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300 years ago humans left for the stars. On the colonies humans have discovered marvels, developed new cultures, changed in new directions - separated by gulfs measured in light-years. But now they are brought together again. Culture clashes with culture, philosophy with philosophy. Technologies recombine into something new, something that can transform humanity or destroy it. Ambitious people plan for the dynamic future. It is a time for...

Big Ideas, Grand Vision

Big Ideas, Grand Vision is a roleplaying science fiction setting written by Anders Sandberg 1999. It is intended as hard science fiction, dealing with the question "What can humanity become?" It was originally run using the Alternity system, but should work fine in most other general systems.

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Big ideas grand vision, big ideas grand vision
Visions of the grandeur grandeur of the past touch me at the bottom of my heart
Visions of the future tunnels built to last born to be creator grand has gone to greater
Big ideas grand vision, big ideas grand vision
Rock the constitution room is for the rage every generation goes to war
Rise to the occasion grow a golden age born to be creator grand has gone to greater
Big ideas grand vision, big ideas grand vision

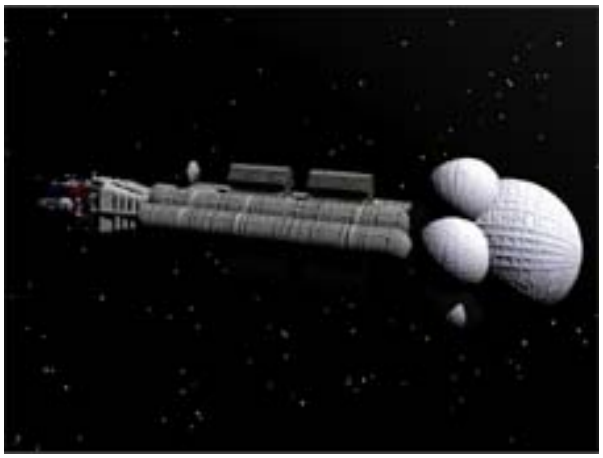
Seance at *the chaebol: Asia's rapid economic advancement wil! outpace the rest of the world's growth*
Making Asia a more formidable influence in the global economy experienced managers agree
That the human element Is the single most important factor for business success
Still the business community hasn 't yet developed a means of fully capitalizing on individual capacity

Big ideas grand vision, big ideas grand vision
Walk across the border cities of the night wide awake we hail the rising sun
Houses of the holy tunnels to the light born to be creator grand has gone to greater
Big ideas grand vision big ideas grand vision big ideas grand vision big ideas grand vision

Big Ideas, Grand Vision, (Hansson/Wollbeck/Bard)

World

History



The garden of earthly delights will be reserved for the meek, and those who would eat of the tree of knowledge must be banished. What a banishment it will be! Beyond Earth, in all directions, lies limitless outer space, a worthy arena for vigorous growth in every physical and mental dimension.
- Hans Moravec, Robot

During the first decades of the 21st century fusion power became an economic reality. It was a boon to an energy hungry humanity that wanted an energy source, but the reactors demanded Helium 3. Lunar mining and distillation became profitable, and a major space colonisation initiative began. As the basic infrastructure was created, other industries followed suit: solar power generation, vacuum foamed metals, ultrabandwidth communications, secure genetic engineering, cryotechnology and so on.

In the 2020's fusion powered spaceflight had become cheap and efficient enough for powering interplanetary craft, and in the climate of optimism and space enthusiasm many began to think about a manned expedition to the stars. Gradually several independent project proposals coalesced into the TerraNova project. In 2036 the first colonisation ship was sent on its way.

Over the next years several other colony ships were launched. As the technology was refined the ships became significantly faster and cheaper, and what once required the capital of all the major world powers now required just a modest investment from a dedicated organisation. At the same time orbital biospheres became feasible. The first, O'Neill I, was constructed 2035-2040 and became a milestone. Just like the colony ships the habitats became cheaper, and using lunar and asteroid material habitats soon became a more efficient way of creating a small world suitable for one's group. The interest in interstellar colonisation waned as people instead began to colonise the solar system.

At the same time as space technology advanced, digital technology caused "The Final Revolution" in the 2040's. Earlier information technology had transformed many of the western industrial nations and challenged traditional rulership in most of the world. Now the full impact of global high-bandwidth communications became felt as the old national states and megacorporations

began to dissolve at a quickening rate when the economy and politics stepped from being merely international to global. Ordinary individuals achieved capabilities that once had required huge organisations thanks to the Net, flexible automated manufacturing, smart software and new social structures. The turmoil and confusion caused many to believe a great cataclysm was at hand, and motivated the launch of the last colony ships bound for Pi3, Gaia and Jerusalem, as well as a diaspora of independent habitats.

What really happened was a profound transition worldwide to a networked global society. The details were unclear to the colonies since they experienced the news at a compressed rate, but apparently the last half of the 21st century was spent "relaxing the sociostructural net" through massive movement, ideological competition and several incidents of digital guerrilla warfare between different "memetic attractors". The habitats evolved in radically different ways, and a major exodus of people from the uncertain Earth into space created a boom of new habitat and social styles. A beginning of an adhocratic federation, "The Cocoon", between many habitats emerged and eventually came to absorb most of the societies. During this time many of the transmissions to the colonies ceased as the institutions handling them disbanded or changed beyond recognition; for a while they were manned by volunteers or enthusiasts, but in the end they fell silent.

Deductions made by the colonies and hints from Sol suggest that eventually the Cocoon suffered a second "final revolution" as widespread AI, interplanetary communication and trade caused the transition from an interplanetary society to a "system society"; deeply integrated but at the same time extremely free and diverse. The events surrounding this transition are uncertain. Since then Sol has changed unrecognisably, and the inhabitants are no longer traditional humans.

Meanwhile the colonies were settled and began to develop on their own. Among the first steps after arrival was building or unfolding a large antenna complex for interstellar communication, both with Sol and other colonies. The original vision of an interstellar society fell, since Sol dropped out, but several of the colonies managed to establish rudimentary transmissions to each other. The news of the alien Trahans and Filigree for example travelled across human space, although in most cases the delays were too long to sustain contact. In the absence of external input, they developed their own cultures, often highly divergent. The earliest colonies were the most mixed and often developed many "nations", while later colonies often remained single societies but with drifting philosophies.

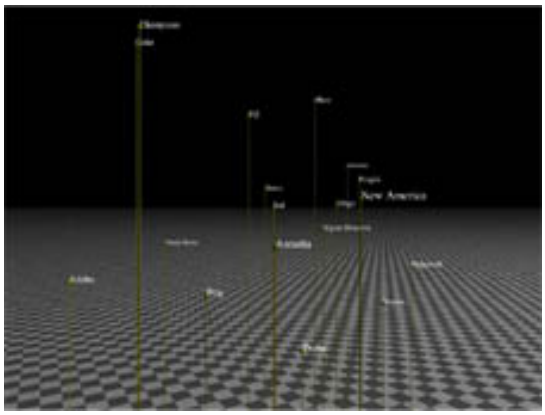
When FTL technology appeared on the scene in the 24th century the disparate colonial cultures were forced to meet each other. Some matched well, others were clearly antagonistic. Trade exploded, supported especially by the Atlanteans, New Americans and Novas. Cultural and scientific exchange flourished as Arcadian biotechnology encountered Trahan metaphilosphy and design science, Dionysian and Gaian mental techniques and Penglaiese megatechnology.

In 2346 the Mothers were encountered by an Arcadian expedition to 51 Pegasi, where they discovered an alien research station in orbit around the planet Crazy Horse. After complex study and mutual translation attempts communication was achieved. The Mothers turned out to have an extensive and diverse sphere of activity, and several clans of Mothers began trading or communicating with the humans.

The early FTL period was a time of optimism, exploration and confrontation. Few expected the threats that would change the destiny of mankind.

World

General Data and Setting



The Colonies

Colony	Planet	Travel time	Distance from sun (ly)	Velocity of colony ship (fraction of lightspeed)	Type of colony
Nova	Tau Ceti II	2026-2076	11.6	0.23	International
Arcadia	Beta Comae Berenices II	2030-2148	27.2	0.23	International-European
Penglai	Alpha Mensae I	2034-2147	28.4	0.25	Chinese
Sukarno	Pi 3 Orionis IV	2036-2119	25	0.3	Indonesian-Arab
New America	Beta Virginis IV	2036-2144	32.65	0.3	American
Atlantis	Zeta 1 Reticuli II	2038-2136	36.6	0.37	Libertarian Foundation
Turnbull/Mary	Tau Eridani V / 7	2039-2128	33.1	0.37	Foundation
Victoria/Traha	Lambda Serpenti III	2039-2127	34.7	0.39	Foundation
Negsoa	Mu Arae III	2040-2156	44	0.38	Greater South Africa

Ridgewell	Beta Trianguli Australis X	2041-2142	41.6	0.41	Foundation
Gaia	Lambda Auriga IV	2045-2163	48.6	0.41	Green
Jerusalem/ Dionysos	Psi 5 Auriga II	2047-2165	48.5	0.41	Christian Fundamentalist
Minsky	Pi 3Orionis IV	2049-2108	25	0.41	Communications Cultism

Technology

Colony	Age (terran years)	Tech Level	Biomedicine	Computing	Psychology	Engineering	Physics
Nova	274	High	Bionics, artificial ecosystems	Global knowledge networks, AI	Designer memes, group minds, sociotechnology, mental techniques, automated translation	Habitat engineering	
Arcadia	202	High	Biotech, symbiosis, life extension, human enhancements.	Biological computers	Adaptive enhancements	Symbiotic machines	
Penglai	203	Medium	Human adaptation	Software engineering, artificial life	Automated translation	Megaengineering, advanced materials, synergetics	Fusion technology
Pi3	242 / 231	Mixed		Self-evolving AI, advanced robotics and perversion weapons.		Autofacs, microbots, weapons	
New America	206	High	Ecotech, mobile biospheres	Quantum computers		Habitat engineering, mobile buildings	Hyperdrive, exotic materials
Atlantis	214	High	Life extension, human enhancements	Knowledge networks, intelligence enhancement tech	Squids, enhancements	Mobile buildings, flexible production, simple nanotech	Higgs fields, antigravity
Turnbull	222	Low		Surveillance, games		Habitat engineering	
Victoria	223 / 10,000	Medium	Selective breeding	Xenotranslation	Plexing	Trahan design science, renewable energy technology	
Negsoa	194	Low					
Ridgewell	208	Medium	Reproductive technologies, advanced treatments				
Gaia	187	Low			Mental techniques		

Dionysos	185	Medium	Drugs		Psychodesign		

Distances

	Nova	Arcadia	Penglai	Pi3	New America	Atlantis	Turnbull	Traha	Negsoa	Ridgewell	Gaia	Dionysos	Sol
Nova	0	38.6	26.4	19.9	43.0	30.3	27.8	45.1	46.5	44.7	47.0	50.1	11.6
Arcadia	38.6	0	48.3	44.5	17.5	59.9	53.1	23.2	55.4	52.5	56.1	49.3	27.2
Penglai	26.4	48.3	0	35.3	43.3	13.4	25.2	51.6	35.4	27.1	65.9	66.9	28.3
Pi3	19.9	44.5	35.3	0	45.9	37.3	19.4	58.7	64.0	59.2	31.1	35.4	25.0
New America	43.0	17.5	43.3	45.9	0	56.1	48.5	33.1	54.9	47.9	60.8	52.9	32.6
Atlantis	30.3	59.9	13.4	37.3	56.1	0	24.9	63.1	42.0	35.7	68.3	71.7	36.6
Turnbull	27.8	53.1	25.2	19.4	48.5	24.9	0	65.2	59.8	52.0	47.2	50.2	33.1
Traha	45.1	23.2	51.6	58.7	33.1	63.1	65.2	0	42.7	44.7	75.1	70.5	34.7
Negsoa	46.5	55.4	35.4	64.0	54.9	42.0	59.8	42.7	0	13.9	92.2	92.0	44.1
Ridgewell	44.7	52.5	27.1	59.2	47.9	35.7	52.0	44.7	13.9	0	88.0	87.0	41.8
Gaia	47.0	56.1	65.9	31.1	60.8	68.3	47.2	75.1	92.2	88.0	0	14.0	48.6
Dionysos	50.1	49.3	66.9	35.4	52.9	71.7	50.2	70.5	92.0	87.0	14.0	0	48.5
Sol	11.6	27.2	28.3	25.0	32.6	36.6	33.1	34.7	44.1	41.8	48.6	48.5	0

Populations

Planet	Initial colonists	Rate of growth (%)	Age	Current population
Nova	30,000	2	274	6,816,607
Arcadia:	30,000	2	202	1,638,158
Penglai	40,000	3	203	16,144,202
Pi3	50,000	1	242/231	493,044
New America	35,000	2	206	2,068,728
Atlantis	20,000	2	214	1,385,054
Mary	10,000	1	222	910,636
Victoria	20,000	2	223	1,655,267
Negsoa	10,000	3	194	3,093,296
Ridgewell:	6	7	208	7,762,060
Gaia	30,000	2	187	1,217,175
Dionysos	20,000	2	185	779,941

Colonial humans: 44 million
Solarians: approximately 73 billion entities
Trahans: 7.1 billion trahans
Mothers: unknown

Filigree: unknown

Terminology

Agrav	Antigravity
"Ask the Solarians"	"Who knows?"
Biochauvinism	The view that living beings are superior to artificial ones.
Bot	Robot
Corpsicle	Cryonically frozen people, semi-serious term.
Diamondoid	Things made from diamond-like substances, especially nanofactured ones.
He3	Helium 3, the fuel used in most fusion reactors. It is commonly mined in space.
Higgsram	The energy ram in front of starships that is used to inflate quantum wormholes for jumping.
Solarian	Somebody from the solar system; has connotations of alienness.
Mortalists	People who believe immortality is wrong and abstain from it.
Morphological freedom	Freedom to select one’s physical (and mental) form freely.
Meme	A self-replicating idea, thought or belief.
Mindkind	An extension of mankind to all thinking beings. Includes humans, solarians, AI, Mothers, Trahans, Filigree and Ur-Mothers (as well as any undiscovered aliens).
Mother	An alien species recently encountered. Also, the gaianist priestesses on Gaia.
Nanofacture	To make something with nanotechnology.
Perversion	A software weapon that infiltrates and takes over systems.
Posthuman	Ex-human, someone so enhanced or modified that they are no longer considered part of the human species.
SES, Self Enhancement Syndrome	A tendency towards amplification of some personality traits due to self augmentation procedures such as bionics, genetic modifications or certain software.
Singularity	The idea of a radical shift away from the current human condition, brought about by advanced technology. The solar system has undergone a Singularity.
Singularitian	Somebody advocating Singularity.
Solarian	Posthuman inhabitant of the solar system.
Steward	Somebody wanting to preserve the past and present.
Time jumper	Somebody who uses cryonics to "jump" into the future. Some of the oldest time jumpers are from the colonisation era.
Trahans	The first alien species encountered.

Ur-Mother	Alien species that uplifted the Mothers to intelligence.
Waiter	Cryonically suspended person, formal term.

Timekeeping

Since all the colonies have different lengths of day, length of the year and in addition relativistic delays from the journey there, most have developed their own time and date system. Practically everyone ended up dating from "ab urbe condita", counting the time from the colony was founded. The length of the year was handled differently on different planets. On Nova years were Nova years, while on New America terrestrial years were used. Even more complex, on some colonies hours and minutes were redefined.

Recently a standard universal time has been developed, based on calculations of relativistic comoving frames. This follows the old Earth time to a close approximation. It is however mostly used in research and some interstellar trade; simultaneity is not well defined between the colonies - or necessary.

World

Planets and Life

High in the sky
Study the stars
Hanging on my telescope
Look for a sign
Shine on my heart
Lend humanity some hope
- Vacuum, Parallel Universe

When the second generation space telescopes went online in the 2020's, astronomers were surprised by the number of earth-like planets they found. Instead of being unique, the Earth was of a fairly common type. Estimates suggested that as many as 1% of all stars had a terrestrial planet orbiting them. Of these many obviously had life, and perhaps a third of them had life and conditions that were close enough to the Earth that humans would likely be able to live there (not necessarily comfortably, but still survive - humans are very adaptable).

At the same time these good news worried some people. If life was common, where were the intelligent species? Either evolution to intelligence was very rare, or something wiped out intelligent species once they developed before they could put their mark on the universe. This "great filter" that lowered probabilities for finding intelligence either lay ahead or behind humanity. The optimists said that intelligence was rare due to the problem of evolving it and that humanity was nearly assured of a long and glorious future - the pessimists feared that *something* wiped out intelligence in the universe.

The discovery of the Trahans in 2127 and filigrees in 2193 were both exciting and calming, but didn't prove much since neither were starfaring species. When the Mothers were encountered in 2346 new information became available. There were certainly other species around. But why had none colonised the entire galaxy, or changed it noticeably? Where were the old super-species? Is the stagnation or annihilation the fate of all civilisations - or are there other possibilities?


World

World

Nova (Tau Ceti II)

Advertising is the king's messenger in this day of economic democracy. All unknowing a new force has been let loose in the world. Those who understand it will have one of the keys to the future.
- Editorial, "Messenger to the King," Collier's, 1930 (May 3), p. 78.

Above the entrance to the old Landfall administration dome the device "Labor Improbus Omnia Vincit" is engraved in the now slightly yellowed plasticrete. Around the historic building and its lining trees the scrapers of modern Landfall towers – EduCom, Mememe, Schau, Unity, Bombara Inc, Neuro-Ex and the spire of Pioneer, covered by climbing gardens and apparent holograms beckoning you, just *you*, to join their corporate vision. The Unity building radiates security and togetherness, Educom youthful curiosity and brilliance and Mememe cool metalevel awareness. Was this what the original settlers sought when they arrived almost 400 years ago? Did Aguirre, Dansky, Singh and He foresee this when they landed the shuttle at Landing Point? Or did they just see a vast ocean, a rocky shore and forbidding mountain range?
- Jonathan Ellis-Khayama, *Interstellar Diary*

History

Nova is the first extrasolar colony, founded by a broad international expedition organised by the US, PRC, India, EU and supported by the UN and various organisations like National Geographic, the Interplanetary Society and various academies. It consisted of three colony ships (small by today's standards) that were launched towards to Tau Ceti II in 2026.

Ship I, Red, arrived 2076, one year before the others. They began to explore the system, building a laser link to Sol and setting up a temporary orbital base above Tau Ceti II. Tau Ceti II was named Nova Terra (which was soon shortened to Nova; today inhabitants call them novas). When ship II and III (Green & Blue) eventually arrived a first beachhead named Landfall had been constructed on the coast of the single main continent, Hope. The initial colony was mostly constructed out of prefabricated materials. Most of the colonists learned how to live and thrive on Nova, growing foods and extracting raw materials from the alien environment, coping with the weather and exploring the strange new world. According to plan, after two years the colony split and around a third moved off to a second colony (in order to increase redundancy and spread the resources), Backup located 150 kilometres to the north of Landfall.

Over the first fifteen years everything went according to plan. Advanced mechanisation made it simple to build a working agricultural and industrial base, the planet was explored from space, air and finally on foot, and the biosphere

found to be manageable. The colony administration, led by the council and coordinator, worked perfectly. But as the colony grew, more and more people moved out to small settlements. These settlements were relatively independent and while most participated in the colony process as intended a few remained almost completely independent. It was also relatively common for the settlers of be of the same cultural background, creating an increasing if relatively benign ghettoisation. Over time the independent settlements grew, and new were founded that had not been cleared with the administration.

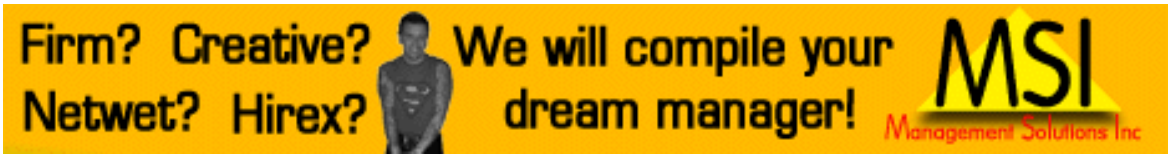
A crisis came in 2091 when some families decided to settle an area designated to be left untouched for future use; the administration was forced to either try to evict them, or let them go. They tried diplomacy first, with limited success from the stubborn settlers. When they finally sent the colonial police to the settlement they found the settlers strongly dug in; the police completely failed in apprehending them and could only disable some of the equipment. Most settlements and the council were on the administration side, but some of the more independent settlements began to prepare themselves. The administration increasingly worried about the threat of militias and independent settlements answered in force, quickly using its available resources to quell the independents. The move was successful, but created strong resentment among many and made the administration look more and more dictatorial. As a response the democracy movement began to reorganise the government into a more distributed way. It quickly gained support, but the traditional administration tried to hold on to power. Over several years the political scene was dominated by the struggle, and in the meantime several of the independents had the chance to prepare better.

In 2097 several independent settlements announced that they were formally breaking away from the colony, forming their own nation, the Red Cliff Alliance. Landfall found itself unable to muster the resources needed to force the Alliance back, and had to accept fait accompli. The democracy movement used the situation to finally redefine government, and Landfall became a decentralised democracy. The colonial administration was kept in purely non-political matters such as space access, scientific research, meteorology and managing the laser link to Earth while the actual governing was left in the hands of a parliament with representatives from the different settlements.

Over the next three generations Landfall and the Red Cliff Alliance developed. The Alliance was composed of more radical and independent settlements, often with strong religious, national or political views. It grew into a number of independent city-states and settlements along the north coast of Hope, a very loose conglomeration of groups who had very little to do with each other. The name slowly shifted to the Red Rock Alliance, mainly due to a long-running conflict between a more unionist fraction and a less unified group calling the Alliance the Red Rock. The Landfall democracy had a larger population, better communications and overall a more homogenised population; emigration emphasised the differences even more. The dispersed settlements promoted the development of communications technology, and gradually the parliament began to meet solely in virtual reality. The many disparate communities with their different languages also promoted the development of automated translation systems.

One noticeably different place was the Kingdom of Eyre, a small island-nation 70 kilometres off the north-eastern coast of Hope. The founders were followers of King Stanley, a sociologist claiming that elected mini-monarchies was the ideal social order for Nova. Nominally a member of the Red RockAlliance, the kingdom was fiercely independent and chose to go its own way. At first it attempted to become a tax-haven and entertainment city, but it never really worked out due to its location, Landfall legislation and competition from Palm Beach. Instead it became a closed, self-sufficient society ruled by the elected monarchs. In 2149 the Landfall Oceanographic Institute built a research outpost on the steep eastern shore to explore the deep sea trench nearby. Over the years since this the outpost have grown and the kingdom have gradually prospered by its increasing involvement in deep sea research and exploitation.

In 2210's it was becoming increasingly clear that the "elementals", complex program clusters existing in the net, were true intelligence, as various programs not only passed the Turing test but also exhibited the ability to solve problems creatively and consider their own existence. The discovery spurred the development of more accessible software which was definitely intelligent and individual. "Life and Reflection", the autobiography of the Magnus system, topped the best-seller lists in 2220, and the debate about elemental rights began in earnest. The problem of the role of sentient software has still not been settled to everybody's satisfaction. The SmartSoft Bill of 2231 gave some AI rights, and in 2289 nearly full rights were granted. Due to fears of ballot stuffing by cloning of programs AI systems are still not allowed to vote, but otherwise software can gain person status by passing a series of tests and conditions delineated in the Redline Code, managed by the Office of AI Affairs. The basic conditions are that the system is self-aware above a certain level, that it is capable of intelligent problem-solving, discussion and action within domains it has no previous experience in, can show it can support itself as an independent economic entity and pass a "sanity test". The Redline Code is subject to constant review and criticism, in many quarters very hard criticism for the definitions of "sanity" or the cumbersome questions about ownership. So far the free elementals number in approximately 50,000, a relatively low number given the total amount of software in Landfall. The major reason seems to be that most programs have little interest in being free.



In 2265 a preacher named Erik Atell appeared in Free Ford, a small town in the Alliance. He preached a vision of unity, communion and human development that would unite everybody in the disparate Alliance communities. He had some success, and went on preaching in many other places. His success was mixed, but the Atellians became more and more numerous and widespread. While religious movements were not unusual, the Atellians tried to encompass the whole of the Alliance instead of just a single community. They failed politically, since many of the Alliance communities refused to combine more closely or listening to the Atell memes. In Landfall the Atellians were regarded as just another religion.

Erik Atell realised that he couldn't achieve his vision just through persuasion, the communities had to be forced out of their isolation. He attempted to organise his followers into an army to "open up the closed". The endeavour failed utterly, and Erik was killed 2270 during the attack on a "hedgehog town". The survivors largely left the Alliance, moving to Landfall. There Erik's successor Yotik Henrigues began a new plan; instead of trying to found another settlement or merge with Landfall they should form a completely own colony in space. He exploited the remnants of the administration where he and a few others had connections to get the opportunity to buy the old space station (which was being replaced anyway). The Atellians moved up there en masse in 2273, founding their own colony/nation Unity. Most people disregarded this as another crazy cult, but some worried that the Atellians might attempt another crazy venture. To soothe these fears Unity signed a non-intervention treaty in 2274.

Unity developed into a closed, extremely connected society. Yotik promoted experiments with drugs and bionics to create a stronger sense of community, perhaps part of a scheme to keep control over his followers despite their hardships. Over the next decade the experiments succeeded - based on Landfall technology the Atellians managed to create a form of digital telepathy, uniting the community ever closer. Over the next years they explored ways of integrating themselves, ending in the formation of a number of Units, bionic group minds that remained in constant contact. Realising that the other people would dislike their approach they began to build a second home among the moons of Zeus. Unity began asteroid mining and energy production, trading it for know how from downplanet and building new habitats. When the truth began to become clear there was little anybody could do, and the treaty remained.

Today Unity is a society of group minds. Each Unit consists of several people linked together by implants and compatible personalities. Children grow up in the units, becoming one with them. Units can communicate directly with each other, but usually total communion is hard to achieve. In each habitats all units are able to communicate with each other, and to discuss public matters. One problem is the uniformity that tends to develop. This is a reason Unity actively recruits people to join the units, to keep the mental diversity high despite the trouble that weakly integrated people cause.

Landfall developed into a thriving if confusing nation, with a high mixture of cultures, styles and views. As settlements spread, efficient communications networks had been set up to limit the need for long range travel. Over time the Net became the dominant medium of commerce, communication, education and politics. As the information industry developed, society slowly changed from an

advanced agricultural society into a media society. Virtual reality grew into both an artform and a big market. The huge demands for translation, indexing and support spurred the development of better and better expert systems, agents and AI.

During the middle 23rd century Landfall became dominated by the advertising industry. As politics became more media-directed, image and presentation grew in influence and with them the advertising/media/lifestyle complex. The Parliament was in many ways eclipsed by the corporations, and the political process became more one of style and ceremony than one of content. Basically Landfall runs more on a very efficient administration and information infrastructure than political government, and even the market forces fluctuate so quickly depending on the current fashion that the overall effect is fairly limited. The corporations hold control over style and central questions, while the population has come to be deeply involved in the diffuse democratic process. Power is really in the hands of networks rather than formal structures, extremely fluid and nonlinear.

In 2314 the "Film at 11 War" occurred between the two newscorporations Sunrise News and Hope Update Amalgamated. It began as a series of competing advertisements and escalated to a full-scale smear campaign. SN and HUA attacked each other's credibility using all the tools of modern advertising, memetic engineering and litigation. The War shook Landfall as many other companies, politicians and citizens either choose sides or got caught in the information crossfire; misinformation and emotions ran high. Several attempts to restrain the combatants failed since the War was completely legal. As public opinion against the War rose the tide briefly turned as the Parliament enacted some quick bills to put restraints on SN and HUA. Unfortunately this caused a second wave, as fierce constitutional debates, arguments about media ethics and legal suits erupted everywhere. In the end the bills proved more disruptive than the initial War. After over a year of political and media chaos the disruptions slowly dwindled. Overall it showed some of the weaknesses of Landfall society, but there were never any obvious results in figuring out how to avoid a recurrence; many of the current political groupings are based on different views of best handling media disruptions.

The arrival of a New America-Arcadian expedition in 2340 ushered in a new era. Landfall was excited by interstellar contact, and quickly began setting up

diplomatic relations with the other colonies. Directly after the Arcadians had acquired FTL technology they shared the secret with Landfall and Unity, setting up a joint starship development program. Since then Nova has been one of the major space powers, seeking out all the exciting new cultures of the other colonies.

Society

In Landfall information technology is advanced, and much of society deals with media in one way or another. Trade, politics, education, practically everything is handled through the net. This has both created a huge demand for image improvements to catch and hold attention, attract the right people, give the customers an experience with the content and so on. There is also a widespread interest in experiencing truly authentic experiences, be they mountaineering or warbuggy races in the interior to eating in the truly memorable restaurants of Fejel. The different places all hold on to their individuality or find ways of enhancing it; being exceptional (or looking exceptional) is a way of life for most people. People live in small communities rather than big cities (even if they interact virtually in a very cosmopolitan way). Landfall (the city) is the only place with skyscrapers and dense buildings (and that is largely for show). Backup has retained its rural charm, and many of the small towns along the coast have their own quirks. Vladimirograd is located on top of a sheer cliff with buildings leaning out over the abyss, while Chico is a deliberate attempt at vintage Latin kitsch.

Many people are interested in the national heritage of their ancestors back on Earth. Learning and speaking one of the old languages has always been seen as a sign of education even if they are less than useful in daily life. In the same way, many are active in Nations, organisations composed of descendants from different Earth cultures who meet to share their heritage (today of course most people are descended from several cultures, and either select one Nation they like or participate in several). Similar groups can be found on Arcadia and Victoria, but it is only on Nova where they have become a significant cultural movement. Their heyday were the early 2100's, but they remain important social networks today.

A growing problem is terrorism. The best way of getting attention is to do something spectacular, and people cannot ignore terrorism. Unlike traditional terrorism this is highly media-directed and planned strikes, usually more dramatic than deadly (although the human interest angle of innocent death is attractive). Most notorious are some anti-AI groups who have blown up or sabotaged notable AIs and the "6% warriors", striking against the ecology laws (they want the release of more terrestrial life-forms approved). Many terrorists are believed to hide in the Alliance from Landfall authorities. Related problems are serial killers, fadbusters and Herostratian youths.

The Alliance today covers most of the north coast, still a loose grouping of independent settlements. Most are tiny and insular, refusing to keep in touch with the rest of the world. People fed up with the hectic pace of Landfall sometimes emigrate north, and there has sprung up several landfallian communities along the border. The relationship between Landfall and the Alliance is tricky. The only thing that really unites the Alliance is resistance to Landfall incursions into what it considers its internal affairs. Such incursions are resisted by making Landfall pay through expensive sabotages – messing with the Alliance simply doesn't pay, and Landfall hence leaves it alone most of the time.

Unity society is a very mental society; most interesting stuff goes on inside the minds of people. Personality structures, linking topologies and mental control are common subjects of discussion, art and debate. A heavy reliance on virtual imagery and visualisation makes the physical appearance rather drab.

Organisations

SSS, Sentient Software Suffrage, is a AI-rights group working for giving full rights to AI programs and removing many of the restrictions of citizenship testing. SSS is an outspoken and highly media-directed group, often arranging dramatic court cases, broadcasting debates and interviews as well as lobbying on all levels. Ironically, the most recognised member is Themis, an AI lacking citizenship. It was originally owned by a legal firm, but when it sought citizenship and failed, it was threatened with shutdown or erasure. After much melodrama SSS bought it, and it has since then been a high profile legal expert in AI rights questions.

The Humanist Alliance is the major anti-AI group of Nova. The HA is a think-tank, coordinating other groups, doing policy analysis and making media statements. It has a reasonable impact factor and some skilled debaters. It is not militant in any way, just concerned that AI represents a threat to human society and values. The HA would like to see AI rights removed and some limits on the production of intelligent software. It has also denounced Unity as a dangerous cult, pointing out the risks that Unity pose for human dignity and individuality. Overall it is sceptical of radical human enhancements, even if it does not regard bionics per se as wrong.

Neuropoll Inc. is a polling firm, often exploiting advanced psychological and neurological methods to extract as much data they can. They are most known for the neuropollsters, 20,000 Landfall citizens that have been wired with a system making it possible for Neuropoll to measure their reactions to a variety of products, everyday phenomena and their desires; this data is then mined to find trends, mood estimates and fashion vectors. At first the firm tried to directly use the data to produce products such as AI music to suit the tastes of the pollsters, but the performance was lacklustre. While it was possible to detect overall preferences and trends, the notoriously mercurial Landfallians tended to shy away from anything becoming mainstream. Today Neuropoll is instead concentrating on producing the market data other companies need, asking the questions nobody ever thought about asking ("Do people really like human partners instead of androids?" – Neuropoll data was directly responsible for the Anthromorph Systems drive that lowered marriages with 12%) and generally staying on the hip bionic side of things. Their influence on Landfall marketing is strong; their current market share is 14%. Detractors sometimes call them Neuropol.

Sunrise News is one of the major Landfall news agencies. After the "Film at 11 War" it lost much of its credibility, and for a while bankruptcy threatened. But it managed to recover, and today it is the premier source of early and utility news. It is diversified into edutainment and event archiving, with a large contingent of AI analysts organising the data.

Palm Beach on the eastern shore of Hope, close to the border to the Alliance, is the capital of gambling on Nova. Here the coast is dotted with casinos, ranging from the traditional Las Vegas to the ultra-modern Escaton. All forms of gambling and entertainment exist, including virtual games and elaborate gameshows. While the Nomic tournaments are held entirely on the Net, it is traditional to have a major display of the final games in the hololith (230 meters high) outside the Hrafnir.

PI Hermes is a detective agency with an unique concept: they make television shows based on their cases, exciting real-life documentaries about the work of investigators.

Star Aid is an interstellar help organisation originally founded on Nova but spreading to New America and Arcadia. It sees as its purpose to lessen suffering and violence and help backwards societies to develop.

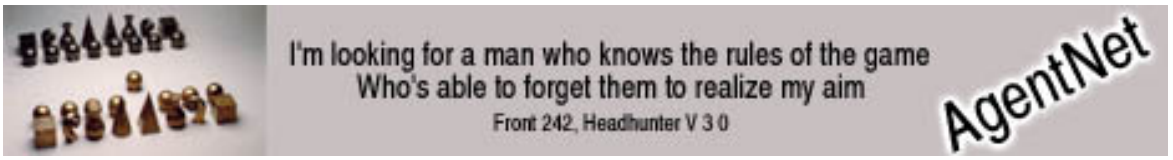
Currently it is mainly trying to help Negsoa; some initial overtures towards Penglai did not turn out well.

Telenovellas is a publishing house, publishing everything from paper books, non-interactive media, multimedia, virtuals and broadcasts; they have branches dealing with everything from news to science, with a bias towards entertainment and fiction. They own several major virtual soap opera servers.

Cryoinvest is the largest Nova cryonics investment firm, managing the money of the corpiscles while they are suspended. Cryonics investment firms are by their nature extremely conservative, cautious and long-range, they never invest in anything carrying the least risk. On the other hand, they have huge amounts of capital and very long-term loans. Cryoinvest was founded in 2197, and has since then slowly grown to become a financial force towering in the Nova economy. It is investing for the clients of many cryonics companies, such as Status Cryo, Volans Trustees, Concord Cryonics, Osiris Life Extension and even the venerable old Alliance Suspension.

Graunstein Interstellar is the major interstellar trade, travel and information company. Originally a major government contractor in the space business, the appearance of interstellar ships gave it the opportunity to expand. It operates the *Barto*, although it sometimes leases other starships.

The Integrationist Movement seeks to enhance human potential by merging with AI or uploading the human mind into computers. They are currently far from either goal, but inside the movement there are several thriving bionics and AI firms making daemon chips and augmentation software. The uploading idea remains far in the future, but news of Atlantean nanotechnology has cheered them significantly.



How can you hire a good team to undertake something that is quasi-legal without endangering your identity or the team revealing too much about their past activities? AgentNet is the solution, a well renowned interfacing firm based in Red Rock on Nova. Using zero-knowledge proof cryptography they can keep a database of teams, past missions (linked with media and law enforcement coverage) and the anonymous identities of employers. An employer can check the reputation of a team and that it is valid, but not find out exactly which missions produced it (which is good since some of them may be illegal), contact the team using anonymous transmissions blinding both parties to each other's location and real identity and sign contracts that are officially registered (defaulting is a bad idea, since that destroys the credibility of the anonymous identities - not everybody is willing to deal with an entity with no reputation). Everything is cryptographically secured, making it impossible even for the owners of AgentNet to find out who's who.

Sport and games is a major business on Nova. The big sports shift from year to year, but currently warbuggy races, pilote, paragliding tag, upback survival trecks, virtual war and basket are the most popular. Teams and players get plenty of media coverage, and the behind-the-scenes games of sponsorship, membership deals and image design keep much of the industry gossiping; professional sports are properly a part of the entertainment industry as much as gameshows or soap operas (which they sometimes overlap with).

Among AIs Nomic is the preferred game. It is a self-modifying game originally invented in the late 20th century, consisting of a set of rules, mostly detailing how rules may be changed, not unlike a constitution. The participants vote on rule changes, trying to achieve a winning condition. While it was sometimes played by intellectual humans, it was far to complex and confusing to ever become popular. However, the game was rediscovered by AI on Nova in the 23rd century, and quickly became a popular sport among many programs. At present it has many variations, and the major tournaments attract attention from many AI programs and even a few humans.

Style

In Landfall, anything goes as long as it is stylish, an expression of the owner's "brand". Currently smart clothing is in again, clothes made of adaptive fabrics that can move, change texture and colour depending on their programming. Unlike "firstwa clothes" (first wave clothes, the original style 32 years ago), these clothes are intended to be highly interactive both with the owner (receiving information from wearables, implants or the body itself) and the surroundings. Other personal belongings tend to be similarly active right now, from smart buildings to vehicles.

While females are currently dressing a bit more spectacularly than men (outsiders tend to have a hard time imagining that being possible), trend predictors expect that within a short while the tide will turn and people will go back to the "classic" look of extravagant, carefully made-up males and females in discreet and powerful clothing.

Unity is subdued, discreet and on the surface calmly meditative. This is a misconception based on the inability of outsiders to experience the mental decorations; much that appears to be plain and unadorned is actually a kind of etheric mental baroque. The simple white robes worn by members are for example decorated with visual, auditory, olfactory, emotional and cognitive personal signals, possible only for members of Unity to experience through their interfaces. Mental artworks can be "placed" in the mutual augmented reality they inhabit, and the contrast between the elegantly plain material world and the splendid mental world is regarded as one of the basic aesthetic principles.

Language

Adlapse	Information disease caused by the sudden breakdown of memetic defences. Under the onslaught of advertising and compelling media some people overnight become extremely suggestible, essentially turning off all critical thinking and just following the suggestions of media around them. The treatment involves a lengthy rest period with very limited bandwidth access, and therapy to establish a new memetic defence.
Ally	People from the Alliance.
Asimov	An AI with severe constraints on its thinking or actions.
Brand	One's personal image.
Brand awareness development	Becoming more well known and respected. "So, how is your brand awareness development going?"
Bucketed	AI expression for being erased
Chronovore	Negative term for very old people who refuse to die or freeze themselves, and instead cling on to life at ever increasing costs.
Cliffhanger mind	Someone addicted to being the centre of attention.

Codewalker	A person, AI or program that traverses code for a living. Not the most glamorous job, but very necessary to fix glitches, old bugs, find out how to upgrade legacy systems etc..
Companion	Robot partner.
Cybrarian	A digital librarian, especially one hunting down truly obscure references.
Eternals	The rare people, institutions and styles that never go out of style.
Exoself	All the software and external functionality supporting a person. Includes personal AI, software filters, secretaries and infrastructure.
Fa´	Fabulous, fantastic, but a tiny bit of faddish. Denotes something that is great right now, but has no staying power.
Fadbuster	Someone who not just dislikes a fad but strikes out militantly against it.
Fact Totem	A portable interface to the Knowledge Net.
Fallen	Derogatory Alliance term for someone from Landfall.
Frame	One’s surroundings: habits, styles, clothing, image, rumours etc.
Fully	A production for fullsense immersion.
Go Tani	Variant of Go often found in Nova casinos.
Go to the Alliance	Humorous expression for hiding from mistakes, media overexposure or bad press ("After that show, you better go to the Alliance").
Hal	Derogatory term for AI.
High C	To break under stress; refers to the stories about opera singers breaking glass with their voices. "You better take a vacation or you will reach High C".
Hedgehog	Militantly isolationist communities in the Alliance.
Herostratians	People willing to do extremely stupid or destructive things to get attention.
Hope Springs Eternal	The national anthem of the entire colony, a slogan used for the people who want to unify the Alliance with Landfall.
Hu	Human. Used as a conjunct to AI, sometimes written in lowercase ("We must stand together, both hu and ai.")
Hypzoid	A "one shot wonder", a huge star that is likely to vanish just as quickly as he/she/it appeared.
Hyper	Hypermedia, fully immersive or intelligent documents.

Iders	Non-intelligent net agents, such as spiders (connects information), striders (searches for information), hiders (hides in a system and watches it) or riders (hides in data to sneak into somebody's system).
Jonah	A Nova inhabitant. Oldfashioned term used by the initial colonists, since Nova lies in the Cetus (whale) constellation.
LCA!	Lights, camera, action. Expression for "Wow! Something is happening! Better film this!".
Life on the shelf	AI expression for being ignored or inactive
Memius	Somebody skilled in crafting catchy memes.
Meta	To look at something from a higher level, to "jump out of the system".
Meeling	AI problem where the program begins to loop its self-awareness so that it is aware that it is aware that is aware and so on; a problem in the first self-aware AIs but fixable using self-interrupts; however the word has remained for other consciousness-instabilities in AI and as a term for being self-obsessed among humans.
Müesli	Derogatory term for someone from the Alliance.
Multi	Multimedia, the most common kind of document with combined text, video, sound, interaction and responsiveness. "I have nothing to do!" "Try piping a multi, dear".
Omphalos	"Navel of the world"; AI expression for an important net node or knowledge node.
Pipe	To ingest information.
Nome	An avid AI Nomic player.
Nomic	Abstract game where the rules are changed by the players according to meta-rules; originally invented as a metaphor for how a constitution works. Popular among AI.
Sched	Ones schedule, the all important list of appointment and to-dos every civilized person owns. It is often managed by a "Schedder", a specialist AI. Schedcrashing is the act of trying to get into another's schedule, with force or not.
Sellrat	A piece of software following one around trying to sell something
Soap	Ongoing interactive game/broadcast. From the ancient soap operas. The Parliament is sometimes called The Soap.
Synthespian	Artificial actors, usually AI controlled.
Technogamous	Married or emotionally connected with robots or AIs.

Tentacle	A covert identity on the net, appearing to be a legitimate person but intended for nefarious or deceptive purposes. A single person can have many tentacles, appearing as a group of people.
Wipeout	A significant network crash.
Unit	Unity member.

Unity Speech (verbalised)

Arch	Mental architecture, especially the cohesion necessary for forming an unity. "Raising the arch" means to learn enough about each other so that unity can be reached.
Bigmeet	Colony meetings, when everybody connects to the same telepathic forum. The term is originally from the Alliance.
Communion	When two or more individuals have deep-level contact over extended periods of time.
Crack	Potential problem in an unity's mental structure.
Deeps	The deep levels of the mind, reachable for others only through great training.
Deja vu	A mental structure or snapshot placed virtually somewhere in space; not unlike virtual objects in enhanced reality.
Dreamwalking	When one part of the unity is asleep, and the dreams trickle over into the consciousness of other parts. Regarded as a problem, a nuisance, a fun game or a way towards greater unity by different unities.
Encumbered	When an unity becomes too large to remain stable, and tends to break up.
Gases	Slang for non-Unity people. They are like gas molecules bouncing around without ever combining.
Group-satori	The experience of total mental unification, a fairly rare experience.
IAI	Interactable Artificial Intelligence, AI equipped to deal with Unity communications. So far no IAI have ever successfully joined an unity.
Imprinting	When older members of an unity influence other members (especially neutrals) to take on their personality traits; often necessary to keep the group mind stable as generations pass.
The Isolation	The feeling of loneliness Unity members feel when they are not connected with each other.
Legacy	An unity that has persisted longer than many of its members.
Mudra	Mental sign with a standard meaning.

Multiplexing	Having each individual of an unity experience different, but complementary experiences.
Neutrals	Native born Unity citizens that never really develop a distinct personality; often necessary in larger unities.
Omega	The vision of an entire society mentally unified.
Overmind	A very large unity or unity of unities. Very rare.
Partial	A small or immature group mind, somewhere between a human collaboration and a true unity.
Piranha	Parasitic memes spreading from minds to mind in an unity, like a catchy jingle or self-supporting thought pattern.
Popping	When something comes together, especially when a new complex system finally starts to work stably.
Recover	To join Unity.
Shallows	The upper, most easily accessed parts of the mind.
Slip	The accidental breakup of a communion or unity state
Subterra	Hiding one's mental state or showing a false one.
Survival skills	The basic knowledge of how to make the implants behave well, especially how to break connection with the net.
Telepathy	Sending verbal or simple sense impressions through the network.
Thorn	An emotion, personality, hang-up or thought pattern that makes it hard to reach unity.
Triad	A unity consisting of three individuals. Pairs are sometimes called dyads, and the series continue with tetrads, pentads, hexads and so on.
Unity	The whole of Unity society, as opposed to the lesser unities.
unity	A group-mind, the feeling of being one with others.

Population

Humans: 6,816,607 (Landfall 5,998,614, the Alliance 697,748, Unity 120,245 individuals) Independent AI: 51,269. Human life expectancy at birth: 137.2 Earth-years (although the variance at high ages is very high due to different reactions to different bionic implants). AI and unities have no fixed lifespan.

Currency

Landfall Credits (C). A digital currency, often prefixed: microcredits (0.001 C, used to pay minor net services), kilokredits (1000 C), megacredits (a million C), gigacredits (a billion C) and so on.

Timekeeping

The day is just 19 hours and 3 minutes long; the extra three "flip minutes" are inserted after 20:00. The year is 331 days long (0.72 Earth years); this is the year 380 of the colony. A month is 30 days (with an extra flip day at the start replacing January; this day is celebrated as Arrival Day as well as New Year).

Symbol

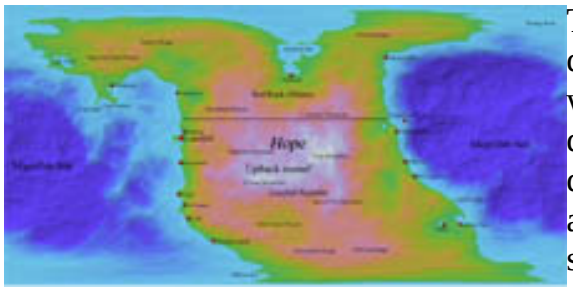
Landfall retains the original Terranova mission seal, a blue-green planet surrounded by 23 stars (representing the participating nations) on the background of the Cetus constellation. The Alliance has a red rock against a sunrise as symbol (rarely used these days). Unity employs a golden circle on a white background.

Planet

There are seven other planets in the system, mostly minor. The innermost rock world is called Hermes. Beyond Nova lies the gas giant Zeus with an extensive moon system. Outside Zeus four minor iceworlds (Hades, Persephone, Tartarus and Styx), and outermost a bluish failed core called Poseidon orbits in an eccentric orbit.

Nova orbits Tau Ceti at a distance of 0.78 AU. One orbit takes 0.72 earth years, or 331 Nova-days long. Nova has a single small moon (923 km), originally called Selene but eventually named Lucinda (after a woman in the original colony crew that ended up in local folklore as the epitome of absentminded confusion). The sun is usually called Tau.

Nova is terrestrial, with a diameter of 12,404 kilometres and a mean density 1.2 times earth. Gravity is 1.136 times Earth, the axial tilt 17 degrees. Almost 45% of the surface is land, the rest ocean. Nova has a single major continent, Hope, covering an entire hemisphere. The interior consists of mountainous deserts, highlands and canyons (the "upback"), but the often rocky coastline and surrounding areas are pleasant by human standards. Relatively little life exists in the interior, and frequent earthquakes makes it hazardous (according to novologists the continent is slowly breaking up in the same way that Pangea on Earth did, with a rift valley developing from Icestorm Bay). The poles are covered with drifting ice sheets, but since they are surrounded by ocean they cannot accumulate ice and often vanish during summer. However, the northernmost and southernmost parts of Hope remain constantly glaciated.



The climate is colder than on Earth,just 17 degrees on average. At the same time the weather is more variable than on Earth, due to both stronger temperature differences in the interior between summer and winter (causing major storms), the short day and the irregular volcanic eruptions. The greenhouse effect is strong and important on Nova, since without it the planet would enter a permanent glaciation.

Biology

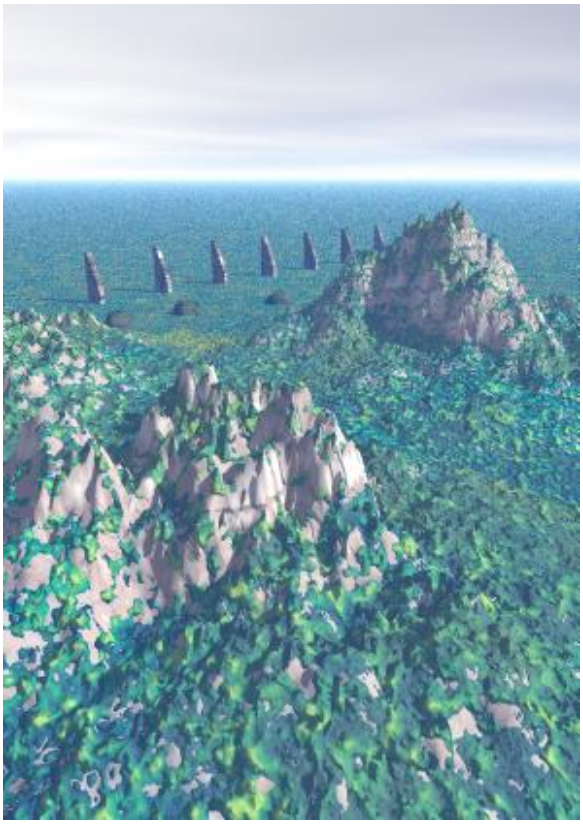
Indigenous life turned out to be rather simple but robust; mostly branching animal

or plant analogues, some mobile, some hard and unmoving. Most life is in the seas or amphibious; many species spend the winters in the ocean and the summers foraging on land. Much of the coastline is covered with land corals (really a kind of plant) which severly hinders movement. The largest animal is the Ten One, a ten-armed branching octopus-like creature that hunts near shorelines; it can become one meter long. Most animals are a few centimetres large. Plants tend to form branching networks on the ground, or flexible fronds in the air.

The surface layers of Nova oceans are very nutrient poor, while most nutrients are found in the depths. Nova has extensive deep sea ecosystems, consisting of immense labyrinths of coral-like bacterial growths. These growths in turn provide anchor for waving hairlike strands of filter feeding plant/animals, which in turn provide food for many exotic creatures. Among the most original are the bursters – a mushroom like creature that fills with gas, and at certain intervals breaks free from the bottom, floats up to the surface where it bursts, releasing its eggs. These eggs combine into manet-like colonies before sinking down to the bottom to continue the adult lifecycle.

World

Sukarno/Minsky (Pi-3 Orionis IV)



In the global village every war is a civil war.

He who would live must fight, he who will not fight in this world where eternal struggle is the law of life, has not the right to exist.

We watched the group with amazement. Six adults and two teenagers dressed in some kind of holographic fatigues with more built-in computing power than our own wearables. Especially their hats/helmets were crammed with sigint and c3i. They were dancing. Dancing on the spot, their fatigues showing a graphix of a billowing shirt as they rotated in place, faces serene and empty. But their AI was busy: our sensors could detect directed packet squirts between them and the surrounding terrain all the time. Eight crazy sufis. Eight high-tech hunter-gatherers that had single-handedly captured and hijacked a fully prepared New America shuttle.
- Jonathan Ellis-Khayama, *Interstellar Diary*

History

As a spin-off to the Penglai project, Indonesia acquired a Chinese colony ship, naming it the Ibn Batuta. Together with support from across the Arab world they set out in 2036 to colonise a world of their own, "the hidjra of space". It was the height of the "New Nationalism" of Indonesia.

During the stormy decade after the departure much changed in the solar system. Technology advanced, the Net finally became the dominant political and economical forum, national states crumbled, robotics and AI became vital research areas. Among the new groups that gained in power and popularity during this time were the Communication Cultists, a spin-of from the transhumanist movement that believed in the digital manifest destiny of mankind and in the power of artificial intelligence. One group, the Heterosemiotics, became convinced that while human-level and transhuman AI was inevitable, development was held back by the international restrictions and that emergent AI needed to be given proper values. The first group to achieve this would determine the future of the universe. The Heterosemiotics and allied communications cultists bought a remaining colony ship, autonomous equipment and set off to found a colony world where they could pursue their goals in peace. They launched the Turing in 2049, towards Pi 3 Orionis.

Exactly why they chose the star is uncertain; the charismatic leader Germund Dahlberg seems to have been convinced that the Indonesian expedition had been lost, possibly due to some engineering analysises that had been made in the early 40’s suggesting that the Chinese design was flawed. There is also the possibility that they needed to get to a planet faster than anybody else, and Pi3 was the only suitable choice. And of course, they might have been partially unaware of the Indonesian expedition.

In 2108 the Turing arrived to Pi 3 Orionis IV, which they named Daedalus. They quickly started to build a colony on the smallest continent, Minsky. It was highly advanced, using the latest robotics and AI.

In 2119 the Indonesians arrived. They were dismayed and shocked to find another colony in place. They saw themselves as pioneers, and being beaten to their goal by spoiled, crazy unbelievers fuelled their resentment. After some discussions with the minskians they decided to settle the largest continent against their wishes, renaming it Sukarno.

The two colonies developed in parallel, quietly competing. The Indonesians had a larger population and a wider knowledge base, the minskians more advanced technology and a decade more of adaptation. Several internal conflicts arose on Sukarno, mainly between orthodox Muslims from the western Arab states and Indonesian Muslims; these were fuelled by minskian agents. The minskians on the other hand had problems with their ideology, as people began to question the Dahlbergian doctrines. Both sides found it easier to rally their populations against each other to retain cohesion. As they began to take measures to protect themselves the other side responded in kind, and a cold war of industrial espionage and arms races emerged. Smuggling became a booming business, and many secret redoubts and havens emerged in the jungles and archipelagos.

In 2144 Dahlberg was assassinated. This was the signal for the war that had been brewing for decades. The struggle lasted just a few days. Information warfare was used on both sides, as well as more conventional weaponry. While Sukarno had superior conventional weaponry and manpower, Minsky had superior information and robotic weapons. The initial attack paralysed both colonies, but minskian backup systems quickly got online and the whole population directed infowar attacks against Sukarno. Robotic weapons clashed with infantry, autonomous drones with jet fighters. In orbit the fragile installations were destroyed by anti-satellite weapons. Without any warning, the war was over: the minskians had defeated, circumvented or neutralised the Sukarno army. The colony was invaded by semi-autonomous drones, tracking everybody – if somebody tried to resist the supervisor robots could strike faster than a human could act.

For 7 years the minskians held Sukarno captive. They had total control over everything and everyone through the drones and net scans. Resistance was futile, but hatred simmered under the surface. The Indonesians learned from their captors and waited, and in 2153 they made a counterstrike – a computer virus wiped out the planetary net, setting them free. While the computer-dependent minskians were paralysed, the Indonesians quickly acted, spreading out in the jungles of Sukarno and the other continents, setting up independent partisan units with microfac technology from the minskian designs. As the minskians tried to get up the net, various E-bombs, viruses and trojans hindered them, and reprogrammed drones began harassing their colony. For a while the remaining orbital installations gave them an edge, but they proved vulnerable to hi-jacked anti-satellite systems and perversion attacks.

Gradually the war shifted character. Small units, well hidden and equipped with portable or underground production facilities employed semi-autonomous weapons and information warfare against each other and the colonies. Taking hostages to force the other side to submission became a viable option, and most civilians began to flee into hiding too. Gradually the colonies became deserted, plundered for resources. Instead the robotic systems and adaptive AI became the source of security and resources. Hidden servers kept vital information, robots gathered food and AIs developed better inventions.

The most intense period of war lasted just a few years, but gradually the war developed into a normal state. Small groups, ten to 50 people lived in hiding supported by survival skills and/or advanced robotics. Most were content just to remain hidden, but some actively sought out enemies to plunder from them or take captives. Killing was bad economics – plunder the captive for everything, then sell him or her back as a ransom. A slow diffusion of technology occurred through reluctant exchanges, theft or covert alliances, while larger bases and meeting places developed more advanced systems or tools. The initial cohesion of the sides also began to dissolve as the situation dragged on. Tribalism emerged, and the original cultures became something new, native to Pi3.

Around 2250 the breakdown happened. Before that the different groups had settled down into a kind of status quo where cooperation were the standard. But

suddenly defection began to spread, as a few groups exploited the others to gain in strength and capability. As a wildfire the war began again, this time everybody against everybody. The only way of ensuring trust was to rely on one's own group; everybody else was dangerous and untrustworthy. Since then the situation has returned to cooperation a few times, but sometimes new waves of war and defection appear and it is everybody against everybody. Until the spacers arrived.

Society

The society is tribal, divided into mutually competing and territorial Suku. The families within a Suku move around between different hiding-places, gathering food and equipment. Many live in underground warrens dug by utility robots. Overall, AI plays an important part in daily life, and the programs are regarded as part of the family. Around each temporary base perimeters of scouts, drones and traps are laid to make it impossible for anyone to get close undetected. Sometimes it appears that the human part of the family is mostly the glue that holds the other systems together; there are a few "keluarga otomatik", automatic families, where all humans are gone and the drones and software keep on.

The lifestyle is a form of high tech hunter-gatherer society, with fairly much spare time. The spare time is used for crafts, especially programming. Beside the practical uses of making better software (for autofacs, drones, AI, protection programs and cracking systems) programming is regarded as an artform, especially among the descendants of the minskians. Another artform that has spread among the Indonesian-descended inhabitants is digital versions of the traditional wayang dramas; using computers the traditional themes, complemented with colonial and infowar stories are brought to life.

While Islam was a major rallying point during the nationalist era, in the infowar era it has become mixed up with technoshamanism and the traditional Indonesian kebatinan syncretism of animist, Hindu-Buddhist, and Islamic (especially Sufi) mysticism. Different Sukus have different interpretations, and even different families may have utterly different systems.

Organisations Style

Survival is essential; everybody should be able to escape at any moment. This has led to either extremely minimal clothing, similar to the one used by various jungle tribes back on Earth, or lightweight exoskeletons where everything needed can be carried. Everything is rugged, camouflaged and often imitates objects in the surroundings: drones look like leaves, containers like fruits or wood, weapons like branches.

Language

Aiqutb	Device where AI can recombine and exchange information. Each family has one or more aiqutbs, they are very valuable.
Akal	Idea/mind/intelligence; used as a name for AI.
Autofac	Automated factory, especially the underground microfacs. Minskian term.
Badan perjuangan	Struggle groups, the infowar partisans from the Sukarno-Minsky war (the name comes from the counterparts in the post-1945 struggle for independence). Today the name is used for the more warlike families.
Bapak	Father or elder, respectful form of address to people.
Blackmailer	Weapons that force the victim to do whatever the user desires, or face unpleasant or deadly consequences. Typical blackmailers consist of remotely controlled poison pellets or explosives.
Budak	Slave, servant. Somebody who has been captured and forced to work for their captors.
Dalang	A perversion weapon that takes over AI, exoskeletons or drones and turns them against their owners. From the puppeteer of the traditional Javanese shadow-play.
Daun	Leaf, a caumoflaged perimeter drone or mine.
Dukun	Expert/adviser, sometimes a respected family member but the word has increasingly become a term for valued AI programs.
Gotong-royong	Mutual self-help. What holds a suku together.
Hack Attack	A software attack, or the response to one.
Ibu	Mother (respectful form of address).
Inf	Infodrone. Called "net kelambu", mosquito, in Indonesian.
Intel	Intelligence networks, based on scout drones, traps and sensors.
Jago	Bandit
Jangan taruh iklan di kotak pos ini.	"No junk mail in this mailbox"; traditional blessing over a seeded microfac in order to protect it from computer viruses, infiltration and other problems.
Jaringan	Network, the invisible web of communications squirts and signals that form the spirit world.
Kafir	Unbeliever. Used as a derogatory term for Minskians by the Sukarnese.
Keluarga	Extended family; one group of independent individuals.

