," Margret commented and continued asking questions. "A factory-size replicator is out of the question. What about an industrial replicator? Will one fit in a standard pod?"

"No, it's too big," Celeste answered after checking the specifications. "But it's close."

"How close?" Tuan asked while looking thoughtful. After a few moments he made an inquiry: "AI, I understand that pods can be expanded after they've been detached from a ship. Is it feasible that a standard-size pod could contain a collapsed replicator that the pod could expand as it expanded itself after it's been moved to a permanent location?"

The AI responded, "It would be considerably heavier than a typical pod which could make it a problem for most freighters unless counterbalanced, but it is possible."

"Could it be operational in less than a week?" Tuan asked distractedly while he was concentrating on other calculations.

The AI remained quiet after a longer than usual delay. Tuan was about to ask if it heard the question when the AI responded, "It would be operational in three days if deployed in orbit. An additional ten hours will be required if deployed to an unimproved location on a planet's surface."

Tuan remarked to no one in particular, "That'll beat the heck out of the pod with six machine shop replicators that Lieutenant Atanas suggested. It'll be slower to get started, but it'll catch up by the end of the first week."

Margret had obtained replicator files for converting habitat pods into greenhouses, but there were no seeds or plants to be had anywhere on Haru. "So much for using plants to reduce the load on food replicators and help oxygenate the atmosphere," she remarked to no one in particular.

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After eating a light lunch, Tuan contacted Constance to ensure she was ready for him and packed up all the notes for their meeting. He elected to leave Margret and Celeste to continue working on some details rather than have them accompany him. He didn't want them to be discouraged by the condescending attitude he was picking up from Constance.

"Please enter and be welcome," a smiling and naked Aswani greeted Tuan at the outer entrance. "Mistress Constance is expecting you and asked me to show you to her study. May I get you any kind of refreshment?"

Tuan was intrigued by the dusky beauty who had greeted him. He knew it was the middle-aged hostess from the restaurant where he and Constance had been picked up, but now she looked no more than twenty and sported large, firm breasts above a trim waist and flat abdomen. The plush lips and soft mound were prominent and hairless at the junction of a pair of athletic thighs.

Aswani's body responded to the brief, lustful glint that she detected in Tuan's dark eyes. She was very pleased that this handsome young man liked what he saw. Her areolae crinkled and her nipples extended to twice their normal length. Her labia thickened and retracted to display a light sheen of lubricant that was leaking from her aroused tunnel.

Tuan's cock was getting uncomfortable as it swelled down the leg of his trousers when he noticed the hard nipples and glistening labia. Following the tight moons of Aswani's naked ass didn't help him get his erection under control either, especially when he imagined rear-ending her if she were to stop short without warning.

He was barely able to take a cleansing breath to clear the fantasy images before stepping past Aswani and into the study. He need not have wasted his time and energy. He was sure she had stepped closer as he passed so that his bare arm brushed an equally bare nipple. Sweat instantly broke out on his lip as he forced himself to ignore the faux pas. As to who committed the social blunder, that could only be determined by a slow motion replay of the incident focusing on the point of contact. It seems that each had leaned slightly toward the other as he stepped passed his escort.

"Would you join me in a cup of tea?" Constance asked as she stepped around her desk to sit on a couch to Tuan's right. There was a teapot on a silver tray with two porcelain cups along with the typical trappings of formal tea. "It's a bit early for tea, but I didn't want to jump into the task at hand as soon as you arrived."

Tuan sat next to her and was very pleased that he hadn't brought Margret and Celeste. Constance was clearly not expecting them. "Thank you," Tuan replied politely. "My parents preferred tea, but my grandmother did her best to convert me to coffee. Where did you get such a lovely tea service?"

Constance smiled, "The replicators can manage a wide variety of very nice items." When she finally noticed the bulge in Tuan's pants she tensed up before realizing that Aswani must have been teasing him. The former demure and proper restaurant hostess had become insatiable since her enhancement trip thru the ship's med bay. It might be amusing to see if Aswani could take on three men at once. Who would she pick to invade Aswani's virgin ass? She savored the thought as she sipped her tea.

After a couple of sips Constance felt she could get down to business without being rude. "I've put together a Gantt chart using the equipment list proposed by Captain Kozlowski of *Copernicus*. AI, would you please display it for us?"

