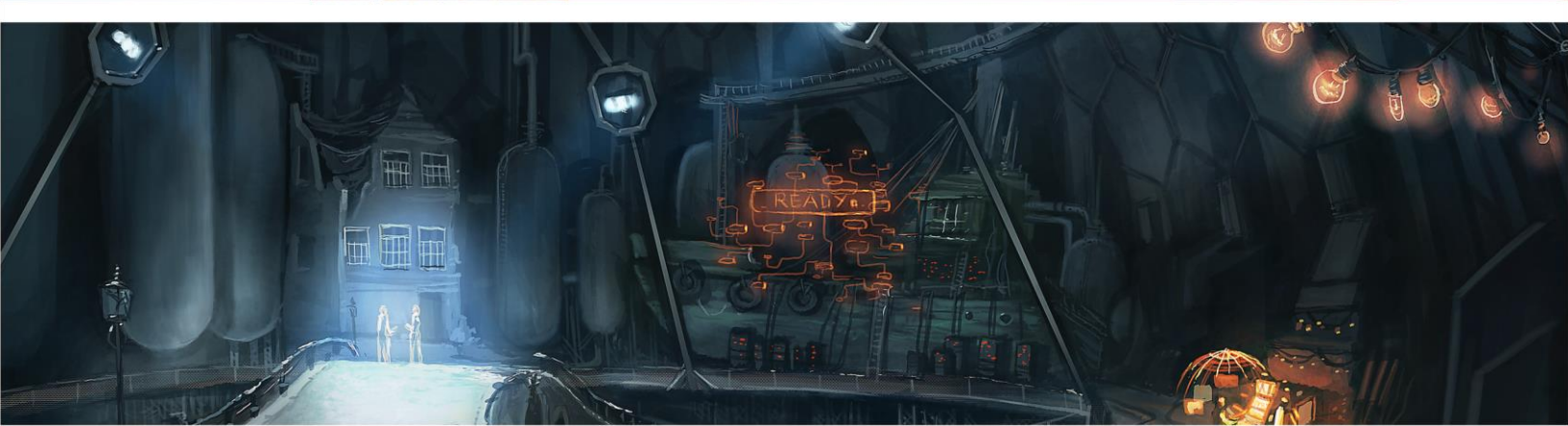


# EMPIRE OF TIME





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An adventure setting for use with the Cepheus Engine Core Rules

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# Introduction

It's 2019 and the world is almost the one you know. You can go downtown and buy an iPad, or head to the coast for the weekend. Or stay right here and sip your coffee if you like. A few clicks around the news websites show Vladimir Putin and Kim Jong-un in power in their respective countries and making nuisances of themselves as usual.

It's when you switch over to Fortune magazine's online edition that you start hitting the differences. Elon Musk isn't making electric cars or rocket ships; a picture shows him smiling in front of a slim vehicle floating well above the ground with the caption *Latest Duillier grav vehicle promises to be the most energy-efficient yet*. Clicking on to the International Geographic Society's site is even weirder. Every single story is about the past or the future—and there are pictures. Not picture-pictures, *photographs*. A gorgosaurus towers over a beach as the sun rises, fluffy feathers incongruously softening the outlines of its huge muzzle. A video shows some kind of...plant...thing...ambling down a jungle path. The vegetation on either side is purple.

It's been 20 years since time travel was invented and the here-and-now, the good old 21<sup>st</sup> century, is in the middle of a revolution. You switched your major in university because of it and it's paid off: you're heading up-time, on a mission to the Chovu Imoi, an intelligent species that won't even evolve for another 600 million years. It'll be three weeks' journey on the old model Hyundai time ship the expedition has bought second-hand from the University of Victoria, but you've tried to pack light.

Just then your phone plays its ringtone, a snatch of an old Chambers Brothers song. It's Max, the retired Army sergeant handling the mission's security. Like you, he stayed behind while the rest of the group went up to Canada to get the ship. You needed to pack, he needed to not fall foul of their gun laws while he stocked up on his particular brand of supplies. Besides dinosaurs and walking flowers there's people out there too, ones not from the cozy world that birthed you. Most of the time they're not a factor, but you never can be too sure—and that's where Max's brand of organized Germanic mayhem comes in.

