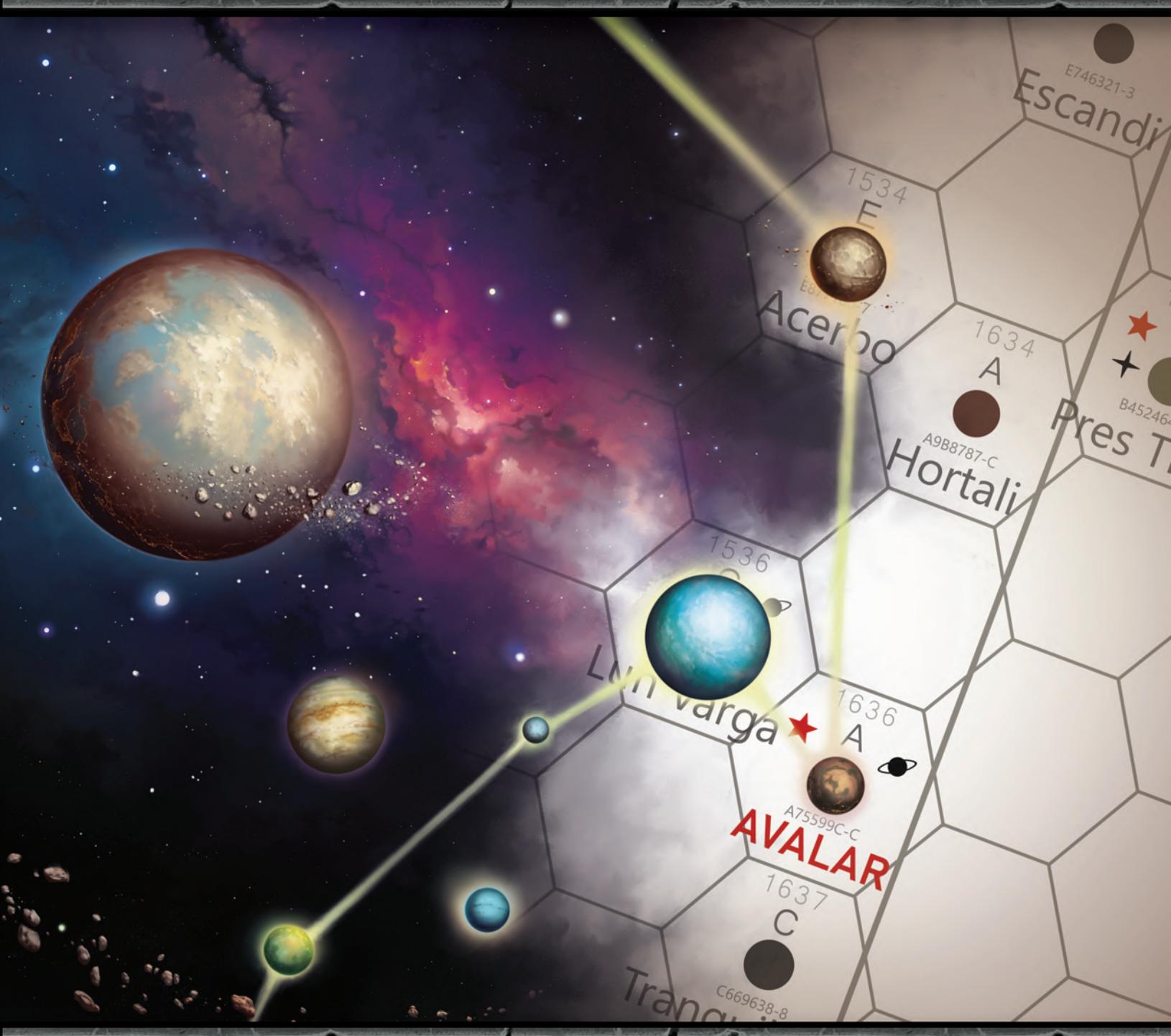


# TRAVELLER

SECTOR CONSTRUCTION GUIDE



SCIENCE FICTION ADVENTURE IN THE FAR FUTURE

# TRAVELLER

## SECTOR CONSTRUCTION GUIDE

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### CONTENTS

INTRODUCTION	02
CREATING A UNIVERSE	03
SYSTEM CREATION	09
SECTOR DETAILS	17
MAINWORLD DESIGN	28
POLITY DESIGN	40
SOPHONT DESIGN	50
CREATING TLINZHA TRAVELLERS	61
SECTOR FINALISATION	62



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# INTRODUCTION

Campaigns in any science fiction roleplaying game require a setting, whether a single world or an array of vast star-spanning empires. *Traveller* allows for the creation of settings of both these proportions and everything between. A sector, built from 16 subsectors of 8 by 10 parsecs arranged in a four-by-four grid, is large enough to accommodate most campaigns, or at least big enough to serve as the starting point of a larger milieu.

The Charted Space universe stretches across dozens of sectors dominated by various species of sophonts. Several sectors are long established and the subject of published sourcebooks but in Charted Space there are frontiers and blanks spots on the map, and many Referees may want to build their own universes with different histories, aliens and civilisations. For this, the *Traveller Core Rulebook* provides the World and Universe Creation chapter. Using those rules and two dice, the Referee can create an endless number of worlds to populate a universe.

However, random numbers alone are not enough to create a compelling setting for *Traveller*. The Sector Construction Guide builds upon the rules and concepts of the *Traveller Core Rulebook* to help Referees create a nuanced sector, where the worlds and their inhabitants form cultures that interact with each other and the Travellers to transform their corner of a vast universe into a living, evolving canvas for adventure.

The examples in this guide are based upon the Foreven sector in Charted Space. Foreven is set aside as a Referee's reserve, with just the profiles of a few

systems and locations of the rest of the sector's stars, adjacent to the Spinward Marches. The Foreven sector established in this guide can be used by a Referee as the basis for a fully developed setting, or can be entirely ignored. Foreven remains a Referee's reserve and no official *Traveller* publication will invalidate a Referee's own creations and choices here. The provided map contains only established system locations, borders and defined worlds of Foreven.

## Recommended Materials

The processes described in this book are based on the *Traveller Core Rulebook*'s World and Universe Creation chapter and no additional materials beyond this guide are necessary. Referees wishing to add additional detail to star systems can find such rules in the *Deep Space Exploration Handbook* (Book 4 of the *Great Rift* box set). Additionally, the *Traveller Companion* contains detailed and optional rules for a variety of situations and can act as an aid to proving additional detail when fleshing out aspects of a universe.

Free web tools such as [travellermap.com](http://travellermap.com) (<https://travellermap.com>) can be of assistance to the creation, display and naming of systems. Travellermap.com may refer to system characteristics described in *Traveller5* from Far Future Enterprises; usage information for these additional characteristics is available within help pages at travellermap.com. Additional information on Foreven is available from Far Future Enterprises at <https://www.farfuture.net/FFEFOREVENSectorReserve2008.pdf>.



# CREATING A UNIVERSE

Before rolling any dice, the Referee should decide the basic ‘look and feel’ of the universe. Part of this is physical: the density of star systems or any variations in world generation based on general or localised factors of the universe but just as important are social factors. This broad outline may evolve and change, perhaps unrecognisably, as the Referee delves into the details. A random roll of the dice may inspire a new idea or change the direction of what was originally envisioned as a minor detail. Much as when writing a novel, characters sometimes take over the story and the end result can be better for it.

The Referee can begin by determining who inhabits this universe. Examining the background of the universe may influence some of the physical factors of the worlds within it, whether they suffered from some ancient war or natural catastrophe and whether the number and nature of the worlds will support the types of polities the Referee wishes to create. The basics of the universe could determine the need to make modifications to the system creation rolls or how a Referee should interpret those rolls.

In this guide, intelligent species, or at least beings recognised as such by spacefaring explorers, will generally be referred to as **sophonts**. Governing bodies will be generally referred to as **polities**. Polities include both interstellar political associations and organisations recognised as a world’s governing body in the Government score of the system’s profile. In addition, some organisations generally considered ‘non-governmental’ such as corporations, religions and special interest groups may be considered polities if they are in charge of a nation, world or multi-system jurisdiction. Small interstellar polities, which span more than a single system but less than several subsectors, are also referred to as **pocket empires**.

One detail for the Referee to consider is prevalence of intelligent life. This will determine how many native sophonts, ruins and habitable environments to scatter among the universe’s worlds. The *Traveller* world creation method creates many systems that are at least marginally habitable and assumes many, if not all, will have populations.

Later chapters cover methods for developing sophonts and polities in detail but, for the purposes of creating the universe, only a broad sketch is necessary and subject to change. The Referee can start by determining the number and relative size of these polities, giving them tentative names and determining how they interact with one another. Are they friendly, cautious, aloof or at war with one another? This could be simple or it could be complicated: perhaps hydrogen-breathing gas giant dwellers coexist peacefully with the inhabitants of terrestrial worlds but wage war against an asteroid-based machine civilisation, all in overlapping empires occupying the same star systems.

## THEMES

Giving a universe an overall theme will set the tenor of a campaign. Themes could include conflict between the intersecting colonies of two major sophonts, the decline and fall of an empire, or the scattered expansion and conflict of corporate, government and pioneer interests. Not everything needs to fit within the theme but it helps to put worlds and polities in context and generate the seeds for adventure.

## BACKGROUND

Both sophonts and polities evolve. The Referee should determine the state of development either for the entire universe or individually for major sophonts or polities. One factor to consider is the maximum generally available Tech Level. Again, this could be the same or similar for all polities, or it can vary widely. Also important is the trajectory of a polity or sophont’s development. Is it a time of expansion, stasis, decline or recovery? For vast empires, another factor to determine is the length of time they have been around. A 1,000-year-old empire may just be expanding into the region, might have long established worlds or have become nothing but scattered decaying outposts of a civilisation long beyond its prime.

## SYSTEM CREATION VARIANTS

The rules for creating sectors and mainworlds presented in the *Traveller Core Rulebook*’s World and Universe Creation chapter are time-tested standards. However, the background and themes of the Referee’s

universe may lead to differing stellar densities, occurrences of habitable worlds, sizes of populations and types of government. A Referee can modify the rules, applying differing DMs to system creation rolls or changing some or all results by fiat to establish background and themes. This is not cheating; it is the cornerstone of creativity, adapting existing rules to create a coherent vision. That said, unexpected or difficult to explain results from dice rolls often lead to further creativity and the Referee should not necessarily force all results to conform to a carefully prepared plan.

## MAJOR SOPHONTS AND POLITIES

Universes are occupied by people (sophonts) and organisations (polities). An overview should determine answers to basic questions such as:

- Who are the interstellar-capable sophonts?
- What interstellar polities are present?
- How widespread are native sophonts? How advanced are they? How are they treated by major sophonts?

These questions can have simple answers such as: one starfaring sophont, one government and no native sophonts, (e.g. Isaac Asimov's Galactic Empire in his Foundation series) or the questions may have complex answers best described in terms of a timeline or short background essay relating evolution from first contact or first star flight to the growth of polities.

The examples in this guide use the Charted Space universe to set the stage for development of the Foreven sector. Charted Space has the advantage of more than 40 years of development by many authors. Six sophont species who have independently discovered jump drive technology are referred to as the Major Races (Aslan, Droyne, Hiver, Humaniti, K'kree, and Vargr) and this includes three varieties of Humaniti – Solomani, Vilani and Zhodani – but none of the other 40+ human populations transplanted across Charted Space by the Ancients. All other sophonts are referred to as Minor Races. Most major polities in Charted Space are centred on a dominant Major Race (except the Droyne who have no known multi-system polities).

The largest polity is the Third Imperium, comprising hundreds of sophonts, but Humaniti – specifically Vilani and Solomani-descended people – is by far the most dominant. The Zhodani Consulate, although a very different culture, is another human-dominated polity with limited opportunities for other sophonts and the Solomani Confederation takes human dominance to

an extreme, considering themselves superior to other types of Humaniti and treating non-humans, even those sophonts they have raised to sentience from other Terran species, as second-class citizens.

In this sophont-chauvinistic respect, Humaniti is not unique. The K'kree make some allowance for other vegetarian sophonts but meat eaters are *G'naak* to be exterminated. The Aslan make allowances for other sophonts who learn to follow their culture and the Vargr have at least as many opinions on the status of other sophonts as they have polities across the Vargr Extents. Even the Hivers, although not a majority in their Federation of hundreds of sophont species, are dominant within their territory, controlling others indirectly through manipulation.

Other universes do not need to follow this single species dominant model. There may be true federations, or cooperatives, or tiered patron and client sophont organisations, or any other organisation the Referee might invent or borrow from fiction.

## ANOMALIES

Another factor to consider either before or after generating systems is whether the universe has one or more anomalies associated with it. Anomalies could be the major theme or minor variations affecting a world, system or subsectors. They are not required and more than one major universe-wide anomaly might be too much but some deviations from standard system creation may help make a universe unique. Examples of anomalies include:

- Large regions of the sector may be part of an interstellar rift or cluster, altering system density.
- A recent supernova may have sterilised worlds within a certain radius – this may affect some Atmosphere and Hydrographics scores as well as Population. An imminent supernova – whether tomorrow or a 1,000 years from now – may also inhibit settlement in a region.
- Ancient ruins may be scattered across the region from a long dead civilisation, leaving behind barren worlds. These worlds may just be barren in the unpopulated sense or in the sense of damaged or missing Atmosphere or Hydrographics. In the worst cases, this may result in replacing a mainworld with an asteroid belt, possibly still occupied by hazardous conditions or technology.
- Jump space may be more hazardous in certain regions. Lost ships may just give the region a bad name in startown bar gossip or actually cause the curtailment of settlement.

- Deadly diseases may exist on one or more worlds. This can be used as justification for an otherwise pleasant world being unpopulated but plague may spread, causing interdiction, evacuation or avoidance of multiple systems.
- Some effect – magnetic, biological or unknown – may inhibit or destroy technology on a world, leading to either its abandonment or a low Tech Level society in an otherwise high tech region. If this ‘condition’ can spread, it may lead to a growing area of pastoral or abandoned worlds.
- Endemic unrestricted warfare. Battles for control of systems may damage or destroy infrastructure, such as starports, and possibly the environment, adding taint from radioactivity or dust, possibly even reducing the depth of an atmosphere.

## BUILDING A TIMELINE

A rough timeline for the universe is a useful reference. It does not need to be complete but should consider how many years before the present era each polity and/or sophont species has been a major player. It should cover the arrival of a sophont species or polity, whether locally evolved or as settlers from outside, and when they established a significant presence and/or their current government. The timeline can include major events between polities such as first contact, treaties or wars. As with other initial details, the timeline is a rough sketch.

## EXAMPLE SECTOR: FOREVEN

Each chapter in this guide will conclude with an example based on the Foreven sector of Charted Space in the year 1105. Located just to spinward (left) of the Spinward Marches, Foreven lies beyond the border of the Third Imperium. In the Charted Space universe, Foreven has long been set aside as a Referee’s reserve, with only the sector’s star positions, the Zhodani frontier border within the sector and the characteristics and/or locations of a handful of worlds defined.

These examples illustrate the processes described in the chapter but will not be as complete as they might be in a full sector published guidebook, such as *Behind the Claw* or *Solomani Front*. They will instead provide a walkthrough of a single exemplar of the processes and generate enough information to fill out the corresponding worksheet. Beyond high-level development of the creation process and a list of sample profiles for the sector’s mainworlds, this guide will provide details of one mainworld, one polity and one native sophont.

This is enough to allow the Referee to begin to provide a solid background, a usable sector map and a jumpstart on creating a full sector writeup, something which can be left in this outline form or evolve into an entire universe.

Note that the Foreven details presented here are compatible with published material on the sector and is designed to fit well with the surrounding sectors but is beyond what is stated in the Foreven reserve documentation; none of it is ‘official’ or ‘canon’. Foreven remains a Referee’s reserve. While the examples used in this section are a starting point for those who wish to use them, they can (and should!) be modified or entirely ignored.

### Themes

The conflict between Zhodani and Imperial interests is an obvious theme for this frontier sector, especially in regions close to the borders. A secondary theme is one of division, danger and uncertainty, driven in these examples by the presence of an unfriendly minor sophont polity, fragmented trade routes and a series of failed settlement efforts near the sector’s centre as described in Anomalies on page 4.

### Background

Although the events and local politics of Foreven are yet to be determined, certain larger events affect the sector as it is part of the Charted Space universe. The earliest of these is the Ancients civilisation and scattered ruins or remnant settlements that may have resulted from their activity. Next, early settlement of the sector’s coreward regions thousands of years prior to the current time by the Zhodani Consulate and early Zhodani exploration provides an anchor for expansion into the sector. The arrival of explorers and settlers from the Third Imperium puts the static Zhodani border in flux. Afterward the results of the Frontier Wars and repression of psionics within the Third Imperium drives the evolution of the sector.

To retain freedom for the Referee to create unique names, for the Foreven examples make references to as yet unnamed subsectors using the following designations.

A	B	C	D
E	F	G	H
I	J	K	L
M	N	O	P

**Decision #2**

Name	Location	Bases	Statistics	Trade Codes	Allegiance	Gas Giants
Zdovesil	1212	ZM	A65588A-9	Ga	Zhodani Consulate	G
Tlebria	1618	?	??????-?	?	Zhodani Consulate	?
Hollis	2523	N, S	A370642-C	De Ht Ni	Imperial Client State	G
Alenzar	3229		C000414-9	As Ni Va	Imperial Client State	G
Raschev	3230		C8697C4-6	Ri	Imperial Client State	G
Avalar	1636	N	A75599C-C	Ga Hi Ht	Avalar Consulate	G

ZM: Zhodani Military base

N: Naval base

S: Scout base

Guidance for developing the Foreven example can be summarised in a number of decisions incorporating a combination of external factors and nuggets of predefined information.

**Decision #1**

Only the Zhodani Consulate will cross sector borders. This limits the size of local interstellar polities but ensures Foreven remains compatible with surrounding sectors.

**Decision #2**

This sector will use the defined worlds provided in the reserve documentation, and Parthinia, a Foreven world described in an official publication, although its location within the sector was not specified. The Foreven reserve documentation lists the following defined system names and details.

Zdovesil is the Zhodani provincial capital for the lakr (Foreven) sector. Telbria was mentioned as the base of a Zhodani shipping company in the *Classic Traveller* publication *Book 7: Merchant Prince* but nothing was defined for it. Hollis is an Imperial client state, which houses both Imperial Naval and Scout bases. Alenzar and Raschev are Imperial client states detailed in the *Classic Traveller* publication *Double Adventure 5: Chamax Plague/Horde* and Avalar is mentioned as the capital of the undefined Avalar Consulate.

Additionally, the world Parthinia, an independent world with a mining outpost and distant reservations for the Issugur species, was detailed in the *Classic Traveller* publication *Alien Realms* but its location within Foreven was only defined as 'six weeks from Zhodani space' in the lakr sector.

Unofficially, this world has been defined as located at hex 3018. Since that is as good a location as any based on the description, it is included in this guide as follows.

**Decision #3**

The Avalar Consulate will be defined as a small interstellar polity, mostly within the N and O subsectors, allied with the Zhodani Consulate.

The nature and exact size of the Avalar Consulate is to be determined. The first decision limits the Avalar Consulate's borders to within Foreven. While not required to be so, the name of the government implies some association with the Zhodani Consulate. To keep with that theme, it will be an ally or client state of the Zhodani. Therefore, Avalar will accept much of Zhodani culture, including psionics, but its people are not genetically Zhodani; instead, most of its human population will be descended from 'Imperial' humans of Vilani and/or Solomani descent. Other small multi-system states within the sector will either be opposed to Zhodani culture or neutral to it.

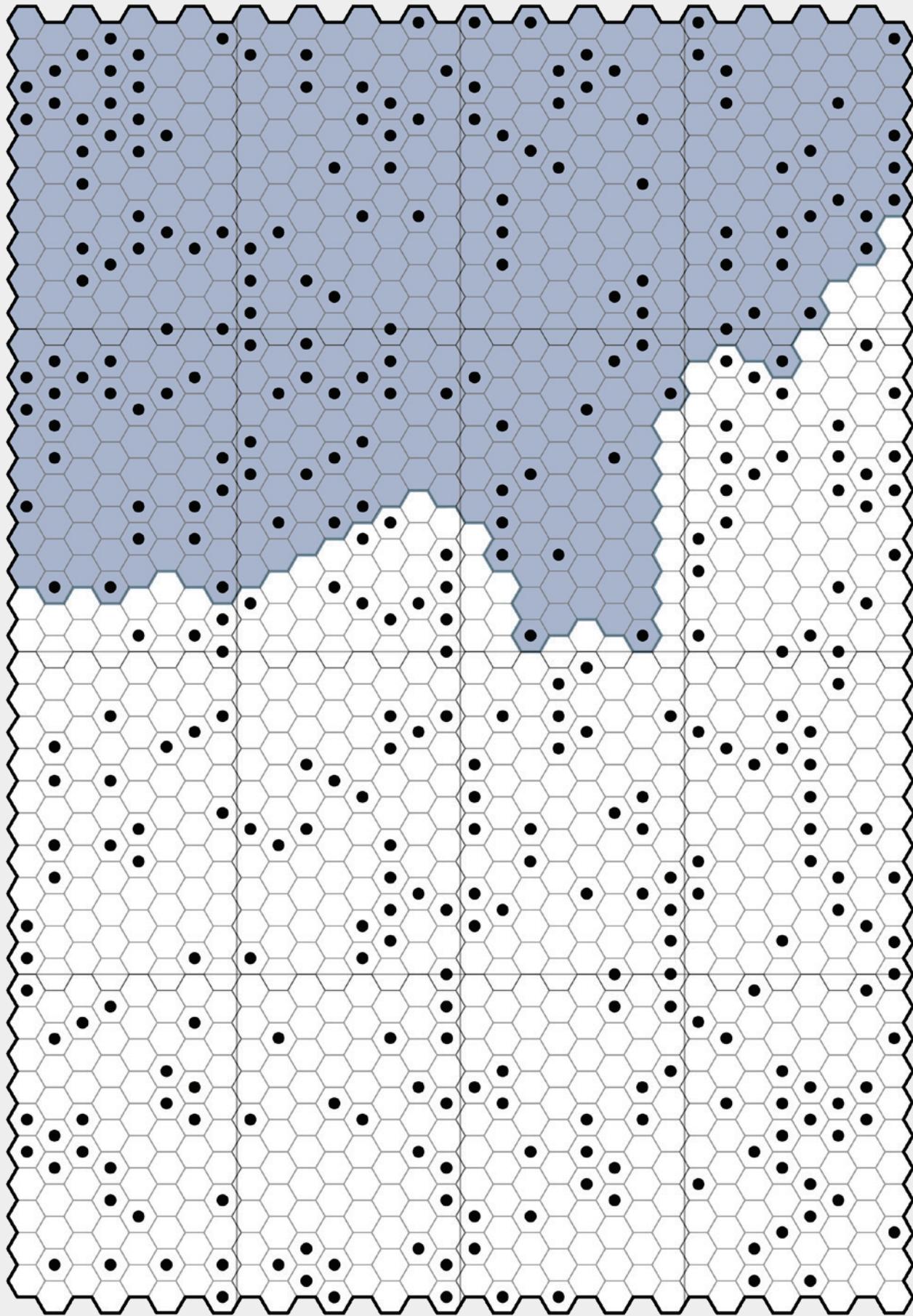
What causes settlement in the sector beyond the initial foray of the Zhodani? This big picture question determines the basic flow of settlement waves, covered by...

**Decision #4**

Settlement beyond the initial Zhodani foray into three subsectors – (A), (B) and (C), which will be considered 'mature' Zhodani settled areas – will be driven by Imperial expansion and Zhodani reaction after the First and Second Frontier Wars in 589–604 and 615–620.

Name	Location	Bases	Statistics	Trade Codes	Allegiance	Gas Giants
Parthinia	3018		C694655-C	Ag Ht Ni		?

**FOREVEN - 1105**



**CREATING A UNIVERSE**

## Major Sophonts and Polities

Foreven is part of Charted Space, with much of its coreward half dominated by the Zhodani Consulate. This forces the decision around major sophonts and polities to be humans of Zhodani-descent occupying the coreward region of what the Zhodani call the lakr sector. No other Major Races claim any significant portion of the sector, although individual worlds or small polities belonging to them or native sophonts may exist.

## System Creation Variants

Specific modifications to system creation procedures for both physical and social characteristics will be detailed in subsequent examples.

## Anomalies

Prior to generating additional systems, the Referee can determine if any interstellar-scale anomalies might affect the sector's systems. For Foreven, the actual star system locations are pre-defined, so stellar distribution is not an issue. Instead, large-scale effects should be more subtle.

For Foreven, a major anomaly emerges from its very status as a reserve sector. As a result, surrounding sectors are better developed and existing Charted Space lore tends to ignore the sector. To be consistent with this, the anomaly for this version of Foreven will be to make the sector difficult to traverse and therefore sparsely travelled. Although system locations are set, some of their characteristics will be altered during or after creation to make travel and settlement more constrained. To this end, an unfriendly native sophont species with interstellar capability just rimward of the Zhodani Consulate will exist and, separately, much of the coreward half of subsector J will consist of barren worlds, a 'Bermuda Triangle' where colonies fail and ships sometimes disappear for reasons unknown.

### Decision #5

The anomalous presence of a statistically large number of barren worlds will be defined as two small clusters in subsector J, the cluster at hexes 1124, 1224 and 1325 and the cluster at 1422, 1423, 1523 and 1622 plus some worlds on the periphery of that zone (0822,

1218, 1319 and 1419). To complicate matters further, the system at 1423, the only jump-2 link between the clusters, will have no gas giant, necessitating an ocean refuelling on the mainworld. Additionally, three systems that should be within the Zhodani Consulate in subsector C, 2209, 2309 and 2310, will be marked as barren, although this may not (or may) be related to the same anomaly.