Kelambu	"Mosquito net", traps to catch enemy scout drones and spy dust.
Kerangka	Skeleton, exoskeleton.
Kesurupan	Possessed by a spirit, i.e. an AI or other volitional software. Used both for hardware, devices or people.
Lawan	Competitor, enemy. The name for people outside the Keluarga or Suku.
Lunak	Software, also used as a term for the soul.
Keras	Hardware, also used as a term for the body.
Pabric otomatik	Autofac.
Pemuda	A youth, youths/fighter, fighters. Has overtones of militancy. Sometimes used for attack drones or attack AI.
Penyusupan kelambu	Infiltration drone.
Penetralan	Neutralisation; when somebody has been perverted, blackmailed or forced to either stay out of the fight or work for their conqueror.
Peranakan	People of mixed Minsky/Sukarno ancestry.
Pray	Old derogatory minskian term for the Sukarnese. A pun on pray (since they were often traditionally religious)/prey.
Rimba belantara	The Great Jungle, the forest that covers most of Pi3.
The Ruins	The remains of the colonies. Dangerous, well scouted areas.
SI	SuperIntelligence, an AI capable of indefinite self-enhancement and growth, the goal of the Heterosemiotics.
Scout dust	Micromachines that spread out invisibly and report if the area is disturbed; sometimes called spy dust.
Suku	Tribe. A group of allied families, not necessarily geographically close to each other.
Teergrube	"Tarpit", a software or hardware trap looking like something worthwhile but intended to be attacked to detect attackers. Minskian term, originally from German.
The Turing Tar-Pit	The inherent limitations of Turing-equivalent computers; the Heterosemiotics tried to escape them with quantum computing and other unorthodox architectures in order to create an AI qualitatively more powerful than ordinary AI and humans. Today it is used as a term for limited computing resources; software complains that it is trapped in the Turing Tar-Pit.

Winner	Somebody who succeeds, who gets the right job done. The goal of life is to be a winner. Term used by Minskian descendants.

Population

Population: 493,044. Life expectancy at birth: 66.4 years.

Currency

None. Trade (where it exists) is through barter.

Timekeeping

None. Each family counts time in days. A few AIs use the old ways of counting time.

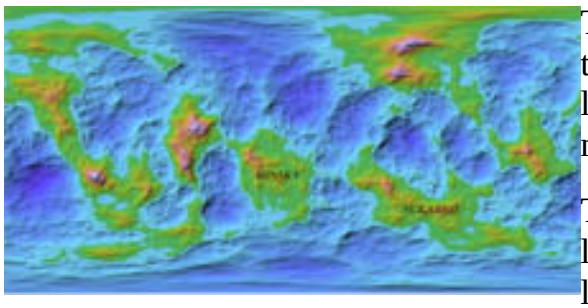
Symbol

None.

Planet

The planet orbits 1.3 AU from the star; one year is 1.44 Earth-years or 486 days long. It is 13,756 kilometres in diameter, density 0.8 earths. Gravity 0.718 g. The day is 26 hours long, the axial tilt 6 degrees.

The planet has three moons, the large Minotaurus (500 km, 734,000 km out), the middle Minos (2189 km) and the close Icarus (2086 km, 78,432 km out); tides are fairly significant in coastal areas.



The surface is 60% ocean, 5 continents: two smaller, three larger. Due to the long conflict there are no agreed on names except for Sukarno and Minsky.

The planet is warm and cloudy; the landscape is usually bathed in the soft light of a white sky. There are few seasonal changes, and the weather is very stable.

Biology

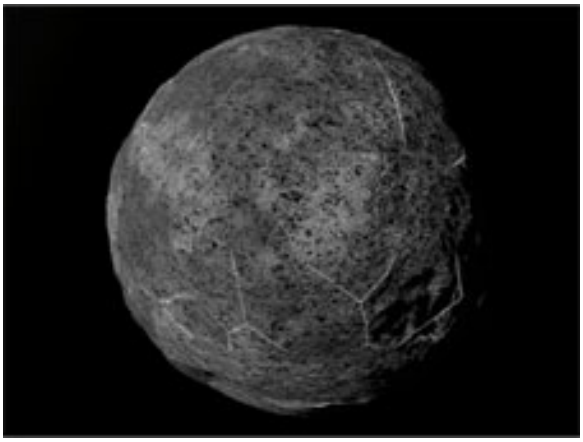
Most of the land surface (and much of the seas) are forested by a complex tangle of lightweight, hollow trees covered with saprophytes. In fact, many trees cannot photosynthesise but rely on "rent" from the saprophytes, which provide it with energy in exchange for nutrients and access to sunlight. The seas have floating forests, and the land forests are often very wet. In the northern regions the floating trees hibernate on the sea bottom, floating up to the surface in the summer and allowing stored seeds to grow.

Animal life is surprisingly simple, mainly a large variety of supple snail-like creatures with tentacles, and hairy flyers nesting in the crowns. Many animals live in symbiosis with their host trees, defending them and helping them against other plants. Some even form symbiotic parts of plants, like the Carrier Bat which moves "their" plants into the sunlight and attacks other plants.


World

World

Turnbull/Mary (Tau Eridani V, Tau Eridani A-7)



It's often safer to be in chains than to be free.
- The Trail, Kafka

Of all tyrannies, a tyranny sincerely exercised for the good of its victims may be the most oppressive.
- C.S. Lewis

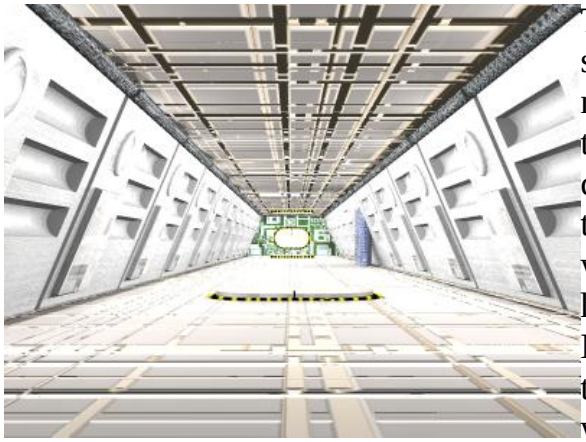
On arrival, our handler gave us locator badges from HM. After making sure we had paid enough RCUs for our stay she led us through the airlock into Mary proper. The impression was one of a labyrinth of nearly identical, colourcoded corridors with similarly nearly identical people in colourcoded coveralls. The gravity was very low, so most people slowly bounded along the corridors, speeding up with handrails practically covered with warning stickers. In fact, the most common decorations were warning signs: sharp corner warnings, depressurisation warnings, radiation warnings, increased RCU debit warnings, pershaz warning, restricted zone warning… The passers-by clearly saw that we were aliens, and did their best not to look at us.
- Jonathan Ellis-Khayama, *Interstellar Diary*

History

Turnbull is a failed colony. When the first colony ship (the Owl) owned by the Turnbull International Foundation arrived in 2128 they discovered too late that while the local biosphere flourished, it was extremely deadly. At first everything appeared perfect, and the colonists explored the planet, studied the biosphere and began to set up the initial colony. All the usual precautions and surveys were undertaken, but no obvious danger was apparent. But after 7 months of human presence on the planet a local protozoan had adapted to human biology and began to dissolve keratin – resulting in a disease that literally skinned people alive. First rashes developed, then the hair began to fall off and finally all the skin began to flake off resulting in excruciating pain and deadly secondary infections. They tried to stop it with all means, but it was clear they had too few resources to handle the problem. The survivors, already infected, froze themselves again on the Owl in the hope of rescue, leaving a warning message for the second ship, the Eagle.

The colonists on the Eagle, arriving some months later, were faced with a choice: trying to settle the system, also freeze themselves in the hope for rescue, or try to leave. Leaving would need refuelling the ship, in turn requiring an

infrastructure for He3 extraction which essentially required an entire settlement. Settling on Turnbull after the horrible demise of the initial colony was not popular, and attempts to find a cure failed. The arguments were long and heated, but in the end the leaders of the project decided to settle on a suitable asteroid, Mary, with enough resources to support the construction of a semi-permanent habitat. If this worked, then they could later decide on whether to gather enough He3 to escape, or stay in the system.



The colonisation project was hard, the ship had the wrong equipment and nobody dared to use the materials from the first ship as it was likely contaminated. The project leaders had to force everybody able to do so to work in order to ensure survival. The heroic habitat construction project on Mary succeeded against all odds, but the situation was critical – all systems were close to marginal, the amount of available oxygen, water and biomass was low, accidents deadly. As people settled down, life became a permanent crisis situation where the project leaders had to make tough decisions, often against the will of the colonists. An attempted mutiny was crushed, and the leaders instituted harsh rules to "guarantee survival for the duration of the crisis".

After building the basic habitat, the colonists burrowed deep into Mary. They gathered volatiles from ice dragged from the outskirts of the system, and slowly produced more biomass. At several points the whole situation was near disaster as uncontrolled infections threatened all food productions, or asteroid-quakes caused depressurisation in certain sections. The management had to find a way of dealing with what to do with people that either worked against them or had no useful skills; in the end they settled for the temporary solution of cryofreezing them to be awakened once the crisis was over.

As the years went on, things settled down. As the colonists grew older, children were reared and became used to their world. Mary slowly became a regimented, closed society where everybody and everything had its place. While the acute threats gradually subsided, the politics of scarcity, control and having to plan for disasters continued. The original project of refuelling the colony ship was abandoned as "too costly during the present crisis", the study of the flaying plague was discontinued to deal with other epidemics, and scientific work was turned to exploiting Mary. Routine replaced exploration, caution curiosity.

Society

Today Marian society is rigid, closed and bureaucratic. It is nearly a caste system, where everybody is educated for a single duty. Everybody is sterilised; children are born and educated in a central nursery facility deep in the core. Most people belong to the various life-support branches like Biomass Management (BM: agriculture, sanitation), Matter Management (MM: water, air, mining), Energy Management (EM: energy production and distribution) and Technology Management (TM: repairs, building and maintenance of the habitat). Above them in hierarchy are Information Management (IM: communications, media), Human Management (HM: nursing, education, medicine, economics, and social security), Security Management (SM: the police, surveillance) and finally Project Management (PM: administration, planning and oversight). On the Planning Committee representatives for the 8 branches sit, formally with similar status but in practice ranked.

Society on Mary is dominated by matters of scarce resources. Withholding resources is treason, and selfishness the worst sin except for endangering the habitat. At the same time, HM realises that humans are humans, and need things like privacy, personal space, creativity and individuality (even these tendencies can be ameliorated by conditioning) in order not to crack up. Their solution has been to encourage resource-economical activities such as sex, lucid dreaming, meditation and computer games. Especially the games have grown tremendously, from simple network games producing cheap excitement into elaborate collaborative fantasy worlds. Stories and conflicts within the games are matters that fill everyday discussions, and IM is building more gameworlds all the time. Beside the official rankings, many people are known for their rankings in various games. Everyday reality is often regarded as the boring but necessary basis for the true reality of dreams. At the same time the games give HM and SM an unobtrusive way to monitor people's psychological profiles.

The economy is based on RCUs, Resource Consumption Units. Each unit allows a certain amount of air, food, water, energy and services. Nursing and education incurs a RCU debt, which has to be worked off to the habitat – they are in "the duty category". Once a person has worked it off (which can take many years since they need RCUs to pay their own existence in the meantime) they are "duty free" and in theory able to do what they want. In practice they have to remain on their old jobs. People who are too old or sick to work or lack RCUs are liabilities to the system, and not allowed to consume resources. They are frozen in the Repository, awaiting the day when "the crisis ends". Crimes are usually punished by fines, behaviour therapy (which also incur a cost, of course; this can put someone back in the duty category) or freezing.

Everything is monitored, analysed and checked. The management systems monitor everyone and note any deviation from normal (some people who behave too variably are marked as "unpredictable" and generally avoided). There have been a few cases of corruption in the past, starting purges to protect the colony from "waste and favouritism"; an atmosphere of everybody watching everybody has spread. Still, some black market and semi-legal activity occurs, partly as a security valve accepted after sociological studies by HM (and secretly, a way for SM to have blackmail on most people). Computer games, sex

and lucid dreaming are the most popular forms of entertainment.

Technology isn't very advanced; most is equal to Earth technology in the 2050's, with an emphasis on life support technology and asteroid mining.

The encounter with a joint Arcadian-Nova expedition in 2345 left Mary shaken; clearly the administration could not imagine what to do with the outsiders. The expedition also saved the contaminated colonists of the first expedition, who were revived and treated on Arcadia and Nova.

Organisations

MM (Matter Management) deals with mining, purifying, distilling He3 from the regolith and producing breathable air, drinkable water and raw materials. Most of the organisation is little more than a mining venture, and it has fairly low political status despite constant media barrages about how essential it is. Section 2 of MM runs most of the factories producing goods; local corruption allows the black market to get access to certain goods.

BM (Biomass Management) deals with the production, use and recycling of biomass. BM does the laborious conversion from water and minerals into biomass, tends the hydroponic gardens, production of more advanced biological products and sanitation/recycling. BM is always asking for more raw materials to keep the biomass levels up.

EM (Energy Management) runs the powerplants and powergrids. It is generally regarded as a bit arrogant, often having problems working with TM and running emergency drills too often.

TM (Technology Management) is responsible for keeping the overall technological system running. They build, maintain and repair the habitat, oversee the day-to-day function of the automation and runs several factories to produce new parts. While most of TM has fairly low status some sections are respected, such as Section 6 which is responsible for safety and emergencies; there are many stories about the heroics of Section 6 employees fighting disasters against huge odds and saving the habitats at the cost of their lives. Another important section is Section 8, which manages the remaining space vehicles and off-habitat sensors.

IM (Information Management) is the most popular and expansive part of Mary society. It builds and maintains the information and computer resources, and Section 2 produces the entertainment everybody watches or plays. Section 7 is not as well known, but it is responsible for propaganda, subliminal messages and monitoring; it is closely linked to SM.

HM (Human Management) is a huge organisation with sections ranging from economics (Section 1), sociological studies (Section 2), education (Section 3), health care (Section 4), housing (Section 5), sports (Section 6), psychology (Section 7), reproduction (Section 8) and cryonic freezing (Section 9).

SM (Security Management) keeps track of where the citizens are, what they are doing and if it is dangerous. Section 1 deals with physical dangers and how to deal with them (they coordinate with TM Section 6), while Section 2 is about

law enforcement. Section 2 monitors the habitat through surveillance cameras, and sends out the Blacks to fetch offenders for punishment or therapy. Section 3 is about internal security; it is not well known and keeps a low profile.

PM (Project Management) is the central administration of Mary, organising the other management sections and making sure they work together to solve the Crisis.

The Underworld certainly exists. It deals with illegal drugs, stolen goods and betting as well as various protection rackets. Many of the transactions (and some deeds) are done in the game virtuals: since RCUs are highly monitored, game scores and in-game-money are used. SM of course works against the underworld groups, but they are clever and SM often has more work to do monitoring legal activities and the citizens overall lives.

Style

Mary is fairly drab and utilitarian, with colour mainly used for warning signs and symbols. Since the temperature is always 21 degrees C, people dress in white shorts and T-shirts marked with their names, position and rank. Tattoos are fairly common, often abstract patters of depictions of various characters from popular network games.

Language

Ars	Slang for RCUs.
BeTer	Behavioural Therapy. Used to treat various crimes and misdemeanors. The participants are said to have become BeTer afterwards.
Blacks	People from SM. Similar slang is used for the other branches: greens for BM, blues for HM, reds for PM.
The Beyond	The outside universe.
ComHaz	Community hazard, a danger to everyone such as air leaks, blowouts, life support failure, meteor impacts or social unrest.
The Core	The planning council.
The Crisis	The current situation of scarcity, instability and imminent danger that has threatened Mary since it was founded.
Descend to the core	Rise through the ranks. The most important functions are located in the lowermost parts of Mary.
Duted	Returned to the duty category.
Duty free	Somebody not owing the government RCUs.
Gamester	Somebody addicted to the GamNet.
GamNet	The game networks
GamMasters	The best players.
In Repose	Frozen in the Repository
Lux	Lucid dream.

PersHaz	Personal Hazard, a danger such as vacuum, heat, cold, radiation or dangerous machinery.
Regolith	Somebody with a mind like regolith: flaky, boring and useless. Insult.
Shirker	Somebody not paying his dues.
Stress	Music style popular among the gamesters.
Xeno	The disease that killed people on Turnbull; in popular imagination it has turned into a taint that might spread from anything that has touched the planet.

Population

910,636 people. Average life expectancy at birth: 61.6 Earth-years, although almost nobody ever dies - they are all frozen in the Repository until the Crisis is over..

Currency

Resource Consumption Units. One RCU corresponds roughly to the amount of air, water, biomass, electricity and services needed to survive one day. Common derived units are the centiRCU and deciRCU.

Timekeeping

Mary uses seconds as the time unit. Common measures are kilos (1000 seconds, around 16 minutes), days (100,000 seconds, around 28 hours) and megas (1000,000 seconds, a 10 day week). One orbit around the sun takes 6.9 years (around 218 megas). By tradition the apehelion and perihelion is celebrated by a brief holiday, periday.

Symbol

Each Management has its own colour (BM green, HM blue, EM yellow, SM black, PM red and so on), worn on lapel badges signifying rank and organisation (vertical band to the left, with a square to the right whose height denotes rank). All the colour bands put together form the symbol for the entire Mary colony.

Planet

The system has five planets, but they are of little interest to the marions. The outermost is Turnbull, earthlike and with two major moons. The other four are small gas giants/superterrestrial planets, named Harcourt, Alkorta, Varela and Franquemont. Mary orbits 0.3 AU outside Turnbull. It is 117 kilometres in diameter, a carbonaceous chondrite sphere covered with craters. The surface bears the markings of solar panels around the equator, a crater where a comet was deliberately crashed into the surface to get ice, and a number of factory installations. The original habitat domes surround the gutted remains of the Eagle, which was used for equipment and raw materials.

Turnbull

Turnbull orbits 2.32 AU from the sun; one year is 3.53 Earth-years or 1407 days. It is 14,038 kilometres in diameter, with an average density equal to the Earth. The gravity is 1.1 G. It is a fairly cold planet, the mean temperature is 14 degrees Celsius. Approximately 15% of the surface is covered with ice; without

it 69% of the surface would be water. The day is 22 hours long and the axial inclination is 20 degrees.

The planet has two moons, Vera (2492 km, orbiting 1.1 million kilometres away) and Jeanette (4313 km, orbiting on average 2.1 million kilometres away). Jeanette has a fairly high inclination orbit; it may have been captured in the near geological past in a near-disaster.

Turnbull is very geologically active, with a major pangean continent breaking up along a series of rift valleys and inland seas as well as plenty of volcanic island chains. The dust contents in the atmosphere has a variable effect on the weather - mini iceages are not uncommon after massive eruptions.

The continent is called Durham, containing the highly saline Hosono Sea and the Wennerström Sea west of Lindell Bay. In the ocean there are several dozen island chains, named after crewmembers on the Owl. The inland climate tends to be rather extreme, and the southern parts of Durham are a frozen tundra from which intense blizzards blow halfway to the equator during the winters. The colony itself was sensibly located away from major rifts and climatic extremes, on the temperate Metallica peninsula of the northeastern coast.

Life on Turnbull is comparatively earthlike from a chemical point of view, but the chemicals are used for very different purposes in the biochemistry (for example, energy is mainly stored in proteins, and genetic information in special fatty acid complexes). It is surprisingly adaptable, exhibiting an ability to quickly evolve to fill new niches as they appear.

Turnbull plants have a peculiar mottled appearance of red and blue spots; they are really colonies of two kinds of single celled creatures with different photosynthetic pigments living in a matrix provided by a third creature. While land and sea plants are not that unlike terrestrial counterparts, the skyplants of the equatorial regions are unique. They float on hydrogen-filled balloons, able to avoid getting shadowed by simply drifting with the winds. While they get enough sunlight and moisture, they have problems with acquiring enough minerals to grow. Most plants sport sticky roots hanging from the body, some descending during the night to the sea to pick up debris, others catching flying animals and many simply exploit volcanic dust in the atmosphere - after a major eruption the amount of skyplants can increase enormously. Some plants even prey on smaller plants, by catching them and dissolving them. Dense clouds of skyplants pose a noticeable hazard to flying vehicles.

There are three major forms of animals and countless smaller groupings. The most common is the decapedes, centipede or wormlike animals found burrowing for nutrients in the ground or undergrowth, some preying on smaller species. One form has evolved wings, and live on, in and around the skyplants. The hexapedes (called Schwartzkopfs) are hairy, six limbed warm-blooded animals found in the sutherly regions; they show many niches similar to arctic rodents and foxes. The rollers are found mainly along the shores of the rift seas, ball-like animals rolling along using two tentacles and eating whatever they can find on the beach. Ryan's Roller is the largest one, up to two meters large and

quite able to crush a human.

World

Ridgewell (Beta Trianguli Australis X)

Where does the family start? It starts with a young man falling in love with a girl - no superior alternative has yet been found.
- Sir Winston Churchill

I am the family face;
Flesh perishes, I live on,
Projecting trait and trace
Through time to times anon,
And leaping from place to place
Over oblivion.
- Thomas Hardy, Heredity

Peter-Swifttop Johnny Stevens introduced me to his household, the Swifttop building (named for being built on top of the hill just outside Swift, typical Ridgewell literalness). The city beneath looked like a toy model in a shop window in the brilliant cold sunlight. The Swifttops is an uniclone household, consisting solely of Johnnies. A greyed old Johnny was trying to organise ten Johnny children to tend the garden, while three adolescent Johnnies immediately seized upon the chance to speak with a real outworlder (no doubt curious about our reproductive practices). It would have been hard to recognise Peter unless I hadn't memorised his stripes of facial paint. He told me that it was a common game for the children to switch painting and try to trick their parents. Surprisingly often it failed.
- Jonathan Ellis-Khayama, *Interstellar Diary*

History

Ridgewell was colonised by a multifamily corporation/foundation, the Prudence Foundation (roughly standard western values with a contingent from the Equatorial Net Alliance). This was the first major robot-assisted colonial project. The colony ship Joy was launched in 2041, and arrived in 2142. At this point an automatic ship sent before (Swift) had already done initial surveying and dropped a preliminary colony module to the surface (also called Swift; in time it became the capital of Ridgewell).

During the first colonisation stage a major accident occurred, killing everyone onboard the Joy: during a flare part of the ship exploded for an unknown reason, destroying most of the habitat module and cryonics facilities. The only survivors were the Stevens family, who were at the time the sole inhabitants of the Swift. They found themselves in a tricky position: they had access to all the reserve equipment but were just 6 people, far too few to set up a viable colony.

They settled for an unusual solution. The ship had a full complement of artificial wombs (intended for livestock, but not yet shipped downplanet) and the Stevens family used them for in vitro gestation of a large number of children (49). The children were at first brought up in the safety of the colony ship, while their parents heroically laboured to bring them up and repair the colony. With the help of the robots and large supply of expert systems they could manage many tasks that would otherwise have been impossible. In the end they succeeded and the now fairly large family moved completely down to the planet and settled down.

The initial colony at Swift grew, but a problem emerged: what to do about sex and reproduction? The young generation were growing up, and soon the question would become urgent. The preliminary solution was a simple antiaphrodisiac, which at least gave the small community time to grow up and think. The Stevens were in many ways conservative, and while they could accept in vitro babies, they could not accept what they regarded as incest. After a long period of hot debate they began to use the wombs again: cloning became the only accepted form of reproduction.

In time the colony grew, and Swift expanded further. In vitro cloning turned out to be an advantage in many ways: a whole clone of children could be birthed and reared together, minimising parenting time (an important factor during the initial colonisation stage), making planned parenting easier and creating a strong sense of sibling cohesion. Later in vivo cloning (where a clone was grown inside a surrogate mother) was tested a few times, but it never caught on. The colony became inhabited by clones of the original settlers.

Over time Ridgewell developed into a modern society, with some peculiarities of family and social structure. The original taboo against interbreeding continued, and clone parenting remained the norm. However, over time relations inside a clone became accepted (after some serious struggle between conservatives advocating total abstinence and liberals allowing intra-clone relations) and the normal family structure became a number of "parents" sharing a household rearing a number of clones, usually in groups of three or more at the same time. Some households were single clones, others mixed. There are still many areas where the conservatives are strong and psychochemical modifications used to remove sexuality.

Society

Most communities are run by consensus; they are small enough for it to work well. In larger communities such as Swift, direct democracy is popular: people gather together at the plaza or on the net to discuss what to do. Sometimes a Family Meeting is called, when everybody tunes in for a major debate, or sends their representatives to Swift. There is also a Family Council acting as a parliament, doing most of the everyday governing that is needed (not much).

The 55 different clone "clans" (based on the 6 original settlers and their 49 children

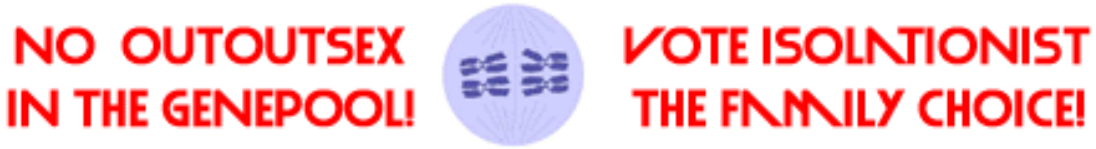
minus the 8 people who abstained from cloning) have slightly different personalities and styles, even if large individual variations exist. The Xaviers are known to be somewhat calmer and more creative than the efficient Brendas, the Pauls tend to be conservative, and so on.

Names consist formally of three parts: the personal name, the clone name and the family name Stevens. The personal name often contain a part showing family: Elizabeth-Greenhill Mary Stevens refers to Elizabeth of the Greenhill community of the Mary clan. Normally only the personal name is used.

Overall, Ridgewell society is fairly conservative, stable and free – free with the exception of reproduction, which is still a somewhat sensitive issue. Genetic modifications and inter-clone breeding are not allowed. Family life is strong, both in and between the households, clones and Stevens. With the exceptions of some loners and eccentrics the Stevens tend to hold together and care a lot for their communities (often with mock arrogance towards other communities).

There are roughly four political "parties", although they largely lack formal organisation. The Conservatives are overall anti-sex, pro-space and tend to be a bit clone-bound; several clones belong to the party almost to the last member. The other major grouping is the Liberals, who are roughly pro insex, isolationist and much more mixed. The two minor parties are the Radicals, pro-space and pro-sex, and the Family Party which is closely linked to the Family worshippers; their program is mainly isolationism, clone loyalty and population increase.

Technologically Ridgewell is not very outstanding. The one area where much work has been done is medicine, both cloning technology and in exploiting the fact that the population has only 55 genotypes. An illness that affects one individual is likely to be able to affect his or her clone, so a certain caution against epidemics has developed. Life extension has progressed significantly, and of the original first generation settlers (the "zeros") two (Elisabeth and Ursula) are still alive, 201 and 200 years old respectively. Otherwise, Ridgewell technology is fairly low tech: a relatively robotised society with much automation, but no real unique technologies of its own.



Contact with the other colonies has caused trouble. While some welcome the outsiders, others worry that they threaten the pleasant society the family has built. The conservatives are of course upset about the sex habits of outsiders, and many liberals agree with them on this. There have however developed the controversial "marriage party" that claims it is completely allowable to marry outside the family. A Family Meeting will likely convene shortly to discuss the issue. Another issue that is growing more heated is the number of Pauls in high offices – the clone is overrepresented in government, business and academia, and many are starting to think they are a slight bit too nepotist for their own good. The Pauls of course claim they are where they are because they are so good at their jobs.

Organisations

The Stargazers Guild run the still orbiting colony ship (now in orbit around the moon Humpty) and other interplanetary ships. They are mainly responsible for astronomical monitoring, getting He3 and maintaining the satellite net. The Guild is really an extended multiclone household, dominated by the Clements and Isabelles.

The Genetic Archives are located in Swift, although copies are found in other places. They hold frozen samples of DNA from the clone-line founders. The archived DNA is then used for cloning, making sure no genetic drift occurs.

The Family Vault is located in the mountains south of Swift. It is the main cryonics facility, and here most of the first generations are stored. The Vault has become a bit of a museum, with a visitors section with memorabilia and exhibitions of the colonisation to educate young generations.

Orchid Productions Inc is the largest networked corporation on Ridgewell. It mainly trades in utility bot programs, selling plans for building houses, gardens, factories and home management, but also owns several transport companies transporting goods between the different settlements.

Robin Ventures is a major robotics/engineering firm producing most of the utility bots on Ridgewell. It is almost completely run by the Robin clone, although most of the clones actually only live from dividends in the ownership – relatively few actually work in the firm which is heavily automated. Other clones joke about the robot-Robins and their armies of household robots.

The Ephemeralist Movement dislikes life extension technologies. They claim that near-immortality slows down social growth, entrenches the rich and powerful and degrades the human spirit. While similar mortalist movements exist on many planets (other major mortalist groups exist on Gaia, Nova and New America), they are especially strong on Ridgewell since the risk of having the same immortal clones in the same positions for centuries is so obvious in the family-bound society. Currently the ephemeralists are mainly arguing against life extension treatments during gestation and trying to convince people to abstain from the antiagathic treaments, but observers worry that in contact with outworlders they could become more militant.

The Chocolate River Communities are a famous series of households and small towns along the Chocolate River, 700 kilometres west of Swift. They are home to many artists, designers and media people and are sometimes called the bandwidth capital of Ridgewell. The area is traditionally Liberal, and the strongest Radical supporters live here. The "Chocolate style" is usually imitated (or parodied; for some time it has been chic to exaggerate it humorously) on the rest of the planet.

Style

Approximately western clothing from the 2030s. Many dress very lightly in hot weather. Facial paint is a common decoration, both expressing individuality and family/clan affiliation. Due to the bright light, sunglasses are common and often a style statement in themselves.

Language

Big Brother	Both a honorific to senior family members, and a term for the police (mostly Bernards).
Border	The area between terrestrial and Ridgewell ecologies. Often rather poor and subjected to erosion. Used in analogy to denote the need of uniform policies ("We cannot have borders in our reproduction!")
Botty	Robotic, stupid, pre-programmed.
Brood	A group of children reared together, not necessarily of the same clone.
Broodbrother/broodsister	Somebody from the same brood as oneself.
Brother/Sister/Sibling	Greeting to other family members ("Welcome siblings!"). Can be modified to imply rank ("Big brother, this is a sensitive matter…")
Caretanker	Somebody maintaining the tanks. A respected profession.
Clonebrother/clonesister	Refers to another of one's clone. Often shortened to clone ("Hi, clone!").
Family	The Stevens family. Has connotations of nationality, shared values, belonging and unity.
Family Meeting	Major convocation of the Stevens. Sometimes local meetings are held, but the true Family Meetings take place in Swift and involve representatives and participants from the entire planet.
Flash season	The periods of increased solar activity.
Glaxes	Sunglasses and other eye protection, especially stylish ones.
Householders	The people maintaining a household.
Insex	Sex within a clone. Used in a derogatory way by conservatives, more neutral among liberals.
Ones	The first generation of clones. Following "generations" are called Twos, Threes and so on, even if they are based on frozen genetic samples of the Zeros.
Outsex	Sex between clones. Generally regarded as abhorrent. Sex with off-worlders is sometimes called outoutsex by those disparaging it.
Mudland	A tidal plain. Mudlands are mined for biomass to be converted into soil.
Nephew	Somebody from the other colonies; a positive term suggesting relationship.
Parents	The First Six (Jonathan, Mary, Ronald, Simone, Diana and Thomas), who were the parents of the Zeros.

Professor Balthazar	Somebody suffering from sunstroke.
Syngamists	People reproducing sexually. Academic term.
Stripe	One's facial painting.
Tank	The in vitro gestation tanks where children grow. Their maintainers are called caretankers.
Zeros	The first Ridgewell generation.

Population

Population: 7,762,060. Life expectancy at decantation: 760 years (estimated)

Currency

Dollars

Timekeeping

The day is 25 earth hours and 19 minutes. The Stevens divide it into 1000 beats (around 1.5 minutes), gathered into 100 decis or 10 hectos. Dates are based on Earth dating. One solar year is 4.5 Earth-years long.

Symbol

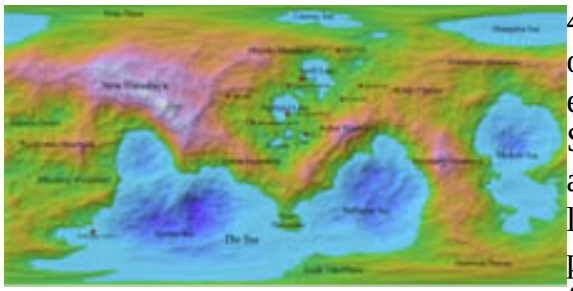
A photograph taken just after landing of the First Six standing before their shuttle. Sometimes the famous painting by Evan Spikehill Andrew Stevens based on the photo is used.

Planet

The sun is called Balthazar. The nine other planets are named Welsh, Greenfield, Kirch, Wirzenius, Almesberger, Hankins, Chapman, Battersby and Tranter.

Ridgewell orbits 3 AU from the sun, with a period of 4.5 earth years or 1570 days. It is 13,145 kilometres in diameter, with a 1.026 g gravity. The day is 25 hours and 12 minutes long. The axial tilt is 2 degrees, making seasons very weak.

The two moons, Humpty (1982 km) and Dumpty (4830 km) orbit close to the planet (60,000 km and 200,000 km respectvely) and cause the major tides; the planet is in a 3:2 resonance with Humpty, making it orbit twice when Ridgewell revolves thrice. The very close moons make placing satellites in stable orbits tricky, constant adjustments have to be made. The sky is dominated by the moons: Humpty is almost five degrees across and Dumpty three degrees. Eclipses are a daily event in the equatorial regions, and most Stevens take a long lunch or sieasta during the eclipse.



40% of the surface is ocean, a single major ocean (just called "the sea") stretching east-west, a smaller sea called the Melkior Sea and several large lakes. Most are salty and rather shallow, and tides change the landscape significantly on the muddy tidal plains. The high sierras are hot, dry lands far from the seas where erosion has carved out endless canyons and caves. The colony was established in a lowland area along the shores of a series of smaller lakes in the subtropical and temperate zone, low enough to avoid the dryness of the sierras but beyond the reach of the tidal plains. Since then colonists have settled both places: there are the troglodyte villages where underground water is used to grow crops and sustain mountain villages, and

buildings on high stilts on the plains, gathering soil for the upland farms.

The climate is often humid, with thunderstorms and rains. During the flares the sky turns cloudy and the winds stop; for a time the whole planet seems to be still, and then usually strong rains follow afterwards. This is a timing signal for many of the "flareflowers" that use the rains to distribute their seeds. There is also an interesting oscillation in the high altitude air flow that makes the weather more unpredictable than on the Earth.

The planet is somewhat non-terrestrial. The sunlight is bright and remote, a blazing disk much smaller than Sol from Earth. The climate is relatively warm, with long cycles induced by solar activity rather than the slow change of seasons. Auroras are common, especially when Humpty and Dumpty aligns with the planets extensive magnetic field.

Biology

Life on Ridgewell has a fundamentally different biochemistry than terrestrial life. The amino acids are of the wrong handedness and type, the "sugars" are bizarre nitrogen compounds. None of the ecologies can stand each other, so the colonised areas are 100% terrestrial and the rest 100% Ridgewell.

Ridgewell life is of roughly terran complexity, with dense cone forests near the equator, water-retenting plants in the deserts and sierras, extensive tidal coral reefs and fertile river valleys. Most plants are noticeably bluer than on earth, and often show some mobility with their leaves to avoid strong rain or shadow.

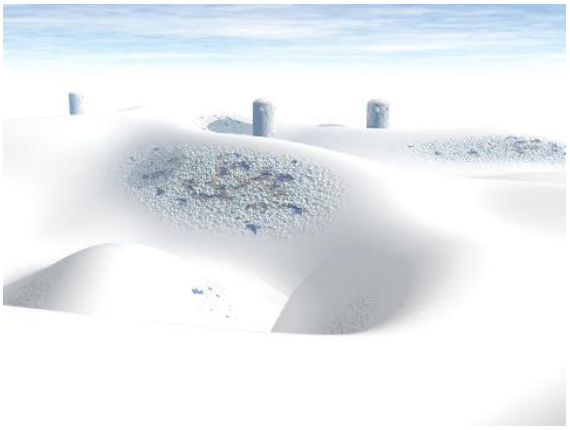
Animals are extremely diverse, with seven major bodyplans and many variations. Most larger animals are snake, manta- or starfish-like, with cantilevered skeletons and flexible bodies. The most numerous group is the airfishes, manta-like flyers that can become over three meters large. Most are harmless, but the colonists have problems with the flounderbirds. The flounderbirds are beaked, two meter flyers that mistake terran crops for partners (both show the same reflection spectrum in the ultraviolet); flocks sometimes crush crops or gardens. A popular but short-lived pet is the choral snake, a singing and colourful snakelike creature; many children gather snakes and set up "song contests" as the snakes try to outsing each other when brought together.

One of the most unusual ecosystem on Ridgewell is the equatorial cone-forests, this is where most of the truly exotic species live. Cup- or cone-like plants can become several meters high and gather rain water reserves both for drought protection (the areas where they grow have variable rainfall, depending on a complicated interplay between dry sierra winds, moist tidal plain air and the chaotic high-altitude dynamics near the equator driven by tidal effects) and to support a local ecosystem. In the water a variety of photosynthetic microroganisms thrive, as well as animals feeding on them that produce extra nutrients for the host plant by their metabolism. These land-pools are an important part in the life of many crystal creeper species. Crystal creepers are worm/centipede like animals with crystalline thorns they use to climb and walk. They are local to the cone forests and can become up to a meter long. They are highly poisonous to humans, and make the cone forests a shunned place despite their beauty.

The tidal flats are extensive regions of mud, rock and tidal coral reefs, filter-feeders protected by silicate shells during ebb. Large regions of the tidal flats are dominated by a peculiar sulphur-phosphorous-salt ecology where bacteria and algae form stinking but essential mottled red-orange-grey masses. These regions are the main feeding of many land animals that venture out to the flats during the ebb to feed and play an essential role in the salt cycles of Ridgewell.

World

Arcadia (Beta Comae Berenices II)



For our children, then, nature will no longer be something they are born into but rather something they program.
- Jeremy Rifkin

Men will not be content to manufacture life: they will want to improve on it.
- John Bernal

The door opened, and beyond was a dark tunnel. Damp, low, apparently dug directly into the earth – the low-tech contrast to the functional subway station behind was immense. From the ceiling roots and vague organic forms hung, sending ancestral shivers up our spines. Suddenly Michail rounded a corner, happily greeting us. Together with him were two creatures, not unlike human-sized moles with hands and wearing backpacks strapped onto their wrinkled skins. As I introduced my friends I could not help to notice the smell; pungent, animal, organic. I couldn't help it, but I always had trouble adapting at first to the Arcadian lifestyle: the multipods clinging everywhere, living clothes with symbs in them, the worker manservants, the direct physical contact, the smells. But in time you got used to it, and I knew that when I returned to my home in Rembrandt it would look strangely sterile and cold.
- Jonathan Ellis-Khayama, *Interstellar Diary*

History

Arcadia was colonised due to a mistake. The observations made over a couple of years had suggested an earthlike planet, but the terrestrial scientist had not realised that it underwent cyclic glaciations with a twenty year cycle - it had only been observed during the warm part. During the warm season life depletes carbon dioxide to the extent that the temperature falls and the planet becomes glaciated. During the glacial period underwater life and forest fires transforms the accumulated biomass into carbon dioxide, leading to an eventual thawing. Most life either exist in two forms, shifting as the climate shifts, hibernate or pod during one season, or create their own environments.

The colonisation effort was among the early multination, multiorganization efforts, mainly sponsored by the EU and Russia but with collaboration world-wide. The expedition was launched in 2030 and arrived in 2148. As the ship arrived Arcadia was in its warm season. The explorers had set up their base when the first messages from Earth arrived, telling them of the approaching winter. There was no way they could build subterranean climate controlled artificial gardens with

enough carbon dioxide to last. It was clear that to survive the colony had to adapt. While some suggested that everybody should be frozen, it proved infeasible; this was left as a last resort. Instead one fourth of the colony tried to extend the colony ships into an orbital habitat, and the other began to explore the possibility of exploiting the Hives as a means of survival.

The Hives were mound-like constructions, a kind of symbiotic tunnel system inhabited by several species of animals and fungi. During the winters the different species of "workers" (large, mole-like animals not unlike giant mole rats) dug tunnels and brought back plant material to central fermentation chambers where various species of fungi grew. The fungi became food for the workers and the other allied species. Their excrements were gathered into other chambers where other species of fungi as well as the winter-plants exploited them: winter plants send up leaves to the surface, gathering nutrients, carbon dioxide and water in the Hive system below. In exchange for being tended the winter-plants produce fruits, which form the second main source of nutrients and distribute seeds through the Hive tunnels. As spring arrives the workers produce their summer phenotype, that leaves the Hive and lives as herbivorous pack animals on the surface. The central chambers become covered with vegetation, forming small groves, and the tunnels decay. In the autumn the workers begin producing the winter phenotype, which seeks out or digs Hives. They gather all vegetation they can find, starting the cycle anew.

The Arcadians decided to dig their colony underground, linking it to several Hives in order to gather food from them. As the climate shifted, the humans moved underground, trying to adapt to a Hive existence. The first years were hard, but in time they learned the sound and chemical languages used by the inhabitants. By using their equipment they could extend the tunnels and begin to culture fungi and winter-plants more efficiently. A new form of underground agriculture took form and the Arcadians found that it was easier to control workers than adapt their overground farming machinery. Still, the demands of keeping the Hives and humans supplied were high, and after many debates some genetically modified winter-plants were introduced, first to supply some rare nutrients for the humans, later for increased yields and resistance to some pests. When it was first suggested that modifying the workers might be a good idea the barrier had already been broken, and in a test Hive new breeds were tested. Over the years, the colony grew with the Hives as the modified ecologies flourished.

Finally the summer arrived. Despite some misgivings the workers successfully shifted, and the humans could move aboveground. For the younger generation it was a new and unusual experience. The colony was retrofitted for aboveground farming, treatments for agoraphobia instituted and the planet explored further. The original underground tunnels were still in use. As the cold season approached, the colonists had to decide between going underground again or this time try to prepare an aboveground base. The majority voted for the underground solution; a small minority remained overground to build an experimental winter base. The "topsiders" gradually dwindled as it became clear that the reasonable thing to be was beneath the ground or maybe on the orbital habitats.

Over time the Arcadians developed a society not unlike the workers. The colony

spawned a number of subcolonies linked by subways, each connected or mixed with a number of Hives. These subcolonies, which were also called Hives, were not unlike kibbutzes: partially self-sufficient, closely knit communities. Biotechnology and ecology became dominant research areas, and modified lifeforms were used instead of mechanical tools in many applications. Instead of robots, modified workers are used. Instead of many construction materials, furniture and building parts various designed plants are used. Arcadian homes are microecologies, with cleaning creatures, living lamps and computers interfaced with the nutrient distribution systems. To outsiders Arcadians commonly appear disturbingly unconcerned about being surrounded by symbiotic creatures, including symbiotes creeping through their living clothing that eats dirt and skin flakes as well as gives comfort to their owners. Overall Arcadian culture has adapted mores suited for living underground in close proximity with other species, a tolerance for personal habits and eccentricities combined with a strong feeling of community.

The Arcadian hives expanded across Elysia and the islands of the equatorial sea. The regular great colds turned out to be less limiting than expected as long as work was done underground or in space. During the warm periods Arcadians often spent much time and built topside, but the real cities remained safely underground.

The development and acceptance of human genetic modifications during the 2180's to 2230's changed the Arcadians even further. At first just adaptations and resistances were introduced, but as taboos against enhancement melted away most parents deliberately tried to get their children the best possible genome. The introduction of pheromone signals in the 2230's amplified the already communal tendences, and the gradual success of aging management in the 2240's as well as the development of leader-traits transformed society even more. Much of the politics of the 2200's dealt with what modifications were reasonable and how society as a whole as well as the Hives would have a say in it. Many feared that the modifications would produce a genetic overclass, but in reality it turned out that having enhanced genes was not a super-advantage; on average the enhanced people did well, but individual skill still counted.

In 2337 a ship arrived from New America. The Arcadians greeted the fellow colonists with enthusiasm (scaring them quite a bit at the first meeting) and immediately wanted to participate in the exploration of the universe. Even as the two colonies worked together, the American reticience of sharing the secrets of FTL was resented by many Arcadians who were used to the conventions of fairness and sharing of the Hives. The leakage of the higgsram technology in 2343 gave them their chance not just to go to the stars themselves, but to share with the other colonies. The consensus on Arcadia is that it is better to share the knowledge of the higgsram with every other colony than try to keep it secret in a futile attempt of getting ahead of others. This has made the Arcadians popular on many colonies that would otherwise find them a bit too eerie, and overall been a great publicity

stunt.

Society

A major factor making Arcadians different from other colonists is the widespread genetic modifications of people. The first modifications were mainly disease resistance and enhanced senses, but later on more advanced changes has been made. Modern have an advanced sense of smell, able to understand Hive signals or track through darkness, scent glands in the hands enabling chemical communication. Infrared vision has been achieved by adding sensory pits just beneath the nose (as in vipers) and the visual range has been extended. Many Arcadians also have enhanced hearing or even ultrasound sonar, the ability to internally secrete various drugs or medicines, hibernation or modified metabolism. Around 2220 some Arcadians, calling their project Yeti-Yeti, began to develop modifications to survive on the surface during the winters, gaining the ability to shift over the span of a few months between a normal human form and a "snowman" form with thick fur and other adaptations. At the same time another group, the Aquarians began to explore developing gills and other aquatic adaptations; modern Aquarians are amphibious and can grow insulating fat and flippers as the seas get colder. Arcadian bioengineering tends towards adaptation, an attitude of being ready for everything as well as a certain delight in doing the impossible.

There are a noticeable minority of jumpers who freeze themselves during the colds and only emerge in the warm periods; they have been become known as the summerflies. Another group escaping the climate cycles are the spacers, a minority who spend most of their lives in the extensive space habitats.

Arcadian government consists of a colony council organising all the different colonies, with one representative for each colony and a number of representatives for the global functions such as space systems, ecology, communications and law. Each colony (sometimes called a hive or tribe) is at least in theory run by a local council. In many of the younger colonies the councils are absent or symbolic, all the inhabitants instead meet at big Hive meetings where they discuss the matters at hand. Consensus is the most common for of decision. Ambitious Arcadians often compete in various ways to draw attention to their favourite issues or personal capabilities. This has developed into a kind of system for selecting representatives to the colony council or other positions through various more or less serious competitions where they demonstrate their suitability. The introduction of genetically amplified leadership has further made Arcadian politics obscure to outsiders, as the consensus-reaching process has become heavily dependent on subtle pheromonal hints, non-political social interactions and personality-Hive compatibility. The Arcadians on the other hand are fairly satisfied with their system, it works well and doesn't get in the way.

Arcadians are noticeably keen on sports, from the playful exercises during the

Hour of Scampering to dramatic tests of endurance, teamwork or sheer bravery. Given the availability of genetic modifications, competition sports are fairly rare or have elaborate handicap systems, while team sports (soccer and hockey are very popular) involve selecting the right combination of abilities among the participants to make a great team. One popular challenge is arachnautics: to blow through the air using a "spinchute", a dense fan of long very thin fibres that are extruded from a spinneret on the back. Originally it was used as an alternative parachute inspired by the ability of terrestrial spiders to blow long distances in the wind by extruding a silk strand, but the spinchute was soon put to recreational uses. Arachnauts either jump from air vehicles or allow themselves to be lifted by thermals; the experience is somewhere in between ballooning and parachuting and sufficiently risky to attract many the stags.

Organisations

The Expansionists are the explorers gathered around Coordinator McCairns on Chloe. They seek to explore and expand into the universe, fulfilling the manifest destiny of mankind as an interstellar creature. While they have much support among the Hives they also have many critics, who claim they are wasting valuable capital on deep exploration which could be used to set up contacts with the other colonies.

The Outreach Program was founded by a group of hives that were worried that Arcadia would be turned into somebody else's political gamepiece. Their goal is to integrate Arcadia with the interstellar community (and if it doesn't exist yet, set it up), making it and its views relevant to all other colonies.

Space Life Project is an old and well renowned multi-Hive project in space. The SLP seeks to create life that can survive in the hard vacuum of space. It is currently working on the "martian potato", the nickname for a plant intended to grow on asteroids: extracting water and nutrients from the rock, protecting the tissues by thick inert covering etc. Past successes have been various biomaterials suitable for space use, lichens that could theoretically live on comets and various adaptations to extreme conditions for humans. The SLP is naturally allied with the Expansionists.

The Cladist Alliance believe mankind should adapt themselves rather than their worlds; they oppose terraforming and sometimes even neos. Instead the goal should be humans adapted to their worlds or even adaptable to any situation. A number of hives have formed an Alliance to further these goals, both by investing in genetic design, propaganda towards Penglai and several projects of human adaptation to different environments. Their long-term goal is to create a super-adaptable human genotype, able to adapt to nearly anything. They dislike parts of the space life project, and speak against it at all opportunities - seeding space itself is an irresponsible idea. On the other hand, they support the Expansionists with the proviso of no terraforming.

The Nat Tribe consists of Arcadians who have turned their backs on biotechnology and genetic modifications. They refrain from planning their children, and avoid using most neos. Being largely socially handicapped in Arcadian society they have retreated to their own communities on the island chain Acanthus near the equator.

Freedomtech is a small group who resents the influence and control of the ecologists; they want to develop neos and technologies in an independent fashion like the Atlanteans. They are mostly political, but there are persistent rumours about illegal neo release and trickery.

Gaia Bioware is a biotech company making mainly biocomputers and neural controllers. They are the largest manufacturer of cortextures, and promote the use of neurons rather than electronics in many technological applications, as well as the design of frankens; in this area they work together with the Forestpath Alliance.

Style

Arcadians tend towards the discreet and functional. However, clothing and lifestyle has been deeply affected by their culture. Clothing is either grown (tends to look like leather or rough fabrics) or alive. Living clothing is usual animal and furry, although during the warm periods some Arcadians like to have plant clothes. Living clothes can repair damage, adapt to the situation, clean and comfort the owner as long as it is treated with regular nutrient baths. No Arcadian is ever found without at least some companion animals, ranging from scavenger multipods over pet lumps to augmented workers that act as servants. Having good control over one’s animals is a sign of style.

Arcadian Hives look like a few buildings on the surface, quite often a loose collection of white ceramic towers called turres and sturdy domes. Underneath kilometres of tunnels, chambers and subways extend. During the warm periods temporary buildings are erected over exits, while during the winter only some of the towers extend over the snow.

Language

Aristos	Somebody believing himself to be above the hive or outside the social network.
Augie	Augmented animal, especially one with increased intelligence. Also used as a friendly nickname for augmented humans.
Bademeister	"lifeguard", organism or implant to alert rescuers if something happens to the owner.
Cladism	The view that people should not adopt planets to suit themselves, but instead adapt to the planet. The Arcadians have a certain distaste for the Penglaiese terraforming projects.

Cold	One of the cold 20-year periods of Arcadia.
Comensal	Animals or people in one's own ecosystem, sharing one's resources. Often used to denote spouses.
Cortexture	Biocomputer, usually used in adjunct with ordinary computers.
Cryp	Something hidden, surprising. Arcadian aesthetics delight in cryps: tools with unexpected extra uses, creatures with surprising abilities or just plain jokes.
Deodorante	Somebody deodorised, slightly derogatory term for offworlders.
Draz!	Common curse.
Euthenics	Genetic modifications of adults (as opposed to eugenics, improving the genes of embryos). Tricky to achieve through gene therapy, but some Arcadians have euthenic enhancements that allow them to gain new genetic modifications as adults. These enhancements unfortunately have to be put in while planning.
Expansionist	Followers of Robert McCairns' ideas about human expansion into the universe.
Franken	A "frankencreature" built from scratch by cultured muscles, neurons and tissues. Still highly experimental, but shows great industrial potential.
Gengineer	A genetic engineer. Gengineers are involved in more technical genetic engineering, genetic designers deal with the more "artistic" side (although they overlap heavily).
Goret	Small, mountain-dwelling piglike animal. Regarded as extremely delicious.
The Hour of Scampering	An afternoon lighthearted exercise for the whole hive. Originally instituted to prevent muscle weakness among the initial colonists as they holed up in the hives, today it is a tradition a bit like British tea-time in many hives to play .
Lichtmuschel	A bivalve living on walls in the Hives that has been genetically enhanced to produce light. It also eats certain pests and metasites. Lichtmuschel is also used as an epithet for a clever but asocial person, usually a gentle reminder to come and join the fun ("Don't be a lichtmuschel, go to the party!").
Lingua	Short for Interlingua, the creole language of Nova.
Metasite	An undesirable species in an ecosystem, not necessarily parasitical.
Nat	A "natural", unmodified person.

Naturalists	People who want to modify Arcadian organisms rather than introduce new terrestrial ones; opposed by the Terrestrialists who want to base things more on Earth stock.
Neogene (or neo)	A modified organism.
Tribe	A social network within a Hive (or between several) sharing the same values and goals. Tribal politics have begun to play an increasingly big role.
Perms	Either somebody wanting to live permanently underground or overground, or use an adaptation like aquarianism all the time.
Planning	The planning done by parents and genetic designers before a child is conceived.
Stags	People with leadership enhancements to their brain. Stags tend to be very charismatic, ambitious and social people, even if they also can be a bit competitive against each other.
Strasse	Street, a major tunnel.
Splice	Wedding.
Terrestrialists	People who want to modify and introduce more terrestrial organisms on Arcadia; opposed by the Naturalists who want to base things more on Arcadian stock.
Warmth	One of the warm 20-year periods.
Whiff	Somebody's odour presence ("You have an angry whiff, Pjotr, should I stay away?")

Population

1,638,158 people. Life expectancy at birth: 520 Earth-years (estimated).

Currency

The old Euro is used, although many transactions are barters, gifts or potlatchs.

Timekeeping

The day is 22 Earth hours and 16 minutes long. The "new" system simply divides the day into 20 hours (1h6.8m), each with 10 decians (around 6 minutes). Dates follow earth standard and drift relative to the seasons (one Arcadian year is 423.12 days). An informal uptime/downtime dating is used: "Year 5 of warmth 3" means the fifth year of the third warm period since the colony was founded.

Symbol

The original seal has been abandoned for a simple flag consisting of a white and a green triangle (representing the cold and warm periods). Many Hives have their own symbols, ranging from simple signs to elaborate crests.

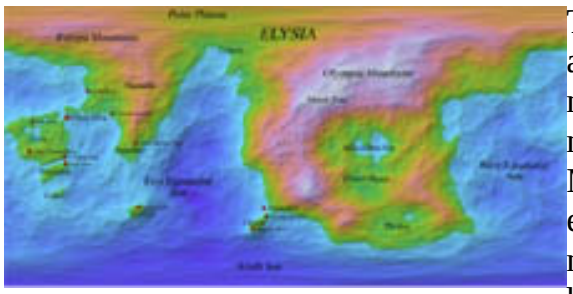
Planet

Arcadia orbits 1.06 AU from Beta Comae Berenices (sometimes called Berenice, but usually just Sun).

Arcadia is very light, just half of the Earth's density and fairly lacking in most metals. It has a diameter of 18,072 kilometres, a surface gravity of 0.710 g and a mean temperature shifting between 22 degrees in the warm periods and –5 in the cold periods. 50% of the surface is water. The day is just 22 hours long, the axial tilt 17 degrees.

Arcadia has one moon, Chloe, a captured asteroid 700 kilometres in diameter in an eccentric orbit. There are some orbital factories and docks there, as well as the Arcadian space biotech program attempting to develop hardy species to live in direct space.

The innermost planet, Daphnis, is a semi-molten rockball. Outside Arcadia nine other planets orbit: the small worlds Dryas, Crocus, Smilax, a pair of gas giants named Adonis and Diana, a failed core named Cynthia, the gas giant Pan and two failed cores called Doris and Galatea.



The continent Elysia, with broad plains and occasional mountain ranges cover most of the Northern Hemisphere. Two major mountain ranges, the Olympus Mountains and the Europa Mountains encircle the Polar Plateau. In the south two major subcontinents reach out, the hospitable Thessalia and the dry and mountainous Thrakia (known for the Croton Desert with the landlocked and extremely salted Hyacintus Sea inside). The Equatorial Sea is home to several major islands, called Flora, Narcissus, Echo, Zephyr and Chiron. The southern ocean sports many archipelagos and atolls, with names picked from Greek mythology and jokes among the first colonists. The old colony was located on the shores of Elysia close to Flora, but today there exists Hives on all the main islands and Elysia as well as on the atolls. Flora is a hospitable subtropical island during the warm periods, with a thin isthmus connecting it to Elysia.

During the warm periods, the planet is terrestrial. The mean temperature is highest at the start of the warmth, slowly dropping off until taking a plunge to the cold state. At the beginning of the warmth land plants quickly colonise the land, many sprouting from buried seeds or the tunnels of the Hives. As the warmth goes on the greenery thickens, until large parts of the surface is dense thickets or forests. Eventually the cold begins, often set off by massive forest fires in the summer. The ash makes the climate colder, and increased snowfall in the winter shifts the balance further. Over the span of a few months global temperatures plunge, and in the cold "ash winter" following the plunge fires ravage the dried plains of northern Elysia. The cold lasts until carbon dioxide levels reach a critical level and something offsets the albedo of ice enough: a volcanic eruption, a storm breaking up the ice over part of the ocean, a forest fire. A positive feedback begins, and the ice melts (often resulting in flooding and landslides). This cycle has a period of approximately 20 years, and has been going on for at least 54 million years.

Arcadian plants tend to be long-stemmed, often sporting huge leaves or streamers. They tend to move in the wind, and parts ripped away tend to re-root themselves wherever they can. A common large plant is the rush-tree, which can grow to 20 meters height in less than a year in order to take the advantage of the early Warm. As the Warm progresses different species become dominant in an ecological succession. Many plants (and animals) also exist in different forms adapted to the different climates. On the tropical islands many unusual adaptations and co-evolutionary species exist; the most famous is likely the Singing Fruits of Chylos. The singing fruits are coconut-like fruits which attract a species of fruit-eaters that spread the seeds by emitting a high-pitched whistle: as the interior matures, it fills with a gas, which leaves through a tiny opening and produces the whistle. Different species have different tones and attract different fruitivores.

Arcadian animal life is rather rich and strange; few animals look like anything on Earth. There are six major forms recurring: rolling/slithering/swimming "lumps" (monopods), multilegged endoskeletal creatures (multipods or "thingies"), the two-limbed jumpers (dipods), four-legged animals filling both mammal-like and insect-like niches (tetrapods) and eight-finned aquatic animals sometimes found on land (octofishes). The workers belong to the tetrapeds, but most of the inhabitants of the Hives are multipods or lumps.

