Society

Contents

Foreword

Icar began in 1990 and has since grown and changed beyond recognition of the original. The game grew from two statistics to eighteen and then back to five. Skills changed, guns became rendered and the amount of material grew and grew.

This is in part to the hard work of the author, Rob Lang but also to the tireless desire for people to play the game. While girlfriends come and go, the players are as constant as the North Star, giving support and often criticising developments. Without these players, the game would not have got this far. I would like to thank the following people in particular.

Simon 'Fish' Aubury
Gideon 'Dwain' Moss
Andrew 'Byrnie' O'Byrne
Gareth 'Baldrick' Jones
Peter Ganderton

Introduction

Unlike Anything Else

ICAR, it would seem is set in a Universe which is notoriously difficult to explain. The main cause for the difficulty is that its not like anything else. It would be difficult to draw any comparisons between popular science fiction such as Star Wars and Star Trek as there are fundamental differences. So the reader should have a completely blank slate to begin with. It has been assumed that the reader has read the story which runs down the edge of the Micro section of the Elements.

Using this Document

This is the background section. It is required that all Gamesmasters read this section before trying to run the game. It is useful if players read this section to get a feel for the universe. Each page is split in two. On the right hand side are pictures, tips, pointers and snippets of useful information where on the left hand side is the body of the description. It is the designer's intention to make the Galaxy as complicated as the players and GM can handle. There are some basics which must understood before you continue to wade through all the background. It is recommended that you read through the timeline first.

To make sense of what is an essentially complicated universe, the description takes a top-down approach. This starts with the a description of the Galaxy and then works down to the individual level.
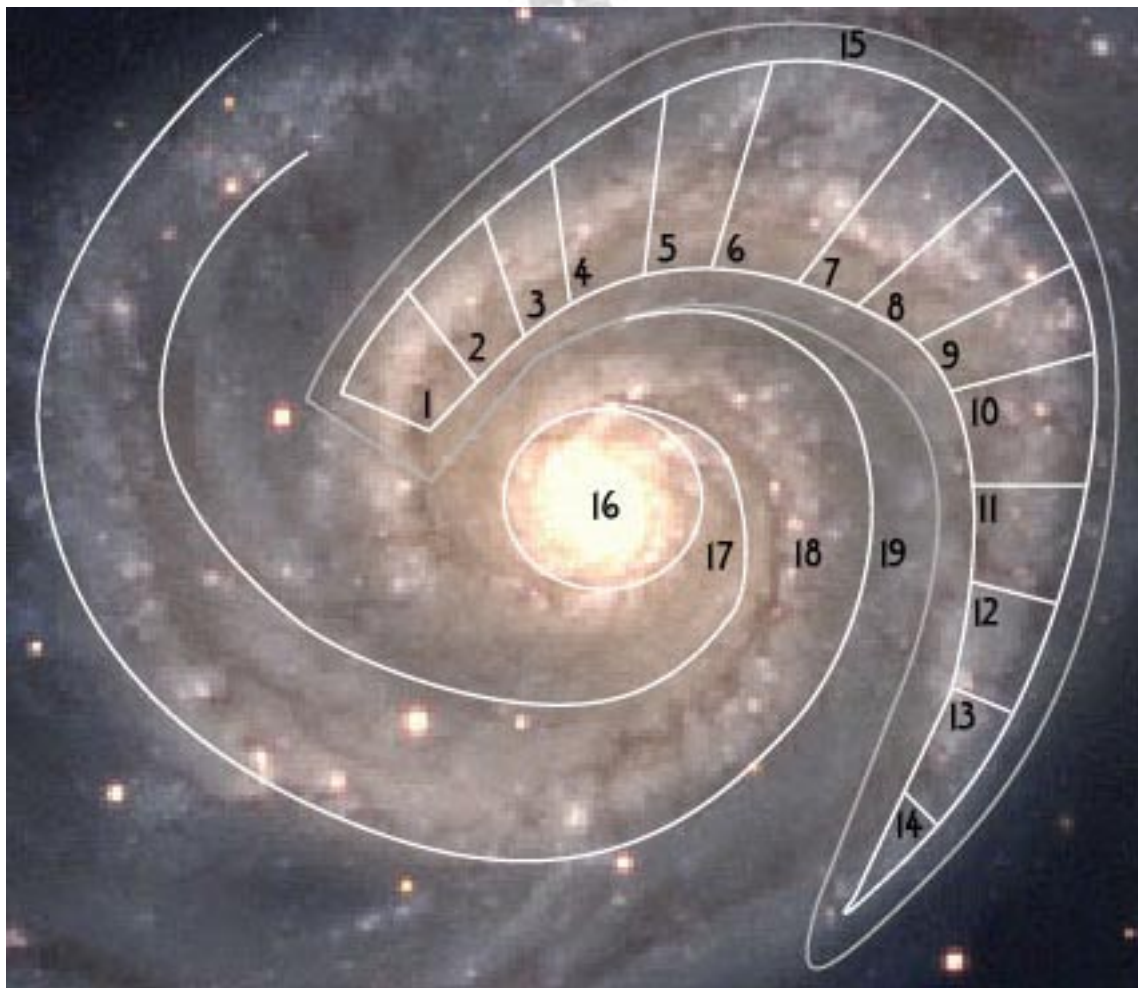
The Galaxy

The Galaxy is locally called The Milky Way and contains approximately one hundred billion stars. It is one hundred thousand light years in diameter and bulges in the middle sixteen thousand light years thick. The galaxy is populated by two species. Only one hundred million of the stars in the galaxy hold stable systems, the others are either engulfed in Nebulae or are unstable. Of these systems, approximately five million are populated by one of two species. The first, holding a 95% majority are a race of robots called locally as the Droids. The other 5% are a derivative of homo sapiens. Many different lower intelligence species exist locally to planets but do not have any particular standing. The galaxy is broken up into areas called Sectors.

The Galactal Divisions picture (next page) shows a plan view of the Milky Way. Volumes 1-14 are situated in the Morpheus Arm of the galaxy, this the vastly explored area of the Galaxy, occupied by Droids and Humans alike. Volume 15 is known as the Lone Systems, a volume of stars that are far enough apart to make trade and defense difficult. A small strip (not marked on the map) that exists just outside Imperial space is known as the Fringe, this is a more prosperous but unruly area of space. Volume 16 is the Galactic Core, an inpassible mass of energy at the centre of the Galaxy. Volume 18 is the opposite galactic arm called the Hypnos Arm and is largely and uncolonised due to the huge distances involved. Volume 17 is the Hypnos Wake and Volume 19 is the Morpheus Wake. These are areas of either intense star activity that space is unstable there or areas where stars rarely form.

The huge mass of stars in three dimensions needs some splitting up and classifying to help people understand the huge scale of things. The galaxy is split into two arms, the Morpheus Arm and the Hypnos Arm. The Morpheus Arm is the only one of interest, so it is split into sections called Sectors. Each sector has a name. With a sector, stars tend to form in clumps called Clusters. Around each star is

likely to be a set of planets (stars without any planets tend to go un-noticed), this star and it planets are called a system. Only stable systems are considered for colonisation, unstable systems include those with unstable or multiple stars or those near space anomalies. Space is considered as being 2D as the Galaxy spins in one plane (although it is 3D, it is not very fat in its third dimension so it can be ignored for simplicity).

The Galactal Divisions

Galactic Division Key

1. Unite Verita (UV) The old home of the Imperium. Now Droid Space.
2. Cassius Droid Space.
3. Karolyn Droid Space.
4. Hesperos Droid Space.
5. Atlas Droid Space.
6. Frobish Droid Space.
7. Artemis Droid Space.
8. Nyx Droid Space.
9. Eos Droid Space.
10. Dorian Human Space.
11. Sayshell Human Space.
12. Remmar Human Space.
13. Typhon Droid Space.
14. Rhea Droid Space.
15. Lone Systems
16. Galactic Core
17. Hypnos Wake
18. Hypnos Arm
19. Morpheus Wake

Droid Space

Droid Space is the name given to the volume of stars that the Droids posess. The Droids are an artificially intelligent race of zenophobic robots. Originally created by humans to deal with the problem of a mutagenic virus, a flaw in their programming lead to the death of 95% of the human race. Another flaw in their system was exploited by their creators and the Droids turned against each other. Droid space can be split into factions, areas where the Droids have split into groups. The are approximately 5 million different factions. Every system in Droid space is utilised in the most optimum way, mostly for the creation of more droids and support facilities.

The Droids are an extemely powerful race with incredible resources, if at any time many factions joined together, then a concerted (and probably successful) effort may be made against the human space. Until this time, the infighting amongst the Droids makes them quite ineffective against the humans. The emergence of the factions within the Droids does highlight another of their weaknesses, that they do evolve over time. There is a possibility that some factions may evolve into a non-violent race. Droids are organised by Mark and Variant, the Mark is just a way of distinguishing type (by number), it is not a chronological marking. Variant is a chronological marking (by letter), the higher the letter, the more powerful the Droid is.

Droids are extremely intelligent and will not give up until death. They have the ability to reproduce themselves (given the right resources) and can tactically gauge very complex situations from a very objective point of view. Their idea of self-worth only exists to aid a completed mission. The droids will only sacrifice themselves if the number of kills it can get is more than continuing its existence. At the start of the Droid war, the Droids could program other machines to turn against their human masters. Since the advent of Gaia and the Gaia programming langauge, Droids are unable to access any machines within the Imperium. This has effectively made all vehicles and home-service robots safe from Droids hacking and altering their programming.

Droids is a specific name for this particular race of killing machines. Not all robots are Droids, only those programmed to kill are called Droids.

Common Droid Types

MK1 A humanoid Droid designed for fighting in close quarters areas. Normally used as scouts.

MK2 Early marks are humanoid Droids, originally taken over humans but later marks tend to be heavier versions of MK1s.

MK3 The most common Droid. MK3 is a versatile walking weapons platform, can carry a huge amount of weaponry. Suffers from being a little large in Mex buildings.

MK4 The Droid elliptical fighter craft. Used mostly for space battles as it performs poorly in atmosphere.

MK5 A Grav based version of the MK3. No restricted to walking on terrain, this Droid can fly (slowly, compared to the MK4).

MK6 A support Droid. Carries munitions and spares, also includes a powerful ammo beamer and many shields.

MK7 A very rare grav platform that can be up to 19 miles in diameter, used for massive support and carrying issues. Can light jump very slowly.

MK8 A 50m tall city-crushing Droid. Could be seen as a scaled up version of the MK3.

MK9 A very small (from 5cm to 5mm across) probe Droid that acts as sensor whiskers for any local Droids. Carries very little armament.

MK10 A fully modular Droid that can assemble and reassemble itself into several configurations from walking droid to flying droid. Laters Variants have beamer units so configurations can happen anywhere.

MK11 - 14 Very rare liquid metal Droids that can sustain huge amounts of damage.

Human Space

A small proportion of the galaxy is controlled and inhabited by humans, compared to that of the Droids. The area of Human space is split into three sectors, Sayshell, Dorian and Remmar. The Human race is in a period of rebuilding and expansion, a post war era. Human space is controlled by a benevolent organisation called The Imperium without which, chaos would reign and the Droids would surely invade with ease.
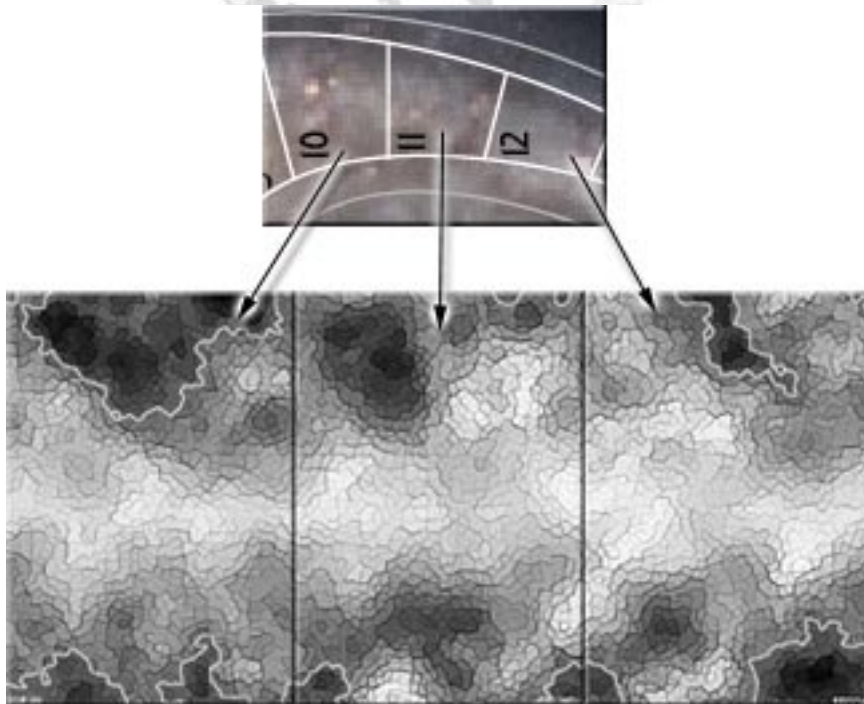
Human Occupied Space
L-R Dorian, Sayshell and Remmar

The Imperium

The Imperium is controlled by a set of councils, each overseeing a particular area of the Imperium's operation. Overall power is assigned to an Emperor who is more than just a figurehead. The core of The Imperium is a small organisation, employing only two thousand people. However, the Imperium has direct control of the Star Industries, organisation under the pay of The Imperium who are the real power. The Star Industries are Star Fleet, Star Scientifica, Star Enforcers and Star Civilisation and are dealt with in the next section.

The Imperial Councils

The Imperial Councils are the organisations within the Imperium that control the day-to-day running of the Galaxy. The Councils are only made from 20 to 50 people. Each one of those councillors have a menagerie of politicians, information brokers and analysts, making the Imperium appear larger than it actually is.

Imperial High Council

This council is actually made from two emminent councillors from each of the other councils.

