

PART I:

 **HISTORICAL + TECHNICAL BRIEFING**





A QUESTION OF ORIGINS

The debate over our past on this world reaches back through the entire documented history of civilization, a period covering over 1300 years. The harsh conditions across this world, Kharak, [A1] fueled the myths of other places and times where we did not have to spend so much of our strength on simple survival. While the issue of our distant past was primarily a religious matter [A2], it wasn't until the dawning of the Time of Reason [A3] that advances in the biological and chemical sciences revealed a disturbing lack of commonality between our biochemical makeup and that of most Kharakid life. Ironically, it was the birth of the Daiamid Movement, with its many scientific breakthroughs, that created a philosophical environment where the oldest myths and the newest theories could be wedded into what we now have accepted as the XenoGenesis Theory. Except for a small variety of bacteria and a single species of small forager, our helix proteins are completely different from all other forms of life on Kharak. We are left with no other choice but to seriously consider the theory that we are aliens to this world. Of course, this answer only led to more questions.



KHARAKID ENVIRONMENT	R1	HERESY WARS CIRCA 520	R2
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KHARAK IS AN OLD PLANET (6.7 BILLION YEARS) THAT IS NEARING THE END OF IT GEOLOGICAL ACTIVITY. MOST MAJOR TERRAIN FEATURES HAVE BEEN WEATHERED DOWN AND VAST DESERTS COVER MOST OF THE WORLD EXCEPT FOR THE POLAR REGIONS. THESE ARE SHIELDED FROM THE ENCROACHING SANDS BY THE THREE NORTHERN SEAS AND THE GREAT MAJIRIAN OCEAN IN THE SOUTH. TEMPERATURES ALONG THE EQUATOR CAN APPROACH THE BOILING POINT OF WATER AND THE ONLY LIFE FORMS LARGER THAN MICROBES SURVIVE BY BURROWING DEEP UNDER THE SANDS AND ALONG SUB-SURFACE WATER CHANNELS OR BY HIBERNATING DURING THE HOTTEST MONTHS. THE POLAR REGIONS ARE ALMOST OPTIMAL FOR OUR PEOPLE BUT THE LIMITED ARABLE LAND AND SCARCE RESOURCES HAS PREVENTED OUR POPULATION FROM GROWING BEYOND 300 MILLION PEOPLE.

EARLY HISTORY ON KHARAK IS MARKED BY CONFLICTS BETWEEN VARIOUS CLANS BASED ON TERRITORIAL CONSIDERATIONS AND RELIGIOUS DOGMA. THIS CAME TO A HEAD IN 520 WHEN THE TWO LARGEST CLANS IN THE NORTH, THE SIIDDIM AND GAALSIEN WENT TO WAR OVER THE ISSUE OF WHAT HAD CAUSED THE GODS TO PLACE US ON SUCH A WORLD. THE SIIDDIM BELIEVED THAT WE HAD ONCE BEEN A GREAT RACE LIVING IN PARADISE BUT HAD BEEN PUNISHED BY THE GODS FOR OUR HUBRIS AND CAST DOWN TO THIS WORLD. THE GAALSIEN BELIEVED THIS IDEA TO BE HERETICAL ARROGANCE IN THE LIGHT OF THEIR BELIEF THAT WE HAD BEEN CREATED TO SUFFER FROM THE BEGINNING AND KHARAK WAS ALL WE COULD HOPE FOR. THE CONFLICT EVENTUALLY SPREAD TO THE SOUTHERN ZONE AS WELL. EVEN MORE OBSCURE POINTS OF THEOLOGY PROVIDED THE RATIONALIZATION FOR A SERIES OF WARS, LARGE AND SMALL, THAT LASTED ALMOST 300 YEARS AND CREATED CLAN FEUDS THAT WOULD NOT BE PUT TO REST UNTIL THE DISCOVERY OF THE GUIDESTONE.

Fig 1.1:
The desert planet Kharak
as seen from space.



TOR
CIRCA 810

R3

MISSION SILUMIIN RIOTS

CIRCA 1024

R4

THE HERESY WARS LEFT OUR PEOPLE ON THE BRINK OF EXTINCTION, WITH PRECIOUS RESOURCES AND INFRASTRUCTURE DESTROYED DURING 3 CENTURIES OF RELIGIOUS CONFLICT. IN 810, WITH ALL FACTIONS EXHAUSTED AND FALLING FROM INTERNAL ANARCHY, A SMALL CLAN EMERGED FROM HIDING FROM THE SETTLEMENT AT TIIR. THIS OBSCURE NORTHERN CLAN WAS THE FIRST TO DEVELOP CHEMICAL EXPLOSIVES AND WERE THUS UNMATCHED IN CLAN WARFARE. THEY ALSO PREACHED A WORLDVIEW BASED ON SCIENCE AND LOGIC AND OFFERED PROTECTION TO ANYONE WHO WISHED TO LIVE IN SUCH A WORLD. A FEW DECISIVE BATTLES SHOWED THAT NONE OF THE THEOLOGICAL CLANS COULD HOPE TO DEFEAT THE NAABEL AND WITHIN 20 YEARS TIIR WAS THE NEW CAPITAL AND THE AGE OF REASON HAD BEGUN.

SPACE EXPLORATION WAS NOT GREETED FAVORABLY BY THE ENTIRE POPULATION. LARGE FACTIONS FROM SOME OF THE POORER CLANS FELT THAT TECHNOLOGY AND INDUSTRIAL OUTPUT WAS BEING WASTED ON THIS EFFORT. THEY FELT THAT IT WOULD BE PUT TO BETTER USE TRYING TO ALTER KHARAK OR AT LEAST DISCOVER WAYS TO SUPPORT MORE POPULATION AND HOLD BACK THE ENCROACHING DESERTS. AS FINAL PREPARATION FOR THE FIRST ORBITAL FLIGHT WERE BEING MADE, AN OBSCURE THEOLOGIAN NAMED PER DOINE PROVIDED THE UNIFYING FORCE TO THESE FACTIONS BY RESURRECTING THE OLD MYTH THAT TRAGEDY WOULD BEFALL OUR PEOPLE SHOULD WE OFFEND THE GODS WITH ANOTHER ACT OF ARROGANCE. THIS RELIGIOUS REVIVAL SPREAD THROUGHOUT BOTH POLAR TERRITORIES AND IT CULMINATED WITH AN ATTEMPT BY A FRENZIED MOB TO TEAR DOWN THE SILUMIIN LAUNCH VEHICLE ON THE EVE OF IT'S LIFTOFF. THIS DISASTER WAS ONLY AVERTED BY THE WISDOM OF THE HIGH TECHNOCRATS WHO STOOD ON THE LAUNCH BASE'S DEFENSE TURRETS, PREVENTING THEM FROM FIRING ON THE CROWD, WHILE THEY PREACHED REASON TO THE CROWD FOR THE ENTIRE 14 HOURS REQUIRED FOR LAUNCH. PER DOINE DIED A MARTYR FOR THE CAUSE AS HE SLIPPED THROUGH THE CORDON AND PRAYED FOR SALVATION BENEATH THE ROCKET'S MAIN ENGINES UNTIL THEY IGNITED, VAPORIZING HIM.

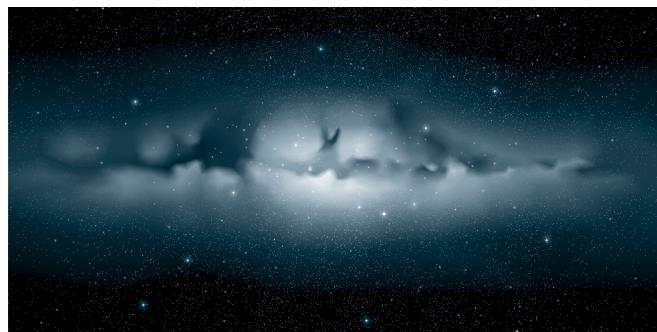


Fig 1.2:

Peering towards the heart of our own spiral galaxy. The dark horizontal band is a vast bank of interstellar dust that obscures the more distant bright core region approximately 35,000 light years away.

THE XENOGENESIS QUESTION AND EARLY SPACEFLIGHT MISSIONS

It was becoming more obvious that we, as a species, were relatively new to Kharak. However this theory, by itself, did not bring peace to our world. The mechanism and reason for arrival was still being hotly debated and was even cause for a theological revival on the eve of our first orbital flights. [a4] The age of orbital exploration revealed the first clues that we were not indigenous to our planet. Once we had progressed to piloted flights, reports of unusual pieces of metallic debris in high orbit soon led to dedicated retrieval missions, with surprising results. While nothing larger than a handspan could be found, samples were brought down from orbit and soft landed in the High Desert. Initial analysis made it obvious these were pieces of advanced manufactured and machined structures. Detailed atomic analysis revealed trace elements and isotope combinations unknown on Kharak or, as it was eventually discovered, anywhere else in the stellar system.

This was yet another piece to the puzzle of our origins, but it did not truly confirm anything except that some kind of alien device or ship had once orbited our world. Though not decisive, the discovery of this tiny debris belt spurred great leaps in metallurgy and manufacturing, simply by



showing that exotic, high tensile composite materials could exist. This in turn led to advances in propulsion, first with limited fissioning of unstable heavy elements and then with more viable hydrogen fusion powerplants, as effective shielding systems became lighter and smaller. The combination of these technologies spurred our fledgling space program even further and our first steps became leaps. We were poised on the threshold of space, looking outwards for answers, when a twist of fate turned our eyes back to the surface of our adopted world.

THE DISCOVERY OF KHAR-TOBA

In 1106 a powerful radar satellite was launched in the hopes of detecting larger debris belts elsewhere in our star-system. A malfunction in its maneuvering jets caused the satellite to turn towards Kharak and scan the surface. Leykab Jaraci, a technician on the project, noticed a strong return where there should be none. A quick analysis showed the powerful radar had penetrated the equatorial desert sand to a depth of 75 meters and there was strong evidence of an ancient city centered around a large metallic structure.

By 1110 enough science Ministers had been convinced, by repeated radar scans, to allocate resources to an expedition into the Great Desert. Despite conditions that would daunt personnel in modern enviro suits, these first brave excavators managed to uncover what has come to be known as the First City, Khar-Toba. While this discovery was the stuff that Archaeologists dream of, even greater secrets revealed themselves when the central metallic structure was revealed to be the skeletal chassis of an advanced vessel. [a5] Though virtually nothing of relevant substance remained except a vast array of structural beams, the real treasure lay in a shielded chamber deep below the surface. While tracing the ancient maze of power cables

KHAR-TOBA ANALYSIS

[a5]

KHAR-TOBA APPEARS TO BE THE FIRST CITY BUILT BY OUR ANCESTORS AFTER SURVIVING PLANETFALL ON KHARAK. ANALYSIS OF THE ANCIENT INFRASTRUCTURE SEEMS TO INDICATE THIS ANCIENT VESSEL SUFFERED IRREPARABLE DAMAGE AND WAS UNABLE TO MOVE IT'S CREW TO A MORE TEMPERATE POLAR CLIMATE. THUS THE CITY SPREADS RADIALLY AROUND THE WRECK AND MUCH OF IT IS UNDERGROUND WHERE IT IS LOGICAL TO BELIEVE OUR ANCESTORS WENT SEEKING RELIEF FROM THE HIGH DESERT TEMPERATURES AND REGULAR SANDSTORMS. MANY OF THE STRUCTURES CLOSEST TO THE HULL ARE MADE UP OF PATCHED TOGETHER SECTIONS OF HULL PLATE. AS THE CITY GREW OUTWARD, MORE RUDIMENTARY STRUCTURES WERE CARVED FROM THE LOCAL SANDSTONE BY HAND. THE MASSIVE FUSION CORE HAD OBVIOUSLY BEEN MOVED FROM THE SHIP TO THE UNDERGROUND CHAMBER WHERE IT WAS FOUND IN ORDER TO FEED POWER TO THE ORIGINAL CITY, WHICH PROBABLY FELL SOON AFTER THE SHIP'S PLANT FAILED FOR THE LAST TIME.





during the first triad of 1112, engineers opened a shielded chamber containing the remains of the ancient ship's powerplant. Painstakingly transported to the modern polar capital of Tiir, this ancient device was back-engineered to provide another generation of breakthroughs in power and material sciences. But what catapulted our technology 500 years forward was the analysis of a module attached to the powerplant. This device was nothing less than a solid state hyperspace induction module. In a decade of analysis, we were ready to take our first steps back out into the galaxy, but it was not until 1135 that it was revealed just how far we had to go.