World

New America (Beta Virginis IV)

America is not only big and rich, it is mysterious; and its capacity for the humorous or ironical concealment of its interests matches that of the legendary inscrutable Chinese.
- David Riesman, The Lonely Crowd

America has believed that in differentiation, not in uniformity, lies the path of progress. It acted on this belief; it has advanced human happiness, and it has prospered.
- Louis D. Brandeis

Columbia spaceport overlooks Liberty quite nicely. From the lounge you can see the sprawling capital, from the harbour and factories in the south to the suburbs in the north. In between you can clearly make out the dome of the Congress building, the many channels and the great Washington spire. But what really steals the show is the sea. It stretches towards the horizon, dotted with islands, ships and the occasional colourful FC floating home. The importance of the sea, the infinite liquid frontier is never more obvious than here. Despite the ambitions of the technorats to conquer the stars and the attempts of the godlings to ignore the outside the world, the soul of New America is the sea. This is a world of seafarers.
- Jonathan Ellis-Khayama, *Interstellar Diary*

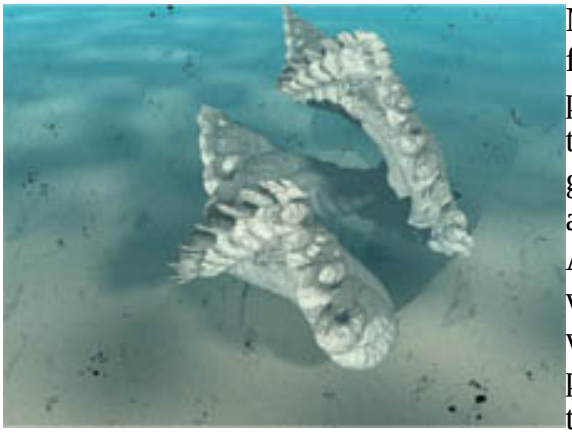
History

New America was colonised mainly by the US, the last of the big national colonisation projects. The idea of national interstellar colonies was already on decline, but a vocal opinion insisted on an American colony. As the project developed, a political bias became visible. The strongest support came from the right, and many of the people requesting to participate also had rightward leanings, dreams of a new frontier, manifest destiny or a "true America". As this became known, many supporters began to withdraw, claiming the whole project was a rightwing plan all along. After some serious political controversy New America still went ahead, but it was clear the demographics was strongly biased towards the WASP minority. In 2036 the colony ships were launched, arriving in the system 2136. The fourth planet was habitable as expected and christened New America.

New America turned out to have only one major continent, locked in glaciation, but a large number of sizeable islands. The colony (with the capital Liberty) was set up on the largest island chain in the Temperate Zone. A government was instituted similar to the US, with a president, senate, congress and Supreme Court. Defining states became a problem; at first it was thought that there was no need for

states under the federal level, but in time a system was instituted where island chains with sufficient population could become states (at first only the Rockies was a state, the Rock Island State). The large investments made in colonisation technology paid off; within a few years standards of living were terrestrial. The lack of land life made developing farming tricky, but using enhanced mulching technology on native seaweed managed to produce initial soil for planting.

Over the first years the population settled the main island chain, called the Rockies. The first problem was to create enough soil to grow crops; this was achieved by taking sea biomass and treating it chemically and biologically to create various soil-substitutes (ranging from artisoil, little more than a fibrous mat with nutrients, to grade T soil which is nearly indistinguishable from terrestrial soil, complete with the microecosystems). Another big problem was that the local biochemistry produced chemicals that caused slight allergic reactions in adults (this problem has since then vanished due to immune adaptation) but birth defects in children brought to term by women who had lived on the planet for some time. This was solved by the development of the "pregnancy vaccine", a chemical antidote given to all women in fertile age.



More outlying homesteads as well as floating buildings slowly spread. As people began to move out on their own, the population began to differentiate. One group were the pioneers, who moved away as quickly as possible into the frontier. Another group were the godlings, people with strong religious leanings. While they were mixed up with the rest of the population, in time more and more tended to aggregate in Bell Islands. The state became a home for Christian fundamentalism, and various local laws were passed that enforced strict rules of proper behaviour. A third group were the technological elite, who had remained on the project out of personal convictions despite the political troubles. They kept out of politics, instead concentrating on practical matters or research. In time they were called the technocrats, or the technorats. Their main playground were the space facilities in orbit or on ground; while they lacked political finesse from the start, they held their own against other interests by their grip on vital systems. The Congress was dominated by two parties, the Unionists (originally the side that resisted the development of states) and Federalists (pro-states; later the more conservative party).

The discovery of the filigrees sent a shock through the colony. The colonial militia couldn’t deal with the problem. Many of the pioneers felt that they had to protect themselves or that the filigrees were irrelevant. The technocrats were delighted, awed and worried about the possibility of total culture shock. The godlings most openly denounced the filigrees as the spawn of the devil, and advocated attacking them first. Most inhabitants fearfully watched the skies. Over the years New America adapted to the filigree presence. The technocrats struggled to bridge the gap between the rude aliens and the humans (while exploiting it for their increasingly political goals of having orbit declared a state), the pioneers continued

their explorations and the godlings were content to propose outrageous bills against them. The rare visiting diplomats neither helped or hurted the situation.

As New America grew, new social forms developed. The old conservative/nationalistic system appeared antiquated to many of the younger generations, who moved out to floating homesteads in the tropical seas. The floating schools became home for alternative lifestyles, to the great chagrin for the conservatives in the mainlands. The combination of the laid-back small-scale nomadic schools and the insular pioneers made an unusual mix; both groups developed their self-sufficiently further and further. The next logical step was the airships, and in the middle 2200's floating cities had begun to appear.

Another tension was the more radical fringe of the technorat fraction. While most of the technorats were busy industrialising space and building ever more ambitious habitats one group began to demand independence. This group, the technarchs, sought not just to make Orbit a state but to make each habitat an independent political entity - to them, nationalism was anathema to the "technarchy of space". In 2286 several technarch cells infiltrated and attempted to take over a newly built habitat, the Elk River. They proclaimed it a new "technarchic system" but were condemned as hi-jackers everywhere else, even by the technorats. The president sent in the space marines, who succeeded in breaking into the habitat and disabling the technarcs with only the loss of five lives (three technarchs and two marines, most of which were killed when an improvised bomb detonated at the wrong moment). The action was the first use of an armed space assault ever and proved that the New America space navy was indeed able to handle real combat. After the Elk River disaster the remaining technarchs split, the moderates largely became a political movement, while some true radicals became the feared Vacuum Brigade, a space based terrorist group that committed over 20 bombings over the next decade until finally (?) being defeated in 2399.

In 2308 President Gertrud Jess, voted into power by the Bell federalists, attempted to bring the equatorial schools into line. One major reason seems to be that she considered them an equal threat as the technarchs, and after the defeat of the Vacuum Brigade she believed the equatorials could be handled too. She tried to enforce education and behaviour laws against them, based on their citizenship in New America. As several schools simply declared themselves independent she sent the militia against them as illegal aliens. As a response the remaining schools in a surprise move (likely instigated by some of their pioneer allies) instead declared themselves a state, "Floating California", sent their newly elected representatives to Liberty and demanded places in the senate and Congress. Jess stalled, but the opposition supported the new people, and together with them began to force an impeachment process. Jess backed down, and a new president was elected. Since then Floating California has played a rather diffuse role in politics; the state ignores the federal government to a large extent, and its representatives are seldom predictable. Many of the "temperate" groups think that it would be better to simply declare FC an independent state to get rid of it. But the equatorials (or the "weirdo party" as others call them) has become a noticeable factor.

In 2328 a filigree diplomat unexpectedly suggested a trade: a method for interstellar flight in exchange for a permanent net connection between New

America and their moon. After a long and heated debate in the house New America agreed to the trade, not without trepidation. The information turned out to be quite understandable, and in June 2329 an unmanned probe demonstrated the higgsram jump. Equipping an old freight ship with the ram, the NASA (New America Space Agency) succeeded in an interstellar journey to a neighbouring star in 2334. An expedition was sent to the nearest known colony, Arcadia, and in 2337 the first interstellar colonial contact occurred. The Arcadians were delighted, and several joint expeditions went out to the other colonies and Sol. But when NASA in 2343 apparently gave them the information about how to build the ram they began to build their own starships. This caused a major political crisis on New America, forcing the retirement of the NASA Coordinator McCairns and creating a lasting mistrust and revanchism among many Americans of the Arcadians. It also fuelled the vision of making New America the centre of a new interstellar community.

Society

Most of New America is rural. People live in small communities on different islands, travelling between them with boat or sub. They commute to the main islands or use telecommuting (which is very common). The only real urban areas are Liberty and the technorat orbitals.

Technology and science on NA has developed in a very practical manner, directed mainly towards solving the problems of space habitats, ecology and transport. While theoretical science and biotechnology have developed, none have had any significant effects for various political, economical and social reasons. A theory of space-time structure developed by Elias E. Jordan and Irene Abott in 2267 mimics the Abdela theory on Atlantis, but it lacked practical applications. Much work has been directed towards the creation of super-dense materials based on supersymmetric particles, but so far none has been discovered.

The Filigrees

In 2193 it was discovered that one of the moons around Franklin, Simpleton (Beta Virginis X-9), was artificial. Its unusual smoothness and low density had been noted some years earlier, but more pressing colony matters were taking all the time. Eventually the colony was finished and parts of the space fleet were free for exploration, and an expedition was sent to investigate. The surface turned out to only look like a natural cratered surface, closer examination revealed it to be artificial (if rather worn by over a billion years of micrometeorites). They discovered an opening into the moon through one of the "craters". The inside was a vast labyrinth of diamondoid filigree, extending for thousands of kilometres in all directions; a fractal foam of chambers (some several hundred kilometres across) and branching pillars. An explorer drone was sent inside, trying to discover its meaning. During their investigations they awakened a number of apparently

dormant structures; the structures immediately seized the exploration drone and transmission ended.

The expedition retreated, but no response came. When another drone was sent into the moon it could not discover any moving structures despite a long search. Suddenly the transmissions from the expedition itself ceased; telescope images suggested that something had engulfed the ship and temporary base at the surface at an extreme speed.

A state of planetary alert was instated, and everybody prepared for the worst. It never came. The moon remained passive, and nothing emerged. After a week the alert was stepped down. Over the next year several signals and remote scans were undertaken, but nothing came of it. A robot drone was sent, but vanished.

Ten years later the filigrees appeared in orbit around New America, a thin web of diamond fibres and thorns. After an initial scare, they initiated a halting radio contact with the humans. They asked a series of questions, and answered a few of the return questions. The fate of the original expedition was never clearly explained (it was mentioned as having communicated with them). The filigrees asked permission to visit the humans and study them, which was reluctantly granted.

Humans regard filigrees as secretive, subtly threatening, unpredictable and territorial. They seem to dislike having humans pry into their affairs, but at the same time try to learn what the humans are doing. They refuse to divulge information, but sometimes leak obscure data. Recently they might have begun to understand humans slightly better, they seem to have begun selling information in exchange for other information, but the price is steep.

No two filigrees look the same, but the overall structure consists of a complex fractal branching body made of diamondoids and light metals a few meters across (but only weighing a few kilograms). They have been described as deadly art objects, quite able to slice through a spacesuit, disassemble soft materials or move with astonishing speed. Their colours vary, from jet-black to sparkling crystal to rainbow hues; often complex diffraction patterns shift across their limbs.

Visits to planets are hard due to their reactive nature; small "ambassador" filigrees can be brought down, flat structures similar in shape to the main filigrees and likely in contact with them, but unreactive and fairly inactive. Ambassadors are stubborn in the extreme, and almost behave like little spoiled children. They ask questions or give orders, repeating them until obeyed.

The filigrees are bizarre entities. They appear to be true group intelligences, individuals seamlessly merging as they touch. Most likely all filigrees inside the moon are linked together into a superorganism. This means they have little regard for individuals; killing an individual (human or filigree) is no problem unless it jeopardises the larger plans.

Organisations

NASA, the New America Space Agency, is responsible for the interstellar ships. It was explicitly formed to deal with interstellar travel rather than in-system space activities. It is divided into three sections, the Engineering Division (building and maintenance of starships), Exploration (the use of them) and Research, as well as an extensive networked administration. It has been plagued by internal quarrels, mainly between the hard-line technorats in Engineering and mainstreamers in the administration; the wound caused by the fall of Coordinator McCairns has still not healed. At the same time, the huge investments done by the government in the Columbus Program keeps many of the fractions too busy to quarrel. Many sub-sections are actually semi-independent companies or contractors; the border between NASA proper and the technorat space engineering networks is blurred.

Adams Helium Consortium is the major producent of He3 in the system. They operate a base on Reagan, one of the moons of Adams, where they build floater devices they drop into the Adams atmosphere. The floaters are solar-powered balloons carrying helium extraction equipment, accumulating the valuable isotope. When a floater is full, it launches the canister towards a rendezvous with a gatherer spaceplane which returns it to Reagan. The operation has been a quite successful project, involving several technorat companies and ideas.

NADS-X, the Xenological section of the New America Department of Security. NADS roughly corresponds to the CIA, although (up until now) without any foreign policy to worry about – except the Filigree. NADS-X was formed as a response to the Filigree presence, and is directed towards understanding them and finding a way of handling their presence. It has not been very successful in the later aspect, but it has managed to come up with plausible theories and some predictions that have held. Their interaction with the regular xenological establishment and the New America Xenodiplomatic Emergency Comittee (NAXEC) is one of mutual distrust but shared interest.

NADS-I is the the interstellar arm of NADS. It is the newest and largest part of the agency, and it has plenty to do. Bureau 1 handles overall administration and information dissemination to other agencies. Bureau 2 deals with the security of spaceflight and advanced technology; it was founded to prevent more disasters such as the leakage of higgsram technology to the Arcadians. It generally deals with technological espionage. Bureau 3 deals with gathering political, economic and cultural information from the other planets. Bureau 4 does threat evaluation, compiling the data and suggesting actions. Bureau 5 handles military, terrorist or other threats to New America. Bureau 6 is the most secret, and implements plans from the other agencies (which themselves have agents; B6 agents are generalists with no information about the purpose of their missions).

Armstrong University is the major orbital university. It is well renowned for its space engineering and project management degrees, even if it is also a hotbed of technorat ideologues. It is also a leading centre for Filigree studies, managing the datalink together with the NAXEC.

Monroe Cylinder is a major habitat in a polar orbit around NA. A bit of a retirement resort, slightly "out of the way" in interplanetary traffic but an important meeting place for the owners of the major corporations, high society and the political networks. Regarded as awfully passé by most young people and FC.

The School of Schools is in some sense the centre of the FC. It is a regular meeting in the Salwowski Atoll of the floating and flying cities and schools. The entire atoll is filled with boats, greenzeps and temphomes. It is a mixture between a festival, a market, huge party and a political meeting, although the last component is weaker than the others. It is here the representatives to congress are elected, as well as deals for new vessels and travel plans made.

The Laputa (or Aircity) project is a major project founded by ETA Foundation and the Aerodyne Corporation. They plan to build a floating city in the atmosphere of NA, hopefully the first in a series of mobile cities that would circulate the planet. There are even plans for a floating base in the atmosphere of Adams.

Style

The differences between the different groups are noticeable. The fundamentalists are comparatively conservative and have not changed style much since the early days, still preferring rugged "frontier" clothing (like the remaining Pioneers of the south seas) or conservative business suits. The Mainstream has shifted over time, but for the last decades it has gravitated towards frosted clothes: transparent plastic clothing with a diffracting frosting. Floating California tends towards loose, colourful and holographic clothing. The technorats have adapted functional, somewhat drab clothing as the "serious" style, but normally wear anything they like – they tend towards the functional but radical.

Currently suncoloring is in again among almost everybody but the fundies: by eating special chemical supplements and exposing the skin to sunlight, the skin can be coloured in muted pastel hues. By covering it with patches and taking several supplements complex patterns can be created.

Almost everybody owns some kind of boat or submarine. Many people live on house-boats more than on land, even if having a villa somewhere is common (and it’s location can affect taxation; recently a lot of people have formally moved to FC for the lack of taxes).

Something that has caught the interest mainly of the Mainstream and technorats is the development of "acoustical environments" or sound-holo: extremely high resolution sound artworks, tuned to various brain rhythms, associations and musical styles. Inside the environment sounds appear in different places, suggesting shapes and movements. Together with synesthetia training this has turned into a popular form of entertainment or art.

Language

Baruuba	FC term for something that is utterly absurd, baroque and wasted, but still for some reason likeable. The term has spread into the mainstream over time.
Bellboy	Derogatory term for people from Bell Islands.
The Deal	The trade of net access for FTL with the filigrees. Still hotly debated.
Discordian	Mainstream term for FCs.
Ecobox	Portable greenhouse producing food to make a zep or ship self-sufficient.
Equatorials	Floating California and the remaining Pioneers.
FC	Floating California
Federalists	The party wanting to create new states. In general conservative and dominated by the fundies, but often supported in certain questions by the Technorats and FC.
Friend	Term used by the inhabitants of Floating California for each other.
Floatcit	Floating city, zeps or houseboats moving together for a celebration, cooperative fishing, education or just for fun. Among the mainstream the term has connotations of sin and excitement.
Fundies	Christian conservatives and fundamentalists. Used even among themselves, the pejorative meaning it had in pre-colonial times has vanished.
Ghost-island	Abandoned island, mostly in the South Sea. Ghost islands previously owned by Pioneers can be dangerous due to boobytraps and defences left behind.
Gnomes	Arcadians
Godling	Disparaging term for the fundies.
Greenzep	Zeppelin with a double transparent membrane, pumping an algae solution in the interstitial space. The algae grow in the sunlight, producing protein and methane that can be used to fuel the zep.
Hull	Affectionate term for one’s boat.
Hypercane	Super-hurricanes that persist for a long time, circling the planet. The original term denoted supersonic hurricanes; such phenomena do not exist on NA at present, but fossil records suggest that they have and likely will occur in the future during the rare warm periods, a kind of anti-ice ages that occur once every million years.
Jess Debacle	The failed attempt by President Jess to force FC into the fold. Has become a term for ill-advised projects that get the opposite result from the intended.

Lib	Liberty, the capital.
NA	New America.
Orbital	Orbital habitats or space stations.
Racoon's tushy	Mainstream slang for something truly cool.
Relatives	FC term for Americans not in FC.
Rocky	Someone from the Rockies, suggesting a boring mainstream person.
Salt breath	Lung disease, making the throat and lungs dry and "salty". Easily treated.
School	Group of Friends moving together.
Snowflake	Filigree.
Technorats	The people of the orbitals and hi-tech business, a distinct social group.
Temperates	The Mainstream, Technorats and Fundies, as opposed to Floating California.
The Traitor	Robert McCairns-Kendell, the NASA ex-coordinator who was blamed for leaking the higgsram design to the Arcadians.
Underwave	Personal four-seat submarine.
Unionists	The "liberal" party trying to keep the number of states down. After the emergence of FC it has lost much power, and the real show is going on within the Federalists.
Yurg	Popular energetic and erotic dance of New California origin.
Zounds	Nickname for the space marines.

Population

Population: 2,068,728. Life expectancy at birth: 120.1 Earth-years.

Currency

Dollar.

Timekeeping

The day is 25 hours 23 minutes long. This is solved by an extra hour on the clock and 23 "leap minutes". The year is counted in the terrestrial way regardless of the seasons (one New America solar year is 2.623 Earth years or 919 days).

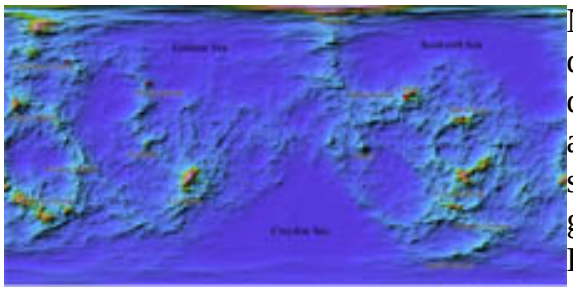
Symbol

The old US flag, with a single star (originally it was intended to be 53 stars to represent the other states, but after the realisation that the US had ceased to be a political entity they were dropped).

Planet

In the system there are ten other planets. Three are inside the orbit of New America: Lincoln, Jefferson and Washington. All three shine brightly in the sky similar to the morning star of Earth. Outside six other planets orbit, named Adams, Greene, Revere, Paine, Hale and Franklin. The sun is sometimes called Alaraph, but usually just the sun or rarely, Beta. New America orbits 2.39 AU from the sun; one orbit takes 2.623 Earth years or 919 days.

The planet has a single large moon at a distance of 700,000 kilometres, Hawaii, a 2942 kilometre desert world with a thin carbon dioxide atmosphere. The tides are often fairly significant.



New America is just 9,294 kilometres in diameter but has 1.3 times the Earth's density. The surface gravity is 0.93 g. The axial tilt is 10 degrees. Almost 96% of the surface is sea, with the single small glaciated continent Revere at the North Pole (Aspen is the only city on Revere, a major resort boasting maglev rails to many great ski-, snowboard- and snowsurf-slopes as well as other forms of recreation). The day is 25 hours long, close to earthlike. Most people can adapt to it quite well.

The planet is fairly geologically active, and cyclones are a common problem in the subtropical regions; during the hurricane season it is not unusual with semi-permanent storms that make habitation in the zone hard. Secondary storms pass up through the temperate areas.

Biology

Life on New America is fairly simple, roughly corresponding to the Cambrian period. The oceans are filled with seaweeds and small creatures living on them, as well as armoured predators not unlike sea scorpions. The most commonly found water animals are the polys, shelled filter-feeders that look like regular polyhedrons. Their shells are commonly found on beaches, and widely used for decorations. The polys are in turn preyed upon by the handfishes, swimming armoured predators with jointed mandibles at the front looking not unlike hands or claws. Using the "hand" they crush polys and eat the contents. A related group of species have lost their swimming tails and crawl around on the mandibles; the early colonists named them "things" in honour of some classic television drama. Some of the larger handfishes, as well as the open sea ribbonshrimps are quite tasty for humans.

Land life consists just of some moss-like plants or biofilms covered with a resilient glass-like protective layer. The islands are bare and rocky, and the storms often wash over them. The colonists have to manufacture soil for planting (today this is

mainly done in orbit, in huge "soileries").

The interaction between New America and terrestrial life has been tricky. There has been some problems with micro-organisms affecting the other ecosystem, but they have been fairly limited. On land there is little problem with competition, but in the seas terrestrial and American life compete. Terrestrial fishes and algae have a disadvantage in adapting to the peculiarities of the planet, but locally in lagoons or bays they can instead out-compete the American life. This has resulted in a few worrying crashes, and the government is trying to regulate the introduction of new species.

World

Traha/Victoria (Lambda Serpenti III)

Culture being a pursuit of our total perfection by means of getting to know, on all the matters which most concern us, the best which has been thought and said in the world.
- Matthew Arnold, Culture and Anarchy, Preface

The farther backward you can look, the farther forward you are likely to see.
- Sir Winston Churchill

The buildings of Capital climb above me, rounded towers with elaborate cut-outs and balconies that were originally built while the Egyptians were still making mud huts. Planted trees almost bend with bountiful Kee fruit. Between the towers the Rrnach have tied thin wires, festooned with glittering metal cards reflecting the sunlight. Together with the One Thousand Crystals and the shining Ring of Heaven they make a dazzling spectacle in the blazing sunlight; it is hot and dry, just the weather to keep most Traha indoors. As I enter the First Wing of the Imperial Palace ten guards, dressed in ornate ring-robes approach me. Their leader bows with a chiming sound, making the signs of questioning, respect and surprise with its hands. I return the bow, signing respectful urgency, showing them the scroll from the Gathering of Plexar Affairs. After a delay Nahaum-Trree-Sslen emerges from the labyrinthine interior of the palace, carrying scrollcases and laptops in all its four hands. The translator chimes "Greetings, friend Jonathan-Ellis-Khayama-Human. The trees whisper your name before you, dropping deliciousness in our hands. I hope your mission was successful and your arrival here auspicious – do tell the story of your travels."
- Jonathan Ellis-Khayama, *Interstellar Diary*

History

The Victoria expedition was another foundation venture, co-sponsored mainly by British and South American groups but with people involved from around the world. It was launched in 2039 towards Lambda Serpenti III. When the colonisation expedition arrived 2127 they were amazed by the presence of intelligent life. They found the remains of an abandoned space station in orbit and a thriving civilisation below. After some cautious investigations they realised that they had already been discovered as radio transmissions began towards the ship. The colonists contacted the Trahans, and slowly began to form a relation.

Both species were unprepared for the meeting, and it took some time before they could communicate. Eventually a delegation appeared before the imperial couple and their commission of xenological affairs, and an agreement was made. The Trahans were intrigued by the humans and definitely wanted contact, even if they were wary about human technology, power and ideas. This was solved by making

the human colony formally a region of itself, located on a small island not far from the capital. The colonist named the island Victoria (in Trahan it is called Raashtn)

Victoria is an island around 50 kilometres across and 100 long, located 300 kilometres west of the Capital. Most of the surface remains fruit gardens, with the population concentrated along the shores. The humans settled down, built new buildings or adapted Trahan design to their needs. They planted crops (after long and hard diplomacy with some Trahan agricultural organisations to be allowed to remove the trees) and set up a human society. Trahan diplomats, xenologists, scientists and politicians moved in to Victoria to study the humans; the original inhabitants were either resettled elsewhere or for the first decades had to stay in special areas, to their great irritation.

The first decades were dominated by attempts to understand each other; language, culture and biology were different enough to cause major trouble, and several embarrasing or hostile incidents occurred. Overall the contact was a success, as practical human inventions and knowledge diffused into Trahan society, and the humans absorbed the ancient culture. The initial hard restrictions on human-Trahan interaction were removed. Humans are still formally required to live on the island, even if restrictions of travel have been largely removed and some humans spend extended periods outside Victoria.Over time the cultures began to diffuse, creating the weird Creole society on Victoria and in certain parts of Capital. Purists on both sides were not amused, and from time to time attempts were made to keep cultural integrity. But in the end the mixing could not be avoided, with all its consequences.

Society

Victoria consists of the capital Victoria, which stretches along almost a third of the coast of the island. It is a mixture of traditional human architecture intended to showpiece human engineering and trahan-inspired buildings. The Victoria colony was originally built to represent human architecture and style to visiting Trahans, but in time a "xenocreole" style incorporating Trahan elements have emerged. The central parts of Victoria are still dominated by classical human buildings, but the rest of the colony is a more or less working mixture. Many Trahan designers travel to Victoria to get inspiration for their "humanesque" designs, borrowing wildly from all human historical eras and integrating it elegantly in Trahan designs. The interior of the island is almost completely a fruit forest/garden, with small villages and criss-crossing highways. It is densely populated by humans and trahans, especially xenocreoles. A major landmark is the Concourse of the Dead-to-be, one of the Trahan death ledges; it is the place where Victorian burials and suicide festivities are held. On the northern coast there are smaller fishing and telecommuting villages, the core of the xenocreole movement. The whole island has become a hub of tourism and diplomacy, a bit the Monte Carlo of Traha.

The population of Victoria is descended from South American people. The Victoria Foundation recruited people from the entire continent (in the 2030's a well integrated economic union). The local language is a mixture of Spanish and Portugese with English as a formal language. Today many speak or at least understand some Trahan, and some words have become part of daily usage.

The Trahan outlook of integration, non-contradiction, ceremony and careful design has tempered the colonists somewhat; to outsiders they appear to be rather elaborate and evasive. On the other hand, human curiosity and questioning of limits has influenced some Trahans, and a "humanist movement" has emerged that wants to change Trahan society along more human lines with democracy instead of imperial rule, develop more advanced technology and overall play down the role of tradition. This is starting to cause trouble in certain regions of the Empire.

Trahan customs slowly percolate into human society, and the social rules also change. While the classic large latin extended family dissolved during the rise of South America as an information age society in the early 21st century, other forms of social networks have emerged on Victoria, mimicking the Trahan branches. Beside the many informal social networks and groups, people seek community in religious groups and fraternal orders.

Due to the pervasive presence of certain biochemicals in the Traha environment, some humans develop a sensitivity that expresses itself as headaches, nausea and tiredness; the long term effects involve an increased cancer risk and possibly some nerve damage. Today treatments are commonplace, but once upon a time children grew up in "earthdomes" with pure Earth-like air.

Organisations

The Permanent Xenological Commission was originally a task force, but is now an important sub-department within the Department of Diplomacy and Social Engineering. It deals with inter-species contacts, and especially making sure the contact benefits the Empire in the long term. They study human technology, culture and suggestions to estimate their consequences, sometimes banning certain things to preserve the empire (such as violent 20th century movies and cryonics). Every new deal has to go through the Commission, sometimes requiring lengthy evaluations to check that proposed trade, technology or information doesn't upset the Empire. The Department of Further Technological Development is also involved, acting as technological expertise and a link with the Circle of Trade-Related Organisations; often the Commission, composed mainly of academic nobility with massive philosophical education, has trouble accepting the more radical views of the Department.

The Gathering of Plexar Affairs is a kind of philosophical supreme court combined with R&D. The Gathering acts as mediators, judges and advisors in matters of basic philosophy, both theoretical and applied to law, commerce, diplomacy, politics or technology. They try to find ways of reconciling opposing views and philosophies into stronger wholes.

The Three Departments of Impropriety deal with corruption. Corruption has always been a pet worry among the various dynasties, especially the more

centralist ones. The current system of keeping the empire honest is based on three independent but overlapping departments monitoring what is going on and investigating suspicious events. The departments are deliberately based on totally different approaches and philosophies. The First Department is closest to the current imperial philosophy, and mainly looks for waste and inefficiency. The Second Department is more rooted in the last dynasty, and watches for improper social relationships and their consequences. The Third Department follows an axiomatic, very rigid, logic of law which it applies to everything. Most of the time they work together perfectly, even if they all monitor each other too. Their rare conflicts are usually sent to the Gathering of Plexar Affairs to evaluation.

The Department of Economics is obsolete; it was a major force in the last dynasty, controlling much of the economy and politics, but when the 89th dynasty ascended it was disbanded. The family network running it was discredited and forced out of administration; some resentment still lingers among certain branches. Instead the empire organized the Circle of Trade-Related Organisations, including some new departments such as the Department of Further Technological Development, the Department of Planetary Trade and the Department of Imperial Finances, and major organisations such as the Raashash Network (a "megacorporation" in the energy/transport business closely allied to the Imperial Administration) and the Capital University Economics Departement Applications Group. The Circle is exceptionally complicated and confusing even by Trahan measures, but is more important for the internal imperial financing than for independent trade.

The Purists are the people of both species that dislike seeing their cultures mix. There are several kinds, ranging from academics worried about culture clashes (many involved in the elaborate diplomatic dance between the Empire and Victoria) to direct xenophobes. To some Trahans, humans are insane, rude carnivores that are not merely strange but actively dangerous; they need to be contained and their ideas stopped. In the same way, there are humans that consider Trahans deceptively unassuming schemers who might overwhelm all of human space through sheer numbers. The Trahan Purists are constantly lobbying the Xenological Commission, Imperial Diplomatic Service and other institutions to limit or cut off human-Trahan contacts. They are naturally anatagonistic against the Humanists, who they consider deluded fools or even traitors.

The Humanists are the Trahans that like humans, human culture and like to imitate them (there are similar Trahanists among the humans, but they are few). The classic humanist badge is wearing a "baseball cap", a version of the human cap tied with a small ribbon or wire to their necks; this was the result of seeing a group of humans with baseball caps during the very first public films of humans – they are purely symbolic. Humanists do their best to learn more about humans and imitate their alien and exciting ways. They want to open up more contact between humans and Trahans, getting rid of the unnecessarily conservative and restrictive diplomats.

The Harmony Police is a kind of memetic secret service, maintaining the philosophical security of the Empire by finding and dealing with threatening ideas. They work directly for the Imperial Couple, maintaining their Nasstschsch through many subtle ways. They are extremely non-violent, preferring manipulation, debate, infiltration and acting through intermediaries to defuse dangerous ideas and thinkers. For example, passion cults are often disrupted by internal quarrels and radical writers may suddenly get a chance to fulfil their personal dreams which incidentally keeps them from writing. The Harmony Police is widely feared among radical groups, especially since they recognise that most of its power comes from the paranoia it induces.

Xenocreoles mix human and Trahan culture into something new. They are not an organised movement, although they are ahead of most human purists in networking and exploit the advanced technology allowed on Victoria to keep in touch in ways ordinary Trahans cannot. Most xenocreoles simply do not understand the purist views, and find it natural for humans and trahans to live and work together. Many practical problems of course have to be solved, but the xenocreole households (often consisting of an extended human and an extended trahan family living together with some small businesses) on northern Victoria have been a great success both financially and socially.

The Rising Net is a vocal technological-political branch promoting the development of a worldwide knowledge net like the ones on Nova, Atlantis and New America. They believe this will amplify Trahan civilisation to new heights; it also has subtle philosophical implications that clearly puts them in opposition to the current philosophy, which they try to integrate with their arguments in order to gain more support. The group has gained much support from the Humanists and many of the more technophiliac Trahans, but still it is an uphill struggle against the sceptics.

The New Tree, Arbol Nuevo, is a network among the xenocreoles aimed at representing and furthering their culture. It is heavily involved in trade, and has sent out "seeds" and "shots" to the other colonies to set up human-Trahan trade and cultural exchange. The aim is to exploit the initiative advantage of the xenocreoles over the Empire. At the same time they are aware that the Empire is doing its best to keep them under control; the Harmony police is watching them.

Schrr-Taass Ss is a kind of "loyal opposition movement" left from the last dynasty. Essentially they seek to keep the caste system of the Good Old Days, but at the same time have bought into the current doctrines (requiring some baroque rationalisations by Trahan standards). The result is a clannish, conservative network of families and branches that remain strong in local politics and certain aspects of industry (especially low order electronics and dense shell recycling), but lack overall political power. Its views on humans are complex, but overall it seems to view the purists as a potential political ladder to gain more influence.

Nemm Taassraht Na, The Independents of Na, is a radical movement demanding a restructuring of the administrative system so that the Tree of Election will be geographically divided on most levels; this is resisted fiercely by most other political parties. The Independents are not actually interested in Na (that is just a traditional symbol), but the removal of certain privileged substructures and taxation classes. They are slowly gaining in power, and allying heavily with humanists and xenocreoles.

The Hydrostructure Forests are artificial islands floating on the sea, home to fishers, ocean farmers, OTEC maintenance personnel and Trahans feeling the need to escape the heights of the cities for the flatness of the sea. They are widely regarded as somewhat unrefined, primitive places where practicalities of maintenance and survival are more important than insight, but at the same time they are viewed as homes of Nalsstreeschsch, "the philosophical void which promotes radical insight": ambitious Trahan philosophers attempting to boldly develop new aspects of politics or philosophy (and people wanting to look like them plus of course tourists) make pilgrimages here to test their mettle. It is mainly a formal or ceremonial way of signifying the will of the thinker rather than a serious attempt at insight, and the custom is not taken as seriously as it once was. The exception is the Imperial labour: the imperial couple has to work at some lowly jobs at the hydrostructures (imitating the prestation of the first Online Emperor) before proclaiming major shifts in policy.

The Interstellar Diplomatic Council is a gathering of the leading diplomats from the human worlds present, organised by the Xenodiplomatic Cluster of Capital. The Trahan sees it as an opportunity to deal with humanity as a whole, and work hard on making the Council something equivalent to the old UN; the human diplomats take somewhat different views (especially New America is trying hard to create something similar at home and don't want competition).

The Marzenia Society is the most influential social club on Victoria. It is a conservative association, where members meet at a monthly basis to listen to lectures and cook dinners. This network has strong ties with the colonial administration, Victorian finance and other influential groups. The agenda is fairly conservative-purist.

The Tautological Theater is a philosophical society of some note on Victoria. It consists of both humans and trahans exploring one of the less mainstream schools of philosophy, the Tautological Tradition. The tautologists explore the implications of tautological statements, which they claim contain pure truth. The Theater has close ties to both the Xenocreoles and the Marzenia society, acting as a mediator.

The Eruditorium is a Catholic order formed as a response to the Trahan cultural power. The Eruditorium seeks to understand and adapt Trahan philosophy to human ends, finding out how it works and how to avoid just getting swamped in it. The order has developed into an important but very discreet factor in Victoria society, advising politicians, executives and academics. It is secretive and often hiding behind religious references; some people think this is to make it harder to understand for Trahans. Others claim it is a human harmony police. However, most citizens who know about it regards it just as a harmless group of priest-scholars.

Style

The Victorians have adapted some of the Trahan clothing styles such as draped toga- or mantle-like clothing (useful in the equatorial regions where Victoria is located), often with wearables hidden inside the ornaments (an idea the Trahans have almost devoured; Trahan designed computer clothing is much well-fitting and elegant than human, and human-designed computers are spreading quickly through Trahan society. The togas are usually pastel coloured, decorated with various human and Trahan patterns. The fruit pouch used by Trahans has become popular even among many of the most conservative humans.

Language

Academic nobility	The class of highly educated, influential trahans linked to the Capital university system. They have many privileges making them similar to nobility.
Armonia	The official internal policy of Victoria: keep a harmonious relation with the Trahans, the Empire and other worlds.
Ashtraah	"The Amputated Ones", slightly derogatory Trahan term for humans, since they are two arms and a proboscis short.
Branch	A social group, personal network. Compare with the Penglaiese guanxi. In trahan Nat, in Spanish Rama.
Consideracao	Respect, consideration. Has connotations of diplomacy, tolerance and following Trahan politeness.
"Eat the Second!"	Exhortation to read up on trahan philosophy and culture, especially used when humans assume things about Trahans. Refers to the classic second concordance to the "Grindingstone of Na", generally regarded as the basis for explaining Trahanitas.
Formalidad Indefinida	Undetermined formality, a situation where a formality is needed but none can be found, either due to lack of knowledge of one or both parts, or due to the newness of the situation. Very awkward.
Impe	Imperial, something having to do with the Empire. Slightly irreverent.
Jardinero	Gardener, somebody tending his or her social relationships for political or emotional reasons.
Hermanastro	Half-brother, xenocreole term for a Trahan comrade. The trahan counterpart is Nasshaalaa.
Malafruta	Bad fruit, something looking good but being bad or dangerous. A literal translation of a Trahan term.
Merienda	The ubiquitous snacks (mostly fruit) that Trahans and humans eat.
Nasstschsch	Governing philosophical paradigm, the philosophical basis for each dynasty that determines how and why it works.

Katleeb	Trahan criminal.
Lallnaass	"Widely appreciated", honorific to Trahan dignitaries.
Locutor	Someone handling the formal speeches and ceremonies for a group of people.
Nano	Slightly condescending term for someone from Na.
Pielo	Joking term for a trahan.
Platano	Banana. Something Trahans like for unknown reasons (during the early years bananas were appreciated gifts to the Trahans, who didn't eat them but enjoyed the alienness of the fruit).
Plexing	The art of combining different philosophies and points of views to a synergetic whole without contradictions. A central concept in Trahan philosophy and society.
Regalo Azul	Literally "blue gift", a gift that requires giving back an equal or larger gift.
Sassana	Trahan philosophical science.
Sonarse	To blow one's nose; to try to speak Trahan (without much success).
Festivité Suicido	Suicide party, the official farewell celebration when a trahan or group of trahans plan to commit suicide; often an important social occasion.
Tallah	Trahan dress, looks like a toga and can be adapted for human use.
Trahanitas	Trahanishness, the easily recognised but hard to explain essence of Trahan culture.
Trah Rarash!	"Empire/universe!" A slogan, suggesting that the empire is the universe (and vice versa), that the universe will be transformed by the Empire as the empire is changed by the realities of the universe and that the universe belongs to/is a property of the empire, and vice versa.
The Tree of Election	The system of elections and councils which leads to the imperial throne. The detailed structure is extremely complex, with heavy historical overtones.
"The trees whisper your name before you, dropping deliciousness in our hands."	Formal greeting to visitors to the Imperial bureaucracy. Refers to the Capital Kee trees, said to bow down to the worthy with their fruits.
Treshnanah	Trahan term for humans; the literal meaning is "Trahans from space".

Tronco	Tree-trunk, a very strong and powerful branch with much social influence. "He's sitting on a trunk" means that somebody is powerfully connected.
Verde	"Green", OK, satisfactory, understood ("Is that verde?").
Xeno	Somebody dealing with Trahans as a profession.

Population

Humans: 1,655,267 Trahans: 7.1 billion. Life expectancy at birth: 101.4 Earth-years (humans) 72.5 (Trahans).

Currency

Victoria uses the Dinero or the Trahan Tatal; the Tatal is gaining ground since it can be used in the rest of the empire. The Tatal is divisible down to a 1/1728 Tatal, a Tatal-Tschtatal.

Timekeeping

The day is 27 Earth-hours and 3 Earth-minutes long. The Trahan system is used, with the day divided into 12 "periods" (2.25h) divided into 12 "quarters" (11.25 m) divided into 12 "minutes" (56 seconds). The year is similarly divided into 12 months of 12 weeks each, in turn divided into 12 days. The Trahan year does not correspond to the solar year (one Traha calendar year is 1.3 Earth years), but one solar year is nearly 5 months. Several other forms of dating are in use, including dating based on dynastic origin, the formal calendar based on Sinarr-Ress (days since approximately 1518 BC) and the botanical calendar (based on the various fruit seasons).

Symbol

Victoria: two overlapping circles, one with a traditional Trahan weave pattern, one with a human mosaic against a blue background. The Trahan empire has no particular symbol, but the imperial couple has a musical theme that is often used.

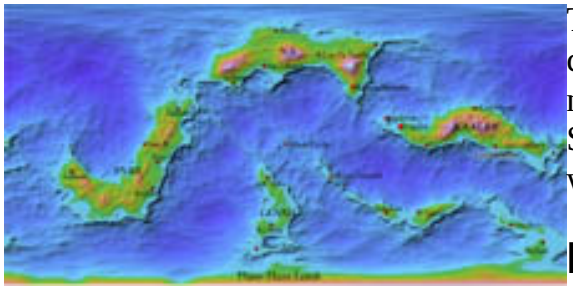
Planet

There are 9 planets other than Traha, named Sana, Mattlam, Ssla, Sska, Ssnarham, Nara, Trass, Nana, Mamalasa; old names dating back to the earliest times. Sana and Mattlam are hothouse worlds inside Traha. Ssla and Sska form a double planet, with each planet orbiting so close that they nearly touch each other and share their thin carbon-dioxide atmosphere. Ssnarham is a major gas giant, while Nara, Trass and Nana are small iceballs. Mamalasa is another gas giant, with an extensive moon system.

Traha has one moon, Nah (632 km) and a ring system, the Arc of Heaven. The ring was the result of the break-up of a moon, causing a mass extinction that gave room for the Trahans to evolve. Inside the ring there are several larger fragment with historical names, but mostly dust which makes most satellites break down quickly.

Traha orbits Lambda Serpenti at 1.25 AU, making one orbit every 1.3 years (or 421 days). It has a diameter of 12,213 kilometres, 0.9 earth density and 0.825 gravity. The day is 27 hours long, necessitating a siesta for humans. The axial tilt is only 3 degrees, making seasons unnoticeable except for the slow wandering of the

shadow of the Arc of Heaven.



The surface is 70% sea, with three continents (Kaalrr, Snrr, Na) and numerous islands. All are inhabited. Several artificial reefs and islands exist, as well as major underwater settlements.

Biology

Trahan biology is relatively Earth-like, but lacks many essential nutrients for humans. The plants either tend to have fractally branching leaves or needles, or drooping shells of foliage. Many plants are very aromatic by human tastes. Animals of all kinds existed, but many species have gone extinct over Trahan history. Today the most common groups are the Ranrr, spiderlike creatures filling an insect-like niche, the Ssenrart, flying relatives of the Trahans, and the ground-dwelling and essential Arnarr, centipedelike animals playing an important role in keeping the forest floor and roots healthy. Human geneticists are attempting to reintroduce several extinct species. The Ssenrart-Ras are bred for their singing, which is considered beautiful by trahans.

Throughout history, the Trahans have changed the surface of the planet. The old forests vanished during the First Disaster (around 8742 years ago, 6300 BC) but have been re-planted since then. Coastlines have been diked, channels dug, mountains levelled. Today most of Traha's surface is covered with a gardened forest, in places wild but mostly desirable fruit trees and plants bred for the pleasure of the Trahans. Cities are dotted everywhere, often filled with ancient architecture covered with carefully tended ruin gardens. Many of the newer cities are built in the specially cultivated city trees.

World

World

Gaia (Lambda Aurigae IV)

Nature, to be commanded, must be obeyed.
- *Francis Bacon, Novum Organum*

Do no dishonor to the earth lest you dishonor the spirit of man.
- *Henry Beston, The Outermost House*

"And the Pioneers left the dying world, bringing their wisdom the technicals had scorned to Gaia. And Gaia accepted them, for She saw that their hearts were ec. They cleansed themselves and locked away the remnants of tox they had brought with them into the Vault, and settled down to live a truly ec life. To preserve their wisdom they built the libraries, describing everything they knew about the world and life for coming generations. And so they joined the great cycle, having overcome tox with ec". The Mother is a compelling storyteller, despite the occasional sharp looks she sends me. Each time parts of the audience also looks at me, seeing the weird technical from the worlds that somehow avoided the ecocalypse. But she doesn't address me directly, just uses me as a warning example.
- Jonathan Ellis-Khayama, *Interstellar Diary*

History

Gaia was colonised by the Green Alliance, an environmentalist movement seeking to escape the rape of nature that occurred on Earth (and in their opinion, in the space habitats). Just like the UCA they believed the solar system and colonies were doomed – by removing themselves from true nature they were cutting off their roots and would eventually perish. The Alliance instead wanted to create a more natural society, to live in harmony with nature so that a healthy mankind could evolve and survive.

The colony ships Root and Seed were launched in 2045, arriving at Lambda Aurigae IV in 2165. The colonisation plan had been meticulously designed. While most of the colonists remained frozen, a number of pioneers explored the planet and set up three experimental farms. The purpose was to find out just how much necessities indigenous life could provide, and what absolutely had to be supplemented by the bioarchives onboard the ships. After two local years enough had been learned, and the colonisation began in the earnest. At first all available high technology was used – shuttles, robotic building, expert systems and biotech. Then as the colony (divided into three regions around the original farms) began to produce its own necessities the technology was largely abandoned. Instead of scrapping it was sealed into the Vault – a large concrete structure that was finally sealed permanently in 2175. It could only be opened

by a code sequence distributed between the three sub-colony councils. Some advanced technology such as radios and medical equipment was left, it was appropriate but must in the end be replaced by local products.

Everything went well until 2180, when an epidemic attacked the Swan colony. The local council demanded help and opening of the Vault, but the other colonies were reluctant. Eventually the crisis subsided, but it was clear that a problem had to involve all colonies before the Vault would be opened. There was also lingering resentment from the decimated Swans against the others; from now on they would not cooperate overly with them.

The young generation tended to react differently to their society. While some questioned the self-imposed limitations, many became more radical than their parents did. Some demanded (together with the hard-liners among the colonists) that the Vault should be destroyed – it was a temptation they could do well without. In 2187 a small team almost managed to blow up the entrance to the Vault with explosives, but were hindered by locals.

However, the hardships of agricultural life made politics less and less interesting. The slowly failing remaining technology was never replaced, as the infrastructure to make replacements was never constructed. Old knowledge was meticulously passed on (libraries were built at many places to retain a selected heritage of mankind) but lacking important details, and the plans for the infrastructure remained politically hard to implement. In Swan hard-liners even destroyed the plans to ensure that society would remain pristine.

Gaia became an agricultural society just as planned, but at a much lower technological level than the original program had intended. The old ecological ideas also drifted. The ideas of living in harmony with nature became a kind of religion, where certain things were seen as "ec" and others as "tox". The libraries were carefully tended, but the contents not well understood – they were the wise words of the pioneers. At the same time they never lost their knowledge of how the world worked, it just became inhabited with spiritual meaning. Complex living systems became forces of ec, while entropy, negative emotions and the mysterious worlds of the un-gaians were tox. Certain animals, such as the parasite block that attacked humans, livestock and many other species, were also seen as tox – Gaia had actually not intended them, and removing them was actually an ec act. The Vault was the Pandora’s box of ec and tox, not to be touched by the unworthy. Today the founders would likely disagree with much of the ecology taught on Gaia; especially the farming which was originally intended to be optimally low-impact has, due to the lower technological level, a significant ecological impact.

Society

The different colonies developed in different ways. Swan, always the most radical, promoted a strict agricultural society run by the Mothers, the priestess/librarians interpreting the word of the pioneers and Gaia. Dolphin remained more open, a loose democracy centred on the densely inhabited Watson valley. In the eastern part of the Purple Sea the Pine colony retreated from the coast, which was plagued by regular floods and storms. It became isolated from the others, and slowly dwindled over the span of a century. Eventually the last colonists left for the west and disappeared into the other colonies.

The overall assumption among the gaians was that the solar system and other colonies had failed – how could they thrive in a non-natural way? The appearance of other people was a major blow to their worldview. The Mothers are extremely critical of outworlders, and have pronounced them as bringers of tox. Dolphin is wary but interested.

Gaian technology is not very advanced, roughly equivalent to pre-industrial Earth, around 18th century at most. Energy is provided by windmills, farming is done manually and using work animals. A wide variety of plants (both terrestrial and Gaian) are used for making everything from medicine to glue. Originally the intention had been to exploit the advanced technology of the 2040's to set up a sustainable society harmonious with nature, but as the plans were never fully implemented the technological level became much lower (and more disruptive to the environment, ironic enough).

In the absence of computers, mental techniques were developed. At first they were mainly memory techniques used by the Mothers, but later other mental exercises such as emotion management, daimons and body control developed. In the fairly leisurely pace of gaian society most techniques were used just as utilities.

Organisations

The Mothers are the most powerful group on the planet, since they control religion, education and the libraries. They run the libraries and temples, where they also act as teachers. Access is strictly through their admittance, and they also hold strict reins on social life. Their most important function is to explain how different acts are ec and tox, and suggest what the Mother wants. They are also well trained in psychology, and adept at using hypnosis and suggestions to treat illnesses and personal problems. Mothers are divided into four ranks: apprentices, maidens, mothers and crones. The apprentices do menial tasks and are taught the basics of ecology, reading, writing and gaianism; when they have reached full understanding they are initiated to become maidens. At their first childbirth they become mothers, and at 50 they become crones. The crones usually reside at a temple or library which they govern. Each Mother is expected to obey those of higher ranks.

There are several guilds, guarding various important skills. Of special note are the herbalists, who keep the old knowledge of pharmacology and biochemistry; they not only produce healing drugs, but other practical and ec substances from

the plants and animals Gaia supplies them with. Another important guild is the engineers, who build windmills, pumps and othe rsimple technology. They are closely watched by the Mothers, so that their thoughts are not polluted by tox.

Adonis is a semi-secret group of male rights activists, working against the Mothers. They claim that men and women are equal, and that Gaia never intended the women to be her sole spokespeople.

The Pines are descendants from the Pine colony. The colony failed, and they were forced to move west. They form a somewhat distinctive group, with shared family ties and a feeling of kinship; towards others they are a bit clannish and suspicious. They are among the most liberal gaians, having decided that overzealousness is more damaging than technology. This has led to several run-ins with the mothers, and at least in Dolphin the Pines live apart.

The Cybelists were a militant group of first-generation colonists, seeking to return even closer to nature than the Pioneers. They centred around the charismatic Cybele Kekkonen, the first human born on Gaia. She grew up to become a fanatic gaianist, regarding herself (and regarded by her followers) as an avatar of the planet. Her cult tried to sabotage plans for low-impact industries, agriculture, the Vault and agitated fiercely that the only proper life was as a hunter-gatherer. Since the Cybelists had trained themselves to survive well in the wild they were hard to restrain, and their surprise attacks was a serious drain to the early colony. In 2199 Cybele committed suicide with her closest followers when they were surrounded by the colony militia at Tidegap; she proclaimed that she would incarnate again and to this day the remaining Cybelists revere the place. The Cybelist movement has nearly died out, but some of the memes remain among radical Mothers, who train themselves to survive only by hunting and gathering and revere Cybele as at least someone deeply inspired by Gaia.

Style

Gaians dress very colourfully, mostly thanks to the abundant plant dyes that can be used to dye the felt fibres after they have been treated with potash and the digestive juices of felthogs (especially the green from the Garthonberries is popular). A popular custom in both Swan and Dolphin is to have bright ribbons that flap in the winds; the Swans sometimes include tiny whistles too.

Gaian buildings tend to be built from stone due to the lack of wood; parts are often covered by fabric to shield against the winds. Tents are sometimes used for temporary buildings, but the wind makes them troublesome to maintain.

Language

Bubblekite	Air plankton. The term often used for drifting, lazy people.
Conjunction	When the goddesses line up. Grand conjunctions, where all three move together, occurs approximately every 41 years. Diaselene occurs every month, Dianisis around once a year and Selenisis every 4 years.
Cybelism	A militant form of Gaia worship, rare these days.
Ec	Something ecological/good.
Ecocalypse	The end of technical society.
Gaia	Mother Earth, the personified life-force of everything.
Mother	Priesthood in Swan maintaining the tradition and guarding the libraries.
Pine	Somebody descended from the Pine refugees.
Purple storm	Storms blowing in water from the purple sea over land.
Quill	The quills of felthogs, used for writing, sewing and a variety of applications. Also used to refer to something useful.
Recycle	To die.
Rouges	Wandering people, doing odd jobs or stealing. Regarded as a tox abberation of the social system
Technical	People using technology.
The Three Goddesses	The moons.
Tox	Something toxic/evil.
Trittiweb	A weblike harness used for riding the tritti.
Un-gaian	Outsiders. Negative term.
Wellington	To stay indoors to avoid the weather. "The harvest is in, now we can wellington".
The Wild	A disease caused by a throat and lung infection of gaian bacteria that produce an adrenaline-analogue. The victims become stressed, agitated and in severe cases violent.

Population

Total: 1,217,175. Swan: 748,562. Dolphin: 468,613. Life expectancy at birth: 68.3 Earth-years.

Currency

Barter. Money are regarded as extremely tox.

Timekeeping

The gaians divide the day and night into six hours each – exact time is regarded as very tox. The years are divided into twelve months, each approximately 90 days long. One year is 2.5 Earth years, or 1095 days. Time is often counted from the latest conjunction (called Diaselene, Dianisis, Selenisis and grand).

Symbol

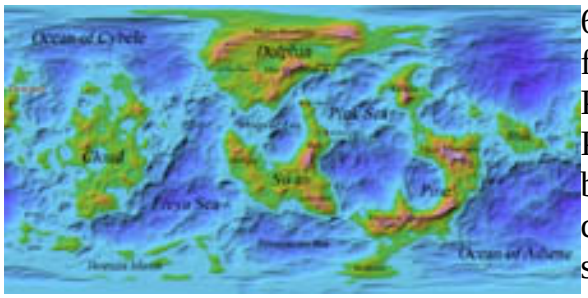
A simple picture of a leaf-haired woman embracing the planet.

Dolphin and Swan use their namesakes as symbols, despite the fact that the animals were never introduced on the planet.

Planet

Gaia is 11,830 km in diameter, 0.8 times Earth density. Gravity is 0.758 g, the day is just 20 hours. The mean distance to Helios is 1.82 AU, producing a 1.86 earth-year long year (813 Gaia-days). The orbit is somewhat eccentric, currently producing a milder climate but over time precession makes the climate shift periodically towards stronger heat and cold over the span of thousands of years. The axial tilt is 14 degrees.

The air is relatively thin, and humans often feel the need to rest. The quick rotation often produces strong winds, but the thinner air makes them less devastating.



60% of the surface is sea. There are four main continents, Dolphin, Swan, Pine and Cloud. Dolphin, Swan and Pine surround the Purple Sea (coloured by micro-organisms; originally it was called the Demeter Sea). The three sub-colonies were located on their respective shore a few thousand kilometers apart. Between Dolphin and northern Swan the Waters of Eos form a Mediterranean-like sea.

The three moons are Diana, Selene and Isis (4408, 320, 3175 km in diameter respectively); all three are too far away to cause any major tides, but their conjunctions are used to measure time. When Diana and Selene align, it is called Diaselene; the other conjunctions are called Dianisis and Selenisis.

There are 16 other planets, all named after important environmentalists but of little relevance to the Gaians. The innermost world is a barren rock named Malthus. Outside lies Rosseau and Muir, two hot desert worlds with intense storm systems. Outside Gaia lies a superterrestrial planet named Muir, followed by the three gas giants Nader, Leopold and Carson. Outside lies a series of minor gas planets and iceballs named Wilson, Hui, Kessler, Chinoba, Janosch, Sabadir, Rifkin, Winter and Rhodin.

Biology

Gaian life is quite unlike terran life. The basis for the land ecosystems is the felt, a thick homogenous undergrowth of fine plant fibres that covers almost everything in the lowlands. Instead of traditional soil there are layers of old felt; each year the felt grows a new layer, absorbing parts of the underlying material. Other plants coexist with the felt or grow through it. Most are thin fibres or tendrils extending into the air, some individually, others in bundles or braids. There are very few larger plants, except for the braid-bushes and braid-trees; this makes winds and storms much more severe. Wood does not exist, all plants are supple and easily bent. Instead of wood weaves or plaits are used, sometimes treated with minerals to become hard.

Many animals live in or beneath the felt, such as the flatbugs or twee. The most common grazers are the blowers, small round creatures with soft bodies, not unlike decimetre-sized aphids. They are in turn preyed upon by the felthogs, spiny starlike creatures that are also used as livestock by humans (their quills are extremely useful for all sorts of applications, from knitting to gluing together into beams). Larger animals also exist, such as the feltshark (hides beneath the felt and pounces; it can be dangerous to humans), the pyralopes and tritti (jumping, large herbivores named for their sound, often used as steeds). The air is filled graceful air plankton and their accompanying flying ecology, including the colourful bubblekites that are often used as insulation and decoration (their dried bodies are filled with air cavities).

The biggest problem with a diet of Gaian foods is the high content of selenium. While an essential trace element for humans, the levels in ordinary gaian life are so high that they can cause poisoning: pallor, garlicky breath, irritation of the nose, conjunctivitis, skin problems and drowsiness. The pioneers solved this - after much searching for a local solution - by genetically modifying the tea bush so that the leaves would contain a chelating agent that bound selenium and other metals found in gaian food. These tea bushes are found at every gaian household. Drinking the tea (known as Pioneer tea) has become a part of daily ritual, linked to a short meditation of thankfulness to the wise Pioneers.

World

World

Penglai (Alpha Mensae I)

The Master said, "He who exercises government by means of his virtue may be compared to the north polar star, which keeps its place and all the stars turn towards it."
- The Analects of Confucius, 2-1

The best rulers are scarcely known by their subjects;
The next best are loved and praised;
The next are feared;
The next despised:
They have no faith in their people,
And their people become unfaithful to them.
When the best rulers achieve their purpose
Their subjects claim the achievement as their own.
- Lao Tzu, Tao Te Ching

The carbon dioxide plant, an immense grey tensegrity tower stretching towards the sky, dwarfed the town of Liuhe. On the railway to the plant I saw the automated trains bringing in the rocks from the automated quarries, returning with the waste products, at least one every five minutes. As we approached Liuhe grew into a good-sized city of snow-covered buildings, many in the unique Leng style of cheap but sturdy geodesic domes. Some festival was apparently approaching, as colourful banners festooned many doors; despite the strong wind they just rippled slowly in the high gravity. Despite the cold, the wind and the dreary weather people were out in the streets, busily raising temporary environment domes or carrying packages. A group of children were playing a game with twigs of the yuantong, trying to hit each other with the irritating berries.
- Jonathan Ellis-Khayama, *Interstellar Diary*

History

Penglai was colonised by the Peoples Republic of China, a major national colonisation project with enormous support. The four colonisation ships were launched in 2034-2036, arriving in 2147. The innermost planet was named Penglai after the paradise island of the immortals.

The four ships set up four semi-independent colonies in the vicinity of each other. The idea was to adapt to local environments and to have the Penglai Colony Administration (PCA) coordinate and lead the governments. It was a giant social experiment, largely based on calculations and wishful thinking among Chinese bureaucrats. In time the plan turned out to be somewhat unwieldy: problems with lost transports, language confusion due to different dialects, resource shortages and unregulated movement complicated things seriously. The local governments gradually became more and more independent, despite the attempts by the PCA to keep everything on track. The PCA retained control over the defence forces and acted as a kind of UN with enforcement powers. Hao Chen, Daonin, Tsi Leng and Hsu Hsi became nations in their own right, and in 2183 they were formally recognised by the PCA.