The council deals with Imperial policy and is chaired by the Empress. The Empress has final say about all matters but normally the best solution is hammered out long before this council sits in a meeting.

Imperial Civil Council

This council deals with colonisation and matters of power within the three sectors. The Civil council also deals with expansion and grants for existing systems. The Civil council is by far the largest of the councils and controls the majority of Imperial funds.

Imperial Resource Council

The resource council controls the flow of money around the Galaxy. By controlling money, the control of inflation (which is practically unheard of) and the issuing of funds across the Imperium.

Imperial Star Industry Council

This council is made up from the heads of each of the Star Industries. This Council allows each Industry to vent their problems. The Empress sits as chair of this council in most sessions, however is only really required when a disagreement occurs across the council.

Imperial Peers

Although not really a council as such, the Imperial Peers are the Imperial Lords and Ladies who oversee the running of Remmar and Dorian. The Imperial Peers sit in session rarely, most disputes are settled calmly amongst the Peers when away from the Imperial Crescent. The Imperial Peers must sit at least once per year.

The Imperial Logo: An open hand symbolising freedom and the a shrunken Imperial Star.

The Imperium is not corrupt as one might expect, they are by their very nature a benevolent organisation. It is understood throughout all the councils that thier actions could save or destroy the human race. Any corruption is immediately rooted out and removed in a completely public manner. Such paranoia about corruption is seated deeply within The Imperium as the last time corruption was allowed to seep in, it lead to a massive inter-human war (The Aran War).

The Imperium holds a crescent of systems in Remmar called The Imperial Crescent from where they

gather information, hold festivals and allow people a place to vent their fears and worries. The Imperial Crescent is a high tech and high social model for the rest of the human race and attracts millions of holiday makers each year as well as businesses who believe that being close to the seat of power makes them more powerful.

Star Fleet

As the name suggests, Star Fleet is a fleet of space craft that defend the human race against the Droids and other outside of the Imperium Invaders. The Fleet is split into three Commands: Battle Command, Support Command and Colonial Command. Battle Command contains all the craft and warriors which do the fighting. Support Command arranges for the craft in Battle Command to be repaired and supplied. Colonial Command visits systems within the fringe, acts arbitrator and even offers Imperial protection to some systems. Star Fleet uses the very highest technology to combat the Droids and has discovered tactics and methods for combatting them. Many of the ships in the Fleet (ranging from massive Battleship down to small and fast Clippers) spend their time patrolling the light jump nets which surround the edges of the sectors that border with the Droids, waiting for any ship to be caught crossing the line. Star Fleet also contains a number of powered armour foot soldiers called Troopers, a select few become highly trained Special Forces and the very best are made into the Elite.

Star Scientifica

With colonies placed across such a huge distance, it was noticed that any scientific discoveries took many years to proliferate through the colonies. Star Scientifica (Star Sci) was created as a centre of academic wisdom and research. Many of the great scientists flocked to be part of the Imperium funded research. Star Sci is now highly secretive, many of the installations it controls are completely hidden about the galaxy (even in Droid space). Many of the area of technology they research into are kept away from the pulic eye and are realeased when it is deemed safe to do so. This is seen as 'saving the public from themselves' and has proved to be a very good idea. Other pieces of technology are fairly distruted to the companies which they may aid, thus bumping up the level of technology.

Imperial Ranks
The Imperium created the rank structure to give command responsibilities across the Star Industries. For example, a Captain in the Fleet outranks a Star Blade in the Enforcers. There are exceptions to the rule, but these are normally based upon the respect for a particular fighting unit.

Steel The lowest of the low. Everyone in training is a Steel. Few people remain a Steel through their whole career.
Blade The first level of responsiblity, a Blade is there to motivate the Steels.
Star Blade The first rank to include any sort of command. Star Blades are squad leaders in Star Fleet, area officers in the Star Enforcers and senior researchers in Star Sci.
Miran This is the lowest command rank. When an individual shows a more pronounced talent for the job and the ability to manage and lead, they can become Miran.
Blade Miran Not much different than Miran, shows added responsiblity.
Star Miran Not much different from Blade Miran, a Star Miran would normally have 20 to 50 people working under them.
Fire Miran This rank is normally reserved for those people who are on the brink of becoming a Captain. A commander should be able to do the job of the Captain to whom they are second to.
Captain Normally in command of many people within a single unit. The rank of Captain is normally found as Captain of a Ship or Head of Star Enforcers on a Colony.
Admiral All the Admiral ranks tend to be strategy jobs, rather than tactical jobs. This is the first level such responsiblity.
Blade Admiral A indistinguishable step above Admiral.
Star Admiral Normally in command of an area of responsibility, like the Star Fleet Special Forces.
Fire Admiral Most of the Imperial councils are Fire Admirals.
Fire Lord The head of each Star Industry.

Star Civilisation

When Emperor Morius died, his left a list of jobs for his successor to do. These were things he believed were very important, but never go round to doing. Star Civilsation (Star Civ) was one of these. Star Civ was set up to make sure that every colony had adequate food, medical and educational facilities. Star Civ effectively runs every medical unit. Star Civ is also responsible for creating and fostering new colonies. This includes the sanctioning of new systems as imperial ones and alterations to the light jump net. Star Civ also specifies and controls the issue of licenses (see right).

Star Civ is the second largest Star Industry (after the Star Enforcers) and has had a huge impact in the education on planets. Before Star Civ, many people could not find jobs as they did not have the correct qualifications, these qualification were often expensive through private means. Now, Star Civ provides the teaching service for free. Anyone who wishes to learn, may. Many have (and will) argue that the Imperium wants to control what people think and the best way to do this is to control the education of children. This is purely conjecture and there are no indications that the lessons taught have changed in content.

Star Civ also controls medical facilities on each colony, making sure that there are adequate hospital as well as rapid response facilities. Star Civ has improved the situation on most systems, although the number of medics available for hire is slim.

Star Enforcers

Originally, it was the intention that Star Fleet were to police space and colonies would look after their own affairs. However, with the advent of Gaia, it was noticed that a lot of crimes were going unsolved when the culprit would leave the system and disappear. The Star Enforcers replaced a corrupt and under-resourced intersellar police force (called the FEDS). Utilising their own fleet and a wealth of resources they are able to keep excellent law and order on colonies and in space around them. The Enforcers are split into four 'Divisions'. Star deals with the space craft and defends against pirates. Investigation deals with matters of intersellar importance (particularly dangerous criminals). Colonial is by far the largest of the divisions and includes all the police on colonies keeping law and order. The last division is Justice system and deals with imprisonment and execution (depending on local law).

Corporations

Many years ago, corporations were able to control the economic standing of a colony. This lead to corruption and powermongering. The majority intersector coporations of today are much more co-operative, working with colonies to produce a better economic environment. The number of fully

---

Licenses

The License systme was created to allow the Star Enforcers better control over what people can and can not do. The license system also allows corporations to find out what the employee is able to do legally. Licenses come in two classes, those that are automatic (A) and those that have to be earnt by qualification (Q). The licenses are stored not only on the Civilisation computer but also on the Gaiajack of the owner.

Architectural (Q) Allows architects to design new floors for Mex buildings.
Arms Dealing (Q) Allows sell and create arms.
Corporation (A) Allows owner to set up a corporation.
Deep Space (A) Allows the owner to cross the light jump net in the lone systems.
Explosives (Q) Allows owner to buy, set and use explosives.
Ion (Q) Allows owner to buy, operate and create Ion energy systems.
Law (Q) Allows owner to work as a lawyer.
Medical (Q) Allows owner to practise medicine.
Star Craft (A) Allows owner to operate Star Craft.
Star Craft Construction (Q) Allows owner to supervise the repair or construction of Star Craft.
Trade (Q) Allows owner to trade over 100T of goods.
Weapon (A) Allows owner to bear arms.

intersector corporations is small but significant, enough to allow the flow of money and resources between sectors. Corporations are much like in any other time, they expand and attempt to make life hard for the competition while producing goods for systems and individuals. However, unlike any other time, there is very little illegal operations in the intersector corporations of 92029 as there is so very much to loose.

Imperial Lords and Ladies

The Imperial Lords and Ladies (aka Imperial Peers) oversee and rule Dorian and Remmar. By their very nature, they do not intervene unless called for, they are the emmissaries of the Imperium and should be silent in their work. However silent they are, the Imperial Peers become somewhat of a figurehead of the systems they oversee. The general public see their Lord as the ultimate problem solver as the Peer is normally required to solve large, system wide problems such as food or air shortages.

Funding is given to the Lords and Ladies by the Imperium to award to systems that have either shown promise or have fallen on hard times. The criteria for awards is largely left in the realm of the Peers. Other funding is often redirected into teams of troubleshooters and investigators under the constant pay of the Peer. These groups attempt

> **Imperial Peer Powers**
> **Impose Trade Routes**.
> This forces corporations on a colony to trade a certain number of units each month to another colony at a budget price.
> **Call Council Elections**.
> If the Lord or Lady believes that the colony's council are not administering correctly, they can call for a re-election.
> **Stop Any Corporation from doing business in their territory**.
> A rarely used policy that allows an extra level of protection from powerful corporations. This power was often used in the past, when the corporations

to solve problems in a quiet and ground level way rather than using the large scale economic powers of the Peers.

Each Peer also has a Trade Navy. These space craft are owned and operated by the Peer. Trade routes which would not be viable for a normal trader will be given to the Trade Navy (as they do not need to pay taxes to the Peer). Trade Navies are resented by the general trading public but they are understood as a necessary evil.

Most clusters and systems tend to stay under the control of the same Peer. However, the Peers can swap systems between them (as long as the general public vote in favour). Another method for changing systems is when the council of the system vote against the Peer with the support of the public and the industries on planet. This is more common but frowned upon by the Imperial Civil Council. Normally, the colony will only vote against it if there has been a serious miscarriage of justice.
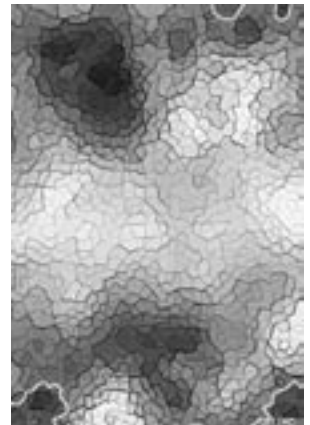
The Sectors

The reason for sectioning volumes of space is long since been forgotten. Now the boundaries serve as a way to section space for control and to show the vast differences between the ecnomic and technological makeup of the clusters inside them. There are three sectors under human control, Sayshell, Dorian and Remmar. Sayshell is the home of Star Fleet and is prosperous and very high tech. Dorian holds the reigns of production and is mostly industrial and trade orientated. Remmar, newly retaken from the Droids is the sector of expansion and new opportunities. Sectors can be further broken down into clusters. A cluster is a group of stars that are spacially close to each other. Clusters tend to have similar economies and share trade as the distances for the transportation of goods is quite small. Separating the sectors from the Fringe and Droid space is a Light Jump Net. This net will stop any craft light jumping through into the sector space. If a craft light jumps though this 1 light year thick barrier, it will be pulled out of its jump and Star Fleet are automatically notified.

The Anatomy of a Sector

Most sectors look quite different in their make up but all have some similarities between them. Sayshell is shown as an example (right). The maps are a snapshot taken from the top, all the clusters are compressed flat. As the spiral arm is elliptical in cross-section, the the distance to the lone systems to the top of the arm is the same as it is to the edge. This is a simplification but seems to work well for most calculations.

The main features of a sector are:
The Central Arm: The central arm is the name given to the bright section running down the centre of the sector.
Clusters: A dark line between each of the sections are the markings defining clusters. Those clusters that are bright have many stars, the darker ones do not.
**The Fringe**: The area outsie the Lightjump net is the top and bottom edges of the image. The exception to this is the white line, which shows the lightjump net. Outside this is the Lone Systems or Fringe.

Sayshell

First populated in the 11th millenia, Sayshell began as a centre of learning and commerce. It remained like this until Star Fleet moved its operation there during the Aran War, being the only really Imperium safe sector in the Morpheus Arm. Since then, The Star Fleet protected and looked after Sayshell more so than any other sector. When the war against the Droids looked like all was lost, the Fleet retreated to Sayshell and with the aid of Star Sci kept the Droids out. Sayshell's economy revolves around technology and learning with food production coming a close second. Comparatively little is actually manufactured in Sayshell, although most inventions originate there. Sayshell does not have any Imperial Lords in control, it administers its colonial councils through Colonial Command. Sayshell is by far the richest and most technological system in the human space, by living there you are assured a job, even if it is in Star Fleet.