Whether the cause of failed colonies and lost ships is jump space anomalies, hidden aliens or just a combination of coincidence, bad luck and superstition is not defined and up to the Referee to determine.

## Initial Timeline

This first pass at a timeline should cover major events in Foreven's initial development which will drive the creation and development of worlds and polities.

Date	Event
-300000	Ancients occupy Foreven, transplanting the Issugur from Terra to Parthinia.
-5000	Earliest Zhodani exploration of the sector.
-4000	Earliest Zhodani settlement in the sector
-1000	Zhodani Consulate border stabilises.
589	First Frontier War begins.
604	First Frontier War ends. Imperial forces driven from the Massina subsector.
615	Second Frontier War begins.
620	Second Frontier War ends. Zhodani defensive expansion begins.
800	Psionic Repressions begin. Imperial psionic refugees begin arriving at Avalar.
826	Psionic Repressions ends.

Notice the approximate dates for the pre-Imperial period and the undefined location of the initial Zhodani settlement. Two more Frontier Wars will follow the second, which will have spill-over effects into Foreven, but those can be worked out later. All pre-Imperial dates in this first timeline sketch are subject to further revision as the sector becomes more fully developed.

# SYSTEM CREATION

There are at least two approaches to creating a sector. One method is to prepopulate it with systems containing native sophonts, capital worlds and their polities, and building random systems around these cores. Another is to create all the star systems of a sector and then pick which systems are home to sophonts or polities. Other approaches, including purposeful assignment of system characteristics are possible but this guide will use an approach closest to the random creation method presented in the *Traveller Core Rulebook*: the sector will be randomly generated and sophonts, major worlds and polities will be determined after the fact.

The entire sector does not need to be developed all at once. It may be sufficient to detail just a quadrant – four subsectors – or even a single subsector to start but for the purposes of this guide, the sector will be the basic ‘unit’ for creating a place to adventure.

A sector is a grid of hexagonal parsecs 40 high and 32 wide, a two-dimensional grid representing a section of a galaxy’s spiral arm. As written, about half of these parsec-wide hexes are occupied by a significant star system with a mainworld and placed on the map. For universes operating under different assumptions, such as 2300AD, a three dimensional mapping system can take the place of a sector but that is beyond the scope of this guide. For other sectors, such as the heart of a globular cluster where dozens of star systems may occupy a parsec hex, or intergalactic space where dozens of parsecs may separate stars, the *Traveller* rules may need to be modified to account for different performance of interstellar drives. Ships capable of jump-1 to jump-6 performance are suited to sectors with between a 2 in 6 to a 5 in 6 chance of a system being present per hex.

## MAINWORLDS

The mainworld is the body within a system that corresponds to the codes presented on the sector map. It is the most important world within the system, but the definition of ‘world’ includes more than just planets. A Size 0 world is usually considered to be an asteroid belt, but it could be a lone dwarf planet, an artificial station, a string of habitats or a ring around a planetary

body. Likewise, mainworlds of other Sizes do not have to be planets in orbit around their sun. Mainworlds could be moons of larger worlds – gas giants, large terrestrials or brown dwarfs. The mainworld generally hosts the system’s starport or the most important civilian space transport hub. Over time, rival worlds, changes in population patterns, wars and revolutions may change which world is considered to be the mainworld. This status may even be in active dispute.

It is possible – and possibly preferable – to create the complete profile for a system before moving on to the next. However, if the sector is a frontier or sparsely populated region, or home to many starfaring sophonts, it may make sense to create the sector in multiple phases, initially creating just the physical scores of each: Size, Atmosphere, Hydrographics, plus related characteristics of temperature and gas giant presence. After that, another phase covers social scores of Population, Government, Law Level, as well as the scores which rely on them such as Starport, Tech Level, Bases and other facilities.

## Mainworld Creation Process

This method for creating a sector can consist of the following phases:

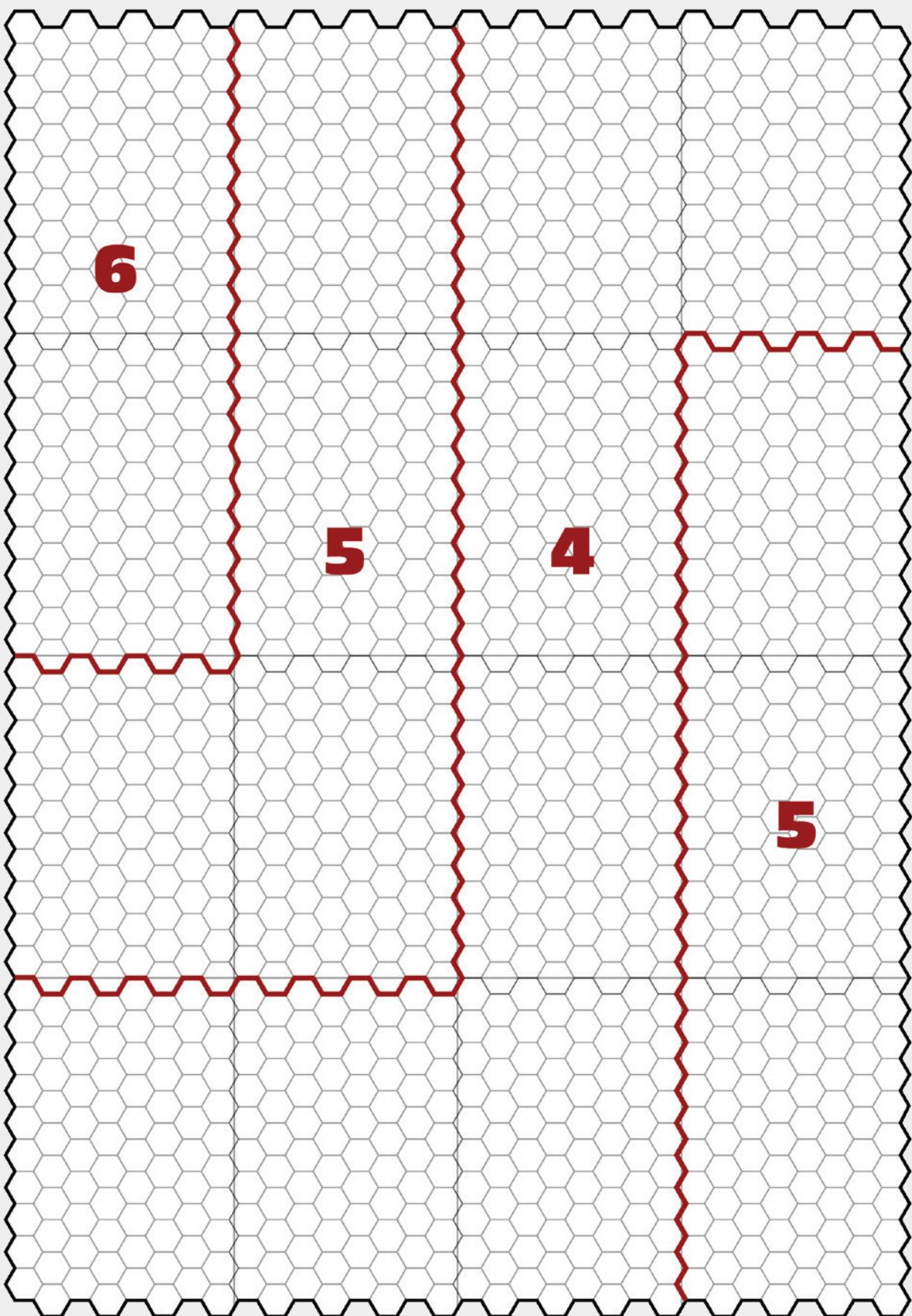
- Phase 1:** Determine system location
- Phase 2:** Determine physical characteristics
- Phase 3:** Determine social characteristics
- Phase 4:** Determine additional characteristics

This process creates the default entry for a mainworld but does not delve into additional details that can make a world unique. These will be covered in the Mainworld Design chapter.

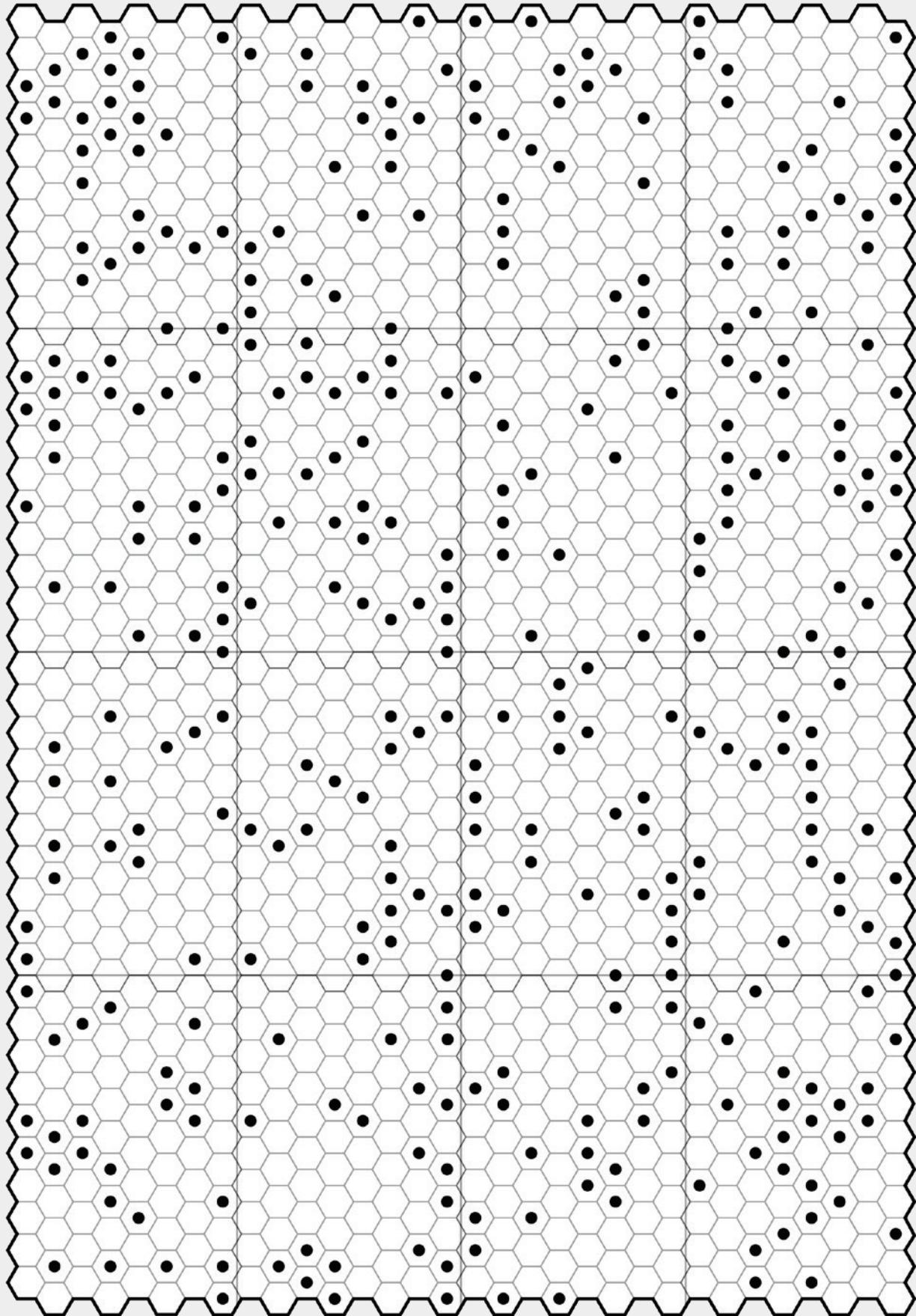
## PHASE 1: DETERMINE SYSTEM LOCATION

By default, a world and its attendant system is present in a sector hex on a 1D roll of 4, 5 or 6. On average, this results in 640 systems occupying the 1,280 hexes of a sector. While this provides many opportunities for jump-1 vessels to access most systems, it does create dense maps. In Charted Space, no sector contains more than 601 systems and most contain significantly

## MAP WITH CONTOUR LINES



## RESULTANT MAP



less. The Spinward Marches has 439 systems or about one third of the hexes occupied. Some sectors within rifts contain barely 100 systems.

System density does not need to be constant throughout a sector. The Referee can sketch ‘contour lines’ of stellar density on a sector map, indicating whether a system is present on anything from a 2+ to 6+ on 1D. For sparse rift areas, the frequency may be even less than one in six: on a 2D roll of 11+ just one hex in 12 will have a system; receiving a 12 on 2D means only one in 36 hexes will have a system or on average about two per subsector.

As with all results, the Referee is not at the mercy of the tyranny of dice. Any result can be changed or a system can be moved to create a desired effect, whether it be a long snaking jump-1 main of connected systems, purposefully isolated systems or systems which provide the only link between two clusters – a critical position that could bring a world great riches, influence and conflict. Still, sometimes random results will have consequences the Referee did not intend but which enrich the sector and provide unexpected opportunities for conflict and adventure, so the Referee should think about these new wrinkles before forcing systems to adhere to a plan.

## PHASE 2: DETERMINE PHYSICAL CHARACTERISTICS

Unless a massive planet-destroying war or some cataclysmic galactic phenomena affected the universe, creation of the physical attributes of a world follow the procedures laid-out in the *Traveller Core Rulebook*. Some variant sectors such as one based on ‘rare earths’ or otherwise hostile assumptions may alter this and other variants might skew results. We will cover the standard rules and some possible variants. Variants are optional suggestions for the Referee to consider and are not meant to be exclusive; the Referee is free to come up with their own.

### Size

Physical attributes begin with Size, a simple 2D-2 roll giving a result from 0 to 10. A 0 traditionally indicates an asteroid belt but could be anything smaller than 1,000 kilometres across, whether natural or artificial. 10 is the largest Size on a standard roll, representing a world about 25% wider than Earth and about twice as massive (given similar density).

The table on page 249 of the *Traveller Core Rulebook* provides examples and gravity values for worlds of different Size. If all worlds had the same density, gravity would scale directly with diameter but larger worlds may be denser than smaller worlds, skewing gravity upward; there will be as many exceptions as adherents to this rule of thumb.

Finally, Size does not determine anything other than a world’s diameter. Size 0 could be a single small natural body, an asteroid belt, an artificial space station, even a planetary ring. Likewise, a planet of any Size may actually be a moon of a gas giant or another planet. Such details are left to the discretion of the Referee.

**Variant:** Planets called super-Earths have been discovered to be common in many star systems and likely represent ‘solid’ or ‘terrestrial’ worlds up to a little less than twice Earth’s diameter and as much as eight Earth masses. To allow for these worlds, Size 10 can be rerolled to allow for larger worlds, either by rolling 1D+9 and creating a linear Size increase or rolling 1D and adding one to Size every time a certain result (4+ perhaps) is rolled, allowing a decreasing distribution up to Size 15. Worlds larger than 15 are likely ‘mini-Neptunes’ shrouded in a dense atmosphere suitable as a small gas giant for refuelling purposes but not as a world to inhabit.

### Atmosphere

If a planet is Size 0 or 1, its Atmosphere is 0. Otherwise, Atmosphere is generated by rolling 2D-7 and adding Size. Optional rules may provide specific varying meanings for Tainted and Exotic atmospheres. *The Journal of the Traveller’s Aid Society Volume 2* (page 60) delves into examples of various Exotic, Corrosive and Insidious atmospheres. A result of 15 indicates an ‘Unusual’ atmosphere that can be anything the Referee invents. If using a variant of Size that includes super-Earths, Atmosphere 15+ should be treated as 15.

**Variant:** Revisions of previously published sectors have removed many worlds of small size and substantial atmospheres. That a small world cannot retain a dense atmosphere may be debatable. For instance, with rules-as-written, a Size 3 world has a 1 in 36 chance of having a Dense (8) atmosphere. Such a result could be explained by it being an unusually dense world, a young or cold world, which has yet to lose its atmosphere, or even a terraforming project. However, if the Referee decides to limit the density of Atmospheres for worlds smaller than Size 5, there are two methods to accomplish this: Increase the Size or thin the Atmosphere.

For an established sector such as the Spinward Marches, the method that was applied to retroactively adjust the Size and Atmosphere relationship while still maintaining the established ‘nature’ of the world was to simply increase the Size of any world with greater than Atmosphere 3 (Very Thin) to Size 5; this increased the prevalence of Size 5 worlds to nearly 33% or twice the expected frequency. To achieve an atmosphere-thinning effect for a new sector it may make more sense to keep the distribution of world Sizes but decrease the density of Atmosphere. This can be accomplished in a number of ways:

1. A simple DM-2 applied to Atmospheres of worlds Size 4 and below would work but would skew towards more vacuum worlds.
2. A Bane on the roll on such worlds, rolling three dice and taking the value of the two lowest, would still skew towards vacuum but allow more variance, still including, for instance, the rare Size 3 Atmosphere 8 world.
3. Another method, more labour intensive for manual world creation, would be to reduce thicker atmospheres by one to a predetermined point but keeping any ‘taint’: Dense becomes Standard, Standard becomes Thin, Thin becomes Very Thin, Very Thin becomes Trace. To avoid a strong skew toward vacuum worlds, Trace would remain Trace.

While DM-2 for Size 4 or smaller is the simplest method, it may change the taint status of a world, as a result of 6 (Standard) would become 4 (Thin, Tainted). For a new sector, this should not matter.

A separate variant besides, or in addition, to modifying Atmospheres of worlds of Size 4 and smaller is to give Size 1 worlds a chance of having a slight atmosphere by applying a straight DM-5 to the Atmosphere roll for Size 1, resulting in a natural 12 granting a Size 1 world a Trace (1) atmosphere. Neptune’s moon Triton could perhaps be considered such a world, small for Size 1 with an atmosphere 1/70,000<sup>th</sup> of Earth’s.

## Hydrographics

The Hydrographics code of a world of Size 0 or 1 is 0. For larger worlds, Hydrographics is determined by 2D-7 and adding the planet’s Atmosphere. To this result, apply DM-4 to Atmospheres less than 2 and greater than 9.

**Variant:** Some older versions of *Traveller* based Hydrographics on 2D-7 plus Size instead of Atmosphere. This assumes that a world’s gravity is more important than its atmospheric pressure in

retaining liquid; as of yet, we do not know if this will hold true for exoplanets, so either method could be supported by theoretical models. Referees who choose to use Size instead of Atmosphere will on average achieve the same result but with different variances.

Additionally, as certain worlds without atmosphere (Europa and Enceladus come to mind) have no Atmosphere yet are entirely covered in ice, an argument could be made that the DM-4 for Atmosphere 0 and 1 is not necessary. Also consider ice at the poles of the Moon and Mercury or a theoretically ice-covered dark side of a world tidally locked to its sun, and higher values for Hydrographics on an ice world could be imagined in just about any corner of a star system.

## Temperature

A world’s temperature is an important characteristic that is generated as part of world creation but not listed in the world’s profile or its Trade Codes.

**Variant:** This is not so much a change in procedure but a suggestion to retain information. Although not present, in the *Traveller Core Rulebook*, climate can be added to the Trade Code section of the planet record. These codes are Fr (Frozen), Co (Cold), Ho (Hot) and Bo (Boiling). Temperate could be assumed to be the default.

## Gas Giants

Gas giants are a physical characteristic not directly related to the mainworld but the system itself. On a 2D roll of 10+ a gas giant is *not* present. This is the equivalent of a gas giant being present in five of six systems.

**Variant:** The *Traveller Core Rulebook* procedures make no attempt to specify the number of gas giants, asteroid belts or other planets in a system. The Expanded Star System Creation procedure in the *Deep Space Exploration Handbook* of *The Great Rift* box set covers methods to create these details.

## PHASE 3: DETERMINE SOCIAL CHARACTERISTICS

Physical characteristics of a mainworld are unlikely to change during the course of a campaign or the lifetime of a civilisation, barring cataclysmic wars, nearby supernovas, terraforming projects or centuries of industrial pollution, but social scores – Population, Government, Law Level and related values such as the world’s Starport and Tech Level – are subject to change and have the most impact in creating a sector.

## Population

The standard roll for determining Population is 2D-2, with the resulting digit representing the rough power of 10 of the number of residents on or near the mainworld. Population 0 indicates no permanent population.

**Variant:** An unmodified Population roll is suitable for a sector with a long-established settlement pattern. Under normal circumstances, with natural increases and immigration, a population could reach 10 billion within several centuries of initial settlement. In many regions of Charted Space, where the Major Races have travelled the stars for thousands of years, any world could conceivably reach any population level and could exceed Population 10. A maximum score of F (one quadrillion) is possible on a world completely covered by a kilometres-high arcology, although the Referee might need to get creative in explaining food production and heat dissipation. A Referee could roll an extra 1D on a result of 10 and turn a result of 6 into Population 11. Repeating this process after each increase might be less dramatic, although it would still leave 1 in 1,296 worlds with a population in the trillions.

Given the extreme effect of results beyond tens of billions of people on the balance of a sector, it may be best to leave extreme population levels to Referee fiat to achieve a desired effect.

The Sector Details chapter beginning on page 17 describes a method to create Population modifiers based on the age of settlements. This is most relevant to frontier sectors or those where at least one major polity has not achieved more than five centuries of interstellar expansion. If using this population pattern determination, the Referee should use the steps described starting on page 17.

## Government

Government is determined by rolling 2D-7 and adding the planet's Population code, with a result of less than 0 equalling 0. Pages 253–255 of the *Traveller Core Rulebook* detail the meanings of Government codes and provide tables and procedures for determining factions and cultural differences present. These specifics can be used as guidelines or prompts to create detailed world descriptions as described in the Mainworld Design chapter.

**Variant:** Certain sophonts or multi-system governments may have restrictions on the types of governments available, limiting the Government code to a subset of values. In these cases, the Government

code is determined by the Referee, or the rather broad definition of Government codes can be reinterpreted to represent a 'common human equivalent' of these non-standard governments.

## Law Level

Law Level is determined by rolling 2D-7 and adding the Government code, with a result of less than 0 equalling 0. Descriptions on pages 255–257 of the *Traveller Core Rulebook* interpret restrictions and effects of Law Level, which become more restrictive and oppressive as the code increases.

**Variant:** As with the Government code, specific sophonts or polities may have alternate ranges or definitions of law level, perhaps always allowing or banning certain possessions or behaviours, or imposing harsher or alternative punishments for crimes. These may alter Law Level or just its interpretation, something which should be addressed in a detailed description of the world.

## PHASE 4: DETERMINE ADDITIONAL CHARACTERISTICS

Additional attributes in the world's profile include the first and last listed values: Starport and Tech Level. Population is the modifier to Starport values but Tech Level is determined by a broad range of factors. Both may also be influenced by sector-specific modifications as described in the Sector Details chapter.

## Starport

A system's starport has a major effect on its Tech Level and connection to interstellar society. The 2D roll for Starport is modified by the world's Population, with DM+1 if the Population is 8–9, DM+2 if 10+, DM-1 if Population is 3–4, and DM-2 if 2-. As an 11 is required for a Class A starport, lower population worlds are unable to support a facility capable of building interstellar craft, which is sensible.

Starport class determines the availability of services and the presence of facilities and bases as indicated in the Starport Facilities table on page 257 of the *Traveller Core Rulebook*.

**Variant:** A variety of factors can influence the Starport class of a world, including overall Tech Levels of a sector, restrictions on technology or other government policies. For instance, a world without interstellar capability ought not to have a Class A starport, unless it is operated by outside parties.

In universes such as Charted Space, where only a limited number of sophonts have achieved jump drive technology, native sophonts beyond the frontier are not likely to have Class A starports unless they have benefited from technological leakage. For such worlds, a DM-2 or greater may be appropriate or, if they are intended to be technologically sophisticated, no DM would apply but results of Class A would be changed to Class B. If the universe assumes most sophonts are technologically primitive – as humanity has been for most of its existence – a larger negative modifier, perhaps as much as DM-4 or -6 could apply.

Conversely, in universes where interstellar travel is common, a positive DM could be applied, preferably beyond a certain minimum population, as it likely requires thousands of people to support a Class A starport without resorting to widespread automation.

Unpopulated or barren worlds will generally have a starport of Class X. Within a polity, Class X usually indicates an interdicted system and unpopulated, non-interdicted mainworlds may instead be assigned a Class E starport, indicating either an automated landing beacon or flat and cleared area designated as a landing zone. Some Class E starports may have been sites used by early expeditions or failed settlements, or may just be cleared bedrock known to support the mass of a starship. Outside the borders of polities, most worlds with no population will have a Class X starport; they will not be interdicted but do not have any marked landing areas.

Starport class is a code the Referee may choose to arbitrarily assign when creating a desired world; it is the code that can have the greatest effect on Tech Level. From Starport also follows facilities, including bases and highports. The rolls for these facilities are details that can be manipulated or ignored when creating a desired outcome within a sector, such as a fortified frontier or a world either requiring or prohibiting landings on its surface.

## Tech Level

The Tech Level table on page 259 of the *Traveller Core Rulebook* provides a broad range of DMs to the Tech Level roll. On the same page is a Tech Level and Environment table, listing the minimum Tech Level required to sustain a viable (human) population on worlds with various Atmospheres.

Worlds with Atmosphere 5, 6 or 8 have a minimum sustainable Tech Level 0. Non-human sophonts may have different minimums, with a starting point of TL0

for their native world. Taints (4, 7 and 9) vary greatly between worlds and a non-human sophont will likely be subject to a TL3 minimum on worlds with a taint differing from their homeworld unless the sophont has a built-in generalised filter organ – even then, differences in biochemistry may present challenges to survival.

**Variant:** A sector may have limits and additional modifiers to Tech Level. A common limit is a Tech Level maximum or for specific polities or sophonts within the sector. This need not be absolute but should only be exceeded in a deliberate manner. In Charted Space, the common maximum Tech Level for the Third Imperium is 15, with most surrounding states lagging one level behind at 14.