After shutting down your computer, you lock the apartment door behind you, drop the keys with the neighbor, and head on down to the street.

EMPIRE OF TIME is an SF RPG setting devoted to exploring alien worlds: not other planets, but our own Earth in different eras from the beginnings of life to the many strange times to come.





# Traveling Through Time

*Excerpts from an introductory lecture on Time Travel by Prof. Lise Lécuyer, given to recruits at the European Security and Defence College (ESDC), 17 Nov 2018.*

“Let us begin with the basics. In the 1990s an international group of physicists and mathematicians developed a theory of gravitoelectromagnetism, or GEM. Its leaders shared the Nobel Prize in 2000, including myself.

“The first practical effect of this was the invention of grav plates, but time travel soon followed. This is done in large grav-propelled vehicles, unimaginatively named “time ships”. This is not theoretically necessary, as GEM effects keep any time machine moving along the timestream at rest with the Earth even as it moves in the universe. Practically, however, what is solid ground in the 21<sup>st</sup> century may erode away and leave a stationary time machine dozens of meters in the air, or a new ice age may put the ship under a kilometer of ice. As intersecting dense existing matter results in the ejection of the ship from spacetime, stationary time machines are not safe.

“The ship’s purpose, beyond taking its occupants to the past or future, is to go to a place where it is safe to move through time—100 kilometers up the air is so rarefied that it is ejected instead. Furthermore, with grav plates a ship capable of going to space can return to any place on Earth. A time ship can depart from Africa in the Cretaceous and travel 100 million years into the future, then can then fly to Asia, or Australia, or anywhere else upon arrival.

## Travel Speed

“According to GEM theory, one can only move through time in quantized amounts; “smooth” time travel is only possible at our usual rate of one second every second. This minimum amount is 18,900 years. Historians have asked me to make this smaller so that they can visit the objects of their study, but I assure you that it cannot be done. The Babylonians, Christ, and your great-great-grandchildren are beyond our reach.

“One can also move in integer multiples of this, and so time ships are rated with a jump number ranging from 1 to 6. There is no fundamental reason why the multiple could not be higher, but I am informed that engineering limitations will restrict us to 6 as a limit for some time.

“Next: a time machine traverses a quantum or its multiple in one minute—a statement I will let rest for a moment, though we must return to it. This results in the travel speeds printed in your handout:

Jump #	Years/minute	Years/hour	Years/day	Years/week
1	18,900	1,134,000	27,216,000	190,512,000
2	37,800	2,268,000	54,432,000	381,024,000
3	56,700	3,402,000	81,648,000	571,536,000
4	75,600	4,536,000	108,864,000	762,048,000
5	94,500	5,670,000	136,080,000	952,560,000
6	113,400	6,804,000	163,296,000	1,143,072,000

## The Quanta

“You have heard the term ‘Q0’ used to refer to the present day. This is the degenerate case of the naming system for quanta, which depends on the number of minimal time jumps needed to reach it and a plus or minus sign indicating whether it is in the past or future. So, the year 16,880 BC is Q -1, while 20,919 AD—the home of the Terminal Empire—is Q +1. Note the drawback of higher Jump numbers. If the quantum one wishes to reach is not evenly divisible by the number of a ship’s engine, it cannot be reached by that ship. A prime numbered quantum such as Q +7919 can only be accessed by a J-1 engine and is time-consuming to reach. Conversely, a quantum that is an even multiple of 60, the lowest number divis...I am boring you. Suffice to say that quanta such as Q +60 and Q +1020 are accessible by ships of all Jump numbers and see more traffic.

“Why not use the calendrical numbers? One reason is practical: it is far easier to remember Q +374 than 42,411,600 AD. The other is that the calendrical year changes. Q0 is currently 2019 AD. Next year it will be 2020. Other quanta move at the same rate: Q +1 will soon become 20,920 AD. Quanta always remain separated by the minimum amount, and their calendrical year depends on the year when a journey begins.

