

# ***Destination Azahar***

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CONTENT: noseX ScFi

UNIVERSE: The Swarm Cycle

## ***Chapter 7 - Searching the Black***

Exactly two weeks after it arrived, *Copernicus* left Dothan with the five officers and fourteen enlisted rated concubines who had trained together as a crew for the small ship along with their twenty-one children. The ship also carried two very green ensigns with their eight concubines and eleven children. The permanent crew occupied the four pods in the center ring plus the forward dorsal pod of the small ship. They had elected to bring their children on this mission thinking that it would be better to resolve issues with family units in tight quarters on this short mission than to have them crop up when there was no turning back from the long survey mission ahead of them.

The dorsal and ventral pods of the aft ring had been transferred directly to *Copernicus* from *Asimov*, the colony ship that had brought the two ensigns out from Earth. They had not been at Dothan long enough to have their pods transferred to the planet before being offered the colony construction assignment on *Copernicus*.

The remaining three pods in the forward ring had the colony AI pod, a pod loaded with mining equipment, and a pod tightly packed with shuttles and a lighter. These heavier pods were located forward to shift the center of gravity as far forward as practical with the two overweight pods containing the industrial grade replicator kits all the way aft.

*Copernicus's* crew secured the cargo after ensuring everything on the manifest was onboard before departing Haru. After completing their own equipment checks before *Copernicus* cast off, Nguyen and McKinsey returned to their pods for dinner and family discussions about the tiny ship and the adventures that lay ahead. It had occurred to each of them that they were heading into a corner of the Universe where no human had ever ventured. This must have been what the crews of the three tiny ships felt as Spain disappeared over the horizon in 1492.

*Copernicus's* navigator, Ensign Julia Johnson, and her navigation team had plotted a search pattern of G2 stars that were a month beyond the sphere centered on Earth that contained most of the colony worlds and a radius that intersected Haruat, the system where Dothan was located. Using plus or minus a week as "about two months", there were four potential systems within six weeks of Dothan. They plotted a course to the nearest one.

The small ship began boosting out of its orbit around Haru and making its way to the outbound jump point. No one in Nguyen or McKinsey's group noticed the transition to hyperspace as the Faster-Than-Light engines engaged. Adventure was heading their way faster than the speed of light.

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Being thirteen and having typical female instincts, Kim and Roni had been helping with the younger kids in their pods ever since the pickup. This included Roni's eleven-year-old brother Jishnu who insisted that he didn't require supervision, especially from his older sister. Predictably, he didn't rebel as much when it was Kim who made the same suggestions.

There were a lot of kids running loose in the public spaces of *Asimov*, but Kim and Roni hit it off the first time that everyone in the Nguyen pod went to the McKinsey pod after the evening meal. They were both slender beauties with dark skin and sparkling eyes, and they shared a passion for makeup and perfume.

Ten-year-old Nora idolized her new big sister, Kim, and always wanted to tag along with the older girls, but there was just too much age difference for her to be a co-conspirator in all of Kim and Roni's antics.

Kim didn't mind having Nora and Jishnu around, but Roni would usually find a way to antagonize her brother and send him stalking off.

On one occasion Kim asked Roni, "Why do you do that?"

"Do what?" she responded totally unaware that her remark had insulted Jishnu.

"Why do you say such mean things to your brother? He really isn't that much of a dork," Kim tried to explain.

"You don't know him like I know him," Roni crossed her arms defiantly and Kim let it go, shaking her head.

It took a while for Roni and Kim to get comfortable with twelve-year-old Frank when their pods were moved to *Copernicus*. Frank rarely took an interest in activities outside of his pod. Captain Kozlowski supported Frank's mother and was regularly on Frank's case about being so sedentary.

Margo was also twelve and spent a lot of time helping her dad and Marcia supervise not only the youngsters in Ensign Johnson's household, but also those of Ensign Wallaby's pod. Kim was also eager to help with the youngsters and fit right in. While Roni had more experience dealing with youngsters due to her having younger siblings, her interests were usually elsewhere, keeping the three girls from being as tight as they could have

been. Roni would help out mostly to be around Kim who could not be easily talked into staying away from the little ones.

Kim was the natural leader of the under-fourteen crowd. Her charisma even pulled Frank away from his video games. Roni couldn't pull Kim away from playing with the younger kids, but Frank managed the feat most of the time. There were times, though, when it was clear Kim wanted to be left alone.

"Uh, oh," Tuan remarked at bedtime. "Kim is playing sad tunes on her flute. It's going to be a rough day tomorrow."

"That's a very pretty song, and she plays it so well," Nancy remarked. "I wish I could play something that beautifully."

"You're the best of us with a skin flute," Beatrice quipped to Nancy; then turned to Tuan. "Tell me, o wise and powerful seer, how does Kim's magic flute predict the future?"