Both environmental minimums and societal maximums for Tech Levels are guidelines. A Referee may choose to modify Tech Level to reach the minimum, perhaps by assigning a higher value to substitute for the 1D roll result (up to a value of 6) and/or improving the Starport to make the minimum value a possible result of a 1D roll, or the Referee may choose to treat the world as a Population 0 barren world, perhaps with the ruins of a failed settlement.

On the opposite end of the scale, a Tech Level exceeding a sector's or polity's maximum may be adjusted downward by a similar method or left intact and described as a research station developing experimental technologies or a home to functional artefacts of a long-dead species or fallen empire.

Another factor to consider is the nature of native sophonts. Tech Level minimums and DMs based on Size, Atmosphere or Hydrographics, or even a low Population, are not appropriate on a sophont's homeworld since their homeworld has their 'preferred' environment. Likewise, colonies established by sophonts accustomed to a different environment should have their own DMs for environments.

Some sectors may have a Tech Level floor, at least for certain polities. The Referee could decide that a polity does not let its systems lag its maximum Tech Level by more than one or two levels. Reaching the 'minimum polity TL' may be achieved by the same methods used to raise Tech Level on worlds with hostile environments. Tech Level floors can be appropriate for some small expanding polities but as time and distance increases, such uniformity is difficult to maintain. An especially advanced polity can have an overall DM added to all worlds, although such a DM is usually best added to the Starport roll and not to the Tech Level roll directly.

Finally, certain worlds can just be more advanced. A polity's capital world and possibly its subsidiary (such as cluster, subsector or sector) capitals may have a DM applied to the Tech Level or the roll 'adjusted' to a higher level. Again, a DM to the Starport roll may be more appropriate, or a Referee's declaration that the TL roll is a 6 for these worlds, up to the polity's maximum TL.

Rather than adjusting a roll's result, it is often better to accept the consequences and use odd results to create an interesting background for the world, such as: how does that Population 1 world support a Class A starport? Or, how do people survive on a vacuum world with only Tech Level 5?

Another factor to consider is that the Tech Level determined for the world is only what is supportable by the local economy, whether by production or imports. Pockets of both higher and lower technology can be present, within limits of the sector. Either currently imported parts or old technology still maintained from an earlier era could keep that TL5 vacuum world running. In other cases, the Tech Level listed may only apply to the region around the starport and a vast outback of more primitive people may exist, perhaps poorly counted in the world's official Population code.

## Trade Codes

The trade codes for a world are determined by the table provided on page 260 of the *Traveller Core Rulebook*. These trade codes provide a shorthand description for a world, indicating whether it is rich or poor, industrial or agricultural, desert or waterworld, among other factors.

## EXAMPLE SECTOR: FOREVEN

Foreven has predefined system locations. This makes Phase 1, the determination of stellar density and placement of systems unnecessary. However, all but the fully detailed systems of Foreven need full physical and social characteristics plus Starports and Tech Level developed. The maps and forms provided with this guide allow the Referee to create a unique sector following standard world creation procedures or with whichever variants the Referee desires to use.

To provide a completed example of phase 2 of the creation process and allow for further sector development, this guide includes an appendix with a complete set of system profiles generated using the following procedures and variants for physical characteristics:

- Size (2D-2) but on a 10, roll 4+ to increase to Size 11 and repeat to a maximum size 15.
- Atmosphere (2D-7 +Size) but on Size 2–4 apply DM-2, on Size 1 apply DM-5, on Size 0 leave as 0.
- Temperature (2D + Atmosphere DMs) with centring DMs for Atmosphere 4–9 (treat 1s as 2s and 6s as 5s).
- Hydrographics (2D – Atmosphere) Standard temperature DMs for Hot and Boiling worlds, DM-4 if Atmosphere 9+. For Cold or Frozen worlds, ignore the standard DMs for Atmosphere 0 and 1.

Additionally, Prior to completing phase 3, the example Population scores have been adjusted as described in Population Patterns on page 17.



# SECTOR DETAILS

A sector's background, theme, timeline and any anomalies will determine details that diverge from the system creation system. If a sector has been settled for thousands of years, with multiple waves of settlement, wars, collapse and growth, its systems' Population can use standard values and its complex history can be outlined only in the timeline and histories for specific worlds. But a frontier or 'unsettled' region might only have native sophonts and a few scattered settlements of emerging or long vanished civilisations. These less cosmopolitan regions require special attention from the Referee to mould into a point-in-time view for the Travellers to explore.

Populations normally take time to grow into the billions and Tech Levels may have minimum or maximum levels dependent on the Atmosphere of a world or the technological sophistication of the polities. As mentioned previously, changing the Starport class of a world may help provide a basis for a facility the Referee wishes to place on that world, whether it is a major naval facility, scout outpost or corsair base.

While the Referee can tailor a world to exact specifications, a characteristic of *Traveller* is dealing with the results of an unexpected dice roll. A Traveller's career can take unexpected twists during generation and, similarly, anomalous results for generating alien worlds may seem at odds with the Referee's vision. Wherever possible, the dice roll should drive the creation process, forcing the Referee to come up with a creative solution, one never envisioned but which can provide unexpected flavour. It is better to use DMs rather than fudged rolls.

## POPULATION PATTERNS

The largest variance is generally centred on Population. A sector's earlier history, as expressed by the existence of native sophonts and lost colonies, or expansion (or contraction) of interstellar polities, will drive modifications to the 2D-2 roll. Any sector where widespread settlement is less than five or so centuries old has a high probability of deviating from the standard Population roll.

Although there could always be exceptions for factors such as mass cloning or forced emigration, for frontier sectors, the Population of worlds without native sophonts will start low and scattered, with many uninhabited worlds. Settlement patterns will depend on the type of expansion. Growth from a central world early in its colonial expansion may look like concentric circles – ripples – with inner regions near the homeworld more likely to be populated than the outer fringe. Growth along the frontier of a large polity such as the Third Imperium might resemble waves: more or less straight gradient lines of expansion spreading from the direction of the central regions. Multiple states may have overlapping or encroaching waves, or ripples of settlement of differing sizes and ages, and such scenarios can lead to interesting sectors with many opportunities for intrigue and conflict.

Ripples and waves will not necessarily begin at the same time. The Referee should use the timeline to determine when these begin to occur, either creating a series of sketches to show changes over the course of centuries or a single map with 'contour lines' of settlement ages and associated modifications to Population.

For a frontier sector, the Referee can use the following Multipass Mainworld Creation Process variant to develop a sector's natives and create point sources and waves of settlement.

### Step 1: Native Sophonts

Determine frequency, place homeworlds and establish mainworld characteristics.

### Step 2: Scattered Settlements

Determine sources and frequency, then place settlements and establish mainworld characteristics.

### Step 3: Pocket Empire Ripples

Determine whether, when and at what rate natives or scattered settlements may have expanded from their home systems.

### Step 4: Settlement Waves

Determine age and propagation rate of thin and thick settlement waves from outside the sector.

### Step 5: Population Generation

Determine population and other social characteristics of pocket empire colonies and settlement waves based on DMs from previous steps.

## Native Sophonts

Determine a frequency for native sophonts. In some sectors, there may be no native sophonts; in others nearly every habitable (and some exotic) mainworld may have a native sophont population. A reasonable frequency per system for native sophont occurrence could be 1 in 36, or a roll of a natural 12. A Referee can then determine placement by one of these methods:

- Randomly, rolling for each system on a ‘full pass’ across the sector. As this will produce a fair number of sophonts on inhospitable worlds, consider what to do about worlds with Atmospheres outside the range of 4–9 or D and E. Exotic aliens living on worlds with Atmospheres A,B,C or F are justifiable and can be interesting to create, however those on worlds with Vacuum (0), Trace (1) or optionally Very Thin (2–3) Atmospheres, may be less likely.

In the cases of scant or non-existent atmospheres, native sophonts could be retained as exotics with little need for respiration, moved to the next suitable system or their existence can be treated as ‘mysterious alien ruins’ instead. If moved the Referee should consider rolling for the presence of native sophonts for that system as well, leaving a slim chance of two sophont species occupying the same world or system. A Referee could also choose to always roll again when a native sophont is present, increasing the chances of systems with two natives present.

- The Referee could divide the number of systems in the sector by 36 (or whatever chance is assigned to native sophonts), rounding to the nearest integer, then choosing or randomly placing sophont homeworlds. This method is faster and may also be desirable if the Referee wants to place sophonts in specific regions or ensure that sophonts inhabit worlds with certain characteristics to match their envisioned nature.

Once the Referee places these native sophonts, Population, Government, Law Level and other scores can be determined by regular methods or assigned based on the Referee’s vision of the sophont culture. Native worlds will tend to have moderate to high population levels, although some may represent a rare or dying species. A standard roll of 2D-2 may not be appropriate for these sophonts (and a result of 0 would indicate an extinct race, lonely survivors of a lost civilisation or some singular being that somehow achieved full sentience). In most cases, native population will number at least in the millions (Population 6+).

Possible methods to determine native sophont population include, but are not limited to:

- Rolling 2D-2 but rerolling any result below 6.
- Rolling 2D-2 but changing any roll below 6 to 6 or 7.
- Rolling 2D3+4.

Modified procedures for sophont development are detailed in the Native Sophonts chapter. At this early stage, the Referee need not create much detail, not even a name.

## Scattered Settlements

In sectors where interstellar travel has long been present, or where fallen civilisations may have remnant settlements, the Referee should establish a frequency for old colonies. These settlements should be considered separately for different sophonts or civilisations and could be common or might average less than one per sector. The Referee can place these settlements randomly using the same procedures as with native sophonts or in accordance with a desired location. In most cases these settlements should have at least enough technology to survive long-term on their colony world or be treated as failed or abandoned colonies with nothing but ruins remaining. Alternatively, the colony might survive in jury-rigged habitable spaces maintained by ancient equipment, primitive means or advanced technology acquired from offworld contact.

The size of these scattered settlements can vary to such an extent that a standard 2D-2 Population roll might be appropriate. In Charted Space, in addition to native sophonts, there may be a scattering of transplanted Minor Races, Droyne and Chirpers left over from the Ancients era. The Referee can treat these scattered settlements as old enough to be considered ‘native’ for Population rolls.

For scattered settlements originating from established sophonts and polities, the Referee can continue to generate characteristics for the mainworld and, depending on the nature of the settlements, the Referee can establish modifiers to the Starport roll to skew results towards either lower or higher Tech Levels.

Additionally, beyond the borders of an established or expanding polity, a few scattered forward outposts may exist. The Referee can treat these as scattered settlements but should use lower Population values, perhaps rolling 1D or 2D3. Outposts of expanding empires will tend to have higher Tech Levels, up to that polity’s maximum, perhaps gaining a DM to the Starport roll or a fixed value – such as 5 or 6 – in place of the Tech Level roll.

## Pocket Empire Ripples

After establishing the characteristics and at least the general nature of a sector's native sophonts and scattered settlements, the Referee can determine if any of these have managed to settle nearby star systems either by jump drive or slower-than-light technologies. The timing of when they achieved starflight will determine the age and distribution of the ripples. In more complicated sectors, these pocket empires may create secondary ripples of settlement from earlier colonies, especially if those achieve independence or if their homeworld's civilisation later collapses. When sketching ripple expansion on a sector map, expansion from a single point can be represented by 'contours' emanating from a central point. When compared to large polity settlement waves, these contours could be considered thin or thick waves, depending on the policies and resources of the pocket empire.

In general, a pocket empire requires a minimum TL8 for slower-than-light colonisation, which will likely progress at no more than one-tenth of light speed, meaning at best three decades per parsec. TL9 allows for jump-1 travel, with multiple jumps able to cross wider distances or, if jump drives are not available in the originating system, faster sub-light travel, perhaps at an additional 10% of light speed for every Tech Level above 9. In Charted Space, only a limited number of Major Races have independently discovered jump drive technology but others have acquired it through trade or reverse engineering of salvaged vessels.

A pocket empire can be as small as a home system with a single colony system or it may span a subsector or two. Any polity larger than about 50 systems should be considered a major polity.

## Settlement Waves

Unique situations can result in various settlement patterns, driven by a variety of factors affected by everything from a sector's astrography to political considerations to wars to 'gold rush' sprints to distant systems. Many factors shape waves and rates of settlement, but in general, starfaring sophonts settling a frontier will begin with an initial 'thin wave' of pioneering systems, filled with a combination of outposts, commercial development, and colonies in promising systems. Following this initial wave, possibly centuries later and possibly propagating slower, will come a 'thick wave' of settlement to fill this sparse pattern and turn the frontier into an established region.

Depending upon the size of the frontier and settlement pattern, a thick wave may eventually overwhelm the thin wave and after a few centuries of development,

the initial settlement pattern can be ignored. As stated earlier, some polities or sophont species may establish outposts prior to this thin wave but as the wave propagates the 'current era' effect of these outposts' existence will be overwhelmed by the wave, perhaps standing out as higher population worlds, perhaps fading to obscurity as people move on to other systems. Unless the Referee wants to preserve this history of initial outposts, it is unnecessary to generate scattered settlements for a polity or sophont species, which has propagated a thin wave across the sector.

A thin wave of initial settlements can propagate quickly, crossing a sector in a century or two. A thick wave requires more dedicated resources and may require a century just to cross a subsector. If settlement waves are limited to slower-than-light technologies, they will be much slower. While a sector could be crossed in little more than a century, actual progress of a wavefront is likely to be much slower. Sub-light expansion waves will likely require a millennia or more to wash across a sector. Outlier settlements can exist but these should be treated as scattered settlements, not waves, unless a mass exodus is part of their background.

Waves can peter out and stop from societal inertia, falter at a certain distance from the central state, run into physical barriers such as rifts or gaps exceeding the capabilities of technology to cross, or they might encounter political barriers such as other polities or treaty obligations.

For physical barriers, Tech Levels can create uncrossable rifts of differing sizes. Not until TL11 can a starship make a two parsec jump, although fuel depots, ships carrying fuel for two jumps and other methods allow crossing a two parsec gap. A three parsec gap creates a bigger impediment. Not until TL12 can a ship make a three parsec jump. Even then, the cost and fuel volume requirements of longer jump vessels will make them less economical. For the large transports required for colonisation, a wave contour might follow a jump-1 main or a route of two parsec passages, bypassing or terminating at three parsec gaps.

These technologically or economically created gaps may cause a pause in settlement, only overcome by increasing technology centuries later, leaving snaking patterns along jump-1 mains and clusters with isolated systems remaining unsettled for long periods. At the very least, larger gaps will slow or distort a settlement wave, which is likely to flow via the path of least resistance unless focused by a particularly valuable destination.

If few impediments to expansion exist, a wave can be assumed to cover a certain number of parsecs per century, perhaps roughly indicated by subsector borders. When sketching a timeline, the Referee may wish to sketch gradient lines showing each century of thin and thick wave expansion at a subsector or sector level, noting the effective DM for Population within each gradient. As lines from different polities intersect or overlap, events such as wars or treaties defining borders should be noted on the timeline and gradient lines adjusted as necessary. Neutral zones, perhaps subject to low or non-existent settlement, may form. These could be demilitarised zones, unpopulated systems or lawless regions, depending upon the sector.

Conditions such as an expansionist culture, resource grabs or strategic settlement may push a thick wave rapidly, but in an irregular pattern, covering only a few strategic subsectors, clusters or mains. Where few paths across a small rift or void exist, some systems can become bottlenecks or crossroads, strategic points that might grow to provide more services or which might become points of contention, control or war.

Additional adjustments up to the sector's 'present' time can add to the timeline and further adjust Population DMs. An example of this is the Spinward Marches, where initial thin expansion by the Third Imperium in its earliest centuries eventually intersected the slower moving or stagnant borders of the Zhodani Consulate. A number of Frontier Wars over five centuries adjusted borders as the sector filled in. For year 1105, the end result is simply equivalent to a standard 2D-2 Population roll. However, if envisioning a sector equivalent to the first two Frontier Wars, an entirely different and more complex population pattern, considering Imperial thin and thick waves and pocket empires such as the Sword Worlds and Darrian Confederation (among other factors), would be more appropriate for population generation.

## Population Generation

Assuming human-like population growth, if a region is only settled by a thin wave, apply an initial DM-5 to the Population roll of systems within the wave, making the roll initially 2D-7, and add +1 per century since the wave began (e.g. 2D-4 if the thin wave reached the system 300 years earlier). For a slowly moving wave, this may create a gradient pattern across the sector emanating from the settlement source. After five centuries, this thin wave gradient has effectively turned the region into settled space with

normal population patterns (2D-2), although the thinly populated 'wavefront', if continuing, could be a few sectors beyond the sector being created.

For a thick wave, or a concerted settlement effort, apply DM-3 to regions where the thick wave is less than a century old, adding +1 per century. This allows a regular 2D-2 Population roll for thick wave regions older than 300 years. Many frontier regions will never receive an official thick wave but after five centuries, the secondary effects of the thin wave will have effectively created a settled region of normal population distribution as the population diffuses to systems initially left fallow. This diffusion effect will not occur if the initial wave is so sparse as to constitute a 'scattered settlement' pattern, leaving just a few isolated worlds that might or might not later develop pocket empires around them. Sublight settlement waves are less likely to defuse over time; systems not settled in the first century of a thin wave might remain barren until visited by jump capable craft. Until then, when generating Population for these sublight waves, the Referee might decide to treat all or some systems with Population 3 or less as Population 0.

Once the Referee has determined appropriate DMs for settlement waves, the Population for systems not assigned to worlds occupied by native sophonts or scattered settlements are determined by 2D-2 and any DM determined by the age of settlement waves. Systems in regions of the sector that do not have native or scattered populations established and which have not yet experienced a thin wave will remain barren and automatically have Population 0.

## OTHER FACTORS

Factors within the sector which are external to the world itself may influence the world's final characteristics. These include its allegiance or membership in a larger polity or level of contact with interstellar society as a whole. Other factors include the imposition of Travel Zones as warnings or prohibitions against visiting a system.

## Allegiance

If a world is a member of an interstellar polity, the polity itself may influence the world's Government, Law Level, Tech Level, Starport, even Population. Polities could require specific forms of government or enforce legal restrictions, which translate directly into the world's listed Government and Law Level values. In addition to a maximum Tech Level, a polity may bolster or inhibit technology of member worlds.

Additionally, strategic placement of naval bases, which generally require a Class B or A starport to support, may bolster the Tech Level of the world through the DM these upgraded Starports would apply to the Tech Level roll. The Referee can impose values for these characteristics and place bases as necessary to support the vision of the polity, although leaving incongruous but ‘naturally’ rolled characteristics in place is a way to provide more flavour.

## Isolation

The default DMs and for Starports and Tech Level assume some contact with interstellar civilisation, even if infrequent. A world or even multi-system polity evolving in isolation, or long isolated from a parent civilisation, is dependent on its own resources to maintain a technological base. For instance, a few hundred isolated colonists are unlikely to maintain the ability to manufacture microchips, at least not once the machinery they brought with them wears out. For these isolated systems and polities, a Tech Level much greater than two levels above the Population code would be difficult to maintain. To simulate this, consider the following variant.

If the Tech Level of an isolated world or polity is greater than Population +2, determine the sustainable Tech Level to be Population +1D-4. If this result is greater than the current TL, keep the lower value. If this lowers it below the Minimum Sustainable Tech Level (see page 21), the Referee may either adjust the Tech Level upward, drop Population to 0 or develop a story to explain the population’s continued survival.

Starports and their associated facilities also require a minimum Tech Level to be sustainable, although the Primitive and Advanced Spacecraft chapter of *High Guard* provides for the capability to construct prototype vehicles at up to two Tech Levels earlier than normally possible, although at considerable cost and disadvantages. The Minimum Starport TL table provides standard and prototype indigenous Tech Level minimums for starports.

### Minimum Starport TL

Starport	Tech Level (Prototype)
A	9 (7)
B	8 (6)
C	7 (5)
D	5 (3)
E	—
X	—

Note that these minimums are only applicable for isolated systems. An isolated polity may construct a starport at up to the highest Tech Level of the polity in any system within its borders or any outpost beyond its borders. Polities with trading partners capable of producing higher Tech Level goods may also support starports, which require technology the polity lacks.

Interstellar polities without at least a single Class A starport might be sustained by imported or otherwise acquired starships or even by slower-than-light transport (consider Orion-type nuclear bomb propelled craft as an option as early as TL6) or by nothing more than radio communications (theoretically as early as TL4 with a primitive radio array of vast size).

## Travel Zones

Travel Zones are restrictions against travel or advisements to avoid unnecessary or causal travel to certain systems or worlds. A Red Zone is a prohibition on entry, usually enforced by the local polity. An Amber Zone is a recommendation or warning. What makes an Amber or Red Zone? Within the borders of polity, they are straightforward to assign. Outside civilised space, Red Zones may not be patrolled and Amber Zones are often just suggestions issued by other polities or organisations such as the Travellers’ Aid Society.

For Red Zones, some worlds are interdicted for obvious reasons, such as to protect developing sophonts or regressed civilisations, or protect outsiders from xenophobic locals. Other reasons, such as hidden hazards, diseases and the like, might explain a Class X starport in a civilised region. The Referee should come up with a reason for the Red Zone but it may not be common knowledge or it may actually be a smokescreen for something else.

Amber Zones imply some sort of hazard. These could be based on physical or social conditions, sometimes both. Worlds whose environments are especially hostile, such as those with Corrosive and Insidious atmospheres, especially in combination with temperature ranges far outside temperate, may be declared an Amber Zone. This can also apply to world subject to massive solar flares, meteoric bombardment or dangerous wildlife. Societal reasons for Amber Zones can be based on ongoing wars, social unrest or especially harsh governments. As a general rule, worlds whose combined Government and Law Level values exceed a total of 20 have a good chance to be considered Amber Zones.



## System Names

Naming the sector's systems is a potentially iterative process, which may depend on the universe. If all systems exist within a single polity, they can be named in a straightforward process. However, if multiple polities or native sophonts exist within a sector, it may be wise to name systems after developing details of the separate cultures. In some frontier regions, barren systems may be nameless or have nothing but alphanumeric designations. This guide will provide additional details and suggestions for naming in Sector Finalisation, beginning on page 62.

## EXAMPLE SECTOR: FOREVEN

This example uses the results of generating Foreven's undefined systems as determined in the previous chapter. The subsectors in the *Forms and Charts* booklet contain the complete characteristics of these systems but for the purpose of the narrative, only the physical characteristics are assumed to exist for this example.

Prior to beginning phase 3 of the mainworld creation process, the Referee can determine the population of Foreven's systems using the population patterns method described in this chapter.

### Step 1: Native Sophonts

A 2D roll is made for each system to indicate a potential home for a native sophont. A result of 12, or a 1 in 36 chance, indicates success. Performing this procedure yields an initial list of possible native sophont systems.

### Initial Native Sophont Systems

Location	Physical Profile	Temperature
0103	558	Temperate
0213	200	Temperate
0717	000	Temperate
0822	300	Cold
1622	300	Cold
1725	223	Cold
1726	300	Temperate
1927	666	Temperate
2328	755	Temperate
2615	300	Temperate
2740	000	Hot
3006	100	Temperate

This random method provides less than ideal results, as only systems 0103, 1927 and 2328 are fully habitable, with 1725 only marginally so. The remaining worlds are all airless, including two asteroid belts.

To resolve the eight vacuum worlds, the Referee could choose to shift the positive results for these systems to the next sequentially generated system. If this next system is more likely to host native life it becomes the new sophont homeworld. If this next system is equally inhospitable, the Referee can keep the original system but treat it as ruins of a previous civilisation, such as the Ancients. Using this approach, the native systems or ruins change to:

Location	Physical	Resolution
0103	558	Initial
0213	200	Use 0214: 520, Hot
0717	000	Use 0720: 998, Temperate
0822	200	Use 0825: 677, Temperate
1622	311	Use 1628: 6A6, Temperate
1725	223	Initial
1726	300	Ruins
1927	666	Initial
2328	755	Initial
2615	300	Ruins
2740	000	Ruins
3006	100	Ruins

This shift results in a final set of eight native sophont homeworlds and four Ancients ruins.

The four Ancients sites may have a non-native population to be generated later. Note that the Referee could have chosen to place ruins on habitable worlds or natives on vacuum worlds but did not do so in this example. The eight native sophont worlds with extant populations can now be fully generated using the native sophonts population pattern and completing the systems' profiles for Population, Government, Law Level, Starport, and Tech Level.

The Referee uses a 2D-2 roll to determine the Population of native worlds. To determine Starport, the Referee chooses to use DM-1, rather than DM-2 to reflect some cultural contamination over the millennia. This choice should emphasise that the procedures provided in this guide are a starting point for Referee creativity, not an invariable process that ignores peculiarities of a sector.

## Native Sophonts and Ancients Ruins

Location	Statistics	Notes
0103	E5589BD-3	Native (Zhodani Consulate – Forbidden: protective interdiction)
0214	E5209EF-6	Native (Zhodani Consulate – Forbidden: xenophobic)
0720	B998844-A	Native – starfaring: controls 819, 820, 919
0825	X677776-4	Native – isolated with unsanctioned trading
1628	C6A688A-9	Native – exotic atmosphere, interdicted?
1725	E223686-3	Native – mostly subterranean – gas giant moon?
1726	?300??-?	Ruins
1927	E666988-7	Native – contact with Darrians?
2328	D87A653-5	Native – contact with Darrians?
2615	?300??-?	Ruins
2740	?000??-?	Ruins
3006	?100??-?	Ruins (Zhodani Consulate – Forbidden: military interdiction)

The notes for each system are a Referee's initial thoughts on the status of these worlds, which will help determine which sophonts might have expanded beyond their home system. Given the sector, the Zhodani have likely restricted access to the three systems located within their borders, for protective or security reasons. The native sophont systems outside Zhodani borders are unlikely to be restricted but only the inhabitants of 0720 and 1628 are likely to have significant spacefaring capability.