Sayshell
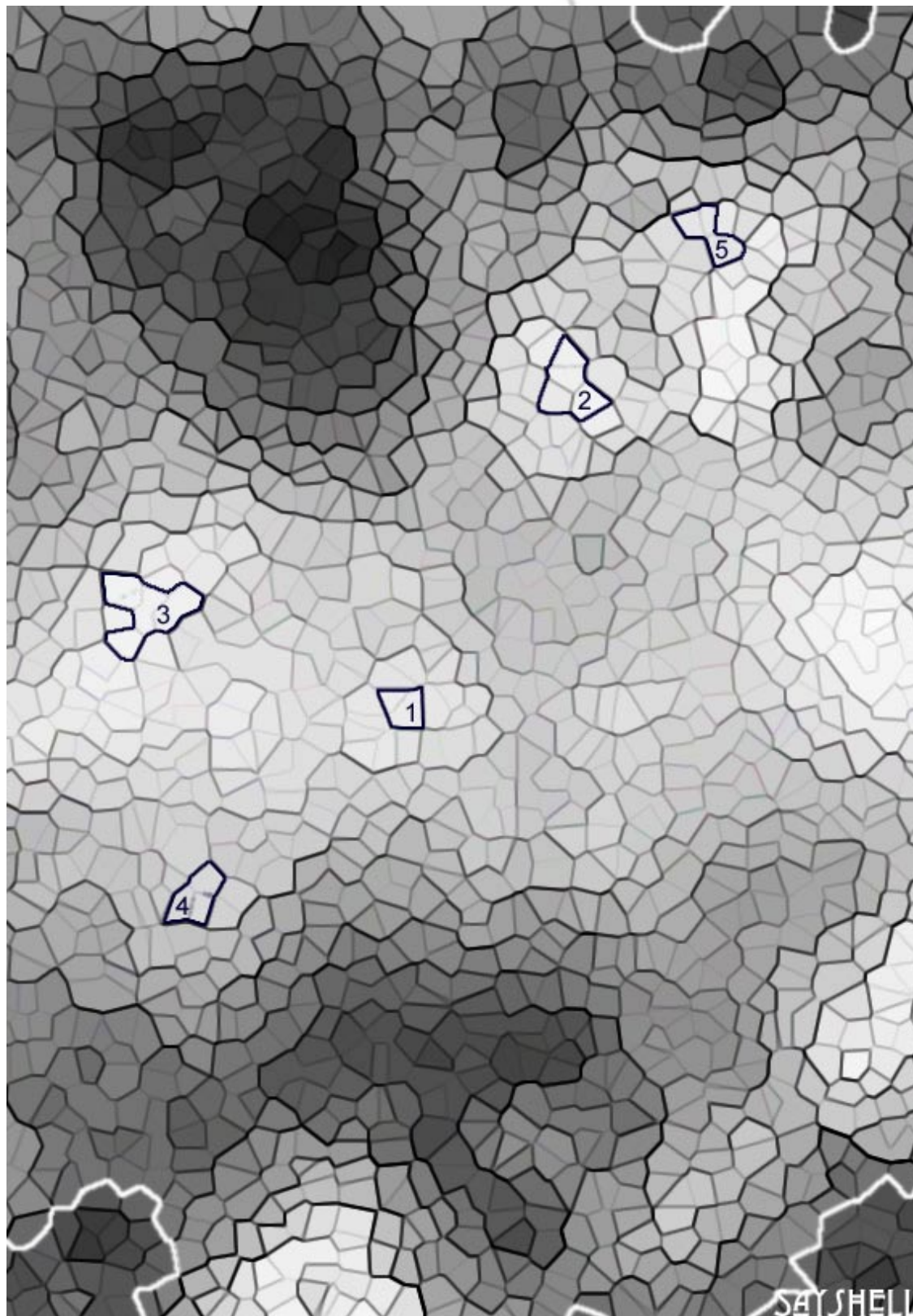
Dorian

The War Of Dorian was the closing chapter of the Droid War, where Star Fleet had a limited presence (only due to its proximity to Sayshell) but the colonists who had retreated and fought their way out of every system up until then were not going to let Dorian and all its resources to fall to the Droids. Although the space was invaded, it was never entirely occupied, the human inhabitants giving a hard resistance. The Imperium soon took the sector back as the many systems yeilded much needed resources that were not availale in enough quantity in Sayshell. Dorian grew once more as the production centre of the galaxy once the Droids were expelled. Now Dorian produces the most raw materials and technological goods of the three sectors and continues to grow economically. Although many of the systems have been neglected in their upgrade over the years and many of the hulks that traverse the long black trade routes are old and osolete, the sector works well. They fix things only when they become broken, to do before is waste unless a significant improvement in performance is gained. Dorian is controlled by a selection of Imperial Lords who act as overseers to elections, economic relations and trade inducers.
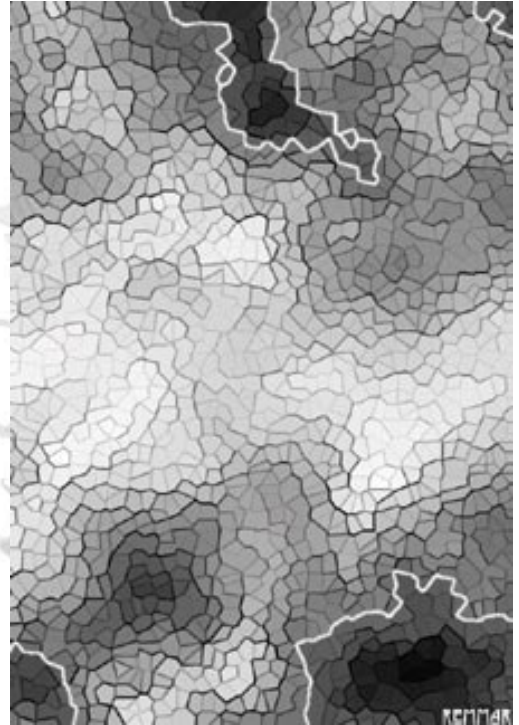
Remmar

Open now for only two years, Remmar is a fledgling sector with one very important resource; food. As the human race grew in the other two sectors, it was soon clear that it would be impossible to feed everyone with the food available. More effort was put into opening Remmar and when it was finally opened for the general public to colonise, a quarter of the human population flocked there to start up crofts (small, self sufficient farms). Remmar's function is to produce food and allow private enterprise to flourish. Unfortunately, there is not yet enough resources coming out of Remmar to make Imperial Lords overseeing all the systems worthwhile. To combat this problem, the Imperium have decreed that not all systems begin as Imperium systems and they must proved themselves before becoming 'Sanctioned'.
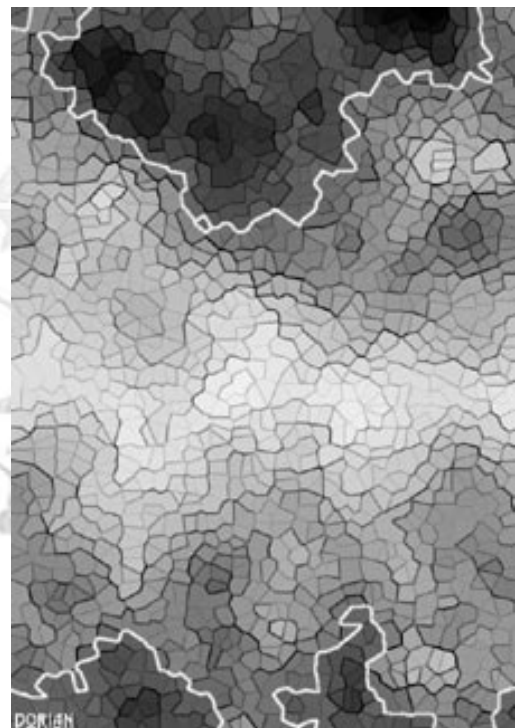
Dorian
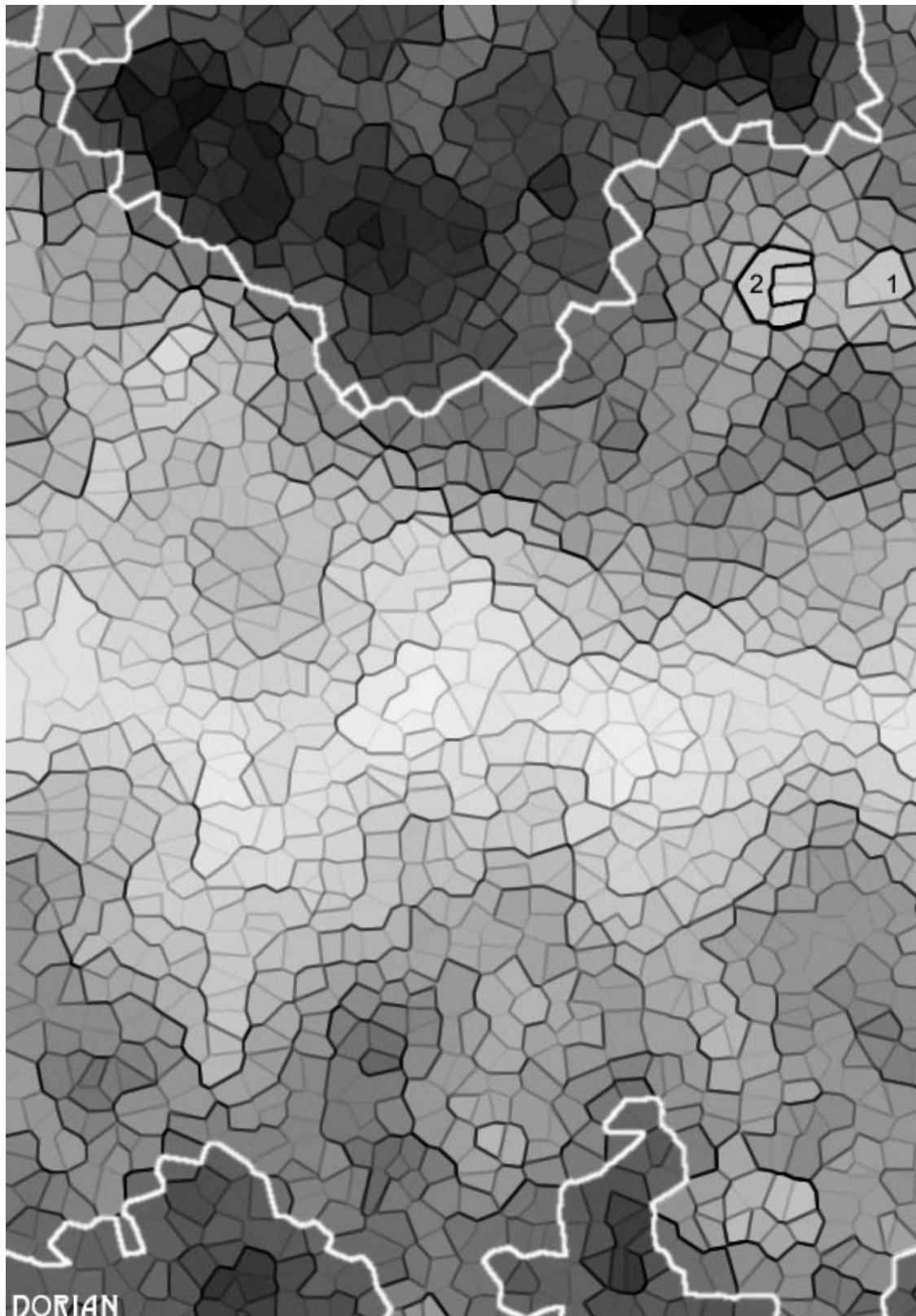
Clusters

A whole sector is a large area to administer without further sectioning. A cluster is a group of star arranged in geographical proximity (they are near each other) and as a result of this share trade and economies. A cluster can be any number of systems from 2 to 20. Below is a list of clusters which are important to note.

The Imperial Crescent

Deep within the heart of Remmar, the Imperial Crescent is a cluster which resembles a crescent if viewed directly from above the galactal axis. The Imperial Crescent was built extremely quickly and is the home of the Emperor, Star Scientifica and The Star Enforcers. The technology of the Imperial Crescent is second only to Arcturus (Star Fleet's home) but is also the centre of art and humanitarian issues aswell. Many of the Interstellar corporations moved their operation to The Crescent purely for the prestige of being in the same cluster as the Emperor. Trade, as you would expect, is blisteringly high around the cluster. The cluster also has a industrial edge, it is responsible for the production a huge amount of food which serves less fortunate clusters around it. The Imperial Crescent is a shining example for the rest of the human race.

The Turus Cluster

Since the The Star Fleet was first created as Stella Fleet in 5800, the Turus cluster (1 on the Sayshell Guide) has been its home. Boasting the largest colonies and Star Bases, the Turus cluster is quite the centre of technology and learning. The Turus cluster produces food and starcraft, as well as training for the Star Fleet. Its excellent position leaves it open to trade from the other sectors and is by far the most advanced cluster in the galaxy.

Romar Cluster

Populated by Romar Smith in 6002, the founder only remained on the system (Romar Grand) for a space of five years in which he managed to set up a self sufficient economy. He soon realised that the remaining systems around Romar Grand were ripe for the picking, he squeezed Romar Grand for the resources for setting up more colonies around it. Bored of colonisation, Romar began setting up trade links with the colonies. When Romar was 56, he had managed to populate 10 planets and was training his two sons (Andrew and Simon) all that he had learnt. The Romar Cluster is now the most powerful economic cluster in the Galaxy, situated far from any recurring anomalies to one edge of Sayshell.

Romar's strength is in its excellent adaption to changing needs. Since the reopening of Remmar, its grip on the food market has waned, so the output of Romar has become more technological and houses some of the most extensive Star Docks in the Galaxy. Romar can be called a 'Nomadic Cluster' as most of the cluster's inhabitants are traders who do not tend to spend too long in one place.

Niopak Cluster

'Niopak Primus Retaris' was first landed by James "Niopak" Trenchard in 6156, life was very hard there. The colonists that had come out here were more idealists and dreamers than realists. Artisans, writers, poets and drifters soon settled the many I class planets surrounding Primus. Unfortunately, they were not well suited to the hard work required in setting up manual farms and building a colony. However, a few harsh winters later and the colonies began to build well. When the Romar Cluster began links in 6211,

the colonies in Niopak strengthened, without loosing the artisan core that permeated all the systems.

Today, Niopak is a very weathly cluster, known for its fashion and for creating new trends and often being the centre of attention in Sayshell. Although there is quite a frivolous side to the Niopak cluster, there is a basis of hard fashion industry to support it all. Any item of day to day living is made fashionable, from Gaiajacks to sports cars. Pointless technology, gadgets and trivial additions to people lives are also produced in large quantities. Noted as being perhaps one of the most high tech clusters in the Galaxy!

Naggachef Cluster

This cluster exists within the Nagga and Chef nebulae, two massive clouds of gas which exist 5 Astronomical Units apart, swallowing most of the cluster. The sparseness of the nebulae (compared to other nebuale of similar size) attribute to the fact that the colonies on these planets are populated. When Peter Nagga settled the first colony with his wife Sarah Chef in the latter part of 5998, the colonists who had taken the gamble were quite cut off from the rest of humanity. Most traders would not venture into the Nagga or Chef nebuale for fear of collision. Once the nebulae were correctly charted, the system became very popular indeed.