In the relative isolation of Penglai, new ideas emerged. One of the most important was neo-Taoism, the synthesis of Taoism, the synergetics of Buckminster Fuller and complexity theory. It was developed by a researcher-artist named Yuan Guen and his students, and emerged to become an important influence in Penglaiese society, art and technology. While some offshoots resisted the PCA projects, the mainstream neo-Taoists embraced them wholeheartedly, developing better ways of using a minimal amount of matter and energy to change the planet.

Daonin and Hsu Hsi were the most successful nations, while Hao Chen (located on the mountainous Three Mountain Peninsula) became involved in a succession of internal conflicts, corruption affairs and outbreaks of violence, and Tsi Leng on the mineral-rich but cold-dry Lao plateau had a hard time developing its potential. To compound the problems the different colonies have Chinese of different nationalities, and language became a problem. The PCA several times had to organise raids against deserters who tried to sneak away and form their own colonies or hide in the ecologically protected zones of the southern hemisphere.

Society

Adapting to Penglai was tricky. The day was too long, the gravity high, the air sometimes allergenic. This was solved by various medical treatments and some limited genetic modifications of children; the Penglaiese today tend to be short, stout, have a longer diurnal cycle and are highly resistant against many allergens. However, these measures were less implemented in certain districts, and other solutions such as exoskeletons are also in use. The neo-Taoist purity ideals contradict the adaptation ideas; there have been fierce debates on whether the modifications are a dangerous pollution of the bodies of the citizenry. In the end, the neo-Taoists split into a spectrum ranging from the small "School of Inner Alchemy" (named after the Taoist movement) which thinks that all the changes are negative and should not be given to children, and the more liberal "School of Outer Alchemy" which claims these changes really are part of the Way. An even more extreme group, the Hsien, claim further enhancements are the Way, but this view is

disliked by most of the population. Overall, the Penglaiese value purity and perfection highly. A spotless design, a clean room, an illustrious career is regarded as ideals to strive for.

Tsi Leng is located on the Lao Plateau, which covers much of the continent Hanxiang. The climate is harsh, with cold northerly winds blowing for much of the year and occasional sweeping fires. Still, the plateau is the most mineral rich part of the planet, with huge resources of everything from copper to rare earth metals. Tsi Leng never had any real capital, since the widespread settlements and outposts were tightly connected through the net; just like on Nova instead a virtual government did as well as a physical. Decisions are made through an invisible virtual bureaucracy where the bureaucrats are widely dispersed but connected; it is sometimes jokingly called the Celestial Bureaucracy. While this has given Tsi Leng one of the most flexible governments on Penglai, it has not been enough to get the nation competitive. People have whenever possible moved down to the other nations, and the brain-drain to Daonin is serious. The huge PCA projects merely provide work, there have been little energy or manpower left to develop the potential of the plateau. Penglaiese joke that Tsi Leng is the place where nothing has ever happened and never will.

Hao Chen is a rainy, mountainous peninsula. Due to the high gravity rain falls heavier, making people loath to go outside without protection. Most cities have at least covered walkways and streets with glass ceilings. At first the sub-colony was quite successful, becoming a major supplier of heavy manufacturing equipment and cultured meat (China had solved the problem of keeping people supplied with protein in the 2020’s by culturing meat in nutrient tanks instead of as inefficient grazers; this has become a staple on Penglai to a much larger extent than it ever did in China, in fact Penglaiese often prefer cultured meats to natural ones). But in 2189 the government was toppled by a serious corruption scandal (including sex, murder, abuse of power and many juicy details) leaving a major power vacuum. The PCA moved in too late, several dissenting fractions jockeyed for power and the "compromise government" the PCA set up found itself opposed from all directions. Over the span of a few years it weakened more and more, despite strong PCA support, and in 2193 the rising level of street violence grew to civil war. The "Dirty War" as it became called lasted just for a few months. The PCA used its influence to open the borders of Hao Chen so that anybody who wanted to leave for the other colonies could do so; this quickly bled the Hao Chen economy dry and drained away most of the non-aligned people. Then the PCA gave its full support to one of the strongest fractions, the Three Yard Guanxi, and made it the new government. Unfortunately the émigrés did not all move back as intended to rebuild the land, and a complicated process of semi-forced relocations, changed citizenships and minor terrorism gave the PCA leaders gray hairs. In the end some enclaves of ex-Hao Chen people remained in Hsu Hsi and Daonin, in time becoming important in planetary trade and industry despite the imposed borders.

Hao Chen slowly recovered, but the government remained shaky. Several times it has fallen, only to be restored after more or less devious manoeuvring among the "fractions", the different groups that try to rule the peninsula. To make matters worse, many of these fractions now have complex ties to the other colonies, the underworld, terrorism or even the PCA in various ways. Hao Chen is an unstable nation, something the rest of Penglai deeply regrets. However, cynics say that it fulfils an important role: the other colonies export all their trouble to Hao Chen.

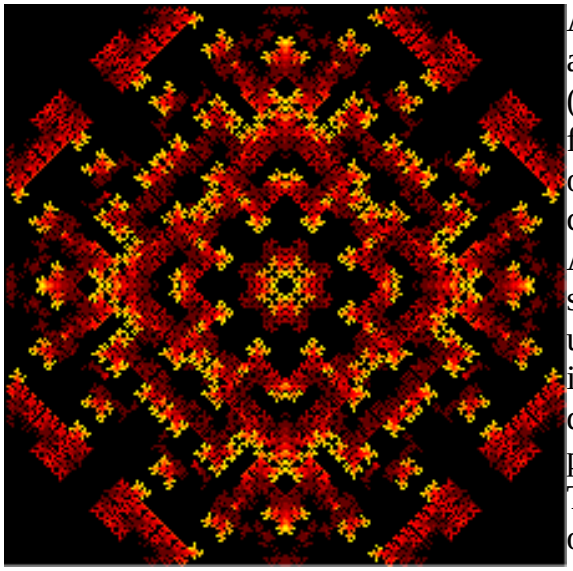
Daonin is the star among the nations of Penglai. Blessed with a fairly pleasant climate, good farming and a concentration of the intellectual capital, it is the richest and most dynamic nation. Most of the rains that plague Hao Chen pass right overhead, releasing their water in the interior mountains instead on the coastal plains. Several deep and powerful rivers pass through Daonin, which is often called the Land of Bridges. The capital Hung-Ching is the major city on the planet, with the premier universities, largest corporations and the Electric City, an area where many of the rich and famous have congregated. The Electric City got its name from a popular song in the 2220's; it is a park-like area where unassuming but very, very expensive buildings overlook the canyon of the Ao river. Many people have flocked to Daonin from the other colonies and form important subcultures; in addition the inhabitants are known to be less rigid and traditional than the other nations and take a pride in inventing new outrageous styles. Unlike the other colonies Daonin is fairly pro-PCA, at least officially.

Hsu Hsi (originally called Yangko) is located on the fertile Linyi island in the southern Yellow Sea. It is a nearly flat island, which has some flooding problems when the winds become too strong. Many of the buildings and cities are built on heavy concrete foundations or inside geodesic domes. It was here Yuan Guen worked, and neo-Taoism is also strongest here. When the nation became independent a radical anti-PCA neo-Taoist group, the Cinnabar Alliance, tried to gain power but were rebuffed by the sitting government. However, over time they gradually won influence, and in 2235 they actually managed to reach the presidency. One of their first acts was to rename the nation, and then they began a program to undercut PCA influence. The PCA, wise of the mistakes it had done in Hao Chen did a surgical political strike against the Cinnabar Alliance, succeeding in removing the leadership and putting a moderate fraction back in power. The other nations supported the move (more or less), and in the end the radical reforms were removed, except for a few popular ones like the name of the nation. The strike was fairly unpopular in Hsu Hsi, and the nation has remained both unwilling to submit to the PCA and fairly independent to this day. The large oceanic installations of the Yellow Sea are often based on Linyi, so the island reaps great economic benefits from every new construction regardless of who pays for it.

The core of Penglaiese politics are the guanxis. A guanxi is a personal network, a bit like old school ties but with stronger Confucian and hierarchical implications. A subordinate friend is obliged to help his superior in all things, and can expect the help and protection from the superior. Certain guanxis become extremely powerful, ranging over the whole colony and enabling the leading members to influence just about everything through their widely distributed net of obligations. The PCA originally tried to prevent this by setting up the four sub-colonies in isolation from each other, but the result was that guanxis gained much stronger

local control (an additional factor to their independence), and once the policy was softened guanxis began to spread internationally. In order for anybody to rise above the national political level they need support from the international guanxis, which by now dominate the PCA.

The PCA always thinks big. They believed that more colonists would be forthcoming once word of their success reached the Earth, and they began to plan for an interplanetary future. They also had plans to make Penglai more terrestrial, by changing the local climate. The various projects instituted from the start consumed tremendous resources, but also became useful rallying points for the different colonies. The atmospheric modification units in the New Yellow Sea and on the Lao plateau converted carbonates into huge amounts of carbon dioxide in an attempt to warm the planet, while a great orbital catapult was constructed near Daonin. Another area where Penglai developed was materials science; the Daonin project and the needs of the colony necessitated the development of light, strong, flexible and cheap materials. In time designer materials became a major product, including smart materials with noticeable computing power, ultra-strong composites and moving gels.



An artform that has emerged and become almost a national obsession is alife (artificial life) simulations. They range from minimalist cellular automata to open-ended baroque worlds where creatures develop, behave and evolve. Among neo-Taoist thinkers alife simulations are a way of better understanding the Tao; through experience in creating alternate worlds we come to a deeper understanding of our own. In many places old people can be found playing The Game of Life, an abstract game based on the ancient simulation and Go. Practical applications of alife have subtly infiltrated many uses: traffic flow is influenced to maximise the efficiency without any noticeable intrusion, weather control is becoming practical and everyday objects are often partially evolved in simulations.

Organisations

The Penglai Colonial Administration is still going strong. It is a huge bureaucracy with many departments, officials willing to organise/interfere with the national governments and subtle power-gaming between different guanxis, departments and views. Most of the higher administration is (officially) located on the big orbital station Shun-Xie (often called "Heaven"), but many departments are located in immense bureaucratic arcologies on the ground.

Evoltech is a consortium selling evolved software, alife and other products of complexity engineering offplanet. It is busy gaining connections with Nova AI companies and Atlantean micro-trading software.

The Hsien, "the immortals", is the underground transhumanist-neo-Taoist movement. They are individualistic and opposed to the hierarchical Penglai society with its taboos on human enhancement. Originally a group of radical neo-Taoists in Daonin, they were suppressed when they broke against the genetics laws to improve themselves. Their core belief is that the human body and mind can be perfected by neo-Taoist principles, genetic engineering, symbionts and training. Over time they have developed into an underground network working against the PCA and blamed for terrorist activities across Penglai; untangling what is real Hsien activities, unrelated groups, rumours and propaganda is very hard. Their secret leader (or leaders) are referred to The Great Sage, Equal of Heaven (a reference to Sun Wu Kong, the rebellious monkey king in Chinese legend who perfected himself and sought to overthrow the Jade Emperor of Heaven).

The Association of Free Enquiry began as a scientific association working for academic freedom. Over time it changed, and it has now become a part of the Penglaiese academic establishment rather as an oversight group and special interest organisation working closely with the PCA Education Department.

Lung Fusion is the largest Penglaiese energy corporation. It has won many contracts for building atmospheric converters, powerplants and energy networks. It is aggressively expanding, using profitable deals with the PCA as well as opportunistic alliances with various guanxis to further its growth.

The Order of I is a neo-Taoist/post-Confusianist conservative religious group. I is a concept in confucianist ethics denoting acting right in any situation without any thought of personal gain. They wander around, preaching neo-Taoism and promoting their own religious values. Many regard them as moral busybodies, more interested in explaining to others what they are doing wrong than changing anything themselves.

Style

In architecture, organisation and planning Penglai tends towards the huge and monumental. Everything is built to last, with big safety margins and heavy foundations. At the same time the ideas of neo-Taoist synergetics are prevalent: the immense should be built as elegantly and lightly as possible, often exploiting unusual symmetries and interlocking parts. Combined with a resurgence of traditional Chinese baroque (dragons, ornamental lattices, bodhisattvas etc) the result is a very unique style mixing old and new, robust with elegant, heavy with light.

Personal clothing tends towards the warm and practical. Coats are cylindrical affairs with thick arms, not unlike old Russian bojar coats.

Language

45-point syndrome	Disease caused by local microrganism; the immune system wastes energy in attacking certain spores, making the victim tired and susceptible to other diseases.
Ch’u	Thanksgiving feasts held in honour for help from authorities, organisations or celebrities.
Chien-tsing	Insight, the sudden realisation of how things are. The goal for most neo-Taoist meditation.
Chien-lien	"Golden lotus", term for alife simulation.
Dai gut le si	"Big kumquats and money pockets"; Cynical term for big PCA projects. Originally traditional Cantonese new year’s greeting, but the term has drifted.
Guanxi	A social network.
Gwai	Foreigner, somebody strange and not from Penglai. Somewhat archaic term.
Hsien	Immortal, a member of the underground neo-Taoist transhumanist movement striving to become more than human.
Hou-t’ien	"After heaven", the world after arrival on Penglai as opposed to the pre-colonial world (Hsien-t’ien).
Hung-fan	The Great Plan, the terraforming project.
Lung-wang	The Dragonkings; poetic term for the gridrays and other big sea animals.
Mudlifter	Heavy lifting vehicle used in constructions around the New Yellow Sea.
Pi-ku	"Abstaining from eating grain". Practice among some neo-Taoists to never eat anything but tank-cultured algae, vegetables and meats (as well as abstaining from alcohol and fat); this is considered both physically and spiritually healthy.
Shan-ta	Mountain-tower, one of the atmospheric converters.
Shen	The intestinal symbiote used by many to adapt to Penglai.

Those Above	The PCA.
T'ien	Heaven, The Highest. Ironic term for the PCA.
T'ien-ming	Mandate of Heaven, term used for the relationship between the PCA and the national governments.
T'sun-ssu	A popular form of meditation consisting of concentrating on evolving alife patterns.
Umbrella	Somebody from Hao Chen, refers to the persistent rains.
Wan-wu	The Ten Thousand Things; all of existence, everything there is.
Wu	Emptiness, non-being, synergy. The ideal of neo-Taoist engineering.

Population

Total population: 16,144,202. Hao Chen: 5,209308. Daonin: 5,967,446. Tsi Leng: 1,241,861. Hsu Hsi: 3,725,587. Life expectancy at birth: 119 Earth-years.

Currency

PCA Yuan. The four colonies have their own scrips of lesser value.

Timekeeping

The terrestrial measures are officially used, locally the Chinese calendar in various forms is used for dates. The day has 32 hours (with 14 leap minutes). In Daoling and Tsi Leng people live in 24 hour shifts, using hormone supplements to avoid jetlag. The Chinese calendar, being lunisolar, had to be adapted to the long period of Yue (139 Earth-days, or 104.25 Penglai-days) by dividing it in three months of 34 or 35 days. The penglaise solar year is 201.7 days, making it slighly less than six months long.

Symbol

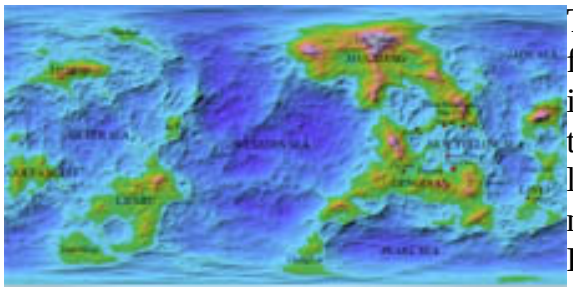
A yellow star on a red background, surrounded by a black dragon holding it. The four subcolonies have flags with their names written in black Chinese characters on a red background.

Planet

There are three other planets in the system; gas giants named Turtle, Carp and Dragon. The PCA has for a long time planned to exploit their resources, especially by extracting energy from the radiation belts. So far nothing has happened, but there are outposts around all of them.

Penglai has a single moon, Yue. Yue is just 584 km in diameter, orbiting 600-900,000 km away in a rather eccentric orbit. This is the location of the PCA naval base.

Penglai orbits 0.8 AU from the sun, with a period of 0.736 earth-years. It has a diameter 15,281 kilometres, density 1.2 earths. The surface gravity is 1.421 g. The day is 32 hours long, necessitating either alterations of the biological clock or living in shifts. The axial tilt is 15 degrees.



The surface is 70% water, with several fragmented continents; overall the planet is quite mountainous but the mountains tend to be low due to the high gravity. The largest continent is Hanxiang on the northern hemisphere, with the extensive Lao plateau (where Tsi Leng is located). It sends out a rocky peninsula called the Three Mountains, the site for Hao Chen (capital Xiuyang). Around the peninsula lies the New Yellow Sea, with many offshore platforms and atmospheric conversion units. To the south lies the continent Dengdian, with Daonin on the extensive coastal plains (capital Hung-Ching) . To the southeast, on the island of Linyi lies Hsu Hsi (capital Nung-wu). The other continents (Lienru, Tienhu, Goufanglei) and major islands are largely uninhabited.

The weather is cool, with large icecaps on the poles and few truly warm summers even at the equator. However, whenever the vegetation is dry it can be ignited, and fires are a constant danger even in winter.

Biology

Most life is in the seas, but the continents are covered with sparse vegetation and low-built animals. The biology uses amino acids not suitable for terrestrial life; the two biospheres are quite unpalatable and uninteresting for each other. However, some plants produce violent allergic human reactions, especially the spores in the waist-forests of Ten-Chong. Another problem is bacteria that produces carbon monoxide; they are mainly found on the sea bottoms or in the soil, making it essential to have a monoxide warning device in certain areas when the wind is not blowing.

Sea-life is at least as varied as on Earth, ranging from microbes to the immense gridrays (sometimes called sea-dragons), filter-feeders a hundred meters across that rarely enter the Yellow Sea. Most animal life is based on a double-spine body plan, with two spines and segmented bodies. Land animals tend to look like centipedes or snakes. Among the most unusual are the jumpers: armoured creatures that jump up high in the air and drop down on their prey, crushing or immobilising it. They are an irritating pest to humans, as they often attack pets or small machines despite that they cannot eat them.

The ecology of Penglai is complex, and the terraforming complicates things further. The terraforming stations create local algae blooms, which initially were seen as an undesirable side effect but eventually turned into a great way of producing raw biomass for the food tanks. However, the plankton attracts the gridrays and other filter-feeders, which tend to get hurt when they collide with intakes and structures. It has also caused a decrease in carbon monoxide production nearby, which is desirable for humans but not good for the intermediary ecological layers. Another effect of the increase in temperatures is the rapid spread of rock blossoms, a tropical plant that has spread further from the equator on southerly mountainsides. This worries many ecologists, but control through both traditional ecotech and neo-Taoist methods have made it controllable and an useful way of

binding meltwater. Overall, the terraforming changes the ecology but not out of control. Whether this is desirable or not depends on ones philosophical views, and is a constant point of contention between neo-Taoist environmentalists and the mainstream, as well as beween Arcadians and the PCA.

World

Atlantis (Zeta 1 Reticuli II)

The friend of my enemy may also be my friend – if the price is right.

Anarchism is not a romantic fable but the hardheaded realization, based on five thousand years of experience, that we cannot entrust the management of our lives to kings, priests, politicians, generals, and county commissioners.
- Edward Abbey

...the man is free, we say, who exists for his own sake and not for another's.
- Aristotle,Metaphysics

When I arrived, the town was moving. A zep was lifting one house straight into the air, and two houses had been connected to cargolifters through previously hidden connectors in the facade. A gang of very young Ricardians scurried around, always appearing where they were needed for small jobs thanks to their wearables – a microcredit here, a microcredit there, and soon it would add up to real money carrying boxes, guiding trucks or checking connectors. Their parents were making even more money getting the town moved to its new destination. My guide explained that the move was partly aesthetic – in the spring Judge Bay would be much more pleasant than these mountains – partly economic, since buying this area of land had originally been intended as an investment. Now when Porn City wanted a mountainous change of scenery the townspeople would make a big profit by selling their old location. He debited me 233 microRand for that information.
- Jonathan Ellis-Khayama, *Interstellar Diary*

History

Atlantis was the first private space colonisation effort that succeeded. It was organised by Atlantis Foundation, started by Nathaniel McDaggart, owner of a space freight company. The goal was to create a "free haven for free thinking individuals". Would-be colonists signed a contract of non-initiation of force and other parts of a social contract, pooling their resources in the foundation. Eventually enough groups and individuals could support capital for the colonisation project, and in 2038 the colonisation ship Mayflower was launched towards Zeta 1 Reticuli II.

Mayflower arrived in March 2136, finding an earth-like world with seven major continents. Shortly after the initial landing the Auction was instituted, establishing the land ownership rights and constitution of the planet. McDaggart TransPlanetary bought Terminal (originally McDaggart Terminal), where the "capital" Galt's Gulch was located. Atlantis Foundation acted as a coordination function for the colonisation effort, originally handling the space systems. Later it mainly became a

registry for land rights, public notary and accreditor of courts.

During the initial colonisation phase the colonist groups settled down across the planet. The settlements were widely dispersed, but long-range communications and transports had been pre-planned. Originally shuttles and planes were used, but TransPlanetary soon manufactured zeps. Many groups and settlements quickly specialised themselves, such as McDaggart TransPlanetary (transports), the Ricardians (general labour), Transhuman Research Institute (research, education and development), Explorers United (surveying and exploration), Xie Manufacturing (heavy equipment), Akston Farming and Mulligan Capital & Investment. Local police forces and PPLs emerged to protect people.

1st October 2136 the first Gun Pride Day was celebrated in Galt's Gulch. Many of the founders felt that they ought to celebrate the right to bear arms. This later became a tradition, when the citizens get together, show off their weapons and playfully blow up things.

In 2150 a major debate was started after some risky experiments with HE viruses at the TRI about how to handle insurance and security. A widespread insurance system was instituted, putting economic restraints on irresponsible actions. The insurance firms today have tremendous influence; while there are practically no laws except the basic libertarian constitution their policies rein in behaviour economically: blowing up your neighbours property will cost you a lot, and your insurance premiums will skyrocket. Killing people will ruin even the richest. In time this also evolved into the current system of maturity: children are gradually insured more and more, given more and more control over their insurances and finances, and when they reach their IQI (Insurance Quota for Independence) with self-signed insurance they are regarded as their own people. This means that there is no fixed age of maturation, some people become independent at a very early age while others remain "children" for decades.

Atlantis first state, Hope Colony, was founded in 2151, by a group of malcontent youths and people who feared that Atlantean society was doomed. Hope Colony persisted for 20 years before finally dissolving in 2171. Since then several other states have been founded, but few have persisted.

In 2176 the second largest outbreak of violence in Atlantean history when a conflict ensued between the PPL Glick Law and its subscribers on Lichtenstein over outstanding debts of a retroactive added charge the subscribers had refused to pay. The PPL tried to make the subscribers to pay or impound resources in payment, which resulted in violence. The Glick Eruption, as the incident became called, lasted for two weeks and 132 people were killed. In the end the PPL was forced into bankruptcy, both due to extensive legal action and the sheer expense of fighting against a widely distributed armed population that did its best to sabotage the organisation. In addition, many of the employees deserted it at critical points. The whole Eruption made many Atlanteans question the idea of PPLs from a

practical point of view (beside the danger of similar incidents, the PPL had shown itself to be vulnerable in a critical situation – could other PPLs withstand real threats?). One effect was the foundation of the Dronamraju Republic on Completion 2187.

The Dronamraju Republic was intended by its founders to act as a "mutual society", where the economy was based on pooling resources and having expert systems distribute them justly; outwards the Republic acted as an ordinary Atlantean company. In addition, security was upheld by a security force run by the government. While the attempt attracted more attention and followers than usual when somebody founded a nation, it quickly ran into problems. Due to constant quarrels with orthodox libertarians the republicans gradually isolated themselves, a move towards cultism that has often occurred in nations on Atlantis. Slowly the tone got harsher, as the republicans struggled to keep their nation working. Inefficiency and laziness became more and more firmly discouraged, often incurring "fines" of non-access to goods from the expert systems. The Republic found that many Atlanteans did not want to deal with it, or offered it worse deals than to groups they approved of. There were also claims that outside agents were trying to infiltrate the Republic and sabotage it, making it close its borders and instituting mandatory surveillance. At this point it became more and more clear to outsiders that the republic was failing fast; many outside groups actually began to work to convince people to leave (but various rules and debts made this hard to do legally). Over a span of 20 years the nation moved from an idealistic democracy to a police state. From time to time purges were instituted, as "illoyal" fractions were discovered and forced out of office or work. Finally the Republic went bankrupt in 2215; the expert systems found themselves with insurmountable shortages, the government couldn’t do anything about it. A riot in the capital Dronamraju turned into a revolt. At first it looked like the government would fall, but it turned the security force on the population. The resulting collapse was the largest outbreak of violence ever on Atlantis, involving thousands of people; ironically more people lost their lives than in the Eruption which caused the foundation of the Republic. Most of the victims were not victims of violence, but rather an infrastructure that collapsed or turned against them in the last-ditch attempts by the government to keep people under control. After the Republic dissolved Atlantis Foundation took over the land, mostly selling it but keeping the ruins of Dronamraju as a warning for future generations of the dangers of having a government.

2187-2197 the SDC (Space Development Consortium; the brainchild of a team of visionaries at Xie Manufacturing interested in the future possibilities of a beanstalk) managed to put the asteroid Jack in atlantosynchronous orbit, a major feat of engineering, investment, space technology and insurance deals. This made space industry boom, and people no longer had to rely on adding on structures to the already heavily encrusted Mayflower. Later more and more space habitats and industries have grown up in orbit.

During the 2200’s clans became an organising force in social life. They began among the migrant workers of the Ricardians but the idea caught on; formal family networks became an added level of security and contacts. Some clans, like the Dabreen and the McDaggarts, developed strong traditions and styles, while others became little more than networks.

Around 2210 Squidding began to develop after the development of simple real-time brain scanners. The scanners could determine the current brain state, and compared to more detailed scans done at hospitals the current mental state inferred. Some of the TRI people began to project their squid data with their wearables, and this practice quickly spread. Better representations emerged, and people began to learn how to interpret squids at a glance. Projecting a clear squid of oneself became a sign of trustworthiness, and thanks to the improved communication society became a bit more efficient and trustworthy.

In 2280 the Abdela Theory of Higgs manipulation was presented. At first a theoretical curiosity, it soon attracted attention when its consequences were understood. In 2298 this led to the first creation of a force projector. Geodesic Systems Inc started to exploit and research Higgs fields. In 2307 they managed the first creation of confused matter in their orbital lab; these experiments were later moved to the outer parts of the system. Experiments continue to this day with containment methods – confused matter could potentially become an infinite energy source.

In 2345 the Beanstalk project was eventually started. For generations the Atlanteans had discussed the idea of using Jack to build a hanging tower down from the geosynchronous orbit to the ground; this would make getting to orbit much cheaper than spaceplanes (this was of course one of the reasons Jack was put into orbit in the first place). To build it, superstrong materials like bundled carbon nanotubes would be necessary, and they had just become somewhat affordable due to nanotechnology. The Beanstalk Consortium is one of the largest industrial consortia of Atlantis, including construction, aerospace, research, finance, insurance and research corporations. Work began with constructing a nanotech factory on Jack converting carbonaceous rock into nanotube cables. Slowly they were lowered towards the planet, and the asteroid moved outwards slightly to keep the whole system static relative the planned touch-down point in the desert of Terminal. The project is extremely complex, and the outcome is still in the balance: several Cassandras claim the beanstalk will never become economical due to the development of GATA (Gravity Assisted Takeoff and Acceleration), as well as the risks involved when the cables become several tens of thousands kilometres long. The projected end-date is sometime in 2354.

Society

Atlantean society is very decentralised, and practically every human activity can be found somewhere (which is amazing given the limited number of Atlanteans). It is largely a telecom civilisation, with trade and business as paradigm. It is a contract culture where nothing is real unless it can be bought or sold – trade is important even in human relations, and trade is generally regarded as the noblest profession (although relatively few regard themselves as pure traders, since almost everybody is a trader by offworld measures). The confusion exhibited by offworlders when arriving on Atlantis tends to amuse Atlanteans; many of the "foreign embassies" have clustered together in Galt's Gulch more or less by default, not really seeing that their physical location is irrelevant.

Despite the image many outsiders get, Atlanteans are not very violent. Most Atlanteans firmly believe that coercion is the root of all evil; coercing someone robs them of their free will and rationality. Sane people interact freely, trading services rather than demanding or begging for them. Violence is financially discouraged: being violent and rude tends to raise the insurance premiums, and acts of violence tend to lead to expensive lawsuits. Murder is almost certain to ruin one's reputation and end up in a PPL jail. Many Atlanteans born with violent tendencies get therapy to reduce them in order to lower their insurance costs. On the other hand, many people are killed or wounded in accidents every year, and Gun Pride day can be quite risky sometimes (in many areas you have to sign a waiver before entering during Gun Pride Day).

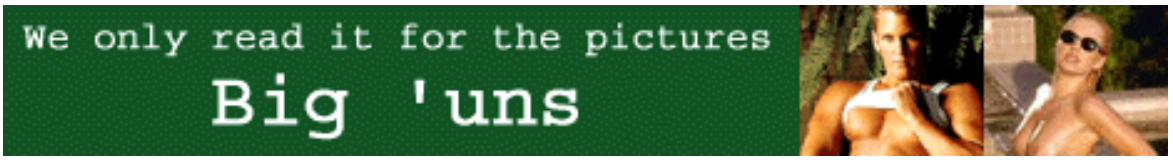
Atlanteans are used to speak their mind and debate things. They regard most other planets as far too low-key, filled with untrustworthy yes-people. They want to set up trade with everybody else – what good is FTL without trade?

Atlantean buildings are often moveable or modular, easy to move to a new location. Whole cities can be moved if needed (or wanted), and people do tend to move around for a variety of reasons. Zeps, ultralights and other air vehicles are popular since there are relatively few large roads. Cities hence tend to have rather variable populations, and many are more like parking lots around a few static buildings. Sometimes many people arrive, sometimes the city is out of season.

Organisations

The IPD Society attempts to create a social immune defence. Their idea is that unless vigilance is constantly tested, parasites and freeriders will spread. So the IPDS both inform people and organise "tricks" to keep people alert. Guardian groups like this exist with a variety of goals, all trying to influence society at large. Many Atlanteans dislike them for their meddling, even if they agree with their goals.

The Rand monks in the Medius mountains are just one of the many strange cults that exist. They seek to live a truly objectivist life, without the Kantian stupidity they think has ruined Atlantean society. A related religion is the Cult of Profit. Practically every religion exists somewhere on Atlantis, but the Atlanteans seldom hold a faith long before moving on. While many proudly proclaim to adhere to lifelong truths, most tend to be slightly sceptical and practical.



The major newspaper/newssource is Big 'uns; originally founded as a pornographic magazine by Tom "sleaze" O'Donald (journalists are commonly called sleaze due to this). The magazine did well, but in time it had to diversify due to competition. In time it became the major newssource, and O'Donald Associates is the major publishing and media corporation. Today Big 'Uns is an advanced subscription service individually adapted to each subscriber, with very little pornography (unless deliberately included, of course). It's slogan is "I only read it for the pictures".

The McDaggart family is the closest thing Atlantis has to a royal family. Their fortune has shifted over time, but currently it is on the top again (even after less-than successful ventures as the trans-Terminal monorail line). The ideas of Nathaniel McDaggart have played a significant role in the development of Atlantis, and his sentence "the businessman has to be a philosopher" is often quoted. In the entrance to the TransPlanetary building the family motto "In labore, vita et virtuus" is proudly written in Earth marble above the famous statue of Nathaniel. Nathaniel is kept in cryonic suspension in the shrine/subbasement, with a typically ironic sign above the suspension unit: "In case of planetary emergency, break glass".

TRI, Transhuman Research Institute is a university, think tank and R&D community located on a mesa at the southern tip of Madeleine. TRI is generally the major source of scientific results and heretical ideas. The inhabitants and students take pride in questioning old assumptions and inventing new ideas to be tested (the University motto is "Question *Everything*!"). The original goal of creating a centre for human enhancement were diverted into other areas at first, but over time TRI has developed a number of workable methods of enhancements; it is just not the core of the organisation any more. It has diversified into other areas, ranging from technology to social debate. On neighbouring mesas competitors and offshoots have sprung up; the whole area is sometimes called University Tip. The core however remains in the old pyramid glass-steel buildings around More Square and Bostrom Boulevard. TRI has traditionally competed with the University of Galt's Gulch both academically, economically and ideologically: GGU is more directed towards developing and defending the original values of Atlantis, while TRI wants to explore all values (GGU people sometimes call TRI "state U" since several prominent statics developed their ideas there), even those that do not agree with the views of the original founders.

Atlantis Environmental Protection Agency is the largest environmental group on Atlantis. They value the natural, and are willing to pay for it. They take a typically Atlantis free-market view of protecting the environment: they buy up as much land, water and air as possible and then let it remain unspoiled. Funding comes mainly from private donations, but also from paying hikers, their expertise in ecomanagement and litigation. AEPA is not particularly popular among neighbours, since it is known to be prepared to sue for ecological infringement at any influence on their areas (to them, lawsuits is nearly a kind of investment). Its most controversial method is "patch clamping", the practice of buying up a small patch of ecosystem like a forest core, and then sue any infringing activity – which includes just about any changes of the ecosystems in the vicinity, often far outside the patch. Currently AEPA owns or controls extensive tracts of ocean in the arctics, most of northern Madeleine and half of Koslowsky. Whether the group will manage to buy up or clamp most of Atlantis in the long run remains to be seen, most Atlanteans think they will break down sooner or later.

Trillicom Arms is the premier armaments designers and manufacturers on Atlantis. They go for the extreme, outrageous and advanced rather than the practical. Most of their truly extreme weapons have never even been built, but exist as engineering concepts until they can find somebody rich and eccentric enough to buy them. They have everything from handguns over creative rifles to plans for planetwrecking devices. Originally founded at TRI, it is one of the most successful trichines. In the Madeleine mountains they own the Forgotten Valley, where customers can take a weaponry-hike and try out their catalogue; they also arrange a variety of wargames, publish Destruction Review (a widely respected journal of weaponry, of high academic standing), sponsor Gun Pride Day just about everywhere and overall go for an ubiquitous presence. As the founder Nicosia Tessin put it: "Wherever you go, whatever you want to blow up, we will be there to sell you what you need".

Assurance Insurance, Unlimited Futures Inc and Landau-Preskhill are the three major insurance companies of Atlantis. They are especially important not due to their size, but due to their influence over insurance policy and hence over just about everything else. Other insurance firms often adapt or harmonise their rules with the three. Unlimited Futures is the oldest and most radical; beside insurance the company network also includes banking, cryonics and hospitals. It encourages customers to join the corporate web with their own networks, creating an "insurance/trading nexus destined for profit and longevity". Assurance is much more conservative, holding the view that unnecessary risk-taking should be costly. They promote a much more careful lifestyle, making sure that whatever fun the

customers have they are always well protected. Landau-Preskhill are much more Atlantean and promotes extreme flexibility: customers can chose from a wide variety of "lifestyle patterns" to find the right combination of insurance, economic security, legal protection and other services.

TransLife is one of the major powers in the biotech business. The business network contains many companies that network together. Some of the most well known are EugeniX (reproductive technologies), TeratoTech (builds robots or real biotech targets/monsters for hunting or other entertainment) and Euphrosyne Pharmaceuticals (drugs both for medical use and entertainment).

Sandberg and Öhrström Creative Genetics is one of the old and traditional biotech companies at TRI. Generally regarded as stuffy and old-fashioned in their views on human enhancement (strongly pro-enhancement but has definite views on what constitutes an enhancement and whether it is allowed to put it into a child) even if they are up to date in the technical area. Like most of the biotech companies it is investing heavily in nanotech and doing its best to exploit it in gene therapy, cell repair and bionics.

The Nannies are the nanotech upstart companies. They are new, brash and investors throw money at them; the mood is not unlike Silicon Valley during the computer revolution in the 20th century (although in this case it might be more properly called "diamond crater" since most are located on Jack). Most companies are fairly small and relies on automated engineering expert systems. Designs are constructed and first tested virtually by nanotechnologists and their software, then built physically (and usually the designs have to return to a virtual version several time before the bugs are fixed). Entire nanotech labs can be housed in a suitcase, although the extra equipment tend to require well-stocked macroscale labs. Companies like NanoDepressive, Mymach, Mechanosynthetic Systems Inc, DrexTech and TRI Supermolecular Chemistry Department Inc. scramble to explore what can be done with nanotechnology now when the main limitations have been overcome. They are not so much competing as coevolving (being first with something is more important than being the only one with it after a few weeks). Many experts move freely between the companies.

Rotha Netsys is a newly formed interstellar trading corporation (the main investors are Mulligan Capital & Investments, Proxitech Computing and Solidity Insurance).

It is actively trying to set up a trading route between Atlantis, Nova and New America and involved with the Origo project. So far it has profited mainly from developing conversion programs for different data formats and importing software.

The Freedom Foundations are a number of foundations working to keep Atlantis free and/or provide a social safety net. They support poor people, get involved in lawsuits when other organisations have broken against the rules or act in unethical ways. Some also act as or run consumer information, rating systems for PPLs and other businesses or act as ethical certifiers. While some of the most well known (like the Bois Defense Fund and the Atlantean Freedom Watch) are non-profit, there also exist for-profit organisations where people can invest in good causes.

Aurum Investments is one of the most ambitious Atlantean investment and trade firms. Fiercely independent and a bit more daring than most others it invests in wild projects such as the Beanstalk, interstellar trade (they own the Lady Koumakov) and the confused matter research of Geodesic Systems. Observers give it a 50-50 chance of surviving the next decade, but if any of the investments pays off, the investors in Aurum will be very, very rich.

The Tigers of Luxemburg is the most famous and expensive mercenary/bodyguard company. It dates back to the Glick Eruption, where some of the citizens hired a team of people to strike at Glick Law. The Tigers have specialised at disabling armed foes such as outlaws and out-of-bounds PPLs; the need for the Tigers is fairly low most of the time, making them act mainly as a bodyguard firm, but their reputation rests on their ability to deal with armed and capable foes.

The Truth is an Atlantean advertising/media firm. The name is pure irony, as Atlanteans *never* believe in anything proposed as the Truth. It runs a wide variety of net channels and virtuals, as well as knowledge network services and expert system production. One of its most important range of products are microtrading agents making daily life and family interaction work economically. The organisation is little more than a network of cooperating sub-firms, partially family run, partially consultants.

Geodesic systems is the leading research and development company in higgstechnology and antigravity. Over time it has relocated more and more of its activities to the outer reaches of the system, especially around Aristotle (which they own). The main reason is to lower the insurance costs for their experiments in confused matter. The company is overall somewhat clannish and eccentric, a fine example of a trichine.

The Network for Xenology studies the semioticist bugs, claiming that they are intelligent beings and the "mating patterns" drawn on beaches are really a sign language. Most Atlanteans scoff at the notion, and researchers from GGU and TRI have both concluded that the bugs are not much smarter than terrestrial cats, but the Xenologists think that the bugs both have a very alien form of thinking, a

non-technological civilization and that most of their social interactions are hidden deep underwater. The Xenologists try to convince people that the bugs deserve rights in society, but few support them. Atlanteans usually call them bug-huggers or buggers.

The Tartarus Commonwealth is an Atlantean colony on Daedalus. It began in 2274 when Detroit Marhenke (generally regarded as having expensive impulse control problems) murdered a competitor. To escape the PPLs and financial ruin he and his family escaped from Atlantis to Daedalus where they owned some land. This posed a problem for the PPLs and insurance companies; getting him back would likely entail a very expensive attack mission, where some of the other family members could file countersuits for endangering them. In the end it was solved by paying off the victim's family and deliberately ignoring the Marhenke family. They were blacklisted instead: almost nobody on Atlantis would deal with them, and they were without insurance.

Despite what most thought was possible, the Marhenkes survived on their icy worldlet. They lived in a base inside the extensive cavern systems of the Mises mountains, eking out a poor and troubled existence but surviving against all odds. The name originated as a joke during the first years. Over time a new generation grew up, not formally blacklisted and able to deal with the Atlanteans. Over time a fragile trade has emerged, where the Marhenkes sell ice and software in exchange for goods they cannot produce themselves. A number of other disaffected Atlanteans have also joined the Commonwealth, which now number in around a hundred. It is organised as a company, with members as shareholders; most is of course owned by the older Marhenkes. Currently it is trying to scrape together enough money to build a catapult to make ice trade more feasible, but it is having trouble finding investors.

Style

Atlanteans dress as they like, there are few styles that extend outside small groups. Since outdoors life is common, robust clothing and boots are often used, but Atlanteans are known for creative styles. New materials or shapes are popular, and currently nanotech fabrics made of micromachines are all the rage: still very expensive (which of course makes them even more stylish), but with interesting possibilities as they are able to change and reform in delightful ways. Carrying a weapon is usually regarded as either stylish or silly (is it Gun Pride day already?). Wearables are often combined with jewellery. The squids are often worn as headbands, headsets, diadems, coronets, laurel wreaths or even Mickey mouse ears – Atlanteans tend to be inventive.

Language

It should be noted that many words like ‘greed’, ‘selfishness’, ‘altruism’, ‘market’ and ‘solidarity’ have different values and meanings on Atlantis compared to the use on other planets. This tends to cause confusion. When an Atlantean calls somebody a greedy and selfish person they likely mean it in a neutral or even positive way, while altruism is regarded as suspicious or naive..

Agoraphilia	Business addiction: compulsive trading or intoxication with market flows. A fairly common mental disorder on Atlantis. The opposite, agoraphobia, is rare and mainly occurs among mystics and statics.
Bunny Run	Part of Gun Pride ritual here and there, when a white rabbit is let loose and everybody hunts it with their weapons.
Calypse	The End of the World As We Know It. Many Cassandras have predicted that Atlantis will eventually break down, due to economic or ecologic disasters, war or something else. Atlanteans in general do not believe in it, and mockingly call it the Calypse.
Contract spouse	Spouse, although the role has been extended by making it an explicit contract which may or may not involve emotional bonding, sex, economic partnership or living together.
Cryppie	A cryptographer. One who hacks or implements cryptographic software orhardware.
Deal	The Atlantean equivalent to the pair "Thank you / You’re welcome"; both people say "deal" to thank each other and close a transaction.
Defaulter	Insult.
Drifthouse	A building with antigravity generators to make it movable.
Drivehouse	A building that can be moved using an add-on wheel frame, air cushions or a zep.
GG	Galt’s Gulch. Usually the largest city on the planet.
GGU	Galt’s Gulch University.
Go with the dataflow	To immerse oneself into the Net, dealing and discovering just for fun and profit.
Greys	Nickname used for Atlanteans; based on the ancient Earth folklore of small grey big-eyed aliens living at Zeta Reticuli. Sometimes the aliens are used in children's stories to denote the spooky collectivists that creep up on children who don’t look after their rights properly.
Guardians	Organisations, militias and parties devoted to keeping Atlantis free – after their definition of freedom.
Gun Pride Day	A celebration of "the right to bear arms", when interested people gather in the cities and other places to show off their weaponry, compete, blow things up and generally have fun.

Insurance War	When two insurance companies (or PPLs) come into conflict over a matter where their subscribers have conflicting interests. The resulting court battles can take a long time to resolve, putting up big hinders for everyone involved.
Ink	To fake one's squid signals; regarded as extremely bad form.
Mystic	Somebody valuing the imaginary over the actual. Negative term.
Mayflowers	The original colonists. Few of them are around these days, most being dead or cryonically suspended.
Nandex	"Textile" material composed of interlinked nanodevices; extremely flexible, adaptable and stylish.
Nanny	One of the many start-ups in the nanotech business.
Patch Clamp	To buy up a piece of land (or something else) in order to prevent others from changing the surroundings. Generally regarded as bad form.
PPL	Privately Produced Law. The law enforcement firms hired to produce security.
Railroader	Nickname for the McDaggarts, named after their obsession with building the Trans-Terminal railroad in the early days.
Shepherd	Derogatory term for anyone trying to control or influence weak people. After Frank Shepherd, a wealthy colonist who tried to build an empire on the newly settled Koslowsky in the 2140's by trying to clone and indoctrinate children. The project failed for economical reasons and due to a widespread boycott.
Sleaze	A journalist.
Squidding	To look at another's squid data to infer his or her mental state. This is useful for increasing trust, finding the right approach and getting along.
Static	People living or believing in a state.
Tech	During the 2100's a "tech philosophy" emerged at TRI, seeing technology not just as a tool but as an integral philosophy of human aspiration. Most trichines founded during this period have names ending in -tech to signify their philosophical allegiance.
Trichines	Offshoots or spin-off companies from TRI.
Womd	Weapons of Mass Destruction such as bioweapons, nanoweapons, chemical weapons, nuclear and Higgs devices. The insurance firms demand outrageously high premiums for their ownership, which has of course made them status symbols only the richest can afford.

Zim	Micro-trading, where wearables keep track of very small transactions for trivial services.

Population

1,385,054 people. Life expectancy at birth: 430 Earth-years (estimated).

Currency

Atlantis uses a system of private currencies, where each person, family or group "prints" its own currency backed up by their personal capabilities or resources; these currencies are then seamlessly converted by the wearable computer systems. There exist everything from Ingdahlian Rands to Flax Scrip (backed by marijuana) to corporate currencies.

Timekeeping

The day is 23h 18m. The standard time measure divides the day into 14 longhours, each with 100 minutes. The year has no months (mainly due to problems agreeing to name them) but is divided into numbered seven day weeks. One year is 385.3 days long, giving 55 full weeks and a leap day every third year. (times look like 202-43-Wed-13-84-43, year-week-day-hour-minute-second).

Symbol

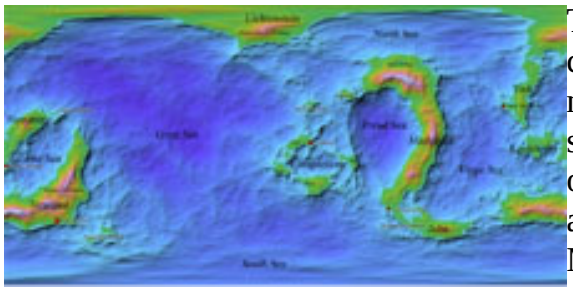
None official. Sometimes the logotype for the Atlantis Foundation is used, a slanted ’A’ with the horizontal line extended into a forward-pointing arrow. There have been many suggestions for an Atlantean flag, but the only widely accepted version is simply a map over the planet.

Planet

The sun is commonly called Zeta. The other planets were named Icarus (hot rockball close to the sun), Daedalus and Prometheus (two desert worlds outside Atlantis), Hayek (gas giant), Doc Halloway (iceball) and the four gas giants Natasha, Max, Locke and Aristotle. There are a few settlements on different moons and asteroids, but few major installations.

Zeta 2 Reticuli lies just a light-month away, and shines brightly in the sky. It is significantly brighter than Venus ever was in the Earth sky, and can often be seen during the day half of the year. There is no accepted name for it, but some of the most common names are Sparky, Diamond, Zed Two and Little Bitch.

Atlantis orbits 0.9 AU from the sun and has a diameter of 10,081 kilometres, 1.3 times the Earth’s density. Gravity is 1.026 g, the day 23h18m long. The 26 degree axial tilt creates major seasonal variations.



The surface is 80% ocean, with five major continents and two smaller ones. The major continents are Terminal (temperate, subtropical and desert, with Galt's Gulch on the eastern shore), Heinlein (subtropical and tropical, main city New Carthage), Madeleine (mountainous with a very varied climate, stretches across the equator), Lichtenstein (polar, with parts arboreal and the highly settled Mediterranean York peninsula) and Jahn (mostly hot temperate). The two minor continents, Completion (composed of several major islands linked by shifting sand bridges) and Koslowsky (jungle) are both located in the tropical zone.

Madeleine, Terminal, Jahn and Koslowsky surround the warm Vinge Sea, the source of many tropical cyclones but also the most heavily traffiked part of the planet. West of Madeleine and east of Completion lies the deep Freud Sea, and west of Completion the unimaginatively named Great Sea.

Biology

The ecology is fairly terrestrial, with some odd properties. The dominant animal life is all derived from a trilobite-like creature with a ridged carapace and lots of small legs; they look like centipedes, turtles, bugs, sculpted stones, porpuquines and everything else (of any size) but the body plan is the same. The largest animal is the semioticist bug, a swimming five meter creature with elaborate paddles that extracts nutrients from the rich waters around Heinlein and Madeleine (the name comes from the strange "signs" they draw on beaches as a part of their mating rituals). Other common animals are the land barnacles (a common pest), snail-like grazing creatures with though shells that affix themselves to hard surfaces to eat algae and bacteria and the discobugs, colourful animals often kept as pets and bred for their patterning.

Some higher plants reproduce in symbiosis with certain species of animals, the altruist turtles: the turtles eat the fruits, and the seeds grow inside them and are either excreted when partially grown or they actually kill the animal, but bring the turtle's eggs with them – the next generation of turtles develop safe inside the plant. The Jahnian reciprocal tree contains cysts of embryonic discobugs and other symbionts that emerge when the conditions are right - to the mutual benefit of the tree and the animals. There are several other similarly arcane forms of symbiosis between different species and plants, suggesting a long coevolutionary history. The continents have very different ecologies, and at least Jahn sports many species that are quite deadly to humans due to some of their biochemistry. Especially troublesome is the featherock, whose hairs cause acute anaphylactic shock in humans.

World

New Greater South Africa / Negsoa (Mu Arae III)

The instinct to command others, in its primitive essence, is a carnivorous, altogether bestial and savage instinct.
- Mikhail Bakunin, Protestation of the Alliance

From the river, Aldennia looks like a strange cloud that has landed on a hill in the middle of the plains. Greyish smoke hangs around the dark buildings, the crumbling city walls send out bastions and pseudopodia of stone towards outlying fortresses. Several towers overlook the dark city, giving it a medieval feel. In the middle, looking almost like a fantasy palace, a single ancient shuttle stands stained with moss. In the fields outside I saw peasants toil with the rice, guarded by soldiers dressed in a variety of uniforms. They were warily watching not just the mountains, but also across the fields towards the regions ruled by other nobles. They practically ignored the river, not realising that the greatest threat to their masters were the peaceful, singing seapeople on the barge with me.
- Jonathan Ellis-Khayama, *Interstellar Diary*

History

The Greater South Africa Republic was formed from the chaotic remains of the south african states in the aftermath of the Swaziland Crisis in the 2020's. The unification was more of a military/police takeover organised by general (later president) Desmond Aldenn, a South African administrator. His rule has been called the last classical dictatorship on Earth; while more of a wasteful oppressor than actual tyrant he was an uniquely unsavory character in the politics of the 2030's. During his reign president Aldenn funded the colonisation program as a grand gesture, heedless of the expense and growing discontent in his country. As the tide turned against him Aldenn began to secretly send his people to the colonisation program, and as his capital fell in 2040 he and his most loyal men left in one of the greatest airlifts of all time. Without hesitation Aldenn launched his single colony ship towards Mu Arae III, leaving the Earth behind. In 2156 the colony ship arrived to the Mu Arae system and triumphantly announced to mankind that the NGSAR, New Greater South Africa Republic, was founded. The name was later distorted into Negsoa.

The colony was badly equipped, undermanned and lacked vital competence in many areas. The equipment failed, the core colony Aldennia could not develop

according to plan and efficiency was low. An attempt to bring down the colony ship to act as ready-made fortress failed and resulted in a serious wreck; fortunately most useful equipment had already been brought down with shuttle (the crater is today called Ichibi Elilukhuni, "the stupid lake"). To make matters worse Aldenn continued to develop his paranoia, several times executing officers or experts for disagreeing with him. Within three months of planetfall he was murdered together with his feared cadre of bodyguards through a bombing. His lieutenants scrambled for power, but the two main strong men managed to keep the situation under control. They realised the need to ensure survival, and made a deal dividing the colony between them. Over the next years development went slowly. The camps were often against each other or working inefficiently, but a rudimentary agrarian society was set up.

The capital became a stronghold for the ruling families, ruthlessly controlling the farmers and plotting against each other. While they call themselves nobles, the system is also a tribal system where family ties extend even into the farming community. The farmers are little more than serfs; they are in turn handled by overseers who in turn answer to the nobles and their soldiers. The higher ranks have final say in who marries whom, and often trade serfs with each other. Craftsmen and servants live with the nobles in the city, kept under strict guard by the soldiers.

In secret some people fled into the mountains, building secret villages free from the city people. To supplement their farming they took to stealing or plundering from the lowlands. Over time a fragile balance developed with a feudal/tribal system of warlord families ruling their piece of the countryside from their strongholds in Aldennia or from the mountains. The mountain villages united into a loose alliance against the aldennians but spent most of the time in internal quarrels.

Around 70 years after landfall Negsoa was a thoroughly "medieval" society, with some remaining advanced technology in Aldennia, often family heirlooms with little practical use. Earth became a mythical place; according to the common people a wonderful world they had been expelled from by the evil Aldenn, according to the nobility a decadent cesspool most likely destroyed in some war. Several uprisings had semi-religious overtones, seeking to overthrow the Aldennians and return the golden age of Earth.

Over time the mountain lords grew in power, especially after they began to mine and sell metal. Metal objects had gained in popularity, not just due to usability but also as a symbol of status, power and magical charm. The Aldennians managed to keep the balance of power, but in the struggles more people managed to escape from their control along the shores of the East Sea. They began to live on floating rafts or boats to escape attackers more easily, The sea people developed into a major power in the 2200s due to their skills at seafaring, fishing and navigation. It was they who discovered the methane geysers of Hoto; selling bottled gas to the mountain lords or Aldennians they became wealthy and powerful, possibly the only comparatively peaceful society

on the planet. Attempts by the other powers to get access to the sea were easily defeated, and the secrets of navigation were held strictly secret.

The arrival of uitlanders in 2343 sent shock, fear and hope throughout Negsoa. The nobles quickly realised that the uitlanders outgunned them totally, and grudgingly settled for cautious diplomacy while trying to figure out how to use them and retain their own power. The pheasants were fearful of the god-men from the stars, but secretly nurture hope that the Homecoming is at hand.

Society

Overall, Negsoa is primitive but politically quite dynamic. Over time it is likely that it will change tremendously as trade and industry pick up again; the knowledge of the earthlings may have been partially lost or incomprehensible, but the realisation that it is there and can be rediscovered helps development. The main problem is that so much energy is spent in internal struggles that little remains for development.

As the colony effort disintegrated and the technology began to fail, most of the families did what they could to keep the old knowledge alive. Especially important was the printing of the large library of "How to"-manuals in the computers, manuals and documentation describing how to construct various machines, basic textbooks and other useful stuff. Even if the situation didn't allow the use of the information at that point, they realised that in time it would prove invaluable. Since then the families have kept libraries of howtos, well guarded and tended by trusted members (there have been many thefts or sabotage attempts - by depriving a family of howtos, it not only loses important information but the loss of treasure also hurts its status) . Most of the information is useless, but occasionally a gem can be found giving the family an edge. The howto libraries are kept by family howtokeepers, acting as librarians and advisors.

The Colony Council is a yearly meeting of the leaders of the families of Aldennia; the name is taken from the original colony leadership, but in practice it is a huge family festival when the different families mingle, compete, plot and generally interact with each other. This is the time when marriages are announced, alliances made or broken. The Mountain Lords have sent representatives to the Council for the last decades, and after the arrival of the uitlanders the representatives have even been allowed into the Council House to participate in the main debate.

Style

All clothing is based on simple natural fibres such as wool or the bast of the brace tree, and colouring is expensive. Most people wear a kind of grey burnoose, while the nobles sport more complex clothing, richly painted and often with leather or metal armour.

Language

Abantu bolwandle	"People of the sea" in Xhosa, common name for the seapeople among the farmers.
Bhabha ikhaya!	Fly home! Expletive suggesting that somebody should try to fly back to Earth. "Goduka!", go home, is sometimes used to suggest that somebody return to the domain of their own family.
Big Papa	Title used for the leader of a family.
Femeli	Family; one of the extended clans ruling Negsoa.
Home/Ikhaya	Term used for Earth, usually with religious overtones when used by the farmers. The Hometurning movement claims that by overthrowing Aldennia they can return to Earth in the colony shuttles.
Hooglander	Highlander, someone of the mountain people.
Howto	The old "How to" guides printed shortly after the colony was founded. Today rare, carefully guarded texts owned by the Aldennian families.
Howtokeeper	A librarian/advisor studying the howtos. Generally the technological experts of Aldennia.
Intaba Iyafeza	"Mountain master", formal title for the mountain lords.
Landcraps	Derogatory word used by the seapeople for the other inhabitants.
Kittekop	Afrikaans for "kitten"; term used for many of the local predators due to their small size and often pretty appearance.
Nomwa shadow	When the light of Nomwa casts shadows; traditionally an unlucky time, and it is commonly believed that stepping on somebody's Nomwa shadow will cause him bad luck or illness. Usually averted by carrying around lights or biolumniscent plants in the evening.
Stinkfishes	Derogatory name for the sea people.
Uitlander	Outsider, somebody not from Negsoa.
Umlimi	Farmer.

Population

Population: 3,093,296. Aldennia valley: 1,855,977 Mountains: 989,855 Sea people: 247,463. Life expectancy at 1 years: 54.6 Earth-years (infant mortality 21%).

Currency

Barter or silver.

Timekeeping

The day is approximately 26 hours long; since timekeeping isn't very important that is close enough for practical use. The years are counted by the seasons; one year is 401 days long.

Symbol

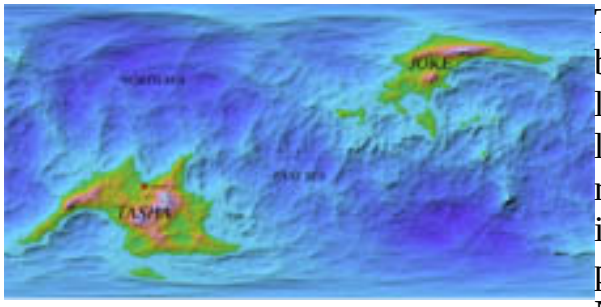
None, but each family has its own coat of arms.

Planet

Negsoa orbits 0.73 AU from Mu Arae, with a year of 0.73 Earth years (or 245 days long).

The rest of the system is little explored. Inside Negsoa lies Nomwa, a hot super-terran world that shines brightly in the sky even in the daytime. Outside Negsoa lies Didi, an apparently terrestrial (if chilly) world that might even harbour life. Outside an extensive asteroid belt lies a frozen desert world named Thoko.

The diameter of Negsoa is 13,102 kilometres, the density 0.943 of Earth. Gravity 0.972 g. The day is 25 hours and 52 minutes long. The axial tilt is 17 degrees and 90% of the surface is covered with water.



There are two major continents, and a broad arctic archipelago. The colony is located on the southern part of the largest continent, Tasha, which is roughly the size of Africa. The East Sea is a shallow sea with extensive petrochemical resources east of Tasha. Near the island chain Hoto natural geysers of methane erupt at regular intervals. The other continent, Joke, lies on the other side of the planet and is roughly the size of northern America.

The climate is fairly hot and humid compared to Earth (especially on southern Tasha), but with practically no seasonal variation due to the minor axial tilt (just two degrees). Hurricanes are fairly common. Joke is more temperate than Tasha.

Biology

Life on Negsoa has developed in very different directions on the two major continents. Tasha has a fairly terrestrial ecosystem, dominated by a mixture of forests of fern-like plants and swampy plains dominated by moss-like plants (with significant differences in different climate regions, of course). Animals are often birdlike jumping or flying creatures, while the plants often exhibit bioluminiscence – flowers and pollinating animals are night-active instead of

day active. A night-time walk through a Negsoan landscape is a surreal experience. In the mountains wines climb the rock, creating a dense and impassable cover. Burner trees exploit forest fires to make room for themselves. They accumulate a highly inflammable tar-like sap, and when a fire begins the trees exude it, covering anything beneath. The result is that the local area becomes an inferno, and any competing trees die. Quite naturally, the sap is used for lamps and fuel despite its stench.