Location	Physical	Temperature	Notes
0103	558	Temperate	Native (Zhodani Consulate territory)
0214	520	Hot	Native (Zhodani Consulate territory)
0720	998	Temperate	Native
0825	677	Temperate	Native
1628	6A6	Temperate	Native
1725	223	Cold	Native
1726	300	Temperate	Ruins
1927	666	Temperate	Native
2328	755	Temperate	Native
2615	300	Temperate	Ruins
2740	000	Hot	Ruins
3006	100	Temperate	Ruins (Zhodani Consulate territory)

The Referee decides that the sophonts at 0720, just outside the Zhodani border, have the capability to create a small interstellar state, either with sublight technologies or acquired technology, and make a good candidate for an 'interesting' Minor Race in a later example. By occupying three nearby system, these sophonts create a bottleneck on travel into subsectors I and M. To support this narrative, the Referee upgrades 0720 to a Class A starport, and the three systems of 0819, 0820 and 0919 will become territory of these interstellar sophonts, which are capable of producing jump-1 ships through acquired technology.

## Step 2: Scattered Settlements

For determining scattered settlements, the Referee may assume that certain interstellar sophonts will have established settlements in Foreven prior to the most current settlement wave. These include:

- Ancients-derived populations of Droyne, Chirpers or transplanted humans.
- Old human settlements from the First (Vilani) or Second (Solomani) Imperium.
- Aslan colonies established by far-ranging *ihatei* or by 'deviants' fleeing the Cultural Purge.
- Vargr settlers who decided to head for distant space.

Some or all of these may exist in Foreven. The Referee can determine a probability for each or could place such settlements as desired. For this example, the Referee will randomly determine the occurrences of scattered settlement by origin type. The following table provides the quantity of occurrences for each across the entire sector and shows the actual results of the subsequent 1D rolls used in this example Foreven sector.

Settlement Origin	Occurrences	Actual
Ancients: Droyne	1D-2	2
Ancients: Chirper	1D-2	2
Ancients: Minor Human	1D-2	3
Vilani lost colony	1D-3	0
Solomani lost colony	1D-2	2
Aslan <i>ihatei</i> settlers	1D-3	0
Aslan deviant settlers	1D-3	1
Vargr settlers	1D-3	2

The resultant dozen occurrences can be scattered across the sector at random or placed by Referee fiat. Given the background for Foreven already established, the Referee decides that one of the human Minor Races will be the Issugur, located on Parthinia (3018) and one of the Solomani lost colonies will be Avalar

(1636), capital of the Aaval Consulate. This leaves 10 to scatter among the remaining 351 unnamed worlds of the subsector. As this is very close to 1 in 36, the same procedure used to determine native sophont presence, a result of 12 on a 2D roll, could allow for any of these systems to house a scattered settlement.

Since the result of rolls for these systems may vary from a total of 10 positive indicators and since some worlds might be unsuitable as homes for these settlements, the Referee retains (as always) the option to modify the results, move a settlement or create an interesting story to explain the results. Also, nothing prevents these settlements from occurring on a world that already has an existing native population.

For this Foreven example, the random determination of scattered settlements resulted in 12 systems, two more than indicated. To achieve a final list of ten scattered settlement worlds, the Referee randomly deletes two inhospitable systems and performs a shift on the remaining unsuitable systems similar to the method used upon native sophont systems. Finally, the type of settlement is determined based on what seems sensible, not a random process.

Location	Physical Profile	Temperature	Type
0104	35A	Temperate	Chirper (Zhodani Consulate)
0131	654	Temperate	Aslan
0408	997	Temperate	Minor Human (Zhodani Consulate)
0708	66A	Temperate	Solomani (Zhodani Consulate)
0935	574	Temperate	Droyne
1216	767	Temperate	Droyne (Zhodani Consulate)
1303	767	Hot	Chirper (Zhodani Consulate)
1938	657	Temperate	Vargr
2823	699	Temperate	Vargr
2835	577	Temperate	Minor Human

In making these assignments, the Referee decides the five systems in Zhodani space are either going to become interdicted or unabsorbed systems, or their inhabitants have become culturally Zhodani. This is unlikely for the Aslan deviant colony and the two Vargr worlds, so those have been placed outside Zhodani borders.

## Scattered Settlements

Location	Statistics	Initial explanation
0104	B35A515-E	Chirper (80%; Zhodani Consulate – science ‘corp’ )
0131	A654956-E	Aslan (interdicted xenophobic cyborgs)
0408	D997648-1	Minor Human (Zhodani Consulate – Forbidden: protective interdiction)
0708	B66A767-C	Solomani (Zhodani Consulate – Unabsorbed: military rule)
0935	C57488D-9	Droyne – isolationist
1216	B767837-9	Droyne (Zhodani Consulate – full member)
1303	X76737B-0	Chirper (Zhodani Consulate – Forbidden: protective interdiction)
1636	A75599C-C	Avalar: Solomani origin
1938	C657864-6	Vagr (Avalar military occupation)
2823	C699876-8	Vagr (80%; waring states on the Spinward Main)
2835	C577757-7	Minor Human – open for trade
3018	C694655-C	Parthinia: Minor Human Race (limited to remote reservations)

When completing profiles for these scattered settlement systems, the Referee treats all as old enough to be ‘natives’ and uses the same variants to determine Population and Starports as in step 1 of this example. The result for adding pre-existing Avalar and Parthinia to these 10 systems is shown in the table above.

## Step 3: Pocket Empire Ripples

In Foreven, the Zhodani occupy most of coreward and their population waves will be dealt with later. The sophonts at 0720 occupy only three neighbouring systems. While the Referee may place additional pocket empires, the only one to be developed in this example is the Avalar Consulate. From its home system in hex 1636 at the trailing edge of subsector N, Avalar’s expansion represents the sector’s only significant expansion ripple.

The Avalar Consulate will be further developed in a later chapter. For initial consideration, the Referee determines that Avalar’s initial expansion began at the dawn of the Imperial era, reaching other systems on the one parsec cluster of systems inside Foreven by the first two Frontier Wars (500 years before present) and expanded up to one jump-2 link away by 800 (300 years before present) and two jump-2 links by 900 (200 years before present) before ceasing expansion. Designating this expansion to be the equivalent of a thick wave, the inner jump-2 ring receiving no Population DM and the outer DM-1.

## Step 4: Settlement Waves

As determined in example Decision #4, three subsectors – A, B and C are considered ‘mature’ Zhodani Consulate regions with thousands of years settlement history. The colonisation of the rest of the sector was driven by Imperial expansion and Zhodani reaction after the First and Second Frontier Wars in the years 589–604 and 615–620.

The Referee assumes an Imperial thin wave began prior to the Frontier Wars, crossing into the four trailing subsectors (named in the reserve document as Massina (D), Fessor (H), Reidain (L) and Urnian (P)) prior to the year 600. These are more than 500 years old and like the three Zhodani subsectors, receive no DM to their Population rolls.

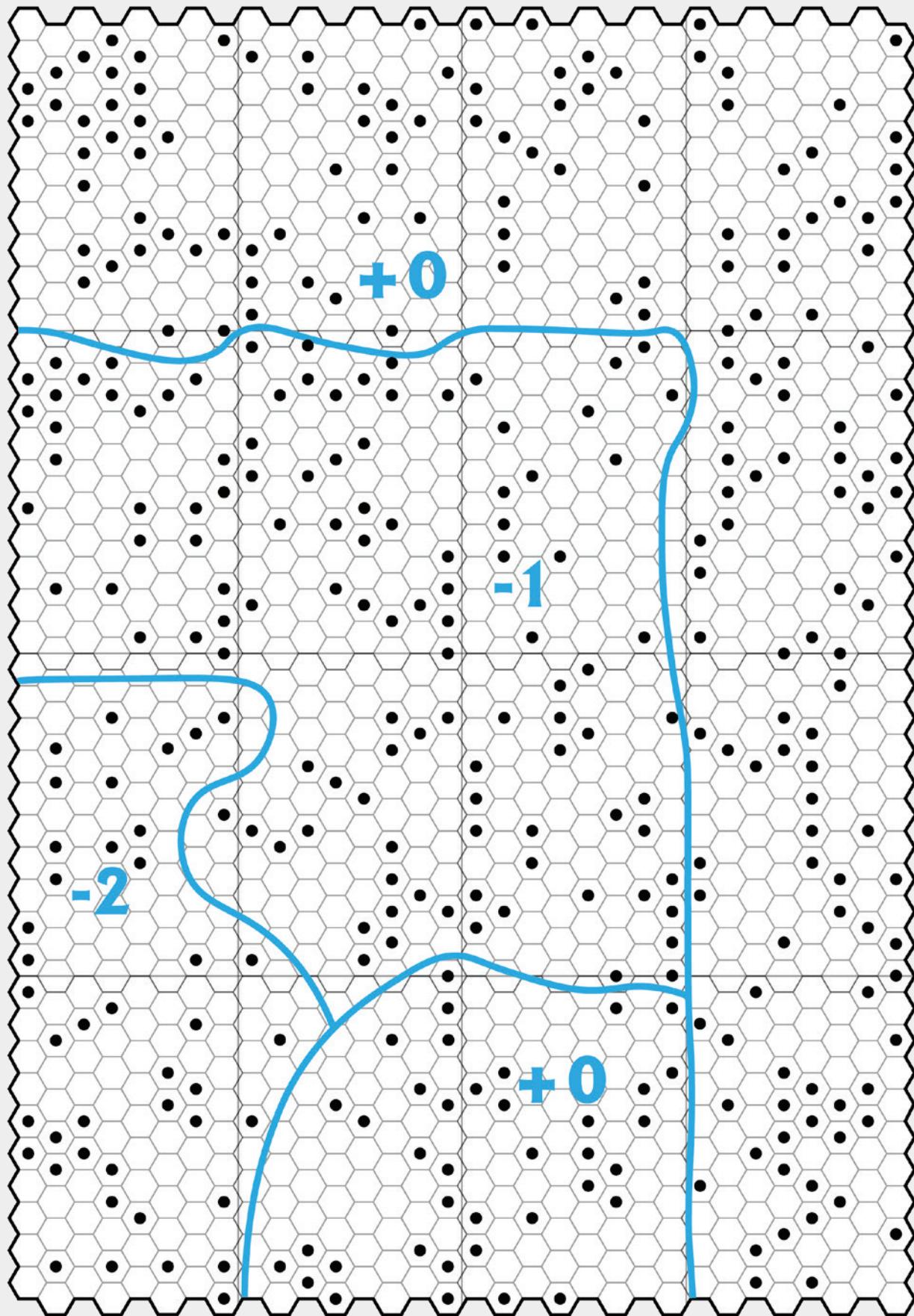
The Referee assumes the Imperial thin wave continued across the sector, reaching the spinward border prior to 700, providing a default Population DM-1 to all remaining subsectors to account for four centuries of settlement.

However, the Zhodani will have countered these moves, first by conquering Massina (D) during the wars, then by beginning their own careful (thin wave) settlement of the adjacent subsectors E, F and G between 600 and 700. This alters the default allegiance of the inhabitants of Massina and the subsectors E, F and G but otherwise retains DM-1 to Population of these subsectors.

The Referee rules the ripple existence of the Avalar Consulate in subsectors N and O causes some additional effects on the rimward portions of the sector. First, the combined Avalar ripple and Imperial thin wave will erase the DM-1 for those two subsectors. Second, the buffer of Avalar and the three parsec gap (with the exception of one jump-2 chokepoint just beyond the Zhodani border) isolates a region which encompasses subsectors I and M and parts of N. The Referee assumes this isolated region will have received less and later colonisation efforts, with settlers possibly arriving to backfill the region from nearby Far Frontiers and The Beyond sectors. The Referee can sketch a line around this region and assign DM-2 to Population for these systems.

## SECTOR DETAILS

## POPULATION MAP



## Step 5: Population Generation

With a completed map of population contours, the Referee can proceed to generate the Population, Government and Law Level values for the remaining systems of Foreven. The systems noted in Decision #5 on page 8 will be left barren and assigned Class X starports – except the garden worlds of 1224 and 1325, which will receive Class E, under the assumption that previous surveys or failed colonisation efforts left behind mapped locations of safe landing areas.

## Other Factors

All systems within the pre-established Zhodani Consulate border are assumed to be either members of this polity or under its control. Within this border, an upper limit of TL14 will be enforced and worlds whose Tech Levels are lower than that required for long-term environment viability (see the table on page 21), will be increased to that level by whatever method the Referee deems appropriate (a fudged TL roll or an upgraded starport). Also, travellermapper.com indicates four systems as endpoints in routes from coreward Ziafrplians sector; as nearly every other Zhodani system on route lines have at least a Class B starport, those systems (1102, 1701, 2602 and 3201) will have their starport raised to Class B if randomly generated to be of a lower class. These systems will also contain Zhodani naval and military bases.

Results for Zhodani bases will follow the random results from the Starport Facilities table on page 257 of the *Traveller Core Rulebook* only for naval bases; any result of a naval base will automatically result in an associated military base and scout base rolls will be ignored.

Outside Zhodani borders, the Referee can be more flexible with Tech Level limits but chooses to leave the TL14 maximum in place. Additionally, systems within the Avalar Consulate border will have a maximum of TL12 to match Avalar itself. Worlds requiring technological upgrades to remain survivable will receive such upgrades if within the Avalar Consulate but outside Avalar or Zhodani borders, systems in which the mainworld is not technologically survivable will be treated as Population 0 barren systems.

For the presence of bases, the Avalar Consulate will have bases placed by Referee fiat as part of the development process. Imperial naval and scout bases on independent worlds beyond the frontier will be rare. The Referee can place these by fiat but if a random distribution in trailing subsectors outside Zhodani control is desired, they should only be present at half standard frequency – determined by rolling 1D and keeping bases if the result is 4+, subject to Referee override. These worlds will likely become Imperial client states.

Red and Amber Zones are to be placed as appropriate, within Zhodani territory substituting Forbidden for Red Zones and treating Amber Zones as either Unabsorbed systems, which are not integrated into Zhodani society, or hazardous systems, which present dangers from environmental or local policy factors. As a rule of thumb, worlds with Exotic (A), Corrosive (B), or Insidious (C) Atmospheres, especially those with Hot or Boiling temperatures are likely to be Amber Zones based on environmental factors. Worlds whose Government and Law Level values add up to 20 or more are good candidates for Amber Zones, as are Balkanised (7) worlds with ongoing conflicts.



# MAINWORLD DESIGN

This chapter covers expanding a system's basic profile to provide a detailed description of the system's mainworld, in terms of both physical and social characteristics.

When a Traveller visits a world, it should be more than a string of letters and numbers. While not every world needs a book or even a short summary, a world upon which a Traveller will spend significant time outside the starport should feel like much more than its profile. Detailing a mainworld is also a useful exercise to complete either prior to or in conjunction with developing a polity or sophont race originating from that mainworld. Creating detailed polities and sophonts will be covered in subsequent chapters.

Some major factors in what a Traveller would see from the surface of a world rely on elements outside the world itself, such as its sun(s) and moon(s). Chapter Four of the *Deep Space Exploration Handbook* from the *Great Rift* box set provides rules to determine the system's star or stars, other planets and moons. Aspects of a world's star may have significant influence on a world's environment. For many locations, systems already mapped in [travellermap.com](http://travellermap.com) will have stellar information listed and the system's other planets determined, or at least counted. For the purposes of this guide, the Referee can create these details or default to treating a habitable planet as having a Sun-like star. However, altering the properties of the world's star(s) can have significant effects that can make the world unique.

A mainworld's physical characteristics can be backed by 'hard sciences' such as the Traveller Science skills of astronomy, biology, chemistry, physics, planetology or xenology. A world's social characteristics can be more fluid, allowing the Referee to invent societies that can be very different from the commonplace without worry that someone will point to a textbook and show how the society is 'impossible'. The Cultural Differences table in the *Traveller Core Rulebook* is a good place to start but it is not meant to be comprehensive, just a prompt for a Referee to develop ideas.

## PHYSICAL DESIGN DETAILS

The Referee can use the physical characteristics of the mainworld as a starting point in the world's detailed description. What is its gravity? Climate? Does it have one continent, or many, or none?

The Referee's description should emphasise not just facts but how the planet would look, feel and smell to a visiting Traveller. For example, the world's atmosphere and gravity can impact the overall landscape, with thicker atmospheres causing more erosion from wind and rain. Lower gravity supports not only higher mountains but a lesser decline in atmospheric pressure as altitude increases. Not every detail needs to be determined but one or two interesting points makes a world with physical characteristics of 554 more than 'it has lighter gravity and thinner atmosphere and is a bit drier than average'; instead, it could have 'jagged snow-covered mountains towering above the starport, with bright sunlight harsh against a turquoise sky'.

### Star Properties

The type of star and the world's atmosphere may influence the colour of the sky but there is no hard and fast rule for this – consider the colour of the skies of Venus, Earth, Mars and Titan, all in orbit around the same sun but with very different coloured skies that do not even correlate with their respective major atmospheric components. However, in general worlds circling cooler (redder) stars and those with a thicker or dustier atmosphere will tend to have less blue in their skies.

The mainworld's sun and the size of its habitable zone – if the world is habitable – impact on not just the length of year but solar tides, which may make the mainworld a tidally locked 'twilight zone' world. The star type can also impact travel times to and from safe jump distances. For Sol-like G class stars and for stars brighter and more massive, a planet's 100D boundary is the limiting factor in jump calculations but for dimmer stars, the system's habitable zone lies within the 100D limit of the star, making distances and travel times to a safe jump location longer, sometimes taking days instead of hours to traverse.

The Spectral Class table on page 12 of the *Deep Space Exploration Handbook* provides a rough guide for the brightest stars of each spectral class (G0, for instance – slightly bigger and brighter than Sol's G2 classification). A modified version of that table is provided here. The star's luminosity has a big impact on a world's surface temperature. Very roughly, the world's temperature – not accounting for differing atmospheric effects and varying light absorption properties – is related to the fourth root of the star's luminosity divided by the square of the distance from the star or:

$$\text{Temperature} \sim (\text{Luminosity} \div \text{Distance}^2)^{1/4}$$

Another way to envision this is to consider the distance from a star to its habitable zone for Earth-like conditions on an Earth-like planet to be equal to the square root of the luminosity of the star:

$$\text{Habitable Zone Distance} \sim (\text{Luminosity})^{1/2}$$

The length of a planet's year is related to the star's mass and the planet's distance from the star. This period is related to the square root of the distance from the star cubed, divided by the star's mass or:

$$\text{Year} \sim (\text{Distance}^3 \div \text{Stellar Mass})^{1/2}$$

The Main Sequence Star Properties table covers main sequence stellar classifications, for a type 0 stars – with M5 and M9 added for stars near the lower limits of stellar masses.

Values for main sequence stars between those listed in the table's rows may be extrapolated from the indicated numbers. The Habitable Zone value listed in the table corresponds to Earth's location in its habitable zone in Astronomical Units (Earth's orbital distance = 1 AU or

approximately 150 million kilometres). A comfortable habitable zone may extend perhaps 10% closer to the star and as far as 25% further from the star than the table's Habitable Zone value, with the 'Hot' and 'Cold' extremes of the zone extending up to 20% closer and 50% further than the given value, respectively. The Year value indicates the relative length of a year for a world at the listed habitable zone distance.

The '100D' value in this table is based on a star's mass, not diameter, although for stars close to the sun's luminosity these values will be similar. The difference between mass and diameter is more evident at the extremes, such as white dwarfs and neutron stars, which are as small as a moon or city, respectively, but as massive as a sun and in some class III giant stars, which have similar masses to Sol, have swelled to diameters dozens of times larger.

For mainworlds, when the habitable zone is inside the star's 100D distance – which is likely for all main sequence stars about G5 or dimmer – a starship must travel to at least the difference between the table's 100D value and the Habitable Zone value to reach a safe jump distance. It would be possible to jump out of a system closer, risking a misjump, but jumping into a system will always cause a starship to emerge no closer than the 100D limit regardless of intent, requiring a full inbound voyage. The geometries between star systems and the position of the mainworld in its orbit could make this distance considerably longer for some voyages, up to as long as the sum of the Habitable Zone and 100D distances but unless the Referee wishes to keep track of orbital motions, relative star locations and the varying planetary orbits, such detail is generally unnecessary.

This table is for main sequence stars (Class V). Giant stars (Classes I-III) will be significantly more luminous and often more massive than main sequence stars.

## Main Sequence Star Properties

Star Type	Mass	Radius	Luminosity	Habitable Zone (AU)	100D (AU)	Year
O0	60	15	1,400,000	1183.22	13.95	5254.367
B0	18	7	20,000	141.42	6.51	396.402
A0	3.2	2.5	80	8.94	2.33	14.953
F0	1.7	1.3	6	2.45	1.21	2.940
G0	1.1	1.1	1.2	1.10	1.02	1.093
K0	0.8	0.9	0.4	0.63	0.84	0.562
M0	0.3	0.4	0.04	0.20	0.37	0.163
M5	0.16	0.15	0.003	0.05	0.14	0.032
M9	0.08	0.11	0.0003	0.02	0.10	0.008

Sub-dwarf (Class VI) stars are less luminous and less massive than main sequence stars, and white dwarf (Class VII or Class D) stars are much less luminous and generally follow a different classification system. Brown dwarfs, which are not generally considered stars, range from 0.013 to 0.08 times Sol's mass.

Lifespan is another factor to consider when determining the class of a mainworld's star. Main sequence lifespan is roughly inversely related to the cube of a star's mass. This means that a star of 10 solar masses would have a lifespan 1,000 times shorter than the Sol, which has an expected lifespan of 10 billion years. As a result, stars brighter than Class F are unlikely to be home to naturally evolved habitable planets as their lifetimes are measured in millions, not billions of years. Conversely a dim red dwarf may last for trillions of years but has its own challenges.

## Tidal Factors

An additional factor for dimmer stars, specifically red dwarfs (Class M), is tidal locking, where the gravity of the star and its varying effect across the diameter of the planet forces the planet to keep one face towards the star, with a narrow twilight zone separating a hot bright hemisphere from a cold hemisphere of perpetual darkness. A tidal lock to a small star is not automatic. Various factors, including eccentric orbits, extreme axial tilts, and other gravitational sources such close-in moons and other planets or stars, may 'break' this tidal lock between star and planet but breaking this lock would also result in extreme tides on the world, caused by the star itself.

A world that is a moon of a larger planet would usually be locked to its primary planet and not its star, also bypassing a solar tidal lock but not the effects of any significant solar tide. Moons only remain in orbit well within the dominant gravity field of their parent object. This means planets in a habitable zone around a red dwarf would only have close-in moons, if any.

For those Referees who wish to model a tidal effect, the strength of tidal forces is directly related to the mass of the larger body and the diameter of the affected body, and inversely related to the cube of the distance between them:

$$\text{Tide} \sim \text{Other Body's Mass} \times \text{Affected Body's Diameter} \div \text{Distance}^3$$

Actual calculations for tidal locking are complex and consider many factors however by using these relationships and comparing them to the effects of

the Sun and Moon on the Earth can allow rough estimates. Roughly, for the Earth, solar influence provides a 0.25 metre tidal effect, and the moon adds 0.54 metres, but actual tidal effects on a shoreline depend upon a number of geometric factors that can apply these values to as much as 16 metres.

## Mapping

A world's geography derives from its physical characteristics and temperature. The Hydrographics code is a rounded 10% value of a world's surface covered by liquid. This is water for most atmospheres but possibly other fluids for Atmospheres A, B, C or F. This can also represent ice on colder worlds and for worlds with vacuum or trace atmospheres. Worlds with Hydrographics above 5 will tend to have continents surrounded by oceans and those below 5 will tend towards scattered seas or oceans surrounded by land. Just because Earth has seven continents (six if Eurasia is counted as one, or just four if only land masses not connected by land bridges are counted) does not mean a world cannot have a single supercontinent, or dozens of continents separated by narrow stretches of sea.

Traveller world maps are based on a regular icosahedron – a 20-sided dice – flattened into 20 triangles and further subdivided into hexagons. The standard representation has triangles seven hexagons across – 35 hexagons across for the entire circumference of a world. For a Size 7 world, this corresponds to 1,000 kilometres. Representations of different Size worlds can vary in two manners: either the scale per hexagon can change – Size 1 corresponds to  $1,000 \div 7$  or about 143 kilometres – or the number of hexagons in the triangle can vary to keep the scale at 1,000 kilometres per hexagon; thus, a Size 8 world would be 40 hexagons or 40,000 kilometres in circumference, matching the size of Earth.