Naggachef contains many systems within its nebulae, most of these systems have many I class planets (some Terraplexed) and great, untapped natural resources. The cluster has two major systems Prem-Nagga, a huge I class planet with a massive farming industry and Prem-chef, a medium I class planet with a huge tourist and pleasure industry. Those on any system within Naggechef are delighted by the 'Nebularis' or 'sky lights', the patterns in space made by the two swriling nebulae. Never do any of the systems have complete darkness, there is always a glow of red, green or blue.

Naggachef is the main food producing cluster in Sayshell, turning out enough food to feed a third of the population of Sayshell. Subsidiary industries include production and tourism.

Vitero Cluster

The 'Blue World' colony was founded in 6322, the cluster taking its name from the founder Simon Vitero. The ideals that the colony founded itself on were based within practicality. In the early years of colonisation, Vitero and his colleagues did well by saving time and effort for that which was absolutely neccessary. The technological and agricultural output of the Blue World colony and the colonies that followed were excellent while the sociological advancements were minimal in the extreme.

Today, the Cluster still thrives on its principles of function rather than form. It is no suprise that the Mex building was designed here along with the laser-bladed harvester. Vitero also holds the headquarters of the Endotech shipwrights, along with a massive space craft manufacture trade. The colonies suffer from being quite uninteresting for the populouse, unlike many clusters, many have holidays outside of this cluster for entertainment.

Baleris Cluster

Situated on the border between Sayshell and Dorian, the Baleris Cluster cluster location has been disputed since the original pioneers landed on Zeff Orb in 6295. The colony was soon absorbed into the Akarak culture but took a slightly different spin on their ideals. Baleris was a cultural centre for Akaraks,

allowing the Akarak people to have more freedom from the constraints of the elder's wishes. Times soon changed and the colonies in Baleris moved away from the Akarak way of thinking, it has kept its cultural significance and its leading system Acerine Prime is a good example of a system with all the good aspects of Akarakian ideas.

Akar Cluster

The Akar Cluster was first settled in 4002 by Jebediah Akarak. Jebediah believed that to lead a long and healthy life both Mind and Body must be expanded and persued. The first colonies starved as the colonies split their time evenly between encouraging their mind state and doing duties on the farms. This lead to many harsh winters where hundreds died through starvation. The food that was created barely fed the populace, so little trade was done. The cluster was quickly populated by people of the Akarak nation (many took surnames with 'AK' to show their affiliation) and slowly the wealth and power of these seemingly odd-ball people began to grow. This growth was massively aided by the Akarak Aid Fleet whose job it was to stop colonies from dying out.

The details of the Akarak nation are discussed later. Now the cluster is a thriving trade source as well as cultural centre. The strict Akarakian discipline lends itself well to trade as outside traders fell that the deal that they were getting will always be honest and fair.

Tef Cluster

Settled in 4142 by Norman Teffralliage (Tef), the Tef cluster is by far the most disreputable cluster in Imperial space. Within the Tef systems there are two sets of laws. The first set is Imperial Law, by which any respectable person goes by. 'Fralliage' law is the laws more often used, which works using ideas about 'You can do anything as long as no one sees you' as laws. Corruption, theft, political overthrow are common place in Tef. However, people still enjoy living there because it is out from under the thumb of the Imperium while still remaining inside the Light Jump net. Tef also includes a very high percentage of I class planets (about 40%!), although most of the climates are very harsh on those living there, they do still count as I class.

Famous Systems

This section deals with systems that appear often on the Skynet news or are important in some way.

Imperius

Imperial Crescent, Remmar

Imperius is a system with 26 members, 4 of which are I class planets (1 natural, 3 terreplexed) and is the home of the Emperor. Imperius is also the location of the Imperial Councils. Many interstellar corporations have moved their headquarters to Imperius as it is quite at the hub of future policy within the galaxy. Imperius is by far the most expensive system ever, with a full complement of 12 Star Bases per I class planet and huge Mex cities.

The most important planet in the Imperius system is Imperius 5, an I class which is almost entirely covered in a Mex colony and forest. This normally the home of the Emperor as the temperate and stable climate provides perfect living conditions.

Arcturus

Turus, Sayshell

This is the system planet of the Star Fleet, 10 planets of which 5 are Terraplexed I class. This is the system where the main battle units are served from. The Star Fleet Elite, Special Forces and High Command are all situated on this system. There is the largest concentration of Star Bases in any system here, over 150 in different orbits with Arcturus 3 having 22 bases.

Arcturus is by far the single highest technology planet. It is also where most people are recruited for the Fleet. Fleet personnel are so common here that they are not noticed.
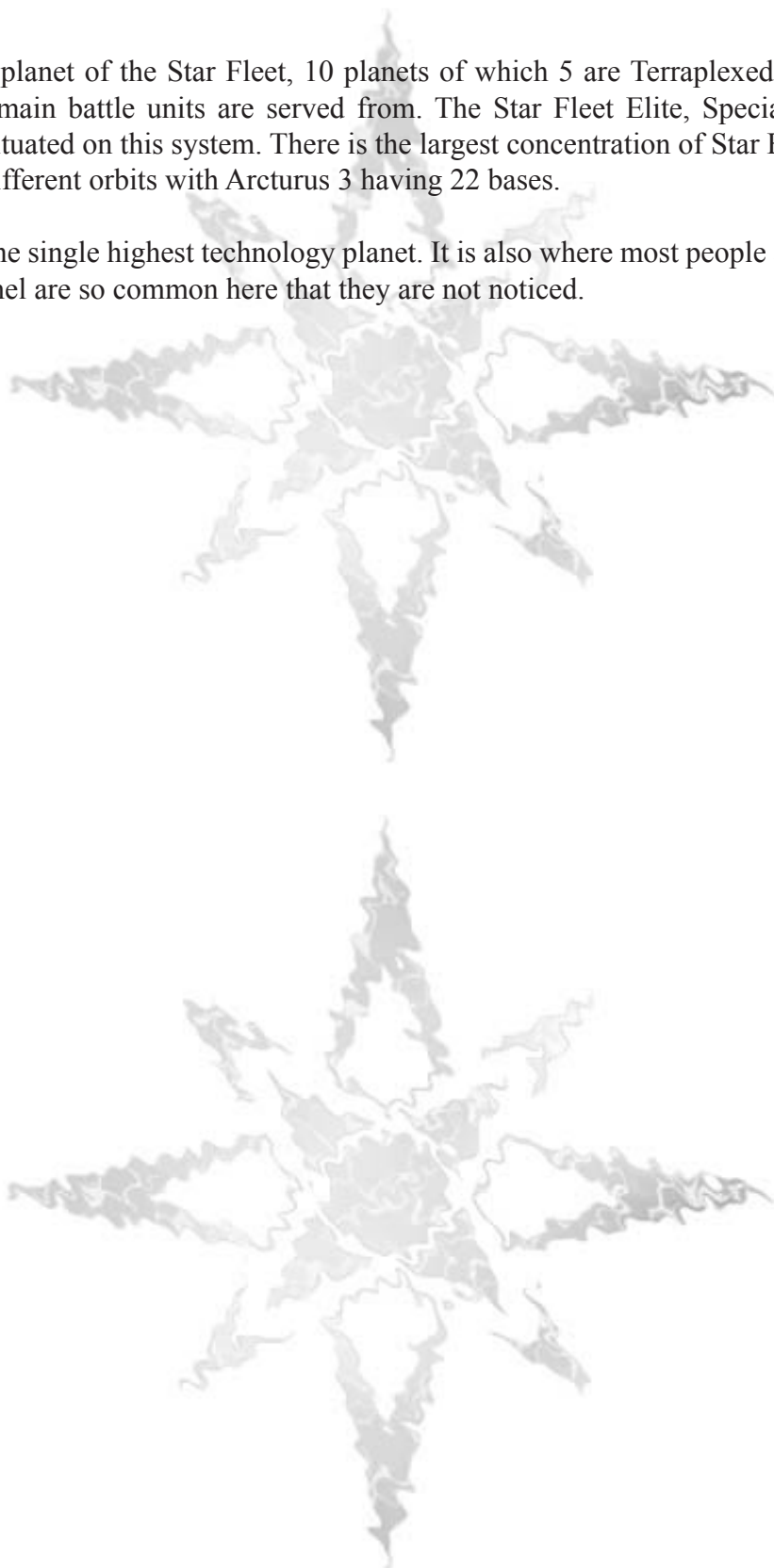
Colonies

A colony is the name given to a dwelling on the surface of a planet. A colony is a city or an area of land where there are many different villages. Colonies are classified depending on the type of planet upon which they stand. The phrase colony means all the cities and dwellings on the planet surface, not just the main city. Colonies are classified thus:

Prosurface

Any colony on a planet where the air is non-toxic to humans is a Prosurface colony. Only about 28% of colonies are Prosurface colonies. Earth in the 21st Century was a Prosurface colony.

Subsurface

Any colony where the atmosphere is not breathable is called a Subsurface colony. These colonies are normally huge caverns buried deep within the surface of the crust, sealed to the harmful atmoshpere. Within these caverns are cities, much the same as on Prosurface planets. Access to the colony is through many huge circular tunnels called 'vents'.
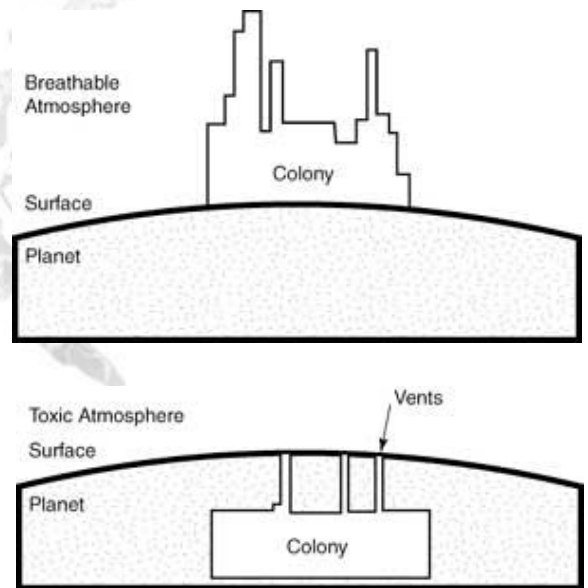
Colony Buildings

After the many wars that have raged across the galaxy, the human race were left with nowhere to live. Therefore, prefabricated buildings needed to be made quickly and distributed around the galaxy to make homes. There are two main types of building, Mex Cities and Crofts. Mex cities are huge lattice structures with tall, straight buildings connected together with structural walkways, providing excellent strength. Crofts are smaller buildings, made to house farms and holiday homes. Mex cities are by far the most popular builds as they are cheap and the levels are standard in shape. This allows the same building to be for different uses.

Croft Buildings

A typical croft building is a circular hut which has a domed roof. On the ground floor of this hut is where all the utility equipment is kept, including generators and for larger croft buildings, any vehicles. The upper floor is the living space. The more people that live in the croft, the larger the diameter of the building is to be. Due to the domed design, every living space has a sky view and all rooms are on the edge of the building.
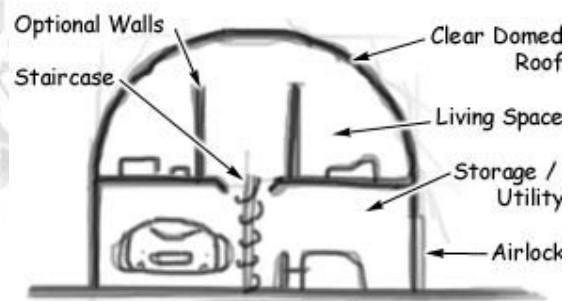
A typical croft has a diameter of 15 metres, large ones can go up to 50 metres. There are many different designs on offer, with many different interiors of all qualities. A simple Croft (including installation fees) costs 10K. Permission needs to be granted by the council (which it normally is) before one is installed.

Mex Cities

A Mex city (as shown on the right) is made from many levels stacked on top of each other. Each level has a particular template so that varying levels can be stacked easily. Each building stands alone, connected to other buildings by walkways which people walk through. Lifts run up and down the corners of the building, each powered by Grav.

Although this pre-fab system of building is normally followed, each system does have its own special character which can be seen in the colours and layout of the buildings. Mex buildings on very different systems sometimes look very similar in shape. Mex buildings tend to be very tall, a normal size for a building would be approximately 1200m high!

In Mex cities, there are many ways of travelling. Inside buildings, people travel by foot, to move up and down the buildings are extremely fast lifts that can traverse 100s of floors in seconds. Free transport is provided in all Mex cities by the Free Mass-Transportation System (FEMTS) which are huge bullet-shaped grav vehicles that run methodical routes around the cities. Personal transport is provided by Grav Cars and Grav bikes which are flying vehicles that fly down the gaps between the buildings.

Living in a Mex city is a very stange experience as people tend to work near where they live, even in the same or neighbouring building. Nearly all humans live in a Mex city in one form or another as Mex cities can be built on both Prosurface and Subsurface colonies. Mex buildings can be repaired and constructed very easily, they can also be added to by lifting off the top level and add more levels in underneath.

Mex in General

From a distance, a Mex city tends to look out of place within the landscape. This is because of the large square lattice work of the buildings. The edges of the city tend to be square and the can be built in any place (shown below in a valley). This is due to their sturdy structure and the fact that all verhicles fly in and out of the city, there are no need for roads, as such.

The ethos of the Mex city has lead to some standardisations in the layout. These standards are called The Imperial Polisat and they provide a perfect model for city designers to follow:

Typical Mex Plan

1. Town Centre

Pivotal to the running of the colony, the Town Centre is the home of all the main colony offices and comprises of several Mex buildings. The main office is the Council Office where the councillors and their advisors organise new colony policy and sort out problems on planet. Star Enforcer Colonial Building or SEC Building is where the Enforcers (Police) on planet reside, often, the SECs have two or more buildings depending on state of the system. Also with a foothold on planet are the Star Civilisation who have their headquarters here too. However, Star Civ often have many offices all over the colony.