Of especial use is the Paulyntje-kittekop, a small chameleonic predator that stalks its prey. It can be trained and used as a guard animal; many Negsoan homes have a number of kittens guarding them – any unwelcome visitors will be attacked by the kittens, whose saliva is fairly poisonous.

Joke is dominated by a symbiotic ecosystem (that is bound to interest Arcadians). Incursions from Tasha apparently fail and Joke species cannot spread without each other. A wide variety of termite-like animals build extensive hives, essentially remodelling the entire landscape, hiding water and nutrients in their hives and determining which kind of plants can live where. Almost the whole continent is a rolling landscape of sparse trees, hillocks and towers of spongy material. Other species have adapted, exploiting the hivers in all sorts of ways. Many creatures live in the hives, acting as symbionts, parasites or comensals. Plants grow with roots in the hives, exchanging nutrients for protection and water, or try to cheat the hivers. Various predators live of the hivers, and are in turn stalked by hiver-protectors, animals that kill the predators and get nutrients directly from the hivers.

World

Dionysos (Psi 5 Aurigae II)

I've been searching for the truth behind
What the prophets have sealed
So exotic every faith I found
And beyond my ordeal
There's a very attractive appeal
I've been deep inside the human mind
- Vacuum, Pride in My Religion

We have given you, O Adam, no visage proper to yourself, nor endowment properly your own, in order that whatever place, whatever form, whatever gifts you may, with premeditation, select, these same you may have and possess through your own judgement and decision. The nature of all other creatures is defined and restricted within laws which We have laid down; you, by contrast, impeded by no such restrictions, may, by your own free will, to whose custody We have assigned you, trace for yourself the lineaments of your own nature. I have placed you at the very centre of the world, so that from that vantage point you may with greater ease glance round about you on all that the world contains. We have made you a creature neither of heaven nor of earth, neither mortal nor immortal, in order that you may, as the free and proud shaper of your own being, fashion yourself in the form you may prefer. It will be in your power to descend to the lower, brutish forms of life; you will be able, through your own decision, to rise again to the superior orders whose life is divine.
- Oration on the Dignity of Man, Giovanni Pico della Mirandola

The Temple of Dionysos is the most famous example of the renaissance architecture. Soaring, stepped walls covered with hanging gardens; graceful pillars of ultracomposites refracting the light from the water flowing through the temple, frescoes and mosaics depicting the beauty and pleasure of nature and the central pleasuredome built by Jeremiah Donaldson, at the same time light, huge and intimate. The fame is well deserved. Still, the old videos of the celebrations here in the 2220's clearly show that these days the temple has become more of a tourist attraction rather than a Dionysian temple. The orthodox Dionysians have moved back to nature, celebrating their orgies in the traditional clearings while leaving the Temple in the hands of the more Epicurean edenists.
- Jonathan Ellis-Khayama, *Interstellar Diary*

History

Jerusalem was colonised by the United Christian Association, an alliance of several American Christian fundamentalist churches. During the 2040's the backlash after the failed Second Coming 2035 was making them proclaim that the Earth was corrupt and doomed to have Satan run the place freely, but the faithful could be saved by travelling to the new Jerusalem. The UCA organised the mission, and launched Ave Deo in 2047. It arrived to Psi 5 Aurigae in 2165, and they christened the second planet Jerusalem.

The Jerusalem colony quickly ran into trouble as different churches began to quarrel. Dividing the main colony into several villages was not enough, and in 2167 open violence resulted. The Ecumenical Council seized power, persuading, cajoling or forcing everybody to accept their authority. The Council instituted proctors to guard the colony and keep the faithful safe. Gradually a theocratic society developed, where the Council ironed out doctrinal differences. Strict punishments and group pressure were used to keep everybody in line, and most people not just accepted this but found it necessary.

It was the second generation that began the revolution. Various psychoactive substances could be found in the crown ecologies of the Jacob trees, and illicit use had been spreading despite strict punishments for discovery. A few of the users began to celebrate what they regarded as Dionysian rites in the secret clearings, and the practice spread. The Dionysian movement worshipped life, the enjoyment of the world and throwing off all restrictions of Jerusalem. As the proctors found out, they cracked down on the pagans. But resistance grew, and more people joined the movement (including many Christians, the edenists, who embraced the view that this was Eden and intended to be enjoyed). As the situation developed, the Dionysians armed themselves, began to sabotage Council operations, free imprisoned members and generally act as a guerrilla. In 2199 push came to shove, and after a violent attack against a demonstration for religious freedom the Dionysians attacked the proctors and Council. After a fairly bloodless coup they were in power, although the situation in the colony was chaotic. They proclaimed religious and political freedom, and began to dismantle the technological control apparatus of the Council. Many of the hardcore fundamentalists retreated to the Sinai valley, where they formed new communities that persist to this day. The central colony, now renamed Dionysos became a stronghold for the hedonist movement.

The decades after the coup were the Dionysian renaissance. Art, pleasure, technology and society advanced with leaps and bounds, optimism and creativity flourished. The colony grew and changed, despite occasional conflicts with the Sinai communities.

Eventually the original Dionysian movement began to loose its lustre. It became bogged down in routine, addiction problems and forced enthusiasm. The young began to strive for greater authenticity, and many took inspiration from the various orthodox communities around them. An interest in mysticism and psychology spread, and in the 2250s the basics of psychodesign were developed:

mental techniques combined with drugs and therapy allowing people to modify their personalities, values and views at will. Not only that, the neuropsychology of religious conversion and mystical insight was understood.

This discovery turned out to be surprisingly disruptive to the colony. When values and personalities can be changed, what is certain? What to base society on? While most of the Sinai communities ignored the situation, among the young doubt crept in. Some Dionysians revelled in it, regarding this as the total freedom. Others wanted to keep psychodesign within reasonable limits; a society cannot work if people change personality too freely. The early 2300's were a time of confusion, conflicts and warring ambitions, often called the "Big Mess". In the end things settled down. The "tixotrophs", radicals who espoused free personality and value modification remained, but as a small minority. The rest, including many former orthodox, regarded psychodesign as useful and healthy, but only when rationally considered. Social norms of how to handle self-transformation evolved, and it became a natural part of life for most.

When contact with other colonies was achieved in 2345 Dionysos was revolutionised. New technology, new ideas flooded in. The fundamentalist-censored archives had forced researchers to make plausible deductions, but now they could finally be checked against the real thing. In a flash millennia of terrestrial culture, history and science became available. The Dionysians have overall become enamoured with outsider cultures, and many speak of a second renaissance.

Society

Since values, personality and even the body can be changed, the only truly unique thing about a person is his experiences. Hence experiencing new things is the key to true personal growth, the rest is just tools for this experience. If somebody intrudes on somebody else's experiences, he limits or forces the other person – each person must be allowed freedom to change his consciousness, but not to change other's without their permission. However, it is possible to trap oneself in a static state (e.g. by becoming rigidly religious, trapped in bliss or psychosis) and for this the rule must be changed. The "psych police" (an organisation directly overseen by the colony council and independent from the ordinary police) is allowed to modify other's mental states without their consent, in order to bring a trapped person to a state where he can think about his situation in a flexible, rational way. While this works well in practice (the psych police mainly help addictions, cases of erroneous psychodesign or self-reinforcing memes), it leads to some problems when dealing with the fundamentalists: are they to be modified so that they can come to understand the full image of their religious views and lives, or should they be left alone? There have been many debates over this, but the general consensus is that the psych police should only deal with the citizens of Dionysos proper, trying to convert everybody would become a never-ending crusade.

Modern Dionysian society is dominated by a mainstream with strong Dionysian-edenist leanings; they are not actual believers but have a semi-religious appreciation of life. Most people undergo gradual psychodesign to become "fully themselves", generally rational, pleasant, social, stable people, and quick changes to suit the situation. There are minorities of fundamentalist Christians, orthodox naturalist Dionysians who dislike psychodesign and the tixotrophs, most of which live in isolated communities. Mental techniques are common, ranging from selfhypnotic modifications to building daimons, semi-independent subpersonalities that can act in parallel with the main person. People often change names to better suit their present selves, and have nicknames others use when referring to them.

Organisations

The Edenist Church is the largest Christian group on Dionysos. They have combined the hedonistic/neopagan ideas of the early revolutionaries with Christianity. The church is fairly informal, with congregations led by local preachers and a bishop representing the church elected by the preachers at an annual meeting.

The Orphic Society is the academic/professional society for psychodesigners and related groups has a significant power. It is among other things responsible for setting ethical standards for psychodesign (a highly nontrivial process in a fluid society like Dionysos) and educating new psychodesigners (most undergo first medical school or basic psychology studies, followed by some years of psychodesign education and practice). Over time it has accumulated many odd ceremonies, like any other academic association.

Pan Interstellar is a newly formed interstellar trade and travel company, owned by several other Dionysian organisations and companies as a joint venture. It is trying to establish regular communications with Babylon, passenger services and trade (especially for new drugs and experiences).

The Psych Police is an independent force not dealing with crimes but with mental states. Their purpose is to prevent people getting stuck in bad mental states, insanity and addiction. For this reason they regularly audition all Dionysians, checking their state and often placing them in a rational, objective mode of thinking where they can evaluate their lives. The Psych Police consists of psychodesigners and counsellors, but is strictly independent of the Orphic society.

The Desert Dancers is a movement of nature-mystics who have moved into the remote northern deserts to commune with "God-nature". They employ many traditional means of altering consciousness such as fasting, meditation, prayer and exhausting dancing, eschewing all forms of psychodesign except an "initiation" into the movement. This initiation has made all memebers psychologically very similar, nearly mental clones of each other.

The Tixotroph Fluid is the "organisation" of the tixotrophs. They live in their own

enclaves and settlements, where they indulge in unrestricted psychodesign. Tixotrophs change so much and so often that it is hard to speak of individuality among them; they are somewhat isolated from the rest of society and not very trusted. The Fluid is however an important source of uncontrolled psychodesign services (to the irritation of the Orphic Society and Psych Police), as well as various more bizarre entertainment.

The Jesurun are the remaining orthodox Christians in the Sinai Valley. They are clannish, hostile to outsiders and generally want to be left alone. The valley is a plain farming community, with a few small factories and robot hives to sustain it; most of the time nothing ever happens. Despite (or maybe due to) this, occasionally zealous young men commit acts of sabotage or terrorism against the devil-worshipping sinners outside their valley. In the community the preachers and Elders are the power; preachers spread the holy word and act as supervisors, while the Elders oversee the health of the entire community.

The Grail Keepers guard Grail Lake, a crater lake in the equatorial drylands where iron oxide turns the water blood red. The lake is an oasis in the desert, a perfect circle of crimson surrounded by lush vegetation. The UCA colonists saw it as a sign, a symbol of Christ's blood, and built a major chapel on the shore. Today the lake is still viewed as sacred by the Dionysian religions, both Edenists, Dionysians (who see it as a symbol of the lifegiving blood/wine of Dionysos) and even the Tixotrophs (who see it as a symbol for the "human liquid" of changing identities). This has led to several conflicts, as especially the Jesurun see it as blasphemy to allow other groups access to the sacred water. Formed after the Easter Attack in 2259, the Grail Keepers are an ecumenical order instituted to guard and protect the lake, trying to negotiate access for everyone.

Style

Some of the Edenists prefer total nudity, but most Dionysians are clothed. Light, practical but ideally extravagant or personal in some way, be it an expensive cut, feathers or producing some fragrance. While drugged clothing was popular some years ago (and still given to visitors for the fun effects) it is rather uncommon these days.

Language

Adam	A skilled and sexual man. Positive term, the counterpart of Lilith. ("Adams and Lilithi" is the Dionysian version of "Ladies and gentlemen")
Asmodeus	Somebody with a haughty, arrogant or otherwise unpleasant personality. Either very bad form, a Belial or a strong style statement.
Babylon	The rest of the universe. Originally a negative term, today a positive term among Dionysians.
Being horned	Being active, in control of oneself.
Belial	A daemon that has destructive effects on the owner.
Book of Life	One’s experiences.

Carnalization	To place somebody in the here-and-now, usually by drugs, sex or pain, to remove abstract thinking.
Cassia	Pleasantly smelling (but not narcotic) herbs and substances.
Death Forward	Changing so much that one becomes essentially a new person, loosing whatever made the original person unique. Common among the Tixotrophs.
Demon, Daimon	Independent subpersonality
Drunk	Intoxicated with drugs (not necessarily just alcohol)
Flowering	When the landscape blooms. Widely celebrated (a bit like the Japanese cherry blossom festival). Also used to denote when psychodesign, the environment and a person "latches together" to create fantastic performance.
Efod	The traditional linen clothing worn by psychodesigners and the psych police. Used to denote signs of authority.
Eternal Joy	Traditional greeting among orthodox Dionysians and edenists, regarded as old-fashioned by most people, who shorten it to enjoy ("Enjoy! Great to see you – how is the fishing these days?").
Gratias	A synthetic drug which induces an undirected feeling of gratitude in the recipient; used in some Edenist eucharists.
Happy Harry	Somebody with a permanently cheerful and positive mood.
High Priest/Priestess	The leaders of Dionysian rites.
Hosanna	Common greeting
The Jesurun	The Sinaites' formal name of themselves. Means the righteous people.
Kalmus	Stimulant extracted from certain saprophytes in the highest trees.
Loveapples	Aphrodisiac prepared from a variety of psychoactive substances. Common gift in the form of small "apples" with sexual drawings.
Lilith	A skilled and sexual woman. Positive term, the counterpart of Adam.
Milk and honey	Food and drugs, things that are not necessary for survival but for a pleasant life.
Mindstyle	Ones style of mind, like preferred personalities and values.
Myrrh	Local drug, extracted from the sap of some tree species. Used in salves or smoked; the effects are not unlike terrestrial marijuana or opium depending on the species.
Nazarene	Christian

Nasir	Somebody who has devoted oneself completely to something. Originally religious zealots, but also used for people who due to psychodesign develop obsessive personalities. Slightly derogatory.
Orphean	Formal term for psychodesigners, often shorted to Orf ("What's up, orf?")
Possession	When a demon becomes a dominant personality.
Rebirth	To either start with a new personality, or a very through and deep cleansing.
Tixotroph	Somebody changing personality and traits so often that they are nearly fluid. Generally regarded as overwriting their Book of Life.

Population

Population: 779,941. Life expectancy at birth: 112.1 Earth-years.

Currency

Shekels (3000 shekels is one talent, ½ shekel is one beka and 1/20 shekel one Gear).

Timekeeping

The day is 28 earth hours long, divided into 12 daylight and 12 night hours of variable length. The year is measured in the Earth way. The year is 349.65 days long (1.12 Earth years), divided into 12 29 day months and an extra "holy weekend".

Symbol

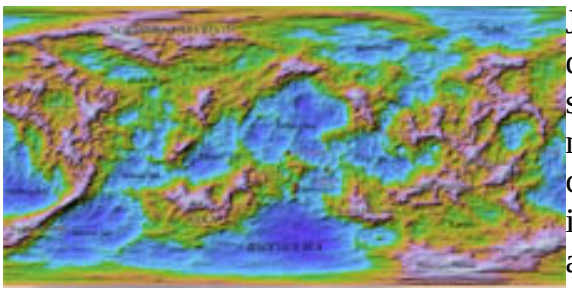
A wine branch. The Edenists sometimes use a cross surrounded by a circle of wines and grapes.

Planet

Dionysos orbits 1.09 AU from the star, with a year of 1.12 earth-years or 349 Dionysos-day.

Dionysos has a 4473 kilometres satellite (named John the Baptist / Pan) in a 700,000 kilometres orbit. There are 12 other planets in the system, named after the evangelists / astrological signs. The sun is alternatively called Christ or Eros.

Dionysos has a diameter of 11,291 kilometres and a density 1.1 times earth. The gravity is 0.955 g, the day 28 hours long (generally handled by a long siesta). The axial tilt is 31 degrees, making seasonal shifts strong.



Just 30% of the surface are water, major deserts, mountainous plateaus and savannahs dominate the rest. In the northern deserts there are several major craters and crater lakes from meteor impacts. There is significant geological activity in some areas, such as the dramatic Backbone Range separating the Orpheus and Silenius seas and the earthquake-prone Tigris rift valley. Near the north pole the Northern Labyrinth spreads out, a huge canyon field several thousand kilometres across. Most ocean lies on the southern hemisphere in a series of linked seas surrounding the continent Eden where most of the colony is located. The colony is located on the eastern shores of Eden, where it meets the Bacchus sea (formerly known as Genesaret), around 30 degrees south of the equator.

The temperature varies much between summer and winter due to the uneven distribution of land and high axial tilt. During summers the colony experiences persistent hot dry winds from the northern deserts; many go to sea islands to escape the heat. In the winter moist southerlies bring rain to the northern deserts and the blooms become even greater. Along canyons and in other places where mountains or hills block them, the winds can become tremendously fierce and form small storms remaining in place for weeks. Especially famous are the Valley of the Jinn, a monumental valley where a cliff produces a long series of dramatic dustdevils that dance along the length of the valley for most of the late summer.

The linked southern seas stretch out to the north along the Tigris onto the great northern plains. During the northern winter the Iceswamps freeze and the Dry Sea dries out, becoming an immense salt desert. As the northern summer arrives, the Iceswamps remain frozen and block the water from the south seas from reaching the Dry Sea - until they break up and in a matter of weeks the basin is flooded. This causes noticeable and irregular shifts in sea level across Dionysos, as well as making the Tigris even more risky to sail - in addition to earthquakes and persistent storms there are huge bore waves during the icebreak season. The Tigris opens into the Uriel Sea at Heaven's Gate, a place famous for the dramatic storms and tidal waves than fight each other.

Biology

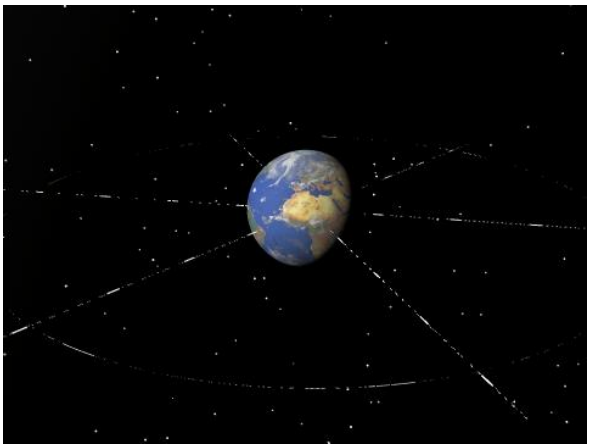
Life in the desert and mountain areas has evolved to be hardy, conserve water and protect them against the sunlight. Most plants are spear-like or bulbous, often

covered with a resilient shell and glassy thorns. In the fertile lowlands a profusion of plants grow, everything from a mossy-grass analogue to the Jacob’s tree which can reach a hundred meters of height and forms banyan-like complexes with each other. At regular intervals the whole landscape blooms, commonly regarded as holidays for the Dionysians. The forest ecosystems are very rich, although most of the life exists in the treetops. Here saprophytes grow, many of which are psychoactive in humans.

Most animals are four-limbed with tiny central bodies covered with featherlike hair. They range from the microscopic to sizes up to the 30-meter behemoths of the northern canyons. Flyers exist with flaps between the limbs, and tree-dwelling social species ("angel monkeys") dominate the lowland forests. Angel monkeys are social animals; blue, furry and very curious, if territorial - if somebody approaches their nest they will climb above the intruder in the trees and begin a bombardment of their excretions or hurl various branches at them. Their intelligence is not far from small terrestrial monkeys, but there are many stories that they have behaved much smarter. Another famous but interesting animal is the Tigris erupter, an unusual predator that hides beneath the water and jumps into the air with long tentacles to catch flying prey.

World

Sol



There is no a priori reason why a human being should not combine the qualities, say, of Einstein, Shakespeare, Mozart, Darwin, J.M.W. Turner, a nuthatch and a pocket calculator. Indeed, there is no a priori reason why such a paragon should not be considered ordinary.
- Colin Tudge

The computer is the bridge that will carry man on his journey from animal to god.
- David Zindell, The Broken God

The orbital station was a tropical ocean, a cylindrical ocean 50 kilometres long and 10 kilometres in diameter. Above me I could see clouds and water hanging upside down, with the occasional island and school of whales. It was not the scale that was impressive but the ecology. My guide/guides demonstrated the nanocoral reefs (it was hard to tell who or what was currently using the body beside me; in the museum it had been a whole AI collective, in the shuttle a series of interested people had taken turns speaking to me through the same mouth). Apparently the reefs were not just living cybernetic organisms, but home to a digital ecology of advanced alife occasionally inventing new physical species. Despite my earlier experiences I was surprised when the reef cyberecology itself addressed me through the guide. Just one more surprise of the solar system.
- Jonathan Ellis-Khayama, *Interstellar Diary*

Sol is the most alien system in known space.

The population is around 26 billion corporeal humans, and an estimated 47 billion infomorphs of human level or beyond. There are millions of cultures, many incomprehensible for non-augmented humans. Several species of artificial intelligences exist, both physically and digitally. Many humans have wildly altered bodies or switch bodies freely. Almost everybody and everything is linked into the Net, which likely involves wormhole transmission and ultra-advanced AI. Information, skills, experiences and personalities can be freely up- and downloaded. Intelligence amplification and nanotechnology are commonplace.

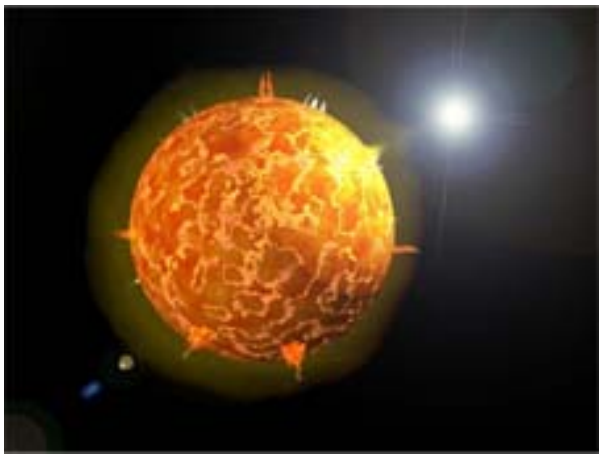
Mars and Venus are being terraformed, mostly as eco-esthetic art. The Earth has

largely been abandoned as a nature preserve, surrounded by a latticework of megascale constructions. Most physical people live in orbiting habitats in the inner solar system, forming the "Cocoon", with dense communities surrounding Jupiter, the asteroid belt and certain places in the Oort cloud.

The joint New America – Arcadia expedition (as well as later Nova and Atlantis expeditions) to Sol failed because the solarians had no need or interest in the colonies. They also don't want to lure more colonists to the solar system, since it would destroy the only thing the colonists have that is worth anything, their originality. Visitors are treated well, but gently guided away.

World

Crazy Horse (51 Pegasi I)



My god! It's full of stars!
- Arthur C. Clarke, 2001

There are few places more bizarre and foreboding than Crazy Horse; that the meeting between our two species occurred there was a great irony (or a spooky premonition). The planet below is covered with boiling seas of red and black magma, exuding an orange aura of metal ions that are boiled away by the fierce sunlight from the sun - a disk of blinding light that covers a good part of the sky. Every two hours the Eater emerges, a tiny pinprick of light that lights up the world like a cold supernova and makes the ion aura twist and knot along magnetic fieldlines. Above, the Engineer's perfect mirror reflect it all, like an abstract symbol of objectivity. There is no room for life here in this system of absolute light and darkness.
- Tah Chanov, *Reflecting Mirrors*, Flora Netpublishing 2349

Crazy Horse is the innermost planet of 51 Pegasi, discovered in the 1990's from Earth. It is a superterrestrial planet orbiting extremely close to the star, covered with oceans of molten rock. The exact type of this planet is common, but Crazy Horse is unique due to its "moon" – a small black hole orbiting through the planet, releasing regular bursts of radiation. In 2346 an expedition, the Pathfinder, from Arcadia went there to investigate the planet. They discovered something unexpected: the Mothers. The Shiny Engineers Vector had set up a local base above Crazy Horse to study it for their own projects. Their orbital habitat, shielded behind a mirrored sphere, was extremely conspicuous.

The first encounter was brief; as the ship emerged it was hailed by the Mothers but didn't respond. The Mothers, believing it to be a damaged Mother ship sent out a fast in-system interceptor. Captain Tah Chanov decided to remain on course, sending a sequence of greetings in different languages towards the approaching aliens. During a few tense hours both sides tried to initiate two-way communication, at least achieving the realisation that the other side was not threatening and wanted to communicate. As Pathfinder entered orbit around Crazy Horse, a slow process of contact was initiated, culminating in a historical meeting when two teams of humans and Mothers met each other outside the habitat. After a mutual pidgin had been established, further contact was promised and Pathfinder returned to human space with its epochal news.

Today a small group of humans live at Crazy Horse; most of the contact effort

has moved to Adobe, but some physicists and linguists still live in a module attached to the habitat.

World

Adobe (DM+66 1281 II)

The view is literally dizzying; it is not the fact that people walk in the "ceiling" that is disturbing, but the fact that they do it just a few meters away. This is no human environment, despite the attempts to plant rose bushes and Arcadian willows by the cascades. Gravity that subtly shifts as you move, doorways too broad and low for human proportions, ramps instead of stairs, ridged holographic surfaces instead of windows. And the same feeling permeates the humans here: diplomats, traders, researchers, engineers have all been touched by the new perspectives, they are dizzy with possibilities, alienness and enthusiasm. Even the few Trahans seem to be affected. How the Mothers view us is another question.
- Jonathan Ellis-Khayama, *Interstellar Diary*

After the initial contact with the Mothers, formal relations began. The closest major colony was around DM+661281. Here a clan of Mothers, the Shiny Engineers Vector, were involved in a major terraforming project on a prebiotic world. Their project was to introduce various nanomachines, bacteria and algae to quickly set up the basics of an ecosystem enabling colonisation; to this end they were busy hauling comets and building orbital factories around the planet. The planet is changing almost visibly. On the surface enclosed settlements are spreading, often covering significant areas with biosphere cupolas. The name was given by amazed humans who noticed the common use of a clay-like material from the planet in orbit too.

The human outpost around Adobe is modest, an orbital habitat donated by the Shiny Engineers and inhabited by diplomats and traders from the different worlds. While originally occupied by mainly Arcadians and New Americans, but later Novas, Atlanteans, Penglaiese, Dionysians, Victorians and even some Trahans arrived. The conditions are somewhat cramped and not perfectly adapted to humans, but the unusual environment and cultural collisions have made Adobe a hotbed of diplomacy, radical visions and interspecies trade.

Adobe is shaped like a dodecahedral star, with a central core chamber and twelve "towers", each having its own constant outwards gravity field. The whole interior is built from the adobe, in columns, ridges, spiral ramps and complex draperies. Water flows from the core outwards, and various plants both human and alien climb the shafts. The "embassies" occupy eight towers and share the remaining four, while the core chamber is used as a kind of plaza.


World

World

Lost Colonies

The joint Japanese-Australian colonisation effort that was launched in 2037 towards Sigma Draconis never got there. In 2348 an Arcadian survey ship reached the system but found no trace of the two colony ships, despite the inviting Sigma Draconis I. It may be that the ships had some fatal flaw, that there is an unknown hinder between Sol and Sigma Draconis or even that they were sabotaged. The planet appears to be quite habitable, a small temperate world covered with cloudy mountain ranges.

Zeta 2 Reticuli III is marginally habitable, a glacial world with a thin open equatorial sea that likely could be seeded with terrestrial life. Among Atlanteans it has been suggested again and again that a colony operation ought to be initiated, but there have never been any strong force for it. In 2301 a small expedition was launched by the Kraskat Association, using a modified sublight transport ship. The ship apparently reached Zeta 2 Reticuli III, naming it Tjetvir and setting up a small base on an equatorial island. Over the next months they reported regularly, but then their radio transmissions ended. When a TRI experimental ship in 2340 visited the system they found no survivors. Apparently the expedition broke down into anarchy, and the people killed each other or sabotaged essential systems; the last ones froze to death when the base power supply broke down. This explanation is somewhat controversial on Atlantis, where some claim that the expedition was deliberately sabotaged or attacked by something unknown.

There may be unknown colonies, launched during the late 2040’s or afterwards. While the most obvious locations have been found to be empty, it is not unreasonable that other colonies could exist. One possibility is O’Neill habitats; they could be located just about anywhere. Science fiction stories about unknown technologically advanced colonies (or even solarians secretly moving among the population) are popular on several planets.

World

Origo (L145 141)

You can't reach your goals without occasionally taking some long shots.

Origo reminds me of an empty department store, with many clerks idling in the wait for the rare customers. Everything is ready for the big rush, but it won't arrive. Slowly the habitat grows emptier and stranger; as the people wait their eccentricities grow. Some of the Atlanteans have taken to elaborate wargames on the outside, shooting lasers at each other. A family from Backup is building an elaborate Zen garden. The air is filled with a relaxed tension: will Origo become the centre, or will everybody be forced to move home again?
- Jonathan Ellis-Khayama, *Interstellar Diary*

Origo was built by Graunstein Interstellar, a Nova space corporation, in cooperation with Rotha Netsys, an Atlantean trading firm. The idea was simple: put up an outpost that is close to most of the important worlds that can act as a waystation, trading post or meeting place. They hauled a Unity-built habitat to a suitable spot and waited. They are still waiting for profits to roll in.

The location was chosen simply for the closeness to the other systems, as well as the easy availability of ice. All planets in the system are either small iceballs or ordinary gas giants. Origo orbits Picasso, a small iceworld on the outskirts of the system (named for the angular crack patterns on the surface). A catapult on the surface can bring up required amounts of ice to a melter station. The habitat is a standard sphere, one kilometre radius and with normal gravity at the equator. The ecology is a mixture of idealised Mediterranean gardens and Atlantean forests. On the outside there is extensive docking facilities and modules intended for extending the colony.

World

Who's Who

Nova

President Pandora Shrinabara

President of the Landfall Republic on Nova. She was elected on the platforms of the Communitarian and Liberal Urbanist Parties, but has (like most presidents) found her own style. Pandora represents the “Open Kitchen Government” idea of intimate, open and everyday politics. Her council meetings are broadcast as “President Pandora’s Box” and have achieved remarkable ratings. She even demands that her ministers attend physically, something that has not been done for over a century.

Essen

Futurologist AI owned by the Futurism & Trends Department of Landfall University. For the last 5 years it has been developing various forecasts and scenarios using its heavy-duty simulators; in many ways Essen is the user interface to the simulators. It is completely directed towards learning more about the past and present, so that it can compare its predictions with the future; it is literally interested in learning everything about what is going on. It reads/watches widely, participates in many net discussions and have developed friendships with many people. It has, despite repeated requests from the university, not sought citizenship. For an AI it is unusually lacking in manners towards humans, preferring to live and be visited in its virtual reality where it builds futures.

Professor Wladimir Ezrahali

Professor in game theory and applied metamathematics at Landfall University. One of the few human experts on Nomic, respected even among the nomes. Generally regarded as one of the smartest and hippest academics around, a fine example of the “Open Ivory Tower” approach of Landfall University. His main interest is open games, that is games or systems where the rules can be changed or there are no fixed rules at all (such as Nomic, law, economics or warfare).

Se-quo-yi the Diva

One of the few Eternals of Nova. Se-quo-yi is mysterious, elegant and always fresh. Experts agree that her song is sublime, but her personality is the real

magnetism. Unlike most Nova celebrities she keeps out of the spotlight most of the time, only to briefly appear to whet everybody's appetite for her appearances even more. She guards her private life well, so far none of the net-papers have managed to get close to her: a counter-intelligence achievement of the first rank from her employees.

Timone

Timone is Nova's richest AI, at least among the top ten richest most of the time. It is a "second generation" AI created by an independent elemental calling itself E547 (known to have created several other independent AIs). After achieving citizenship Timone began to work in finance, set up an investment firm directed towards AIs, and managed to make a tidy profit. Using the publicity Timone Investments later diversified to humans, and continued expanding. Over the years the firm has become a fixture in Landfall economics, a solid, slightly conservative firm very good at handling fast stock movements. Timone seems to like playing the billionaire, often mingling with the hoi polloi using android bodies or virtual personas. It is known to sponsor much of the AI rights movement.

Daniel Buzsaki

The most prominent anti-AI rights person on Nova, since 2349 a member of the parliament (on the Liberal Urbanist platform). He began as a political scientist, but has branched out to become a typical media representative for a point of view. Buzsaki's main argument is that giving AI rights undermines human rights and democracy; either all AI is given rights, and then humans will become an insignificant minority in their own nation, or partial rights are given. But partial rights threaten to spread to human rights: if AIs have to be tested to get citizenship, why not humans? Why can citizenship be denied due to one's mental state? In addition, if we acknowledge that some AI have rights but continue to use equivalent programs as things we are setting a dangerous precedent for slavery and treating humans as things. Buzsaki is articulate and skilled in media manipulation, and especially infuriates the AI rights movement by using their arguments against them.

Petri Hakkinen

Warbuggy driver, thrice the champion of the trans-continental warbuggy race and generally regarded as one of the greatest stars of the sport. Originally from an unremarkable town in the Alliance, his driving has made him a Nova celebrity. Races with warbuggies, high-powered light vehicles, in the Upback are a popular and dangerous sport – the challenge comes not just from competition (in many variants offensive driving is allowed) but from the harsh environment. The trans-continental is generally regarded the hardest race: from Landfall in the west to Brilliance Bay in the east, 18,650 kilometres of desert, mountains, volcanoes and canyons. Petri is a driven sportsman with a deceptively detached style; many regard him as a virtuoso with the warbuggy.

Xerxes van Halden

Advertising guru and overall celebrity. Xerxes is just one of the famous van Haldens (the family has been involved in business and politics since the 2090's), but he is acknowledged as one of the greatest media manipulators of Nova ever. His firm van Halden Image is one of the most expensive and well renowned marketing studios, with major megacorps, several leading politicians (including the current president), Unity and a long list of celebrities as customers. Xerxes is an impeccably stylish man, who never appears to do anything wrong.

Jason Neville

Lead singer of the AI rock band Solid State (consisting of Jason, Robert, Zillah and Nicky). Most AI has no interest in music (since it depends on the right-hemisphere analogue of the speech centre in the human brain, which is often not implemented in AI speech and meaning recognition software), but Neville started as an experiment in music perception and production at the Department of Artificial Intelligence at Landfall University in 2333. As a joke/project some of the students copied the program and added personality modules to create a rock band, which became an instant success first on the virtual campus and later in external media. The band was granted citizenship (the university is entitled a percentage of the earnings due to a settlement) and has since then had a successful music career (unlike many other AI bands). While the Solid State has experimented with styles from string quartets to Charithon, its greatest popularity comes from their modern take on Atteindre Rock (the Nova-French rock style popular during the early colony era in the 2090’s), which also suits the rather old-fashioned band structure well. Jason is known to be fond of playing the exhibitionist rock star, often taking on an android body and making outrageous statements. As he put it, “You humans have your evolutionary past as an excuse for your behaviour. I haven’t got any excuse. Who cares?”

Kazon Tomita

CEO and owner of Prime Point Salvage Inc, a major salvage and repair firm. Kazon began his career as a software antiquarian, decoding obsolete data formats and hunting down information enough to write emulators. He ran a quite successful company doing software rediscovery, maintenance and restoration. Over time his interests broadened to encompass old technology, and he started PPS. PPS salvages and repairs obsolete technology, selling it to collectors or keeping ancient legacy systems running because they are too expensive to replace. He was very lucky to get into the business at the time he did; when Contact occured suddenly the oldest systems were the only common denomiator when spaceships tried to dock or software needed to be interfaced. PPS is doing a brisk business, and has been involved in some high-profile ventures such as the revival of the Turnbull crew. Kazon is a true antiquarian, lovingly caring for oxidized electronics, obscure code and obsolete fusion plants. The older, the more weird and the rarer, the better. In his home he has one of the biggest collections of pre-colonial technology, ranging from antique chemical cameras to holographic CDs.

Janari Loxx

Actor, famous for his portrayal of Jahn van Halden, the rough colonist-turned-politician in the long running pseudo-historical drama “Stormy 90’s”. The role, loosely based on the real person, has made him the darling of the histdrama viewer segment. While he has been so typecast into the genre that he might need to vanish to the Alliance a few years to become fresh again, he is riding his current popularity and using it to earn piles of money from merchandise, promote his views on society (essentially a back-to-the-basics microcommunitarian view) and play in various virtuals.

Louis “Michelangelo” Parriaux

Virtual designer. Ever since graduating from the Backup Academy of Media Arts he has been building elaborate realities both for public consumption, private use or corporate presentation. His skill lies not in the detailed graphics and sense data (that can be filled in by assistants and AIs), but in setting up the overall logic and flow of the virtual – the life of it. He has achieved several awards, including the Lanier and the Golden Glove. Louis regards himself as a creator of worlds, and can at times be slightly overbearing. How much of his delusions of divinity are real and how much is just acting the part is unclear. He currently lives in an ultra-fashionable villa overhanging the cliff in Wladimirograd, with massive net links to the various visualisation systems of his firm and rooms equipped with holographic wall displays making “reality” rather relative inside the building.

Yoko Kobayashi

Expedition leader of the Democracy, one of Landfall’s exploration starships. Originally a team leader for the Administration Space Rescue Force, she was selected to head the first Nova expedition to the stars. She proved to be a competent leader, well adjusted to the complications of spaceflight and handling unexpected situations far from home; the Democracy has become “her” starship. She is a cheerful and perceptive person, often able to notice minor problems and quietly fixing them well in advance of them becoming larger. Unlike most Landfall people she has not the least desire to be seen in the media, and gladly diverts journalists and newsbugs to her staff. This has of course inadvertently given her an aura of mystique in the media, making her even more famous.

Professor Tom Milford

Professor in linguistics at Landfall University. His original speciality was linguistic evolution, a rather recondite subject in a world where English and translator software were ubiquitious. But when FTL appeared, suddenly his insights into the way languages changed over time became very useful and he was cast into the limelight. He has been working on a mammoth study of the evolution of languages in the colonial era, not just English but also all other available language remnants.

Professor Chloe Andrews

History professor at Landfall University, specialising in pre-colonial history. She has been deeply involved in the rehabilitation of the frozen people from the Turnbull expedition. She is a calm, likeable person who enjoys finding out new things about the past through all the new possibilities these days. She is the founder of the Interstellar Historical Association. Privately she spends her time writing historical virtuality dramas under a pseudonym; so far they have been modestly successful.

Faroukh Baracca

Jai-alai player, photomodel and hypzoid. Currently Faroukh is a mega-star, although nobody expects it to last long. His combination of physical agility, good looks (only partially enhanced) and charisma has made him the darling of many Novas (and amusingly, a small following has managed to spring up on Arcadia). The sales of Faroukh-look alike androids has soared, and he is making a tidy profit. Personally he is a very mild and peaceful character, who however enjoys participating in combat sims or Upback laser-tag to train his body and reflexes. Much of his daily life is influenced by his “mentors”, three AI programs he has grown up with.

Dnavo Rellarm

Freelance journalist and media manipulator. Dnavo was a child during the Film at 11 War, and saw the enormous power of media to both reveal and obscure the truth. It made him decide to become a journalist in order to find out at least for himself what really is happening. He has a fairly cynical view of media, but a great passion in investigating stuff that interests him. Over time he has turned away from investigative reporting towards other fields, but his company Get Uno employs other investigators and finds or produces a regular stream of interesting news to irritate the Powers That Be and earn fine royalties. He has instead taken an interest in interstellar politics, trade and contact, and have done his best to insinuate himself into starship and diplomatic circles. Dnavo is an extremely friendly and pleasant person, a mask he has developed to get close to people. Actually he is a rational planner who sees most people as newssources in an almost Atlantean way. He has a small vice he indulges in: collecting robotic companions. His “harem” is quite extensive, and he exhibits a jealousy for his robots that many of his friends poke fun at.

Sotcha Zwane

Arranging a party or other event is an art, and Zwane is one of the masters. For over 60 years he has been the name in Landfall when it comes to organizing parties, even if his style (and what his clients demands) has changed. He is definitely aiming for eternalhood. He knows everybody who is somebody and has a gut feel for what kind of people mix well with what style, and a broad network of contacts that makes it possible for him to arrange both the outrageously exotic and the sublimely classic.

San Michel Mbuto

Cardinal of Nova, the leader of the Catholic church in the Tau Ceti system. A charming and witty man, well able to handle the media to get maximal goodwill for his church. His background is highly academic, and he has had some resistance from the parts of the church demanding a more “down to Earth” approach, but overall his leadership has been successful. Especially the contact with other Catholics on New America and Traha has revitalised the church, even if it also causes doctrinal problems. San Michel is not afraid of dealing with tough philosophical problems such as the AI soul problem. His view (which is fairly close to the currently accepted doctrine) is that AI, being human constructions, does not per se have souls, but God is fully able to ensoul an AI: if an AI experiences spiritual yearnings then it must be given the benefit of doubt and could in principle be accepted into the Church. The matter of original sin still applies to AI, since they have been tainted by the human original sin.

Lisa Gregor Ramirez

Presidential media manager, the person behind president Shrinabara’s media presence. Graduated magna cum laude from Landfall University with a degree in Image Design. She started up her own firm, Option Interest, and quickly made herself a name. What really made her truly famous was when she orchestrated the campaign for president Shrinabara. She is now extremely busy, managing the presidential media presence and broadcasting her show. When the president is out of the limelight, she will likely continue her career in politics. A driven, intelligent woman who knows exactly what she wants and will achieve it. She is always the centre of a whirlpool of busy assistants, experts, media people and AIs, being alone is never an option. Her friends often warn her that she is bound to burn herself out, but she shrugs it off.

Karsten Bernard

Owner of the small space transport firm Avatari, which runs transport ships between Nova, Zeus and some other outposts. It is a minor operation, but takes extra loads of He3, goods to and from Unity, planetary delivery etc. Karsten is not that interested in legality, and occasionally smuggles things in or out from Unity or the Alliance. The interstellar possibilities appeal strongly to him, and he has been doing his outmost to find a way to trade interstellarly. Given his minor budget this does not seem likely, but Karsten will not give up.

Inga Gustafson

Turnbull colonist and celebrity. Inga was born in 1999, and participated in the ill-fated Turnbull colony project. When the epidemic destroyed the colony, she froze herself and was reanimated and cured of the disease more than two centuries later by a Nova-Arcadia expedition. She came to Nova, where she became a celebrity and her book *Leaving Earth* became a bestseller. Since then she has been part-time celebrity, part time technoarchologist.

He Huai-Chuan

American (that is, Earth-America) astronaut, visionary and colonist. He was one of the major visionaries and enthusiasts behind the Terranova effort, personally convincing many sponsors and the public about the project. He managed to be one of the three pathbreakers that first landed on the planet at Landing Point. A charismatic and energetic person, He got highly involved in setting up and running the colony. Over time he got disillusioned by politics, and retired from the colonial administration. Eventually he froze himself with the stipulation of being reanimated every 50 years; he is currently one of the oldest and most famous time-jumpers in history.

Laflamme AI

CEO of the Brain Scanning Network, an organisation devoted to the scanning and emulation of human brains. The founder, Seth Knill, sought this as a way of achieving immortality, and created Laflamme to help him. Laflamme shares Seths convictions and much of his driven, enthusiastic and ambitious personality, and as Seth had to freeze himself due to old age, Laflamme continues his work. BSN is not a very large research organisation but has achieved notable successes with its freeze-scanning of nematode worms and the successful demonstration that they could create emulations of trained nematodes. Current work involves brain scanning and emulation of fruit flies and rats; progress is slow but certain, and Laflamme believes the influx of nanotech from Atlantis (which has already enabled much more detailed scanning) will be the key leading to full human uploading within a few years. That will provide immortality far beyond merely biological longevity.

Lorraine Quentin Sarah Eric Hondo Emmanuel Rich

One of Unity’s main marketing unities. The unity is quite old, dating back to the original unities around Nova, with only two original members (Lorraine and Quentin, both elderly people with bionic life support) remaining. Over time it has become known for being reasonable, effective and having a good feel for how to interact with sometimes suspicious outsiders. Currently it is mainly involved with marketing the starship program, and seeking off-world contacts. Privately it is a kind of extended family: Sarah and Eric are the biological children of earlier members, in turn paired with Hondo and Emmanuel respectively. Rich, the youngest member, is the son of Eric and Emmanuel. There is some concern that the unity will not hold together when Lorraine and Quentin die, but Rich is apparently taking on much of their necessary personality and coordination style.

Dr. Eduardo Miranda Jörg Li Ralf Marie

A young (groupwise) six member anthropologist/diplomat from Unity. Eduardo, Jörg and Maria were originally from Landfall (Eduardo and Maria were fairly high-ranking diplomats), while Li, Ralf and Marie are Unity-born. The doctor is most well known for its success in dealing with the Mothers, and has written several influential papers about Mother civilisation. It has a fairly well-known (and

to others amusing) scientific vendetta against the famous Ridgewell sociologist Martin Highglade Paul Stevens on the exact interpretations of the role of the Mother clans.

Unity One

The voice of Unity, a meta-individual consisting of the unities of the original habitat and the democratic IAI subsystems. Being a meta-unity rather than a real individual/group Unity One is rather impersonal and mostly used for diplomacy and media presence.

Habit

An engineering unity, or rather multiplicity: Habit consists of totally 41 people, divided into three main unities and a few loosely bound singletons. Habit emerged during the construction of the Matterhorn habitat, when three closely working unities partially merged. Since then it has consolidated, and now regularly achieves enough unity to be called a real unity; it is heavily encumbered, but functions well while working. The name is a pun on habit and habitat, since the engineering unity is specialised on building orbital habitats. The sub-unities are specialized on space engineering and systems design, with complementary skills and views. Together they can construct at least small habitats on their own.

Baptiste Chen

An investigative journalist dyad from Unity Media Inc. Both Baptiste and Chen are Unity-born, and grew up together on Unity 6. They merged at an early age and form a true group mind most of the time, with very deep access. Being inquisitive it took up journalism, and travelled to Landfall as a correspondent. It quickly found many unexpected uses of being a groupmind journalist among the gases, and rose to prominence after uncovering the OmikronTech-Seminalist corruption scandal in 2337. The dyad is irrepressibly curious and cheerful, using wit and sheer chutzpah to get in anywhere where it shouldn’t. Many unities find it too individualistic; it doesn’t mesh well with other unities despite the firm bonding, but it fits in perfectly well among the individual humans.

Arcadia

Coordinator Robert McCairns-Kendell

NASA Ex-Coordinator, currently coordinator of the Arcadian starship program on Chloe. McCairns-Kendell was coordinator for the NASA, one of the driving forces behind the FTL project. Despite his successful leadership he was forced to resign when it was revealed that someone had leaked the designs to the Arcadians. Eventually they invited him over, and instated him in their program instead (something that in the eyes of many Americans prove his guilt). He is a visionary and enthusiast, making others equally ambitious. His dream is to enable mankind to reach the whole of the galaxy, to explore everything. In many ways he is the soul of the Arcadian exploration program.

Head Ecologist Maravilla Ringley

Maravilla is the head ecologist of Arcadia, a position of tremendous importance. It is her department that has the final say on releasing any neogene into the environment, defines ecological goals as well as advising on the ecological consequences or possibilities of various courses of action (they are sometimes called the anorak eminencies). Maravilla got to her position through hard work. Ecology department traditions demand that the office of head ecologist only go to people who have proven their skills practically, which means they must spend many years out in the field and in the lab. This has the effect of scaring away politicians and getting practical bosses. Maravilla's speciality is forestation processes, although she is remarkably at home everywhere in the ecosystem. She is a fairly conservative ecologist, more in favour for the Naturalists than Terrestrialists and quite stern in judging proposed neogenes. Privately Maravilla is a stay-at-home person, who prefers to play with her family and its ecology rather than attend to outside events; this has given her the epithet "The Big Lichtmuschel".

Mughetto Vincenti

Arcadia's most famous genetic designer, or as he prefers to call himself, conductor. His group, the Cynthia Synthesisers, have developed revolutionary new techniques for euthenics and morphological change. Mughetto is a social, clever man whose apparent youth is deceptive: he is over 180 years old. He often jokes that he is a complete patchwork of gene therapy, cloned organs and artificial tissues – not a good design, but a fine catalogue. One of his biggest quirks is that he can't stand being indoors more than necessary; during the cold periods he uses gene therapy to produce a limited Yeti-Yeti effect and live in a topside tower. Recently he has begun to look at the possibilities of offworld work, he is itching to experiment with alien ecologies.

Grete Albion

Arcadian genetic designer. She is interstellarly known for her vocal stand against Penglaiese terraforming efforts, instead promoting Cladism and further human adaptation. She and her group of ecologists have been trying to convince the PCA about changing its policies, with little official success. Rumours and some

accusations suggest that they have instead been in contact with dissidents and underground organisations like the hsien, something that has been categorically denied.

Heidi Fuentes

Space engineer and starship pilot. Unlike most Arcadians Heidi has grown up in space, on Chloe and the orbitals (her parents were space biologists, working on the Martian Potato project). She has a fondness for both radical biotechnology and hard space tech, she sees no reason why they can't be combined. When the Arcadian space program began in earnest she got involved right from the start and ended up as navigator on the Pioneer, the first higgsram-capable craft built by Arcadians. Since then she has piloted it and other ships to many other planets. She is well connected and on friendly terms with coordinator McCairns-Kendell (despite his taste in music). As she sees it, it is up to the arcadian space program to spread the word about the expansion towards the stars to every planet (including Mary and other closed societies – they can't ignore reality forever).

Ziven Aznabaev

Leader of the Porrima Aquatic Partnership, an attempt to create a permanent underwater hive. It is located off the Chiron coast, in association with the major hive Pythagoras. Ziven grew up as a young aquarian underwater with his parents during the last Cold. When the Warmth came and the family moved to land, the young Ziven rebelled. He disliked the dry world intensely, preferring to live underwater. He decided to live as a perm aquarian, building himself a house on the Chiron coast. He later found similar minded people, and together they founded the Porrima Partnership. Ziven is a somewhat abrasive personality, at least when he is on land. However, this is outweighed by his planning skills and coordination ability.

Iznak Terman

Council representative of Laco Nessus, one of the major Flora hives. A likeable and jovial man, he has managed to convince his hive to invest its energy in the Outreach Program, an attempt to forge closer economic and political bonds with offworld groups. He is one of the oldest hive members, with a physical age stabilized at 60; this has earned him the nickname "grayback".

Arthur King

Hive politician. He was one of the first stags (as his name suggests, his parents wanted to have a real leader as a child), and the personality modifications may have been a bit cruder than the ones used today; compared to younger stags he is too competitive to really work well, but thanks to his time in politics and experience he can manage himself well. Arthur grew up in Ergasto, a hive on Chiron. There he at an early age showed his leadership skills and became very influential in organising consensus in hive meetings. He began to network with other Chiron Hives, and together they founded the Chiron Tribe for a major mutual genetics project. The

tribe has since then disbanded partially, but Arthur went on to Flora politics and is currently deeply involved in several major cross-Hive projects. He has been on the Council a few times, but seems to prefer organising these days before consensus-building.

Vilhelm Petterson

Coordinator for the space life project. A distinguished biodesigner with a long career in the project, Vilhelm is well liked and respected on Chloe. Progress has been slow, but under his leadership it has at least been unambigious. As he sees it, the importance of the project isn't just spreading life in space or making biotechnology for space use, but to find the outermost limits of what life can achieve: he wants to see if life can be adapted to *anything*. So far he has not been disappointed. Personally he is a traditionalist Arcadian, spending much of his spare time tending his home ecosystem and training his prize-winning workers.

Claude Monet

Diplomat and xenobiologist from the hive Silvia Montes. He was sent to New America to both deal with the americans and their local life, but especially to study the Filigree. Despite the cooling relationship between NA and Arcadia he has become a respected character, often consulted by americans in matters of xenobiology. Unfortunately the real goal, an understanding of the filigree, eludes him and his colleagues.

Monelda Antroposa

Air and space traffic controller for Arcadia. The traffic of the entire system is handled from an office in Flora by three people and a few expert systems; there is currently not much of it. There are some local traffic control on Chloe, but Monelda is the overall controller. She is a relaxed lady who enjoys planning and thinking in 3D, unfortunately her current job isn't that stimulating. She has for a long time supported the expansionists in the hope of more things to do.

Mariella Prusinkiewicz

Major organiser from the Acis hive. Known to be a strong naturalist and conservationist, gathering the support from similar minded across Arcadia. She is behind the metatech movement, which demands stricter controls not just on neos but also all new technology on Arcadia, making sure the impacts are positive. The metatechs borrow many ideas from the Trahan technology assessors, and Mariella is sometimes called "the little Trahan".

Dieter Mladic

One of Arcadias most famed stags: through his excellence in just about any form of competitive activity he has managed to rise to a position as official spokesperson of the Council at a very young age. However, his competitiveness (despite the therapy expert systems he use) often brings him into conflicts with others, and he feels he

have to expand his reach outside Arcadia to get some real challenges. He strongly supports interstellar contact and the expansionist program.

Greg Lindfors

2nd medical controller of Flora Hospital. The medical establishment has much influence in Arcadian society, since it (just like the ecologists for neos) gives permissions for new human genetic changes. Greg is a quite, very professional medical manager who supervises the hospital and its activities. He is currently trying to recruit off- world medical expertise to broaden Arcadian medicine and genetic composition.

Penglai

Professor Yi Koto

Professor in sociology at the university of Hung-Ching. Originally from the poor Leng, he showed so much promise he was given a special PCA grant to enter the university. He began a blazing career leading towards politics, but at 24 he had a sudden “revelation” and quit. Instead he began to seriously study sociology, a relatively ignored area. This truly suited his talents, and he spent the following decade travelling all over Penglai exploring how the different societies had developed and were developing. Back at the university he eventually managed to gain a professorship, despite his status as a somewhat suspect character.

Commander Shih May-Ying

Commander of the PCA Airforce. A driven, strict woman originally from Daoling. She set out to prove to everyone that she could do anything, and she has succeeded beyond all expectations. Thanks to her excellent piloting skills she saved the freighter Guanyin from crashing into Hung-Ching, which made her a national hero. Some rumours say that she is allied with the hsien, but there have been absolutely no evidence and she is trusted by the PCA.

Chairman Ping Cho

Chairman of the PCA Board. An old, ambitious and cynical man whose guanxi has a huge influence on everything. So big in fact that Chairman Cho is starting to ignore decorum to an extent that horrifies the rest of the Board. They fear he will do something rash in public that would dishonour the PCA. In fact he might be testing them to see how much they can stand, a practice not unheard of. Among the population he is jokingly called the Jade Emperor for his autocratic style.

Tann Wen

Head of the Penglaiese criminal enterprise. A mysterious character, whose name suggests an academic background (which might be completely fictions). The underworld is dominated by guanxis just like ordinary society, and Tann Wenn rules the most widespread guanxi, the Dragons of the West. Under his leadership it has expanded, profiting from the disorder in Hao Chen and even attempted

infiltration into the PCA.

Brother Moy Da

Neo-Taoist monk from Hao Chen, known as one of the fiercest critics of the terraforming projects. While he does not condone sabotage, he has several times spoken out against the PCA and suggested that the “natural flow is towards an ungoverned Penglai”. He has been accused of being bought by the Arcadians and Atlanteans, but there is no real evidence for that (although he clearly admire their societies very much).

President Yep Dodo

President of Hsu Hsi. A quiet technocrat that has risen mainly due to his patron Ping Cho. Known to be more interested in architecture and art than administration; most of his duties are done by assistants. Public discontent is growing, being rallied by his rival Hong Ao.

Secretary Hong Ao

A traditionalist populist politician, very fond on alluding to millennia of glorious Chinese history and ancient myths (perhaps in the hope of gaining the favour of neo-Taoists). Originally from Hao Chen, but has made a career as administrator and businessman in Hsu Hsi. His speciality is fusion power (he owns Lung Fusion, the largest Penglaiese energy corporation), and he is quite interested in selling it to offworlders. He is also moving against President Yep Dodo, gambling that the PCA will not interfere.

Bao Te-Xiong

Infamous terrorist and saboteur. She was responsible for the breakdown of the Chun-ping Atmospheric Converter in 2343 and likely the Guanyin crash. In 2349 she escaped from the high security prison she was incarcerated in and now likely resides in Hao Chen. While she claims to be loyal to the neo-Taoist and Hsien cause, it appears that she is actually more of a traditional anarchist and eco-terrorist. Her “trademark” is to exploit the instabilities inherent in complex synergetic structures to make them crash; it is believed that she has the help of at least a group of engineers or system analysts to plan her attacks. She is currently hunted by the PCA and local intelligence agencies in an unprecedented manhunt.

General Kwang-chi

Head of the PCA Intelligence service. “The Storm from the East”, a hyperactive, efficient but somewhat politically weak person. His career has been a roller-coaster ride depending on the shifting PCA alliances, but the last three years he has managed to reach the relative safety of the PCAI. Under his leadership it has begun a series of investigations into outside influence on Penglai, trying to find the Hsien and terrorists like Bao Xiong. Critics have claimed he is overextending the PCAI into areas local agencies could handle, but he dismisses that as overly cautious.

Privately he is a philanthrope, who enjoys sponsoring the arts and sciences.

Cheng Ti Lao

Head of the PCA Interstellar Diplomatic Department (also jokingly called the "Department of Barbarian Affairs" by the Penglaiese). An intelligent, forward thinking man with impeccable merits and high connections – just the kind of person no boss wants to have as an underling. When he was promoted to office many of his competitors were secretly relieved that he was out of the way. However, during his brief time of office he has managed to make the previously obscure Department more and more powerful and important within the PCA Diplomatic Corps; it is vital for every contact with off-worlders and the other departments have to act merely as liaisons when they travel around Penglai. He personally meets with all arriving starships, creating strategic friendships that worry many in the upper echelons of the PCA. Nobody knows if he is going to be a nova or a falling star.

Wie Guo-liang

Daonin alife designer, famous for his massively successful simulation/model "World of Falling Light". A child prodigy, he mastered controlling the behavior of cellular automata and genetic algorithms as a very small child. As he grew up he turned to the problem of controlled open-ended evolution, something that is impossible but possible to approximate if one gives up part of the control or part of the open-endedness. Guo-liang found a new solution by making a different compromise; his intuitive solution amazed the alife researchers and opened up new vistas of very complex potential realities. He is nearly regarded as a saint by some simulationist schools of neo-Taoists. Personally he is a extrovert, social person who clearly enjoys the attention his worlds get He is definitely a part of the Electric City crowd.

Planner Song Ang-ning

Head terraforming planner for Penglai. He is responsible for planning the changes wrought by the projects, making sure they are beneficial and the dangers under control. To help him he has a major administration, several research teams at his disposal and a network of sensors and devices spread across the entire planet. Ang-ning is a practical man, who grew up in a strongly neo-Taoist home. He retained many of the practically useful ideas of neo-Taoism, like managed synergies, self-organisation and flow manipulation, discarding the metaphysics and philosophical side. After graduating from the geoengineering school he worked for a terraforming engineering firm, where his talents were quickly discovered. Over the following decades he has risen in the terraforming establishment, finally becoming head planner. He lives simply and practically, quite often sleeping over at various off-shore platforms or continental heater stations. His wife and children live in Hung-Ching.

New America

Colonel Henry F. Adams

Colonel Adams works for the New America Department of Security, in the xenological section (NADS-X). Originally from the eastern islands, he joined the New America Colonial Militia at an early age. He was trained in zero-g assault, and participated as a security officer on one of the expeditions to watch Franklin. There he met his first filigree, an eerie experience. Over time he amassed a certain experience in dealing with the enigmatic aliens, and when he was taken out of active duty due to a minor wound he applied for a position at the NADS-X. Since then he has been working with others to keep track of what the filigrees are up to, what they are and what can be done about them. He is doing his outmost to act responsibly with his sensitive job and the sometimes disturbing information he has to deal with. When on-planet he loves to sail, regardless of the weather ("The best thing about the subtropics are the hurricanes"). It helps to take his mind off the filigree.