## Climate

A world is a big place. Even a small world is likely to have a variety of terrains and climatic zones. Worlds or geographical regions may be subject to storms or extremes of temperature, extreme tidal activity or periodic radiation from solar flares. In addition to tidal factors and conditions such location in the habitable zone, the following may impact climate:

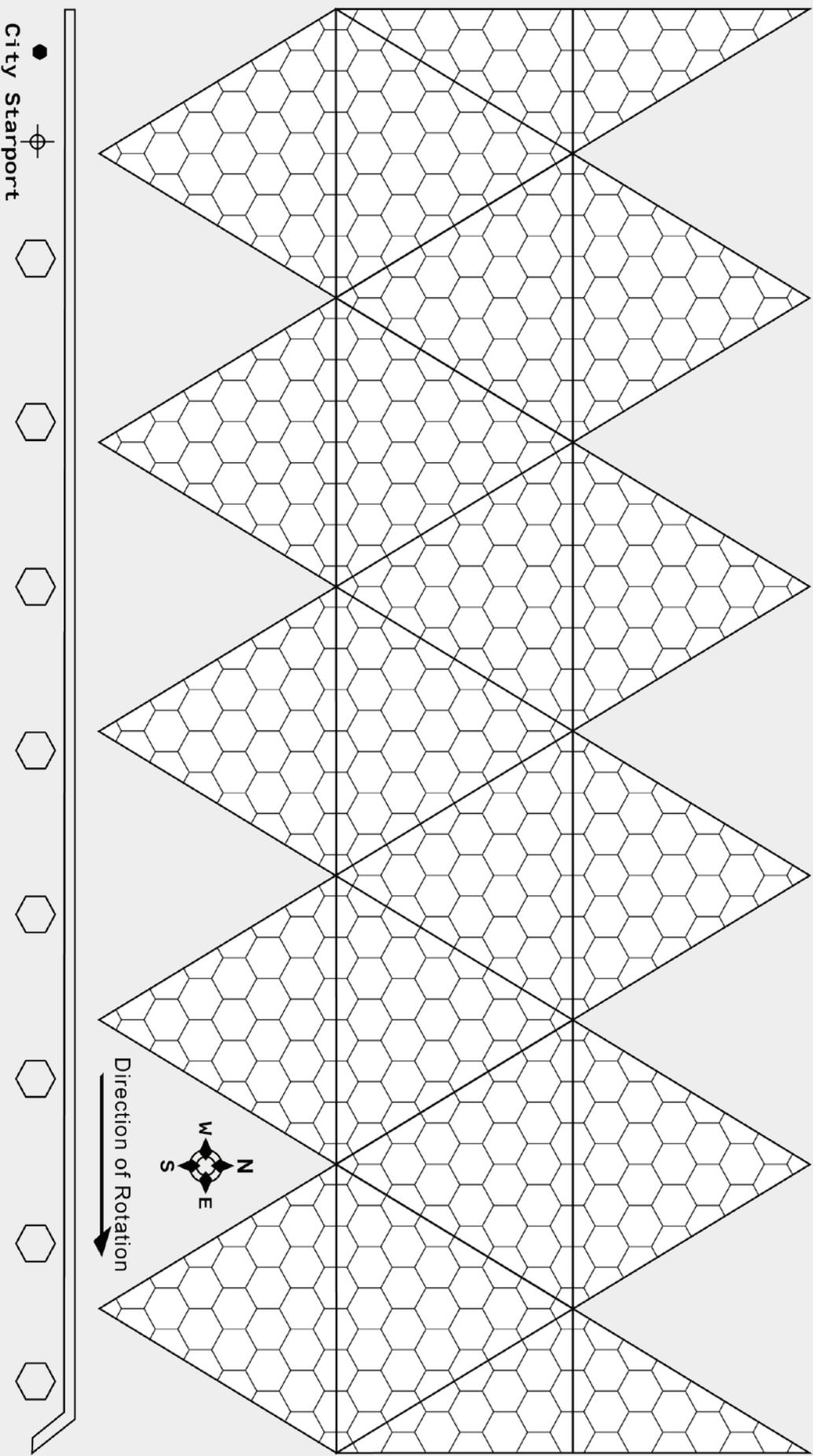
- Extreme axial tilts can lead to extreme seasons or large regions of extended sunlight or darkness.
- Eccentric orbits can lead to temperature extremes in the course of a local year.
- Slow rotations may result in temperature extremes in the course of a local year.

## MAINWORLD DESIGN

### WORLD MAP

NAME:

UWP:



- Thicker atmospheres lead to stronger storms, as would faster rotation or the amount and distribution of land.
- Many red dwarfs produce megaflare events, sometimes as often as multiple times in a standard day. These flares could cause anything from pretty auroral displays to lethal radiation storms.
- Multiple stars within the system could subject a world to much more complex seasonal variation than that caused by a slight axial tilt.

## Moons and Celestial Objects

Large moons can have tidal effects and distance is the dominant factor. If the Earth's moon was half as far from the Earth, it would look twice as large in the sky but its tidal effects would be eight times as strong.

Moons or parent worlds, if the mainworld is a moon, have more than a physical impact on a world. The presence of one or more moons, or of rings, nearby planets or stars bright in the sky may have some effect on climate and tides, however it is just as important to consider their aesthetic value in providing background 'colour'.

## Wildlife

Worlds with naturally occurring Atmospheres of 4–9 and D are likely to have native fauna (animals) or flora (plants) larger than microbes, as would some exotic worlds of Atmosphere values A, B, C and F. Atmosphere E worlds may have advanced life in lowlands or cracks and even vacuum or trace atmosphere worlds may have exotic or bioengineered lifeforms.

The Referee should consider whether the visible biosphere of a world is native, imported, mixed or non-existent. On long-settled worlds, imported (or invasive, depending on how they are perceived) lifeforms may have long since pushed native life to extinction or into niche habitats, or a terraforming effort may have transformed the world and replaced its lifeforms. Lifeforms may also have been imported and modified to exist on the world. The Referee need not commit to one answer but should consider the overall theme of the biosphere.

For imported lifeforms, the Referee can draw upon animal encounters or descriptions from other *Traveller* publications. If the world has a native ecosystem, it can be helpful to detail a few animals for encounters. The Referee is free to sketch out an entire set of encounter tables but most may remain

unused. Only an adventure that requires extensive wilderness activity needs the creation of more than one or two animals.

If creating multiple animals, or describing major noticeable types of wildlife, animals native to a world would tend to be members of a few major phyla – such as chordates or arthropods on Earth. Focusing on more specific groupings such as classes within these phyla (e.g. mammals, birds, reptiles or insects, crabs, spiders, respectively) would be more useful. There is no need to develop an entire evolutionary tree for a planet's species but a phylum should have some broad common characteristics – such as internal or external skeletons or basic symmetry.

When determining broad definitions of lifeform classes – what most Travellers would consider 'types' of animals – the Referee can consult the Sophont Physical Characteristics table on page 51 and make two or three rolls to determine each class's primary characteristics. See the Sophont Creation chapter for further discussion.

The Referee should consider local climatic conditions of the world when developing both fauna and flora. Fauna is often considered in detail but the Referee should consider if a world's unique conditions warrant flora that can be very different from funny-coloured 'trees' and 'shrubs'.

## Pathogens

Another differentiator a Referee can use to make a world more interesting may be a disease, whether resulting from microbes, environmental factors or other illness-causing circumstances. Diseases can be described in the format present on page 80 of the *Traveller Core Rulebook* or, if additional detail is desired, the *Traveller Companion* provides more detailed processes for diseases and other hazards on pages 67–74. Unless it is a major factor in the sector, the Referee should use pathogens sparingly. Not every world should have a disease of note but a local plague could be the focus of an adventure or a major aspect of a world's development.

## SOCIAL DESIGN DETAILS

A world's Population, Government and Law Level codes, not to mention its Starport and Tech Level, are point-in-time generic snapshots of the world's development. When fleshing out a world, the Referee can consider not only the specifics of these characteristics but how they came about.

## Society as a Whole

A planet's social characteristics are influenced by Population (and its composition), Government, Law Level and Tech Level, but two worlds with identical values may express them in entirely different ways. A detailed history is not necessary for every world, especially if straightforward, but to give a world character, the procedures associated with the *Traveller Core Rulebook* Factions and Cultural Differences tables, beginning on page 254, can provide guidance to the Referee's creativity.

Factions are separate Government rolls based on the world's Population code and may indicate aspects of the world's ruling authority or forces in opposition to it. On a balkanised world (Government 7) this may indicate individual nation states or competing blocks of nation states.

The Cultural Differences table provides 'quirks' to local society and can be used to create prompts for describing a complex society. The results should be considered as guidelines rather than absolutes; Referees can alter or ignore the results or create entirely different cultural quirks from their own imagination or sources in literature. Different factions may have differing cultures or may just be different power centres within the same culture.

Rather than just rolling once on the Cultural Differences table, rolling multiple times – perhaps at least once for each faction – can produce interesting results. While nothing limits creativity to what is in the tables or requires the Referee to accept the result of a roll, thinking about why a result is inappropriate for the world or trying to interpret how it can apply can lead Referees to invent societal quirks they might otherwise not have considered.

External factors from nearby societies, possibly even into an interstellar polity, could also influence historical development. While the Referee is free to work out any world's history in minute detail, it is not necessary to develop a timeline in any more detail than what would be noticeable to visiting Travellers. For merchants arriving at the starport to buy and sell goods, this may require very little detail. Travellers engaged in an archaeological expedition in a region where a faction has considerable influence or where long-term occupation has gone through many phases may require more.

A combination of cultural and physical characteristics may influence architecture, transportation and perhaps the appearance of the locals as well, either in terms of

clothing styles or for extremes of planetary size, even their physical appearance.

Other social factors to consider, ignore or modify are the entries of the Example Contraband column of the Government table on page 253 of the *Traveller Core Rulebook*.

## History

The detail put into creating a world's history is entirely up to the Referee. It may be as simple as estimating the date of its settlement and/or incorporation into an interstellar polity or it could be a long and eventful saga, especially if this sets the stage for an adventure.

Unless a world is or was home to a local sophont species, the history of a world begins with its discovery, exploration and settlement, events which may follow closely in time or be separated by millennia. Prior to the sustained period of settlement, extinct sophonts, shipwrecked crews or failed colonisation ventures may have occupied the world. These events could be helpful to add to a timeline, although only the settlement date or duration of the current occupation is necessary. From this time, the planet could have had a period of linear development, growing in Population and Tech Level, or it could have had a turbulent history with invasions, local wars, plagues or revolutions along the way.

If certain events have not yet been resolved, perhaps as a result of ongoing factional conflict, the history can end with a summary of current events, especially those relevant to the Travellers. These could range from all-out civil war to minor protests over the treatment of flowering ornamental bushes.

## Population

A world's Population code influences the size of its settled area but not necessarily in a uniform manner. On some worlds the population may be centralised around a single settlement – anything from a village surrounding the starport to a vast cityscape – or the population may be broadly distributed across the planet, perhaps under the surface, beneath the seas or in orbit. The presence of multiple sophonts might indicate a multi-cultural civilisation or may result in populations living in separate reservations, regardless of Government code.

The Referee should give some thought to the distribution of the populations. For low population worlds, residents could cluster in a startown near the starport or be spread out in separate homesteads or outposts surrounded by wilderness or the vacuum

of space. High population worlds may spread across habitable portions of a planet or cluster in huge arcologies or space stations. At a density extreme, one cubic kilometre can house up to one million humans in an urban-density landscape, allowing a few huge arcologies or a hollowed-out asteroid to house billions.

## Government

Government descriptions are intentionally vague and broad. The Government table on page 253 of the *Traveller Core Rulebook* provide an Examples column but it is by no means complete. The actual structure of the government or its official form may differ from the categorisation: nearly any government listed could officially be a monarchy, a democracy or both, but the Government code should indicate how the government operates in practice.

The Referee may wish to spell out how power is distributed within the government: centrally, among different branches, or entirely decentralised with most decisions made at the local level. Higher Government codes might tend toward greater centralisation of power but this need not be the case.

The Tech Level of a world can influence the type and scope of government. Very low Tech Levels make long distant communication difficult and recordkeeping cumbersome while high technology may allow a citizenry to be implanted with devices for voting, surveillance or control.

## Law Level

Law Level is a broad indication of the involvement of government in the lives of its people in terms of restrictions. The Law Level table on page 256 of the *Traveller Core Rulebook* provides guidance on bans of weaponry and armour but just as important is the degree to which people can travel, associate, or speak freely. Different rules may apply to different social classes. Even restrictive governments with technically high Law Levels may allow possession of specific 'banned' weapons or other items for certain people, or a thriving black market and corruption might make official policy meaningless. Likewise, a low Law Level world might have few restrictions but may punish its few enforced laws more harshly than a world where nearly everything is illegal but whose violations are subject to little more than warnings, fines and possibly exile or deportation, even for the most serious offenses.

The nature of the legal system may be important to Travellers. How does the system deal with non-residents? Is the system adversarial, inquisitional,

theological, or entirely arbitrary? Are penalties generally focused on fines, restitution, rehabilitation, punishment, or exile?

The world's Tech Level can also influence methods of control available to a government and the detective and investigative tools available to prevent and solve crimes.

## Finalisation

Major events in a world's history could be added to the overall sector timeline and major external events should be considered when developing details for any particular world. Events developed later may cause the Referee to rethink some elements of a world's background. Worldbuilding can be an iterative process.

To record the outcome of this process, *Forms and Charts* provides World Map sheets and a World Summary sheet. These are optional and may be used by the Referee in part or in whole. The Referee may also choose to expand a world's description into essay or booklet form. A world important to a campaign may eventually acquire an electronic or physical folder with additional maps, encounter tables, even sketches of important persons.

## EXAMPLE MAINWORLD: AVALAR

Avalar is the capital of the Avalar Consulate, which will be described as the example in the subsequent Polity Design chapter. As the world is capital and home to most of the polity's population, building its description serves as an example of worldbuilding and begins to develop the background for an example polity description.

## Physical Design Details Development

The physical characteristics of Avalar are 755. This indicates a garden world but one smaller than Earth and with a thinner atmosphere and less water. Foreven reservation material describes its star as M0 V, at the bright side of the red dwarf range; so, the world must orbit close to the sun to maintain habitability. Likely, this means that the planet is either tidally locked to the star, has a high axial tilt, fairly eccentric orbit or large close moon. Alternatively, the world might orbit at the outer edge of the habitable zone, with a surface mostly covered by ice and tundra.

For this example, the Referee assumes the colonists of Avalar travelled far and picked this world for settlement, rather than being forced onto a semi-habitable world because of a failing ship. Given the resulting high population and importance of the world, the Referee can choose one of the better habitable cases for a

# WORLD SUMMARY SHEET

World
UWP
Star System
Planetary System
Physical Details
Social Details
History and Current Events
Notes

garden world around a red dwarf: a planet with a close moon, the pair tidally locked to each other to create a somewhat reasonable day length.

With a close big moon, lunar tides would normally be high but with a tidal lock to the moon those tides might distort the underlying shape of the planet to some extent but not cause daily tides. However, proximity of the habitable zone to the star, 0.2 AU – five times closer than Earth to Sun – will cause significant tides even with the less massive star. Using the guideline for tidal factors on page 30, the tidal factor would be five cubed or 125, multiplied by the smaller stellar mass (0.3) and the smaller diameter (7/8) for a final factor of 43.75 times the effect of solar tides on Earth. This provides a tide of nearly 11 metres in ‘ideal’ (e.g. deep ocean) locations and perhaps over 150 metres in certain areas. Coastal settlements are likely to be rare and coastal geography may be extreme.

A solar year on Avalar would be short: the square root of the quantity 0.2 cubed divided by 0.3 equals 0.1633 years or 69.645 days. If the Referee makes the moon close enough to make a ‘day’ seven standard days long, the local year becomes about 10 local days duration.

A distinct sky feature this creates on Avalar is the potential for daily eclipses on the moon-facing planetary hemisphere. To determine how it would look on the ground: A seven-day-long rotation would line up sun and moon once per rotation, with the sun moving about 2.14 degrees per hour (360/168). To roughly determine the distance of a moon that orbits Avalar every seven days requires reversing the year equation to become:

$$\text{Distance} \sim (\text{Duration}^2 / \text{mass})^{1/3}$$

Assuming a standard density for Avalar, mass would be  $(7/8)^3$  or 0.67 of Earth and assuming duration is a quarter of a month, then the distance becomes about 45% of the Earth to Moon separation, meaning a Moon-sized object would appear a little more than twice as large as our Moon, or about one degree across. The star would be five times as close but only about 40% as wide or twice the apparent size of Sol, so similar to Avalar’s moon. Some points on Avalar’s surface could see total eclipses often, but the entire eclipse from partial start to end would be about an hour. If Avalar and its moon orbit the star and each other in the same plane, these eclipses would be visible in equatorial regions every rotation. The relatively brief duration would have little effect on climate, but to have both star and moon twice the size of Earth’s would become an interesting bit of background flavour for visiting Travellers to observe.

For mapping purposes, Avalar is a Size 7 world, allowing a standard map to maintain a 1,000 kilometre per hex scale. It has 50% water and its location in the habitable zone implies cooler poles, with icecaps. Lower gravity and thinner air can create higher mountains, especially if supplemented by tectonic plates moving under greater tidal stresses. With only half the surface covered by water, jagged continents may be separated by narrow seas and land bridges connect much of the world’s land surface area. This provides the basis of a map, with about half the hexagons filled with land terrain and the upper two of the polar hexagons covered in sea ice, glaciers or snow-covered tundra.

The climate of Avalar becomes dominated by its slow rotation, with cold nights followed by warming days. The Referee can put together a plausible description: Slow rotation and thin air may weaken cyclical storms but the heat of afternoon might drive storms, with winds blowing towards ‘morning’ and ‘evening’, and snow falling in the hours before dawn and after dusk. The long night (more than three standard days in duration) would be cold and still.

With a population in the billions, much of Avalar’s land surface may be inhabited, with arable land converted to agriculture but desert regions, hazardous volcanic ranges and rough tidal shorelines may remain wilderness.

The Referee can use the Sophont Physical Characteristics table (see page 51) to create two major classes of animals, choosing which characteristics to randomly determine. For the first type, rolls for Symmetry yields: 6, Trilateral and for Number of Limbs: 5, Octopod – which the Referee interprets as  $4 \times 3$  or 12 limbs for a trilateral – and for Type of Manipulator: 6, Tentacle. Choosing Environment, the Referee can turn this into an amphibious, shelled, 12-tentacled ‘crab’ that occupies the tidal regions. A second set of rolls yields Symmetry: 6, Bilateral, Number of Limbs: 2, Hexapod, and this time rolling for Environment: 4, Flying, envisioning a wide variety of ‘lizard wings’ with forearms, wings and legs who occupy a niche similar to birds, but with greater ability to manipulate their environment and cause mischief.

Flora may also be influenced by the slow rotation. Instead of leaves, the local equivalent of trees could have dark-coloured large inverted-umbrellas or parabolic-dishes to collect sunlight; these could retract during the long night to conserve heat. As an extra detail, some of these ‘trees’ could use these features to catch small flying lizards by snapping shut, like large Venus flytraps.

Pathogens will not be a factor inherent to Avalar, although the Referee may choose to introduce a plague later.

## Social Design Details Development

Avalar is central to the largest local polity in this version of Foreven. The Referee has designated it as one of the early scattered settlements, founded by Solomani immigrants during the waning days of the Second Imperium. The Referee chooses a settlement date of -1850, some two centuries after the settlement of the worlds in the Sindalian Empire and three centuries before the arrival of Solomani on Darrian. The Referee assumes a one-off expedition, using a Tvarstar manufactory starship (see the *Journal of the Travellers' Aid Society, Volume 3*, page 32) with 10,000 colonists in low berths. The name Avalar means 'to endorse' in Spanish, making it conceivable that an Avalar Project was some endorsed colonisation scheme. It can be used as the name of the ship, long since disassembled, as well as the world and polity name. This allows the Referee to frame the origin story as a project to preserve Spanish language and culture far beyond the forces of the Galanglic and Vilani languages prevalent in settled regions.

Avalar's history begins with the departure of the Tvarstar manufactory starship *Avalar* from Terra more than 2,500 years prior to the current era. In the waning days of the Second Imperium, Terra was effectively cut off from the faltering administration of what was often called the Ramshackle Empire. Central authority was fragmented and far away, and worlds had begun to turn inward. In that period of retrenchment, the administration of Terra had little interest in preserving its many disparate cultures. Those who wished to save their unique languages and customs were often forced to emigrate to new worlds.

Using the Route feature of travellermap.com the Referee can determine a journey from Terra to Avalar at jump-3 would take at least 113 jumps to cross the 328 parsecs, a long trip around the Great Rift. Assuming two jumps per month, this voyage would take about 4.7 years but various delays, detours and repairs would likely increase the length of the journey to at least six years.

The manufactory ship can support a crew of more than 3,000 in addition to sleeping colonists, so pessimistically the Referee assumes 12,000 total settlers survived to begin life on the planet. Applying the technology parameters for isolated worlds discussed on page 21, an initial Population 4 will converge towards a long-term Tech Level 0–6, with a fair chance of colony failure as equipment wore out. Initial technology from

the ship was TL12. Assuming 1% population growth, the Population code reaches the millions (6) after two centuries and failure of all original equipment. Assuming no Zhodani contact prior to -1650, a 1D roll of 5 for Tech Level yields TL7.

The Referee assumes some intermittent Zhodani contact after -1000, causing the locals to become aware of psionics and possibly causing societal disruptions, with the population (known from reservation material to be 9 billion in 1105) reaching one billion prior to recontact with Imperial scouts in ~200. Rerolling Tech Level based on Population 9 provides a result of TL10, meaning Avalar likely had jump-1 technology when recontacted, allowing it to have visited and possibly colonised worlds along the 1-parsec cluster containing its system. Continuity with surrounding sector narratives forces the Referee to 'contain' the resultant Avalar Consulate polity to Foreven.

To create a background that makes Avalar a Zhodani client state, the Referee assumes a strengthening of ties and contact with the Zhodani after the First Frontier War ended in 604, with technical advisors gradually increasing the Tech Level to 12 (and jump-3 capability) over the next few centuries. The Psionic Suppressions of the early 800s and subsequent refugees strengthen this relationship and creates an enmity toward the Third Imperium.

Avalar has a population of 9 billion. The Referee names the capital city for a Spanish word for landing: Alunizar. A high population world can have sprawling cities or concentrated arcologies. The population may be limited to the land surface or spread across oceans, orbit and other planetary bodies within the system. For Avalar, the Referee chooses a moderate approach of dense cities surrounded by agricultural land occupying the hospitable parts of half of the planet and leaves regions less hospitable or further from Alunizar in a natural state. These choices inform the drawing of political or technological features on a world map.

The government of Avalar, which contains the bulk of the Avalar Consulate's population, is an Impersonal Bureaucracy (9) with a very high Law Level (C). This can imply psionic control of the masses rather than overt repression. Rolling on the Factions table provides only one faction, a Charismatic Dictatorship with few supporters, perhaps a former ruler or aspirant to dictatorial powers. Two rolls on the Cultural Difference table provides results of 14: Ritualised and 41: Tourist Attraction. The former speaks to the bureaucracy, the latter perhaps to tidal regions with spectacular sea shores, which the Referee dubs the 'Shores of Avalar'.

To provide something which speaks to the general culture, the Referee rolls again, resulting in 56: Unusual Customs: Social Standing, indicating a caste system – likely an elaboration on the Zhodani Noble-Intendant-Prole system with additional specialisations and restriction on behaviour and employment.

## Finalisation

After the development exercise, the Referee has enough information to create a world map and fill out a summary sheet for Avalar. If required for background in an adventure or campaign, the Referee can delve deeper into Avalar's history and society, writing a chapter-length essay and providing more detailed maps and charts.

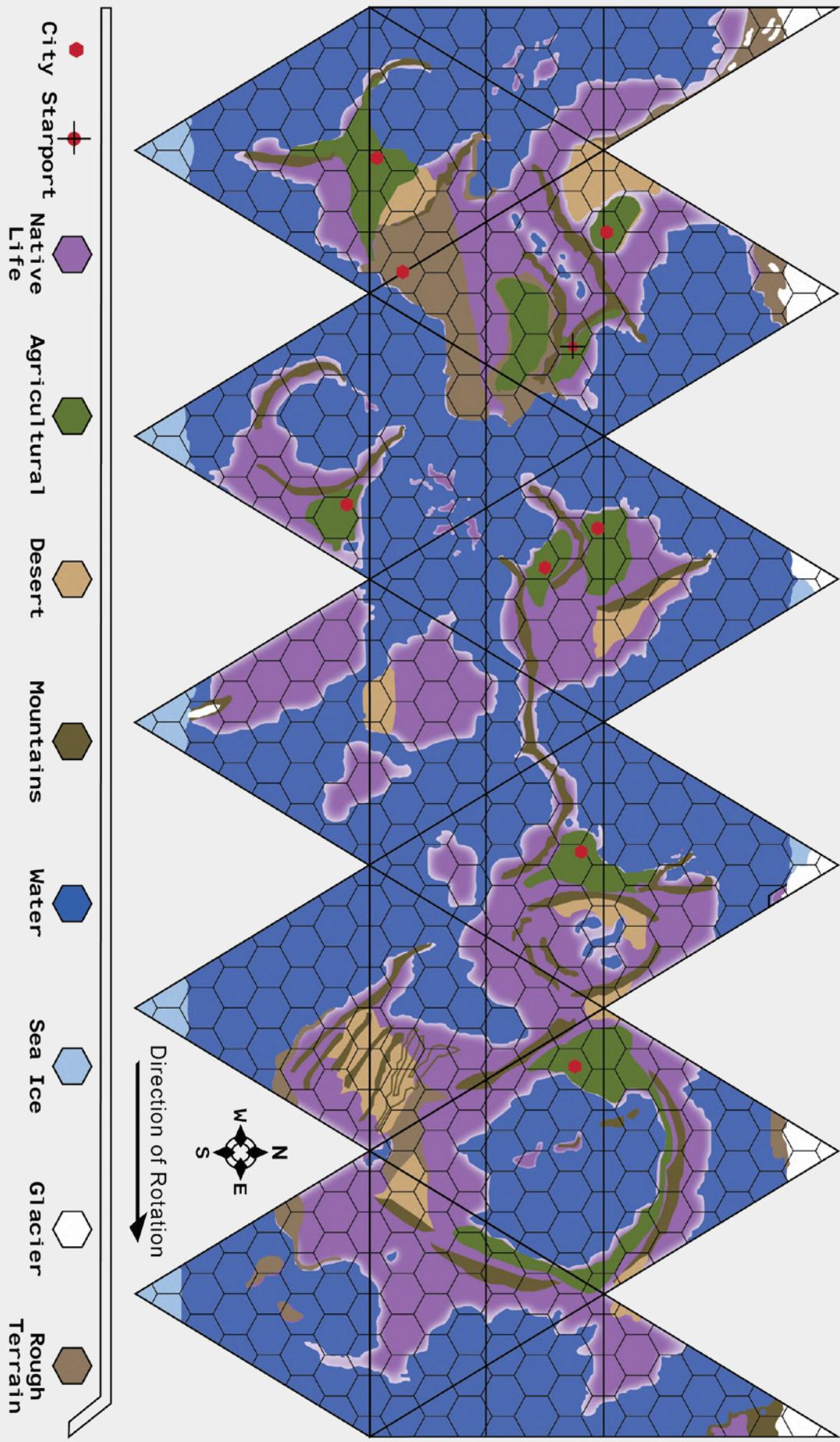
# AVALAR SUMMARY SHEET

<b>World Avalar (Foreven 1636)</b>
<b>UWP A75599C-C</b>
<b>Star System</b> M0 V Primary: Rosa 0 Planetoid Belts 4 Gas Giants
<b>Planetary System</b> Avalar: 0.20 AU from Rosa Luna (F20049C-C): 173,000km distance (15.5D), 7 day orbit
<b>Physical Characteristics</b> <ul style="list-style-type: none"> <li>Avalar is a world of many small jagged mountainous continents connected by land bridges or separated by deep oceans. Tidally locked to its moon, Luna, its day and 'month' are both 7.05 standard days long. A year is 69.645 standard days.</li> <li>Climate follows a 'daily' cycle: Cold nights followed by warm days, with the afternoon heat leading to a 30 hour period of heavy rains and winds flowing toward morning and evening; snow normally falls prior to dawn after a cold, clear night.</li> <li>Solar tides range from 11 to 150 metres, rendering most coastal areas uninhabited and creating spectacular coastlines such as the sea stacks of the 'Shores of Avalar' parklands.</li> <li>Amphibious 12-tentacled shelled 'demon crabs' roam the coastal areas and four-limbed 'lizard wings' fill both rural and urban niches. The major flora are parasol trees, whose single parabolic leaves track the sun and retract at night; some parasols are carnivorous feeding on lizard wings to supplement their diet.</li> </ul>
<b>History</b> <ul style="list-style-type: none"> <li>Avalar was settled in -1850 from Terra by Hispanic colonists arriving in a <i>Tvastar</i>-class manufactory starship.</li> <li>Contact with Zhodani traders before -1000 led to a technological renaissance and acceptance of psionics.</li> <li>Avalar resumed interstellar travel in -21.</li> <li>Population reached one billion prior to recontact with Imperial scouts in 200; natural growth and immigration from the Imperium, especially after the Psionic Suppressions of the early 800s.</li> <li>Avalar founded the <i>Avalar Consulate</i> in 628 after the first two Frontier Wars and remains its capital.</li> </ul>
<b>Social Characteristics</b> <ul style="list-style-type: none"> <li>9 billion Population, nearly all of Solomani human origin.</li> <li>Alunizar is the capital city of both world and Consulate.</li> <li>Avalaran Esponjol, descended from Terran Spanish is the local language.</li> <li>Local government consists of self-governing ministries ostensibly controlled by the <i>Avalar Consulate</i>'s legislative and executive branch.</li> <li>The Ministry of Law rests on an inquisitorial system with limited rights to defendants. The investigating judge determines guilt but is subject to appeal and review by senior judges.</li> <li>Civil society is structured on an intricate caste system, with psionic ability or heritage a major component of upper castes and the main method of advancement in caste. Other high castes include <i>Avalar Catholic Church</i> officials and descendants of the colony ship officers and colonial leaders.</li> <li>Castes govern limits on behaviour, apparel, employment and marriage. Legal penalties for violating caste limits are minor fines but violations lead to being ostracised and occasional extra-judicial violence.</li> </ul>
<b>Notes</b> For an hour each day, the moon (spanning 1.1 degrees) eclipses the sun (1.0 degrees); an inclination of 10 degrees from the ecliptic shifts the location of total eclipses during the course of the year.