Tuan cut his eyes and tried to look dangerous, but Beatrice stood her ground and giggled totally ruining the empty threat. Tuan sighed and shook his head. "Why do I have to get the cheeky concubines? Because I just know that she's going to be gloomy for several days. She doesn't get moody very often, but it happens often enough for me to know the signs. It's best to just give her space. It seems like everything I've ever tried just makes it worse."

Nancy was puzzled. "I've never seen Kim in a grumpy mood. She's even nice when she has cramps."

Beatrice really starting laughing but managed to get enough air to remark, "I'm guessing that the sad songs happen about once a month?"

"What? No!" Tuan shook his head in denial. "She's never asked me for feminine supplies. That can't be it."

"Of course she didn't ask you, genius. You're male!" Tears were streaming from Beatrice's eyes. "She's been getting what she needs from me for almost two years."

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Three months out of Dothan *Copernicus* entered the elliptic of a very bright G2-spectrum planetary system. Most of the sensor team focused on identifying and analyzing the planets. One crewmember was always directing scanners all around the ship looking for threats. This was the third planetary system that they had investigated and it looked very promising. The system contained the typical mix of gas giants, dead celestial objects and cooling masses of rock.

The fourth planet was in the 'life zone' of the large star, and unlike the planets in this zone of the other two systems that they had mapped, this one had evidence of liquid water on the surface. A promising spectral analysis was made from several million kilometers. They made additional readings as they approached the bright speck in space. The results indicated that the planet was a bit hot, but habitable. The surface temperature ranged from a tropical 28 degrees Celsius (82 degrees Fahrenheit) at the coldest pole to a deadly reading of 66 degrees Celsius (151 degrees Fahrenheit) at the equator. These were average temperatures. Thermal currents in both the air and water generated shifting temperatures and the vast, warm oceans powered large storms that soaked up a lot of local atmospheric heat.

The analysis of the atmosphere looked promising, even though it had a negligible amount of free oxygen. The planet was a good bit larger in diameter than Earth, but judging by the thickness of its atmosphere, it appeared to be a bit less dense. Captain Kozlowski continued to bring *Copernicus* closer and closer as the candidate planet kept looking more and more promising.

Current volcanic activity registered in three locations, with indications of recent activity in seventeen others. The orange oceans and violet atmosphere looked very alien to the humans, but the planet still warranted closer investigation. Captain Kozlowski ordered the ship into a low polar orbit in order to map the maximum amount of surface in the minimum amount of time.

The sensor watch was doubled with attention split between the planet below and the space everywhere else. The Sa'arm may not be the only threat in the galaxy and Kozlowski didn't want to be surprised with his pants down deep in a gravity well and with no hope of fighting his way out of a confrontation. A kid with a slingshot would be a serious threat to *Copernicus*!

From the orbital velocity and altitude, *Copernicus's* navigator was able to determine that the planet's gravity was 112% of Earth's gravity and noted. "One point one-two gees is hardly enough to make us feel tired even after a ten-K run."

Ensign Wallaby added, "The atmosphere is mostly nitrogen and carbon dioxide, but there's enough sulfur dioxide present to significantly enhance the erosion effects of rainfall. The warm oceans generate treacherous winds at all altitudes and latitudes."

Ensign Johnson continued as though she hadn't been interrupted, "I'm sure everyone has noticed that the planet has two moons, which makes for some very interesting tidal patterns along the coasts of the little bit of visible land. The smaller of the moons has a 25-day orbit and the larger makes the loop in 32 days."

After they had been in orbit for a week Kozlowski sat down with Nguyen, McKinsey, Johnson, and his first officer. Johnson had the ship's AI (known as Nic for Nicolaus Copernicus) display the contour maps created from the radar altimeter data.

Kozlowski asked his navigator, "What have we learned Julia?"

"Barely fifteen percent of the surface area is above sea level," Johnson pointed out. "However, based on color patterns, wave height, and tidal variations we estimate that at least thirteen percent of the surface area has an ocean depth of less than four meters. We won't know for sure without sonar soundings."

Ensign Wallaby spoke up. "The planet has a very weak magnetic field which could be an indication of very little molten iron in the core, but the volcanic activity in three areas suggests there is a molten core of some kind. Analyses of the volcanic emissions in the atmosphere indicate a higher percentage of copper and aluminum than iron, but most of the ejected mass is silicon compounds, various feldspars and quartz being the most abundant. The weak magnetic field will make the surface much more susceptible to solar radiation hazards."

"Regarding mineral deposits," Johnson resumed his report, "it's hard to say for sure without kicking up some dirt for analysis, but there are several magnetic anomalies that could be attributed to large deposits of iron, one of which is on land near the southern pole. The orange color of the oceans has to be from a large amount of iron compounds in the water."