## Rules of Thumb

“It is entirely possible that you have missed some major implications of what I just said, and I promised I would return to a statement I made earlier. Ask yourself ‘What does it even mean to say that you are traveling at 18,900 years per minute?’ The unit of measurement is nonsense, it reduces to nothing. But consider this: if time passes at an equal rate in each quantum, then the time experienced aboard ship is not real. It is a form of time dilation, though opposite in effect to that of Einstein. If you travel through real space at nearly light speed and return, those who remained behind will have experienced more time than you. Travel through time and return, you will experience more time than they will, and by exactly the amount that you experienced aboard ship.

“Think through a few scenarios in your head after this lecture is over and if you are bright enough you will see that this must be true or else paradoxes arise.

“This fact has interesting consequences. If two ships leave a quantum at the same moment, headed for the same destination quantum, their jump number does not indicate which one will arrive first. The word ‘first’ is meaningless when dealing with time travel. They will arrive at the same moment as seen by observers in the destination quantum. However, the crew of the ship with the lower jump number will feel they have experienced more travel time than the one with the higher. A Jump-1 ship experiences six times as much time as one that is Jump-6 on the same journey.”

“Then there is the troublesome word ‘before’. Time travel was first achieved by the *Aurora*, the uncrewed satellite which famously jumped to Q -1 from 2002 AD. But we soon discovered that the Terminal Empire in Q +1 had been traveling time and building an empire for eight centuries! How was this possible?

“It is the iron law of synchronized quanta. 2019 AD is synchronized with 20,919 AD, and each moves inexorably one second every second into the future if we remain in real-time. The Terminals discovered time travel in approximately 20,100 AD—*after* we did, to the extent that that word means anything. But this is synchronized with 1199 AD!

“So, you see the problem now: any quantum we can reach, they reach ‘before’ we do. It is ‘after’ too, but as the distance through time is less than one quantum, we cannot travel to the years ‘before’ they made their discovery and interfere. We can be in 2019 AD, or in 20,919 AD but not in any of the years in between. Only by regular time travel—or, to put it another way “waiting for a very long time”—can we reach them.

“Your next lecturer will discuss the many opportunities time travel affords us here in Quantum 0, but understand that a military man will soon occupy this lectern. The laws of time have left us in a bad position, and you will need his knowledge.”

### **Lise Lécuyer**

Distinguished Professor

595DFB Age 56 Cr950,000

Admin-0, Bribery-0, Carousing-0, Comms-0, Computer-2,  
Physical Science-4, Navigation-2, Riding-0, Space Sciences-1,  
Wheeled Vehicle-2,

Professor Lécuyer is a researcher at the Free University of Brussels (ULB), where she is part of the Department of



Sciences. She can often be seen walking between the campus and her home a few blocks away on Rue de L'Été.

She comes from a rich family and has become even more prominent since she was co-winner of the Nobel Prize for Physics in 2000. Of those winners she is the only one still alive in 2019, making her probably the most famous physicist on Earth since Stephen Hawking passed away. She pops up on television quite a lot but is a feared interview because of her prickly personality. Once she decides she likes someone she is more comfortable, and even displays a high-brow sense of humor.

Lise is a short, round Wallonian French woman with short white hair and blue eyes. She wears glasses, one pair for reading and one pair for other times, and switches between them. Her biggest secret is not exactly a secret, but instead something she chooses not to dwell on: her son was on board the first crewed ship to Q +1 and was killed along with everyone else on-board. Upon arrival it was fired upon with an anti-aircraft missile battery based in the Terminal capital, Menlet, an incident the Terminals have explained as accidental due to their surprise at an unknown ship suddenly arriving above their homeworld. The professor was not close to her son, and fears that others might hold her lack of grief against her.