# MAINWORLD DESIGN

NAME: AVALAR

UWP: A75599C-C



# POLITY DESIGN

Local sovereignties or powerful non-governmental organisations such as corporations, religions or secular social movements exist within a sector. A polity – an organised interstellar state with direct control of one or more systems – is the most obvious of these but may not be the most powerful. A polity does, however, tend to be the organisation with the most clearly defined borders. A polity often provides a foundation or safe haven for organisations with a specific religious, social or economic outlook, and may consist of a single sophont species or be dominated by one species or one culture; it may instead be a conglomeration of many sophont species and/or cultures. The procedures for polity design presented here can also form the basis of a process to develop other types of organisations, such as corporations or religions.

In all cases, the polity should have some historical background to describe how its growth, stagnation, decline or renaissance led to its current structure and span of control. Current properties of particular interest are its people, worlds, culture, military and relations with other polities and organisations.

Within a sector, native sophonts, scattered settlements from earlier times and newcomers to the scene are likely sources for polities. It is useful to have details of the mainworld or sophont prior to detailing the polity but there can also be a feedback loop from the effects of the founding and governing of an interstellar state upon its world or people of origin.

## Scope Development

The size of a polity is likely to be limited by its technology, with few societies incapable of jump drive travel likely to expand beyond a single star system and if so, only slowly and with considerable challenges to central authority. While a sublight interstellar civilisation is certainly possible, time required for travel and communications will force a decentralised structure upon the polity and many will lose cohesion as colonial culture almost inevitably diverges from that of the homeworld.

Polities of TL9–10 can become capable of jump-1 travel, either as a resurgent Major Race or the recipient of jump drive technology from an outside source. Such polities are likely to concentrate on a single main or

cluster of systems connected by jump-1 links. While the polity could cross gaps between these linked systems by using multiple jumps or constructing depots in deep space, the additional costs of maintaining these links makes such endeavours expensive to maintain. In isolation, large jump-1 empires may exist but could easily be overcome, economically or militarily, by a nearby polity capable of jumping longer distances.

TL11 societies can achieve jump-2, greatly increasing their ability to expand across vast distances. The First Imperium spanned 15,000 systems at TL11, eventually falling to an adversary that had achieved jump-3. Still, jump-2 polities can span vast distances, reaching most systems in regions with average or sparse density. A Referee may allow a TL10 polity to develop jump-2 using prototype drives.

At TL12, jump-3 is possible and, except in areas of rifts or very sparse starfields, a polity is unlikely to suffer a technological limit to expansion, although inherent societal limitations and contact with the borders of other polities are likely to constrain growth. Beyond TL12, starships can cross greater distances but the constraints of additional fuel and higher drive costs make all but specialised couriers and military vessels above jump-3 uneconomical. Nearly any system in the galaxy can be reached by one or two jump-3 transits.

If a polity has no contact with more advanced civilisations, the isolation factor discussed on page 21 can act as a guide to determining the maximum Tech Level of a polity and its worlds. Using the population of polity as whole, a Tech Level of Population +2 may be the highest sustainable Tech Level to reasonably expect, meaning a polity with a population in the tens of billions (A or 10) would peak at TL12. This is strictly an optional guideline but consider the fate of the Charted Space polity that clearly exceed this ‘limit’: the Darrians reached TL16 but managed to destroy their civilisation shortly thereafter; they advanced very quickly but perhaps not very wisely. If a polity is adjacent to an advanced interstellar state with higher technology, the isolation factor will have less effect but even with technology leakage a society requires a certain industrial base to support building indigenous high tech goods.

## Cultural Development

A polity's culture will be greatly influenced by its founding system. In the case of a single founding mainworld and/or sophont species, this culture should be developed first using the rules in the previous Mainworld Design chapter and the forthcoming Sophont Design chapter. If the polity is a federation or league of once-independent systems, the culture of the interstellar state may reflect a blend of the founding members' culture or could develop an entirely independent culture with only secondary characteristics related to its members.

To develop unique cultural characteristics and structural properties, the Cultural Differences table in the *Traveller Core Rulebook* can provide prompts for characteristics that apply beyond a single world. These should be interpreted through the lens of the founding culture or cultures but may also reflect influences of colonies or minor member systems. It is also possible that the overall polity's goals and values conflict with one or more of its members' cultures, creating a tension that can lead to a dynamic environment, which spawns both opportunities and hazards for Travellers.

## Structural Development

The governmental structure of a polity could be a simple extension of the structure of its capital world, especially for smaller polities, or it can be entirely different. In most cases, the smaller and younger the polity, the more similar its government to that of its parent world. A small polity may consist of a homeworld and some colonies with Government 6 or home rule provisions for a governmental system compatible with that of the homeworld.

In cases of polities with multiple powerful members, especially if they have differing governments or cultures, the government may not resemble that of any of its members. Such disparate membership often results in a federal, decentralised or confederate polity structure. A polity which has conquered worlds of other cultures might impose military rule and govern the polity as a whole from the capital or military fortresses.

The Referee can impose a structure that makes sense for the polity as a whole. If desiring a more random outcome, the Referee can roll on World Creation Government table with either the Population code of the capital world or entire polity as the basis for a modifier to the result. The polity can be assigned additional factions from the Factions table, either as new power centres or carried forward from homeworld

factions. In a federation or confederation with multiple significant members, sub-groups of members may form new polity-wide factions. If the Referee wishes to make polity-wide rolls on the Cultural Differences table, these may spawn or explain additional factions.

The Referee should note the basic governmental power structure at a high level, but excessive detail need not be developed, e.g. unless some very unique qualifications or process determines the viability of candidates, it is enough to state that a society has a powerful legislative body with representatives from member worlds, however details into the electoral process and operations of the legislature are only needed if they are relevant to the Travellers.

## Historical Development

An interstellar polity may have any number of possible origin stories. The society could be evolved from a local sophont species as it expands into neighbouring space. Similarly, scattered systems settled in earlier times can achieve or regain interstellar capability and expand into surrounding space. The origin or culture of major polities need not be based on societies within the sector but could be based on outside influences. Expanding interstellar states or ideas may encroach or a distant culture's former citizens may arrive, establishing new outposts from that polity or fleeing its rule to set up independent states. These outsiders may form polities within the sector or cause conflict within and between local polities.

A basis for a society's history can result from answering three fundamental questions: *Who? When? Why?*

**Who?** The Referee should develop locally-based societies after developing their homeworlds or dominant sophonts. At some point the system-bound founders attain at least TL8 and develop the ability to reach the stars. Thereafter, settlers may depart, either taking aspects of their core society with them or setting off to build a society that alters or rejects those values. This question helps determine the nature of a polity's member worlds.

**When?** The age of a society is a factor in its size and complexity. Although jump-capable ships can cross a whole sector in a year, settling a new system requires resources and time, and the longer the journey, the longer required for travel to and from the new system for colonists, supplies and communication. Unless faced with an existential threat, decades or at least years are likely to pass between separate colonisation efforts launched from a single world, although perhaps high

population, competition, or a strong drive to expand may vary this. *When?* helps to build expansion ripples on a map to determine borders and Population values.

*Why?* Motive is a factor in rate and type of expansion. Colonisation might be limited to systems with worlds similar to the homeworld but exploitation or exploration-based expansion might be less particular. In a sparsely settled region of space, even if densely occupied by stars, a polity faced with few competitors may pick only the best worlds for colonisation and develop a very sporadic settlement pattern with minimal bases supporting routes to colony worlds. A society of this type may have a series of thread-like routes of scattered outposts connecting the homeworld and its colony. Over time, this may evolve into a web of worlds and finally a completely settled region. The Referee should consider the nature of the society – its hierarchical tendencies, for example – as well as the polity's age before deciding whether to fill in all the marginal systems in a specific region. *Why?* may determine whether a ripple of expansion is 'thin' or 'thick'.

Obviously, the existence of other polities and sophonts has great influence on expansion and shape. Depending on whether the expanding polity occupied barren worlds or gained control of other systems by promises, diplomacy, economics, threats or violence – or a combination of such factors – the evolution of the polity could be rather straightforward or complex, filled with wars, intrigues, setbacks or triumphs. The Referee should note relevant major events of this evolution in the timeline – not necessarily detailing the addition of every system but listing events affecting the structure of the polity.

Additionally, the question *How?* may be of great importance – for instance sublight ships versus jump drives. Finally, the question *What?* refers to how the society evolved from *Why?* to become the type of society it is in the sector's current era.

## Military Development

The armed forces – or lack thereof – of a polity are often an important aspect to consider. At a minimum, the Referee should determine, modify or justify the location of naval and military bases. Relative strength and technological sophistication of the military can be a relevant detail as Travellers may encounter them in opposition to their plans. There is no need to develop a complete – or even incomplete – organisation chart of

the military but if useful for the campaign, the Referee can note the general force levels, deployment and composition of military assets.

If the local military has a particular vessel that Travellers are likely to encounter, the Referee can include a spacecraft or vehicle design as part of the polity's description. Creating a single ship or describing the kit of soldiers is a good method to develop an illusion depth. This approach also works for non-governmental entities: a merchant line, exploration group, even a religious organisation, may favour a certain design of spacecraft, vehicle or other item.

## External Relations

Once the polity is 'evolved' to its present state, the Referee should summarise relationships with other societies. In some cases, the history of the polity may already have determined some basis for current relations through events such as wars or less overt forms of competition. These interactions, especially wars or treaties, can add to the sector's timeline as the Referee completes each polity.

## Iterative Design

Polities interact with each other and with outside factors, influencing historical development, perhaps even their culture. Major events can cause a revision to the background of existing polities, systems or sophonts. The Referee may approach this by creating timeline elements and then working them into polity histories as they develop. This approach certainly works, with design decisions filtered through the lens of an existing concept but it is difficult to anticipate everything, especially in sectors with many polities or a long history. It can be beneficial to allow for 'surprises' to occur as depth is developed; these need not change the nature of the Referee's overall vision but may spawn new ideas and allow for interesting situations for Travellers to explore.

## Finalisation

Major events in a polity's history should find themselves added to the sector's timeline, including founding dates, major wars, revolutions, disasters or other events that might add flavour. The Polity Summary sheet in *Forms and Charts* provides a format for a short description of the polity, but as with mainworlds, the Referee should determine the detail desired. The sheet may be enough or a chapter or book might result if the polity is to be the focus of a campaign. Not all the detail need be developed at once, but the sheet should provide enough for a solid framework.

# POLITY SUMMARY SHEET

Polity
Capital
Description
Culture
Structure
History
Military
External Relations
Notes

## EXAMPLE POLITY: AVALAR CONSULATE

This example will illustrate the process to create details for the Avalar Consulate.

### Scope Development

The Avalar Consulate controls a number of systems in the rimward region of Foreven. The Avalar system is located at hex 1636 in subsector N. That is the extent of ‘canon’ information on the Avalar Consulate and helps form the basis of its scope. To prevent conflicts with other sectors, the Avalar Consulate will be bound by the borders of Foreven. This especially limits its rimward expansion. Although Avalar’s TL12 economy is capable of building jump-3 ships, most of its starships – especially civilian vessels built during its colonial expansion – are likely to be only capable of jump-2 or less. Additionally, expansion is likely to have focused to coreward, towards the Zhodani Consulate. A rough estimation of Avalar’s influence was developed as part of the Setting Details process to determine Population values for Foreven. This exercise assumed that Avalar’s scope was limited to systems reachable across two jump-2 gaps from the cluster of jump-1 systems accessible by Avalar.

With these guidelines in mind, the border of the Avalar Consulate can be sketched on a sector map. This rough border includes the system at 1938, already presumed to be Vargr-dominated. The Referee can decide that this system – Zuekgov, a Vargr Gvegh language name – is under Avalar military occupation as a potential source of corsairs and other ‘disruptive influences’.

After determining the border, the Avalar Consulate consists of 27 systems. Using worlds within those borders, the total population of these systems is 10.7 billion, of which 9 billion reside on Avalar itself.

### Cultural Development

With systems settled by Avalar or absorbed by it in the process of expansion, the culture of the Consulate is dominated by its homeworld. While individual worlds may have some variation and the occupied Vargr-dominated world of Zuekgov certainly has its own culture, as a whole the beliefs and practices of the homeworld dominate the Consulate. The Referee chooses not to roll for a separate cultural difference for the Consulate, although individual systems may deserve a roll as they are developed.

### Structural Development

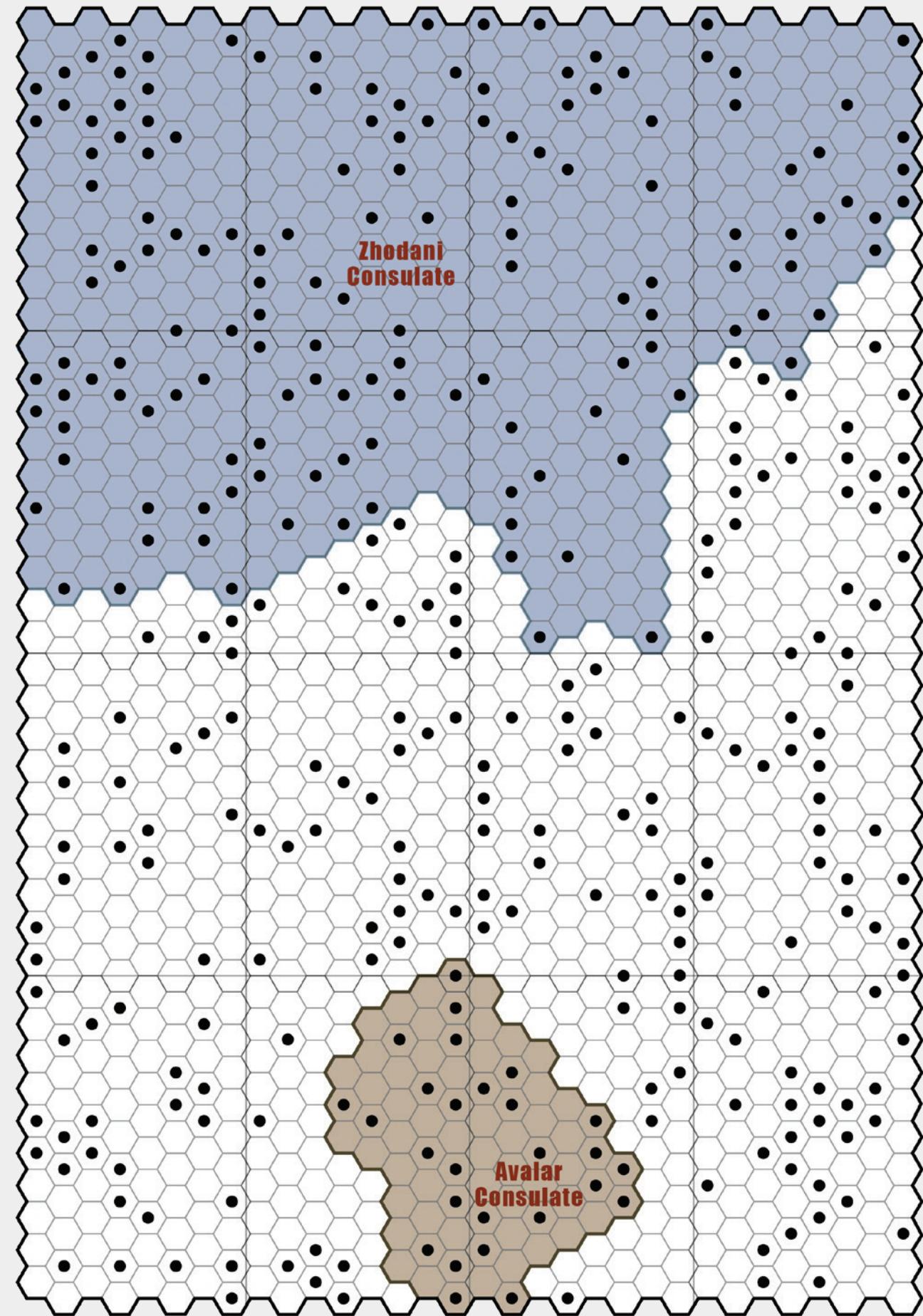
The name ‘Avalar Consulate’ assumes some sort of consular leadership and its affiliation with the Zhodani Consulate implies commonality. A full 84% of the Consulate’s population resides in the home system, making it a dominant factor, but the other 26 systems should have some influence. The Avalar system is dominated by the bureaucracy but for the Consulate the Referee chooses to create a legislative branch, a congress of representatives from the 12 systems (excluding Zuekgov) with at least one million residents. With representation determined by population, fully 85% of the representatives would be from Avalar itself, although each of the represented worlds should have at least one seat. For executive functions, the Referee decides that this Grand Congress elects nine Consuls, each for a nine-year term (standard year, or close to it: five Avalar years would be about 350 days, in mutated Spanish a ‘cincoano’ – a detail suitable for either a Mainworld or Polity Sheet mention). At least two of these Consuls will be from the 11 represented colonial systems. Election or appointment as a representative or Consul will be limited to upper castes, specifically those with psionic ability. Judicial matters would be handled by Consuls regarding Consular constitutional matters, with lesser judicial affairs administered by each system’s Ministry of Law.

### Historical Development

Using Avalar history as a guide, the history of the Consulate begins with its first interstellar voyages to neighbouring Tranquiland (1637) 21 years before the Imperial era and the world’s settlement 39 years later. This began Avalar’s period of expansion and exploration but the Referee decides that true development of the Consulate came in response to Zhodani efforts after the first two Frontier Wars (589–604 and 615–620).

In the aftermath of those conflicts, the Zhodani encouraged the formation of a strong client state to block Imperial expansion to spinward in those regions rimward of the Zhodani border. With client state status and a defence treaty signed after the Second Frontier War, the Avalar Consulate formally came into existence in 628.

Expansion continued gradually and an influx of psionic humans from the Third Imperium occurred in the ninth century as a result of the Imperium’s Psionic Suppressions. The Third Frontier War (979–986) was the first test of the alliance with the Zhodani. Although far from the main fighting, the Consulate experienced Imperial commerce raiding and fought back with raids on Imperial bases in Foreven. Distant from Imperial borders,



the Consulate's actions were little more than footnotes but the Consulate again traded raids with Imperial outposts during the Fourth Frontier War (1082–1084).

## Military Development

The Avalar Consulate requires only one armed military service: the Consular Armada, which includes a marine and naval infantry element, the latter expanded to act as the occupying power on Zuekgov. Additionally, the Consulate maintains a paramilitary psion-supplemented Public Safety Division, a police force with vast surveillance powers.

The Armada is mostly defensive with naval bases, designed as orbital defence forts, shipyards and administrative centres. The systems named Pres Alfa (1738) and Pres Tinto (1734) are essential fortresses ('Pres' from '*presidio*'), the latter of which is entirely under Armada rule. Surface installations and

a few deep meson sites protect ground installations and civilian populations. The Armada's focus has historically been defensive, concentrating on piracy suppression and system protection, although efforts are underway to increase the Armada's strike capacity in anticipation of another Frontier War. Capital ships are a mix of second-hand obsolete Zhodani heavier cruisers (TL13) and smaller indigenous TL12 designs, although a battlecruiser building programme is underway, prompted by – and this carries forward Avalar's undefined Charismatic Dictator faction – the Consulate's Defence Minister, an Armada admiral of some renown.

## External Relations

The Avalar Consulate is a Zhodani client state, receiving military and technical aid from its partner across trade links reaching the coreward portions of Foreven. Considering this, the Consulate's embracement of psionics and the psionic refugees from

Name	Location	Bases	Statistics	Trade Codes	Travel Code	Gas Giants
Lun Escarpa	1630	N	B400310-C	Ht Lo Va		G
Amanecer	1234		C212347-9	Ic Lo		G
Ardiente	1335		B461885-B	Ri		G
Rocaroja	1432	N	B100798-A	Na Va		G
Acerbo	1534		E877100-7	Lo		
Lun Varga	1536		C336412-9	Ni		G
Horizonte	1539		D87A653-6	Ni Wa		G
Buergeria	1631		C542635-6	Ni Po		G
Escandi	1632		E746321-3	Lo Lt		G
Hortali	1634		A9B8787-C	Fl Ht		
Avalar	1636	N	A75599C-C	Ga Hi Ht		G
Tranquilidad	1637		C669638-8	Ni Ri		
Lun Estrad	1639		B4346A8-A	Ni		G
Orilla	1640	N	B400233-C	Ht Lo Va		
Pres Tinto	1734	ZM	B452464-C	Ht Ni Po		
Pres Alfa	1738	ZM	B443454-C	Ht Ni Po		G
Lun Rico	1739		D442221-7	Lo Po		G
Salacia	1833		C98A154-C	Ht Lo Wa		G
Cloacina	1834		C510647-8	Na Ni		G
Atun	1840		C66A336-A	Lo Wa		G
Tresca	1936		D76A340-6	Lo Wa		G
Zuekgoz	1938	M	C657864-6	Ga	A	G
Fragos	2135	N	A000641-C	As Ht Na Ni Va		G
Ninfa	2136		B567757-B	Ag Ri		G
Drevas	2137		D410444-9	Ni		G
Larissa	2236		C659841-7			G
Lun Orcus	2237	N	B100341-C	Ht Lo Va		G

ZM: Zhodani military base

N: Naval base

M: Military base

the Psionic Suppressions, the Consulate's relationship with the Third Imperium cannot be cordial. Relations with the Imperium are tied to those of the Zhodani Consulate: when the Zhodani and the Imperium fight, Avalor will be dragged into the conflict, although it will be remote. Relations with other states must be viewed through this lens. Mostly this involves the coreward interstellar states of The Beyond, but could also include relations with pro-Imperium polities or client states the Referee chooses to place in Foreven.

## Iterative Design

With the present state of Foreven's development, the Referee does not need to consider influences besides those of the Zhodani and Imperium. The Tlinzha of Tlesho – to be developed in the Sophont Design chapter – are too distant and xenophobic to be more than a routing problem for trade between the two

Consulates. If the Referee places pro-Imperial polities or strong Imperial client states within Foreven, these could influence the Avalor's development.