2. Home Gateway

The Home Gateway or Home Gate is the star craft docking facility that is used by smaller, private craft and the large passenger carrying Star Buses. Smaller berths with more commercial aspects (such as hotels, souvenir shops) are clusters around this edge. Traditionally, the Home Gate is normally a very well kept part of the Mex City as it is normally the first place that the visitors to the city will ever see. The Home Gateway has the feel of an old-fashioned 'airport', with people waiting to travel or moving away from the Gate area as quickly as possible. Local populace normally leave the inflated prices of the Home Gate for the tourists and live elsewhere. The Home Gate is often locally called something else, named after a founder or famous spacefarer.

3. Freight Gateway

This is the star craft docking facility for larger, freight vehicles. These star craft tend to be huge hulks that carry a mass of ceramic-metal space crates. Each of these freighters have only 100 crew but have many hundreds of automated 'Hoppers' which are flying robots that are designed to cary space crates on and off the freighter. The Freight Gateway has few bars and cheaper hotels (as crews tend to sleep on ship).

4. Hauler Port

Also situated on the edge of a city, the Hauler port the way in which a city transports good around on the planet surface. A hauler is a large vehicle which accelerates very slowly but can travel very fast indeed. This makes it perfect for long distances. Although mostly automated, the Haulers are normally piloted due to the mistrust of automated systems. Hauler ports tend to be poorer areas of the city as most of the Hauler pilots spend little time in the city, it is not looked after very well. The Hauler Port is also likely to contain many storage levels as it is not a desirable place to live.

A Mex city is a series of buildings connected together with walkways. Grav vehicles fly between these buildings and high-speed lifts travel up and down the edges. Many Mex buildings look similar from the outside but the layout of the internals varies depending on the use of the building. Each Mex building

can be up to 4 km high but they all have the same 'footprint' of 100m square. The height of the building depends on its use and the amount of money the owner wishes to spend. A Mex building is never really 'finished' as such, more levels can always be added onto the top of the building after people have started living there. Thus, a city can grow and change vertically. Quite often, the lower levels of the building are owned by the poor (where little light penetrates) and the upper reachers are owned by the rich. This is not the result of some social engineering but the preference of people who live within these cities.
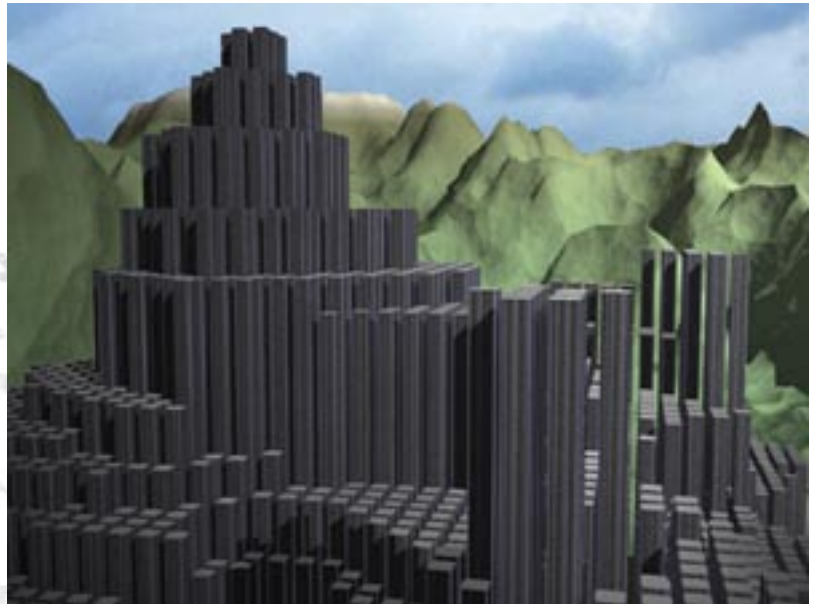
Classifying Mex Buildings

A Mex building can be classified by its use. There are 5 main types:

1. **Habitation.** A building where people live. These buildings include bars, restaurants, shops, living spaces, parking areas and parks.
2. **Commercial.** A commercial building is where companies perfer to operate. These buildings also include the usual restaurants and parking areas.
3. **Industrial.** An industrial building is one that has manufacture going on inside it. Manufacture normally involves either large-scale automated manufacture or small scale specialist work.
4. **Organic.** A park-like building. These buildings are expensive and are normally found only on richer systems.
5. **ConT.** A self-contained building which has all of the above aspects.

In a Mex City

With many of these Mex buildings joined together, you get a City. The picture (right) shows a view from within a Mex city. The picture focuses on one corner of a Mex building, taken from the opposite corner. Due to the regularity of Mex levels, it is very easy to navigate around a Mex city.
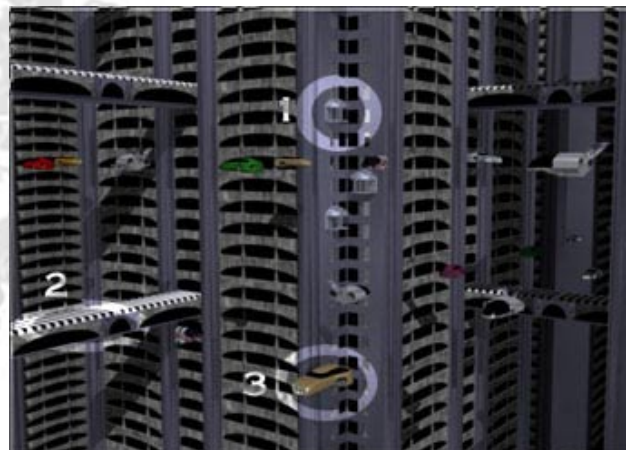
1. Lift

Lifts travel up and down the corners of all buildings. Some buildings have lifts on the inside as well but the majority of people use the corner lifts. The lifts run on grav and are not directly to connected to the building, so there are many (often as many as 200) lifts in one building corner. They are best thought of as independent Grav Vehicles that mainly travel vertically. Lifts travel at great speeds and one can travel at up to 20ms (4 floors a second or 12 floors a game turn). Due to the lifts having a gravity field generator, the effects of the huge accelerations are not noticed by the people using the lift.


2. Walkway

Walkway are structural, covered paths that join Mex buildings together into a strong lattice. Toward the centre of a Mex city, walkways are common and become more rare toward the edge. Traffic passes above and below these walkways and they sometimes travel at angles between the buildings. In any case, the gravity of the Walkway is always perpendicular to its floor.

3. Traffic

For those who can afford their own personal transport, there are flying cars called Grav Cars are used to move people around. As the volume of traffic in central areas of a city can be extemely heavy, people often choose to walk instead of driving.

Grav Cars fly through the city in lanes as shown in the picture above. The lanes pass between the walkways with each flow of traffic at 90 degrees to the one above and below it. The picture shows two lanes of traffic in each flow of traffic at 90 degrees to the one below. An example Grav Car es shown below.
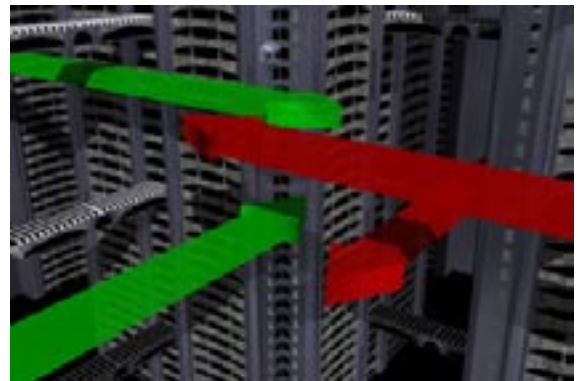
Other Mex City Info

Free Mass Transportation System

The Free Mass Transportation System or FEMTS is available in all major Imperial systems. The FEMTS consists of a number of FEMTS cars (see below). Unlike most old-world free transportaion systems, the FEMTS is normally the pride of the city, clean, reliable and always on time. A typical FEMTS car is unmanned, only the passengers travel on it. The car is controlled by an AI which

senses other traffic in Gaia and then makes decisions on the best route to meet its stops. The FEMTS is widely used by many, as a safe alternative to owning one's own car.

Mex Levels

The benefit of having levels of a regular size is that they can be constructed separately and then built together as one on site. The footprint of each level is very similar (to allow it to fit onto the level below and the structural pillars that run on the edges of the floor.

Mex Internal Structure

The internal structure of a typical Mex Floor is shown below.
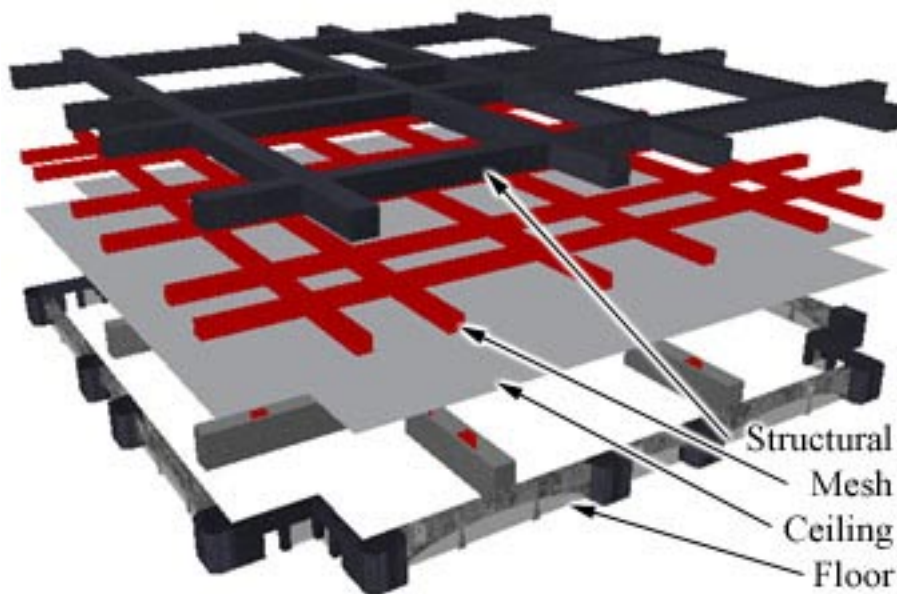
The Structure of a Mex Level

Above the floor is a ceiling and then in turn a Mesh. The Mesh also runs down in the main supporting walls of the floor. The Mesh caries air to all parts in the building and has inbuilt air filtering and purification. Also, down the edge of the Mesh is the main building-wide power web supplies that carries power to all the large devices in the building. Above the Mesh (and intertwined with it) is a structural layer, made from hardened Titanium Sinite Core. This structural layer supports the floor above.

Mex Level Types.

There are hundreds of types of Mex Floor, each one with a specific purpose. We cover just a few here. The numbering applies to the picture on the right.

1. Living Accomodation

A number of high-priced flats within a single level. Grav cars would be parked elsewhere in the building. A common level to have in the building. Also, one can see a lift opening in the very centre of the level. This would need to be repeated on the floors above and below to be of any use.

2. Vaulted Room

The Vaulted rooms are used for a variety of functions such as Parks, Zero-G Swimming Pools, Concert Halls and Game Rooms. Some versions of the vaulted room have open walkways halfway up. These floors are mostly found in places of great richness within the city.

3. Office Area

With offices in the corners and lifts in the centre, this is a typical office layout. The white space between the main walls would often be used as a coffee area or relaxation point. Plants add character to Office Areas and those companies who value their workforce will make this areas as relaxing as possible.

4. Mek Bay Floor

Mek (Eno-Mechanical) Bays are used for the construction and fixing of things. Two large, circular doors are provided for Hauler Access and a large open area can be used for many jobs. These are often 'garages', for fixing Grav Vehicles. These are only really used for fixing things, rather than the creation of new items, although there is the provision of space for the right equipment to do so.

5. Storage Level

One of the largest floor available, this huge level is where Crates are stored ready for packing onto Star Craft or Haulers alike. They proliferate the edge of Mex Cities but can be found toward the city floor in most buildings. Commercial buildings often keep their stock in a level such as this, fetching it automatically when the customer makes a purchase.
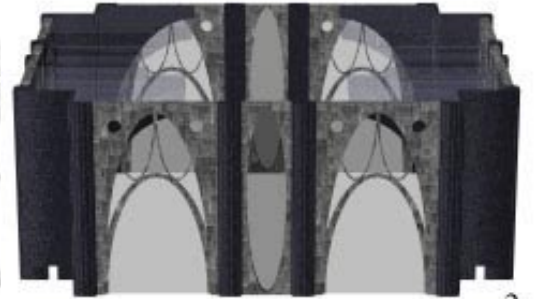
Time

When the first space farers left earth, they abandoned the 24 hour clock in favour of a 40 hour day. As ships always needed to have a crew awake and active, a ship system was developed that was soon adopted as the normal for the whole galaxy. The days is split into four 10 hour cycles. Each cycle serves a different purpose. Between each cycle is a meal.

Sleep Cycle

During the cycle, a person get their rest. A human of 92030 only requires 9 hours sleep in 40 to function properly. The other hour is spent waking up and having the first meal called 'Breakfast'.

Work Cycle One

This is the first ten hours of work. Often a person will take two jobs, each with a 10 hour duration. After this cycle is a meal called 'Lunch'.

Work Cycle Two

The second work cycle is normally a more relaxed affair as motivation begins to wane. After this cycle is the meal called 'Dinner'.

Recreation Cycle

The recreation cycle is when a person can persue whatever activities they are interested in. Most people have a hobby of some such. Before sleeping once more, a person normally partakes in a nutrient drink called a 'Cap'.

As everyone is living in a synchronised 40 hour lifestyle, businesses stay open for all 40 hours. People tend to share jobs, one job between two. The passing of day and night has no effect on the cycles of a person, phrases such as 'morning' and 'afternoon' are normally used to express the position of the sun in the sky.

Organisation of Years and Dates

Following the standardisation of time, dates and years followed suit. The organisation is as follows:

Minute: 60 seconds.
Hour: 60 minutes.
Cycle: 10 hours.
Day: 4 cycles.
Week: 10 days.
Month: 4 weeks.
Year: 10 months.