The discovery of the powerplant and hyperspace module was considered the gem of ancient Khar-Toba, and with them safely in research labs in the temperate poles, the old city was left in the hands of a few dedicated Archaeologists. They struggled to do their work under some of the harshest conditions on Kharak. Led by a young woman named Mevath Sagald, they gave our entire civilization an answer and a goal as she pieced together the location of the mythical Observatory Temple of Khar-Toba. Accidents left her to excavate the site nearly single-handedly, but when she opened the inner chamber she recognized immediately the full import of what she found, etched on a single piece of black stone.

THE GUIDESTONE

Archaeologist Sagald had found something that was as unremarkable to the casual eye as it was monumental to the future of our people. When she studied this stone further, she discovered it had once been an ornately carved artifact that had been nearly destroyed by intense heat. Whatever message it had been originally intended to convey had long since been erased. Some distant ancestor had cast it through time as a message for generations to come. Etched into the upper surface is a simple diagram of our galaxy, and a single gouged line leading from a point on the rim to one deep in the galactic center. Adjacent to a spot easily identifiable with Kharak's actual position is a single string of numbers that give a three dimensional vector. And at the other end of the line is a single word, ancient but common to all clan dialects:

Hiigara . . . Home.

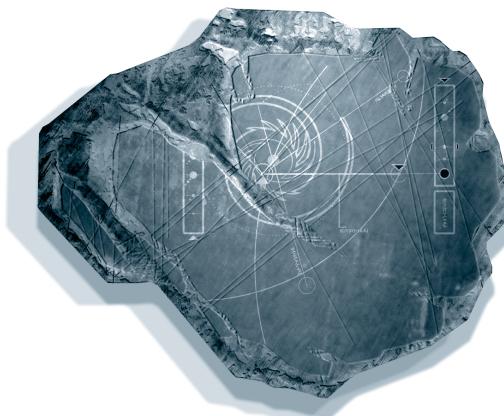


FIG 1.3:

The Guidestone.

Found in the ruins of Khar-Toba, it has been dated at over 3000 years old. Precise galactic features and the indisputable coordinates of Kharak were etched into its dark surface. In a small area near the region representing the galactic core, a single ancient word is clearly visible: "Home".



The effect on our culture of this simple artifact, now known as the Guidestone, has been unprecedented. Our materials scientists confirmed the age of the artifact at approximately 3000 years, and are assured that they can match the Guidestone to its system of origin should we come across it. After a long history of struggle, strife and inter-clan warfare, the confirmation that Kharak was never our true home inspired an era of co-operation like none ever known. [a6]

For the past two hundred and fifty years there have been no significant conflicts or bloodshed. We have dedicated our entire industrial and scientific resources towards a single, common goal:

Returning to Hiigara, our Homeworld.

THE MOTHERSHIP

In the first triad of 1159, a final plan was accepted for the vessel that would follow the path indicated by the Guidestone. What had delayed the project for so long was simply that no one, neither astronomers nor religious leaders, could say for certain what had brought us to Kharak, and so none could say what an expedition would encounter. It was finally decided to build a vessel that was capable of doing everything, including establishing a new colony deep coreward. Known simply as the Mothership, this vessel would be part carrier, part survey ship, part factory complex and, most importantly of all, the temporary home for millions of our people frozen in cryogenic sleep. It would have to be able to deal with the great unknown reaches of the galaxy, and whatever discoveries or threats they might contain. It would be the greatest construction project in our history. Ministers from every clan abandoned their cloistered, competitive policies and pooled every resource to develop strategems and designs, and

GLOBAL PLEBISCITE

of 1155

a6

HAD ARCHAEOLOGIST SAGALD BROUGHT THE GUIDESTONE BACK TO HER OWN CLAN STRONGHOLD, KHARAK MIGHT HAVE FOUND ITSELF ONCE AGAIN DESCENDING INTO PARTISAN STRUGGLES OVER POSSESSION OF THE ARTIFACT AND WHO WOULD BE FIRST TO EXPLOIT ITS SECRETS. INSTEAD SHE REALIZED WHAT SHE HAD FOUND WAS FAR MORE IMPORTANT THAN LOYALTIES TO FAMILY OR CLAN. IT WAS A STARTLED GATHERING OF HIGH MINISTERS THAT FOUND THEIR DEBATE DISRUPTED BY A SAND-COVERED YOUNG WOMAN CARRYING AN ANCIENT STONE. BY NIGHTFALL OF THE FOLLOWING DAY SOME OF THE GREATEST MINDS IN THE DAIAMID HAD EXAMINED THE GUIDESTONE AND CONFIRMED NOT ONLY ITS VALIDITY BUT ALSO ITS IMPLICATIONS. WITH THIS KNOWLEDGE IN HAND THE HIGH MINISTERS RETURNED TO THEIR HOME CLANS TO BRING THE WORD THAT WE WERE NOT INDIGENOUS TO THIS PLANET. FROM THE MOST POWERFUL CROSS-TERRITORY INDUSTRIAL CLANS TO THE SMALLEST AGRICULTURAL VILLAGES, THE WORD WAS UNANIMOUS: THE ENTIRE INDUSTRIAL AND SCIENTIFIC MIGHT OF ALL KHARAK WOULD BE PUT TO THE TASK OF FOLLOWING THE PATH LAID BY THE GUIDESTONE. FOR THE FIRST TIME SINCE WE CAME TO THIS WORLD, WE WERE ONE CLAN.



then allocated them to the various industrial hubs throughout the polar zones. In the meantime, clans that had been trailing the cutting edge in technology and production turned their efforts completely over to agricultural work, feeding those who were occupied by the construction effort.

CONSTRUCTION CHALLENGES

The planned Mothership was so massive that it took twenty years simply to build up the infrastructure required for the construction project. Asteroids from the debris belt were pulled into a parking orbit around Kharak. Here, manned cutter ships used high-energy lasers to break these planetoids into manageable sections that could be towed into the great maw of the Phased Disassembler Array. The PDA used a series of fusion torches to reduce the planetoid chunks into their component elements. Robotic Materials plants then combined these elements into whatever alloys and composites were required for the grand task at hand. Many of the lessons learned here were refined and implemented into the next generation of resource-gathering ships that would serve the Mothership herself.

The next step was to construct the orbiting Scaffold where the Mothership would be built. This framework took 10 years to complete, and is the single largest structure ever built. New disciplines in macro-engineering had to be created and put into practice just to complete this construction yard. The Scaffold runs 25.6 kilometers long, and is stationed in middle orbit around our world. Easily visible from the planet's surface, it is the only moon that Kharak has ever known, and has been a natural fixture in the night sky for almost four generations now. Only the eldest of our people can remember a time when the skies were dark and there was no glittering lattice work to remind our people of their destiny.

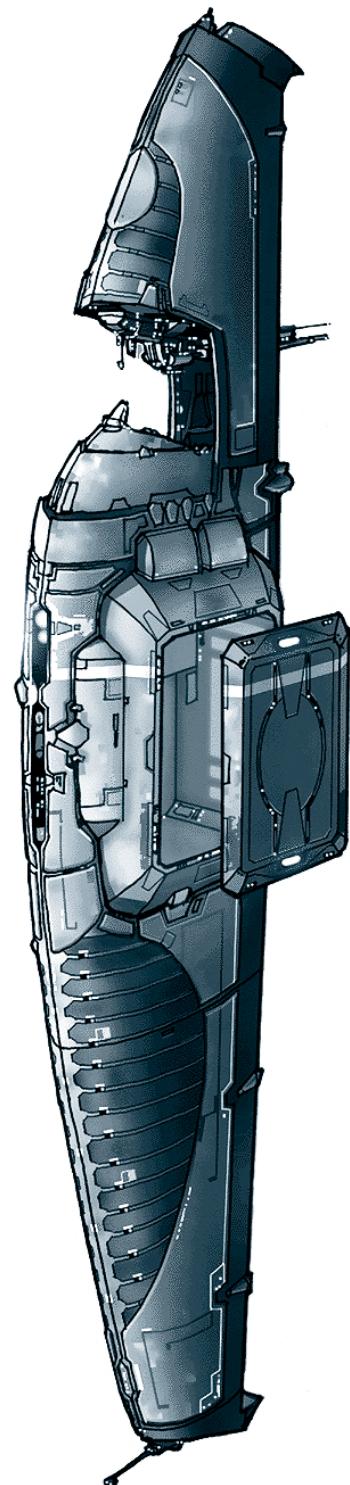


Fig. 1.4:

An early Mothership design. The Mothership will serve as the base of all operations for the trans-galactic voyage.



Over the next 25 years, the Mothership slowly took form inside the Scaffold, building up in layers from the center sections outward, until the final layer of ceramic armor was laid down just last year. For the last eight decades, there have been over 10,000 technicians along with another 25,000 robots working on this ship continuously. Many of the fusion torches and materials plants



Fig. 1.5:

Four generations witnessed the Scaffold silently orbit the moonless Kharak. In this view, supply and service vehicles can be seen adjacent to the main assembly.

that broke down and processed the planetoids early in the construction program were cannibalized and incorporated into the Mothership itself. During the course of this massive project, 2,357 personnel have given their lives for the future of our people, and their names have been engraved on the central hyperdrive core aboard the Mothership. They will never be forgotten, and their brave spirits will precede this vessel into the gulf of hyperspace.

MOTHERSHIP SECTIONS AND SYSTEMS

In such a huge vessel dedicated to so many tasks, it is necessary to devote entire areas towards fulfilling each part of the ship's mandate.

Fleet Foundry:

The Mothership is designed to be a mobile construction yard on par with the original orbital facilities which created the mega-vessel in the first place. The automated manufacturing bay is capable of high-speed production of vessels from tiny Scouts to larger ships that are yet to be designed. Various parallel production bays allow for dozens of larger components to be cast and assembled at the same time, thus radically reducing the time needed to build larger vessels. Ships components are based on modular technologies, many of

the same ones being used across various hull designs, thus saving time and allowing for faster simultaneous construction. The foundry floor is capable of using multiple construction tracks to simultaneously build a fleet of scouts, assemble a squadron of corvettes, and create enough ordinance for both sets of new ships. A large hanger provides docking sleeves for a huge array of vessels to be serviced - or the same sleeves can simply be used as berths should the Mothership need to enter hyperspace with a large fleet of auxiliary ships.