## Finalisation

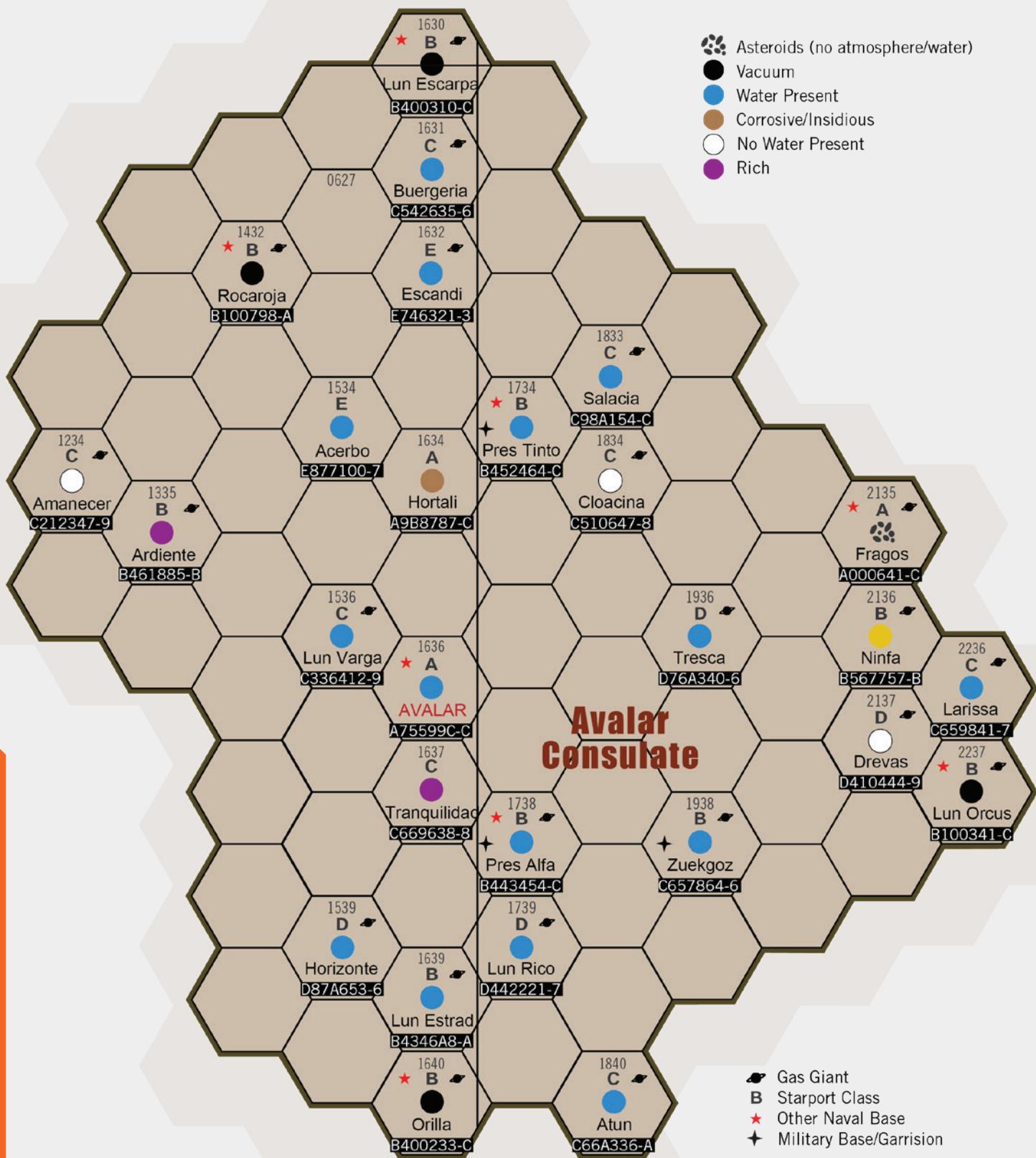
The Avalor Consulate builds upon systems generated by procedures chosen in the example portion of the Sector Details chapter. Their names have been created with the flavour of a much malformed 'Spanish of the future'. As with all other non-canonical details developed as examples, they are usable by a Referee in a campaign or can be entirely ignored. However, the system characteristics, names, maps, and tables are provided to complete the example of a polity.

The following timeline details the major events in Avalor Consulate history, from the original colonists' departure from Terra to 1105. It includes elements from the mainworld design example and a few additional details.

### Avalor Consulate Timeline

-1856	The <i>Tvastar</i> -class manufactory starship <i>Avalor</i> departs Terra.
-1850	The <i>Avalor</i> arrives at the system and world its crew names Avalor.
-1650	Avalor's population exceeds one million with technology stabilising at TL7.
-1635	First contact with Zhodani explorers.
-1000	Introduction of psionics into Avalor society.
-633	Grange War establishes central control of Avalor's provinces.
-588	At the Council of Revelation, the Avalor Catholic Church accepts psionics as a gift from God.
-21	Avalor reaches TL9 and begins producing jump-1 starships.
18	Tranquillidiad settled from Avalor.
125	Avalor's population exceeds one billion with technology reaching TL10.
206	First contact with Imperial scouts.
604	First Frontier War ends, resulting in the start of Zhodani client state status and technical assistance.
614	Avalor reaches TL11 and begins producing jump-2 starships.
620	Second Frontier War ends. Avalor signs a defence treaty with the Zhodani Consulate.
628	Ardiente settled. The Avalor Consulate is formally established and recognised by the Zhodani.
704	Ninfa settled from Avalor.
744	Larrisa voluntarily joins the Consulate.
800	Psionic Suppressions begin in the Third Imperium, resulting in a wave of psionic refugees.
855	The Avalor Consulate reaches TL12 and establishes a naval base at Fragos.
980	The Avalor Consulate declares war on the Third Imperium during the Third Frontier War.
983	Naval bases and fortresses established at Pres Alfa and Pres Tinto.
985	An Imperial strike on Tranquillidiad causes more than two million casualties and devastates the world's infrastructure.
986	Avalor's Vengador strike force attacks an Imperial naval base in Urnian, retreating after heavy causalities. Third Frontier War ends.
1045	The Avalor's Consulate's occupation of Zuekgoz begins as a piracy suppression mission.
1082	Fourth Frontier War begins. Avalor declares war on the Third Imperium and raids Urnian installations.
1084	Larrisa and Lun Orcus raided by frontier cruisers out of Urnian space. Fourth Frontier War ends.

# AVALAR CONSULATE



# AVALAR CONSULATE SUMMARY SHEET

**Polity** Avalar Consulate

**Capital** Avalar (Foreven 1636)

## Description

Zhodani Client State occupying 27 systems in the mid rimward region of Foreven.

See Avalar System table.

## Culture

- *Avalar cultural norms carry forward to the Consulate. Society is divided into castes; high castes are psionicists, church officials and descendants of the colony ship's officers and leaders.*

## Structure

- *Centralised union of worlds with the dozen members of greater than one million population having proportional representation in the Grand Congress, meeting in Alunizar on Avalar.*
- *Grand Congress elects nine Consuls to act as executives supervising the bureaucratic Ministries. Consular elections stagger one every cinoano (350 standard days); two Consuls must be from outside the Avalar system.*
- *Consuls act as judges over Consular matters, with local Ministry of Law judges handling system issues.*

## History

See Avalar Timeline

## Military

*Consular Armada: Includes marine and naval infantry elements.*

- *8 naval bases with orbital forts and surface defence facilities.*
- *Pres Alfa and Pres Tinto are fortress worlds.*
- *20 naval infantry combat brigades stationed on Zuekgov.*
- *Armada includes: 2 x squadrons obsolete (TL13) Zhodani heavy cruisers, 3 x squadrons indigenous (TL12 light cruisers), plus indigenous destroyers, frigates and corvettes with battlecruiser programme underway.*
- *Naval bases protected by monitors and SDBs; mobile patrol groups support remaining systems.*
- *Consuls control paramilitary psion-supplemented Public Safety Division (PSD).*
- *Large force present on Zuekgov.*
- *PSD patrols at starports and on all member worlds.*

## External Relations

- *Client state of Zhodani Consulate*
- *Poor relations with Third Imperium and Imperial client states*

## Notes

- *Current Defence Minister is Admiral Jorj Valenz, once commander of the Fragos naval base and commander of the Fourth Frontier War era raider force. Valenz has channelled this popularity into the Movement for the Executive, a political party calling for a new constitution built around a strong executive as an answer to 'Avalar's malaise'. Three current consuls belong to his movement, which is popular among the officers of the Consular Armada.*
- *Valenz has begun a programme, to produce eight battlecruisers within the next two decades. Insufficiently funded, only one of these vessels has been launched, with commissioning likely years away. Three more ships are under construction but the four remaining ships are not funded. Valenz represents the 'Mobile Movement' within the Armada; the opposing 'Security Movement' emphasises defensive installations and improved orbital infrastructure and retains the support of six of the nine consuls, which influences budget allocations.*

# SOPHONT DESIGN

Creating an interesting sophont species can be challenging. The default outcome of many a superficial effort can result in the equivalent of a human in a <insert animal here> body or the converse: a humanoid with the behavioural characteristics of a <insert animal here>. Much as with all depictions of alien life, working off a single exemplar – Earth life – can be a challenge. Arguments about ‘convergent evolution’ or ‘universal biological principles’ are little more than guesses based on a single world’s examples of life. Beyond some basic physical and chemical assumptions that life requires a source of energy to persist and thrive, the forms which alien life may take and the limitations on intelligence are biased guesswork. Consider the quote ‘how much intelligence does it take to sneak up on a blade of grass?’ which denigrates the chances of intelligent herbivores. Ask an elephant about that quote and you might get an interesting (yet unintelligible) answer.

A description of native sophonts should at least include two general attributes: the sophont’s physical appearance and its behavioural or societal characteristics. The latter, and possibly the former, may not be universal across a species but the sophont’s core attributes and values can be used as starting points. For primitive natives with little or no outside contact, the basics around these two factors can be left as rough sketches, to be detailed in later adventures if needed. Unless the Referee enjoys creating alien societies as a hobby, details of primitive sophonts only become important when the Travellers encounter them or visit their homeworld.

The Referee should prioritise developing those sophonts who interact with spacefarers or those who are spacefarers themselves. For these, their expansion into space or their reaction to other sophonts’ expansion into their neighbourhood can have a major impact on the sector. These are also the sophonts Travellers are most likely to encounter and could become Travellers themselves. Referees are free to use whatever comes to their imagination in developing them, but to jumpstart the process this chapter provides optional tables for physical and behavioural characteristics. The Cultural Differences table on pages 254-255 of the *Traveller Core Rulebook* also provides a number of random cultural factors which can be helpful in developing a unique culture for each sophont.

A detailed sophont description could be a short list of attributes on the provided Sophont Summary sheet, or it could become a multi-page body of work, but should include the following sections:

- **Names:** What are they, their homeworld and any associated polities called?
- **Physical Characteristics:** What do they look like?
- **Evolutionary Development:** How did they get that way?
- **Life Cycle:** How do their lives progress?
- **History:** How did their society develop?
- **Society:** How does their society look now?
- **External Relations:** How do they interact with other sophonts?

## Names

The names of a sophont species, its homeworld and any polities, requires some thought. They might be words used by the sophonts themselves or may come from explorers involved in the discovery or first contact with the species. In many cases it will be the latter. Human language is limited by human physiology. Other species may generate sounds using very different organs or not convey language in sound at all. Conversely, even if the sophonts use a language a human can pronounce, actual meaning can be lost or changed in translation. Names might reach human ears through a third party of entirely different sophonts who have altered or ignored native words. These things occurred on Earth as new cultures were encountered and is even more likely to happen when dealing with completely alien languages and contexts. The Referee should take these factors into account when creating names for a sophont, as names themselves can tell part of a sophont species’ story.

## Physical Characteristics

Sophonts come in a variety of different shapes and sizes. Some characteristics may result from their environment: aquatic, gas giant skies or the vacuum of space. The Referee may have specific ideas in mind for certain characteristics but might not have considered everything. In some instances, the Referee may wish to create a sophont on short notice or have lost the creativity required to create another unique race after just completing several.

## Sophont Physical Characteristics

### D66 Characteristic

11	Amorphous – the species has no defined shape or is capable of transforming its shape. This can be similar to the behaviour of an amoeba or involve more sophisticated alterations.
12	Asymmetrical – the species has no symmetry or its symmetry is ‘broken’ with one or more ‘sides’ differing in limb dimension, quantity or shape.
13	Bilateral – the species has bilateral symmetry with two sides, one mirroring the other. This is an external feature which may or may not be mirrored internally.
14	Spherical – the species has spherical symmetry with limbs protruding symmetrically in three dimensions. The body itself may not be spherical but the distribution of limbs forms a spherical pattern without preferred sense of left, right, up or down.
15	Radial – the species has four or more degrees of symmetry based on a central axis for limbs and possibly sensory organs.
16	Trilateral – the species has a trilateral axis of symmetry, with limbs and sensory organs exhibiting a symmetrical pattern in threes.
21	Bipod – the species has only two limbs or one limb per degree of symmetry.
22	Hexapod – the species has six limbs or three limbs per degree of symmetry.
23	Decapod – the species has 10 limbs or five limbs per degree of symmetry.
24	Many-limbed – the species has six or more limbs per degree of symmetry.
25	Octopod – the species has eight limbs or four limbs per degree of symmetry.
26	Tetrapod – the species has four limbs or two limbs per degree of symmetry.
31	Grasper – the species has manipulators with three or more mutually opposed flaps or digits capable of clamping an object.
32	Gripper – the species has manipulators with two opposed flaps or digits capable of clamping an object.
33	Hand – the species has manipulators with two groups of one or more opposed digits capable of holding an object.
34	Paw – the species has manipulators with multiple unopposed digits capable of holding an object.
35	Socket – the species has manipulators of hollows or suckers capable of holding an object.
36	Tentacle – the species has manipulators with one or more flexible digits capable of entwining or coiling to hold an object.
41	Amphibian – the species is able to survive in both a gaseous and liquid environment.
42	Aquatic – the species evolved to survive in a purely or primarily liquid environment.
43	Floating – the species floats either in the air or on the surface of a liquid, primarily due to buoyance or body density.
44	Flying – the species is able to actively fly or glide in the air of its native environment.
45	Subterranean – the species evolved to spend all or most of its life beneath the solid surface of its native environment, in subterranean dwellings and/or by actively burrowing.
46	Triphibian – the species if able to survive in three separate environments, normally in the air, on the surface and in liquid. This may be true throughout the species’ life cycle or different life stages may thrive in different environments.
51	Carnivore – the species evolved to subsist primarily by hunting and killing motile prey.
52	Herbivore – the species evolved to subsist primarily by eating non-motile food, generally considered to be ‘plants’ but in the broadest sense herbivores could feed on bacterial mats, fungi or any other immotile organism or material.

53	Immobile – the species is immobile or moves extremely slowly. This could result from the species being an autotroph, a primary producer gaining energy from non-living sources such as sunlight, heat or chemical reactions. An immobile species could also be a filter-feeder, gaining sustenance by filtering food particles travelling across its path, or a siren, luring prey to its location and directly or indirectly causing its demise.
54	Omnivore – the species evolved as an omnivore or generalist, equally capable of consuming motile or immotile food sources or scavenging dead organic material.
55	Parasite – the species evolved to gain nourishment by use of another living organism, forming a parasitic or mutualistic bond to gain sustenance. In some cases, only the parasite benefits from the relationship, weakening or killing its host, in others the arrangement is mutualistic or symbiotic, with both host and parasite gaining from the arrangement.
56	Scavenger – the species evolved to gain nourishment by harvesting food from dead lifeforms that it did not hunt and kill itself. In some cases, this may involve the active scavenging and hijacking of recent kills of carnivores, in others, scavenging is a secondary act of consuming unused or inedible portions of other's prey.
61	Asexual – the species has no gender or only one gender and reproduces by producing buds or clones of itself or by splitting into multiple organisms.
62	Extreme gender dimorphism – the species has genders which vary in size by a large amount, often magnitudes. In some cases, genders may have differing body plans, or a gender may be a symbiont.
63	Hermaphrodite – the species has more than one gender but an individual may be serially or simultaneously a member of more than one gender.
64	Metamorphic life cycle – the species has a life cycle of multiple stages separated by a metamorphosis of shape. This metamorphosis can completely change the appearance and characteristics of an individual. Some life stages may not be considered sophonts or may have differing genders.
65	Multiple sexes – this species has more than two genders required for reproduction. While many species might limit reproduction to only one or two genders or castes, in this species at least three genders are necessary for the conception and development of a new member of the species.
66	Non-intelligent gender – this species has one or more genders not considered sophonts because of a lack of intellectual ability.

The Sophont Physical Characteristics table provides optional guidance on the form and basic biology of a sophont species. Rolling D66 provides a variety of results, not weighted by probability. The table's 36 outcomes are grouped into six categories by general characteristics by the first dice.

- 1 **Symmetry:** The being's basic shape or body pattern.
- 2 **Number of limbs:** The being's number of limbs per degree of symmetry.
- 3 **Type of manipulator:** The structure of the being's manipulating appendages.
- 4 **Environment:** The nature of the environment in which the being evolved.
- 5 **Behaviour:** The being's original role within its ecosystem.
- 6 **Gender:** The being's mode of reproduction or its life cycle.

This structure allows the Referee to use the entire table as inspiration, perhaps rolling one to three times to get a 'feel' for the species or to focus on one aspect of the sophont by rolling a single dice and treating it as the second digit on the table. This table is intended only to spark the Referee's imagination. Results can, and should be, ignored or altered at will. Although it is possible to do so, it is not intended for the Referee to roll once for each of the six portions of the table, neither are the characteristics intended to be an all-encompassing guide to the near infinite variety of forms possible. Note that neither default environment type (terrestrial) nor default gender type (two genders) are listed on the table. It also does not consider other important aspects of a species, such as size, metabolic process or parenting strategy.

This table is also useable as a starting point for creating non-sophont animals and defining basic characteristics of one or more of a world's major phyla or classes of

## Non-Standard Characteristics

Roll	Characteristic
1	<b>Cloned reproduction:</b> An artificial method of reproduction, such as clone creche farms or some less industrial method as a standard or common form of reproduction.
2	<b>Cybernetic:</b> An extensive and non-medically necessary use of artificial components.
3	<b>Hive Mind:</b> Cybernetic, psionic or other linkage between all members of the species. Individuality may or may not be suppressed.
4	<b>Machine Intelligence:</b> The brains of the sophont have been uploaded onto technological platforms, a condition which could also be either a perquisite or an enabler for a hive mind and which may still result in a species with some biological components – the obverse of a cyborg.
5	<b>Multi-species Collective:</b> This may indicate a naturally evolved group of species or involve uplifted or artificially created biological or machine life in which different species form parts of a collective society.
6	<b>Psionic:</b> A race in which psionics is a central tenet of society. The Zhodani could qualify, although psionics is limited to their ruling classes. The Droyne are perhaps a better example.

life. Again, it is not appropriate to roll all six ‘second’ dice. To create a few ‘types’ or classes of fauna, the Referee can choose or roll for symmetry, number of limbs and type of manipulator or environment as major distinguishing features and improvise from the results.

## Unusual Characteristics

On a case-by-case basis, the Referee can add non-standard characteristics to a sophont species, which result not from evolutionary pressure but subsequent social or technological development. While such attributes should be used sparingly, certainly not on every sophont species, the Non-Standard Characteristics table provides additional physical characteristics to consider.

## Evolutionary Development

Even sophonts who have become entirely artificial originally evolved from some earlier non-sentient form or were created by some other sophont. The Referee should give thought to describing the process of this evolution from ‘animal’ to ‘sophont’ to explain behaviours, beliefs and limitations that persist into sentience. The environment and behaviour of sophonts before they became sophonts, as well as any other physical characteristics, will influence the society they create and their tendencies in interactions with others.

## Life Cycle

All biological sophonts are born, grow up, grow old and die. For some sophonts, different phases in the life cycle may involve very different forms separated by some type of metamorphosis. This may transform

an individual’s role or membership in society. For metamorphic sophonts, describing the forms, duration and mental capacity of each stage of life is important.

## History

To provide background for describing a sophont society and external relations, the Referee can write a sketch covering development from sentience to its current state. This sketch need only cover major events, such as initial sentience, emergence of its current society and major technological accomplishments, such as industrialisation, first spaceflight or first contact.

## Society

The evolution of the society can be informed by physical and evolutionary details as well as Government and Law Level. Societal details can be invented the Referee or inspired by the use of the Cultural Differences and Factions tables of the *Traveller Core Rulebook*. These results should be interpreted as appropriate for the sophonts, discarding or ignoring results which do not fit, although with a little bit of creativity on the Referee’s part, adapting seemingly unsuitable rolls can lead to interesting and unique results.

## External Relations

Once the sophonts and their society have been described, the Referee should summarise that society’s relationship with other sophonts and polities. Unless they remain protected or isolated from others, this should be done in conjunction with determining history and society.

## SOPHONT SUMMARY SHEET

Name
Homeworld
Physical Characteristics
Symmetry
Number of Limbs
Type of Manipulator
Environment
Behaviour
Gender
Other/Notes
Evolutionary Development
Life Cycle
History
Society
External Relations
Notes

## Finalise and Revise

Other sophonts and polities could influence everything from the history to the physical form of a sophont. If these interactions are developed later in the process of creating the sector, the Referee should circle back on detailed descriptions of previously established sophonts and polities, and incorporate these as necessary. The creation and incremental development of a common sector timeline is an aid to keeping these relationships synchronised.

The sophonts' description should at the very least contain enough summary information to provide a brief entry in each box of the Sophont Summary sheet, even if that box contains just a notation of 'N/A' or even 'TBD'.

A major sophont might merit a chapter of a guidebook with sketches of the beings and their society and/or technological artifacts and other details, including procedures for creating Travellers of that species.

## EXAMPLE SOPHONT: THE TLINZHA

The narrative below walks through a creation process for a sophont species. Guided by the tables presented earlier, this process is as much art as procedure and the Referee is encouraged to improvise and use dice rolls only to assist the creative process. This example will focus on expanding a few basic details to create a detailed description of a sophont, covering categories listed earlier in this chapter. After filling out a summary worksheet, the sophont will be described in narrative form, including the process to create Travellers.

The example will go through the creation of the Tlinzha, natives of the system in hex 0720 of Foreven. For general background, the Tlinzha have acquired jump drive technology and occupy three systems. The Referee's initial assumption is that they are territorial and xenophobic. In a detailed sector, Tlesho, their homeworld should get its own worksheet and development process as should their polity, the Tlesho Union. For these examples, those processes are abstracted and included only as they pertain to the development of the Tlinzha.

### Names

Assuming first contact with the Zhodani, the Referee comes up with something interesting (and pronounceable): Tlinzha.

In many, perhaps most, cases the sophont's homeworld should be different than the name of the species. After considering more Zhodani words and looking for something suitable, the result is: Tlesho for the name for the world and system at 0720. Henceforth, they are the Tlinzha of Tlesho and their small realm is the Tlesho Union, comprised of the systems Zhdikevli (0819), Chtenchee (0820) and Zdefr (0919).

### Physical Description

Prior to developing the Tlinzha, this example will take a short detour into describing its homeworld, Tlesho (A998844-A), a world somewhat larger than Earth with dense atmosphere and limited continental masses. The Referee places the world in orbit around an M3 red dwarf that in turn orbits an F5 main sequence star. Tlesho orbits its flare-prone star every 16 days and this in turn orbits the larger star every 1,000 standard days. Tlesho rotates slowly on its axis – not quite locked but with a little precession, like Venus – and all regions eventually receive 'daylight' from the red star. For every orbit, each side of the planet will receive dimmer but shorter spectrum light ('white' – although probably centred in the green or yellow part of the spectrum) from the more distant white star for eight days out of the short 'red year'.

With that in mind, the Referee makes three rolls from the Sophont Physical Characteristics table on page 51, resulting in 61: Asexual, 56: Scavenger and 25: Octopod. Rather than rolling further, the Referee can fill in other details, specifying the sophonts as bilateral beings with graspers, living in a terrestrial environment. The high background radiation and subsequent high mutation rate can explain why Tlesho lifeforms do not require sexual reproduction to produce variance in populations.

As for body plan, with a high gravity and dense atmosphere, a centaur-like form with two pairs of 'arms' and two pairs of 'legs' seems logical. But why be boring? Instead, the Referee can place the legs in the middle and the arms – and sensory organs – on either end.

Focusing on those two 'heads', one set of organs – the 'red head' – can be specialised for red and infrared light, armoured but low resolution to protect against flares, while the other 'white head' keeps its eyes closed or retracted during flares and can specialise on 'standard' visual spectrum light with greater acuity.

## Evolutionary Development

Forgoing generation of random characteristics for life cycle and evolution, the Referee decrees the Tlinzha evolved culturally from groups gathering to feast upon corpses of large herbivores and guarding them from other scavengers.

## Life Cycle

To keep it simple, the Referee decides the asexual Tlinzha reproduce by parthenogenesis, producing smaller versions of an adult form who grow to adulthood as part of a community which evolved from a scavenging pack.

## History

The Referee can assume a conventional historical development, beginning with early sentience more than a million years ago, then emergence of a 'modern' Tlinzha after mutation and development of civilisation through a primitive village phase. Scavengers have little incentive to develop agricultures but religion and specialisation of individuals who produce goods and crafts can lead to the development of a culture from TL0 to TL2 over a period of tens of thousands of years.

First contact with Zhodani explorers 6,000 years ago becomes the impetus towards technological development: a shock to society which sets off innovation. Technology progresses to sublight exploration and expansion but as the Tlinzha are not a Major Race, jump drives also need to be introduced by outside factors. In this case an encounter with Imperial explorer-adventurers resulting in a wrecked ship for the Tlinzha to reverse engineer can fit the bill.

From there, antagonistic relationships with both Zhodani and Imperial humans can lead to the present four-system state at the edge of Zhodani space. The Referee can further develop the Tlesho Union polity from first starflight to present day.

## Society

For society, the world's Government code indicates a Representative Democracy (4). A roll on the Factions table results in three factions of various strengths. Rerolling for these government types results in: Government 4, indicating a second-level federal structure to the democracy; Government 9, indicating an impersonal bureaucracy of notable support; and Government 11(B), a non-charismatic leader with minor support. The Referee can assume a federal democracy with a figurehead monarch and a significant set of entrenched ministries.