## Example Ships

In these early days of time travel ships are one-offs or part of short runs numbering no more than a few hundred. Only a very few things could be said to be true about all of them: they can support human life in space, they use grav plates as their main means of propulsion, and they have a time drive on board to handle travel through the one dimension that the grav plates don't handle. Characters can expect to find almost anything flying between the years, but a few examples follow:

### *Solitaire*

One of Elcat's new line, the 505 runabout, *Solitaire* is proudly owned (thanks to a considerable mortgage) by rogue trader Jackie Vega. No larger than a commercial helicopter, the model is intended for short runs of a few quanta. Jackie brags of her "iron ass and steel bladder" as

explanation for how she can go for days (and a couple of thousand quanta) on her trips. In



reality she just lands for a break every now and then, as anyone will realize if they stop to think that she's always bringing her dog Flight Hazard with her. With only a little over a cubic meter in cargo space she has to choose what she carries carefully, but there are just enough high-value items that need express service (medicines, spare parts for critical equipment, and so on) that she keeps in business.

505s are a familiar sight in the quanta close to Q0, especially when visiting out-time facilities where they're typically based. They can also be encountered in the cargo hold of a much larger ship, on expeditions that want some extra flexibility when they arrive at their destination quantum.

**Stats:** Elcat 505. J-1, crew 2, mass 4.1t, cargo: 1.1m<sup>3</sup>. Cost MCr4.2

#### *Mungo Park*

A lab and exploration ship built as a one-off for King's College Edinburgh, one of the world's leading research institutions when it comes to unravelling the timestream's many mysteries, *Mungo Park* is named for one of their exploring alumni.

**Stats:** *Mungo Park*, J-4, crew 8 (pilot, co-pilot, engineer, 5 others), mass 500t, cargo *standard*: 110m<sup>3</sup> (8.1dT). Cost *standard* MCr310.

#### *Next Friday*

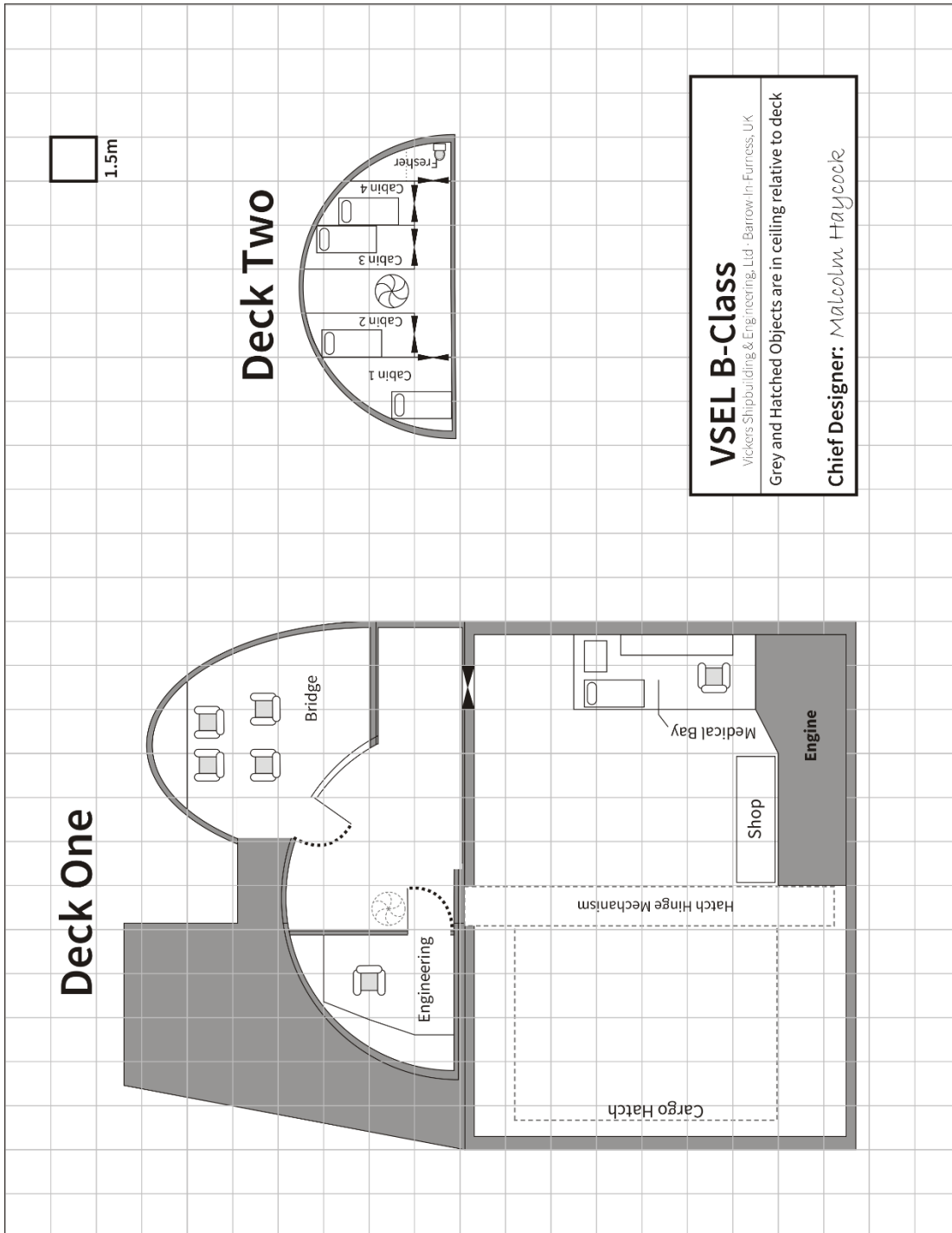
The *Next Friday* is a merchant ship like the *Solitaire*, but past that they've little in common. The plaything of American billionaire Errol Linquist, it's large where the other is small, and luxurious where *Solitaire* is spartan. While he's quite serious about trading, he hardly needs the money—*Next Friday* is mostly an excuse to explore.