None of this would be possible without the immense quantity of raw materials brought in by the Resource Collector vessels. Built around the model of the original cutting ships, which were used to break down raw materials for the initial construction of the Scaffold and the Mothership, the Resource Collectors are designed to reduce and acquire a variety of space material, ranging from solid planetoids to gas nebulae. The Collectors then return to the Mothership and transfer the contents of their holds for processing through a Phased Disassembler Array. While this PDA is smaller and quite a bit more efficient than the orbital array used to supply the Scaffold, it works on the identical principal of arrayed fusion torches. It will reduce any material to its component elements, while a Magneto-Hydrodynamic Shunt Field sorts the vaporized elements according to atomic weight and carries them to the storage shells. The massive honeycomb of storage shells, (almost 3 cubic kilometers of storage space) lies just under the surface of 65% of the Mothership's hull. This allows for quick access and venting, in the event of a jam or storage cell rupture, as well as providing a final layer of armor.

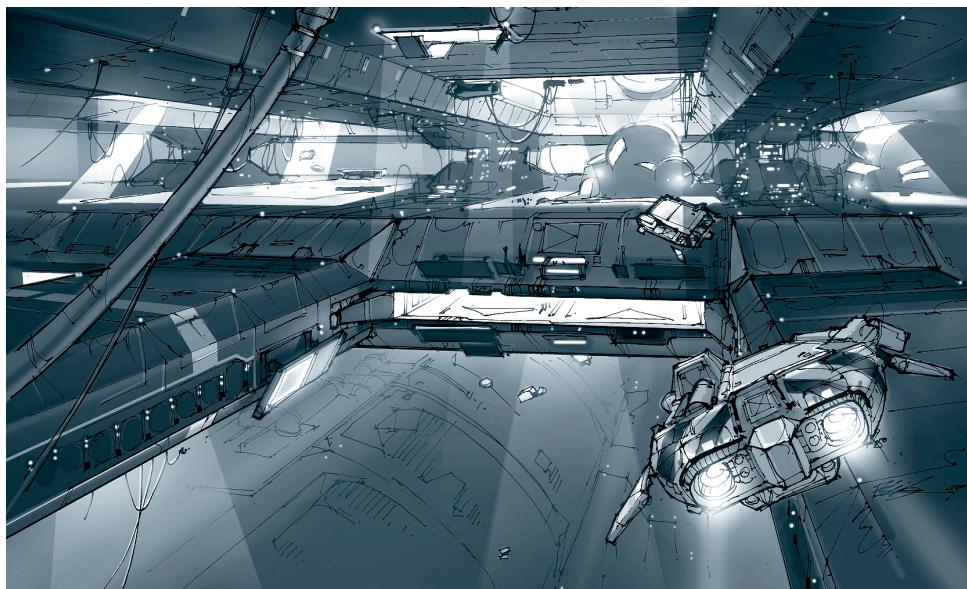


Fig. 1.6:

Inside the Mothership's main Construction Hangar. It is the single largest enclosed volume ever built and will be capable of shipbuilding on every scale possible. In this view, the vast Main Hangar is visible looming beneath a factory slab in the assembly area. Strike Craft docking sleeves are housed within these huge sub-decks. Service vehicles populate all sections of the Hangar in great numbers. Highly versatile, they provide countless vital operations from simple maintenance tasks to complex assembly.

Navigation:

The Mothership has two modes of travel. The first is based on conventional fusion drive technology, and is basically a series of large fusion reactors



designed to vent high-energy plasma through an opening in a shaped magnetic bottle. Maneuvering jets are fed plasma from the main exhaust through a series of conduits, and this allows a portion of the main thrust to be diverted to maneuvering.

The Mothership's secondary drive is less well understood, but it is the system that makes this voyage possible. Toward the lower aft portion of the ship lies the large shielded area containing the Hyperspace Module. This is a direct copy of the one found under the sands of Khar-Toba, but expanded twelve-fold to accommodate a vessel of the Mothership's mass. [a7] Even though the effect has been tested extensively through ships fitted with test modules of various sizes, our control and understanding of the effect is somewhat limited. This has resulted in a need for massive energy to induce the waveform, prohibiting its use on any vessel too small to carry at least three industrial fusion plants.

There is another drawback to our limited understanding of hyperspace. We can only induce a linear tunnel effect of massive proportions, with relatively crude control of distance. The module is projected to have a range of 2500 light years for a single waveform event, and in order to trigger the drive we must charge the module with all the

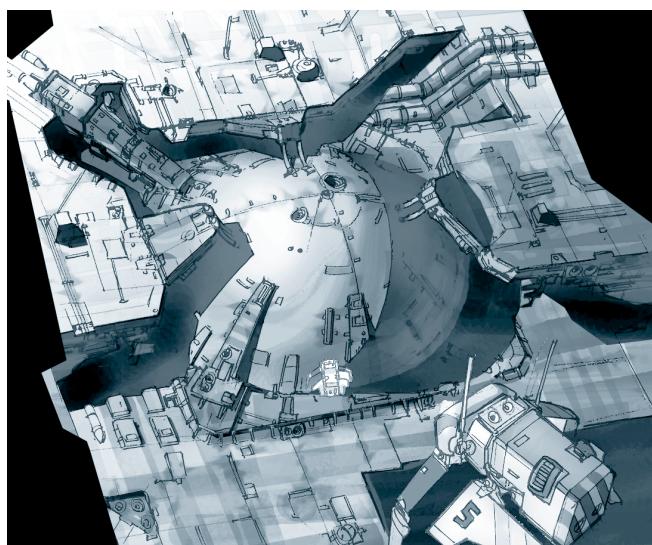


Fig. 1.8:

The enormous Hyperspace Module under construction in orbit. Although the core of the device is entirely solid state, the power and control systems that embed it are the most complex devices ever built. Only the upper part of a hemisphere can still be seen bulging above the surrounding construction.

HYPERSPACE PHYSICS

R7

THE SOLID-STATE HYPERSPACE MODULE IS A QUANTUM OSCILLATION DEVICE CAPABLE OF GENERATING A WAVEFORM THROUGHOUT ANY SURROUNDING STRUCTURE. IT DOES THIS IN ORDER TO INDUCE AN EFFECT KNOWN AS QUANTUM TUNNELING. BECAUSE THE DEVICE WAS REVERSE ENGINEERED, THE EXACT WORKINGS OF THE MODULE ARE STILL VERY UNCERTAIN. ALL THAT OUR SCIENTISTS KNOW ABOUT THE EFFECTS OF HYPERSPACE TRANSPORT HAS BEEN DERIVED FROM LIMITED EMPIRICAL DATA - THEORETICAL DATA IS ALMOST TOTALLY NONEEXISTENT.

THE RISK INVOLVED IN EMPLOYING A TECHNOLOGY THAT WE KNOW SO LITTLE ABOUT, ON SUCH A VITAL MISSION, COULD NOT BE AVOIDED. THE RAW MATERIALS NEEDED TO BUILD THE HYPERSPACE MODULES ARE EXTREMELY RARE ON KHARAK; ONLY A FEW PROTOTYPE DRIVES WERE BUILT PRIOR TO THE MOTHERSHIP MODULE DUE TO THIS MATERIAL SHORTAGE.



energy required for such a stunning distance. Should we wish to travel a more appropriate and cautious distance, we must crudely halt the wave effect by discharging the module's energy, and dropping back into normal space-time. [a8] Currently the Hyperdrive Module is programmed for three priority interrupts. The Achieved Target interrupt is based on our own astronavigation technology, which takes a 'sighting' in normal space and will discharge the module once the time vs. distance hyperspace algorithms state that we are roughly near our programmed coordinates. The Anomaly Interrupt occurs when a gravimetric anomaly is detected by ship's sensors, and the vessel is automatically returned to normal space to either gather resources or, in the case that the disturbance is actually another vessel, investigate further. Finally, the Safety Interrupt occurs when ship's control computers sense any irregularities in either the waveform effect or the Mothership's hull integrity. All three of these interrupts empower the navigation computer to automatically drop the ship into normal space.

Fleet Command:

As the project neared completion and the full size and complexity of the Mothership became clear, System Coherency specialists encountered a problem that seemed to defy solution. In even the most basic function simulations, there was so much data to be analyzed, so many responses per second required, that the projected bridge crew grew into the hundreds. As new command staff were added to the simulation, the hierarchy became completely unmanageable. It became apparent that in any sort of crisis, the Mothership would quickly suffer from communications paralysis.

Computational experts tried, but no simulated intellect system they could devise could be trusted 100%, and the whole project was at the verge of collapse when a young neurronics expert stepped forward with a desperate plan. Karan Sjet was

FURTHER HYPERDRIVE LIMITATIONS

R8

ANOTHER PROBLEM WITH OUR CURRENT UNDERSTANDING OF HYPERSPACE IS THAT WE CAN ONLY TAKE LIMITED GRAVIMETRIC READINGS OF THE NORMAL SPACE WE ARE TUNNELING THROUGH. THIS MEANS WE CAN DETECT A MASS THAT DISAGREES WITH OUR NAVIGATIONAL DATA, BUT SHOULD WE WISH TO KNOW ANYTHING ABOUT THE ANOMALY WE MUST INTERRUPT THE HYPERSPACE MODULE. GRAVITY WELLS ALSO HAVE A DESTABILIZING EFFECT ON HYPERSPACE TRAVEL. TEST SHIP LOSSES HAVE TAUGHT US THAT A HYPERDRIVE MUST BE SHUT DOWN WELL OUTSIDE ANY STAR SYSTEM'S GRAVITATIONAL CURVE.



working on experimental biological circuits that would mimic brain functions. When she heard that an information bottleneck was facing the systems of the Mothership, she realized her research could be put to another purpose.

Neuronist Sjet suggested using an existing brain - her own - to bridge the gap between living nerve branches and the Mothership's data shunts. [a9]

As Fleet Command, she is capable of handling hundreds of alerts and updates per second, while analyzing what tasks can be handled automatically and which situations need to be brought to the attention of the crew. Should the ship come under fire, she will instantly analyze systems across the entire length of the ship and monitor all response activities. Fleet Command observes the status of all vessels and updates their positions. Research reports are also processed through her central core, along with information on construction projects.

Fleet Intelligence:

It is the job of Fleet Intelligence to analyze incoming data from probes, observation equipment and sensors. Centered just below the main bridge is a large spherical chamber containing work/com stations, with data shunts centered around a full holographic projection pit. When the Mothership is under way, this pit will be manned permanently by shift teams composed of the best scientists, diplomats, linguists and tactical officers, all specially selected not only for their knowledge, but their adaptability. Fleet Intelligence has access to not only the Mothership's sensor arrays, but to the Fleet Archives as well. Whatever the Mothership should encounter in deep space, Fleet Intelligence will interpret the data and give as accurate an analysis as the situation permits, offering tentative conclusions and tactical recommendations.

Cryogenics:

The major stumbling block for the plans to start a

KARAN SJET SOLUTION

R9

THE DRAWBACK WAS THAT HER RESEARCH WAS STILL DECADES AWAY FROM EVEN A BASIC NEURONIC INTERFACE, AND THE ONLY WAY TO PATCH SOMEONE INTO THE DATA SYSTEM OF THE MOTHERSHIP WAS TO LAY A NERVE TRUNK OPEN AND ATTACH THE SHUNT DIRECTLY WITH A BIO-CIRCUIT INTERFACE. IN ORDER TO SERVE AS A LIVING COMMAND CORE TO THE MOTHERSHIP, ONE OF OUR PEOPLE WOULD HAVE TO VOLUNTEER TO BE SURGICALLY ALTERED SO THAT MOST OF THE NERVE TRUNKS SERVING LIMBS AND SENSES WOULD BE PATCHED INTO SHIP SYSTEMS INSTEAD. THE SUBJECT WOULD THEN HAVE TO BE EMBEDDED PERMANENTLY IN THE BRIDGE OF THE SHIP. KARAN SJET REFUSED TO ALLOW HER TECHNOLOGY TO BE USED ON ANYONE ELSE. SHE IS NOW THE MIND OF THE MOTHERSHIP, AND THE VOICE OF FLEET COMMAND.





new colony was life support. The resources needed to keep 600,000 people alive for years in deep space are simply impossible to store and transport; the Mothership would have to be so huge that no number of fusion plants could move it. To solve the problems of a long spaceflight, our life-scientists turned to cryogenic suspension. [a10] With the technology tested and perfected, engineers began filling the cryonic hold with the 600,000 pods that would be required for the voyage.