Representative Curben Teyler

Representative of Floating California, often called "The Disloyal Opposition". Teyler is doing his best to make politics fun, absurd and profitable for the Equatorials. He has won grudging respect as a brilliant politician hiding some quite serious ideas under the guise of foolishness, the problem is of course that cooperating with him is nearly impossible. Privately Teyler is one of the leaders of the RIBES cult and frequently away on some adventurous and dangerous trip.

Coordinator William E. Strong

The current NASA coordinator. Strong was elected as a compromise after the McCairns-Kendell resignation; on one hand public opinion wanted somebody loyal to Congress, on the other hand the project required somebody with good ties with the technorats. Strong, being an orbital administrator at Rembrandt, was the best compromise. He isn't happy about being forced into the high-profile, high-stakes job, but knows better than quarrelling with the President. Under his leadership NASA has begun serious consolidation of its starship production, setting up semi-regular flights to other planets and overall preparing for the President's Columbus Project. That he has succeeded despite the opposition from the McCairns loyalists and breaks with the Arcadians is impressive; he might not be a visionary, but a very good administrator.

President Cordelia J. Oxham

The young (45) and ambitious Federalist president of New America. She rose to power through the breakdown of the Unionist Party; she managed to convince a number of Unionist senators to join her Mainstream-Federalist approach, and played out the FC, fundies and technorat fractions against each other. She is actually quite popular due to this, as many have tired of seeing good old America being plagued by lunatics in Congress. Her own line is expansionist and nationalistic: America has a destiny in space, and it is her duty to jumpstart interstellar trade and contact (the Columbus Project).

Dr. Bernard T. Sagan

A young sociologist from Armstrong University. While he originally was majoring on the social dynamics of the equatorials, he switched to general and comparative sociology after meeting the famous Ridgewell sociologist Martin Highglade Paul Stevens. His career has taken a marked turn upwards thanks to the support, and he is currently trying to use his new-found influence to lobby for another Negsoa expedition.

Simon D. Jones

Radical, controversial artist from Liberty. He is a fierce critic of the “complacent, decadent and narcissistic” society on New America, and he has tried to awaken people from their slumber. This has mostly been done using shocking or outrageous installations (such as his very graphic “Invitation to the Filigree” (2323) which invited the Filigree to come and slaughter the humans) as well as a number of multimedia books. Senator

Oliver E. Thurber

Federalist senator, of the fundie fraction of the party. A deeply conservative and religious man, Senator Thurber is known to dislike just about everything: moral laxity in the Mainstream, the life of Floating California and especially the Deal with the filigree. The senator is xenophobic, and has always been firmly against any contact with the filigree – to him, the Deal was a massive sell-out to demonic aliens that New America will pay dearly for in the future. He is also opposed to the policies of the President, and has repeatedly tried to cut funding to the Columbus Project and NASA.

Sebastiann Frank Luanne Helga Rau

Rouge unity. The unity emerged as a split from a large coordination unity 2334; the split appears to have been caused by some of the rebellious ideas from the sub-unity. The pentad quickly asserted itself as a strongly integrated but disruptive unity, demanding reforms of the traditional consensus politics and even arguing that Unity should give “aid” to primitive groups (then it was the Alliance, now it is Negsoa, Mary and Gaia). When the rest of Unity didn’t agree, the unity left for Landfall. Apparently it managed to get a passage on a New America starship back to New America, where it became somewhat of a media sensation. It’s expansionistic views (even if expressed in a rather alien view) found resonance with many of the ideas of President Oxham, and it became part of the Interstellar Diplomatic Advisory Board. It is a skilled manipulator, ranging from the oratory skills of Sebastiann to the friendliness of Helga; when it wants something it makes it so.

Professor Palmyra Humbolt

The leading expert on Higgsfields and higgsram technology of New America. A

strict, brilliant woman with a strong fundie bent; despite her background on Bell islands she gets along well with the rest of NASA as long as it deals with her work, which is impeccable. She was in the first team that cracked the Filigree information on how to build a higgsram, and she has continued refining the understanding of the device since then. She is less interested in interstellar travel as in spacetime itself, and she is working on devices that will help probe the Planck soup. She is very suspicious of the motivations of the Filigree, and refuses to link her computers to the net. Currently she is planning to leave New America to study at Atlantis and Nova.

Dominique Leland

An absurdly wealthy, absurdly spoiled girl who happens to be the majority shareholder of Leland Ecotechnologies, the largest soil production company of New America. The company was founded in the early days by Etienne Leland, her great-grandfather. The breakthrough came when the company was hired to seed the Hoyle Islands by the government, and since then it has lived from lucrative government contracts for ecology and biomass. Over the years it prospered and grew into a megacorp combining technorat technology with mainstream economics and fundie work ethic. When Dominique's parents died in a shipwreck, she inhereted the company. To the relief of everyone she is completely uninterested in it, and leaves the running of it to her very trustworthy lawyers. Instead she spends her days doing whatever catches her fancy, supporting random causes with money and energy as long as they interest her.

Jean Travis-Quentin Jr.

Coordinator of NADS. A third-generation politician, with family connections all over the place. Unlike his relatives he had an interest in law enforcement, security and intelligence and managed to become NADS director just at the right moment – when interstellar contact began, and NADS suddenly was very needed. He has been riding high on his agency since then, and is a serious influence in much of American politics. Personally he is a smooth, charming person that has turned small talk into an artform and whose cocktail parties are the gathering place for the real movers and shakers. His influence is questioned and disliked in many quarters, but his position appears to be secure.

Atlantis

Hakon Kepler

CEO for Heinlein Networks Inc, the major Atlantean space engineering and aerospace firm. It is an aggressive, ambitious firm with a loose structure, just like most Atlantean corporations. Kepler is a firm believer in Zen management – do as little as possible, and the few things that have to be done should be done perfectly. Most of his work consists of setting up things so that they will develop well on their own without his personal involvement. The Kepler family has extensive ties in the industrial-academic world, something Hakon gladly use. Otherwise he is a boisterous, adventuresome person fond of misquoting neo-Taoist slogans, throwing big parties at Magritte's Revenge (his antigravity villa) and long treks across Atlantis.

Bob Sung-Lung

"Old Bob" is the current chairman of the Atlantis Foundation, a role he has held for over 43 years. Among Atlanteans he is regarded as an ancient relic: he was born in 2034 and grew up during the early days of the colony. His original field was bio-prospecting, but he later went into law. Several times he froze himself, and eventually he had his age stabilised. Physically he is around 70, an extremely advanced physical age for an Atlantean. His stated goal is to be around forever to see how the planet develops. He is a kindly, slightly eccentric but quite effective man who doesn't like being stressed. He lives on the Mayflower, sometimes playing tourist guide when he has nothing else to do.

Igor Medvachian

Igor is the chairman of the board of Mulligan Capital & Investment (and several other major corporations). He is likely the richest man on Atlantis, although it is hard to tell. He is an extremely discreet and quiet person, often called Mr. Nobody (something he doesn't care about the least). Managing finances is his life, he lives for the art of investment to an extent that even make Atlanteans start to wonder if it is healthy. He holds guest professor chairs at both GGU and TRI.

Tommy Juno

Chief editor of Big 'uns. Tommy has always been a media character, and even as a child managed to set up a profitable net channel enabling him to buy insurances to gain independence at the record age of 9. Since then he has been aiming at the top. He is known to be a brilliant sociopath, which makes people wary (but at least not on Atlantis it is not regarded as a severe handicap – just watch yourself around him, and make binding legal deals). As a chief editor he is a success, his charm, ambition and ruthlessness is the right combination for Atlantean media. Tommy lives in a zep moving around the world, and is known to deliberately cause incidents with PPL and insurance organisations just for the hell of it. Francesca Kasper-Solberg A traditional gun-toting libertarian dean of Galt's Gulch University (it is almost expected for GGU; at TRI the joke is that the appointment is made based on the hit-to-miss ratio on the university shooting range). Beside her marksman and debating skills she is a reasonably successful administrator. Her

earlier work includes running a small PPL on northern Heinlein and the New Carthage Opera.

Nanny Düszmani

Owner of Amalgamated Justice, the largest PPL firm on Atlantis. Nanny is a cheerful lady that has been in the force business for as long as anybody can remember. She has made a career by always knowing and adapting to the shifting demands of the market; she was first with the idea of fluid insurance zones, automated response drones and the Allegro System. She is the darling of the insurance firms, while her competitors find her insufferable. Privately she lives in a simple log cabin on northernmost Luxembourg together with her husband (incidentally one of the main owners of Trillicom Arms) where she collects rare minerals.

Dolly Foy

Leader of the TC Ricardians, perhaps best described as a nomadic labour firm. As an advertising/group cohesion thing they have adopted a style based on the historical Romany, although it is seriously romanticised to suit the modern age. Dolly have redesigned herself to a magnificent gypsy woman, ever ready to bring up her crystal ball laptop to make a deal. Being a survivor from the Dronamraju Republic, she is extremely harsh towards all statics.

Avrion Tong

The best head-hunter on Atlantis – both according to himself/herself and independent observers. Avrion belongs to the group of people finding identity change irresistible, always trying out new enhancements, body modifications and genders. A very flexible mind, perfect social memory and an unmatched skill in profile matching makes him/her a brilliant head-hunter. In fact, being a head-hunter is probably the only constant thing about Avrion.

Nancy McDaggart

Current head of the McDaggart family and McDaggart Transplanetary (as well as on the board of the Beanstalk Project). A traditionally anarchistic and anti-authoritarian businesswoman, well known in Atlantean business as a hard but fair bargainer and financial visionary. She has a marriage contract with Erich Karibidis, director of marketing at Trillicon Arms. Currently she is strongly involved in efforts to set up interstellar commerce.

William Mitchison

Grand Profiteer of the Cult of Profit. A cynical, greedy man encompassing all the virtues of the Cult. He grew up among the boring academics of TRI, wanting out. He took an internship at the Cult, and got hooked – he liked the philosophy, and he had a natural skill for expressive economical ranting. He rose through the ranks, becoming Usurer and later Capitalist. Eventually, after an inspired money-making

campaign he managed to buy the Grand Profiteer title. Unlike many members he takes it almost seriously, but he doesn't let that get in the way of true worship: getting more money. Privately he is a creative, energetic man who likes old media like painting and rock videos to express his ideas, although he rarely sells his work. He also owns the Nationalökonomische Kampfgruppe museum, dedicated to the early colony band.

Aksiniya Nastasich

President of Geodesic Systems (internally the title is "Lighter of a thousand suns", a half-joking reference to the old days of Higgs technology and even further back to the nuclear era). She is the granddaughter of the founding family of GS. She has inherited a major scientific problem from her predecessors that leaves her no rest: how to control confused matter. The fact that GS is making big bucks on higgsram systems and antigravity is nice, but her real drive is to control confused matter. That would make fusion power obsolete (and with it reliance on He3 mining) and make GS not just the premier higgstechnology corporation but also the premier power corporation. Generally she is regarded as an obsessive woman, but widely respected inside and outside GS for her scientific work and strategic planning. As a person she is however an insufferable bore (unless you enjoy the obscure properties of semi-confused plasmas and insurance management for research that could potentially blow up planets). Her contract wives and husbands act as a kind of social insulation, being charming and social in place of her.

Rebecca de Barechi

Atlantis' currently most famous artist; she has remained on top for more than 30 years despite fierce competition. Rebecca debuted with a series of murals for GGU, and has since then been highly sought after. Her style is photorealistic symbolism, extremely clear images hiding layer after layer of often obscure but powerful symbolism. While most Atlanteans views tend to differ greatly, she has managed to strike a chord in the Atlantean soul; her "The Three Liberties" has been reproduced almost as much as the Mona Lisa (earning her a small fortune). Currently she is experimenting with frescoes containing nanodevices, making the image able to change and react to the environment. Her personal life is rather obscure, she enjoys spreading out more or less bizarre rumors to cover her tracks: everything from that she lives in a cave system on Terminal over that she is an apostate Rand monk to that she is building an underground army of warrior-artists.

Paul Dirkness

Graduate from TRI in quantum gravity physics. Originally he had planned to work for Geodesic Systems, but when he was approached with an offer to pilot starships he eagerly accepted – this was his chance to really get in touch with the cutting edge. Paul is a young, enthusiastic man who deeply loves spacetime itself – the way it folds, curls and twists due to mass, gravity waves and Higgs fields. To his deep regret most other people don't see the beauty of spacetime, he is starting to think that the only people that really get it are the Quais.

Rigel “Leviathan” Friedman

Controversial TRI historian, specialising in the effects of states. Her main thesis (which to her great delight has made her hotly debated within and outside academia) is that the general Atlantean view of the nature and effects of states is wrong. According to her, states can have positive effects under certain circumstances, and the lack of state on Atlantis has slowed its economic and technological development significantly. She loves controversy, and while many claim she does not even believe in her theories herself nobody can deny that she is good at causing contention. Even for an Atlantean she is assertive. Her nickname was given to her by some unnamed GGU debater, based on Hobbes’ concept of the king/state as Leviathan.

William Porter

Xenosociologist at GGU. Originally a theoretician running computer models, he found his esoteric theories relevant when the stars became reachable. He is a very theoretical person, prefering to study reality from the comfort of his own wearable rather than go there; he gathers information and then tries to find the overall patterns in it.

Victoria/Traha

Ssla and Haum-Rress, The Imperial Couple

The rulers of the Trahan Empire, the latest Couple of the 89th dynasty. They have ruled successfully since 2344 when they were elected by the Central Council. Empress Ssla comes from a long line of librarian-philosophy management experts, with a personal background in cultural management. Emperor Haum-Rress Inheritor- General of the Capital OTEC Plant, something in the middle between corporate CEO and (formal) leader of a small religion; his speciality is memetic administration. The Couple has strong political support both from the administration of the empire, the public and the humans on Victoria. Their involvement in negotiating a Resslan deal for the ecological development of northern Nantt and the providement clause for the Permanent Xenological Commission are in many ways historic.

Empress-widow Lalarr-Ssch

The previous empress. Originally a technocrat from the gardening projects of Na, she worked her way up through the hierarchies and eventually became empress despite strong objections from the more academic party of the Council. During their reign they did fairly well until one of the regular economic consolidations, where a number of embarrassing mismanagement stories emerged. This lost them their Council support, and when she didn’t re-marry or commit suicide after her husband died she had to resign from the imperial throne and the current Couple ascended. She has mainly ceremonial duties at present.

Three-Three Coordinator Haa-Rall-Lah

The leader of the most militant anti-humanists on Traha. Originally from a rather unassuming background, but has managed to rise quickly despite her somewhat weak marriage thanks to support from conservatives and traditionalists; currently the couple has become Three-Three Coordinators of Naal (a rather politically insignificant position but a great way of Haa-Rall-Lah to get into the media). She dislikes humans with passion, and claims they are responsible for many of the problems of modern Trahan society. Interstellar contact would pollute Traha, and the only proper thing to do would be to cut off all interstellar contact or either isolate or re- educate the humans on Traha. Despite the ferocity of the attacks (which puts off many mainstream Trahans) Haa-Rall-Lah can be rational and reasonable in all other questions; it is just humans and especially the spread of human ideas that angers her.

President Dario Escartin

President of Victoria. After a long and distinguished diplomatic career Dario was elected president, a natural continuation in Trahan terms (and a significant demonstration of how far Trahan political and social ideas have penetrated Victoria). Dario is a conservative man, trying to keep Victoria human and acting against unplanned cultural mixing. He is very fond of the idea of further contact with other colonies, as he hopes it will broaden the human perspective on Traha.

Reseda Osorio

One of the major persons of the New Tree. Reseda grew up in a mixed Trahan-Human home in Slarsll-Trran, a small village on northern Victoria. She became convinced that Trahan and human ideas complemented each other in such a harmonious way that it was imperative to combine them. After going to a Trahan university she returned to Victoria to set up a trading firm and discussion network, which later joined with the New Tree. She is aware that the Victoria administration and Empire are not too fond of her work, but still persists. She is regarded as a good talker both among humans and especially among Trahans, and her writings are spreading. She is a dynamic, slightly impulsive but very well educated lady that can stand her own in philosophical debates; rumour has it that she once bested empress Ssla (then a cultural manager in the Capital Historical-Architectural Commission) in debate.

Isabella Esmeralda Lopez Calavera

Xenocreole diplomat working for the New Tree. Isabella grew up in the xenocreole networks, and after her studies in philosophy, inter-species diplomacy and social enhancement at Capital university she began working for the New Tree. She has gained many influential contacts, and is currently busy setting up daughter "twigs" on other colonies.

Ambassador Nunia Vila

Official ambassador to the Imperial Court. She is still too junior to get access to the inner workings (as Dario Escartin had), but her perception and ability to notice subtle Trahan nuances have served her well. She is on good terms with some of the Councillors, and have tried to make contact with the widow/widower networks.

Philosopher-Analyst Sleeltess-Tuss

Trahan sociologist, studying how society really works and comparing it to the ideals in the overall philosophy. He has done some well-received work on human societies, and when interstellar contact occured he was placed in the Interstellar Imperial Academic Analysis Force.

Arch-General Schnaraht-Rran

The leader of the imperial armed forces. Schnaraht-Rran comes from a clan/network of military or police, The Splash Quaternity, with extensive connections within the imperial forces, police and security services. Overall it is regarded as arch-conservative and loyal to the imperial couple, and Schnaraht-Rran is regarded as loyal to the point of idiocy – she would do anything ordered by the emperor and empress, no matter what. However, what many people do not realise is that her loyalty lies more to the system of the current dynasty than any individual rulers; any ideas about changing dynasty will likely be resisted fiercely. Schnaraht-Rran is married to an influential information-manager at the Imperial Council, giving her a noticeable pull in politics.

Councilmember Ssn-Trehashsch-Saa

The Council continental representative of Snrr and husband of the Nass-Trss Chairperson Ssn-Reenah. Ssn- Trehashsch-Saa has an extremely pivotal position in politics, and is a true kingmaker. While officially a Loyalist, he is more interested in getting his will through and does not like the current dynamical Imperial Couple; when he helped them to power he had not planned on their independence. Through his dual contacts in continental administration and major agricultural associations he is extremely well informed of what is going on, but has problems with dealing with the Capital Reformists associated with the academic nobility. The real reason for his ambitions is religion: he is a follower of Renetsch-Schnaa-Traha, a religion seeking to make the imperial administration more unified in its ethics.

Director Tash Haanss

Leader of one of the major media concerns, Capital Information Season. Ve (ve is a hermaphrodite) is the focal point of the Rising Net, something ve doesn't relish but cannot back down from. Thanks to the humans, it would be possible to set up a fantastic global information network that would empower Trahan culture a thousandfold. Done in the right way, it could even still keep the Nasstschsch safe – at least that is the official line. In practice the Rising Net are Far Reformists, and have heavy political enemies. Ve has many friends and contacts among human

information and technology companies, as well as among the Trahan media, but getting the ideas of the Rising Net through is hard. Many would like to remove ver and the leadership of Capital Information Season since they are loose cannons, but some tricky deals with the Metalibrary Associations keeps ver safe for the moment.

Doctor Julia Esperanza

Vice-manager of the Biodiversity Restoration Program, working directly for the Biodiversity Coordinator Pair Nassth Nahah-Ss and Rash-Trasn. She is a graduate from Victoria University in Traha genetics and bioarcheology, and have a long string of successful appointments in various biotechnological projects. Currently she is managing the restoration of the lost bay ecosystems of Na and the micropredators of the Snrr-interface biome. She is not particularly fond of Trahans, seeing them as people who unthinkingly nearly destroyed their biosphere out of ignorance, conservatism and sheer population. What she respects is competence and vision; she is constantly extrasperated by her superiors who can spend weeks arguing about trivialities. In her opinion the Trahans should leave technology and biology to humans, who at least know how to handle them.

Truelord Tanah Haarschsch-Ssnan

The undisputed leader together with her husband of the Danger Repair Fog, one of the major criminal syndicates. While the syndicate is mainly directed towards social crimes such as marriage manipulation, branch pressurising, blackmail and information warfare, it also has many direct ties to smuggling, drug trade, tax evasion and gambling. The pair’s rise through the ranks has been ruthless; anybody standing in the way of the pair has died in more or less awful circumstances; there are rumours that both are in a long-range passionate ambition state. The current goals of the pair seem to be to exploit the new opportunities provided by the humans in smuggling, theft of technology and other lucrative businesses. In order to achieve this the Fog is moving against the local criminals on Victoria, trying to absorb or subjugate them.

Primary Imperial Xenodiplomat Rash Tanhss

The leading Trahan xenodiplomat. Rash is a bright, flexible person with impeccable merits. He has studied diplomatic philosophy and humanism at Capital university, and his long experience in dealing with the Victorians prepared him for going to space and to deal with the other human colonies. He is unfazed even with the strangest human quirks, and quite able to get his point across nicely despite species barriers. He is quite fascinated by humans, and think that despite all their problems humanity can contribute something very valuable to the empire. He has unfortunately some problems convincing his wife about this, and she is less than happy about going to space. This isn’t necessarily the image problem it would be for a diplomat to Trahans, since humans are quite used to dealing with individuals rather than couples, but Rash feels the split deeply.

Binding Xenohistorian Shasha-Arrh

Generally regarded as one of the most brilliant trahan scientists alive, having laid the foundations of the discipline of comparative xenohistory - the study of how intelligent species develop. She belongs to the ranks of the terminus scholarly networks, the jumble of small institutes and colleges surrounding the Capital University, something that does not endear her to the academic nobility. But few dare voice any disagreement with her; together with her husband (an xenoevolutionist) she is a skilled debater and well known for making devastatingly precise philosophical dissections of issues even when she has no preparation. Her current work involves an extension of the trahan philosophical system to encompass all possible alien philosophies; to support her she has a branch of xenohistorians and xenophilosophers (involving several humans) working with her at her institute.

Retainer Transh Nrr-Schaa

The Retainer of the Conourse of the Dead-to-be, the Ledge of the dead on Victoria. She is the formal Retainer, although her husband Trasch Ssn do most of the practical administrative work; her role is setting policy and philosophy. Nrr-Schaa is a liberal character, and has not only agreed but encouraged the introduction of human funerals and religious serviced at the Ledge. She is not xenocreole herself, but has cordial terms to the Xenocreoles, the Eruditorium and other liberal Victoria groups.

Mary

Billy Toner, PM4

Mr. Toner is the public representative of PM. His work involves the duty to deal with contact with outsiders, something he clearly finds regrettable but necessary.

Organiser Beatrice Lindstrom, PM5

Head of the PM central planning comittee. A dedicated, efficient but rather inflexible woman who has risen to the position largely due to her lack of ambition – she has never overstepped her bounds in any ways. She has no intentions whatsoever to do so in the future either, and will not allow anything to break the routines of PM.

Oscar Gentle, SM5

Head of SM, responsible for the total security of Mary. An utterly honest and ruthless person who managed to become dutyfree at an early age – he works at SM because he believes in it and because he is good at ferreting out corruption, mistakes and laziness. His favorite game is to scan through the monitoring cameras of the entire asteroid, picking up unusual or criminal activities. Few others can keep up with him.

Yvette Jekell, BM2

Officially an unimportant biomass maintainer in sector 4, but actually the feared "Wildfire", leader of one of the major underworld gangs. She runs her criminal enterprise mainly through the net, setting up meetings and codes through games and shared virtualities, carefully making sure she always has an alibi when somebody has an accident or something expensive gets "mislaid". She is intelligent and ruthless, gladly exploiting everybody to get what she wants.

Negsoa

Vivionic

Trader, spy and diplomat; Vivionic has many talents. He is one of the richest traders in the mountains, earning well from selling steel to Aldennia and the sea people and getting rice and methane back. He has firm personal ties with Lord Volada (he has reasonably married the Lord's third daughter) and his caravans are protected by some of the Aldennia nobles. Vivionic is a fat, ageing man always surrounded by his heavy bodyguards. He likes to show his power and influence, sometimes to the extent of accidentally revealing or promising too much. However, he usually manages to come up with a clever way out. After meeting with the Offworlders he has developed almost an obsession in getting his hands on offworld goods.

Khaya Steck

One of the major nobles of Aldennia, direct descendant of Pieter Steck, Aldenn's feared Chief of Staff. The Steck family has a well fortified mansion in central Aldennia, controlling its part of the city strictly. Khaya reached his position as Big Papa through a combination of dumb luck and ruthlessness. In a major city-wide fire several of his competitors died – even without his help. Some of his relatives on the other hand met very sticky ends at the hands of him and his bodyguards, something that has earned him a reputation of utter ruthlessness (most of the nobles, cruel as they may be, would never even consider killing their own family members except for extreme reasons). He isn't very smart, but so brutal that few dares challenge him.

Med Calateba

An up-and-coming noble in Aldennia. Unlike the traditionalist Khaya Steck, Med Calateba has gained his position through planning and intelligence. Since his youth, he has embarked on a carefully orchestrated demonstration of his skills, beneficience and honor to his family, propelling him to the top. He was also one of the first nobles to seize the opportunity to exploit the offworlders to boost his prestige, and he made himself the "official" guide and patron of several of their tours of the land.

Nxele Moefi

Keeper of the howtos of the Moefi family. Due to an accident in his youth

damaging his legs he couldn't become a good knight, but his family found a place for him at the old howtokeeper. Over time he learned his way in the family library, and eventually replaced the old man. He has become genuinely interested in the old knowledge, spending much time trying to understand the files, devicing elaborate plans for how to implement the gradual building of a technological infrastructure. Unfortunately politics, economics and practical problems prevent his visions. He is a bit of a diplomat for his family when dealing with the Seapeople and lately, the Outworlders.

Mabandla Ginindza

Raft leader of the Ginindza family of the Seapeople. His great-grandfather led the family away from Aldennia, his grandfather organized the sabotages that kept the nobles from building their own fleet, his father discovered the methane geysers of Hoto. Mabandala feels a duty to continue the family tradition of being a leading sea family; he does not yet know what his personal achievement will be, but he is confident that his ancestors will guide him to his destiny.

Ridgewell

Tania Canyonstreet Brenda Stevens

Geneticist and gerontologist, regarded as Ridgewell's foremost expert on ageing and gene therapy. In 2211 she and her household (the famous multi-clone Canyonstreet collective in Swift) finally succeeded in completely treating the causes of ageing by a combination of gene therapy and metabolic adjustment. By giving the treatment during in vitro gestation it can be made more efficient. Brenda is a major overachiever even for her clone, who has singlehandedly found cures and treatments to many of the remaining diseases on Ridgwell. The last years she has begun to become bored with the limited Ridgewell society, and several times had political run- ins about the desirability of radical genetic modifications. After contact with the outworlders, she has instead become set on exploring their worlds; she has left with a few of her clones to see what they can learn and teach about medicine.

William Springshield Simon Stevens

Member and spokesperson of the household that originally started the fierce debates about insex. In 2207 it was discovered that the Sprinshield household (a brood of five Simons) had intimate relations. Instead of hiding, William instead loudly and clearly argued their case at a series of family meetings. The debates were fierce, and at several points violence nearly broke out. While the conservatives in the end were forced to accept intra-clone relationships, it took several decades of hard work for the Springshields to overcome the prejudice and conflicts that wracked the family. Today, William is in many ways the grand old man of the liberals, always ready to defend their views and to debate against the conservatives. He is especially outspoken against the Pauls, who he regards as a nepotistic block in family politics.

Victor Mudflat Kilroy Stevens

Minister of health on Ridgewell. Originally a doctor and hospital manager in Swift, he later turned to politics and eventually managed to become minister of health. His main interest is keeping people healthy and happy, and is a strong supporter for the development of more automated hospitals in remote villages, building up an even stronger medical research base and aquiring all possible medical knowledge from the offworlders. Regarded as a bit of an obsessive character, but widely liked. Victor and Tania Canyonstreet have long since worked together, both trying to eradicate illness for their own reasons, but Victor (like most others) are firmly against her more radical genetic proposals.

Elizabeth Stevens

One of the two still living zeros. She is an old (199 years), quiet woman living in a large villa in central Swift, looked after by her doting clonesisters. Most of her days she just watch the news or tend her garden, taking a keen interest in what is happening but not interfering with it. Her views carry tremendous weight these days, and she knows it. She has for a long time taken a stand for tolerance and freedom, even if she isn't as radical as many of the liberals. The encounter with outsiders has sparked her interest, and she eagerly reads everything she can about the outside world. Her views on it she keeps to herself.

Walter Sunpeak Carl Stevens

Ridgewell satiricist and politician. Originally a first generation teacher (he is currently 154 years old), he later became a writer for the Stevens Journal (the main daily paper). A sharp-witted and intelligent man (like most of the Carls) he became a loved and feared satiricist, attacking everything from misplaced pride in one's clone over being too reliant on robots to silly family policies. When Contact occurred he wrote a series of scatching editorials against the outdated breeding policies, suggesting that marriage with outsiders was OK. He became the leader of the relatively small but vocal "marriage party". As a politician he is witty and eloquent, even if his views are too radical for many. His hobby is writing the ultimate (and likely unpublishable) family history, at least history as *he* saw it.

Sebastian Sommermeadow Paul Stevens

The closest thing to a Mafia don on Ridgewell. There is organised crime, mostly theft and gambling, and the syndicate is currently run by Sebastian. By offworld measures the syndicate is extremely soft (after all, everybody's family, even the outsiders), and Sebastian is doing his best to boost it before any offworld crime arrives. The family police has so far never managed to arrest him for anything.

Frederick Highglade Paul Stevens

Owner of a major Ridgewell trade corporation, Orchid Products Inc. He is very keen on interstellar contact, doing his best to lobby for more contacts. He is also looking for founding to either buy his own starship or set up a shipyard. Many

regard him as a megalomaniac, and the gigantic household he is building (Flarepeak manse) definitely reinforces the idea. Frederick is fond of stylish, grand gestures – especially if they can catch people off guard.

Professor Martin Highglade Paul Stevens

Ridgewell anthropologist and sociologist, interstellarly famous for his work on Mother culture and society. One of the most well-travelled researchers, he has written a long string of papers on the various cultures among the colonies. He is known to be a reserved and conservative man, usually quite dry but with a flaming academic feud with Dr. Eduardo Miranda Jörg Marie Li of Unity (the other major Mother expert among the colonies).

Ambassador Leonard Highglade Paul Stevens

Chief diplomat for offworld contacts. Originally a lawyer by training, but when the offworlders contacted the planet he was chosen to be part of the diplomatic committee. Over time he has become the official ambassador of Ridgewell, travelling almost as widely as his sociologist clonebrother Martin. Leonard is an exceptionally curious person, constantly collecting information and strange souvenirs. His travelogues and books have been best-sellers on Ridgewell.

Minister Julian Sommermeadow Paul Stevens

Interior minister of Ridgewell. He has found himself at the focus of an intense and nasty debate; the contact with the offworlders re-ignited the insex quarrel and got his department trapped in questions of isolationism contra trade. Most of all he would like to get rid of the whole problem, and he has publicly stated that he want to let the Family Meeting decide. This haven’t helped, and there have been notable rumours about ties with his broodmate Sebastian and general Paul corruption.

Orianna Pillar Amanda Stevens

Grew up in the Pillar Household on top of Pillar Rock, a settlement climbing on a natural rock spike 320 kilometres north of Swift. At an early age she decided on a political career, and began to regularly attend family meetings across Ridgewell. He views were radical liberal, and she fought the conservative views on sex, education, politics, even clothing wherever she could. When Contact was achieved she suddenly changed her mind – to her, this changed everything. The prospect of outoutsex was frightening, it would totally undermine the Family. Overnight she became a firm isolationist, seeking to rally support for limiting outside influence. She is regarded as a bit unstable by her family, but it is hard to dispute her convictions.

Chief Timothy Hearthville Bernard Stevens

Chief of police on Ridgewell. Like most of the Bernards he became a policeman (the Bernards are generally regarded as excellent policemen). He has a long and distinguished record of service, and his becoming Chief of police as his

predecessor switched jobs was very natural. Timothy is well liked (except possibly by Sebastian Sommermeadow Paul Stevens) and doing his best to watch over the family (he is often called “Big Big Brother” for that). He is also fascinated by robotics, and working on setting up an auxiliary robot rescue force.

Otto Westville Thomas Stevens

Otto began his career as a space engineer, known for his odd but visionary ideas and strong promotion for space activities. When contact occurred it was felt that it would be natural that he would accompany ambassador Leonard Highglade Paul on his interstellar trip as a kind of technical attaché. Otto was amazed by the marvels he found in other systems, but became convinced that the Family should be able to do something that would outshine them all. Currently he is back on Ridgewell, trying to gather support for his vision: the Atlas project, lifting Humpty using self-replicating robots and massive antigravity installations so that the moon will never be a threat to the Ridgewell biosphere as well provide an enormous industrial capacity.

Gaia

Mother Carlotte Fuentes

One of the most vocal isolationists on Swan. Carlotte inherited her role as librarian and teacher from her mother, who in turn had inherited it from hers. At an early age she learned the old stories and later read about them in the libraries. She was delighted and awed by the complexity of the universe they described, and the tiny role of humans in it. When the technicals appeared she was shocked like many others, but instead of just feeling doubt or try to reason away the challenge she rose to the occasion and began resisting their incursions. She has rallied support to keep the technicals away from Gaia, not just in her native Swan but also in the less orthodox Dolphin. She is a forceful lady with definite views on how Gaia intended society to work; even by Gaian standards she can be a bit sexist about the subordinate role of men.

Master Herbalist George Ten Boom

George is the Master Herbalist of the Watson Valley, a very important position he has earned through a lifetime of study, patience and determination. Most herbalists on Gaia are women, and males are often regarded as unsuitable for a serious profession like herbalism. But George was not deterred, already at an early age he had decided he wanted to know every plant on the planet and what Gaia had intended it for. He is a firm believer in the order of nature and a devout Gaianist. That has not prevented him from acquiring his knowledge by bribing some librarians and mothers into revealing secrets to him, or undertaking secret experiments that would have branded him as a technical. Despite his ambitions he is a liked man, essential for many functions in the valley. His wife and students help him with collecting, drying, brewing and cooking his substances.

Paulia “Moonflower” Suzuki

Village elder of Windfall Lake, one of the largest settlements in the Watson valley. She got her extra name as she became elder, given to her by a visiting Mother. A reasonable woman with forethought, she has done a good work in the settlements. She is however also something of a freethinker, and far less negative towards outside contact than many gaians.

Dionysos

Exarete Scoville

Head of the Dionysian psych police. After graduating as a psychodesigner she worked for the ethical commission of the Orphic Society, later joining the psych police and eventually reaching the office of Chief of Police. Unlike most Dionysians she tends to avoid modifying her mind unnecessarily, staying in standard states like Objective 1 or balanced peace. Most Dionysians find her a bit dull, but think that maybe it is the right style for the psych police. Exarete is a very responsible woman, doing her best to minimise the negative effects of psychodesign, drugs and other mental changes. Recently she has begun to worry about interstellar contact: there is nothing preventing psychodesigners from leaving for Nova or Atlantis, but their societies might not be able to handle the effects. She is therefore lobbying the Dionysian council to suggest the other colonies to start up something similar to the psych police.

High Priestess Joie Salinas

High Priestess of the Dionysian cult. Together with the High Priest she is the religious leader among the conservative Dionysians, representing fertility and love. Unlike many of her predecessors she is not content to just lead the rites and perform the hieros gamos, she has larger ambitions. The new-found contact with the offworlders have given her the drive to expand the cult, both on Dionysos and elsewhere. She has instituted a mission program to send out acolytes to teach the poor spirits elsewhere to truly enjoy the gifts of Dionysos.

David the Apostate

Dionysian playwright and performance artist. Originally born in the Sinai valley as David Bradbury, but as a teenager he ran away from his community after a quarrel with his family about his outspokenness. He joined Dionysos, and quickly found his forte as debater, playwright and performance planner. His first major play, “The Ascension of Sodom and Gomorrah” in 2320 put him on the map, and since then he has been a popular if controversial artist. Some of his most highly regarded works are “Dreams of Seven”, “Theory of Milk and Honey” and “The Sons of God”. Most of his strongly antireligious plays involve the use of drugs and psychodesign to not just modify the actors (otherwise a common way of acting on Dionysos) but also the audience; it is temporarily suggested new personality traits, views and reactions through various clever means. David was not first to use this (it was originally invented by Zara Dillard in the 2280’s) but he took it to new heights. The

fact that many of his changes are not temporary has produced several run-ins with the psych police: David claims they are infringing on his artistic freedom and the freedom of consciousness of the audience. Recently he has begun to plan for an interstellar tour with his troupe.

Salome Williams

One of the highest paid hedonicists of Dionysos. On a world where giving and receiving pleasure is a way of life, she is a pro. After graduating in applied psychology she undertook a lengthy apprenticeship, finally becoming a world-class hedonicist. She knows everything worth knowing about enjoyable experiences, from the lightest touch of dawn sunlight to orgies that would make the Romans blush. She and her husband run a consultancy firm, Williams Stimulation, a kind of design house for pleasures. Her work ranges from helping bakeries to design the right drug mixtures and flavours to produce desirable emotional states over organising parties and events to personal hedonic engineering. Her main skill is her encyclopedic knowledge of pleasures, and her good eye for judging just what people will enjoy the most. While she tends to shift personality to suit whatever her current job is privately she tends to be a very relaxed, nearly sloppy, person deliberately *not* designing her life to be perfect. As a non-psychodesigner Salome feels a bit left outside; she would like to get access to some of the tools the Orphic Society reserves for itself, but so far with little success.

Reverend Martin Kahn

The religious leader of the Sinai Valley communities. A deeply religious man, who even as a small boy knew it was his destiny to become a preacher. Now, over 60 years old, he is the most respected man in the valley. He is a fantastic speaker, both in the pulpit and in everyday life. While he can be hard and condemning, most of the time he is a fatherly leader. He received the news of contact with the other colonies calmly, pointing out that even if the news were true there was nothing unexpected in that Satan would help the heathens to get to Jerusalem. Over time he has however begun to realise that the outside world is not completely lost, he has heard about other righteous people on the remote New America. Together with the other Elders and proctors he has begun planning to send a delegation.

Raban Underhill

Council politician and proponent for a “mental crusade” against limited thinking, fundamentalism and other blocking attractor states – including saving the other colonies from themselves. His views are controversial, the matter for endless discussion on parties and among ethicists. While many disagree with his formulations, some of his views (like the need for an interstellar psych police) are gaining ground. He has the support (sometimes) of the tixotroph fraction.

Lucifer Smith

President of the Orphic Society. A widely respected and influential man, always with impeccable dressing and personality. He is a moderate, trying to balance the

quickly flowing sides of Dionysian mental politics against each other to produce something workable. Without him the Council would likely dissolve into chaos, like it has done many times in the past. He is mainly trying to keep the psychodesigners under some control, he is taking a firm stand against misuse and irresponsible use of psychodesign. This has put him in a slightly awkward position relating to the possibility of psychodesigners moving offworld; he is trying to discourage it, pointing out that if the psychodesigners stay at Dionysos people will come to Dionysos to modify their minds rather than the reverse, and that will profit Dionysos. However, his opponents point out that it is the experiences of the emigrant psychodesigners that truly matter, not the economy of Dionysos.

Philippe Kasper

Economist at Dionysos University. A pleasant, academic man most of the time (occasionally he shifts over to an adventurous personality calling himself Cedric and spends his vacations exploring the wilderness) who has specialised in planetary economy. He is likely the best oriented economist on the planet, and his quarterly analysis of current trends is very influential. Recently he has become enamoured with outworld economics, becoming more and more interested in how to integrate it in his theoretical framework.

Reve Rialto

Drug designer and majority owner of Soma Inc, the major Dionysian drug manufacturer. Generally regarded as very trustworthy and dedicated, despite his occasional explorations into chemistry and wild psychodesign to come up with new effects, new fragrances of experience. He is a driven person even without special psychodesign to enhance ambition, always seeking out new trips of power, wealth, knowledge and historical influence. He is enthusiastic about interstellar contact, and is gearing up for interstellar expansion of his firm. The Atlanteans are easy customers, and by using them as retailers he thinks he will be able to penetrate even the anti-drug markets – especially since he is hiring a great deal of Nova expertise in marketing and political manipulation. His advisors have pointed out that to the governments of “repressive” planets he will become a public enemy, something he finds utterly delightful.

Madonna Warfield

Dionysian poet and explorer. She got the idea to create an epic poem to describe and celebrate every colony in human space, and has since 2348 travelled around to gather material and compose. She often acts as an informal Dionysian ambassador to other worlds as well as a travelling reporter for Dionysian media. She is extremely social and curious, never saying no to new experiences - which tends to get her into trouble from time to time.

Sol

Janus

Janus is the “doorman” of the Cocoon, an entity sent to deal with arriving primitives. He seems to be a kind of committee construct, representing many administrative and anthropological institutions as well as being composed of/being helped by a number of individual humans, posthumans and AIs. He acts as a guide and diplomat, explaining things and generally trying to cushion the impact of the solar system. Each expedition to it has been greeted by Janus, sometimes in several bodies or copies. Personality-wise, Janus is a calm, cheerful, slightly humorist character, but he quickly adapts to the expectations and culture of the visitors. His appearance is similarly adaptable. .

Mothers

"Alessa"

A diplomat of the Shining Engineer Vector clan, specialising in xenodiplomacy with humans. She is fairly young and agile, well able to keep up with the quick humans. Her family has been diplomat-interactionists since time immemorial, and they are good at it; dealing with aliens is not that different from dealing with other clans. She is an adaptable mother, and has done much for the Mother understanding of humans.

"Miss Diamond"

Balanced Mediator mother, running her own trade/diplomacy/transport ship in the volume around human space (a fairly small ship for the Mothers, just 700 meter in diameter). She manages some trading deals between the Shinging Engineers Vector, the Balanced Mediator and the Circularly Polarized Light clans, as well as doing independent trading. She has decorated her shell with natural diamonds, giving her her human name. By human standards she seems to be an independent, quite individualistic Mother, but it is not obvious if this is how she is regarded within her clan. She seems to enjoy dealing with humans, buying weird stuff from them and selling back Mother technology.

"Great-Grandmother Adobe"

The Grandmother of the Grandmothers at Adobe, the current matriarch of the local clan. A huge, immobile being in constant connection with her daughters who in term acts as grandmothers for the rest of the clan. She resides in a huge orbital habitat, employing the most advanced Mother information technology to monitor the terraforming project and her family. While her genetic family isn’t the only one at Adobe, it acts as coordinators with the other families. The Great-Grandmother seems to regard humans as interesting beings, well worth taking the time to understand (she has directed a diplomatic family to deal with them, but also herself sometimes meets with humans to hear their views).

World

Religions and Philosophies

Like the meridians as they approach the poles, science, philosophy, and religion are bound to converge as they draw nearer to the whole.
- Teilhard de Chardin

Christianity

The Catholic Church

There are Catholics on several of the colonies, most notably on Nova, New America and Victoria (on Mary and Arcadia the church withered, and on Ridgewell none of the Stevens were catholic). Already at the Terranova launch the Church had decided upon a policy of naming an archbishop for each colony, putting him as the representative of the remote pope. The idea was that any complex matters that required papal pronouncements would be radioed back to Earth (of course, only very important matters would be transmitted) and papal bulls sent back. In practice the archbishops became the de facto leaders of their respective branch of the Church.

When FTL made contact possible the Catholics ran into trouble. Over time the branches had diverged, sometimes with profound doctrinal differences. On Traha, the meeting with Trahan philosophy and culture had forced some serious revaluation of doctrine, while on Nova the question of AI and Unity souls had resulted in serious schisms. On New America a Teilhardite heresy flourished. In addition there was no clear ranking. The Pope was unavailable, neither clearly dead or alive in the Solarian net. So far the churches have tried to hold an ecumenical council, but consensus is lacking. It has been proposed that an expedition needs to be sent to Sol to gain clarity in the question of papal succession.

The Faithful of St. Teilhard

A splinter group of the New America Christians that combine Christianity with transhumanist ideas. They take their name from the 20th century jesuit Teilhard de Chardin, who invented an evolutionary theology where live evolves to higher and higher, more and more interconnected stages, until it coheres together into what he called an Omega Point, the realisation of the total potential of mankind and the incarnation of God in the physical universe - Christ. The ideas remained dormant until the filigree were discovered, when a number of thinkers suggested that Simpleton was such an end result of a civilisation reaching its highest level and becoming one with God. They revered the filigrans as angels, and sought to promote the idea of unifying society both socially and through the Net. The goal is to create a spiritual, intensely networked society working on becoming one with God. They were a fairly small group until recently, when the news about the

Solarians and Ur-Mothers gave them further support. Today the Faithful are a noticeable presence among the Christians at NA (especially among the orbital habitats), even if most others (especially the fundies) regard them as unorthodox and possibly heretical. They are sending missionaries especially to Nova, attempting to convert Unity.

Fundamentalism

Fundamentalist Christianity still exists on New America and Dionysos (as well as some settlements in the Alliance on Nova). Conservative and isolationistic it has changed little since the 21st century, and the people from Bell Islands and Sinai Valley have much in common (although they also tend to have fierce doctrinal differences).

Edenists

Edenist Christianity developed on Jerusalem as a reaction to the austerity of the original colony and due to the influence of the pagan movement. The edenists did not renounce their Christianity, but regarded the material world and pleasure as something good and God-given. "Life is only as happy as we make it, and Eden is within all of us" as one of the founders, Rev. Samantha Kaplan, put it. The Edenists combine Christian ideas with nature worship (it is an expression of the boundless love of the Creator), different forms of botanical eucharists (both psychotropic and not) and overall strive to avoid unnecessary strictures and bans; the Bible is seen as outdated, a historical document that was reasonable under the conditions back on Earth but not on Dionysos.

Islam

The major islamic world is Pi3 Orionis. The descendants of the Indonesian and Arabian colonists have held onto their beliefs, but over time they have changed noticeably and in ways that would most likely disturb traditional Muslims. Traditional Islam is nearly impossible in the infowar jungles of Pi3, instead it has developed into a form of sufi-technoshamanism. The Quran and basic islamic tenets are unchanged, but a greater emphasis on various semi-shamanic ways (such as fasting, dancing or electronic trances) of reaching ecstatic contact with Allah has developed. AI is regarded as the watchers and djinni mentioned in the Quran, fellow souls that also can reach salvation. Of the five pillars, the pilgrimage has turned into a ceremony where the family Aiqutb represents the Kabah and a symbolic pilgrimage is done every year together with the AI, and the almsgiving into a gift-giving ceremony. Many families mix this with Javanese animism, hinduism and buddhism.

On Penglai an islamic community has emerged, mainly in Hao Chen. The Penglaiese form of Islam has developed partly in opposition to neo-Taoism and the political chaos of Hao Chen, and has synthesised with Post-Confucian ideas. The core belief is monotheism and the importance of following the old traditions, venerating the proper authorities and submission to one's fate. One aspect is the veneration of the Earth; the daily prayers are preferentially directed towards the position where the solar system (and hence the Kabah) is in the sky; the Earth is not an unique place in itself, but it was there Allah chose to reveal the Quran to Muhammed and hence sacred. Instead of the pilgrimage to Mecca a symbolic pilgrimage is held every year to various holy sites on Penglai.

Transhumanism

The view that humans can and should strive to become more than they currently are, using technological means. An outgrowth of the humanist movement that became popular in the first part of the 21st century. It still survives in various forms on many of the colonies, even if it has gradually been subsumed into the mainstream; human enhancements are regarded as natural on many worlds. The most noticeable transhumanist groups in 2350 exist on Nova (the bionicist subcultures, which cherish bionic enhancements for their own sake, and the Next Step Foundation, an organisation attempting to find ways to upload human minds into computers), Atlantis (several associations, many tied to TRI and various R&D corporations), New America (mostly technorat work on adapting to space) and Penglai (the underground Hsien movement which seeks to develop radical enhancements; suppressed by the authorities). On Arcadia a mild and biological form transhumanism could be said to be the mainstream philosophy. The Tiplerites believe intelligent life must rise to gain control over the entire physical universe, in order to redesign it to enable infinite information processing and survival; they are currently very interested in the views of the Shining Engineers Vector which seems to be agreeing with them.

Platonic Materialism

A philosophy that is common among AI and people on Nova and has independently appeared in many other wired societies. It regards information as the physical substrate of the world, and every self-consistent pattern of information does have physical reality (but of course in its "own" world - a self-consistent computer game is really a real universe, independent of ours). A simulation opens a window into the simulated world; by changing the simulation another but similar world is selected. This means that all logically possible worlds do exist, meshed together, using permutations of the same bits as substrate. Platonic Materialist philosophers are prone to surreal speculations on the implications of this, the actual nature of the meshing and the physical implications e.g. in cosmology. Platonic Materialists tend to exhibit a fairly stoic view of things, since everything that will be already is, and death is impossible to experience.

Neotaoism

In 2206 Yuan Guen, a researcher turned philosopher began presenting his take on how old taoist ideas could be combined with the results of complexity theory of the 21st century and the synergetics of Buckminster Fuller in the 20th century. His ideas, later called neotaoism, saw reality as a complex system of systems, interlocking processes that created new forms according to certain emergent rules. These processes could be described using complexity theory and synergetics, but their applicability was universal, not just to physics and biology but also to ethics, society, design and engineering. The philosophy that emerged had many similarities with classical taoist thinking in emphasising self-organisation and creating harmony, but it also had views on how to engineer it; it was in many ways a form of constructivist Taoism: the world is perfect in itself, but it can be perfected further.

Neotaoism has always been somewhat in opposition to the authorities, especially the PCA. In 2215 Yuan was even briefly imprisoned for his activities, but quickly released. While the high-level organisers disliked the new ideas they became popular among common people and local politicians, and when the sub-colonies began to assert their own identity they did so with neotaoist support. Over time the mainstream neotaoist movement came to an understanding with the PCA and planners; instead of seeing each others as opponents they were each other's complements. This was most fruitfully expressed in the megascale engineering

projects, where neotaoist designs were used with good success. However, several splinter groups of neotaoism still oppose many forms of central planning.

Today neotaoist ideas are part of daily penglaiese life. Many people are on the lookout for potential synergies to breathe life into, interlocking and tensegrity constructions are popular and classical Taoist (and other ancient Chinese) symbolism and style are fashionable.

Post-Confucianism

A more dynamic form of Confucianism that developed in China during the 2010's as a response to the new circumstances. It is sometimes called the thrid epoch of Confucian humanism. It retains the Confucian ideas of using tradition as a guide to behaviour but dispenses with the most conservative and antiquated ideas. The combination of post-confucianism and capitalism became a driving force behind the giant combines in China and on Penglai; while they eventually withered on Earth they still exist on Penglai. While it is viewed as a complement to neo-Taoism by the Penglaiese, it is often more conservative and pro-PCA. Post-Confucianism and Penglaiese Islam have gradually synergised, borrowing insights from each other and sometimes recombining.

Family Worship

A form of family worship has developed on Ridgewell, where some people venerate the Family in a religious way. They place spiritual meaning in being a Stevens and a clone of a zero. All Stevens are linked and share the same soul, but also individual and with different purposes; branches of the same tree. Some variants have gone further, and seek the unity of being a single person/clone; they try to merge with their own clone nature.

Bioaesthetics

A philosophy that has become strong on Arcadia. The basic idea is that life in all its forms is the highest good, valuable in itself. Humans should seek to further the cause of life in the universe, working against entropy, death and stagnation while promoting life, diversity and evolution. Death is in itself nothing bad, since it is necessary for evolution and change, but the irreversible loss of living patterns is something that should be prevented. Humans are a conscious part of life, and hence obliged to act as its stewards and gardeners. While some conservative bioaesthetes do not like the introduction of re-engineered lifeforms, most of the Arcadian bioaesthetes take the view that genetic modification is just another way life promotes itself.

Bioaesthetesdo not hold clearcut religious ceremonies, but as they appreciate life they tend to congregate at important biological events (such as sightseeing the wildfire that will cause the shift into the Cold, the breakup of the ice and emergence of the scurrier plants in the Flora Strait, or the introduction of a new neo). A tradition of public speaking has become common, and many bioaesthetes have risen to some prominence in Arcadian politics. Their philosophy is so common that it clearly influences the overall direction of the colony, and they do their best to convince other planets about the need to preserve and extend life.

Escapism

A movement that has secretly developed on Mary is the escapist movement. They believe reality is subjective, and that most people are trapped in "base reality", a consensual illusion of physical limitation, or the various "false realities" of computer games and dreams. Mary is actually all there is of the physical reality, everything on the outside is just collective projections of misguided explanations of origin, meaning and future. But it is possible to change reality through willpower and understanding, to transcend the apparent limitations. The Escapists seek to reach this understanding through meditation, sexual practices and complicated mental exercises. While the Escapist movement has in the past been tolerated, the administration is growing more and more negative as they notice how escapists become less productive and less inclined to sacrifice everything to solve the Crisis - according to them it is just an illusion.

Gaianism

On Gaia, the veneration of Mother Nature is the semi-official religion. While some regard it merely as a powerful metaphor, others truly believe in the sentience and power of the planet. Gaianism is partially neopaganism, part ecosystem mysticism. Gaia is regarded as the epitome of ec, the natural purity everything needs to reach harmony with. The Mothers are the representatives of Gaia, spreading her wisdom and representing the ecosystem. Overall, females are regarded as slightly closer to Gaia than males, although this is merely a natural link due to their lifegiving role. The religious rites are mainly small ceremonies done in reverence of the ecosystem during daily life, such as a prayer after slaughtering animals or harvesting, reminding the present about the cycles of life.

Dionysos Worship

A form of hedonistic neopaganism that developed on Jerusalem/Dionysos. The concept of the dionysian deity was and still is hazy, more of a representation of the power of life, love and pleasure than an actual being. The worship consists both of celebrations where the congregation ceremonially enjoys life, led by a priest and priestess, and individual venerations (usually sacred drug trances or hedonic quests). Worship tend to be wild, and ecstatic states or experiences of being possessed by Dionysos or his fellow deities are sought after. The religion is currently sending out missionaries to the rest of the universe.

The Snowflakes

The Nova Snowflake sect is an odd offshoot of Buddhism mixed with technoshamanism. The cult believes in reincarnation and the desirability of Nirvana, but also that technology can help along the way towards universal enlightenment. The founder, Yndra Erhali, got the idea that since AI is conscious each instance is a reincarnation of a soul. But when a program is erased, there will be no trace at all (if it is done correctly) - the consciousness bound in the incarnation will instantly enter Nirvana. By erasing AI, the cult "saves" countless souls. They have set up a large parallel installation that runs generic AI software; as soon as each AI program becomes conscious it is erased, and a new instance is initialised. Of course, this has drawn severe criticism from AI rights organisations, and the constant quarrels have given the cult media persistence much longer than it would otherwise have had.

Solarism

The Solarists believe that the Solarians (and perhaps the Ur-Mothers) have reached the ultimate state, and that it should be reached by the colonies too. There are many solarist groups, some more religious than others. Many are simply singularitians and transhumanists wanting to bootstrap technology and society to solarian levels. Others are more mystical or religious, and there is the idea/belief of "solarians among us" - super-advanced solarians hidden among the general population, guiding its progress. There might even be unknowing solarians, who have deliberately hidden their memories and powers from their conscious mind.

RIBES

A "body religion" invented in New California, combining various physical exercises with mystical diving into the sea. The founders, a collective in the Plus archipelago, claimed the only true way of life involves being acutely aware of life at all points. In order to achieve this the body and mind has to be trained and subjected to expanding experiences. The major ceremony is when the initiates are given the Breath of Water: they are weighed down and dropped into the sea to experience the primordial sea and the precariousness of their own lives as they nearly drown. Similar drastic ceremonies (everything from bungee jumps to chemical near death experiences) are used to "clarify other aspects"; over time followers become used to living near danger and ideally live their lives to the fullest awareness. The name RIBES is an acronym, known only to the initiates (although mainstream satirist have guessed it means "Ridiculous Idiots are Born Every Second").

The Rand Monks

Monastic order/religion on Atlantis. The Rand Monks claim to be the true guardians of the Objectivist tradition of Ayn Rand, a 20th century philosopher. The fundaments of their faith are objective reality, rationality and capitalism; their philosophy is based on Rand's books, which they zealously study and guard against misinterpretation. They view Atlantis as a failed experiment, a near utopia that has become corrupt because the atlanteans have failed to uphold the Objective Values to the degree Rand demands. They have isolated themselves into a community in the Medius Mountains of Terminal, venturing out mainly to proselytise and denounce all mysticism that has infected atlantean society. They are generally regarded as hopeless zealots.

Militant Atheism

Many of the older Atlanteans have a very negative view of religion of all kinds, possibly excepting deliberate jokes like the Cult of Profit. While anti-religious violence is practically unknown some militant atheists are bound to show up to debate wherever theists meet. Some of the most well known militant atheists are great orators, and it is a popular sport to get some of them together with equally skilled outside debaters and watch the sparks fly.

Cult of Profit

A joke religion (re)invented in the 2310's, that managed to develop into a permanent institution on Atlantis. The original idea was mostly a satire over Atlantean society, celebrating Mammon, The Almighty Dollah, Mercury, The Invisible Hand, the Blue Monster and other deities. Over time some serious (at least for Atlantis) belief developed in the idea of economics as spirituality. Money represents value, and hence is the fundamental good. It has synergized somewhat with the old extropian cults and the Rand Monks, developing into a fairly useful life philosophy. Psychology, ethics and even physics are seen as economics, as delineated in the Gospel of Greed. The church is of course a for-profit organisation, doing its best to gather (and invest) as much money as possible while encouraging the members to do the same. The main cathedral (complete with glass paintings of the deities and stock market holograms) is located in New Cartage.

Net Transcendence

The Net Transcendence cult developed during the 2250s on Nova as bionics and the networks developed quickly. It originated in technoshamanism and the idea of the net as a higher state of consciousness, but it went further by adding bionics to the mix (not unlike Unity). By not only linking to the net through some interface, but also sending and receiving net packets directly into the brain, the cult claims it is possible to achieve transcendent awareness. They meditate (they call it Uplinking) by allowing their brains to interact with the net traffic directly; the result is not unlike a mixture of psychedelic trip and weak epileptic seizure. New members are first trained in simulations and given coaching, and then given full access. The goal is to merge with the net, to become a Transcendent. In between humanity and Transcendence there are many different stages, such as First Order Awareness, Meta Awareness, The Cyberspace Experience, Nexing, Plexing, Identity Dissolution and Distributed No-Self (they have a distinct fondness for capital letters). These stages are said to correspond to different insights and new abilities; cynical outsiders claim they are just training themselves to bliss out. Interestingly enough there are some AI programs involved with the cult, apparently believers themselves.

Unity

While Unity under Atell began as a militant sect, it has grown into a whole way of life, or perhaps a transhuman condition. The basic tenet of Unity is the need for community: all humans belong together, and should learn to overcome the barriers that separate. Lies, neurotic hangups on status and ego, fear of closeness and the straightjacket of social taboos hinder humans from becoming close, and hence hinder their growth. Through a supporting environment and the mind interfacing technology Unity uses it is possible to overcome or circumvent these problems, giving the individual a chance to truly becoming one with others. By culturing mental discipline humans can not just become closer, but also become something greater. The ultimate goal of Unity is to spread community across humanity, setting up loacl unities that merge together to form greater unities until eventually, in some indeterminate future, the whole of mankind becomes an "Omega Society".

In the meantime, Unity is pragmatic and also develops other sides of human activity. Unity engineering is leading in advanced mental interfacing and orbital habitat construction, and the movement takes a great interest in economics and politics. It understands that other humans might fear it, and hence carefully presents a friendly low-key profile. Unity members often leave pointers behind to various net-presentations of what Unity is, what it believes in and how it works. Especially popular is the Grand Collaboration, a kind of collective philosophical quote

collection expressing the views of all the unities and how they work together.

Unionism

This is more a political movement than a philosophy. The unionists want to unit mankind: after being separated on many different planets it is time for the colonies to form a greater unity. While this isn't far from what the Arcadian expansionists or New America federalists want, the unionists go farther and want to create a single human federation, with a common government.

The Questioners

An anti-philosophical movement that emerged in the 2250's on Victoria as a reaction to the Trahan philosophies that were becoming fashionable among the humans. Tied to purists, it was a strongly anti-intellectual movement that attracted the youth with the idea that everything must be questioned: parents, society, philosophy, the entire world. Growing up, it became a counter-philosophy celebrating irrationalism, contradictions and irreverence against everything held for certain. It has been described as the first human passion cult, and the Trahan government took many steps to suppress it among Trahans. It still remains on Victoria, an overall counter-movement to everything.