"Well," Kozlowski commented as he looked at the colorful map. "If this place is going to blossom into a colony world; then we might as well name it Azahar. It's a big orange that's going to blossom."

McKinsey and Atanas both laughed at Kozlowski's play on words. The Spanish reference to "orange blossom" was lost on Tuan.

Kozlowski looked around the table, "It sounds like we need to break out the shuttles and get a stream of raw materials headed our way through transporters dedicated to feeding Mr. Nguyen's replicators." Smiling, he looked at Atanas, "Make it so, Number One."

"Nic, can you release the pods containing the shuttles and industrial replicators, please." He used a pointer indicate a location on the holographic display that was near the ship. "Have the replicator in the shuttle pod link them together with airtight corridors at each end like we planned."

The struts and passages were manufactured by machine shop units using the small store of raw materials that *Copernicus* had brought along for this purpose. The corridors formed a ring that would accommodate seven of the enlarged pods powered by the modest fifty-megawatt reactor in the hangar pod.

Four of the ship's concubines along with Nancy, Celeste and Judith had been trained as shuttle pilots. The engineering officer, Ensign Marina Stayton, coordinated the shuttle missions to the locations identified by Johnson and Wallaby as points of interest. By the end of the second week above Azahar the surface survey missions had collected a

considerable amount of detailed data and mining nanites had been deployed to several of the sites. The mining operations and their associated transporters began sending a trickle of raw materials to the orbiting replicators that were open for business long before the materials began arriving in sufficient volume to keep them busy.

The two expanded replicator pods had openings in the side of the cylindrical housing to extrude whatever was being built outward from the central axis of the budding station.

After deploying a number of communications and navigation satellites into synchronous orbits, Kozlowski nudged *Copernicus* and the manufacturing platform into a synchronous orbit on the longitude line that was centered on one of the larger land masses in the southern temperate zone of the planet. With an average temperature of 38-degrees Celsius (100-degrees Fahrenheit) it wasn't all that temperate, but it had a combination of mountains, valleys, and inland plains. The triangular island also had both deep and shallow bays along the coast line. There were a number of freshwater lakes and rivers sustained mostly by rainfall along the mountain slopes that unevenly divided the landmass. Most importantly, it appeared to be geologically stable.

A line of mountains along the northern coast was roughly parallel to the equator and about nine hundred fifty kilometers long. The apex at the southern tip was a bit off center with the western coast being a bit over eight hundred kilometers and the eastern coast closer to nine hundred kilometers. These were straight-line approximations. The jagged coastline was considerably longer in all three cases. The island was a bit larger than the combined area of the British Isles and was situated with the more prominent mountain range along the northern one-third of the dingy gray triangle protruding from an orange ocean. The low plains near the southern apex of the island were almost featureless. There were a number of tiny islands that appeared to be of volcanic origin to the east and west of the main island.

Captain Kozlowski christened the landmass Triton.

None of the sorties to the surface during the previous week had found any signs of life on the young planet, not even bacteria. There was no protection from the abundant ultraviolet-B radiation from the large star, making life improbable except in deep water.

One of the best sources for a wide variety of minerals was the seawater itself. Nguyen sent parts for a modest pumping station down to one of the deep-water bays near the iron deposit at the southern tip of the island. The pumping station would not only provide a source for the less common elements, but also provide potable water suitable for consumption as well as for irrigation and cooling after the soluble solids and gasses had been removed.

With a site selected, the pod lighter was used to deliver the colony's core pod to a location between the ore deposit and the pumping station. It took several days for the colony core to bury itself deep below the power and communications terminus that it left on the surface. Nguyen's family used the pod that had transported the mining equipment

as temporary quarters and their pod was delivered near the terminus. It took a couple of days for the habitat pod to bury itself out of the hot sun. The machine-shop replicator in Nguyen's pod made quick work of creating a short tunnel to a transporter terminus station in a natural pocket of the soft rock.

With the tunnel and transporter room already in place and with the help of Nguyen's machine-shop replicator the habitat pod for the McKinsey crowd was ready for occupancy overnight. The residents slept through most of the process after riding down with the pod. The brief period of weightlessness was quite an adventure for the six kids, not to mention a couple of the supposed adults.

Even the modest machine-shop replicators were much too large to fit in a Galileo shuttle, but the extra pod that had carried the mining equipment and associated transporters to the surface was again put into service when it was used by the pod lighter to ferry the larger items to the surface. The lighter also carried the first industrial replicator produced by the orbiting facility down to the site of Nguyen's pumping station. Various sizes of replicators were then produced to extract minerals from the settling tanks of the treatment plant as well as remove other contaminants from the water. The pumping station discharged purified and de-ionized water that was saturated with oxygen.

The southern tip of Triton began to show signs of intelligent life.