Volunteers have chosen to surrender as much as 12 years of their lives before the voyage even starts in order to be processed for cold sleep. First, they are prepared and placed in their Cryonic Pods, where they are slow frozen over a period of two weeks. The Pods are then stored in holding areas deep under the surface of Kharak until 100 of them are ready to be placed on a Rack Module and boosted into space together aboard the Heavy Lifter Units. These Rack Modules are then loaded into large Cryo-Trays. A single Tray provides power and stable containment for a thousand Rack Modules, 100,000 individuals in all.

The six cargo trays will be loaded in to the Mothership once the Hyperspace drives have been successfully tested. Until then, they will wait in a stable orbit near the Scaffold.



Fig. 1.7:

Inside the cryogenics hold. The pods are widely spaced apart in the buffer solution. Due to the narrow temperature tolerances of the cryo-pod systems, a large bath of buffer fluid is necessary to maintain even temperature in the hold. In the event of a total power failure in the hold, and spontaneous malfunction of all auxiliary fusion pylons, this system will still support its frozen occupants for six months if the insulated walls of the hold are not breached.

CRYONIC STUDIES

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BIOTECHS STUDIED NUMEROUS DESERT-DWELLING ANIMALS THAT GO INTO A FORM OF SUSPENDED ANIMATION, DEEP UNDER THE SANDS, DURING THE HOTTEST TIMES OF HIGH SUMMER. THE BIOLOGICAL MECHANISM THAT KHARAKID LIFEFORMS USE TO DEPLETE THEIR CELLS OF WATER, TO AVOID VAPORIZATION EXPANSION DURING THE HIGH TEMPERATURE EXPOSURE, WAS RECREATED ARTIFICIALLY IN ORDER TO SOLVE A SIMILAR BUT OPPOSITE PROBLEM; THE DESTRUCTION OF CELLS DUE TO ICE EXPANSION DURING A CRYOGENIC FREEZE. EARLY EXPERIMENTS WITH ADAPTIVE CRYOGENIC TECHNOLOGY WERE SUCCESSFUL, AND IN 1185, REI MAGANN WAS PLACED INTO A CRYOGENIC POD AND PLACED ABOARD A SMALL PROBE VESSEL SET TO CIRCUMNAVIGATE THE KHARAK SYSTEM IN A CROSS ELLIPTIC PATH. THIS JOURNEY TOOK 6 MONTHS TO COMPLETE, AND IT WAS PLANNED THAT PILOT MAGANN WOULD NOT AWAKEN NOR CONSUME LIFE-SUPPORT ELEMENTS DURING THE ENTIRE VOYAGE. THE TEST WAS SUCCESSFUL, AND THE ONLY SIDE EFFECT WAS A BOOK OF POETRY PILOT MAGANN WROTE AFTERWARDS TO DESCRIBE THE LONG VIVID DREAM THAT HE EXPERIENCED WHILE IN CRYOGENIC FUGUE.



The vast hall aboard the Mothership containing our people is in the most protected and armored area of the vessel. The cryonic vault stretches for three kilometers and is almost a kilometer across. All that is required for life support is a constant supply of power to the freezing units. A deviation of even a single degree can be fatal to the occupants if it occurs outside the intricate revivification procedure. In light of this, even though the 600,000 pods draw their power from the main reactor core, some auxiliary fusion pylons are set into the vault walls, each one capable of handling the power demands of the vault by itself. Boarding and cryogenic placement has been occurring on schedule for the past decade.

AUXILIARY VESSEL TECHNOLOGIES

Due to the unprecedeted concentration of research and development required for the construction of the Mothership, our strike craft technologies and capabilities are in relative infancy. Compensation for this shortcoming will continue at every opportunity, with more volatile experiments taking place aboard auxiliary Research Ships to be constructed during the course of the voyage. Our present capabilities in auxiliary ship systems are detailed here, as well as some projected systems on which our scientists are nearing breakthrough as the Mothership prepares for launch. Presently the largest auxiliary vessel we are capable of constructing is the Resource Collector, with combat vessels restricted to the single seat Scout.

Maneuvering:

All small vessels are based on the same ducted fusion torch drive which moves the Mothership through normal space, but on a much smaller scale. Fighter and Corvette drives are so small that they must carry onboard reactive mass to be passed through the fusion torch and ejected as relativistic plasma. This limits their range greatly. Larger, self-sustaining power plants will enable the



Fig. 1.9:

An early scout prototype during trials over the desert proving grounds.

construction of a new Capital Ship class, provided the necessary chassis and drive research is successfully completed.

Vector-altering maneuvers are achieved by ducting small amounts of the main drive plasma through various ports scattered across the hull of smaller ships. Since the mass directly affects the inertia of ships in space, small fighters are capable of extreme maneuvers from the ducting of small amounts of plasma. These craft are capable of intricate attack and defense maneuvers. It is likely that with increases in ship size agility will drop considerably and the proposed Capital Ship class will probably be restricted to slower movement.

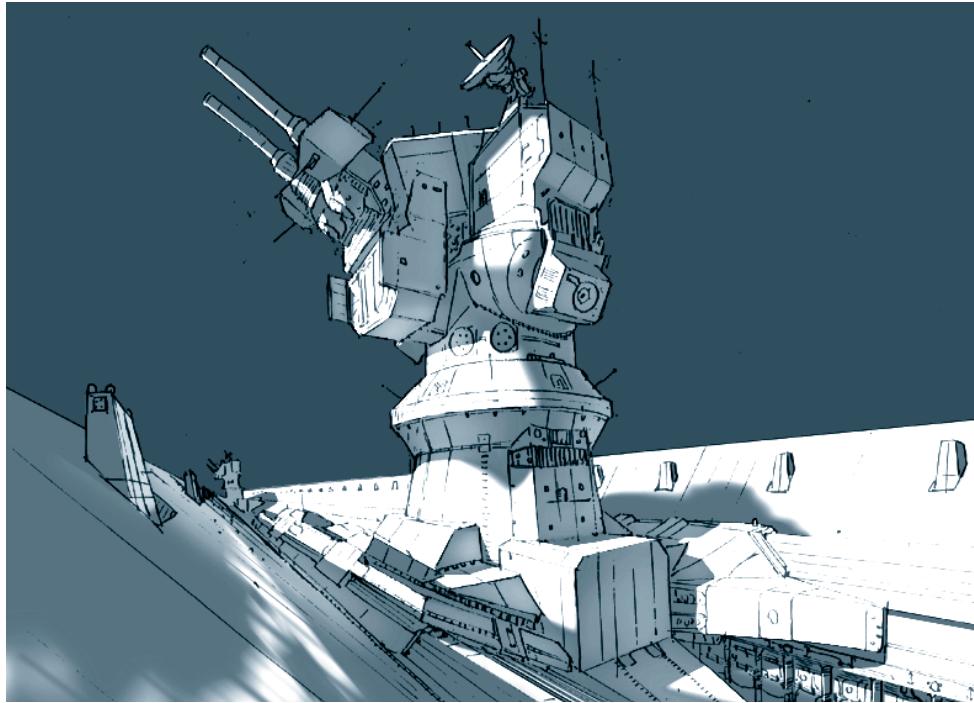
Weaponry:

We have no idea if there are any military dangers lurking between us and the Galactic Core, but the Mothership is carrying our most advanced weapons technology to cope with any possible threats. Our current space weapons technology is based on two principles of directing catastrophic levels of energy at a target. The first and best-known is the kinetic weapon. Projectile guns have been an art unto themselves for nearly a thousand years now.

In space, the principles remain the same but the implications are far deadlier. The lack of atmospheric friction allows for high speed projectiles to be fired by magnetic acceleration. Currently, space-based cannons use cylinders of heavy elements, covered in a superconductive shell and fired from a fairly simple magnetic accelerator known as a mass driver. Speeds of almost 10,000 meters per second are possible, and there are plans for larger ship's guns that could fire much larger projectiles. Currently, fighters carry small rapid-fire mass drivers in a multiple rotating barrel configuration.

Another weapon discipline was born in our exploration of space, and is based on the focused direction of high-energy particles. These Ion Beam weapons, as they have come to be known, are currently based on the principle of firing streams of positive ions from a particle accelerator. These weapons are capable of delivering incredible levels of energy to a small area. Unfortunately, the prohibitive energy cost of creating large beams at long range means that our current powerplant technologies are inadequate for fielding these systems. In fact, beam weapons may be so massive that entire ships may have to be built around the weapon itself.

Currently, the ranges and velocities of space combat have made missile technology completely inadequate to the task of delivering explosive payloads. While there are no foreseeable plans for missile-based weaponry, a recent projection analysis has revealed the possibility of a quantum leap in missile speed and intelligence, which would make them viable weapons again.



Armor and Defensive systems:

Survival in space through the preservation of pressurized crew areas, is the highest priority of ship designers. Whether considering theoretical enemy action or disastrous encounters with natural phenomena, ship hulls are designed to survive, with multiple layers of redundancy to compensate for a variety of effects. Presently, combat vessels are equipped with an initial ablative layer designed to vaporize instantly at the point of contact with either kinetic or beam weapons. The high-speed cloud of vapor serves to either deflect the rest of an armor piercing round, or cause interference with a particle beam and dissipate its power. Beneath this ablative layer is a thin, power absorbing layer. And finally, the last layer protecting a ship is a thick Crystal polymer composite, interwoven with advanced ceramics. This armor is the strongest material we have yet developed, but it is capable of flexing under extreme impacts. Cockpits are double layered with this kinetic armor.

Short of the fantasy of an all-powerful energy shield, this combined kinetic/beam defense gives our ships the greatest chance of surviving damage, while maintaining a manageable mass-to-thrust ratio.



Fig 1.11:

Early mass-drives were cumbersome, inefficient and unreliable. Designers continued to refine super-ballistics until compact and powerful weapons were available for the Mothership and it's accompanying vessels.

Fig. 1.10:

Frigate Class ships will be heavily armored. The darker composite sub-skin can be seen beneath the ceramic surface armor.



MISSION PRIORITIES

The mission facing the crew of the Mothership is profound. It is nothing less than the quest for the origins of an entire people. Our mission is now irrevocable. It has become clear through the past 120 years of driven industrial and technological expansion that Kharak can no longer sustain us. While always harsh and unforgiving, our technological development has stripped the planet of what few vital resources it contained, and the narrow bands of temperate climate at the poles have been slowly shrinking. In order to survive as a people we must leave Kharak.

THE GUIDESTONE IN RELATION TO GALACTIC STRUCTURES

While the Guidestone map is crude, it does allow us to make certain assumptions and correlate them with our knowledge of galactic cartography.

Galactic Co-ordinates:

Kharak is situated on the outer edge of our Spiral galaxy, along a secondary arm populated mainly by stars in the early to mid stages of the main sequence. While our galaxy's core is obscured by dark interstellar dust clouds, our position allows for clear study of neighboring galaxies. From these studies we can infer the structure of our own. From what we can observe, our galaxy is a standard spiral type A, with a pair of stellar arms radiating out in a curved fashion from a central hub. This galactic core is the home to an ultra-massive black hole.