The month names are the same as the Greogorian calendar, except November and December are ommitted. Days are not named as anything but their number.

Public Holidays

Although business runs 40x40, regardless of day and night, there are still public holidays. Days during

the week are not taken off and there is no 'weekend'. The public holidays tend to mark events either Galatically (Emperess' Birthday) or locally (Cluster or System Founding day). Public holidays depend very much on the system. Those systems without much local history tend to have fewer, as do heavily industrial systems. Artistic colonies and those systems with a long history tend to have more public holidays.

The Star Industries do not partake in public holidays as the employees are always on duty. In some cases, they take part but only in an official capacity. The only exception to this rule is the Empress' Birthday when most Star Industries throw a party. Only those on active duty do not.

Orbitals

With the advent of powerful interstellar jump engines, it became obvious that spacecraft could be made very large indeed. However, the amount of energy required to get these huge craft from orbit to surface and back was prohibitive on the size of the craft. One solution to this was to have a place in orbit where a craft could deposit some of its cargo for shuttling down to the surface. This is the initial reason for having an Orbital but they soon become integral to the economy of the system and not just for the trade they offer.

More than just trade platforms or orbiting store rooms, an Orbital is often the gateway to the rest of the galaxy. They are used for many different tasks such as acting as a base of operations for a mining company, a dock for space craft repairs and the home for many people who dislike living on planet. The use of an orbital often changes focus through its life, normally beginning as a trade or base of mining operation and then growing with the population to become a more pleasant habitation or supporting large trade ships.

orbital Types

Each orbital is different from the others, however they do roughly split into types: classified by their shape more than their use. The Orbital types will be dealt with here. A Circ orbital is mushroom shapes (see right), with a large long spine and then a living area. They range in size from 40 to 120km in diameter and 50 to 100km high. The second type is an Orb which is a huge structure where an artificial world is created on the inside of a ball. The final type are Docks which are often angular structures designed for the creation of spacecraft.

Each type of orbital will now be investigated.

The Circ

The Circ is by far the most popular choice of Orbital because of its compact size, expandability, robustness and adaptability to any purpose. The Circ is a mushroom shape construction with a central spike running up the middle (see picture). Circs typically house between 10 million and 2 billion people, not including the crews of visiting trade ships. Where the Circ orbits a planet with a colony, the Council of the colony pulls the strings of Circ policy. Otherwise, the council is much as it is elsewhere.
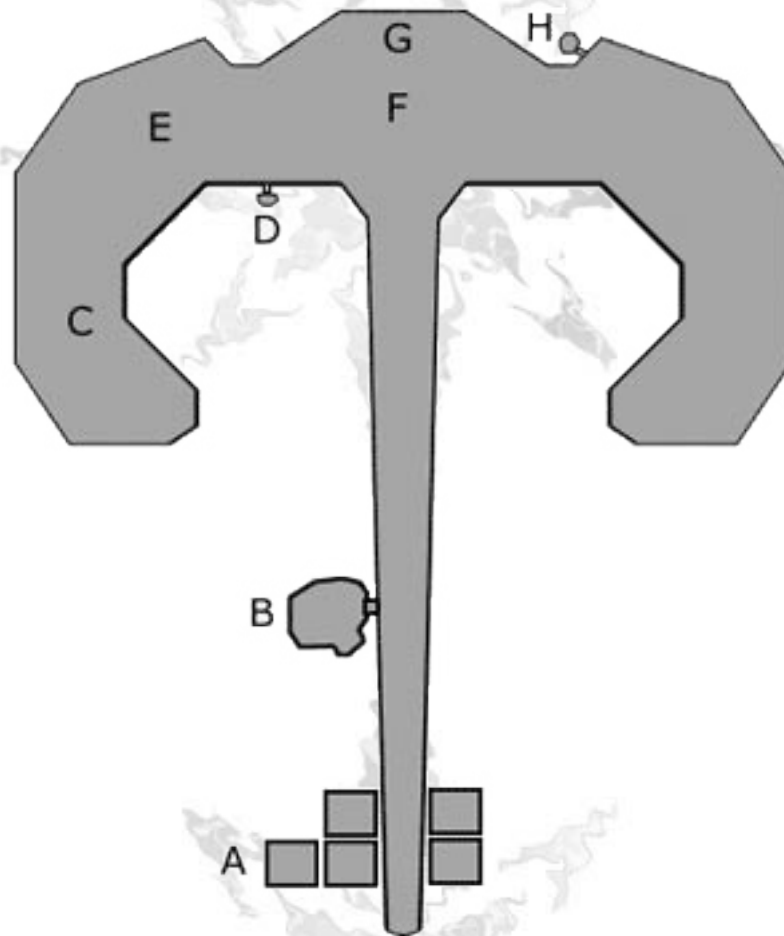
Circ Type Orbital Cross Section

Key

>A. Storage area (an generators).
>B. Docking for very large craft.
>C. Storage and docks area.
>D. Docking for smaller vessels.
>E. Living Area.
>F. Corporate Area.
>G. Organisational / Council offices.
>H. High quality docking area.

Circ Interior

Although the edge of the Circ orbital is circular, the interior is mostly square. A feeling of openess

and space is often created with vaulted corridors and holographic projections of sky and clouds. More industrial-use Cirs have many long, square corridors, but these are seen as old-fashioned and now Circ orbitals are constructed with less regularity.

A typical bar and hallway in a Circ Orbital

Getting around in a Circ Orbital can either be done on foot, by driving a grav or by FEMTS. As most people go by foot, a Circ often splits into communities of people who live and work in the same area. When driving a grav, they are driven through huge tubes that run between important areas of the base. These tubes are often irregular and connect areas of the orbital that are important for that particular place. The FEMTS system also uses its own set of tubes, the cars exactly resembling the FEMTS cars of Mex Cities.

People who live in Circ Orbitals tend to enjoy the enclosed spaces and can be agoraphobic (afraid of open spaces).

Orb Orbitals

An Orb Orbital is the largest contruction the human race has ever made. The orb is an inside-out planet. A huge hollow sphere where the people live on the inside. The inside surface of the Orb is often as large as a large moon and contains continents, mountains and oceans. A huge artificial and yet self-sufficient eco-system exists on the inside of these massive structures. Gravity is produced by localised Grav field generators, making sure the inhabitants have a constant gravity outwards. The atmosphere is created and maintained by a series of atmosphere processing plants that exhaust through the oceans. To give the inside a feeling of a planet, a huge light source (known as The Solar) with a hood rotates in two axis in the middle of the orb. This gives the appearance of light and dark. When looking 'up' on the orb, you see the ground on the other side. During the day, the sun obscures the dark side of the world and the atmosphere gives a pleasant blue haze. Looking 'up' at night time, you will see a blue blur, without stars as if a moon was lighting high cloud.
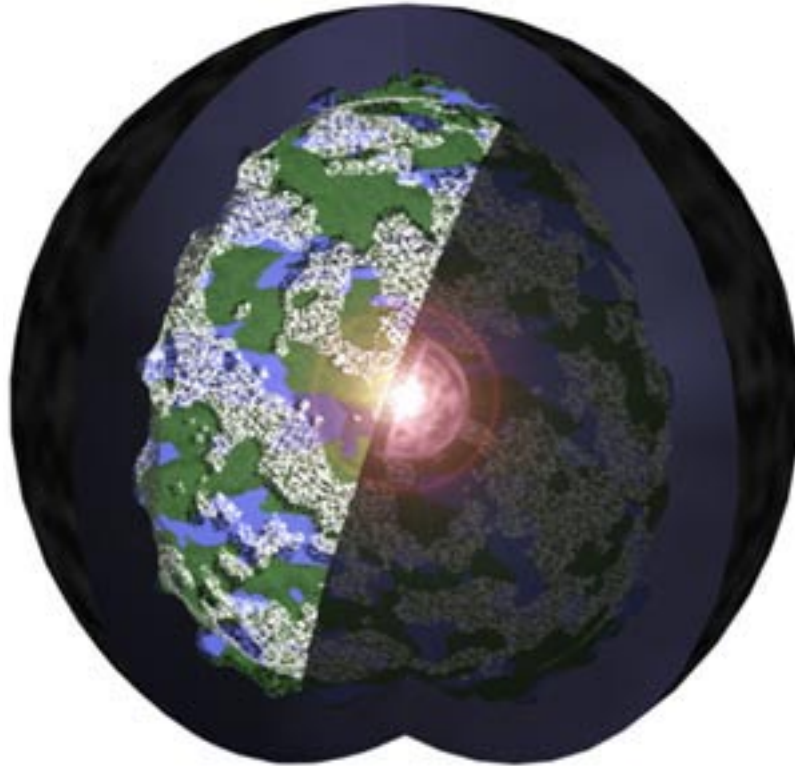
And Orb Orbital with one quarter cut away. Note land masses, seas and The Solar givein light to only one side.

The Orb is so large that the curvature of the surface is barely recognisable unless it is a clear day. Most people's day to day lives can be lead without ever reaslising they were not on a planet. Under the crust of the inner surface is a huge number of manufacturing bays and zero-g workshops. Massive transit tubes take FEMTS all over the orb.

Segments

An orb is made up of a huge number of triangular segments. Each segment has a very similar make-up. The diagram (right) shows a cross section of the a segment. The top part of the image is th centre of the orb.

1. Space
2. Outer hull (very little exterior docking)
3. Docking Area
4. Inner Storage
5. Workshops / Engineering
6. Geoatmoshperic Processing
7. Surface
8. Atmosphere

Other facets of an orb

Transit tubing is used for moving around. They are like huge tube highways that curve throughout the shell of the Orb.

Social Considerations

Due to an orb's size, there is more than enough room for everyone to live on the surface, regardless where they actually work. On a few desirably located orbs, space can be at a premium and one can own a share of the surface. This makes the orb much like any other planet, with large Mex cities for convenience and then out-of-the-way places of beauty for the rich.

Psychological effects of living in an orb

Unlike on a Circ orbital, the inhabitants of an orb are unlikely to become agoraphobic (fear of open spaces) as the surface provides a wide-open space, akin to a planet. Claustrophobia (fear of closed in spaces) is also unlikely as the human mind knows that it is on the inside of a giant marble.

Administration

Due to its size and general resemblance of a planet, an Orb always has its own administration and will have a councillor on the seat of the controlling planet of the system.

Charges for orbitals tend to be higher than on a circ. Also, they use a sliding scale. The longer you dock
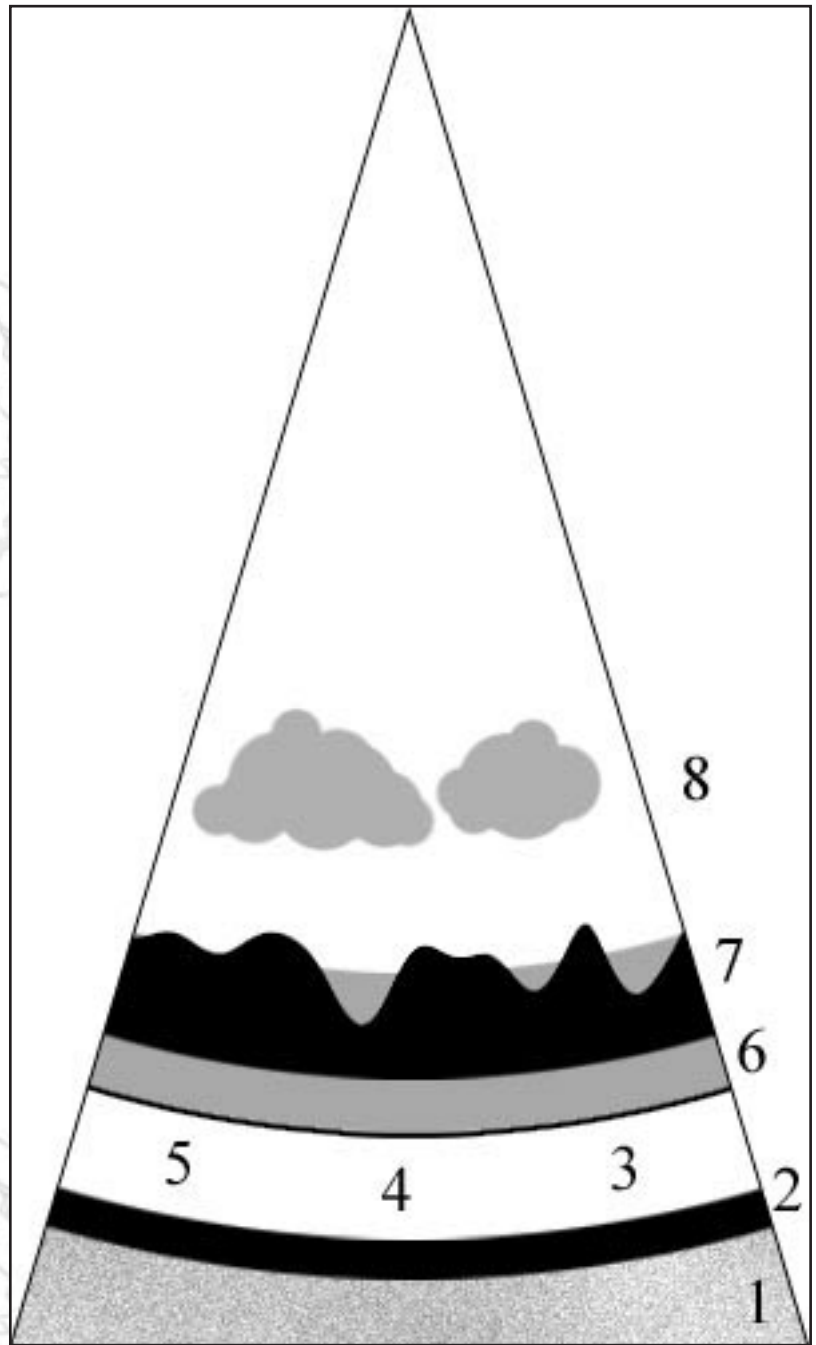
for, the cheaper it is. This sometimes leads to people abandoning craft on the orb.