Tuan elected not to correct her as to the source of the list as he looked at the cascading lines colorfully displayed above the low table. He noticed that it would be a bit over six months before the ninety-six pods needed for an *Aurora*-class transport would be available. Spreading his notes next to the delicate tea service he found the modified list of items Celeste had made.

"If we don't bother with a PAM, which we can manufacture on-site in a few days, take along a single shuttle, and a pair of industrial replicator kits we can have 96 Mark I pods ready in less than six weeks."

"What?" After she processed what Tuan had said Constance exclaimed. "An industrial replicator won't fit in a pod!"

"Not if it's ready to use as soon as we arrive." Tuan replied smoothly. "But it can be folded up and stuffed into a pod that grows to fit the running replicator in three to four days after delivery. It'll catch up with the machine shop units suggested by *Copernicus* before the first week goes by. It may take a couple of machine shop units to help with the preparation of a raw materials supply chain, but by the end of the third week we can start pumping out six pods a day unless raw materials are hard to deliver."

Constance had the AI build a Gantt chart using Tuan's list of equipment. The detailed schedule showed Tuan's numbers to be conservative, but perhaps a bit more realistic than the theoretical numbers Constance had plugged into the schedule.

Going back over the two lists of equipment Constance asked, "Kozlowski recommended three shuttles. How much will having only one shuttle slow down the exploration of a planet?"

Tuan shrugged. "We could use the same expansion trick for the pod carrying the lighter, the 50-megawatt power module for the orbiting pods, and a machine shop replicator. Three shuttles couldn't be operated out of the space left in a standard size pod, but they could be packed into one and flown in and out after the pod has expanded to half again its original diameter."

Tuan had Constance convinced before their tea got cold. "I'll draft this as our initial recommendation and have Captain Cooper forward it to Admiral Pirelli. Good work, Tuan. Be sure to thank Celeste and Margret as well."

He knew that she would take credit for the ideas, but was used to managers pulling that kind of stunt. It occurred to Tuan that Constance had just taken charge and not been appointed. She seemed accustomed to being in charge and had assumed the role. That was actually fine with Tuan. If anyone objected to what they proposed it would be Constance who would catch the heat. Tuan knew he had the option of ignoring Constance, but that wouldn't be a good idea with this Admiral Pirelli or his representative.

If Pirelli was too ignorant to distinguish valuable staff from window dressing, then too bad for him. Tuan had no desire to become upwardly mobile or politically savvy. He preferred to remain in the background where he could actually add value to a project.

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Three days after *Asimov* had entered orbit above Haru the *Copernicus* dropped out of hyperspace and began making its approach to Haru. Captain Kozlowski requested an interview with Admiral Pirelli and his recommended candidates. The Admiral respectfully declined, but assigned Captain Coggins to attend the mission planning briefing since this whole concept originated with him anyway.

Lieutenant Kozlowski's first question to Captain Coggins went back to his original question that had been unanswered by Admiral Hargreaves. "Can you tell me why *Copernicus* was chosen for this mission and what is expected of us to satisfy the orders to 'begin constructing a colony infrastructure'? What does that really mean?"

Coggins laughed, "I can understand your confusion, Lieutenant. It's not that this is a covert mission, *per se*. This is simply a very low-priority, low-profile concept that no one wants to expend a lot of resources on.

"Right now the priority for resources is establishing colonies within a month of Earth to get the maximum number of people off-world before the Sa'arm arrive and begin the systematic destruction of our home planet. They will kill every living thing that irritates them or that they need as food."

Tuan interrupted, "Excuse me, sir, but is that really a foregone conclusion? Most of us need the hope that the Sa'arm can be stopped before they reach Earth."

"Many cling to that hope," Coggins replied. "But the reality is that with just the resources that the Sa'arm worlds we know of have available to them, there's no way we can mount an effective defense of Earth before their projected arrival. Some pessimists think it may take as much as a hundred years for us to build adequate forces to contain them. If it really does take us a hundred years to fight back effectively, then about half of the current colony worlds will also be overrun.

"The concept of this mission is to establish a major manufacturing colony that's off the beaten track and not likely to be discovered by the Sa'arm for at least a hundred years. We can't get approval for a lot of resources, and we expect this colony to develop on its own and very slowly over a long period of time.