A roll on the Cultural Differences table results in 33: Degenerate. This does not fit with the Referee's vision of a small but vigorous interstellar state, so for now this roll can be side-lined in favour of another roll of 21: Taboo. This is more interesting for a race of scavengers and can be treated as elaborate rituals around what is considered food. A further roll of 24: Honourable can indicate a body of formal customs and expected behaviour with those who deviate from proper behaviour being ostracised.

The Referee can weave these results into rules of behaviours enforced by protocol bureaucrats guided by ancient tomes of dietary guidelines, handed down from a legendary god-emperor whose powerless many-generations-of-budding-removed descendant presides over dietary-based ritual festivals of great antiquity. This last detail allows the Referee to incorporate the previously rolled 33: Degenerate to be used and combined with the Government 11 result. As a result, the Referee has tied together these random results into a story where no roll is discarded – as Tlinzha butcher-implement-wielding 'Guardians of the Meat' ensure that no part of a rotting carcass goes to waste.

The above exercise provides enough detail to improvise a quick summary of the Tlinzha, a sheet which can form the basis of a more detailed development. A description based on these short notes including information required to create Tlinzha Travellers will follow the worksheet.

# TLINZHA SOPHONT SUMMARY SHEET

<b>Name</b>	Tlinzha
<b>Homeworld</b>	Tlesho A998844-A (0720 Foreven Sector)
<b>Physical Characteristics</b>	
<b>Symmetry</b> Bilateral	
<b>Number of Limbs</b> 8: Arms(2), Legs(2), Legs(2), Arms (2)	
<b>Type of Manipulator</b> Graspers (per arm, with a large sharp nail in each palm)	
<b>Environment</b> Terrestrial	
<b>Behaviour</b> Scavenger	
<b>Genders</b> Asexual with parthenogenic reproduction	
<b>Other/Notes</b> Two heads – one on each end of the linear body – U-shaped in profile	
<b>Evolutionary Development</b>	
<ul style="list-style-type: none"> <li>Evolved from scavengers who grouped together in packs to feast upon and guard the corpses of large herbivores.</li> </ul>	
<b>Life Cycle</b>	
<ul style="list-style-type: none"> <li>Adults reproduce by parthenogenic birth of a smaller version of the adult.</li> <li>Communally raised until reaching full-sized adulthood in six standard years.</li> <li>Natural Lifespan exceeds 100 standard years.</li> </ul>	
<b>History</b>	
<ul style="list-style-type: none"> <li>Bands of scavengers began to settle in villages by -23,000.</li> <li>Semi-religious doctrine, the Protocols of the Consumption of Meats guided gradual development from villages to TL2.</li> <li>Zhodani contact in -4880 sets off a technological revolution.</li> <li>Spaceflight and sublight settlement began by -2300.</li> <li>Jump drive acquired from wrecked Imperial trade ship by 300.</li> <li>Established small interstellar state eventually reaching TL10.</li> </ul>	
<b>Society</b>	
<ul style="list-style-type: none"> <li>Tradition-bound society guided by the Scholars of Protocols provides structure and ritual to an elected hierarchical federal government.</li> <li>The Tlesho Union is composed of four systems with self-rule and a common culture, foreign policy and military structure.</li> </ul>	
<b>External Relations</b>	
<ul style="list-style-type: none"> <li>The tradition-bound society is culturally xenophobic but not hostile.</li> <li>The few Tlesho who travel abroad do so in information-gathering 'Tasting Packs'.</li> <li>Visitors are not allowed in Tlesho space.</li> <li>The Tlesho Union only has permanent relations with the Zhodani, allowing a small embassy on Tlesho and maintaining an embassy in Zhodani space.</li> </ul>	
<b>Notes</b>	
<ul style="list-style-type: none"> <li>Tlesho orbits a red dwarf in a 16 day orbit, which in turn orbits an F-class star in a 1,000 day orbit.</li> <li>Tlinzha have two heads: a 'red head' optimised for red/infrared vision and a 'white head' with eyes retracted during flares that has higher acuity visual spectrum vision.</li> </ul>	

# COMPLETED DESCRIPTION:

## TLINZHA

The Tlinzha of Tlesho are interstellar-capable sophonts controlling the Tlesho Union, a small polity on the border of the Zhodani Consulate.

### Physical Characteristics

Tlinzha are two-metre-long bilateral octopods with beaked heads on both ends of their long bodies. An adult Tlinzha masses between 100 and 200 kilograms. They have four central legs and two sets of arms near each head, their two heads specialising in the varying environment imposed by Tlesho's two suns. The two wide-set eyes of the 'red sun head' are red-light and infrared detectors of low acuity protected by heavy brows. The four stalked eyes of the 'white sun head' are fully retractable but sit at the end of flexible stalks, providing excellent wide-angled three-dimensional vision across the visual spectrum from orange to ultraviolet. Both heads are pitted by multiple pores that serve as combined olfactory and auditory sensors, leading to a form of synesthesia evident in their language. Respiration is performed by slits on the central body, providing oxygen to three lung-like organs on each side of the body, each of which is tied to one of three central hearts.

In profile, the dull brown, scaled body of a Tlinzha resembles an elongated shallow half-filled 'U' with two long 'necks', each with two arms and ending in a head. All four arms end in triple-digit mutually opposable graspers, which surround a hardened thorn-like 'palm nail' used for slicing meat. The Tlinzha's central body contains all vital organs, including the brain, hearts and a digestive system fed by oesophagi from each head. A single cloacal opening at the 'base' of the 'U' provides excretory functions and also deposits 'buds', the immature miniature form of a Tlinzha.

### Evolutionary Development

The Tlinzha evolved from scavengers living in the uplands of Tlesho, hilly regions generally immune to the periodic monsoons that flood the lowlands following the rise of red sun. Pre-sentient Tlinzha gathered in cooperative packs to intimidate apex predators into surrendering prey, with some pack members giving chase or standing guard while others devoured the kill. Rotation of duties ensured every member received part of the kill but senior members enforced a hierarchy in which they ate first and received the choicest parts.

Animals who died a natural death were also subject to Tlinzha packs, with senior members first 'evaluating' the kill to ensure it was safe to consume.

### Life Cycle

When food is plentiful, the Tlinzha's body reacts to increased fat content by releasing hormones that cause a parthenogenic bud to form. These buds mature within the body for a period of six months, then emerge from the parent's cloacal opening as a five kilogram miniature Tlinzha. The child reaches adult size in six standard years, raised communally by the pack. A pack's genetic ancestry was often associated with a 'founder', although a high mutation rate and environmental conditions produced individuals only superficially similar in genetic expression.

The natural lifespan of a Tlinzha exceeds 100 standard years, although Tlinzha are only capable of budding for the second through sixth decades of life. Tlinzha attach special status to the last bud or 'Perfection' of an individual, who is often the most fit child and most likely to survive to adulthood. The Perfection is often undetermined until it is clear that their parent is no longer capable of reproduction but eventually inherits their parent's status.

While proto-Tlinzha often died from mutations caused by occasional mega-flares of their red sun, those who live in an environment protected from radiation for more than a few standard years begin to suffer hormonal deficiencies preventing the production of enzymes vital to life. These Tlinzha become unable to bud and age prematurely, dying within a standard decade.

### History

The proto-Tlinzha achieved sentience more than one million years ago. This forerunner species developed language and conquered fire but never evolved culturally beyond the semi-nomadic pack level. Approximately 50,000 years ago, a single Tlinzha underwent mutations increasing brain size and sociability. This individual was progenitor of the First Pack. This enhanced pack's intellect and ability to cooperate allowed it to survive the often-flooded lowlands by constructing hamlet-sized rafts that kept Tlinzha breathing slits above the water. These rafts eventually spread First Pack descendants across all of Tlesho's major continental regions.

Trading villages first appeared in -23,000 and led to artisanal specialisations and the introduction of metals for use as tools and currency. Writing first appeared as ledger entries but by -18,000 the first Protocols of the

Consumption of Meats was compiled. The Protocols are a semi-religious guide stipulating the hierarchy of meat consumption and non-consumptive uses for inedible parts. The lengthy tomes are part-bible, part-cookbook, part-zoological guide and filled with both ritual and practical information. The modern version of the Protocols is more than 10 million words long, with canon supplemental texts and commentaries at least an order of magnitude larger.

A society centred around the literate class of scribes and merchants at the village and town level evolved into a religious bureaucracy based on ‘university towns’ – centres of learning – which became sites of pilgrimage filled with monumental architecture. A period of schisms and religious wars spanned -13000 to -9000, eventually coalescing in the Great Compromise, a version of the Protocols penned by an individual whose name translates as The Great Wise Scribe, who ended wars and whose direct Perfection-line offspring is still worshiped as a near god – The Living Perfection of Wisdom – some 10,000 years later.

Tlinzha technological progress was slow, increasingly guided by the Protocols and interpretations of them. Advancement had stabilised at TL2 when first contacted by Zhodani explorers in -4880. Society had spread across the habitable portions of the planet and evolved into a federation of nation-states ruled by a priest-scholar elite. First contact upset the worldview of the Tlinzha, forcing them to examine life forms and topics not contained in the Protocols. A series of wars and schisms eventually resulted in a new status quo, with artisans, technicians, and non-priestly scholars achieving political rights as leaders of an advancing technological civilisation. Republics replaced the old theocracies, although priests reattained cultural dominance. Industrialisation began before -3500 and improved communications led to a confederacy of all nations by -2900, united by the new technologies of radio and internal combustion. Powered flight emerged in -2862 but Tlesho's high gravity limited development of rocketry. Only by trading with Zhodani did the Tlinzha reach space, using reverse-engineered TL8 lifters that they may have stolen.

Full gravitic manoeuvre drives were developed by Tlinzha scientists from early lifters, allowing exploration of their solar system. A sublight generation ship expedition was launched toward the Chtenchee system in -2330, scheduled to arrive after 500 years but contact was lost after the first century of flight. A second expedition departed in -2135, arriving at the small watery world of Chtenchee in -1833. Few Tlinzha were willing to spend their lives in an artificial habitat,

living and dying so their descendants could settle on floating habitats on a strange little waterworld. After a follow-up expedition to Chtenchee in -1764, the Tlinzha seemed content to stay on their world. Overall technology stalled at a mature TL8 with widespread communications and computer technology supported by fusion power and gravitic transportation networks.

Contact with Imperial scouts occurred in 219. As with the Zhodani, this contact was brief but since it was with a new human civilisation, other than initial difficulties in translation, the encounter had no profound impact upon Tlinzha society. However, a follow-on encounter with independent Imperial explorer-adventurers at Chtenchee in 278 went wrong, resulting in the sinking of a habitat platform and the deaths of the Imperials. A distress signal from the distant colony took three years to reach Tlinzha and there was little the homeworld could do to help. The next Imperial trader to visit Tlesho in 288 was asked to assist the Chtenchee but when negotiations broke down a group of Tlinzha killed the human crew and seized their starship. After six years of study and careful copying of the jump drive, the Tlinzha launched a mission to Chtenchee, arriving to find the small colony struggling to survive.

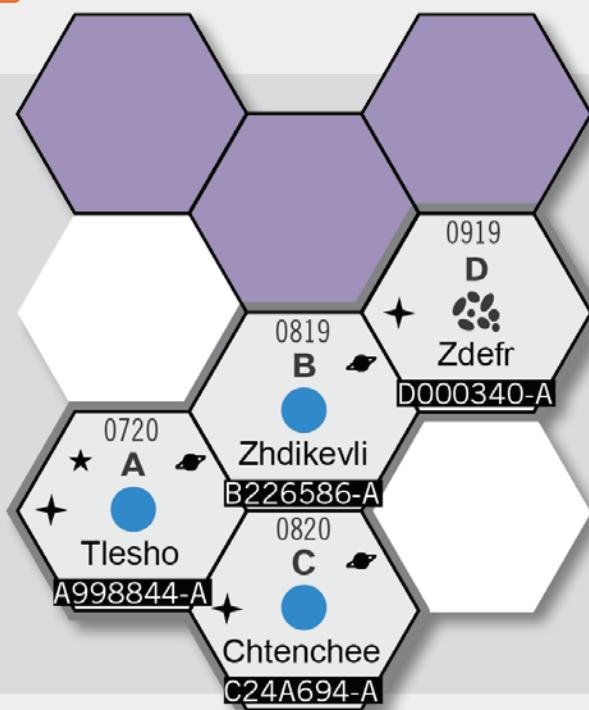
The first starship proved unreliable, eventually lost after a misjump in 301 but the Tlinzha were able to produce a stable jump-1 drive by 312 and resume contact with the Chtenchee colony. The next contact with Imperials was at neighbouring Zdikevli and resulted in a violent confrontation that left the human ship derelict and its crew dead. The next encounter with Zhodani merchants in the following year led to a tense standoff. It eventually resulted in a permanent Zhodani embassy on Tlinzha but solidified the Tlinzha's xenophobia and led them to establish ‘buffer colonies’ at Zdikevli and in the asteroid belts of Zdefr. A Zhodani presence at the fifth system of the Tlesho cluster prevented further expansion.

Technology on Tlesho and its colonies reached TL10 in the seventh century, shortly after the first two Frontier Wars. The Tlinzha militarised their three interstellar holdings, proclaiming an armed neutrality and promising to fire upon any human ship entering without authorisation, yet they did not shut down the Zhodani embassy. This remains the only point of contact with human civilisation.

## Society

The Tlinzha are tradition-bound. All Tlinzha may participate in civil affairs through a series of elected representatives in a hierarchical federal republic, the Tlesho Union, but political power remains localised. The Tlinzha economic system is technically free-market but

## TLESHO UNION



long-established rituals and regulations limit innovation; ‘radical thinking’ is discouraged. The priestly class, the *Scholars of Protocols*, dictate dietary rules. The food industry remains the most regulated, with seemingly contradictory arcane rules and rituals governing consumption of meat on both a daily and holiday festival basis. The *Living Perfection of Wisdom* is head of state and *Supreme Scholar of the Protocols* but the hereditary position is strictly ceremonial. No modification to the Protocols has occurred since the addition of the *Addendum of Sky Meat* was written shortly after contact with the Zhodani over 5,000 years ago.

### External Relations

The Tlesho Union controls all four Tlinzha systems, although the colony worlds have self-rule. On Tlesho itself regional governments retain most of the power and budget. The Union maintains military bases in all its systems, mostly focused on self-defence missile batteries and system defence boat interceptors whose supplemental reaction drives and torpedo launchers keep ships from approaching Tlinzha settlements. Relations with other polities is limited to formal contact with the Zhodani through their embassy compound on Tlesho. Interstellar trade is non-existent and the Union’s defence ships do not allow for ‘peaceful transit’ of ships through any of their systems. Zhodani ships jump to Tlesho on a strict schedule, within well-defined travel corridors and Zhodani staff is limited to 64 diplomats at their embassy.

Despite preventing nearly all contact, the Tlinzha themselves do travel outside the Union, mostly into Zhodani territory. Groups known as ‘Tasting Packs’ crew ships on exploratory voyages, which seek knowledge about external societies and perform scientific examinations of star systems.

The Tlinzha appear to Zhodani as psionically blank, apparently having no psionic capability but also no capacity for their minds to be read. Tasting Pack ships are equipped with collapsible fuel tanks to accommodate as many as five single parsec jumps and have reached considerable distances from their home territory. Expeditions have reached The Beyond, Far Frontiers and Spinward Marches, although in the latter contact has been limited to neutral and Darrian worlds, with all Imperials met with suspicion or hostility. The only permanent Tlinzha presence beyond the Tlesho Union is an official embassy at Zdovesil staffed by rotating diplomats.

Tlinzha language exceeds human hearing thresholds, using beaks and gill-slits to produce a variety of clicks and hisses and it includes an olfactory ‘tonal’ component represented by dialytic marks in their morpheme-based written language. Communications between Humaniti and Tlinzha occurs only via written language or data transfer. ‘Tlinzha’ is a Zhodani language term derived from the name of a mythical two-headed beast. The literal translation of the Tlinzha term for ‘alien’ is ‘non-nutritious meat’ and Humaniti is ‘communicating non-nutritious meat’.

# CREATING TLINZHA TRAVELLERS

Tlinzha Travellers are rare. While their society includes all professions, only a few journey beyond the Tlesho Union as part of a Tasting Pack. Gregarious among their own kind, a Tlinzha is unlikely to be encountered alone and immigration to non-Tlinzha worlds is nearly unknown.

## CHARACTERISTICS

Tlinzha Travellers have the following modifiers applied to their characteristics: STR +1. END is rolled on 3D.

## TRAITS

Tlinzha Travellers all possess the following traits:

**Multi-limbed:** Tlinzha have two sets of arms and associated sensory organs, allowing them to perform two non-movement actions in a round without penalty.

**Beaks and Nails:** Tlinzha can attack with both beaks (damage 1D+1) and with each grasper hand's palm nails (1D+2). They may make one attack with either beak or nail from each of their ends during one round without penalty but due to the length of the Tlinzha bodies, these attacks must be aimed at two different targets or one very large one.

**Infrared Vision:** Tlinzha can sense infrared radiation with their 'red' head, negating penalties for darkness when observing objects that generate heat above 30°C.

## CAREERS

All careers from the *Traveller Core Rulebook* except Psion are suitable for Tlinzha, as is the Believer career from the *Traveller Companion*. Any career event relating to psionics should be rerolled.

Tlinzha begin careers at age eight. Both career terms and aging effects use eight year terms.



# SECTOR FINALISATION

The process of creating a sector is not linear. After determining a basic background and broad timeline, mapping system locations and optionally determining any large-scale anomalies, the order of development of additional detail is based more on the Referee's interest and the needs of their campaign than a set sequence of tasks. If the Travellers begin in a small corner of the sector on an independent world, then creating one world is all that is necessary to start and, even there, the level of detail should be dictated more by the needs of an adventure, not completeness. As the Travellers venture further into the sector, the Referee might develop vague lines on a map and rumours of strange sophonts into detailed worlds between adventures. Such an approach may potentially back a Referee into a corner or limit the development of 'far' subsectors unless there is at least a broad idea of how such regions and their inhabitants interact with others but it does spread out the work of creating the sector over time.

The creation of worlds, sophonts and polities feed into one another. During the process of creation, the Referee should occasionally pause and look at the whole picture. The actions of one polity can influence another and the history of worlds can be affected by outside events. Sophonts may suddenly gain starflight from an external source or develop xenophobia after a bad encounter. The Referee should add details and update the timeline as these interactions are created. Nothing is final until the Referee says it is and, even then, it can change.

There is no need to determine every detail before the campaign begins but the Referee should allow for interactions between societies, at least at the highest level, even if it is just a vague idea or scribbled phrase. Further detail can follow as campaigns evolve.

## SYSTEM NAMES

Detailing a sector requires naming hundreds of systems, not to mention sophonts, polities and potentially religions, social movements, and important characters. The Referee might be able to maintain the creativity to name these objects without assistance, but tools are available to help. An internet search will find many naming tools, but specific to Traveller and Charted Space the Pasuuli's Vilani Tools site

located at <http://traveller5.net/tools/vilanitools.html> can create names based on word generation algorithms developed over decades in many *Traveller* publications. Despite the site's name, a large number of languages from the Charted Space universe are available from the Language dropbox. Other language choices include Aslan, three Vagr languages, Vilani (obviously) and Anglic.

Some of these names will be unpronounceable, too long or too short, but running the generator and making a list to be appropriately culled can leave a set of names to apply to systems or for other needs.

Barren systems may not have names but just numeric designations. A convention used by the Imperial Interstellar Scout Service is of the format XXX-YYY where XXX corresponds to the mainworld's physical characteristics and YYY is a unique sequence number, which the Referee can treat as random. In settings outside Charted Space or far from Imperial borders, the Referee can invent other alphanumeric schemes.

## DESCRIBING CURRENT EVENTS AND TRENDS

One end result of the Referee's development of a world, polity or sophont is its status in the current period of the sector. The Referee may have started with a current state in mind, or one may have 'evolved' during the creation process. Whether this is a golden age of peace, a time of war, one of expansion, collapse or a long dark age, this general theme might have been determined early. However, even against this broad backdrop, other events, pockets of war or of hope, regions of expansion or collapse, are possible within a sector.

The Referee also should have some idea of what is to come, what big factors may begin to influence the sector in the course of a campaign, both internal and external. A wave of expansion or disaster could be approaching from beyond the sector or relations between polities could be ready to erupt into conflict. The Travellers may have some agency to influence or avert some events or may be forced to react to powers far beyond their control.

## ADVENTURE SEEDS

Current events, histories and detailed descriptions of worlds and societies are a rich resource to mine for adventures. Intrigue, exploration and opportunities for profit are always a good inspiration. As the Referee delves into detailed creation, it can be wise to keep note of situations that make good seeds for an adventure, patron encounter or interesting character.

## FINALISING FOREVEN: TASKS FOR THE REFEREE

The reserve map of Foreven includes only the borders of the Zhodani Consulate and the names and characteristics of those systems derived from previous *Traveller* publications. System locations are traced out but everything else is subject to the Referee's whims. The additional system names listed *Forms and Charts* are the result of examples provided in this guide and do not need to be used in the Referee's version of Foreven. Profiles for all the systems of Foreven are provided, should the Referee choose to use them. As with example names, these are neither required nor 'canonical' but can aid the Referee in populating the sector.

System profiles use the system creation procedures of the *Traveller Core Rulebook* with the variants for Foreven listed in the System Creation chapter on page 9. Systems described as sophont homeworlds and scattered settlements were developed in the Sector Details chapter.

Even if the Referee decides to adopt the systems, sophonts and settlements created as examples, the Referee still has plenty of tasks to do to make a complete sector.

### 1. Additional Polities

If the Referee wishes to create additional pocket empires or significant interstellar polities in addition to the Avalar Consulate, this should be a task to consider early in the process. Creating additional polities may modify system profiles and create significant events that affect other polities. This may also spawn detailed mainworld creation for the polity's capital and/or major worlds.

### 2. Sophont Race Development

As envisioned by this example, only one native sophont race in Foreven has developed interstellar capabilities. The Referee may wish to alter this,

creating something different in place of the Tlinzha or expanding or altering other native sophont worlds to support a pocket empire under non-human control. As with polity creation, this may also spawn detailed development of more mainworlds.

### 3. System Names

The systems of Foreven have a strong Zhodani influence. Names for Zhodani worlds can be created, perhaps utilising Pasuuli's Vilani Tools. This toolset is also valuable for creating non-Zhodani names.

Different polities might spawn specific naming conventions. The worlds of the Avalar Consulate have a somewhat Spanish-based origin and other polities, human or otherwise, may have names that follow a specific pattern.

### 4. Zhodani Bases

The Referee should consider where to place Zhodani bases and any associated communications links. Zhodani bases are created differently to standard naval and scout bases, as the Zhodani have no separate scout service and the Zhodani naval base symbol appears in a system with both a naval and military base. For simplicity the Referee can assume that any world with a Class A or B starport and a naval base also has a military base. Additionally, as [travellermap.com](http://travellermap.com) has route lines leading to hexes 1102, 1701, 2802 and 3201, these systems could be assumed to have naval bases and appropriate starports, and may form waypoints to base locations closer to the border. Between the border and these waypoints, other systems with Class A or B starports could have bases to support communication routes and a system may have its starport upgraded to Class B to support the existence of a Zhodani naval base if no appropriately-located starports are present.

### 5. Zhodani Travel Zones

The Zhodani Consulate limits access to worlds for the same reasons as most polities. Red Zones are enforced by the Zhodani Consular Navy. Within Foreven as created in the examples, five Zhodani worlds could qualify as Red Zones, four to protect natives, the fifth to interdict a system with known Ancients artefacts.

Amber Zones can be imposed on hostile worlds but also apply to 'Unabsorbed Worlds'; worlds within the Consulate that have not adopted Zhodani culture, either because they were originally settled by non-Zhodani or

because locals have deviated from standard Zhodani practices and ‘corrective action’ has not yet been successful. If both hostile environment and cultural issues apply, the world is considered Unabsorbed. Either way, Zhodani citizens should avoid the world unless they have a legitimate need to be there.

In any version of Foreven, systems within the Massina (D) subsector might have been settled by Imperial colonists prior to the First Frontier War and full assimilation might still be underway on some worlds even centuries later. Other systems may have ‘gone their own way’ in an attempt to create a unique society. The Referee should determine which Zhodani worlds to classify as Amber Zones.

Beyond the Zhodani border an Amber Zone may exist in a Travellers’ Aid Society guidebook, but it is strictly a recommendation and a Referee may place these as desired.

## 6. Zhodani Influenced Systems

Beyond the borders of the Zhodani Consulate, there may be systems aligned with the Zhodani as client states. Tlebria (1618), known to be home to a Zhodani corporation, is an obvious choice.

The nearer the Zhodani border, the more likely a world is to be a client state. The Referee should give some consideration to the reason behind client state status. Some may also house Zhodani naval or military bases, especially those nearest Imperium-influenced systems.

## 7. Imperial Influenced Systems

Foreven is entirely beyond the borders of the Imperium but its influence is still strongly felt, especially in the trailing subsectors. The defined worlds of Hollis, Alenzar and Raschev are all Imperial client states and Hollis is host to both an Imperial naval and scout base. Other systems may also be client states if the Imperium has reason to support local governments.

One obvious location for these is along the Spinward Main extension, which stretches to just beyond Hollis and already includes the three abovenamed systems.

Another likely location is near the border with the Five Sisters subsector of the Spinward Marches, where the Imperial Navy has built a ‘cage’ around the Droyne systems of Andor and Candory. To complete the three parsec cage around these worlds, naval bases at 3135 and 3228 are likely; if the Referee so decides, then these two worlds would be Imperial client states with at least Class B starports and Tech Levels upgraded appropriately.

## 8. Foreven Adventure Seeds

As the Referee develops worlds, polities and sophonts or ponders how to explain or name certain systems, ideas for adventures may arise. Keeping a list of these ideas is a great method for developing adventures or creating rumours for the Travellers to follow.



# TRAVELLER

SECTOR CONSTRUCTION GUIDE



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