Space Travel

Since man walked upright and saw the sky as much as the earth it has wondered what it would be like to visit the tin pin-pricks of light that shone at night. Now it is possible and generally accepted as a common and required part of society. The general populace do not often find the need to move about. Space travel is either a requirement for work or to provide a change of scene for a holiday. Frivolous planet hopping is rare. Due to the instability of the space-time continuum, there are lots dangerous places in space called space-time faults. Most are charted and can be avoided. Some can be detected from a distance (in time or space), others come and go at such speed, that the craft can be enveloped by them before they can be avoided.

Travelling in space will inherently involve a few calculations. To keep them simple, travel operates in multiples of an hour. There are many facts and figure scattered through this section. They are collated at the end for easy reference. The technical details of space travel can be found in the Technology section.

Classifying Space

Before you can explore it, you need to know what you are dealing with. Space is classified depending on what is round it. Here are the main classifications of space:

- Atmosphere. Not strictly space as such but the first step one must make before getting there. Atmosphere is classed as the first 20km between the lowest point on the surface (sea level) and space.
- Low Orbit. Between 20km and 500km is low orbit and sometimes referred to as Planetside. If a craft is not atmosphere capable, then this is the nearest to the surface it can get. Most large vessels use this altitude for the loading and unloading of cargo, although the expense of doing so is often prohibitive.
- High Orbit. From 500km to 1000km is known as High Orbit. This is where the Orbitals exist.
- System Space. Within the outermost planet's orbit around a star is system space. In a place with few planets, the edge of system space depends on the gravitational pull of the star.
- Dead Space. Dead space is the area that is not governed gravitationally by a star or its planets (the force provided by them is weak). Most of space is dead space.

Dead Space

System Space

High Orbit

Low Orbit

Atmosphere
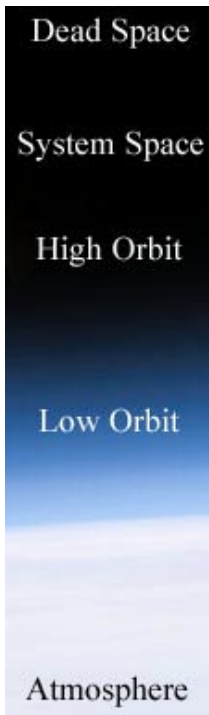
Jobs in space

Travellers are often grouped by the job that they perform. Most regular travellers through space operate as part of a crew on a star craft. Although the particular jobs on each craft are varied - from medic through to pilot - the crew are normally classified by the job that the ship does. A few examples of these tasks are given below.

Military

The Imperium has 2 separate fleets. The largest Fleet is operated by the Star Enforcers and is used by Star Enforcers, Star Civilisation and Star Science. The ships are mostly used for chasing criminals and

for dealing with Pirates. Not all of the Enforcer fleet is well armed and most of the ships are not purpose built but converted civilian craft. The other fleet, The Star Fleet, is a completely different case entirely. Every vessel is purpose built and created from the very best technology the Imperium has to offer. The crews are the very best because the job of the Star Fleet is to protect humanity from the race of the Droids.

Trade

In this case, the term Trade is a very broad one. A craft that moves any item from A to B is considered a trade one. A trade vessel carries freight (raw materials or tech) or passengers. Typically, a vessel is owned by its captain and depicts the type of cargo it caries. For example: Ore freighters tend to be large and dirty, with large industrial automaton equipment. Tech traders tend to be smaller, high tech craft! The dynamics of space trade itself is dealt with later.
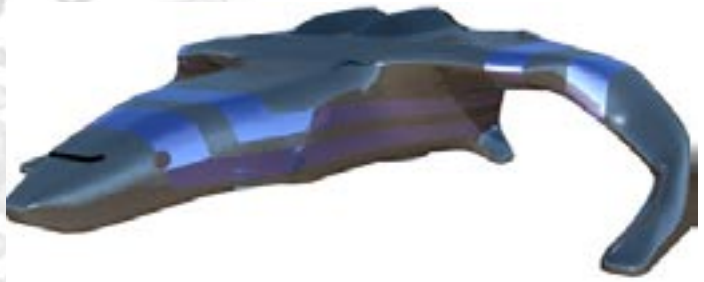
Courier

A courier takes an item from A to B. They are more expensive than traders but give a more personalised hand-to-hand service: important for expensive or personal items. A courier is a regular space traveller and will build up a clientele of corporate and non-corporate customers. Excellent service will build a good name and this is essential for a successful courier.

Scavenger Crew

There are billions of tonnes of junk, all worth money. A Deep Space Scavenger's (Scavvies) job is to find, repair and return for sale. Seen as the lowest of the low when it comes to ship crews, Scavvies spend their time in dangerous wrecks, hunting out cargo and objects of value. Within these floating shipwrecks could be any manner of dangers, from traps rigged by paranoid crew members on leaving the wreck to other Scav teams.

Cost of Space Travel

Space travel is now possible but costly. Owning a space-capable craft is not rare, much like owning a car in the late 20th century. Owning a craft that can travel between the stars is akin to owning a boat in the late 20th Century. Old, slow ones are cheap and can be afforded by many. Industrial craft (such as trade craft) cost depending on the job they do, large freighters can cost millions, as can small fast courier craft. Executive craft exist only for the idle rich, those who have the time for visiting distant worlds purely for pleasure.

Although modern star craft use solid-state generators (an almost infinite source of power) there is no fuel as such. The only costs incurred are the crew and docking tariffs on arrival at an Orbital or planet. Planet docking tends to be the most expensive and costs range depending on the prestige of the system. Systems of higher prestige are placed in the upper end of the bracket given here. Typical costs per day (40 hours) are:

Type	Description	Cost
Orb Orbital Berth	Pressurised hangar or vacuum hangar.	Free - 2000
Circ Orbital Outer Berth.	On the outside of a Circ orbital.	100 - 5000.
Circ Orbital Inner Berth	In pressurised space.	500 - 6000
Orbit Berth.	High Orbit space.	Free - 1000
	Low Orbit Space	100 -> 5000
Planet Port Berth.	On the side of a Mex city.	500 -> 50k

Spaceflight Types

Faster than light travel has been a goal of the human race since the laws of physics made the speed of light a boundary. In normal space, it is a boundary but there is more to the space-time continuum than just normal space. This section will stay as free from science as possible, further descriptions can be gained from the ever complete technology section. Every trans-light vehicle is given a light speed. This speed is the number of boxes on a cluster map the craft can go in 1 hour. A cluster is approximately 20 squares in diameter. Use this a rule of thumb for unknown clusters or the actual cluster pictures for use.

Grav

When travelling between ground, space and between planets in a system, Grav is used. Grav works by 'surfing' down the waves created by celestial objects (stars, planets and moons). With Grav, it takes approximately 1 hour to travel between planets, 10 minutes between a planet and a moon. These figures are ship-independent as the waves that the Grav surfs on are the same for all the different craft. The time from low orbit to planet (or vice versa) depends on the power of the Grav engine and varies from ship to ship. It's normally about 4 hours. The time between Low and High Orbit is small and thus can be ignored.

Grav suffers from zero gravity deficiency. This means that if the grav engine is in a place where the gravities of objects around it cancel out. This dead zone is rare and is unlikely to last for very long but will cause the Grav ship to be stranded.

Light Jump

A light jump is a method of traversing a huge distance of space in a fixed amount of time. A jump lasts one hour. At the end of which, you can jump again. The jump is in a straight line (there is no such thing as a straight line as space is curved, but simplified for ease here). All jumps last one hour, the faster the ship is, the further you go. However, all jumps are one hour. This is because the ship takes most of this hour to accelerate and the major part of the travelling is done in the last ten seconds. Thus, if a ship can go at 20 and needs only to jump 10, it will still take an hour. All of the calculations required to cover long distances are performed by an AI and thus the crew of the ship can rest or perform other tasks while the vessel is in transit.

For a Light Jump engine to form a bubble in which to jump, it needs to be in a gravitational low. This means away from any system or large celestial objects and clear of other craft (by 1 minute). 1 hour outside of system space is typical. Thus, a Light Jump can only be performed in dead space.

Light Jumps are susceptible to space-time faults. A ship is likely to come out of jump immediately when encountering one - requiring the vessel to make another jump. It is uncommon that any damage will be done to the Light Jump Engine unless it is old or already damaged.

Point to Point Light Jump Engine

The original light jump engine design is millennia old. The Point to Point Light Jump engine (PTP) takes sensor information, an improved star chart and more accurate engine for precise jumps. The PTP is very much like its old variant, except for two major points:

1. PTP can begin a jump from high orbit, as long as it is clear of any Orbitals (given permission).
2. PTP can end a jump within system space of another system but may not ump straight into high orbit.

PTP requires more power, and cannot be fitted on very large craft. For large craft with PTP, the engine and generators for it take up most of the vessel. PTP is mostly found in small executive and charter vessels (as might be used by couriers in a hurry). PTP is also four times as expensive and not easy to repair (HARD on Space Craft Systems). This is not so much the future of space travel, more of an alternative present.

Curve Surf Engine

Rumoured to be invented by a number of rogue scientists, the curve surf engine has unofficially been used by the Star Fleet for a few thousands of years. Curve Surf is a technology more like Grav than light jumping. Like Grav, it surfs down the gravity supplied by celestial objects, it does this beyond the speed of light. Because of the gradual acceleration offered by this surfing, the light jump bubble can be kept open indefinitely. A vessel using Curv Surf can also change direction in mid jump.

As curve surf has a more accurate sensor pack and can change direction, it is less susceptible to time-space faults. Also, Curve Surfing can begin from anywhere in System Space.

The largest difference between Curv Surf and typical Light Jump Engines is that the speed of Curv Surf depends on the pilot. In Light Jump Engines, it does not matter what part of space you're flying through, the distance you travel given in one hour has a maximum. Curve Surf depends on the ability of the pilot to intelligent plot routes through space. This can be achieved by an AI, but the nuances of space an human flair will always achieve better results. Thus, for each ship equipped with Curve Surf, a sliding scale of time taken to travel the desired distance (depending on how well the pilot passes their Pilot Cruiser roll).

Curve Surf is extremely rare and expensive. It is not possible to buy a vessel with Curve Surf equipped as little is known about its operation. Thus, most engines are created specifically for a vessel and that vessel is likely to have a very powerful set of generators indeed.

Typical Craft Systems

Space craft vary in technology widely from the basic freighter to the most expensive executive cruiser. There are some basic systems that are found on most craft. More technical detail can be found in the

technology section, this is just to give a general overview.

System	Description
Hull	Able to withstand the shock of meteor collisions.
Generators	Not as standard on every space faring vessel.
Life Support	Huge power sources from which all power on the craft derives.
Engines	Air and food processing for indefinite survival (they have their own generators).
Energy Web	The power distribution system around the craft.
Sensors	Mostly used for detection of collisions and for avoiding space-time faults.
Grav Field Generator	Creates an artificial gravity on the ship.
Grav Lock	A device for keeping the atmosphere 'in' where the hull has holes (airlocks and breeches). Also used for 'sticking' cargo to the floor of a cargo bay.
Sheilds	Invisible to the human eye.
Cargo Bay	A space for stacking crates.

Dangers in Space

Space is a dangerous place. It's no wonder that most of the human population prefer to stay put. Most of the problems that occur in space are more of an irritation (costly to those who use space for business) than a risk to life. It is, however, unpredictable. This section deals with some of the problems that can occur, they are either space-time faults or not.

Quantum Singularities

A quantum singularity is the scientific name given to things that are inexplicable, unpredictable and really quite dangerous. They can arise without warning, be difficult to sense and can have a number of effects on a star craft:

• Drop out of light jump. Can be caused by the singularity draining power from the generators momentarily or similar energy 'blip'.
• Incorrect Sensor Readings. Either echoes from times past or reversed sensor information is another often occurrence with singularities. The sensor information of a planet may momentarily pop up in the path of ship (causing a drop out of light jump).
• Weirdness. Alterations in gravity on ship, atmosphere conditions or the biological state of the crew are all part of deep space weirdness.
• Total Energy Shut Down. Perhaps the worst-case scenario, this would involve the main generators shutting down completely. Restarting generators can often take days.

Worm Holes

These are tunnels that connect different places in the space-time continuum. They exist for spaces of time and are then gone. Some do re-occur, but those are not dangerous: they are listed amongst the star charts as avoids. If a light jump takes a craft through a worm-hole then the position of the craft in space and time can be somewhat random. There is a 50/50 chance that a Light Jump Engine will come out of light jump before entering the worm-hole, in this case, it can be avoided.

Worm holes are not to be entered, they are extremely dangerous and a craft must be specially designed to cope with the huge pressures and energy flux within the tunnel.

Energy Ripples

When a celestial event occurs (such as a star exploding - a super nova) then a huge sphere of ripples spreads out, leaving very little where the star once was. When this occurs, huge ripples of energy are left travelling, getting weaker as they spread. However, there are areas where they may gain energy and when this occurs they can become dangerous once more.

The least a ripple will do is drop a craft out of light jump. With more powerful ripples, the ship may be push off course and damaged as well. The worst an energy ripple can do is to carry the ship through the light jump net into the lone systems and cripple it.

Asteroid Fields

When celestial objects explode, they leave debris. Unless there is some sort of a gravitational field to do this, they will remain in rings and spheres. In most areas of space, these are charted, but they can move and the detonation of stars can cause their satellites to become asteroid fields.

The worst a field can do is drop the craft out of light jump. If the field is large enough to do damage to the vessel, then it will be detected early on.

Super-Dense Nebulae

A nebula is a huge cloud of gas. Most nebulae are harmless, the major bodies within it mapped out such that travellers may not have a collision. Dense nebulae are more dangerous as they hold stars being born. The energy involved in such a process can cause energy ripples (see above).