The Guidestone map seems to indicate that the Homeworld lies in the resource-rich inner galactic sphere, where the star systems are older and closer together. If there are other species of sentient star-faring life out in the greater galactic neighborhood, then it follows that our odds of encountering them will climb as we approach the central hub. This should be taken into strategic account.

Guidestone Origins:

While the map gives a crude indication that we seek a star system on the edge of the galactic hub, the inner sphere is so massive and dense that we must look to the makeup of the stone itself for clues to narrow down our search to realistic proportions.

The black stone seems bear the unmistakable characteristics of being formed in a vacuum. Most theorists think this indicates that it may be an artifact of a moon, instead of a planet. Analysis of its atomic structure indicates a rock

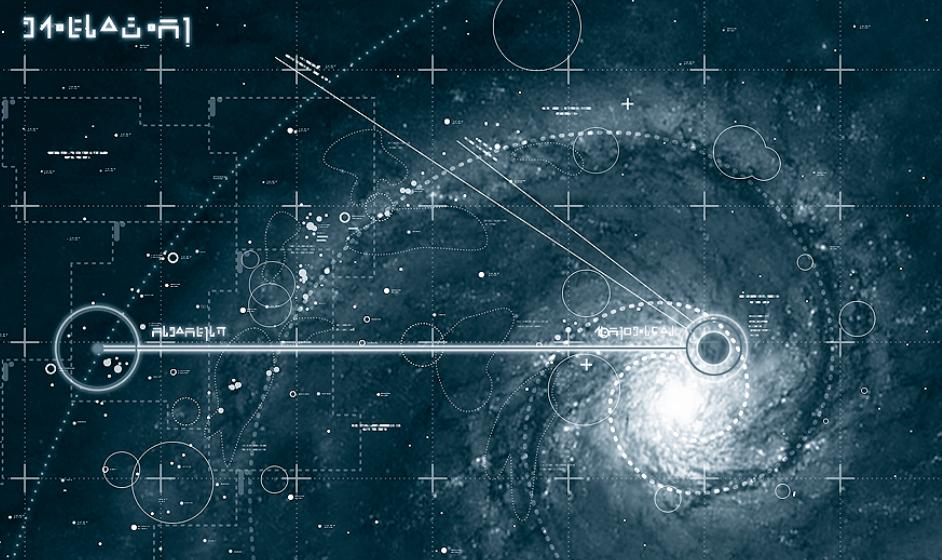


Fig. 1.12:

Kharak's position in the outer spiral arm of the galaxy can be seen encircled at left in this celestial navigation chart.

The horizontal line indicates the projected heading of the Mothership as it moves towards the galactic core.

formed by slow accumulation of layers; some of these layers are composed of high-energy isotopes, which could only have been created with bombardment by extremely high-energy photons. These are produced only in the most violent of galactic phenomena. In observing other galaxies, we have noted periodic flarings of high-energy particles generated when the central galactic black hole swallows a particularly massive star. If we apply this knowledge to our own galaxy, we can roughly calculate the distance of the Homeworld system from the galactic core based on isotope density per layer in the Guidestone. This calculation, combined with the map itself and the vector provided, should narrow the search to less than 350 star systems once we arrive in the general area indicated.

COMMAND PRIORITIES

The Command staff will be responsible for the priority functions of the Mothership and her auxiliaries. Local commanders will handle the execution of said orders. Command will assign formation, destination and even targeting priority to a squadron. Individual pilots will determine attack and evasion maneuvers independently. Strike Craft will notify Command of fuel-critical situations but will not refuel on their own discretion unless ordered.

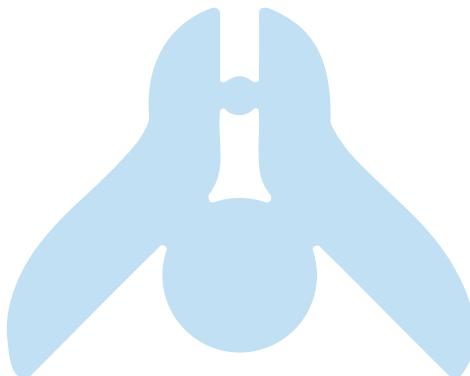
Given the possibility of encountering space-faring races, the Mothership will carry a diplomatic cadre prepared to deploy automatically in any peaceful first-contact situation. They will report back their findings and opinions to Fleet Intelligence, who will in turn make their recommendation. Command staff may have to make the choice between war and peace.

Command also will be required to order new auxiliary vessels to be constructed and will be expected to monitor resource levels aboard the Mothership, assigning resource collectors to priority targets if necessary. The Automated systems in the Fleet Foundry will attempt to devote equal amounts of resources to whatever production assignments are queued up but will halt all construction across the board should resources be depleted. Command may cancel projects in order to concentrate resources or simply wait for re-supply as the Foundry will automatically restart when raw materials are made available.

And finally, while scientists will be in control of their own departments and research vessels, it is Command that will designate overall research goals for each team as well as an overall research strategy. Command will also be able to link multiple research teams together in order to concentrate resources on a single goal, theoretically reducing the time required to make a breakthrough and integrate the technology into our infrastructure.

Decades of effort and the entire economic and industrial output of our planet have been dedicated to this mission. Mounting this fleet has stripped our planet of essential materials and drained our energy reserves. Those of us who will remain behind will suffer many hardships, but so long as our people have a fighting chance of returning home, our sacrifices will not have been in vain.

Good luck.





THE KHARAKID SOCIAL SYSTEM

Society on Kharak is organized along loose family associations, many of which now include hundreds of thousands of members. An extended family grouping is called a kiith (plural: kiithid), and most archaeologists agree it is a social artifact that dates back before our arrival on Kharak itself. Interpretation of ancient legends and translations of texts found in the ruins of Khar-Toba suggest that our ancestors' journey to this world was arduous enough to break down all social structures except the most basic family bonds. When the power plant at Khar-Toba failed, refugees in all probability fled in small groups of friends and relatives. Harsh conditions and the passage of hundreds of years hardened what was originally a practical system, taking care of your own loved ones first, into a ritualized system of alliances and loyalties we have come to know as the kiith system.

A kiith has a loose hierarchy based on one's social position within the family. Originally this was based primarily on seniority, but as technology has changed the face of life on Kharak, the kiithid too have changed, and now family ranking is based more on wealth or personal influence than age. Organization within the kiith is recursive in nature and models that of a core family unit. Where a single family has a primary leader, a secondary and then a group of dependents, the next level of kiith organization is based on the same system -- there is a primary family who makes policy decisions, a secondary family which hears disputes and makes recommendations, and a number of families of lesser power that have sworn allegiance to the primary. The primary family within a kiith is called the kiith-sa.

This structure is not static by any means and, while it is not a trivial matter, families are free to change their primary allegiances as they see fit. A family's position within the kiith rises and falls with how many swear allegiance to them. Although it is much rarer, from time to time a family will move from one kiith to another or even feel the need to become their own full kiith.

In ancient times, a kiith-sa could direct all within the kiith to war, demand families dedicate time and finances to special projects, or even move the Kiith to another region. In modern times, the kiith-sa is a political and financial leader only in that it acts on the wishes of the entire kiith as established by referendums. The kiith-sa from all over Kharak meet in the Great Daiamid located in the capital of Tiir, to debate global policy and resolve legal conflicts between kiiths.

Traditionally, kiithid concentrate their power in one or two disciplines and gather families under their banner by being the best place to find



advancement in a particular field. For example, Kiith Sjet has been associated with the sciences on Kharak for over a thousand years and is known to have the most advanced computer labs in the world. Bonded couples interested in the field often apply to a Sjet family associated with such labs. Alliances between kiith are also based on mutual interests, and they often lead to closer ties or complete reorganizations. During the last century, when the manufacturing families of Kiith Hraal realized that the future was in orbital systems, they first tried to influence Sa Hraal to begin investing in aerospace technologies. When this gambit failed, the entire manufacturing branch of Kiith Hraal broke away and joined with a relatively small kiith that specialized in space technologies. The new kiith, LiirHra, has gone on to take the lead in the design and construction of the Mothership.

In the modern era, the kiithid have slowly transferred their power to the individual, but it should be noted that it is still a powerful means of social identity. Kharakid society pursues a single goal today, and our new sense of racial destiny has reminded us that we are all families of one grand kiith. Unfortunately for the unity of our people, tradition dies hard, and it takes little stress for any Kharaki to think of family first and Kharak second.

KIITH GAALSIEN

Of all the kiithid, none has lost more throughout the centuries than Kiith Gaalsien. The Gaalsien line is ancient and some of the oldest documents on Kharad bear their sigil. While there is some debate about their specific origin in the collapse of Khar-Toba, it is clear that by the time civilization once again rose on Kharak, the Gaalsieni were already a spiritual and political force to be reckoned with.



Historically, while minor cults have come and gone, the majority of Kharaki have always believed in the Great Maker Sajuuk, whose Hand Shapes What Is. The majority of religious sects differ not over whether Sajuuk exists, but in what His nature may be, and His reasons for bringing us to Kharak. The majority view until the Time of Reason was some variation on the theme of punishment; the logic being that no just God would leave His people on such an inhospitable world if they had not done something to earn this fate. Many vital survival tactics, such as conservation of resources and not risking the future of the kiith on untried methods, were reinforced by dogma in ancient



Kharak - undesirable acts were always described in terms of punishable arrogance. These beliefs helped keep our people alive during the great trek from the central deserts, but once in the temperature polar regions, the same beliefs held back useful innovations that the more hospitable environment made possible. Generally, how wrathful one believed Sajuuk to be tended to dictate how wary one was of cultural and technological advances.

Of the three major religious kiithid, Gaalsien, Ferriil, and Somtaaw, it was Gaalsien that preached the strongest message of punishment. The dogma of righteous suffering and humility held that Sajuuk had cast our people down to Kharak from some celestial paradise to pay for our arrogance. Gaalsien theologians preached that to deviate from the most accepted and ritualized survival methods was to actually extend the period of time before our people would be lifted back up to heaven. In the early days, this strict dogma paid off and allowed Kiith Gaalsien to survive and prosper during various ecological disasters during the period between 75-250. Once this turbulent time passed and people penetrated further into the temperate polar region, more innovative kiithid regained their power and Gaalsien power began to fade somewhat. Many archaeologists believe that Kiith Gaalsien deliberately started the Heresy Wars as an attempt to bring all the lesser kiithid back under its power during the resulting chaos.

Fortunately for the technically inclined among us, it was Kiith Naabal which emerged victorious from the Heresy Wars, and the dogma of penance and repression begin to fade from the hearts and minds of Kharaki. Despite this, the Gaalsien, power shattered forever after nearly 300 years of war, became even more extreme in their religious beliefs -- as if to compensate for the rest of the sinful planet. By the time the Time of Reason was at its height in 710, the Gaalsien were down to less than 30 vassal families, and only the great desert temple city of Saju-ka remained under its power. Perhaps it was the sense that history had passed them by, or simply a desire to commit an act of sacrifice strong enough to regain the favor of Sajuuk Himself, but in the year 717, the kiith-sa of the Gaalsien performed an act that has lived in infamy ever since.

At the time, Saju-ka was the artistic gem of Kharak. In its great temples and halls were most of the great works commissioned in the name of the God Sajuuk, and in its libraries were the collected works of our people, gathered before His eyes so that He could see them and judge us worthy. Though Saju-ka had been built in the first hospitable valley found in the north, time had allowed the deserts to crawl ever northward themselves, and by the 700s, sand would have completely swallowed Saju-ka if not for the complex series of wind baffles, dikes and sand paths designed by the great Engineer Gar



Naabal. One night, during the height of the spring winds, Saju-ka was lost to our people. In a single act of divine madness, Miirpat Gaalsien-Sa ordered his people to blow up the entire system that held back the sand. The light from the hundreds of explosions was still visible when the hungry sands began pouring down the streets of Saju-ka. Within two days the city was completely buried, and thousands died in the mass evacuation.