"The K'treel ships are primarily focusing on planetary systems within a month's travel of Earth. Once they've found a qualified candidate, an *Aurora*-class ship drops the first load to get things going. *Aurora*-class colony transports begin making pickup trips between Earth and the new colony once it's established and continue shuttling immigrants until a Kilo can take over. The K'treel ships can't carry enough pods to establish anything larger

than an observation outpost. The three extra pod mounts on *Copernicus* will allow the delivery of some limited manufacturing equipment. An *Aurora*-class transport will be diverted to your colony after enough pods are made available."

Kozlowski expected the two ensigns to lose interest when he explained, "Once it looks like everything is on track at the new colony site, *Copernicus* is going to detach your pods and leave. You'll be on your own and shouldn't expect visitors until you have at least ninety-six pods manufactured."

Nguyen and McKinsey were a little nervous until they reviewed the inventory of the minimum equipment that would be operational before *Copernicus* bugged out and left them to fend for themselves. McKinsey skipped down to the communication protocols as Nguyen made some quick calculations. McKinsey asked, "I see that we're to make monthly progress reports to Admiral Pirelli. Can I assume that a colony ship will be dispatched when we project the completion of the required pods?"

"I can't answer for Admiral Pirelli," Coggins hedged, "but considering the schedule of pickups for the next year and a big push to upgrade from *Aurora*- to *Kilo*-class colony transports in about six months, I think it'll be safe to assume that one will arrive within a month or two of having the pods available."

McKinsey gave Nguyen a questioning look when his attention returned from his calculations to her. "Six weeks," Nguyen answered the unvoiced question. "Two months on the outside."

A thoughtful McKinsey nodded to Nguyen; then asked Coggins, "How soon can we expect a search and rescue team to arrive if we call for help or fail to make a scheduled report?"

This question caught Lieutenant Kozlowski totally unprepared. He looked at Captain Coggins for help. The blank look Kozlowski got from Coggins made it clear that contingency plans had not been discussed. "We'll check with Fleet Operations before you leave Haruat. If you and your families have to tuck into life boats it'd be nice to know when you can expect rescue, wouldn't it."

McKinsey smiled, "Yes, it would. It looks like we'll be looking for a system that has abundant raw materials for constructing not only habitat pods, but also ships and weapons. If this is truly the case, then we should expect to have more than a hundred pods constructed by the time a colony ship can reach us from Haruat after *Copernicus* bids us farewell and arrives back here."

Coggins, Kozlowski, and Atanas looked like they were contestants at a blinking competition. "You can't be serious," Kozlowski voiced the opinion of the three experienced officers.

"Not a problem," Nguyen assured the incredulous faces that turned to him. "It'll take us about two weeks to get Captain Kozlowski's list of items accomplished. A week after he leaves we should have six industrial replicators in orbit building six pods a day and two more down on the planet civilizing the wilderness."

Coggins consulted his PDA and smiled, "We didn't look closely at what these two actually requested that we load onto *Copernicus*, gentlemen. We appear to have the right people for this job. They've come up with a way to transport an industrial replicator using a standard pod mount."

"What?" and "How?" came from Kozlowski and Atanas respectively.

"By collapsing it into a specialized pod," Tuan addressed Atanas' question. "It's three times the mass of a typical habitat pod, but we were referred to a Commander Carl Segal who sent us to an office filled with spaceship engineers. They looked at the specifications for your ship, Captain, and told us there would be no problem if the pods were mounted in the three o'clock and nine o'clock positions of the aft ring and attach the heavier of the remaining pods in the forward ring. Stresses should stay within safe limits unless you decided to do some high-performance maneuvering while they're attached. I have their report right here."

Captain Kozlowski leaned over to have a look after Tuan beamed the document from his PDA to Atanas'. "Have Ensign Stayton double-check these figures, Alec. I want to be sure that the extra weight aft of the center of gravity won't destabilize the ship. If she agrees that this report is accurate, then we can expect to head out on our original mission shortly after we find these guys a suitable planet."

Once McKinsey was satisfied with the arrangements she consulted with Nguyen, and the two very green officers formally accepted the assignment. Coggins had brought the orders that transferred these two recruits and their concubines to *Copernicus* with him and passed a copy to each of them.

Nguyen laughed. "Did we really have a choice?"

Coggins just smiled.