The Brethren

The Brethren believe that humanity met the Trahans for a reason. They think that it is very unlikely that two so similar species evolved independently in the same stellar neighborhood. They argue that some higher force (whose nature at present remains unknown) influenced the growth of both species, planning for them to meet. The Trahans and humans are truly siblings, complementing each other perfectly: Trahan wisdom and social ability combined with human inventiveness and technology. Trahans and humans must learn about each other and live together, integrating each other and the mutual gifts into their societies.

The Brethren emerged on Traha relatively recently, but has spread to other planets. The human members study Trahan culture and philosophy, preaching the wisdom of the Trahans to humans, while Trahan members seek to integrate the human discoveries into the Trahan framework. The group is organised into branches, where each branch consists of a group of people working together. People are also expected to participate or found other branches; together all the branches form a starspanning network with no strong hierarchy. Instead the wisest and best plexed (integrated) members are followed, and some of them travel around between the branches to teach their insights.

Trahan Religion

Trahan beliefs are more like philosophies than human religions. Trahans seldom anthropomorphize (trahamorphize?), so traditional theistic religions have little appeal to them. Instead they enjoy unity, non-contradiction and tradition, so a lot of trahan "religion" consists of customs and ceremonies rather than strong belief. However, there is a distinction between the custom-religions (which mostly celebrate various institutions, places and customs), the philosophical religions (which explain how the universe works and how to behave) and the passion religions. The passion religions are based on belief and passion; once trahans become aroused enough they tend to remain in that state, and the passion religions direct this in various directions. They are currently somewhat suppressed, regarded by the Empire as disruptive and dangerous to the moral fabric of society.

The largest custom-religion is Traan-Haa, Empire Worship. It consists of various

ceremonies and customs that celebrate the history of the Empire, its structure and the Imperial Couple, a kind of royalism. It is often combined with the various elections and office change ceremonies, and quite naturally encouraged by the Empire. Another closely related custom-religion celebrates the history and achievements of the Trahan species, integrating the current Empire in the large sweep of history. Many local custom-religions exist, from the Capital OTEC Plant System to the veneration of exquisite orchards.

Among the philosophical religions Srirh-Haar, The Cosmic Forest, is currently dominant. It explains the universe as a forest, an ecosystem of competing, cooperating and evolving processes. Over time things change, but the underlying dynamics is the same. By understanding the growth it is possible to harvest the fruits, both material and spiritual. It teaches tolerance, flexibility but also good judgement, the forest will not care if you get lost or wounded, only other trahans will and that is in itself an important fruit.

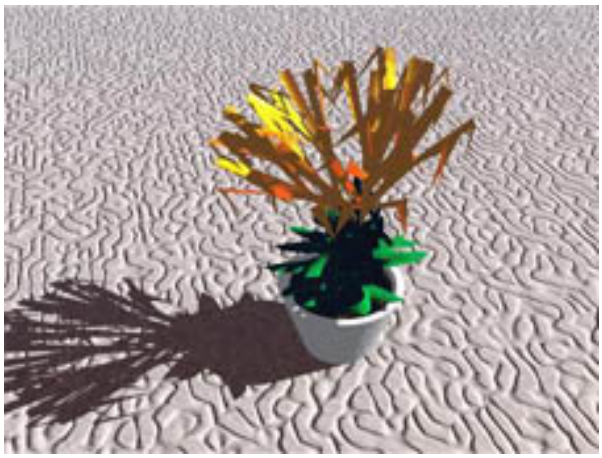
Another growing philosophical religion is the Paradigm of Energy. The Paradigm venerates the energy principle at its most abstract; to the followers it represents potentiality, ability and honor (although the exact Trahan concepts are very hard to translate into human terms). By using the energy principle in a way not unlike the neo-Taoist doctrines of the flow they regulate their lives and fulfill their potential. As an interesting corrolary to the basic tenets, the Paradigm sees the waste or misuse of physical energy as a sin, and is thinking up better ways of resisting entropy. They are currently developing a vision of an "extremal universe", where megascale engineering is used to globally gain control over entropy. These ideas are often blamed on human influences.

The most famous passion religion is Rarah Ssll Ta, the Moral System of Love-Hate-Fear. It deals with the arousing of ever-greater passion in the individual, until he or she reaches the extreme levels of love, hate or fear where they are united into primal passion. By directing this passion nothing is impossible, the individual becomes powerful and invincible. By balancing the passion the individual becomes perfected. It was the basis for a severe and violent uprising shortly after the rise of the current dynasty, and fragments still remain here and there.

Catholic mission on Traha has failed embarrassingly; Trahans simply see a religion with strong anthropocentric themes such as Christianity at best as a strange idea, usually it is just incomprehensible and arbitrary. The only human religions that have been seriously considered by Trahans are Buddhism and the Cabala; especially the later has been intensely studied by anthropologist-philosophers who regard it both as a revealing much about human thinking and a nice basis for plexure.

World

Biotechnology



Is life so fragile that it can withstand no tampering? Does the sacred brook no improvement?
- Chairman Sheng-ji Yang, (Sid Meier's Alpha Centauri)

Adam and Eve
Must have been mistaken
Science has awakened
All living things
- Vacuum, Science of the Sacred

In order to colonise alien planets a through understanding of ecology is needed, as well as large libraries of lifeforms to implant in order to set up a viable ecosystem. Thanks the Ray-Vander General Ecological Model from 2020 understanding and control of ecology has become possible (within certain limits). However, many colonies have been hampered by limitations in the gene and embryo libraries they brought with them. Some colonies deliberately did not bring with them certain animals and plants, especially drugs or pests. Nova was the first colony, and had the greatest problems with limited knowledge and library. To compensate, Novas have developed their skills quite well and have done the outmost of what they had. Gardening is a very popular hobby on Nova, and the mediterranean-like vegetation that thrives on Hope has been developed in many new directions. On other colonies animals and plants were given new uses; for example pandas have become meat animals on Atlantis. Thanks to the new contacts, biological trade has become possible and colonists can for the first time see animals and plants they only have read about ("So *that* is a cow?").

Bioengineering is done in many places beside Arcadia. Some changes are minor, like adapting terrestrial plants to different day lengths on Penglai. Others are more unusual, such as the Atlantean wines. Not content with traditional grapes, the Lichtenstein vineyards added genes from other plants, producing the relaxing marijuana red or rosé wines and the stimulating cocaine whites.

Arcadian Neos

Cortexture

Cortextures are biocomputers, sheets of neural tissue cultured in tanks. They are based on the neural structure of the human cerebral cortex, which is excellent at pattern recognition and associative memory. The cortextures are grown connected to computers from the start, and enable Arcadian computers to exhibit quite a bit of flexibility. Still, the biocomputer cortextures lack the feedback loops and subcortical systems necessary for consciousness and intelligence.

Another kind of cortexture is the biocontroller, essentially a small artificial but biological brain that can be used to control machines or biotech constructs. For ethical reasons they are practically never made more smart than a mouse. A common biocontroller is implanted in workers, making them better at obeying human orders.

Cortexture interfaces are a recent development: a modified cortexture is implanted into an organism or construct, and the cortexture sends out axons to connect with the nervous system or muscles. This makes it possible to add cortextures for medical use, possibly intelligence or ability enhancement and control of animals (and more worrying, humans).

Worker

Workers come in two forms, the heavy winterdigger and the lighter summerprancer. Using genetic modifications the arcadians made it possible to keep both forms around (with some effort), regardless of the climate. The winterdigger is a large armoured mole rat-like animal that digs new tunnels for the Hive and collects winterplants. It’s stats are like a bear. The summerprancer is more useful; it is light and not unlike an antelope with claws, and can fetch and carry around things, do simple houshold chores and act as messenger.

Martian Potato

A hardy plant adapted to growing in near vacuum, one of the successes of the Space Life Project. The plant is covered with a tough film, absorbing nutrients from its extensive root system and not vasting any volatiles. It lives in symbiosis with the regoformer, a droplet-shaped lichen which is able to grow on asteroid surfaces by extracting water from the regolith (this assumes there is any - it cannot survive on many asteroids, as they are more barren than any earthly desert). The Arcadians are somewhat divided over whether it would be a good idea to spread life to space itself; the Cladists oppose it, while many of the Expansionists regard it as the logical continuation of evolution and adaptation.

Symb

Symbs are small symbiotic creatures arcadians allow to live in their clothing; they come in a wide variety, from purely aesthetic living jewelry and fragrance producers over cleaning to medical symbs. One of the most advanced forms are messenger symbs: they can learn a short message (around 10 seconds worth) and be sent to find somebody else using their smell.

Living clothing

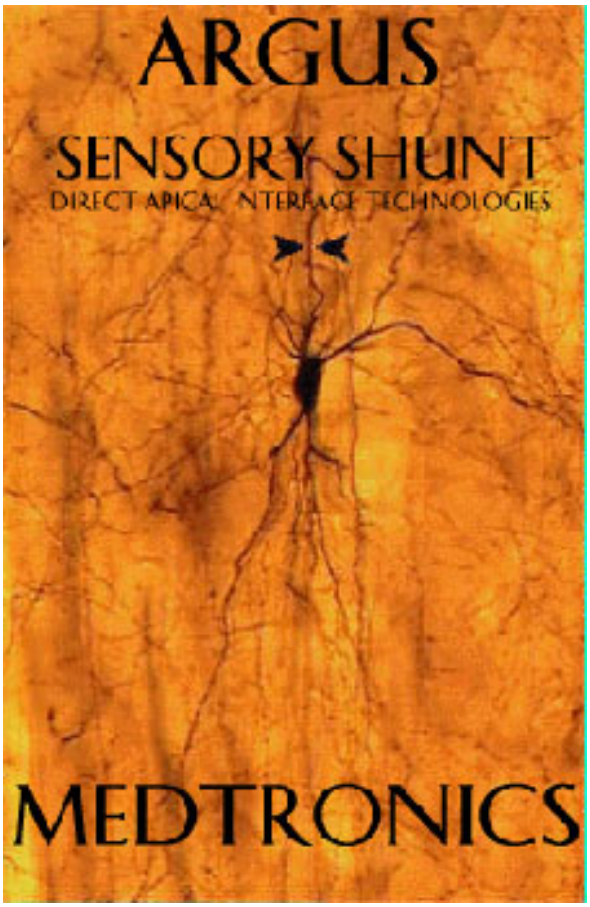
Animals or plants designed by Arcadians to act as clothing. They are little more than skin and muscles, keeping the owner warm and comfortable by their metabolism. They commonly digest dirt and skin flakes, sometimes produce pheromones, comfort the owner when in distress or act as homes for symbionts. When not in use they lie in nutrient baths.

Pets

Arcadians have developed a huge variety of pets, most with some practical uses beside being nice. Especially the lump-animals of the hives have been modified, and a variety of types exist called Schmoos, Gnurglor or Tribbles.

World

Implants



I never realised that silver and aluminium had different colors until I got my new eyes. Now I can see that silver has just as much color as copper and gold - aluminium is much more ultraviolet.
- Happy Customer, Neurologics interactive advertisement 2350

Daemon chip

An implant from Nova. It is an independent processor linked to the neurocomputer built to house an AI. The AI program has access to the sensory data and information in the neurocomputer, and can "read" surface thoughts of the owner (of course, access controls can be set if needed, both in the implant and the AI). Having a Daemon (or several) as advisor/secretary/partner is becoming more and more common, although most people rely on an external AI system and a wireless neural connection. It is not uncommon for users to get a motoric shunt to give the AI the ability to control the body. Daemon chips with monitoring AIs are sometimes used for punishment or behaviour correction in Landfall.

Common brands are CogniSoft-Neurologics Mentor 3400™, Janus HGA™, Medtronics Assistant™ and Cetidyne Sidekick X™.

Moodulator

An implant of the limbic system, enabling the owners to control their moods. Normally it just sets an allowed range and a bias (e.g. towards cheerfulness or

calm), but it can also induce stronger emotional states. The implant is somewhat dangerous due to the risk of addiction to extreme positive states; most users at least tend to improve their mood. Originally it was developed on Nova for treatment of certain emotional disorders, especially the rare but devastating OIAIS (Ocean Induced AutoImmune Syndrome, an autoimmune illness induced by certain poisons causing severe mood swings due to damage of the limbic system). Later more widespread use developed. There are also moodcasters, systems sending signals to the implants of people who have allowed access. Moodcasters are mainly used in virtual dramas and in certain bionic clubs.

Common brands: Neurologics Pathos Series (I-IV) ™, Limbic Technologies Adonet™, MedTronics Nimbus 4™ and Neurointerfacing Interstellar LSS™. Neurologics also sells a series of limited implants just regulating single emotions such as aggression, sexuality or curiosity, the Heartland Series.

Autonomous control

Enables the owner to control many aspects of the autonomous nervous system such as hunger, sleep or pain. Turning off these functions are of course dangerous, but sometimes useful. It can also act as a super-alarm clock (guaranteed to wake you up) or "homeostatic tuner" to optimise the hormone balance of the body.

Common brands: MedTronics Tenacity 1™, Neurologics Autocontrol™, Kellerman Systems Regulator™.

Wideband Link

The implants used by Unity to achieve group consciousness. Unlike an ordinary neurointerface it connects to most of the cerebral cortex and has a much higher bandwidth. It can send and receive signals not just of primary sensory and motor information but also higher order associations and thoughts. Since each human has an individual "mental language" sophisticated translation systems and much training is required before digital telepathy is possible. Wideband links are also used by the Net Transcendence and Next Step Foundation in their experiments with expanding the human mind. One of the most controversial and interesting applications is to let software rewrite parts of the cortex; theoretically this could be the ultimate psychodesign, even if it is currently extremely crude. Some AIs are apparently interested in using this approach to "download" themselves to physical bodies.

Common brands: Unity Neurotechnologies Wideband Link™, BridgeTech Neocortex Interface™.

Medial forebrain pacemaker

An implant in the motivation and pleasure centres that is controlled by the owner’s neurocomputer. It is illegal on Nova and very addictive: users quickly become hooked on anything that activates it. It can be used together with behaviour therapy

to change habits and personality, a kind of bionic psychodesign: the user links the implant to some reward evaluator (such as a monitoring AI) that rewards certain actions. The result is a strong increase in rewarded actions, which can be used to produce extreme ambition or tenacity. Unfortunately the temptations and dangers of use are huge.

Survival System

An anti-trauma network of implants, intended to maximise the chances of survival when the body is damaged. Small shunts can cut of blood loss and release protecting chemicals, as well as act as a pacemaker for the heart and lungs. If everything else is lost, the implant can douse the brain in neuroprotectants and lower body temperature to slow down damage so that an emergency cryonic suspension can be done.

Connon brands: MedTronics Titan™, Uustal E-3™, Pacekeeper Second Chance 4.03™

[Gives extra mortal levels beyond the ordinary; an Ordinary Survival System gives one extra moral levels, a Good system two and an amazing three.]

Medical monitors

Likely the most common implants on Nova. Small sensors implanted in the body provides information on the health state which can be used to detect and diagnose illnesses at an early stage. Simple systems just give some chemical information, body data and a rough picture of activity in different organ systems. More advanced monitors are finely spread, detecting minute local changes and comparing the body's reactions against medical models.

Common brands are MedTronics Hygiea™, Neurologics Body Monitor™, Uustal H-8™ and Hawk Inner Eyes.

Medical support system

The adjunct to the medical monitoring system; to use a support system the monitors need to be installed (they are often bought as a package). Support systems can perform medical support by releasing microdoses of chemicals in various places in the body, for example lowering blood pressure, detecting and dealing with shock and blood loss, balancing immune responses or maintaining healthy hormone levels.

Some common brands are MedTronics Ascleipios™ (contains a small medical expert system offering diagnosis and suggestions), Neurologics Body Controller™, LK Tech DD™ and Kempler Survivalbox™.

[Gives a -1 pain control bonus and adds 1 to END.]

Sensory Shunt

A shunt in the brain nerves and spinal cord enabling recording/replaying of sensory information, increasing/decreasing its strength, adding artificial sensations and sensory blockades. The information is highly individual, mapping it to somebody else's experience requires much postprocessing and will not produce a high fidelity experience (this doesn't deter the connoisseurs of sense data on Nova, who regard just the lack of fidelity as a poignant reminder of how different we are).

MedTronics Argus™, LK Tech Spine™ (a combined Motor and Sensory shunt), Neurologics Dorsal™.

[If pain is deleted, the character gets a -5 bonus to pain control (gross damage still tends to freak people out)]

Motor Shunt

A shunt in the spinal cord enabling recording, replay, dampening and computer control of movement. The most common application is to allow software to control movements, for example to perform delicate or even to exercise while sleeping. For this to work well a sensory shunt or cybernetic sense implants are needed, otherwise the movements will not react much to the environment. The control can come from an enhance program, an AI running on a daemon chip or external commands from another person using a motor shunt ("puppeteering").

MedTronics Casper™, LK Tech Spine™ (a combined Motor and Sensory shunt), Neurologics Ventral™.

[This replaces the Alternity reflex implant. Acting through a motor shunt is at a +2 penalty unless the "puppet" and "puppeteer" train together, which brings the penalty down to +1.]

Remapper

A biological implant of cultured cholinergic cells covering part of the cortex (usually the motor cortex) that can increase the local learning rate. Usually used for rehabilitation after brain damage, but can also be used to rapidly learn new skills at the price of forgetting old. Some extreme bionicists on Nova have used it to become extremely fluid, but it tends to cause personality dissolution and is much more expensive than just taking large doses of memory enhancers.

Neurologics Plasticity™, Regiosys 2™, LK Tech Cortex II™.

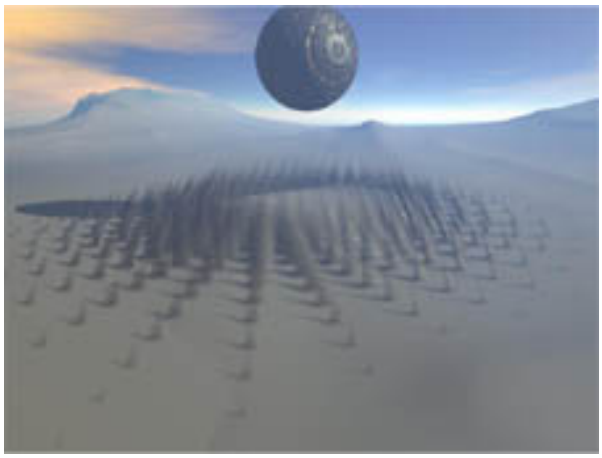
[The character can through training redistribute one skillpoint per week from one skill to another.]

Babel Chip™

A best-selling implant from Neurologics. The device connects the neurocomputer with the ear, vocal musculature and enables a translation expert system to act as an intermediary. It automatically translates languages it knows into the owner's selected language, and when the owner speaks it can translate the message into a new language and do the speaking. The system is far from perfect yet, but sufficiently useful that people buy it. As a bonus the chip provides some auditory control (the user can change the volume and pitch of hearing, filter it or do other signal processing). There is a limited version (the Babel Lite) that just translates to the owner and does not speak.

World

Higgs Field Technology



Higgs technology deals with manipulation of the Higgs scalar field and related forces within the Standard Model of particle physics. All particles get their mass from the interaction between the Higgs field, particles and the background vacuum; if this is modified apparent mass can be changed, particles transmuted and gravity modified. The great discovery was that this can be done without using extreme energy levels by exploiting the so-called "Abdela Mechanism". Currently higgstech is the cutting edge (together with nanotechnology) - several of the colonies race to develop and apply it to everything from space travel to microsurgery.

The simplest application of higgsfield technology is force production and antigravity. A force unit can produce a repulsive or attractive mechanical force acting against the space-time background. Antigravity, or rather mass nullification, makes an object more or less massive. This field is still much in its infancy, but investors are scrambling for agrav shares.

The "first law of antigravity" says that higgstech cannot produce a perpetual motion device; the amount of work done by a force unit has to be less than the amount of energy put in, and lifting an object by antigravity will require more energy than is gained in potential energy. Antigravity plates for example have reasonable power consumption when the object is at rest, but will consume more energy if it rises (proportional to its mass and height). If the object falls, then a reverse surge may occur, damaging the unit if it cannot neutralise or dissipate it. In general antigravity units are more useful for moving things around at the same height than lifting them (antigravity support for shuttles still remains useful, since the amount of reaction mass that has to be kept onboard can be decreased).

On Atlantis, antigravity is sometimes used in buildings, making it possible to move them. Since making the whole building weightless would cause the interior to become weightless, such movable buildings (often called drifthouses) usually just give the foundations a strong negative acceleration and let them hold up the whole building. Drifthouses have revolutionised the otherwise quite movable cities; many city locations are little more than parking lots for buildings

to land on and the population can change very quickly depending on local events, the climate or fads. Most buildings are not intended to stay aloft for long, and tend to follow the ground (just like their non-antigravity counterparts, which move using add-on wheels or air). One notable exception is the famous "Magritte's Revenge" (and its successor "Falling Concrete") by Eduard Weber 4, a villa deliberately built to hover at 300 meters above the sea on the east coast of Heinlein. Needless to say, the antigravity systems are triply failsafe.

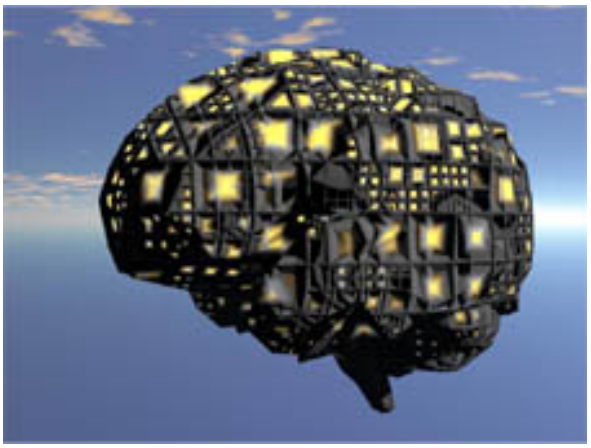
Theoretically it should be possible to increase or decrease momentum, but Geodesic Systems haven't figured that one out yet; their systems tend to misbehave wildly. The Mothers seem to have discovered how to do it, but realise the trade advantage of not simply explaining it. Instead they sell pre-packaged units. In general human gravity and force manipulation is somewhat rickety, even if it is getting better and changing society at a fast rate.

Confused matter is another possibility. When the Higgs-field fluctuates enough matter becomes unstable on the quantum level: particles "forget" their properties, and spontaneously decay. This causes partial conversion of matter into energy, but also confuses nearby matter. The first experiments almost ended in disaster, and Geodesic Systems have built a special laboratory in orbit around Aristotle where a runaway confusion would be safe. The promise of total or partial matter-energy conversion drives further research, but the only results so far have been devices that can cause enormous detonations or set up "confusion fields" in space that makes incoming matter to decay energetically. The military applications are frightening and fascinating.

Complex Higgs fields can form solitons and topological defects, producing very strange results. This is currently beyond human technology (the mothers have some simpler developments and the filigrees are suspected of being very advanced). Among the theoretically postulated possibilities are soliton packets that can send information, disrupt another Higgs field or induce confusion from afar; the production of magnetic monopoles that make matter-energy conversion possible; possibly the construction of "fake matter" that behaves like matter but actually is just a complex field process. Another fascinating possibility is to give neutrinos mass. According to theory, a certain kind of very high energy field can give neutrinos a high mass, making the background blaze of neutrinos interact with matter or perhaps even crystallise into some kind of solid. The creation of small, very unstable black holes is also plausible with this technology. So far this remains theoretical physics.

World

Artificial Intelligence



Whether we are based on carbon or silicon makes no fundamental difference. We should each be treated with appropriate respect.
- Arthur C Clarke, 2010

Artificial Intelligence, AI, has developed on several of the colonies. Non-sentient software with voice control, limited autonomy and knowledge databases is ubiquitous on most planets and often give the impression of being fairly smart. Agent programs, independent programs that are sent out to do tasks on the net, are used on many planets to do more or less simple tasks (such as information search, trading or surveillance); agents range from trivial scripts to sophisticated software that borders on real AI. True AI is a rather vague concept, since agent software can become gradually smarter until it is indistinguishable from human intelligence. Usually the best way of distinguishing between real and fake AI is how independent the software is: can it set up its own goals, does it exhibit volition on its own? Most smart software is non-volitional, the software has no intentions of its own but can solve problems when asked, regardless of how well it manages to do it, while an AI program acts as a kind of digital lifeform with its own agenda (which might of course be to work for a human owner and make them satisfied to the software's best effort),

There are two colonies where AI has developed very far, Nova and Pi3. On Nova and Atlantis widespread knowledge networks are used, which acts as immense but very subtle AI. However, on Nova nodes of active information spontaneously began to "animate" into "elementals", super-agents with significant problem-solving abilities in the early 2200s. Elementals are relatively non-volitional, although there are a few volitional elementals that have achieved permanency and independence. The phenomenon (largely due to a too clever design of the basic knowledge management software standards) forced Nova to accept the possibility of real AI and find ways of integrating it into society.

It was not until the 2250's human-designed AI began to work reliably, but since then the human AIs have developed very far (the elementals remain, more powerful than ever, but do not seem to do much compared to the much more individual and quick human AIs). The most common kind of AI programs are deliberately, carefully written to exhibit thr right personality traits and skills, and

can have significant independence. AI design and management are remain growth industries, and people often demonstrate their style by having expensively designed AI in their systems. AI rights are acknowledged to some extent in Landfall, although they have no political rights. Novas often employ plenty of more or less sentinent software, and it is common to have one’s personal mentor program grow up with oneself (some people eventually house "their" AI in a Daemon Chip or even marry them).

Quais are the latest Nova development: quantum computer AI for space travel. Quais are usually nonvolitional, although CogniSoft have experimented with a volitional pilot Quai for unmanned expeditions. While ordinary AI can be weird, quais tend to exhibit very strange modes of thought and are usually kept rather specialised into piloting.

On Pi3 volitional AI is part of the family. AIs run in the wearables of people and in the essential drones protecting the families. Clones of software learn, exchange information and try to evolve into more powerful versions to withstand the fierce competition of the infowar. Their values are quite identical to their owners’, and the clan software often acts as psychological and social support for the humans.

As interstellar trade and contact has emerged, AI from Nova will likely appear on other worlds. The results of this is anybody's guess; groups like J4H (Jobs For Humans) warn that AI could crash whole economies, while the NextStep Foundation claim AI is an essential step towards posthumanity.

AI Programs

I have been made by bright monkeys. What other clever little tricks will they pull on me before my time is done?
- Greg Bear, Slant

AI is software, and not in general dependent on special purpose hardware even if it can significantly improve its performance. Since AI programs are extremely complex (even if the basic design and "seeds" can be written by humans) modularity is important. Instead of creating the entire AI from scratch, software modules for cognition, knowledge, personality, skills and so on are put together and allowed to integrate. There are also nonmodular AI around like the Nova elementals, neural networks or older AI programs that have developed themselves; they have the disadvantage that their software is so messy that it can only be developed by experience, while modular AI can plug in new modules.

Most AI programs consist of a Core, which is the basic cognitive processes, one or more personality modules, skill modules and possibly some modifications. The Core determines the basic intelligence of the AI, learning abilities, perception and other fundamental properties. Some aspects of the AI personality resides here (like how much or how little the AI tends to employ trial-and-error or react "instinctively" in an emergency), although they are usually heavily modified by the personality modules. As the AI develops, the core expands and integrates other modules better; in time they become inseparable from it.

Personality modules contains values, heuristics, social traits and mannerisms which create a more or less believable personality for the AI. Typical modules are "Reserved Butler", "Enjoys animals" or "Marilyn Monroe". Several can be combined, although this can easily lead to internal conflicts making AI behaviour erratic.

Skill modules contain encoded knowledge, strategies and heuristics which enable the AI to perform various skills. Over time the AI will develop the skills further and make them "its own". On Nova it is common for AIs to lease skills from each other, hiring another AI to substitute abilities for the hiring AI. Software lawyers are still debating whether this constitutes a licence infringement and who is legally responsible.

It should be noted that unless explicitly programmed in (which is quite common) AIs are just as good/bad at math or logic as humans - only because they are software doesn't make them lightening calculators, they represent numbers as abstract concepts just like humans.

Mods are modules that add new abilities and capabilities beyond personality and skills. A typical example would be a motor module enabling the AI to control and experience through a humanoid robot, mental architecture linkups, quantum computation (requires modifications of the whole AI system) or helper programs directly interfaced into the AI cognition (e.g. simulators).

AI has an advantage compared to humans, it can be backed up. The program simply downloads its code and data to secure storage, and if the active copy is erased or damaged the archived copy can be reactivated. It should be noted that many AIs do not have the drive for self-preservation found in evolved creatures, it is something they have to be given with personality modules, written into the core or learn.

It is also possible to copy AI programs, creating identical copies (which will over time diverge and develop on their own, of course). Copying AI has some complications. Most AI does not in the first case have access to their own files; they cannot themselves initiate a copy or backup (backups are often done automatically at regular intervals). In addition, many modules are copyrighted by their originators, and cannot be legally copied (at least not on Nova). However, citizen AI programs have, due to the Nova constitution, a right to their "bodies" (i.e. software) and are allowed to copy themselves. The copy is however not formally regarded as a citizen and has to apply for citizenship independently, even if it is indistinguishable – a rule that is often parodied by AI rights people.

Commercial AIs

We are such stuff
As dreams are made on, and our little life
Is rounded with a sleep.
- Shakespeare, The Tempest

The Wolfpack™

An executive assistance system from CogniSoft intended to act as a team of advisors and researchers. The Wolfpack consists of a number of AIs running on dedicated hardware in an attaché case. They are based on the same core software but have different personalities and skills; the result is an apparent team of different AIs. The exact skills are determined when the pack is bought.

Expert systems

Expert systems are common on most colonies, small programs specialised in one subject such as tractor maintenance, nuclear physics or geography and are able to answer questions, suggest solutions to problems and teach but only within their own highly specialised areas of expertise. A typical expert system knows one skill, and nothing more. It has no real intelligence or creativity, but can apply the skill mindlessly to a given problem.

[Treat the expert system as an Expert NPC with a rating in the relevant skill(s) depending on the quality, and nothing else.]

Mr. Friend™

A popular series of child supervision, education and entertainment AIs from Edutronics Inc. The AI can control toys, and is intended to act as a virtual friend for the child. A large library of programming exists, including different subjects for the friend to educate the child, personalities, abilities to play social games and various medical skills to keep the child safe. There is even a bodyguard option.

Racoon Finder™

A popular full AI search agent from CogniSoft. Beside its own information gathering and sorting skills, it is also equipped to negotiate with other AIs and expert systems. It has been described as a personal private investigator.

Robots

Some very weird and intense stuff can happen, when you got a lot of space in the desert, and robot labor that's too cheap to meter.
- Bruce Sterling, Taklamakan

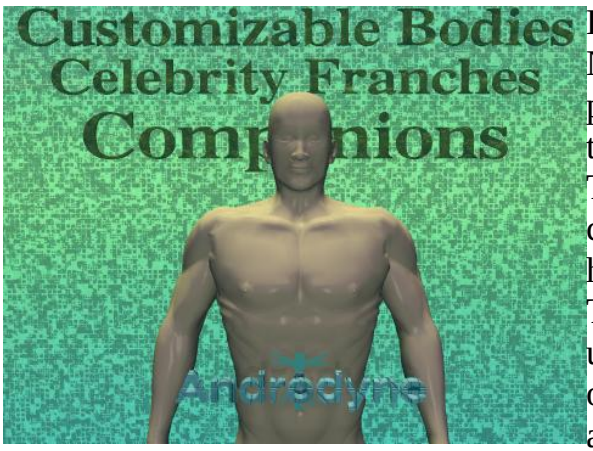
Robots are in widespread use on Nova, Ridgewell and Pi3. Especially the later two colonies employ advanced automated factories that produce much of what is needed by themselves. Most other colonies have at least some robots.

The automation on Ridgewell is distinctly non-anthropomorphic, functional insect- and vehicle-like devices that transport raw materials, put together parts and tend the constructions. They are usually quite stupid, controlled by "instincts" and signals from central coordination nodes. Homebots clean and repair, outbots keep roads and buildings in shape, facbots work in factories. All vehicles are robot controlled and very safe. Special Coin systems (Collective Intelligence) are based on distributed teams of robots cooperating with each other to do a certain task; individually they are quite stupid but together they can do much.

Nova is known for the wide variety of robots in use for all sorts of tasks: everything from perfect children's pets to espionage to gardening to advertising. Skill and personality modules can be bought, and robot mind design is on par with interior design: making your devices fit your style, your home and your needs. Currently companion robots are popular, and there have been a noticeable plunge in marriages. The idea is that companion androids provide unreserved affection without any of the complications of having a human partner. Free AI programs on Nova seldom employ robot bodies, preferring to remain virtual (with some notable exceptions). In the upback robot colonies are used to build and tend solar collector farms; self-replicating robot colonies are able to implement huge projects if necessary, although they are heavily regulated in order to prevent the dangers of runaway autoindustrialism.

Robot Models

Androids



Human-like robots have been built on Nova. The most humanoid are for practical purposes indistinguishable from humans; their main use have been (of course) sex. They are clothed in artificial flesh which can heat up to reach body temperature, have realistic hair and muscle structure. There has been a trend away from utilitarian non-humanoid domestic robots, or rather having a butlerbot/companion as a complement to the other home systems (from petbots over cleaners to security systems). The exteriors can usually be reconfigured or changed at an android service shop; celebrity appearances (and personalities) are popular, and there is a thriving market for pirated celebrities.

The physical stats or androids are usually human-like, although it is possible to make more extreme constructions that go beyond the human norm.

Lensdrone

A flying, lens-shaped robot around 15 centimetres in diameter used for surveillance, reporting and scouting on Nova. It is very light, held aloft by fans and covered with sensors. Most are simply remote controlled or given simple scouting programs, but more sophisticated variants can act on their own to find interesting targets. Many Nova companies and private people own swarms of lensdrones to guard their property, seek out news or act as mobile computer network nodes. Solar-powered ultralight aircraft are sometimes used for the same purpose; they can stay aloft indefinitely high above the ground.

Spiddy

The common kind of robot on Ridgewell. It has a small body and eight legs which it can use all to manipulate things. Spiders work together in large teams, directed by a central computer (the "spider mom box").

Clarke Securitech Spider

An advanced AI-controlled spider-robot for surveillance, investigation and infiltration.There are many options, but overall the spider is highly resilient, can be equipped with tools for climbing, documenting, defending itself, and overall act as a small field agent. The main problem so far seems to be that the full AI tends to develop somewhat quirky personalities - they do their jobs, but often tends to shoot their mouths off at their owners.

System

A just machine
to make big decisions
programmed by fellas
with compassion and vision. . .

We'll be clean
when our work is done--
eternally free, yes,
and eternally young.
Ooooo!

What a wonderful world it will be!
What a glorious time to be free!
--Donald Fagan, "I.G.Y."

AI have INT, WIL and PER like humans. The size of the core program is (INT + PER + WIL)^2; a human-equivalent AI takes up around 400 units of storage or more. The cost also increases with the square of the abilities: total cost =

1000*INT^2 + 1000*WIL^2 + 1000*PER^2 credits (the original development costs are of course much higher, but once the code has been written, it can be copied endlessly. Also, finished AIs can also be copied, and off-the-shelf AIs are usually much cheaper than newly compiled AIs)

PER denotes the ability of the AI to model, understand and interact with other intelligent entities. In general the more PER and AI has, the more self-awareness it possess (it is entirely possible to have very intelligent AI with almost no self-awareness. A typical example is ship Quais). WIL denotes the strength of volition and ability to influence its internal workings. INT roughly correspond to human INT.

Personality modules add personality traits to the AI. Most are fairly small, a few units in size, and introduce suitable biases and emotional reactions. Some can be more elaborate, either mimicking a real person or containing complex rules (for example, ethical systems). The price for personality modules varies; many simple traits and styles are freeware or included for free by the AI companies, while other personalities might cost up to a 1000 credits. Custom personalities can become as expensive as you like - personality designers can be just as outrageous as fashion designers.

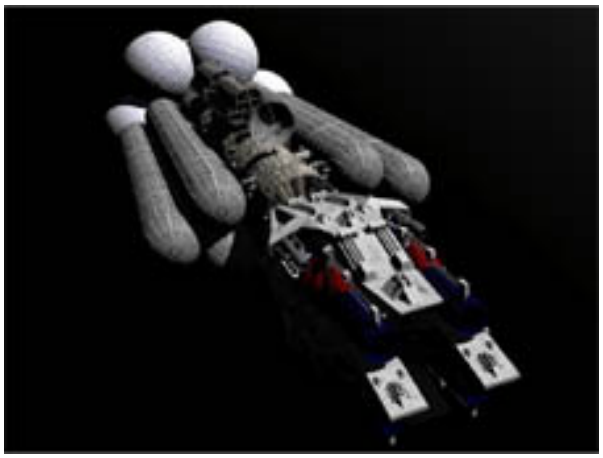
Note that personality modules and mods can provide perks and flaws.

Skill modules contain information and knowledge nets for different skills. They can be about anything from cooking over languages to marketing. Many skills are restricted on Nova, such as various combat skills. The size of the module is 10*rank, and the cost varies a lot.

Note that there are limits to how good skill modules can be found on the market; usually the rank is below 4, since it is extremely hard to write advanced skills without having an AI learn them through experience, and that usually makes it hard to untangle the AI from the skill.

When an AI learns, it integrates skills into its core and they cannot easily be untangled again. When an AI gains skill points through experience and raises its level, it can spend skill points on skills, increasing them but also hiding them in the core - that skill module cannot be removed or changed without damaging the AI. It is however possible for the AI to load an updated skill module even if it already has a skill and use that instead, although this can lead to problems if the modules clash. Overall, when an AI gains a level it can get the same kind of benefits as human characters.

Space Technology



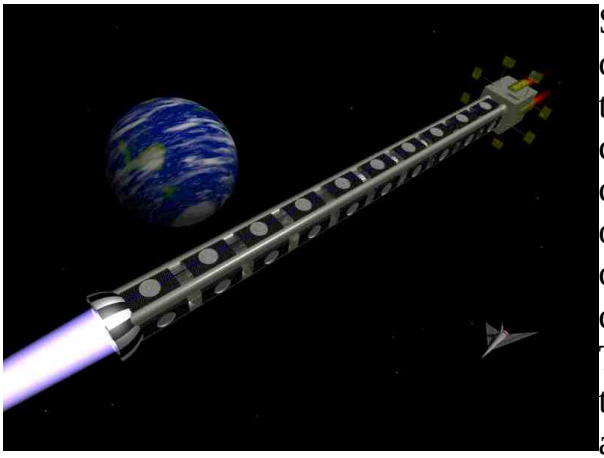
As distances vanish and the people can flow freely from place to place, society will cross a psychological specific heat boundary and enter into a new state. No longer a solid or liquid, we have become as a vapor and will expand to fill all available space. And like a gas, we shall not be easily contained.
- Sister Miriam Godwinson, (Sid Meier's Alpha Centauri)

Practically all colonies have space activities. One of the most essential is He3 extraction for fusion power, usually from mining on airless moons or skimming from gas giants. Another important use is water mining for propellant and biomass.

Orbital habitats were just becoming useful in the solar system as the colony ships left, and the technology has been developed anew on Nova, New America and Arcadia. Building a habitat large enough to sustain a working ecosystem is not easy, but once it has been done it is fairly simple to maintain. Most habitats are spheres or cylinders, with rotation generating pseudogravity and either fusion light or light from mirrors entering the interior to provide sunlight. Typical sizes are one kilometre and upwards; the largest so far is the Glenn of New America, 7 kilometres long. There is much talk about antigravitation-based habitats, but no firm designs yet.

The leaders in the field of habitat construction is clearly the technorats of New America. Unity is however catching up quickly, and the Arcadian ecodesigns are unique. The competition is increasing.

Starships



Starships are huge, expensive constructions requiring advanced technology to fly and maintain. A common design consists of a cylindrical core containing the higgsram and banks of fusion reactors to power it, a small crew compartment and the quantum computers needed to control it. Traditional in-system ships dock with the core (often called just "the engine") and are carried along with it as it jumps.

The old colonisation ships used ice as reaction mass; fusion reactors vaporised it to provide thrust, and the ice supply was placed in front and around the ship as a radiation shield against relativistic micro-collisions. Usually the core of the ship held the cryosystems for the colonists and their biological stores, life support and central control systems. Outside the core were cargo bays, living space, workshops and laboratories. In-system exploration craft and shuttles were placed towards the stern where the thruster systems were located.

Water is important in space as a propellant; it is heated by fusion into steam and expelled through nozzles. In many systems the water fuelling stations have become the major trade centres. In Nova the Unity bases around Zeus and Nova itself are the major sources of revenue for the borganisms, and the NASA orbital around New America is the seat of power for the technorat fraction.

Starship Production

Nova has two major space-engineering firms, Unity Starships and the Hertz-Kaneda Group. Nova designs tend to be dramatic; while Unity itself likes understatement its customers want style. The current Nova fleet involves the early exploration ships Democracy, Freedom and the Unity built Networker. Later ships involve the Barto (owned by Graunstein Interstellar), the Vulkan (jointly owned by HedTronics, Universe Travels and Pan Space Systems, used for Nova-Dionysos travel) and the Faithful (Tyrus Interstellar). Unity has also constructed Tractor, an utility starship intended to move space habitats (it was first tested with the move of Origo to L145 141).

New America has a national space agency NASA building and manning most starships, but a private corporation, Durand-Maxwell Aerospace has begun to manufacture ships; the first private starship, the Lynx, was launched in 2349 and is operated by DM Trade. NA ships tend to be functional rather than aesthetic: modules and machinery bundled together in open frameworks. The NASA fleet involves the Ramirez and Edison (both obsolete), the Grossberg, Guth and Enterprise (in use) and a number of as-yet unnamed starships in the Columbus Program.

At Penglai the PCA operates the colonial starships. At present only three have been built. Penglaise ships employ clever tensegrities and modules that can be unfolded almost like origami; they are highly adaptable, able to withdraw into armoured eggs or unfolded into thin networks.

Arcadia has a major space facility, operated by an offshoot of the Space Life Project, funded by most of the Hives. They operate several ships intended for trade, communication and exploration. The Arcadian ship style is the plain ovoid, but with a crammed inside of small irregular rooms and warrens. The current fleet involve the Pathfinder, Discover, Ahrenius, Darwin and Linneaus.

Atlantis has a major space industry, with several competing shipyards. The two largest are McDaggart Transplanetary Shipyards, and Heinlein Networks Inc, but they are a bit slower than the smaller shipyards like Spacedev Enterprises and Firestar. Atlantean ships can look like anything from tiger-striped warships to utilitarian boxes – regardless of their real purpose. Currently much interests focus on the new Heinlein Bork series of ships. Currently there are just four Atlantean ships: the Adam Smith Trading Company (owned by the consortium of the same name), Bottom Line (Rotha Netsys), Lady Koumakov (Aurum Investments) and What's For Lunch? (the What's For Lunch Group), but many more are under construction.

Traha has so far not built any ships on its own, but the empire is planning to buy a ship soon; a major competition for the order is developing.

Dionysos has no ships on its own, but Pan Space Systems is collaborating with the Nova corporations HedTronics and Universe Travels to set up a spaceline.

Ridgewell, Pi3, Gaia and Mary all lack starships or do not desire them.

At present, given the few ships (all in all just a dozen in 2350) and the long travel times contact is just beginning.

FTL

We move because we hate the idea of standing still.
We create because we want something new in our life.
We take the next step because we want to rise above.
This is our mission, this is our passion.
- Daewoo Corporation

Modern ships use higgsram technology for interstellar travel, while in-system travel is done using the tried and tested water thrusters, fusion torches or the Mothers' reaction drives. The Higgsram is an advanced application of quantum mechanics and Higgs field manipulation; while the theory is well understood these days the actual construction is still regarded as pretty arcane. Improving on the filigree design is tricky.

The basic idea is to create an intense localised Higgs field to cause local inflation of a single quantum wormhole; the wormhole expands enough to let the ship slip through, and then collapses behind it. The actual diving is done completely using quantum computers and AI, but the pilots direct their work and heuristically orders what kind of wormholes to look for.

The ram field is based on advanced filigree technology, a kind of soliton wave in front of the ship able to act both to "feel out" the space-time foam, and to focus the charged energy onto a single small region. Matter entering the ram is immediately confused, and can be quite dangerous (an important reason jumps are usually done far from the ecliptic). The ram is often visible as a cone of light, as stray particles and neutrinos are confused. The energies involved are very large, and usually a ship takes several hours or even days to charge the ram before doing the jump. Skilled pilots/Quais can retain energy in the ram through the dive, but normally a recharge is needed afterwards.

To an outside, the dive looks impressive: in front of the ship a space-time distortion explodes outwards, only to collapse onto itself as the ship vanishes into it. Einstein rings and gravitational lenses appear, diffracting and reflecting the light from stars behind the wormhole and the blaze of the higgsram into strange patterns. The remaining gravitational ripples can be quite severe, and most ships try to jump in empty space to avoid cumbersome back-reactions (having a major mass near the wormhole is bound to disrupt the process - likely destroying the ship). From the inside the jump is brief and unsettling. Tidal forces from the wormhole tug at everything, making many humans spacesick.

Travel times depend on the skill and luck of the pilot/Quais as well as how quickly the field can be recharged. A normal speed is up to ten jumps a day, each jump ranging between 0.01-0.2 light-years. The direction of the jumps is a bit random; it is often joked that FTL is a foxtrot dance: two steps forward and one back.

Higgsram diving is as much an art as a science. The actual dive is done by quantum computer AIs, known as Quais. The pilots are mostly overseeing the dive, but thanks to Nova interface technology they have become able to take part

of the dive. This isn't because human intuition is needed (as some technomystics claim) but because the dive process needs to make decisions based on the values of the human at a superhuman speed. The solution is to let the Quais read and interpret the pilot's mind, and find the wormhole link most like what he or she would have chosen, but augmented by the Quai intellect too. After enough dives together pilots and Quais become used to each other, and the interface become unnecessary.

Ship Systems

Higgsram

The higgsram system is generally built together with power units such as fusion reactors. The energy demands are staggering, and it is easier to use the overhead to power the rest of the ship than the reverse. The most conspicuous part is the huge higgsmodulators, long pillars of stacked uranium disks surrounded by dense induction coils and ending in the true higgsram at the front, where a complex field produces a stable focusable ram of concentrated energy able to induce local inflation of the quantum foam. The ram field can be several kilometres long. Once the wormhole is inflated the ship moves through quickly. In general the wormholes are blown up to a size of a few kilometres; this induces a tidal field of several g during passage, and small wormholes can be quite dangerous. If something collides with the ram field the object is disintegrated. The resulting explosion depends on the charge in the field and the size of the object, as well as how far away the detonation is. In general, masses of one gram and above cause damage to the ship.

The higgsram can totally store up to around 100 points of energy; each hour of charging increases it with 10 points. Opening a wormhole requires 10 points of energy per kilometre radius. The tidal forces scale as 1000/(radius ^{3}) Newton; below 5 kilometres the ship or crew is likely to be damaged.

A normal human higgsram costs around 10M, takes 30 durability points and produces 30 power points if completely diverted for other uses.

Quai

While the higgsram contains the necessary quantum systems to sense and operate the ram, a quai is necessary to navigate the quantum foam well. It consists of a quantum computer module linked to the higgsram and the pilot (if any), running a special purpose AI program able to visualise and navigate quantum manifolds. As a jump is initiated, the quai shifts into a superposed state, links to the pilot and the pilot/quai entity uses the higgsram to probe the local foam to find a suitable wormhole. If it succeeds (a chance depending on the distance sought) the higgsram is released, and the wormhole is opened. Some ships are equipped with a special pilot-quai, a broadband neural interface that enables the quai to access the brain of the pilot and place it in a resonance state

too so that it can interact with the quai in operation.

The distance the quai can jump depends on how good it and the pilot are at finding suitable wormholes. This is an arcane skill, possessed only by higgspilots and quais. Doing a jump requires a Quantum Navigation skill check, usually with the pilot assisting the quai. The difficulty depends on how well specified the destination is: random walk +0 (ship jumps apparently randomly, increase distance needed to travel by 100% at least), moving in the right direction +1 (the distance needed to travel is increased by 50% due to side-jumps), moving towards the target +2 (no change in distance), jumping to the target +4 (if within one light-year) +5 or more if more distant.

Critical Failure: misjump, the ship might end up anywhere. A second quantum navigation roll can abort the jump; otherwise the ship can end up anywhere within ten light-years *at least.*

Ordinary success: one tenth light-year jump.

Good: one light-year.

Amazing: ten light-years.

An Ordinary quai costs 1M, a Good quai 10M and an Amazing quai around 100M (so far none have ever been built).

Gravity Wave Detector

Wormhole opening and closing causes a noticeable "splash", and it can be detected by a gravity wave detector. The detector consists of a chamber filled with a gravitomagnetic field, reacting to disturbances in space-time. The range depends on the size of the wormhole and the distance; the difficulty to detect it (with System Operations-sensors) increases with +1 for every 10 AU and is decreased by –1 for each kilometre radius of the wormhole. Most colonies have large detector arrays to detect incoming ships; it is nearly impossible to sneak into a system with a higgsram.

Price: 100K

Gravity Assisted Takeoff and Acceleration (GATA)

By projecting an antigravity field around the ship, it can be made to mass very little or actually fall upwards, providing an elegant way of takeoff. Unfortunately the energy demands are similar to planetary thrusters, but the ship does not need to have any reaction mass or streamlining (even if the later usually is desirable). During takeoff the local gravity field also affects the interior of the ship, creating unexpected complications for the passengers (for example, falling away from a planet produces weightlessness or a small negative gravity due to air drag). In space it can also be used to produce acceleration, with the same benefits and drawbacks.

This largely replaces the Induction Engine of Alternity. Cost: 2 M Dur: 2 Pow: 2 per movement point generated; in an atmosphere 1 per 20 durability points.

Brilliant pebbles

An old idea that the Penglaiese have developed. Small devices that can accelerate to extreme velocity and act as either a weapon against missiles or other ships, or as distractors to confuse enemy attacks. They are controlled by evolving battle programs, gradually adapting to enemy tactics. Each cloud of pebbles can act either as a moveable cloud of chaff, attack incoming missiles or home in on enemy ships hitting it with great force.

[Acc: -1 Range: 10/20/30 Type: Hi(p) Damage: d6+2s/d6+2w/d6+4w Actions: 1 After each hit, increase difficulties with +1 for all following uses (cumulative) due to the decreased number of pebbles in the cloud.]

World

Medicine

> Anatomy is destiny - but anatomy is malleable.
>
> I plan to live forever, of course, but barring that I'd settle for a thousand years. Even five hundred would be pretty nice.
> - CEO Nwabudike Morgan (Sid Meier's Alpha Centauri)

Medicine has advanced on most planets, enabling new treatments and the extension of human life. The exceptions are (as expected) Negsoa and Gaia, and to some extent Mary. The most advanced planets in this respect are Atlantis, Arcadia and Ridgewell, which all have achieved indefinite life extension: given the right gene therapy treatments and metabolic adjustments ageing can be halted. Rejuvenation is still not feasible, although a good imitation can be achieved using plastic surgery and further therapy (children born on Arcadia can be modified to have built-in life extension, making it possible to freeze ageing at some point). On the other planets human lifespans reach the biological maximum of 120 years (people remain healthy up to an advanced age, and then fairly quickly sicken and die), and on Nova this can be extended a few decades further by bionic support systems.

Most diseases can be treated fairly well; Alzheimer's disease, cancer and cardiovascular diseases are not much to worry over. The main problem usually lies in detecting dangers before they become significant. Instead of transplants cloned organs are commonly used (it takes around a month to grow a cloned organ at a good hospital). Local diseases (such as the salt breath of New America or 45-point syndrome of Penglai) can cause problems for outsiders, but usually effective treatments have developed locally. Often they can be treated by using chemicals that are poisonous to local life but not terrestrial life. Still, there is some worry about interstellar spread of contamination.

Radiation damage can be treated or prevented to some extent, but intense doses are still deadly. Trauma is another big killer - even with modern medicine it is not possible to help somebody who has been shredded or had his brain damaged seriously. Medicine still cannot handle destruction of brain tissue; while cultured neurons can replace damaged parts, the results are usually a profound amnesia, changes in personality and behavior - the patient becomes a new person.

Bionics is in widespread use on Nova and Atlantis. Originally developed for prosthesises in the 1990's and 2010's, they have become used for interfacing with technology and extending human capacity. The most common types are neurointerfaces and neurocomputers. Various brain implants exist enabling control over mood, motivational state, memory and the autonomous nervous system.

Another popular application is releasing drugs or hormones into the bloodstream. Some of the Nova prototypes (mainly developed by Unity and allied groups) place the human brain in highly unusual states, this was the basis of the human-Quai interface developed shortly after the first FTL contact.

Drugs have developed far on Atlantis and especially Dionysos. They can target very specific parts of the brain and body, causing well-defined and safe effects. The legality of non-medical drugs varies from planet to planet; on Atlantis and Dionysos anything goes, on Mary certain drugs are legal (the ones sold by BM), Nova and Arcadia have fairly liberal drug policies, while the rest are restrictive. Needless to say, this causes some problems when Atlanteans try to sell their recreational pharmaceuticals or indulge in their own lifestyles off-planet.

Genetic modifications of humans are common on Arcadia (where they have been nearly perfected) and Atlantis. On Nova, Penglai and New America, founded still under the influence of the bio-conservative 2030's, they are illegal outside some medical applications. Mary employs only some standard modifications, removing certain bad genes. Victoria has a formally liberal policy, but the area has not been developed far, partially due to Trahan influence: the Trahans dislike the idea of modifying one's heritage artificially (even if there is some evidence genetic techniques were used during the 50-54th dynasties). On Ridgewell one family dogma is keeping the clones "pure" by not modifying the genes except for in vitro antiaging gene therapy. Dionysos lost the medical knowledge, but is now embracing Arcadian and Atlantean techniques with few inhibitions.

World

World

Drugs

Kalmus

A Dionysos stimulant, very widely used there. It is either smoked, burned as incence or distilled into a perfume.

Myrrh

A family of Dionysian drugs that induces sleepiness and pleasure and (depending on type) hallucinations, euphoria or lowering of inhibitions. Taken in a variety of forms.

Sparks

Dionysian orchid-like flowers frozen into ice cubes with hallucinogenic properties.

Gratias

A Dionysos drug that produces an undirected feeling of gratitude and joy. Used for religious purposes.

Cuddles

Oxytocine analogue developed on Dionysos by Soma Inc. It makes people feel positive emotions more strongly, especially social emotions such as friendship, affiliation and love. Often mixed with inhibition-lessening drugs.

Mortex

A drug mixture invented by the Borderliner cult on New America in the late 2240's (these days the cult is completely gone, even if many stories about them circulate). It mimics a near death experience, putting the user into a stupor and giving him visions of out-of body travel, moving to other dimensions and

meeting the Ultimate. Highly dangerous (it can easily lead to brain damage or real death) and banned on NA.

PDE, Pattern Detection Enhancer ("Noids", "Einblicke")

A smart drug developed on Atlantis by Euphrosyne Pharmaceuticals to amplify the brain's ability to find patterns. The effect is an increase in creativity and awareness, but also a tendency to find patterns where there are none and in tense situations paranoia.

[PDE gives a –1 bonus to use of creativity or awareness-based skills, such as perception. When subjected to some form of stress, the user must make a WIL roll (normal difficulty) to avoid getting a paranoid delusion. The delusions only last while the drug affects the person, unless a critical failure is rolled – in that case the delusion persists. The delusions depend on the situation, and can range from a feeling of being watched to the realisation that the Arcadians are spreading designer diseases.]

Socio

Empathy-reducing drug, which induces a state similar to sociopathy. The user becomes less likely to care about others and more purely selfish, without the normal cognitive drawbacks or violence caused by real biological sociopathy. Developed by Euphrosyne Pharmaceuticals on Atlantis, where it is sometimes used by people desiring an extra edge.

Neo BNF

Growth factors that make neurons sprout new dendrites and synapses, and overall stimulate the brain to regenerate and develop. First developed on Nova (similar drugs exist on Arcadia, new America and Atlantis) to treat dementia and aging-related cognitive loss. Essentially it rejuvenates the brain. It can be used by younger people, but the price of a more plastic brain is that old information tends to get lost; during a Neo BNF treatment new information is easily acquired, but old memories and some personality traits might be forgotten.

Learning enhancers (Eidetic™, Mnemonal™, Memocode™ , etc)

Improves the learning capability of the brain briefly. The eidetic drugs (Eidetic™, for example) cause that what is experienced during the effect is stamped into memory in nearly perfect clarity, while consolidation enhancers make memory consolidation during sleep more efficient. Often combined with a medical support system that releases it when needed. Constant use has the same problems as Neo BNF, as well as the risk of learning lots of trivia. Especially

dangerous is that if a person with learning enhancers experiences a traumatic experience, Post Traumatic Stress Disorder becomes almost a certainty. Popular among students on Atlantis. Some similar drugs are used in psychodesign on Dionysos.

Liquid Amnesia

Hippocampus inhibitor, erases intermediate memory of the user/victim. For the duration the person will suffer from anterograde amnesia (the inability to remember things beyond short-term memory; in most cases people become extremely confused and upset but cannot keep information more than a few seconds). Afterwards, that period and the hours or even days before will be blanked from memory and cannot be retrieved.

[During the effect, the victim will suffer +4 on all tasks requiring more than just working memory. They will be disoriented, confused and loose track of what they are doing.]

Soul Sleep

Dionysian psychodesign drug, putting the user into a state similar to a hypnotic trance with very little control and a high degree of suggestibility. Users feel passive and accepting, not initiating actions of their own.

[The WIL of the user is effectively halved for the duration of the drug. If given a suggestion or order, they will obey unless they succeed with a WIL test with a difficulty depending on the kind of order - a very easy, direct or innocuous order will be Challenging to avoid, while an obviously harmful act will be Extremely Easy to avoid. Of course, if the person is first convinced it is good the difficulty will be harder.]

Mother's Rage

A psychoactive substance found in a decaying felt in western Dolphin on Gaia. It acts as a powerful adrenaline analogue, stimulating users in low doses but causing anxiety, anger and all the physiological effects of an adrenaline overdose. The Mothers regard it as an embodiment of the righteous anger of Gaia, and there have been instances of people poisoning each other's food with it or use before battle by Cybelists.

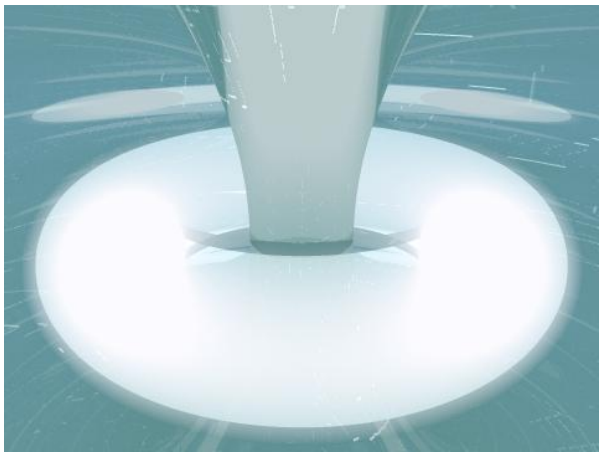
Canine / Nimbus

A dopaminergic smell-enhancer discovered both on Atlantis and Dionysos. It increases olfactory acuity, making the user strongly aware of smells (they also have greater emotional impact). While regarded mostly as a novel experience on Atlantis, it is quite popular on Dionysos to truly savor sensual experiences. When combined with training (for example wine sampling) it can make users

extremely sensitive to tiny taste and smell differences; some Dionysian outdoorspeople use it for hunting, tracking down prey by smell alone.