Astrofailure

This is the name given to any fault or failure within the craft. This can occur of very old vessels. Most vehicles have an AI which can scan for problems within the ship. However, the difficulty is not always detecting the problem, but solving it.

Total energy loss is the worse case scenario. If the generators shut down then there is no power to go anywhere and help must be summoned.

Pirates

Very rare in Dorian, uncommon in Remmar and impossibly unlikely in Sayshell, pirates are those people with armed craft that attack other craft. Depending on their motives and the Captain, the pirates may just take the cargo or murder the crew as well. They normally choose soft targets (or those that look soft). Most pirates are well organised and educated, researching their targets and finding fences for the known cargo before attacking. It is often thought that Pirates are amongst the best-trained ship crews.

The Dynamics of Trade

Trade is the movement of resources from one system to another for money and happens for three

reasons.

Firstly, trade occurs because a system requires a certain resource to continue operating. For example, a sub-surface colony may need a supply of oxygen. This is called an obliged trade route. Failure to complete this route can mean a fine and even a banning of spacecraft use. Often, if the trade route does not appear profitable enough, then the councils will add a subsidy; after all, the welfare of the system is at stake.

Secondly, a trade route may exist between two planets where there is mutual benefit. In one direction there may be flow of food and water from an inhabited planet and in the other direction technology from a planet strong on manufacture. These routes are controlled by the councils on the planets and are sold to particular traders to operate them. No one else may run that cargo on that route unless there is a greater requirement. This is called a secured trade route.

Finally, a trade route between two systems where there is profit to be had. This is a more traditional route and they make up 50% of the total number of routes. These are called free trade routes.

Facts and Figures

A Light Jump takes 1 Hour.

A ship's light jump speed gives the number of cluster squares travelled in a single jump.

A cluster can be considered to be 20 cluster squares across.

A craft must be 1 hour outside the system (outermost planet) before it can light jump.

On Grav, it takes 1 hour to travel between planets.

On Grav, it takes 10 minutes to travel between a planet and a moon.

Unless otherwise stated by the spacecraft sheet, it takes 4 hours to go from Low Orbit to the planet surface.

From Low to High Orbit takes a very small amount of time and can be ignored.

Gaia

The name Gaia used to refer to 'Mother Earth', a mystical being that protected the human race's original home, Earth. Such romantic mysticism has long since died and Gaia is now known as the computer network that the human race uses to communicate.

Created during the Droid war, Gaia is a huge virtual world that mimics the real world as well as the creators will let it. As the technology was created after the war had started, the Droids cannot use it. It exists within Imperium space, outside of which there is no Gaia at all. A detailed description of Gaia is included in the Technology section. A brief overview for the casual user is included here.

Gaia can be accessed for free by anyone. There are millions of cylindrical public terminals on every human system. Upon stepping into a Gaia terminal, the person is standing in the same terminal, but in a virtual world. From there, the user can navigate around - visiting the Gaia representations of the real world but anywhere in the Imperium without physically moving location. In large cities, these representations are likely to be accurate or more impressive than the real world counterparts. Anything that has a Gaia chip appears on Gaia, the shape of the real world object hard-wired into the Gaia version (with one exception - the hand-held terminal. See below). It is chic for the Gaia version of a place to look exactly like the real world. This is known as passive Gaia and is how the majority of people use it - to interact on the very basic level to watch news, buy products (by exchanging money), watch Planetball and the like. People can see you on Gaia - you look exactly like you do in the real world.

For example: To communicate with someone, you step into a terminal and navigate to where they live. You can then leave a message on their terminal, if they are not there. If they have a Gaiacard, it can be easier to find them as the Gaiacard may be watching the terminal and will let you know where they are. If they are there, you can then have a face-to-face conversation with them in their surroundings. No body language is lost and one might be lead to think that the conversation was had in the real world.

There are also hand-held terminals (called tanked), but they are not as effective as the room terminals (called immersive) as they do not surround you. A tanked terminal animates a slightly see-through 3D image of what you would see within a Gaia room. Sight, touch and sound are still included but the feelings of motion and smell are lost. They are useful for checking the scores of your favourite sport or for making quick calls where there are no other terminals.

Active Gaia requires the ownership of an expensive Gaiacard (10k credits). With a Gaiacard, comes a virtual toolkit called a Gaiajack. Also, on this card is a personal identification persona called an Isis. This Isis is represented as a shape. You may have an Isis that looks different to yourself (such as a Dragon or giant robot) although it is not chic to do so. A Gaiajack also allows you to have your own set of controls, such as personalised driving controls for your car or a set of hacking tools for getting into other people's systems. Most people make do without one, though. A few people have the terminal and Gaiacard installed in their head (see Bionics, in Equipment). This makes them very powerful Gaia users. One of the Gaiacard tools of interest is the ability to lock a terminal.

A Gaia terminal reproduces reality perfectly: sights, forces, smells and sounds are not differentiable

from the real world. The AI controlling the terminal will not let harm come to you. The only thing that stops you from believing that you are in reality is a psychological effect called Reality Gravity. This is a feeling that something is not entirely right. It can be suppressed for a few days, but after that it is clear that something is not right. There are those people that believe that Gaia is more real than the real world - often leaving their bodies to rot in the real world as they experience a massive galaxy of soap operas, shopping, other people, news, features, history documentaries and more.

The Human Race

Without change, a species can stagnate and grow genetically lethargic. The human race continues to go through lulls where evolution slows down and booms when evolution accelerates to produce a finer race. In one sense, the human race has grown similar. Before the last war on earth, people were segregated because of skin tone or sub race of the human species. This folly was soon rectified on the Arianne 1001, when all races mixed together. Soon, the different races became indistinguishable, and the human race as a whole changed into a more generic race of tanned skinned people.

With bionic augmentation readily available (described later), the human race is more intent than ever to retain their humanity.

A Human

Here is a list of typical human male attributes for the 93rd Millenia.

> Height: 6'6"
> Weight: 14st.
> Lifespan: 140 Imperium years.
> Age of manhood: 18.
> Temperature Range: -20 deg to 50 deg.
> Time without Food: 6 days without water,10 with 1 litre a day.
> Time without Water: 4 days.
> Time in vacuum: 2 minutes.
> Time without air: 3 minutes.
> Hair Colours. Red, Auburn, Blonde, Brown.
> Skin Colour: Fair to Dark (dependent on location).

Mankind and the Machine

As soon as man interfaced itself with a machine, the benefits of this became quickly clear. An extension of the physical self and the ability to extend life beyond the 140 years was too much of an important advance to ignore. This section only deals with rounded ideas of bionics, rather than details, which are covered in the Equipment section.

It is common practise for those who believe in the good work of technology to become augmented with bionic tech at the age of 80. This is long time before death, but at this point the human body does not have a chance to have any detrimental effects on the brain. A new, technological body can then be provided for the brain, extending the life span up to around 300 years, at which point senility takes a firm grip and the person loses grip on the world (the oldest sane human died at 323). For those who wish to move ahead in the heavy industries (freight and large technical creations), bionics offer the ability to be stronger, quicker, to fly, survive in space and much more.

Bionics are split into three distinct types. Borgware, Cyberware and Bioware. Borgware consists of full limb replacement, essential replacing robotic-like limbs onto the human frame or, more commonly, replacing the body as a whole. Cyberware are implants, under the skin and Bioware is a biological

replacement, which can replace limbs so that they are the same as before. After augmentation, the user goes through a period of rehabilitation. If this is not done correctly, then there might be some additional psychological effects. To most, becoming a Borg has a level of reluctance. It is impossible to mate without a human body and thus, a Borg must have family first. Also, there is a strong feeling of a loss of some humanity and detachment from the human race that can never be regained.

Borgs are not trusted by the public. The physical appearance of a machine classes them with the Droids in the eyes of many. A Borg is also an unknown quantity, there is not the human limitation on strength and a single bullet fired is unlikely to bring down a Borg. This uncertainty breeds fear. Cyberware is mostly sub-dermal, so the general public cannot see it by inspection. However once someone is found as having Cyber, they are treated with as much contempt - or even more - than a Borg. Bioware is a new and expensive technology, rarely found. In the most part, it makes humans with disability able bodied again, returning them to their human state before hand. However, there are parts of this technology that are lesser known that enable the augmented person to exceed human limits.

Philosophy
The human race lost its mysticism long ago. The belief in Gods and higher beings is barely recognised, although a form of philosophy does split the population into two distinct camps.

On one side are the Humanists. These are people who believe that humans should not be tainted by technology. They also believe that by augmentation and by spending too much time in Gaia the human soul is diminished and thus, the future of the human race is damned. Humanists believe in human contact and in the natural course of evolution.

The other side are Technologists. These are people hell bent on using technology to further the advance of mankind. Technologists tend to use any kind of technology to its greatest advantage and joy at the sight of new advances. They tend not to care about the long-term effects of technology, as long as it is new.

This 50/50 split in the population is echoed in the Imperium as well as within the criminal syndicates. The distrust of technology is spurned from the Droids. Before the Droid war, such differences were minor and rare. The dislike of pure humanity is fuelled by the mutant race of Genus Two (described later).

Evolution
At some point in the 81st Millenium, the human race reached an Evolutional milestone. Some believe this is akin to the missing link in the rise of humanity from apes. The species split into two groups. The first, called Genus One is much the same as the human race than before. 99.9% of the human population is Genus One and these are what the player characters are most likely to play. The second, called Genus Two is a mutated and short-lived zombie-like version of a human. In the past 2000 years (recent history) it s believed that Genus 1 has split again, creating Genus 3 and Genus 4. This section will deal with each of these Genii.

Genus Two

It is believe that the Genus Two was triggered after the alteration of diet within the Aran war, where people were forced to survive on foods that were potentially poisonous. The human race adapted by creating a much tougher immune system. The Genus Two has a lifespan of 20 years, the body begins to rot just after the onset of puberty. The immune system of the Genus Two is pro-active, leaving the host to attack viruses outside of the body. There are other biological differences, such as lower heart rate and the ability to breathe in non-oxygen atmospheres. Also, Genus Two people have very little intelligence and find it difficult to communicate. However, it can be difficult to detect Genus Two children without a medical scan.

If a Genus Two person comes into physical contact with a Genus One human then the immune system of the Genus Two will attack the Genus One, altering its genetic code to make it Genus Two. The upshot of this is that if the Genus One is older than 20, they will die. If not, then they will slowly become a Genus Two.

A Genus Two is either created from another Genus Two or can be given birth to. The mother is scanned during birth and if her physiology starts to change, she is quarantined and then usually killed with her child. It should be remembered that the number of Genus Two after year 85000 was large enough for the Imperium to commission a deadly number of robots to deal with the problem, these are now known as the Droids. Genus Two can bring down whole colonies where the medics are not prepared but this only really happens outside of Imperium space. Genus Two is mostly eradicated within Imperium space, although with every baby born, there is a chance it could kill the whole colony.

Genus Three

Genus Three was discovered by Star Scientifica at some point in the year 90000. Very little is known about the Genus as yet and thus it is kept completely secret from the general public. No-one outside of Star Sci and the very highest people in the Imperium know of its existence.

Only one in ten billion births turn out to have this genus and it can be very difficult to spot. Genus Three people have extended mental powers (which people argue are latent in the human brain). This emerged with the onset of puberty and can be frightening to the person in the extreme. A person has a psychic pool that fills slowly with psychic energy. When a power is used for some mental feat, the pool drains a little. If the person goes through some sort of emotional upheaval, then the pool will fill a lot quicker.

Genus Threes are not dangerous to the rest of the human populace as Genus Twos. It may be passed on to children, but is not contagious. A Genus three can have differing amounts of ability. This power may be controlled (player chooses to do something) or uncontrolled (GM chooses when and how the psychic power is used).

Certain mental phenomena appear to group together. Thus there are power packages, as described below.

Dice Roll	Power Name	Description
1-3	Feeling	Telekinesis (moving things), Hydrokinesis (sensing and alteration of water), Pyrokinesis (manipulation of fire)
4-6	Seeing	Hypnosis (suggesting things to people), Telepathy (reading minds within visual contact), Precognition (sensing into the future), Psychometry (sensing information about an object, e.g. History).
7-9	Inner Self	Healing (heals 40 HP per turn), Regrow Limb (5 turns), Meditation (Recover 1 Pool point per hour, rather than per day). Resist Fatigue (can go for 80 hours without detriment).
10	Enokinesis	Manipulates energy patterns to alter reality in some way. The user may not entirely understand the effect of the alteration. Only one pattern may be altered. When this skill becomes 90%, they may alter energy patterns through time as well. Can also see in the second and third media (can see cloaked ships and see the raw code of Gaia pass around them).

GAME NOTE:

The character gets a Psychic pool of twice their soul. Every feat, regardless of its impressiveness drains one point. If the pool goes below Soul then the pool becomes the value of their Soul. Eg. Soul of 5 gives 10 points in Pool. If character does 6 feats, leaving 4 points in pool, until it is replenished, the Soul of the character is 4. Upon reaching 0, the character dies (but this would be suicide).

Replenishment is 1 point every 40 hours (with 10 hours of sleep) or 1 point for every emotional situation. The character won't actually become stressed as the pool will take the energy of the emotion away to be stored in the pool.

If the player has rolled Genus 3 on Psychotheatrics, get them to roll a D10 again on the table above.

Each of the facets listed above is to be treated as a skill starting at 2 x Soul. The player must first roll under Soul to be able to use the power at all, if this is a success, then the actual power skill is rolled. Every session, the player gets one Free RP to put into the psychic powers. Difficulties can be added to the roll, but the player should feel that the power is limitless and thus should not have any difficulty.

Enokinesis is only recommended for experienced players.

Genus Four

This is a scientific probability. Star Scientifica know that this Genus must exist. There have been no examples to test the theory on, only reports that indicate that it must exist. In the same manner that Genus Two was triggered by a biological alteration, it is believed that augmented humans procreating have triggered Genus Four. Some believe it is the ultimate in the symbiosis of man and machine: a natural technological step forward. Others see it as the end of humanity.