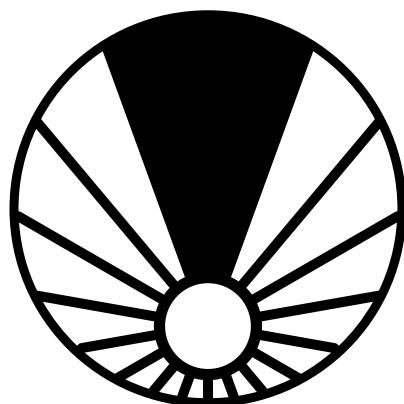
The whole of Kiith Gaalsien was convicted in absentia by the Daiamid in Tiir and deemed an outlaw kiith, but this punishment had very little effect on the Gaalsien, as they slipped away into the wastes during that terrible night, abandoning the progress they saw as a decadence that would eventually bring down the wrath of God.

Since then, Kiith Gaalsien has wandered the great central deserts, surviving by the skills and rituals they held so dear. Occasionally they will make themselves known by raiding scientific communities or stations in the wastes and leaving massive theological documents proclaiming how close we are to the end. Military expeditions to track them down once and for all have always failed, and a certain mythology has grown up around them -- as if there is a nagging suspicion in the minds of modern Khiraki that the only way Kiith Gaalsien could have survived is if they really did have the grace of Sajuuk. Some say that they have even found His lost city under the sands, and Saju-ka once again echoes with mumbled prayers, and offerings made in the darkness.

Certain acts of sabotage during the construction of the Mothership seemed to be Gaalsien-inspired, and it's likely that even today there are families secretly aligned with the ancient religious kiith.

KIITH PAKTU

Prior to the year 462, Kiith Paktu was a minor farming kiith, living on the slopes above the Salt Sea. On the year their most famous leader, Majiir Paktu, was born, the long rift between the religious leaders of Kiith Siid and Kiith Gaalsi, which were then the most powerful kiithid of the north, finally became an unbridgeable divide. In 462, the famous Siidim Council announced a new Dogma -- the traditional Siidim cosmology, which once held that all





kiithid on Kharak were exiled from a heavenly paradise, was abandoned. The truth, according to the proclamation of 462, was that only the Siidim were of divine origin -- all other kiiths were native to Kharak, and therefore inferior, their blood tainted by corrupting sand.

In accordance with the new Dogma, many cruel pogroms were passed against non-Siidim kiiths -- the people known as "Gritiidim," or "sand people." By far the harshest of these measures was the Clean Water Act, which forbade non-Siidim kiithid from living at the headwaters of a river or stream, lest they foul the water which Siidim downstream would have to drink. Hundreds of families were displaced by Siidim temple men, turned out of their ancestral homes and made to march downstream, carrying as much of their former lives with them as they could. In 488, Kiith Paktu joined the ranks of the dispossessed.

At the same time, the temples of the neighboring Kiith Gaalsi had become obsessed with sins of pride and by the redemption of Kharak through suffering. The Siidim made obvious targets for the sermons of Gaalsi holy men: for every Siidim sin of pride, they said, a more brutal and excruciating expiation was demanded by the gods of Kharak. Lesser kiiths of the north, already suffering under the weight of Siidim oppression, often were willing to join their holdings to the Gaalsi rather than see them taken by the Siidim; many welcomed Gaalsien soldiers and temple men into their holdfasts, only to find themselves held at swordpoint and made to watch as their "sinful" books and belongings were burned to appease the gods. Heavy tributes of both food and fodder were demanded by Gaalsien armies, and appalling sacrifices were sometimes demanded by Gaalsien priests, who saw no reason why the pure of heart should suffer alone.

Clashes between Siidim and Gaalsien holdings intensified over time, and even remote kiithid were forced to choose sides; both great kiithid were too powerful for any smaller kiith to challenge on its own. Caught between the proverbial rock and a hard place, the Gritiidim were finally ready to try the unthinkable: crossing the Great Banded Desert to the south, looking for new land.

By this time Majiir Paktu had become head of the Paktu kiith-sa. Although the First Migration may not have been entirely his idea, it's certain that the fate of all the people of Kiith Paktu was in his hands. It is difficult for us to imagine today what he must have felt as his people built the first great sailers at the edge of the desert. Although many Kharakii believed there might be arable land at the southern pole, no one had ever attempted to cross the Great Banded and returned to tell the tale. The only confirmation of a land



south of the desert came from mad Mannanii travelers, rambling about endless seas and “grasses that touched the sky.”

The Migration offered slim hope at best, so slim that no Kharakian dared to risk it until there was no other hope at all.

The rest, as they say, is history. Nearly 50 kiithid set out from the plain at Albegiido in 490 and sailed into the Great Banded Desert, sweeping over the burning sands on the winds of the seasonal storm, the Chak m’Hot. By the time the men, women and children of the First Migration reached the shore of the Hunon Mountains, only 17 families were left, and all of them had lost weaker members on the journey. Still more died as they struggled over the Hunon; without anyone to guide them to the easiest pass, they lost many to poisonous water, rockfalls, thirst and lizard-bite.

As the story goes, many of the Firsters fell into despair among the burning red canyons of the Hunon and did not want to go on. Despite whether he had been the leader from the beginning of the Migration, Majiir Paktu was definitely the leader on that day. He stood at the head of the column and pleaded with the people to continue. “I can smell the sea,” he said. “It’s only a little farther.”

The people did not believe him, and more than a few turned to start the hard trek back to their sand-sailers, still docked at the desert shore. But as legend has it, at that moment a bird appeared in the cloudless sky above them -- a sea-spirit, circling against the hot sun.

The kiithid of the First Migration followed the sea-spirit and Majiir Paktu through the mountains, and when they stood on the last red hilltop, they were looking down at the rolling breakers of a great grey sea. Straight away, that expanse of water was named the Majiirian Sea, after the man who brought them there.

The people of the First Migration settled on the shores of the Majiirian, and were presumed dead by many in the North for the almost two years it took to build up their homes and holdings. In the spring of the third year, however, Majiir Paktu and a group of picked volunteers attempted another crossing of the Great Banded Desert to take back word of the new land to the North, where so many still lived in a nightmare of war and oppression.

Majiir Paktu did not survive the return, but seven of his followers did. These seven Paktu kiithsmen passed through the northlands on foot, taking word of the new land with them everywhere they went. Once that word spread, there



was no stopping it. Dozens of families built sandsailers on the famous plain of Albegiido every year, trying to escape the Heresy Wars and the madness of their Siidim and Gaalsi masters.

Alas, Siidim and Gaalsi were not quite finished with the people who escaped their tyranny. Although they ignored the Migrations for many years, both Siidim and Gaalsi lost many hectares of holdings to the war. By 650 it occurred to both of the great northern kiithid that many of those who fled to the south were still considered their vassal clans and by treaty still owed them lands and tribute.

There were at least three major attempts to assault the southern lands from 652-700. The last of these was the most successful; the army of Liam Gaalsi actually arrived at the pass of the Hunon mountains almost intact in the spring of 698, ready to subdue the unruly kiithid of the southlands and their kiith-sa.

On that day, Kim Paktu, the grandson of Majiir Paktu and leader of the Paktu kiith-sa, arrayed an army of 30,000 swords on the shore of the Majiirian. Every one of them wore the colors of Kiith Paktu, and every standard bearer carried its flag.

"These are my people," Kim Paktu said. "And this land is ours. You have no vassals here."

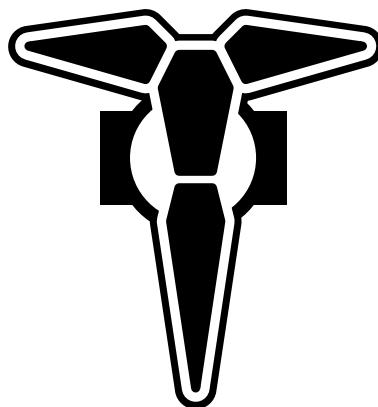
Badly outnumbered and facing a fresh and well-supplied army, Liam Gaalsi nonetheless led his troops into battle. Very few of the Gaalsi who followed him that day escaped with their lives. Although they killed hundreds of Paktu, the southern kiith-sa eventually prevailed, and no such crusade ever was attempted again.

To this day, the Paktu are still the kiith-sa of all southern kiithid, even those that are not closely related to them by blood. The flag of the Paktu is white, the color of the sandsails which carried its people across the Banded Desert, emblazoned with a sun stained red by the blood of those who died in search of -- or in defense of -- freedom. Silhouetted against that sun is the shape of the sea-spirit, an eternal symbol of hope and faith.

Paktu believe fiercely in independence and despise priests and dictators. Its people are optimistic, innovative, and venturesome -- when things are darkest, someone will almost always repeat the kiith's motto: "I can smell the sea."

THE KIITH SOBAN, “THE KIITH OF SPIRIT”

In Kharakid society, the majority of citizens are secure in their kiith ties. Within the immediate family and within the larger circle of more distant blood relationships, not to mention our professional associations and alliances, most of us are bound at many levels. If we should ever have a falling-out with one kiith-sa, we belong to many other kiithid by marriage and inclination and could change our alliances at any time.



This was not always the case. Prior to the emergence of the southern federation and the Naabel intervention, very few Kharakians had ties outside their own kiith, and if they did, they were ties of dominance and submission—one kiith was made vassal to another and owed tribute to its masters, in return for which it was given the protection of the larger kiith’s army and the benefit of trade with the larger kiith’s holdings.

In all of this, however, there was no provision made for those who were without kiith. Unthinkable as this state may seem to us today, it can still bring a shudder to the modern Kharakian to consider the fate of a kiithless man or woman during those times. Banishment from the kiith was effectively a death sentence at any time prior to the year 416, when Kiith Soban was born.

The origins of Kiith Soban, the “Grey Brotherhood,” are somewhat hazy. It appears that two vassal kiithid, which held lands along the second sea, were invaded by the temple men of a strong neighboring kiith. The vassals fought back furiously, defending their homes with desperate strength, and succeeded in killing a few of the raiding kiith. In revenge, the invaders punished the survivors brutally, although they had already surrendered. Many of the basic taboos of Kharakian society were violated; all the children of the farmers were murdered as well as the leader, man or woman, of every family. Those that remained were driven from their holdings, and fled across the Sparkling Desert to carry the news of these atrocities to their kiith-sa.

The leader of this group was Soban, later known as Soban the Red. When he knelt before his sa, he recounted the horrors that the neighboring kiith had committed against his people and demanded vengeance. He offered to personally lead the army that would ravage the invaders and teach them the



error of their ways, and waited for the men and women of his kiith-sa to join him in a rush across the Sparkling Desert.

Unfortunately, this support was never to come. Soban's kiith-sa, afraid of the possible repercussion or perhaps simply realizing the kiith was not strong enough to prevail against a larger and stronger kiith, refused to attack the reavers. Instead, members of the smaller kiith became vassals to the larger, joining their blood to the blood of the murderers.

When he heard of this, Soban tore the colors of his kiith from his body in shame. His followers did the same, and in doing so they abandoned their kiith completely -- an unheard-of gesture at the time, especially coming as it did from landless men and women. According to legend, Soban then declared the word "kiith" was meaningless when any kiith-sa could turn a deaf ear to the blood of children crying from the ground. He vowed that he would never belong to any false kiith again -- the only kiith which deserved the word was the kiith of spirit, the brotherhood of like mind and shared ambitions.