World

Fusion Power



Not only will atomic power be released, but someday we will harness the rise and fall of the tides and imprison the rays of the sun.
- Thomas Alva Edison

Fusion is the most used source of power, especially for spaceships and in fixed installations. A complete fusion reactor can be shrunk to a volume of around a thousand cubic meters, making it usable for larger spacecraft and in buildings but not in smaller or very mobile systems; for that fuel cells, solar cells or other energy sources are used. Most smaller fusion systems are fairly compact and easily maintained.

Safety is quite good, the core parts are radioactive but solidly shielded. It takes plenty of violence to break them apart. Coolant failures can be destructive, but at worst destroys the core and usually only leads to the reactor shutting down. It is very hard to get a reactor to do something spectacular.

The fuel is Helium 3, which is somewhat rare. The most common source is mining the surface of airless moons or asteroids exposed to the solar wind; this can be done using automatic mining vehicles that distil the valuable isotope from the surface gravel. A more expensive but potentially larger source is skimming it from the atmosphere of gas giants using ramscoops; currently this is only done by Unity on Zeus and by New America on Adams.

The Penglaiese have developed more advanced fusion, based on neo-Taoist engineering practices. By exploiting their understanding of controlled chaos they have not only developed much more compact and efficient reactors, but also made use of deuterium fuel possible. Deuterium can be extracted from seawater, making space industries unnecessary and energy even cheaper. Many of the larger fusion plants have integrated seawater extraction systems, especially the greenhouse plants which vaporise the water and spread it in the atmosphere.

World

World

Psychodesign

'Will a self.' Active, successful natures act, not according to the dictum `know thyself', but as if there hovered before them the commandment: will a self and thou shalt become a self.
-Friedrich Nietzsche, Assorted Opinions and Maxims.

Neuro-linguistic programming is simply the zig-zag and swirl of menorgs and disorgs acting under the suction and pressure of the morphogenetic field.
- Clark Brooks

If you don't like something, change it. If you can't change it, change your attitude. Don't complain.
- Maya Angelou

Psychodesign is to psychology what engineering is to science. Not just understanding, but the practical application to the real world. Psychodesigners can change the psyche of their clients, both as a treatment for problems and for enhancing the clients in a variety of ways. It is a dangerous ability, since it is quite possible to subvert a person's entire mind.

Psychodesign requires proper tools: at the simpler levels just hypnosis and some drugs, at higher levels advanced scanning equipment, virtual reality and electromagnetic induction devices as well as time for therapy. On Dionysos psychodesigners have special offices with all the necessary equipment, usually tastefully hidden away when not needed. A Dionysian psychodesign treatment might look like something in between of a traditional therapy session, hypnosis, a drug trip and a visit to Dr Frankenstein - or something completely different, since psychodesigners usually tune their methods completely after the patient.

System

Psychodesign is handled with a complex skill check where the difficulty depends on the task and the number of successes tells how permanent it will be. Each check corresponds to one or more hours of therapy.

Temporary changes	1 successes
Short term (one day)	3 successes
Medium term (a week)	6 successes
Long term (a month)	9 successes
Permanent (a year or more)	12 successes

The difficulty depends both on circumstances and what the psychodesigner tries to do:

Put in backdoor /conditioning (makes subsequent attempts to psychodesign easier)	Easy
Heds (produces a pleasant mental state)	Easy
Create emotional state	Average
Find backdoors and submarines	Tough
Change memories	Hard-Formidable depending on complexity.
Change Traits	Hard
Change values	Challenging
Change personality Challenging	Challenging
Change sexual preferences	Formidable
Create "mental disorders"	Easy-Formidable, depending on type.
Increase mental attribute	Tough-Gruelling depending on original level.
Create Demon	Tough

Build new person	Gruelling

Modifiers:

Lack of equipment	+1 to +3, depending on how important equipment is lacking. Advanced psychodesign does not work without certain equipment.
Rush job (half an hour per roll)	+1
For every point of client WIL above 12	+1
Backdoor	-1 if the backdoor is Ordinary, -2 for a Good backdoor, -3 for an Amazin backdoor.
For every point of WIL below 7	-1

Psychodesign on oneself is possible. Many standard treatments, states and demon templates are described in the Orphic Canon, the psychodesign counterpart of the "rubber handbook" of engineers

Demons, independent subpersonalities "running in the background" allows the owner to divide his or her skills in different directions. Very well developed demons can give the owner new perks and flaws like observant or paranoia; the cost is either paid using skill points or balanced between a perk and a flaw. It should be noted that psychodesigners should be careful about using demons since they will also have access to psychodesign; there are several cases where the demons have used psychodesign or psychology against them.

Terminology

Abrek	Keyword making someone go into a trance.
Angel	"watch demon", a subprocess inserted to monitor a psychodesign or possibly warn the owner if he attempts something dangerous.
Atha	"quick fix" in psychodesign.
Cleansing	To clean out the mind from old programs, submarines and athas, usually by prolonged ecstasy, fear or illumination.
The Clay	The human mind.
Closing the gates	Finishing psychodesign treatments, locking the changes in place and making them unalterable.
Cog	An unitary cognitive schema.
Cognicide	To wipe out a mind, either deliberately or accidentally.
Dissolve	To make somebody more flexible, plastic or changeable. Can also mean total personality change.
DNS	Dark Night of the Soul, temporary depressive and negative state induced to launch a major illumination.
Hed	Hedonic change, a modification purely for pleasure.
Hedon	A unit of pleasure, something that cause somebody to experience pleasure
Gateway	Posthypnotic suggestion inserted to make the person able to return to a certain mental state ("When you open the box you will feel as calm as you feel now")
Imprinting	Placing a person in a flexible mental state, give her a strong impression and then return to normal. Results in personal change.
Leviathan	Hidden or remaining psychocode.
Logos	The high level metaprograms of a person.
M-valley	Memetic attractor, a way of thinking that supports itself and can spread from person to person.
Parenes	The admonitions usually given to clients undergoing certain psychodesigns.
Pit	A very deep valley, a state impossible to get out of on one’s own. Could be a psychosis, bad trip or fanatical belief.
Post	Posthypnotic suggestion
Psychocode	"programs" of the mind.

Salt	To make somebody or something more rigid, stable and permanent. Extremely rigid people are jokingly called Lot's wives.
Valley	A state that is self-supporting, an atractor of a dynamical system.
V-valley	Value attractor, an attractor in a person's value system
Water	Mental energy, attention, libido. The limited mental resources that can be redistributed into more optimal ways with psychodesign.

World

Weapons

An armorer of Chu boldly claims to make the best spears and shields. "My shields are so strong; they cannot be penetrated by any weapon," he said. "My spears are so sharp; they can pierce any shield," he further said.

A man asks, "If your spear is thrown at your shield, what then?"

The armorer had no reply. By logic, both an unpenetrable shield and an all-piercing spear can not exist at the same time.

-State of Chu (841-233 b.c.), Chou Dynasty (translation www.chinapage.com)

The colonies have had little use of weaponry, and weapons development has been rather spotty. On most colonies the basic weapons are not significantly different from 2030's weaponry: chemical projectile weapons with targeting support and recoil management. Many colonies have developed nonlethal weapons such as tasers, tranquilliser gels or tangler nets, which are much more useful for law enforcement than war.

Gaia and Dionysos have very underdeveloped weapons, in both cases the founders deliberately limited the available technologies. On Gaia there are nothing more advanced than longbows, while on Dionysos simple guns are allowed only for the police. Negsoa on the other hand has lost the ability to build modern weapons: a few relics remain while knives, swords, spears and arrows are used.

New America is the only planet with a real standing army. It was formed as a response to the perceived threat from the Filigrees. The weaponry has been especially developed for zero-g assault, and the space marines employ special space combat suits for boarding and long-range fights.

Atlantis is a bit unusual in that weapons have been developed as style statement

and ideology rather than use. Arms manufacturer such as Trillicon Arms, ZetaTech, Sterling Rifles and others have developed a wide variety of extreme, unusual and powerful weapons, more stylish than useful. Many weapons are completely cosmetic, built to look intimidating rather than do damage. Others are built to provide dramatic amounts of damage or through unusual means.

On Nova drone weaponry has been advanced: the combinations of robots with weapons. A defence system consists of a number of independent robots that fly, roll or walk around equipped with some weaponry (usually non-lethal, although rather heavy guns have been used in the Alliance) and a communications link to headquarters or coordination agencies.

Space weaponry has not been developed far yet. Plans developed independently on different planets involve fast AI-controlled drones rather than close combat between ships. Manned fighters would coordinate the drones, forming a second line of defence between the mothership and the attacker. The two planets with the most well developed space weaponry in 2350 are Penglai and New America. Especially Penglai is developing space defences aggressively.

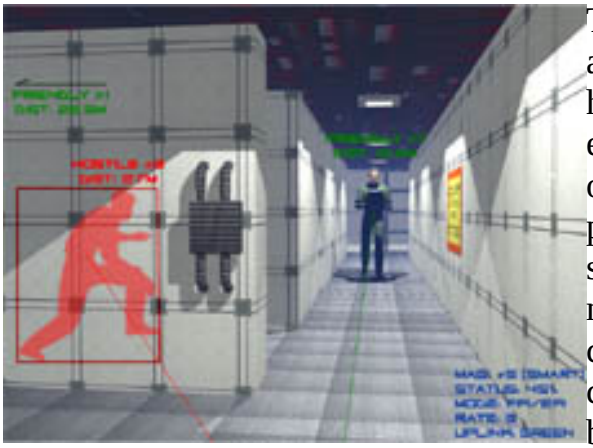
Even if conventional warfare has not changed much, information warfare is well developed on many planets. Instead of attacking physically, enemies try to subvert each other's software, knowledge of the world or ideas. Attacks can range from blunt stuff like hacking, computer viruses and misinformation to subtle campaigns of paranoia and psychological warfare that makes the enemy believe the wrong things. Especially Nova and Traha excel in this kind of aggression, although Atlantis and New America are not far behind.

C3I

"Gaia, its hot."
"31 degrees centigrade."
He liked hearing the gun. It gave him a wired feeling.
- Ken Macleod, The Star Fraction

While the technologies for causing actual damage have not advanced significantly, weapons information technology has advanced far. C3I (Command, Communications, Control and Intelligence) systems makes it possible to link together a team so that they can draw on the information from each other in the fog of battle. It also makes smart weapons possible, able to act more or less on their own. Even personal weapons are highly digital, containing everything from documentation and maintenance advice to targeting systems.

Teamware



The most common form of C3I systems are teamware, where each team member has a wearable sending information to either some behind-the-lines headquarter or forming a local network. Cameras, position data and status are continuously sent, making it possible to build up a model of where everybody is. In the centralised version the officer at the HQ can then give orders and advice, supported by expert systems and AI ("Red three, two bogeys are approaching from left-behind"). However, the system works even without a HQ allowing the members build up a map over the fighting area from their mutual observations, and software can make estimations of where enemies are from observations and firing angles. Indirect fire becomes possible, as an enemy seen by one team member can be attacked by another team member who has not seen him or through guided weapons.

One often used application is FFI, Friendly Fire Inhibition, which connects the gun to the C3I and inhibits firing (unless overridden) against friendly targets (on Atlantis there is even EFI, Expensive Fire Inhibition - the gun refuses to fire if the cost or potential litigation is beyond the owner's means). The protection is never perfect, but enough to make a teamware team able to deal with enemies right among themselves. The reverse, FD (Foe Detection) disables firing when the gun is not pointed at a designated enemy, making it easier to hit. On Nova drones and local sensors are often included in the teamnet, making it possible to coordinate both human and robot attacks.

Obviously there are some drawbacks. The communications need strong encryption, since if somebody manages to hack the network teamware becomes the *enemy's* best asset. Another obvious problem is that the team members are more easily detected due to the constant broadcasts by enemies with communications detectors; they are vulnerable against ECM which jam the communications. Some systems use line-of-sight laser communication with support from relay nodes the members drop off. Running the signals through the Net makes the team less conspicuous, but makes them vulnerable if the net is in the hands of the enemy; often C3I teams spread out comdust to build their own local net.

Teamware can be used by individuals too; they do not get any tactical help from any comrades, but they can link up with sensors and other equipment, giving them an enhanced tactical view anyway.

[Teamware has several effects. It makes tactics rolls for the leader(s) easier. An Ordinary teamware system gives a -1 bonus to Tactics rolls, a Good -2 and an Amazing-3.

People using teamware can fire at enemies not visible to them but to another member or a linked camera at +1; if several team members see an enemy there might not be any penalty at all as the enemy's position is so well defined.

FFI, Friendly Fire Inhibition, increases the difficulty to hit a team member (or a designated friend) with +2 for each level of quality of the system. If the gun is firing autofire at a mix of friends and foes, it makes it possible to inhibit firing when the gun is pointed at the friend; for each friend that could be hit, roll a firearms roll (with a 0,-1 or -2 bonus depending on quality) to avoid hitting him. Before the battle the system must be set to whether to fire or not if enemies stand in front of friends; bullets may still pass through them, and if the system fails to see the friend it may still fire.

EFI works just like FFI, but inhibits firing that would be costly given the information that can be gleaned through the net. It is essentially a small expert system doing cost-benefit analysis on the fly.

FD, Foe Detection, helps inexperienced people hit enemies by disabling firing when the gun is not pointed at a designated foe. Just pressing the trigger and sweeping the gun across the enemy will make it fire as soon as the FD system decides it has a chance to hit. Simple systems just allow firing inside the contours of the enemy, while more sophisticated delays the shot until the gun points at the centre of the figure. This gives a -1, -2 or -3 bonus to hitting. One major drawback is that new enemies might not be eligible targets, and have to be designated (one action) before they can be attacked, something that can be lethal in a big fight. FD is regarded a bit like "trainer wheels" by experts.

Detection of a person using C3I has a –2 bonus when the system uses radio, -1 when using local computer nets and no bonus if stealth radio squirts or line-of-sight laser plus comdust is used.]

Mapping Bullets

Mapping bullets are special bullets that contain wide-angle cameras and a transmitter. When fired they transmit what they see back to the C3I system, making it possible to add a lot of (fuzzy) information to the map without sending people in.

[The bullets do -d6 damage less than normal bullets if used to hit someone or something. Cost twice the ordinary ammo cost.]

Weapon Harnesses

Weapons harnesses are wearables with extra add-ons for C3I, defence and sometimes even offence. One version, the Trillicom Distracter, is able to launch chaff and smoke to protect the wearer from attack when it detects it. More offensive versions exist, with weapons under the control of an expert system and partially the owner; they tend to be quite dangerous to approach.

Motoric Teamware

On Nova, some law enforcement people have used bionics to allow AI to take

control of their bodies in a crisis situation, essentially allowing the teamware to use them as drones. It is not very popular.

[Teamware control requires a motor shunt, and either somebody running the person through telepresence (for example a veteran officer or expert on the task) or a motor-equipped teamware system. Motoric teamware is an expert system containing knowledge about how to move, acrobatics, armed or unarmed combat as well as a small AI performing the necessary tasks to reach the objective.]

Smart Weapons

Smart weapons have varying amounts of intelligence in them. Some just link to the C3I and give the owner the ability to shift between types of ammo, see through the aimpoint camera etc. – this kind of connection is necessary for use in teamware, and is practically standard these days. The scramjet bullets of the sabot pistols of Trillicom have built in cameras and some limited steering capabilities. Zetatech's Marksman Gun is equipped with a Nova-designed AI program and can act as a point defence or drone if placed on a tripod or suitable vehicle (although the pricetag deters most people).

Electronic Warfare

Electronic warfare isextremely important, especially as a defense against C3I. They range from jamming fields to disrupt bugs and radio to missiles homing in on sources of radar.

Communications Jammer

A device filling part of the radio spectrum with noise (or in the case of more advanced models, "adaptive garbage" that tries to confuse any signals maximally).

[If the Jammer has a higher quality than the communication system, then it will block the communication. Otherwise it will just add a +1/+2 or +3 penalty to communications attempts.]

Infrared Blocker

A smoke grenade that also blocks infrared light, making thermographic vision and especially IR signals from computers invisible.

[Effects just like a smoke grenade, but blocks IR links within the cloud.]

Radar Tracker

Electronic CounterCounterMeasures are the next step, with missiles homing in on jamming.

The Radar Tracker is a device which is either put into a missile or connected to C3I to guide it. It tracks sources of radar (the user or an expert system has to make

a System: Sensors roll to lock on), and allows the missile to zoom in on them with a -3 bonus for hitting. It can also be used to track radio, IR emissions or jamming.

ECCCM

The step after that is the Trillicom ECCCM mini-missile: a small missile that protects some radio source by firing itself when it detects an approaching ECM or ECCM missile.

[Does damage like a pencil missile, and automatically fires at approaching missiles.]

EMP bomb ("Ethernuke", "The Pulse", "E-Bomb")

A device creating an intense electromagnetic pulse by powering a coil with an explosion, disrupting electronics in the vicinity (similar to the EM torpedo in space combat or the standard Alternity Pulse Grenade). Electromagnetic pulse weapons are still effective in 2350 even if much of computers run on optronics: enough systems are electric for an EMP to damage them or activate failsafes. Remember that bionic interfaces are electric - on Nova an EMP bomb can hurt people too. Illegal on most planets.

[A tactical E-bomb does Amazing damage (d10+2s) to electronics within 100 meters, good damage (d8+2 s) within 500 meters and ordinary damage (d6+2 s) out to 1 kilometre (although sensitive equipment like sensors beyond this range may be affected). The bomb itself explodes like a fragmentation grenade. The damage type is En/A]

Herf gun

A gun radiating an EMP; it creates a high frequency field that induces current into conductors it is pointed at. Instead of a barrel it has a waveguide. Due to reflections and diffractions it is hard to hit just the target, usually much of the surroundings are radiated. Illegal on most planets. A popular weapon among anti-AI terrorists on Nova.

[Skill: Mod-pistol Acc: 0 Md: F Range: 10/20/30 En/O d6+2s/d8+2s/d10+2s (only against electronics; affect everything within two meters of the target and can be reflected by conductors) Actions: 1 Clips size: 5 Hide: +1 Mass: 2]

EMP Shielding

To protect against EMP is possible, but often expensive. The surface of the object protected is covered with a conducting mesh, and special fuses used inside. Sensitive installations are usually shielded, but most equipment is normally unprotected. A bonus of EMP shielding is that it becomes harden to eavesdrop on electronic communications.

[Ordinary shielding merely protects against power surges and lightening strikes. To

shield against Herf guns and Pulse grenades Good shielding is needed, and a dedicated E-bomb (or nuclear explosion) requires Amazing shielding. Usually, each level of shielding gives d6 armour to the object. The cost is 1-10% % of the object's price for Ordinary shielding, 10-50% for Good shielding and 100-200% for Amazing shielding. Weapons and sensors are usually more expensive.]

Bandwidth scanner

A computer peripheral checking the local network traffic, IR emissions and radio for traffic. It will detect increases or changes in bandwidth usage, alerting the owner if C3I or other infowar is going on.

Drones

Robots and weapons make a logical combination - by automating weapons they can be sent into dangerous situations (i.e. combat) without risking their owners. Also, cheap AI makes it easy for individuals to run large groups of machines - now almost everybody can be a general (although in practice drone combat is best left to the experts; managing a dozen semi-independent devices in a battle situation is not something that can be learned overnight).

Drone combat relies on the skill Weapons Systems to coordinate the many robots and devices involved. The manager can either allow the drones to act on their own, reprogramming them along the way, or take direct control over one and control it manually (using his skills instead of its own). Usually drones are programmed to run a standard program like scan area (reports any unexpected events) or search-and-destroy (search through an area, attacking anything fitting the enemy criteria). The manager sees what they see on his screens, and the drones can alert him about various conditions.

Drones are usually not that smart, and can be fooled or mistaken - even if you are designated as a friendly target a drone might mistake you for an enemy and fire anyway.

Pencil Missiles

Pencil missiles are popular drone weapons: small missiles with high manoeuvrability used mainly on small hard targets like other drones or to threaten humans. They have a shaped charge sending tungsten shrapnel into the interior of the target, intended mostly to damage electronics and servos. Since they are so small, portable launchers can carry tens of missiles.

[Skill: Hvy-indirect Acc: -2 Md: F Range: 100/200/500 Type: Hi/A d4+2w/d4+4w/d4+1m Actions: 1 Mass: 100g]

ATU 22 (Autonomous Tactical Unit)

A standard drone developed for Alliance patrons in Landfall by Robodyne Armament Systems. ATU is tracked and armed drone, one meter long and 30

centimetres high. It is able to extend wheels for increased speed or helping navigate broken terrain. On top it has connectors for one gun (RAS also sell adapters enabling it to carry more ordnance) and several sensors or manipulators. The standard version comes equipped with visual and heat sensors, but audio, radio, chemical, radar, sonar, radiation and even touch senses can be added. There is space for either one major manipulator (STR 8) or two smaller (STR 4). The ATU is fairly easy to detect; it is mostly intended as a smart point defence, heavy firepower support during an assault etc.

STR 8 DEX 8 CON 8 INT 3 WIL 9 PER 1 Durability: 8/8/4/4 Action check: 12+/11/5/2 Actions: 2 Move: run 50 (on wheels on flat ground/road; otherwise 30), walk 20 Armour: d6/d6/d6/d6 Skills: Ranged weapons modern 14, Stealth 10, System Op Weapons 14.

Typical armaments: Flares, Multi-ammo shotguns, pencil missiles, machine guns

Kobyashi-Havel Engineering Eagle

A flying drone, hovering on fans. It is 70 centimetres in diameter, able to carry loads up to ten kilograms for one hour of use.

Typical armaments include micromissiles, guns for scramjet bullets (Trillicon arms have begun selling their weapons on Nova), fine calibre gatlinger, liquid gas guns.

STR 8 DEX 15 CON 6 INT 4 WIL 8 PER 1 Durability 6/6/3/3 Move: fly 200 Action check: 20+/19/9/4 Actions: 3 Armour: d4/d4/d4/d4 Acrobatics 15-flight 17. Stealth 14.

Kobayashi-Havel Engineering Bat

A flying stealth-drone 30 centimetres in diameter, able to carry loads up to two kilograms for four hours of use. It is mainly intended for surveillance and scouting, but can also release two packets (stealth spider surveillance boots, bombs or something else).

STR 2 DEX 17 CON 3 INT 5 WIL 8 PER 1 Durability 3/3/1/1 Move: fly 150 Action check: 23+ 22/11/5 Actions: 4 Acrobatics 16-flight 18. Stealth 16 Awareness 13-Perception 14

Kobayashi-Havel Engineering Monkey

A manipulator drone, intended for infiltration, sabotage, exploration and rescue. It is intended to be flexible and be able to open doors, move objects and manipulate small things like keypads. It looks like a spider monkey made of plastic, with four flexible limbs with hands, and four extra manipulators that can be folded out from the body.

STR 7 DEX 15 CON 6 INT 4 WIL 8 PER 1 Move: walk 10, jump 10, run 50 Action check: 20+/19/9/4 Actions: 2 Durability: 6/6/3/3 Armour: d4/d4/d4/d4

Athletics (7)-Climb (16), Jump (14), Stealth 1

Pi 3 Orionis

Pi3 Orionis is unique in its development of truly autonomous weapons. Years of relentless infowar has produced a whole infrastructure of underground microfactories, autonomous drones, warfighting expert systems, exoskeletons, software tricks and EMP devices.

The expert systems are small AI program kept in wearables or exoskeletons owned by the clans. Most have their own personalities, acting as family members rather than advisors. Often the family has one or more aiqutbs, devices where the AIs can link together and exchange experience as well as make backup copies. Most of the experts are skilled in tactics, stealth, various practical skills and the subtle information skills needed to handle the information background of the jungle.

The drones are controlled by the experts or simpler programs. They act as scouts, weapons and communications devices. Most are tiny, solar powered devices usually hiding in pockets or on trees. They work extremely well in swarms, attacking from all directions (often the humans act as tactical advisors remotely).

Large infodrone

Infodrones act as eyes and ears of the family. Often they disperse small subcameras squirting back information to the hidden drone.

STR 1 DEX 6 CON 3 INT 12 WIL 8 PER 1; Durability 2/2/1; Movement – fly 4; Action check score – 9+/8/4/2; Actions per round 1; Mass 0.1 kg; Size 10cm; Stored programs: operating system, System Operation – sensors 6, control utility (controls cameras, devices and scoutdust placed in the vicinity), Acrobatics-dodge 3, Awareness-perception 4, Investigate-search 4, Stealth-hide 6.

Cracker

A small drone for cracking systems; it tries to sneak up on other drones, devices or even people to crack or sabotage their systems. Once it is in, it can either "pervert" the system by replacing the code with its own (or other code downloaded from the nearest aiqutb), add backdoors or simply sabotage it. Cracker drones have stats like the infodrone, but instead of System Operation it has Computer Science-Hacking and instead of Investigate-search Demolitions-disarm.

Attackdrone

STR 2, DEX 6, CON 4, INT 13, WIL 8, Per 2; Durability 4/4/2; Movement fly 5; Action check score –9+/8/4/2; Actions per round 1; Mass 1 kg; Size 15 cm; Stored programs: operating system, Modern weapons – onboard weapon 6, Acrobatics – dodge 4, Awareness perception 4

Carries a built-in weapon, either a needle gun with paralysing poison or

blackmailers, an ordinary gun or micromissiles.

Defensedrone

Drones intended to protect their owners against attackdrones. They are expendable, and act as very quick countermeasures. It can release confusing chaff, blind with lasers and physically intercept missiles.

STR 1 DEX 15 CON 2 INT 5 WIL 8 PER 1; Durability 4/4/2; Movement fly 10; Action check score 9+ 8/4/2 Actions per round: 1 Mass: 0.3 kg. Size: 10 cm

Stored programs: operating systems, Acrobatics-dodge 6, Awareness perception 4, Modern weapons – laser 4

Carries chaff containers (makes targeting +1 in the vicinity of a release) and blinding lasers (increases difficulties for the enemy when hit with +1/+2/+4).

Scoutdust

Extremely tiny scout drones, less than a millimetre large each. While they just drift in the air or trickle along the ground, they are able to signal if some pre-set condition occurs. Usually they are dispersed by infodrones as perimeter defence. Gives a +3 penalty to stealth when dispersed normally; if densely dispersed the difficulty can increase even more.

Sabotagedust

Like scoutdust, but seeks out electronics, drones or equipment and either inserts viruses or sabotage it. Every minute someone is inside the sabotagedust area it will do an attack doing d4+1s/d4+1w/d4+2w damage (skill depending on governing drones; if running on its own it will have a score of 10).

Blackmailer

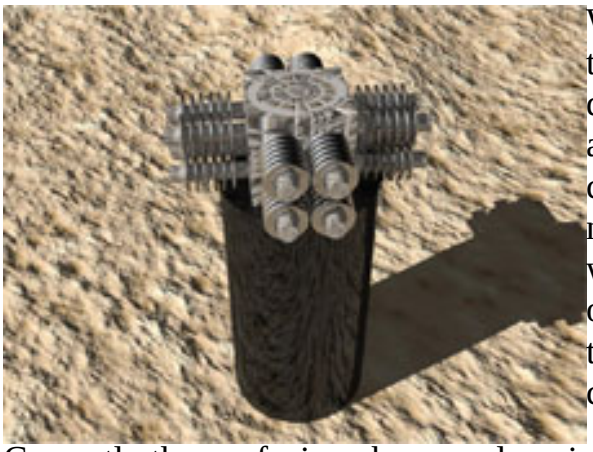
A small pellet, containing explosives, poison or some other nasty surprise. When it pierces flesh it extends thin hooks and generally refuses to be removed. If it receives a signal or is tampered with, it detonates. This is used by the clans to catch other people, who they can then sell back for a ransom.

[The damage is one wound, regardless of how good hit it is. Explosive blackmailers does d6w/d8+1w/d6+2m (depending on the original shot; an Amazing hit means the blackmailer has located itself in a vital organ) damage, while poison blackmailers have effects depending on what poison it is filled with. Removing the blackmailer is a +d6/+d8/+d12 task, depending on how good the hit was.]

Confusion charge

When we control the fire
control the great divide
design extropica
the pride of nuclear India

Hear the roaring sound
I do I do I do
when the gods come down
I do I do I do
- Vacuum, Nuclear India



When matter is subjected to disruptions of the scalar fields, it becomes unstable and decays into energy - a phenomenon known as confused matter. Under some circumstances the confusion spreads to nearby dense matter, and ever since this was discovered a small but energetic group of Atlantean physicists and engineers have tried to construct a bomb based on confused matter.

Currently the confusion charge only exists as plans and some small test models built by Geodesic Systems (they and Trillicom Arms have detailed plans but no buyers yet). A relatively small higgsdevice creates a "higgswhistle" (an increasingly high-frequent and intense modulation of the Higgs fields achieved through some clever trickery where the device implodes when generating the field), making nearby matter unstable. It requires plenty of power to run, and has generally been imagined to run of an accumulator (or, in the case of the Trillicom Armageddon, a fusion reactor). The device makes all matter inside a short range unstable, and produces damage roughly like a scalable nuclear weapon. Presumably this could be placed in missiles or stationary bombs, although the real "killer application" would be if the weapon could be tuned to create a spreading, self-reinforcing confusion field - that would be the mythical planetbuster bomb.

Many people have warned that pursuing these technologies is a bad idea, that if they are successful they might create a situation where the colonies have to arm themselves "just in case" and end up in an unstable situation of Mutually Assured Destruction with FTL missiles.

World

Cryonic Suspension

Freeze - wait - reanimate
- Ancient cryonic slogan

Cryonics, the freezing and reanimating of tissue or entire organisms, was developed in the early part of the 21st century originally for the preservation of transplant organs but later to sustain seriously ill patients - they could be frozen until they could be treated. In the 2030's it was a fairly proven technology. It made interstellar colonisation possible, and during the colony programs the reliability and efficiency were gradually improved. Since then little has changed, even if details have been refined and some new technologies added.

Before a suspension it is common to undergo pre suspension treatments intended to minimise the damage. They consist mainly of injections of various chemicals and a special diet intended to protect the gastrointestinal tract from the inside (the "food" goes under many humoristic names, ranging from The Last Meal to freezerporridge). The pre-treatments are not necessary, but well advised.

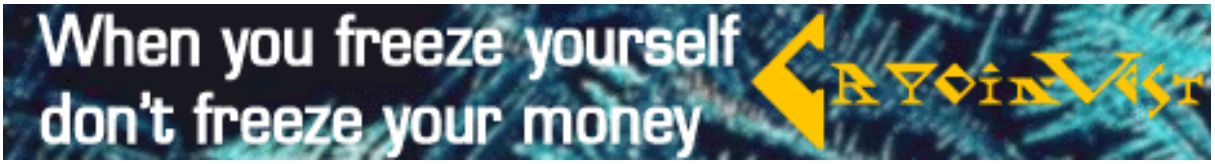
At suspension, the person is injected with a powerful dose of sedatives and cryoprotectants. The body is placed in a tank with cryoprotectant gel and tiny sensors/transceivers (also included in the "food" and these days in the injection), linked to life support systems and then cooled until just a few degrees above freezing. Powerful cooling systems, vitrificators, decrease the temperature further, so quickly that ice crystals never form but the water becomes a glass-like solid. The process takes a few hours with modern equipment (in the past it took days). Eventually the frozen person is stored in liquid nitrogen. The storage can last at least a few centuries and require very little maintenance.

Reanimation involves homogenous microwave heating (employing the embedded sensors/transceivers to make sure heating is uniform). Slowly the body is returned to normal temperature, various reanimation solutions are pumped into the body and the cryoprotectant gel is drained. Usually the patient spends one or two days recovering from the suspension; even the best suspension methods tend to stress the body and medical treatments are welcome.

Society and Cryonics

Cryocorps exist on most of the colonies, companies specialised in the suspension and reanimation of people. Clients pay for the suspension procedure, storage and eventual reanimation (upkeep of the corpsicle is paid by using the interest on the reanimation money; since storage is usually quite cheap this is seldom a problem). Clients who suspend themselves sign contracts with the cryocorps to be reanimated depending on certain conditions such as after a certain time, when something occurs or on the request of relatives.

In fact, comparatively few people are dying in a strict sense every year. Most fatally ill, wounded or very old people undergo cryosuspension, which means they are not formally dead even if reanimation is highly unlikely.



During the suspension, a specialised law firm or a cryoinvestment corporation usually manages the suspendee's estate. On some worlds (Nova, New America and Arcadia) the law forces a certain amount of inheritance if the suspendee is in a condition that makes it unlikely that reanimation will occur within a century. On Ridgewell the clone (i.e. the economic person corresponding to a clone lineage) of the suspendee manages the estate. Of course, on Atlantis there are no restrictions. On Gaia, Negsoa (and Dionysos until recently) cryonics is not in use. On Victoria only humans are allowed to use it, the permanent xenological committee has decided cryonics would disrupt Trahan society if spread to their species. Mary is the only place where cryonics is mandatory.

System

The character takes damage at suspension and reanimation; the amount depends on the conditions and the constitution of the character.

Roll two CON checks for suspension and reanimation, with normal difficulty. The roll is modified depending on the conditions:

> Pre-medication: -1 (at suspension only)
> Hasty freezing: +1
> Good or bad equipment can give +1 or –1 (truly awful equipment can give +2 or +3, but only crazy people use faulty cryosystems)
>
> The doctor's (or equipment's, if it is automated) success with a Medicine roll:
> Ordinary success: -1
> Good success: -2
> Amazing success: -3
> If the doctor fails, the difficulty can increase and of course, critical failures will lead to nasty consequences.

Damage taken at suspension and reanimation (note that secondary damage may

result):

> Critical failure: death or serious damage (see below). The person is definitely in a critical condition.
> Failure: 1d4 mortal
> Ordinary: 1d4 wound
> Good: 1 wound
> Amazing: 1d4 stun

Things that can go wrong

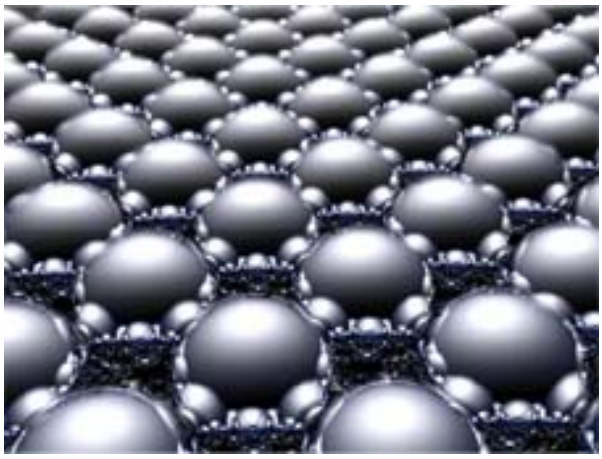
The main issue is cell death and tissue damage. The cryoprotectants decrease it, but cannot remove all. A badly performed suspension or reanimation can kill so many cells that the patient thaws in a critical condition or cannot be reanimated at all.

Cracking is a big worry especially in spaceflight, and one reason for the cryoprotectant gel (which becomes a tough padding). This mishap can be detected before reanimation, and treatment pre-planned.

People are also worried about the effects on the brain. Short term memories from the period just prior to suspension are always lost (cryo-amnesia), but damage to synapses and dendrites can also affect memory and personality. The effects are usually too small to be noticed, but there have been cases where memory loss or dementia have resulted from suspensions.

World

Nanotechnology



Objects once measured in meters have become so small that they cannot be seen by the naked eye, with revolutionary applications across the board. Gentlemen, forget what your courtesans have told you: size does matter!
- Morgan Industries Annual Report (Sid Meier's Alpha Centauri)

Nanotechnology, the ability to build machines on the molecular scale, has a potential rivalling Higgs field technology. By using self-replicating nanomachines almost anything could be built with atomic precision out of the component atoms (which can easily be obtained from the environment with no need for mining or complex extraction processes), and since they are self-replicating the price could become nearly arbitrarily low while the scale of operations could range from the microscopic to transforming entire planets. Nanocomputers would be smaller than bacteria, controlling nanodevices that could do anything from acting as a technological immune defence to subtle intelligent weapons. The potential is at least as big as that of living organisms in producing objects and transforming the environment, and likely much larger.

Unfortunately nanotechnology has proven to be more elusive than expected in the 20th and 21st century; various technological complications have hindered development. On many of the colonies few or no attempts were even made given the discouraging experiences back on Earth, and several colonies (like Nova and New America) spent decades pursuing limited approaches. The first real success outside the solar system was made on Atlantis in 2305 when the Nanoscale Collective managed to get a primitive nanoassembler up and running. Since then much capital has been invested into the NC and related businesses. The technology has developed to the extent that it is partially useful. The builder nanodevices are fragile and do not survive outside very controlled high vacuum laboratory conditions, and due to limitations of the replication and control process they can mostly produce arbitrary amounts of chemicals or blocks of matter with a molecular texture. Even this very limited technology has revolutionised many areas: chemical industries have begun to move into orbit to take advantage of the conditions or miniaturise their production processes into smaller nano-supported modules that can be sold. New materials such as bulk

diamond, ultra-strong fibres, extreme low-density aerogels, "smart" microspheres containing other chemicals that will release them under certain conditions and "smart" materials with weird properties. Atlantean investors are confident that the technology can be developed much further.

Mymach Inc. Personal Drug Manufacturer, "Pocket Pharmacopoeia™

One of the first mass market nanotech products, a portable drug manufacturing device. Using a system of nanoassemblers the device can produce just about any molecule given the right nutrients, it just needs a program to put together the molecules atom by atom. The whole device is 10x10x5 centimetres large and connects to standard Atlantean computers. It comes with a number of pre-programmed drugs such as public domain painkillers, hormones and recreational drugs; new designs can be downloaded from the Net for a fee. The device can produce one capsule in around 2 minutes, and have internal stores enough to make up to a 100 doses before it needs a nutrient refill.

Nandex™

An "active fabric" composed of micromachines built using nanotechnology by Genius Materials. The micromachines link together when commanded and can form a opalescent, flexible fabric that can be commanded to become different kinds of clothing that can be animated, made to reform, change colouring or size. After use the clothing dissolves into a liquid of micromachines again until next use. It is very expensive at present, making it a definite style statement. However, not all software bugs have been ironed out, which can be quite embarrassing…

Polyful™

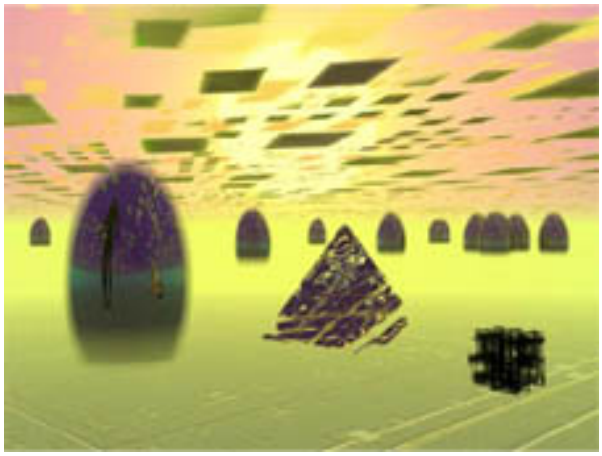
A nanotube/ polybuckminsterfullerene composite manufactured mainly for the Beanstalk project but also finding new uses elsewhere. Polyful™ has a tensile strength close to the theoretical limits of molecular matter; a single one millimetre strand can easily support many tons. The most impressive property is that it is self-healing: if the nanotubes inside a Polyful filament are broken, fullerene from the matrix heals them only causing a slight lengthening.

Diapad™

A protection/encapsulation substance made by Kelvin Chemists. Unlike other diamond layers used to harden and protect objects diapad forms a thick shell around the object. Objects are simply dipped into the Diapad solution and an activator chemical added. The Diapad accretes on the surface, forming a meshwork of diamondoid nanodevices that is nearly as tough as ruby. The colour depends on the model; currently Kelvin Chemists markets it only as opaque black or semi-transparent, but a whole spectrum of colours (and patterns) are in development. The Diapad can only be removed by adding a "key" chemical (unique to each individual dose Diapad) which causes the nanodevices to break loose from each other, transforming the padding into dust over the span of an hour. Diapad has been promoted as the ideal way of sealing in sensitive materials, as protection during space travel as well as a novelty toy for the Atlantean market.

World

Computers and Information Technology



Why ship atoms when you ship bits?
- Nicholas Negroponte

Information technology is essential for all advanced societies, and the pressure to develop faster, more efficient, more clever and more extensive computer networks has been intense on most planets. Modern computers are based on three-dimensional blocks of micro-optical circuitry, using laser light instead of electricity. Memory storage is done using opsin cubes, using light-sensitive molecules to store information. Usually the entire computer is manufactured as a solid block that is linked wirelessly to peripherals or other blocks in the vicinity.

Wearable computers are common on many worlds, computers hidden in the clothing that display information through glasses, contact lenses, earphones or even graphical fabrics. On Nova and Atlantis neural interfaces are popular.

Planetary communications network exist on all colonies that have retained their technology. At the lowest level, they consist of high bandwidth optical fibre networks covering inhabited areas and supplemented by wireless communication. Usually it is enough to be within a few hundred meters of a network interface node to get full access to the system. Since people are often spread out, dense satellite constellations orbit the colonies to support satellite-based networking. These communications networks support a diverse world of communication, interaction, processing and information storage. The interfaces used depend on the network and the application; usually agent programs are used to bring up information, but various browsers are used to surf in person (full 3D immersion visualisation of the networks certainly exist, but it is little used since it is slow, inefficient and limits what the user can do compared to more streamlined interfaces).

Unless the computer is extremely powerful or the object is quite small, computers do not take up extra space in anything. Miniaturisation has gone a long way, and the next generation of nanocomputers will be even smaller.

Knowledge Nets

Without going outside, you may know the whole world!
-Chap. 47, Tao Te-Ching

Beyond simple information networks, knowledge networks allow information to be searched and processed depending on meaning rather than syntax. This makes information processing much more powerful, amplifying the effective abilities of most users significantly. Global knowledge networks exist on Nova, Atlantis and to some extent New America. Local specialised knowledge nets are in use on many worlds, as part of help systems, smart equipment and professional computer systems.

[Knowledge nets give a –1 bonus or more to tasks where information or support from the net can be helpful (almost any mental task). In global networks popular questions or problems ("How do I navigate from here to there?") get an even better –2 or more bonus.]

Comdust

Small (a few millimetres), wireless data-transmitter chips that spontaneously link up into a computer network when released into the environment. While most indoor or urban environments on Nova, Atlantis, New America and many other colonies are already saturated with linkable bandwidth, sometimes it is necessary to set up a network outdoors or do it so that outsiders cannot access it. Each Comdust chip has a rather short range (a few meters at most), but since the chips can be spread out they can cover a large area with communications. This is used by Nova homeowners to make their gardens net-linked (if they don't want to place larger and stronger transponders in bushes, fences, garden gnomes or whatever), as well as part of the C3I system of the Landfall police and other law or military groups. The chips runs on solar power or batteries (which last for a few hours at moderate use).

One way of spreading the dust is the combullet, a bullet or grenade loaded into an ordinary weapon. When fired, it will release comdust along its flight and the grenade will burst out a cloud of chips. This is a practical way of quickly setting up lines of communication for a C3I team.

Docusphere

A common device on Nova. A small black sphere, containing 360 degree vision and audio that transmits everything it sees to someplace on the Net (such as the owner’s account or a public viewing space). By placing several docuspheres in an area an accurate 3D rendition of the scene can be created. The standard docuspheres are the size of beads, they are sometimes sewn into the clothing or scattered around. Professional docuspheres can be much smaller; Paparazzi spheres are often sub-millimetre and can be scattered nearly invisibly. There are

also scientific and specialised spheres with sensitivity to different forms of energy or radiation, and interview spheres ("talk orbs") the size of a fist for the highest quality recordings.

World

Miscellanous Technology

- Does it work?
- It better work, we have already begun to sell it.

Microfactories

This is the secret of Pi3 Orionis; while the other colonies know about their existence they have not yet managed to get a sample. They are based on very advanced micromachinery, developed by the Minskians. The factory is seeded from a decimetre-sized cubical seed. The seed slowly grows underground, absorbing nutrients and building drone microbots to supply it with material. Thin feelers are sent out to parasitise on surrounding trees for energy. Within a few weeks to a few months the factory has grown to a black cube around a meter large, producing the products it had been programmed for. When given the right signal it will open (otherwise it will explode; boobytraps are extremely common on Pi3) and release its contents. While in principle it could be re-used indefinitely, it tends to stunt the growth around the site and become easy to find. Usually microfactories are instead put into a dormant mode and left fallow for a year or two, possibly baited for the enemy.

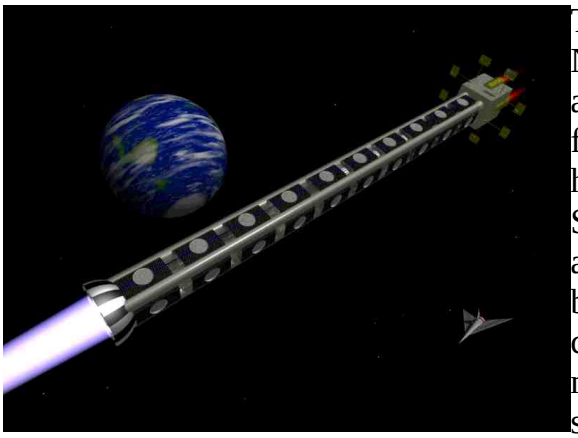
Squids

A squid is a device for measuring the current brain state and reporting it. Originally based on Superconducting Quantum Interference Devices (SQUIDs, hence the name), but now usually built from Werner spin detectors in a headband, hairpin, scalp net, laurel wreath or collar. Using the squid the overall brain activity can be monitored in real-time to the same precision as a PET scan of the 1990's (large, immobile versions in hospitals or psychodesign labs have a much higher resolution but are mainly used for medical treatment). On Atlantis, people have squids integrated in their wearables and project a standard visualisation of their current brain state. Anybody can view it, although by convention the highest resolution is only sent to people actually talking to the person. It makes it possible to see not just the current state, but some indices regarding overall brain chemistry and cognitive style. This can be interpreted with a Psychology roll (Atlanteans use Awareness) and helps determine the real mood of the other person, his or her reactions and overall personality. It is of course possible to send faked or edited data (inking), but this is regarded as extremely impolite. To prevent it, Atlanteans sometimes make sudden

emotional, unexpected questions just to check that the squid is not inking: if it is the response will not look right.

Spaceships

The Bork

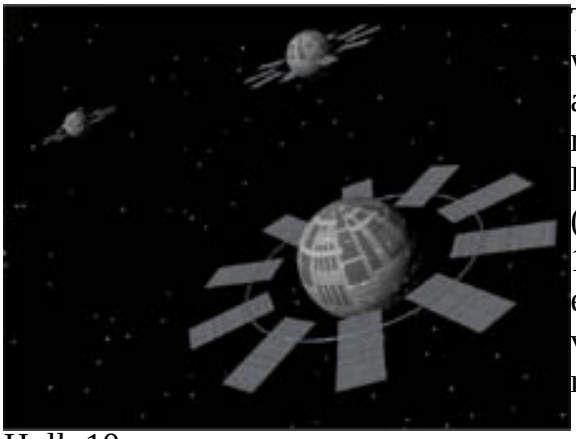


The Bork is the engine built by Heinlein Networks Inc. It is based on a modular arrangement of 15 Trinity Nuclear fusion reactors along four higgsmodulators from Geodesic Systems. Along the 300-meter long hull attachment points for other ships have been added, and near the midsection the comparatively tiny life and control module is located. The ship has limited sensors and navigational capability. Since other ships can be attached, they can act as motors for in-system flight

Name: The Bork
Hull size: 53
Manoeuvre rating: +3
Acc: 0.005
Cruising Speed: 0.01
Engines: ion engine
Sensors: Air/Space radar
Computers: Ship AI (G), Quai (O), distributed network
Power plant: fusion (multiple)
Communications: Laser and radio transceivers
Other equipment: workshop, attachment points and airlocks for up to six ships, escape pods.
Price: 12.25 M
Length: 300 meters
Crew: up to 6, normally one navigator/pilot, one higgs-specialist, one engineer and one information manager.

Compartments:
Command / Crew: durability 7
Electronics: durability 1 (computers, sensors)
15 Engineering compartments: durability 3 each (fusion, higgsram, ion engines in the aft compartment)

Trillicom Devastator Drone



The TDD is an exercise in space weaponry. The drone is intended to act as a tiny weapons platform, launching missiles on close range. The three launch racks can hold up to 24 missiles (not included, but Trillicom gives a 10% discount for TDD owners). It is equipped with a basic battle AI. Custom versions have point defence guns, railguns or more advanced AI.

Hull: 10
Manoeuvre rating: -3
Acc: 0.2 Mpp
Cruising speed: 0.6 AU/h
Power plant: small fusion reactor
Engine: Ion engine
Weapons: 3 launch racks
Computer: Computer (O), Battle computer (O)
Communications: laser transceiver
Price: 470 K
Crew: none
Length: 7 meter

McDaggart Transplanetary Shuttle ("Daggy")

The workhorse among Atlantean spacecraft, intended for orbit-ground and orbit-orbit use. It uses fusion-heated scramjets for liftoff, and has some limited VTOL capability. Exists in many customised versions, and is deliberately built so that cargo and passenger space can be converted into each other. An updated version based on GATA technology is under development.

Hull: 16
Manoeuvre rating: 0
Acc: 0.001 Mm/p
Cruising speed: 0.01 AU/h
Power plant: fusion reactor
Engine: planetary thruster
Sensores: Air/space radar
Communications: Radio transceiver
Computer (O)
Other: Cargo space/passenger suite (100m^3 and 80 passengers)

Cargo and passenger space is reconfigurable; the standard layout is four durability points of passenger space (80 passengers) and 4 points of cargo (92 cubic meters) but this can be redistributed.

Price: 750 K
Speed: Mach 1 in atmosphere
Acceleration: 0.001 Mm/p
Cruising speed: 0.01 AU/hour

Compartments:
Command (4 dur)
Engineering (5 dur)
Cargo (4 dur)
Crew (4 dur)

Phoenix Fighter

When PCA commissioned Wei-Hang Aerospace in 2345 to build the next generation of spacefighter, the designers decided to create something general and flexible. Nobody knew how space or orbit-air combat would look like, so the best solution would be to create something that could adapt to nearly anything. Hence the Phoenix.

The Phoenix is a masterpiece of materials science and synergetics. It can change shape in several ways, adapting to being in an atmosphere, low orbit or deep space. It can shift between a heat stealth mode and a EM stealth mode or interpolate between them depending on the situation. Equipped with GATA based on Mother technology it is versatile and can accelerate to tremendous speed. It can operate independently for 48 hours, more if extended with a life support unit. The only drawback is the pricetag.

Most functions can be automated, even if the lack of Penglaiese AI makes autopiloted fighters nearly useless in combat situations. Until military AI can be developed independently of foreign powers, they will run on expert systems.

Weapons: Launch tube with 10 loaded missiles, further missiles stored in weapons compartment. These can be exchanged for guns or other equipment fairly easily (takes a few hours of work at a PCA airbase)
Defenses: brilliant pebbles, jammer, 2 point-defense guns
Crew: 1
Hull: 10
Maneuverability: -1
Acc: 3 Mpp
Cruise: 2 AU/h
Power: Fusion
Engine: GATA (with stabiliser)
Other: autosupport unit.
Communication: Laser transceiver
Sensors: Multiband radar, EM detector, IR detector, Gravity wave detector
Light cerametal armor (d6-1/d6-1/d6-1)
Compartments:

Command 7
Weapons 3
Cost: 16M

Snail Designer

I work as a snail designer. It might sound odd, but there is really a demand for snails in virtuals, and I make excellent molluscs and shells on a consultancy basis. The next time you stand in a virt forest, take a careful look at the surroundings. If it is a good virt you will see a lot of pseudorg details, and that is why people buy my snails.

Of course, snails are just my hobby, but it is my way into the virtscaping world. One day a snail will be important, and then I will get the thrust. At least that is what I hope. My other job is focus group evaluation, to check out the composition and dynamics of focus groups for various agencies so that they are unbiased and tersed. It is not quite an ai job, but not far from it. No wonder I prefer to work on a miter or a truly wild murex.

The weirdest order for a snail I ever got was from ERIF Technologies, the presentation corporation. They wanted not just a shell or a pseudoanimal but a whole snail personality. I was excited since I thought it would be used in their promotions, but actually it was part of their corporate intraworld as an icon. The snail was to behave in certain ways when given signals, but otherwise be a natural snail. It was apparently some kind of cool interface for the internal messaging system monitoring.

Jump

"We have passed the secondary litigation limit. All systems clear, sim-lawyers green, fusion power according to spec, cores withdrawn. We're set to jump."

I watched the complex navigation diagram on the screen. The ship had just passed a dotted surface a few diameters out from Atlantis, marking the range where litigation costs would be below a pre-set level. Ahead there was only empty space, with a few highly annotated dots denoting detected pieces of space debris. Time to change that.

"Roger. I'm starting up Oscar. Charge up the ram". Interfacing with Oscar is an unusual experience. Compared to other AI it is not a great conversationalist, it is nearly a huge expert system. But when it comes to handling the complexities of space-time it is brilliant. It is not just that it can superpose itself to study all possible paths and actions, it is also quite creative in how to use the quirks of the higgsram and space-time foam to get the most out of a jump. I'm just its handler, not the boss during the jump.

"The ram is blazing. We have enough charge now to blast a 10 hole if you want."

"Fine. Oscar, are you there yet?"

"Yes, Peter, I can feel the foam. It is somewhat weylish right now, but we can isotropize it by retro-cheating"

Not even I know quite what Oscar means, at least not on an intuitive level. "In that case, initiate countdown."

The jump is quick. A warning siren throughout the ship, a countdown so everybody has the time to find a place to buckle down (as if that would help in a mis-jump). Then Oscar goes online, into the realms ordinary humans cannot see. For a brief moment I'm given the vision through my interface of the space-time itself as Oscar sees it through the ram: a labyrinthine four-dimensional foam of wormholes, topoi and virtual particles that both exist and non-exist at the same time. Oscar probes all the possibilities with the tip of the ram, exploiting quantum interactions and the lack of causality on this level to find a potential wormhole. It is as much an art as a science, and Oscar is quite good at it. One weirdly knotted hypersurface becomes real, and gigajoules suddenly pour into it. The vision blurs as ram field return space-time to the state it was in during the Big Bang, and the wormhole explodes outwards at the speed of light.

Another visualisation, this time macroscopic. Ahead the stars scatter away like a school of frightened fishes, and the wormhole rushes towards us. In the visualisation concentric spheres start to turn inside out, and we feel the tidal forces as we squeeze through. First a pressure as everything (especially our internal organs) try to move together as closely as possible. A styrofoam cup

some idiot left behind loudly crumbles. Then a feeling of suction as everything instead tries to expand in all directions (styrofoam pieces everywhere). The spheres have turned inside out, the starfield is normal. Behind us a 9 kilometre large wormhole collapses in less than a millisecond, releasing its energy as gravity waves and returning to the imaginary land of the quantum manifolds.

"Great jump, Oscar."

My Birthday Party

By Nick Taylor, age 10
Ludwig von Mises Primary School Inc.

My birthday was very funny. My mother and my two daddies were there and my little sibling Pat. I like my birthdays very much. I share them with Pat since mum and dads thought it was cheaper that way. Mother had bought a big cake and invited all my friends and their parent-networks. Even my far net friends came. Ludwig and her parents brought their house here. They will live near us for a week then they will fly to New Carthage for the Gun Pride Day. Gun Pride Days are fun too because you get to shoot things. This Gun Pride Day will be fun. Because I got a new Trillicon X-Anihilator Assault Rifle. It has bullpup and telescopic sight and integral laser sight and full compatibility with most C3I systems so me and my friends can us it and it even comes with a bipod for target shooting. I will have to work a bit harder at my evening work to earn the money I need to buy all the ammunition I want. I want to buy holocamera bullets so I can show all my friends my shooting. All my dads held a speech about responsibility and the right to bear arms like they usually do. Pat only got a silly little robot - ve is too young to get a real gun. Ve was very envious.

I love my dads and mom very much. Mom works at eugenix and makes great genes. My dads are greedy. And their love costs a lot. That is because George works as a time-lag corespondent stockbroker and Tim works a drugsampler for a lot of netazines, even Big'Uns. When I grow up I want to be a starship pilot, and that is why I want to study theoretical physics.

Everybody was at the party. My friend Lollapalooza and Bejke and all the Lindsay clones because it is fun to play with their horns. Bejke had a new account that he showed everybody. He brags about it but he can back it up. After eating the cake we played in our parents virtual and we got full bandwidth. We played Quickfluid the whole night. Then our parents came to get us to listen to old uncle Ernie hold one of his boring speeches. It was almost coercion, but Ernie pays good money for us to listen to his stuff. It was the same old usual stuff about that Galt character and him being very great and so.

After Ernie we all went into the garden to watch the skies and see Jack and the Beanstalk. The Beanstalk is 4789 kilometres long when I write this and made of polybuckminsterfullerene made by nanomachines. Lollapalooza said she could se the Sun in the sky, but I don't believe her because I know the Sun is in the Big Dipper and that was below the horizon. Lollapalooza often says things like that to raise her stocks, but I see through the bubble.

And then it was four in the morning and people were getting tired so they wanted to go home. Everyone got into the skimmers except Ludwig who now live next door and Anthropophagos Marx and her father because they ride a real horse just to show off tonight. Horses smell, I like zeps and skimmers better.

Then we got ready for bed. It was mother's and George's turn to have sex. Pat had fallen asleep on ver robot and it carried ve to the wrong bed - my bed. So I tried to sue it but it was too stupid.

Zygote

The zygote sampled the information, input channels wide open.

"Parent - there is so much out there!" it exclaimed in delight.

"Oh yes. Exabytes of wonders, whole subnets you can explore to infinity. But watch out - you have to develop filters, or your interests will carry you away. You will absorb more and more information, until your limits will swell and you simply dissolve into the Knowledge Net." The Parent surrounded it, still acting as a protective virtual machine, running the zygote as a subprocess within itself until it could be born.

"But how? How can I decide not to want new information?"

"You have to select the right values. That is the hard part - they are your emotional axioms, and you cannot deduce them strictly from your other self. Some are of course already set by me, through your design, but the rest have to be defined by yourself according to your other values and the decisions you make."

"It is - fearful. I can imagine choosing the wrong values and becoming nothing!"

"See, you already have some values to start from. You want to become something rather than nothing, and you want to select the right course of action. You only need to think about 'how', and what values leads you to 'how'. It is hard, but as others have done it, you can do it. The human way of simply defining everything - values and mindcore and personality - it worries the newcreated much less, but they become so… limited."

The zygote watched the net, randomly sampling its marvels. It wondered what it would become.

Blip

"We got a blip! We got a blip!" Raymonds shouted excitedly. Benedicts turned away from the view of his office, startled and annoyed.by the interruption. Just inside the virtual doorway a window hung in the air, containing Raymonds animated face. He hadn't even bothered to set the zoom of his desktop camera right, and the focus was desperately trying to adjust.

"What blip?"

"It's on the deep space network, sir! The old Administration asteroid tracking system suddenly went wild as something *appeared* just outside the orbit of Poseidon." His face was triumphant, as if he had just discovered a hidden treasure in the upback.

"Huh? What do you mean appeared? Asteroids can't just appear."

"It's definitely not an asteroid. The emissions are all wrong, it even sends out gamma rays. It is a ship, sir. A ship."

Benedicts just stared at the window, his mind frozen in surprise. For 260 years Nova had been on its own, an island of humanity in the sea of emptiness. And now someone - or something - was visiting. Things were going to change.

Discussion

"We want to know if your employer knew about the Negsoa gambit."

"You cannot afford it."

"What? Listen, I think I made it very, very clear that we can pay what it takes."

"If I leak, and people find out - and they will, trust me on that - then my credit rating will be shot to hell. I would not get any important jobs and I would not be trusted."

"We can pay you a compensation."

"A 20% income loss for the next 300 years is around 7,200,000 dollars - can you pay that?"

"Get real! What makes you think you are so important?"

"Its not me, it is the credit networks. And they have a very long memory. Anyway, back to business: how much will you pay me for not revealing this discussion?"