All the followers of Soban took a new color: a deep and vivid red, the color of blood flowing from the heart. Although they could not have been many, their first act as a kiith was a successful attack on the holdings which had once been their homes. When they left their old farms behind, not a blade of grass was left green nor one stone standing on top of another -- everything was razed and every invader killed in ways that gave Kiith Soban a bloody reputation for years to come.

Kiith Soban became a martial kiith from then on, and as years passed, a peculiar set of rituals developed among them. Although many other warrior kiithid existed at the time, those kiithid were standard in their aims and organization; they were martial to the extent that they desired the property and possessions of their weaker neighbors. Only the Soban were completely landless and existed purely as mercenaries.

The Sobanii mercenary is a curious feature of Kharakian history. For centuries, Sobanii took part in every military conflict on the planet, and their skills as soldiers and commanders were highly prized. When the services of any given Soban were bought, he or she would dress in the colors of the new kiith and fight in the service of that kiith, regardless of personal risk or cost. When the term of service was over -- down to the hour and minute -- Soban mercenaries would put down their arms, remove their adopted colors, and return to their own kiith. If the end came during the middle of a battle or a thousand miles from home, they would still go; contracts for their services could not be renewed on the scene, and only through their kiith-sa.

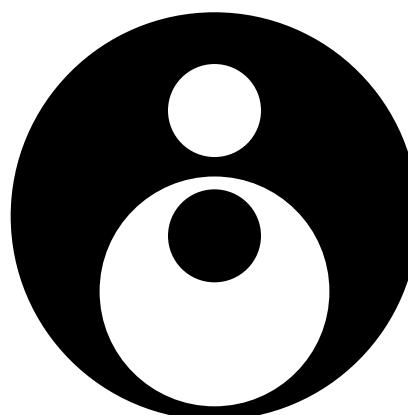
To this day, the Sobanii are completely devoid of standard family groupings. No “marriage,” as such, is permitted among their ranks; and although male and female Sobanii are permitted to form whatever alliances they might want, there is no such thing as a Sobanii child. Children born to the Soban are left as foundlings with other kiiths or their parents are made to leave Kiith Soban to raise them.

Despite the fact there has not been a major war on Kharak for 200 years, the skills of Kiith Soban are still valuable, and they never lack for money and influence. Sobanii are often preferred when influential kiithid like the Naabel need intelligence officers or security officers, and virtually all modern-day admirals and generals are trained at Soban-run military academies, which are now open to the public -- one can pay for the training and discipline that was once available only to life-long Sobanii.

A current of true Sobanism still exists in our society and always will as long as some men and women continue to reject the status quo. Some Kharaki still join Kiith Soban of their own free will, renouncing all other kiith ties and associations; others are forced to join when driven from other kiiths for violating their taboos. Before “taking the red,” as it is called, a prospective Sobanii must repeat the ritual which Soban performed centuries ago; all other kiith colors must be forcibly ripped from the body, a powerful gesture of negation. To some it represents the ultimate rebellion, to some the only salvation, but Kiith Soban imposes the same discipline and solidarity on them all -- for which Kharakian society may well thank them.

KIITH SJET

Kiith Sjet is something of an oddity among the power structures of the kiithid. While they are an ancient and respected kiith whose expertise has been courted by kiithid-sa across Kharak, they have never parlayed this influence into any real political power. Kiith Sjet is, in fact, one of the only kiith to have a validated claim to direct kiith descent from the ancient first city of Khar-Toba. Translations of the words and calculations found on the wall of the Temple-Observatory where the Guidestone was





found make several mentions of a group of astronomical philosophers with the family name of Sjet. Even the Sjet sigil, a series of embedded circles representing the celestial spheres, can be found etched in the temple doors. It is now an accepted fact that Kiith Sjet once was responsible for the preservation of the Guidestone and constructed the Temple-Observatory to protect it and scan the heavens. And therein lies the true power of Kiith Sjet -- its undying desire to question, observe, predict and record.

In ancient times they were the first to plot the path of the planets in the Kharakid system and derive a calendar from them. They were the first to discover the 13-year progressive cycle of sandstorms that tear around the equator of this world and predict where the rains that follow the end of every cycle would fall. Most of the impartial histories of the Heresy Wars and the resulting reformation were penned by Sjet scribes, who recorded it along with their observations of top-soil destruction and the slow crawl of the sands northward.

During periods of upheaval, Kiith Sjet have always been too valuable as allies and advisors to be turned into vassals. Any kiith who killed or attempted to interrogate a Sjet was shunned by the Science philosophers for a period no shorter than 100 years, and in order to keep their knowledge from being corrupted, any kiith who wished to become Sjet swore an oath directly to the Sjet-Sa and had to serve faithfully for two generations before being instructed in the sacred wisdoms. The closest thing to a scandal that has ever shaken the Sjet Kiith occurred during the Time of Reason, when it came to light that during the Heresy Wars certain Sjet vassals had actually lived under a secret secondary oath to Kiith Naabal. These secret Naabali used their positions of Sjet immunity to move through the various warring factions and carry out missions of retrieval and intelligence-gathering. When this truth was revealed, the sense of outrage was strong, but Fliir Sjet-Sa realized the extremity of the situation may have justified the betrayal. Even though she was able to bring enough of her kiith over to this line of reasoning to avoid sanctions or exile for the families involved, there is still a lingering thread of mistrust between some Sjetti and Kiith Naabal to this very day, and the debate over the use of Science as Power is still a passionate one.

As the Time of Reason progressed, Kiith Sjet expanded their studies and moved away from the tradition of celestial mechanics and mathematics. Various families began to delve into the nature and origin of life on Kharak. Within a century, Kriil Sjet presented a paper to the Daiamid in Tiir presenting the scientific evidence that we bore little biological similarity to the vast majority of Kharakid life. This scientific proof of the religious tenet of Exile shook Kharakid society but established once and for all that Kiith Sjet



served the truth, however disturbing that might be.

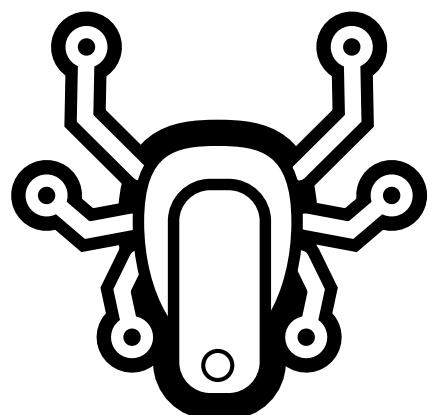
With the advent of the Mothership project, Kiith Sjet finally found a goal wherein pure science could be applied without the danger of corruption. This belief was strong enough for Sjet to overcome its distrust of Kiith Nabaal and join their theories to Naabali applied sciences. Sjet supercomputers have worked out the theoretical quantum waveforms of the hyper drive module. Sjet bio labs help perfect the cryogenic process which will allow us to colonize the stars. And it was a Sjet who came to the conclusion that the Mothership could never function without a radical redesign of the command core.

Karan Sjet, the only daughter of Huur Sjet-Sa and in direct line for the leadership of all Kiith Sjet, was a neuroscientist in charge of the research division that was designing the command and control systems in the Mothership. Many other researchers would have balked at having to tell an entire world that its dream was impossible, but Karan was true to the spirit of her Kiith, and broke not only the news to the Daiamid, but also suggested a terrifying solution. Again, as a Sjet, she rejected fear in the face of the truth and demanded that her own system, using a living being as the command core for the Mothership, be applied to herself.

As our people are on the brink of a new voyage of discovery, it is only fitting that a Sjet is at the frontier, helping us satisfy our desire to know the truth and face down the terrors of the unknown, no matter what the cost.

KIITH NAABAL

Not much is known about Kiith Naabal prior to their dramatic emergence at the end of the Heresy Wars. There are a few scattered mentions of them in the records of the major kiithid of the first epoch, but the name Naabal arises only in terms of tradesmen or heretics. Kiith Gaalsien were particularly vehement in the persecution of families under the Naabal flag, and there is some evidence that it was Gaalsien persecution which drove Naabal to their hidden valley refuge, blasted into the edge of Kharak's tiny northern ice cap. Based on the fact that the Naabal crest, a Kharaki silhouetted against a background of tiny circles and stripes, loosely resembles symbols found etched into panels on the wreck at Khar-Toba, some





archaeologists have put forth the theory that the Naabal are actually direct descendants from some sort of engineering core that ran the ship that brought us here. While the theory is convenient in terms of linking the unknown past with the present age of exploration, the evidence is just too circumstantial for most scholars to give it much weight.

Kiith Naabal itself seems uninterested in clearing up the distant past, and the hard facts only begin to appear in the years directly before the Naabal intervention, when the kiith moved to end the Heresy Wars and establish the Daiamid. In those three centuries of chaos, Kiith Nabaal had almost completely cut off contact with the rest of Kharak. Traders or refugees who accidentally stumbled into the valley were welcomed with open arms and given a place to make their lives anew. There is no record of any rejecting this offer, so we are not quite sure what the alternative might have been.... Small parties, always made up of families with direct fealty to the kiith-sa, were sent out occasionally to bring back texts that were in danger of destruction, usually because the cities that held them were being constantly sacked. Sometimes these parties would even spirit away scholars imprisoned for heresy. It wasn't until Ifriit Naabal-Sa came to head the secretive Kiith that a less isolated philosophy began to take hold. Ifriit realized the wars were dangerously close to destroying the last of the infrastructure that kept the bulk of the Kharaki people alive. Fields were being burned, dams demolished and sand traps torn down simply to deprive the enemy of valuable resources. Under such an onslaught, the days of civilization on Kharak were numbered.

Though declared pacifists, much of the knowledge discovered and hoarded by Kiith Naabal had direct military application and so, when Ifriit Naabal-Sa finally proposed intervention to his people, it took only a few years for a military force to be assembled. The Naabal had been keeping the secrets of explosives, steam and refining for more than a hundred years, and when they rose, they swept out of their hidden city of Tiir like the gleaming servants of Jaakul himself. Steam-powered vehicles towed cannons to bring down the walls of despotic kiith, while handfuls of soldiers carrying repeater rifles and wearing hardened armor moved to route marauding armies 20 times their size. Ifriit Naabal-Sa spoke at every holding, village and city his army liberated, and offered those people all the fruits of Naabal science and technology if they would but lay down their arms and end the pointless destruction. Unlike the major powers in the Heresy Wars, Naabal-Sa did not demand renunciation of former kiith ties; all he asked for was an ending. The lesser kiithid, brutalized by nearly 300 years of war, gratefully accepted his terms, and soon the Naabal army had grown fifty-fold with kiithid whose only desire was to end the Heresy Wars any way they could.



And in three short years they had done it. Ifriit Naabal-Sa's last act before stepping down as Sa was to establish the Daiamid in Tiir as a place where all kiith, powerful and weak, could gather to resolves disputes and set policy for all of Kharak.

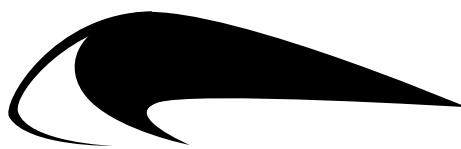
In the decades to follow, Naabal rebuilt the damaged infrastructure of Kharak and improved upon it with their no-longer-secret construction and metallurgical techniques. Any minor kiithid were accepted into Naabal if they simply wanted to learn new crafts and trades. These same kiithid were then allowed to go their own way if they chose, and many of the major industrial kiith of the modern world began under Naabal's wing. By the Time of Reason 200 years later, Kiith Naabal had replaced the perilous sand-sail routes to the south with rail mounted steam cars, and had given Kiith Paktu-Sa of the southern polar region a permanent presence in the Daiamid.

Kiith Naabal seemed content to fade slowly into history for many years, but the discovery of Khar-Toba seemed to change all that. From that point on, Naabal formed permanent alliances with both the Sjet and Saban kiith, and began to influence first the excavation of Khar-Toba and then the exploitation of technologies discovered there. Again, the Naabal-Sa have been careful to spread the wealth and knowledge, but remaqin adamant about driving forward with the Mothership project and returning to our ancient Homeworld.

While the Mothership has neared completion over the past five years, Kiith Naabal has once again begun retreating behind the scenes both politically and industrially. Financial analysts have noted heavy Naabal investment in off-Kharak facilities, especially in the asteroid belt, and in proposed research facilities on the moons of the Gas Giant Haarsuk. Others have noted the slightly higher ratio of Naabal kiithlings among the cold-sleep volunteers waiting to be loaded onto the Mothership at the conclusion of her trials. Most analysts agree this is another sign of Kiith Nabaal's desire to be part of whatever future our people will find among the stars.

THE KIITH MANAAN

Perhaps the strangest of all Kharakid kiithid is the Manaan, or "the Travelers." Although the blood bonds between Manaani are not strong -- they range greatly in physical appearance and kiith traditions -- they are nevertheless





all considered one family, especially by outsiders, who for centuries viewed these nomads as a dire threat to decency and morals, to unprotected holdings, and to the virtue of young men and women from good families.

The antipathy toward Manaani is simple enough to explain. During a time when the majority of Kharakians were hard-working farmers, clinging to life with teeth and fingernails, the Manaani maintained a traditional nomadic existence. They traveled from place to place, stopping at watering places to rest; if the water was surrounded by a hold, the Manaani expected hospitality. Although they were rarely hostile toward farmers and city dwellers, they resisted any attempts to settle or civilize their kiith. Driven by a hunger for new experiences and a restlessness few other Kharakians could understand, the Manaani could never stay in one place for long—they simply picked up stakes and moved on into the wastes again, leaving the security (and the hard work) of house and hold behind them.

The earliest historical mention of “Manaani wanderers” comes from the year 340, when holdings along the shore of the White Desert complained that their farms had been raided by the Travelers. According to the report they sent to their kiith-sa, the White Desert holders had recently closed their gates to a wandering kiith, refusing them permission to make camp by the waterside. Although the Manaani went away peacefully at the time, they returned by night and came over the wall “by the hundreds”, overwhelming the resistance of the surprised holders. In the end, the Manaani were accused of stealing nearly a ton of food and many hundred man-weights of water -- which was, coincidentally, just a bit more than the tribute which was owed by the White Desert holders to their kiith-sa that year.

The tale of the White Desert holders was dubious for many reasons, although it was widely believed by landed Kharakii at the time and for many centuries to follow. The report that Manaani came over the wall of a sand-dike “by the hundreds” is absurd, given the fact that traditional Manaani never traveled in groups larger than an extended family and in such a group, there would have been a dozen able-bodied men at most. To find Manaani “by the hundreds,” one would have had to seek them out at a Gathering, their yearly meeting on the sands of Ferin Sha (“The Dancing Ground”). Not only was Ferin Sha nearly 200 miles from the White Desert, but focus at such a Gathering would be celebration and drinking, not killing and looting. Fighting of any kind was forbidden at Ferin Sha -- to profane sacred ground with spilled blood was the greatest Manaani taboo.

Is this to say there was no basis for Kiith Manaan’s early reputation as thieves? Unfortunately, no. If the majority of Manaani were innocent of raiding, there



were still some who undoubtedly traveled in greater strength and might have been capable of carrying off a few water barrels. The majority of travelers were probably guilty of a little judicious pilfering from time to time, even if it was only picking a pocket or picking fruit in the night. The real question is not whether the Manaani were really thieves, but why, if they were widely believed to be thieves, would the majority of holdings open their gates to Manaani visitors? An answer of one word will suffice: entertainment.

The Manaani were always traders, but prior to the Great Migration they could never compete with the legitimate trade routes among the northern holdings -- at least when it came to transporting mundane cargoes. In order to survive, a kiith of travelers needed to bring their would-be hosts something they could not get cheaper or more routinely somewhere else. In some cases, Manaani would carry rare drugs or medicines that could be found only in remote places, or traffic in taboo items, but since their caravans were often searched before being allowed to enter a holding, the Manaani would more often carry a less tangible but even more valuable freight: music, laughter, and spectacle, a break from the hard and unending work of a desert farmer's life. For many years, Kiith Manaan survived by their wits and their ability to amuse hold-born Kharaki. Singers and poets, magicians, dancers, actors and con men -- there was nothing to the rumor that Manaani could perform dark magic, but they could certainly make your purse and your 15-year-old daughter disappear.

After the Great Migration began, life changed drastically for the Manaani. Although they played no important role in the First Crossing, a small kiith of travelers accompanied the Paktu in the sandsailers that left Albegiido in 490. Most of them returned to the north in 497, bringing their three-masted ships with them. The Manaani took to the new technology in droves and made many improvements to the original design.

During the beginning of the Heresy Wars, Manaani still living in the north suffered badly under the rule of Siidim and Gaalsi; their free-wheeling and joyous attitude was anathema to both of the great kiith, and one of the few points of doctrine that both parties could agree on was that Manaani were abominations before the eyes of Sajuuk. The last celebration at Ferin Sha was held in 513; during which an army of Siddim attacked the Dancing Ground and slaughtered the celebrants wholesale.

After the massacre at Ferin Sha, the majority of Kiith Manaan survivors took to the sail and the sword. Manaani raiders, once largely a myth, became a grim and terrible reality to Siddim holdings that bordered on the desert. No one was safe from the pirate sailors, and the sight of a mast on the horizon was an occasion of panic and terror. Within a hundred years, however, the



Manaani exhausted their appetite for bloodshed and began to use their ships for more profitable ventures. When the great mother of their kiith-sa, Jora Manaan, declared the war on the Siidim at an end in 656, the Manaani built a new Dancing Ground in the Paktu-held south and turned their fleet completely to trade.

The questing spirit of the Manaani is not dead even today. Kiith Manaan still controls enormous wealth, and of all the Kharakid kiithid it is the most likely to produce a diplomat or a statesman. Manaani also are common in the ranks of Scout pilots and are always eager to volunteer when it's time to fly an experimental craft. Being the first to see anything new and different is a hunger that still burns deep in their blood.

EXCERPTS FROM FLEET TACTICAL DEBATE 7.12.1302

(Fleet Admiral Paktu and Admiral Riif-Sa)

(Topic: Fleet Composition)

Adm. Riif-Sa:

If one looks at the combat data available, the answer to the question we are discussing here today becomes obvious. Both Strike and Defensive fleets must be composed mainly of Capital Ships, with Fighters serving only as escorts and deep harassment forces. Only Capital Ships have the firepower and range to do significant damage to an enemy force.

F. Adm Paktu:

While my colleague has a valid point, I believe his tactical doctrines are based on ideal situations instead of the actual pressure situations a fleet will find itself under. We all would like to command fleets of nothing but the best and biggest, but the reality is that time and resources in combat often do not allow the creation and maintenance of a large force of Capital Ships. And we needn't even bother to analyze the true costs of losing a single large vessel when compared to the attrition a fighter squadron can suffer while still being maintained at combat readiness. No, as much as I find the thought of commanding multiple destroyers attractive, I have to favor the opposite fleet strategy; that of large groups of massed Strike Craft anchored by a handful of Capital Ships.

Adm. Riif-Sa:

Oh, no you don't, Chiisur, I have seen you undermine by generalization since we were just gnats learning to sail sand skimmers at the training crèche. I am not talking about vague plans and mythical battles! I am talking about precise

deployment plans, with each Capital Ship escorted by six Interceptors or three multi-gun Corvettes. Once each Capital Ship has its Strike Craft escort, they should be organized into attack divisions based on class and combined arms theory. Frigate divisions should consist of two or three Ion Cannon ships in a tight V formation, with an Assault Frigate positioned below and another in a higher slot. This creates a fighting wedge with significant firepower, while creating a deadly sphere of anti-fighter fire provided by the Assault frigate turrets and the strike craft surround each frigate. No attacking force of Strike Craft could survive their first pass against such a squadron intact, while the forward firepower could punch through any opposing Capital Ships easily. When using Super-Capital Ship types like Destroyers or Cruisers, formation doctrine places these admittedly expensive and invaluable vessels in the core any given formation, surrounded by an escort of four to eight multi-gun Corvettes to provide point defense fire. The key to this kind of formation is that enemy commanders are usually driven to order attacks against the heaviest enemy vessel threatening them, and this means the super-heavy ship at the core of this formation serves double duty, both as the heart of the division's firepower and as a lure to bring lesser enemy craft into the deadly crossfire of the division's massed turrets.

F. Adm. Paktu:

Once again I do not doubt the power of these fantastic collections of Capital Ships, but my point of cost versus benefits still stands. Are you aware of the number of Interceptors one can build for the cost of a single Assault Frigate? Now granted, each one packs only a tiny amount of the Frigate's firepower and certainly cannot survive more than one or two hits from a heavy gun, but I ask you: Exactly how much damage can 75 interceptors do in the time it takes to kill just one of them?

In my tactical deployment plan, Fighter wings work in massed formations and attack in waves, each with a specific purpose. The advantage of my system is flexibility and speed, a decided improvement over Admiral Riif-Sa's deployment strategies, which trade these attributes for extreme concentrations of firepower.

In my strike fleet, an attack group is made up of three distinct Fighter waves. The first wave to attack is a group of 20 to 30 scouts in X-formation, ordered to fly in Evasive mode. Their job is to pull the enemy Heavy Fighter screen into a series of long, drawn-out dogfights and attract as much defensive fire as possible. The extremely high speed and maneuverability of the Scout will result in most of the enemy turret fire missing its mark. Approximately 10 seconds later, four wings of Interceptors consisting of eight to sixteen fighters each enter the battle and attack any obvious enemy fighter groups which are



already busy hunting the scouts. Corvettes should be the other priority target for the Interceptor wing. And finally, with all of the enemy fleet assets tied up in tracking small fast targets, the plasma bombers wings, in V-formations five to eight ships and ordered to attack aggressively, should vector in on all Capital Ships positioned on the outer edge of the enemy fleet.

Backing up this attack should be two Support Frigates, guarded by five to ten multi-gun Corvettes. The attacking Strike Craft should be ordered to retreat to the support ships for repairs at the 60 to 70 percent damage level in order to not waste personnel. This tactic has the added bonus of luring enemy Fighters toward the support group, where the point defense fire from the Corvettes can cut them to pieces. The mopping up force should consist of one or two Ion Cannon Frigates, escorted by flights of Heavy Corvettes, and should concentrate fire on the heaviest of the remaining enemy Capital Ships.

Adm. Riif-Sa:

Fah! My deployment plans are idealistic? You would need the multi-tasking skills of a whip-crawler to orchestrate that battle. Your fighter groups would be cut to pieces while you were still directing in more attackers. It is unworkable! My deployment system depends more on local commanders to make the correct targeting decisions without constant choreography from Fleet Command.

F Adm. Paktu:

If my esteemed colleague is saying that he no longer has the skills and stamina to command such an attack, that is understandable, given his years, but ...

Adm. Riif-Sa:

Too old? Your Kiith Matron!!

.....

(Tactical Debate temporarily adjourned for consultation purposes.)