Like most others of this model, the VSEL B-Class, *Next Friday* is a mid-sized, long-range cargo ship, but Linquist has had his reconstructed rather extensively. The base model does not include a bar and a triple-sized bunkroom for the captain/owner built in the cargo hold, or *Next Friday*'s suite of sensors and weapons. Accordingly, this custom model has rather less than the 400 cubic meters of cargo

space of the standard B-Class and cost a ludicrous amount more. He considers it worth every penny.

**Stats:** VSEL B-Class, J-2, crew 6 (pilot, co-pilot, engineer, 3 others), mass 400t, cargo standard: 400m<sup>3</sup> (29.6dT)/Next Friday: 180m<sup>3</sup> (13.3dT). Cost standard MCr173/Next Friday: MCr584.



# Quantum 0: The Present Day

*Day 2: Cesar Ray Robles, on his own behalf*

“You’re probably familiar with Quantum 0, that strangest of all times [*audience laughter*], the early 21<sup>st</sup> century. It’s been just a few years since we started time traveling and people from here and now have fanned out across billions of years, engaged in what we hope will be a long and fruitful period of exploration, trade, and colonization. There are people and even other intelligences looking to prevent that, true, but a rundown of the people and organizations looking to advance a more positive agenda is in order.

“Of all countries, the United States has had the most varied response to time travel. Large corporations are looking for opportunities to trade or extract resources, and so are one-person wildcatters. Its universities are all-in on answering questions both big and small using the new perspectives provided, and flat-out adventurers go to out-of-the-way corners of Earth’s history for no better reason than the chance for some excitement. Some budding colonies have even sprung up, from the well-thought-out to the (let’s not mince words) redoubts of religious fanatics and racial supremacists.

**In China:** “As the world’s aspiring superpower, the Chinese government feels the need to match the USA’s efforts in the timestream. They too have claimed their territory throughout time, Q -10,000 to Q +10,000, the back half of that being daringly in defiance of Terminal interests. It’s my understanding that they’re angling to claim a lot more quanta too, and have only backed off due to overstretch even handling the twenty thousand Chinas they’ve already staked out.

**In Europe:** “The European countries are generally rich and satisfied with what they have, which means their primary interest in the timestream is scientific.

**In India:** “The subcontinent’s largest country is arguably more interested in time travel than any other in the world. With their large and growing population, they see settler colonies as a useful, symbolic way of easing the burden on their Q0 resources, while time travel in general is like space travel in the 1960s: a generally recognized way for a country to compete for prestige on the world stage.

**In Japan:** “East Asia’s long-term leading player is feeling the effects of being knocked into second place by China. In a similar position to Europe with a relatively undynamic population and economy, the Japanese government doesn’t see a way to use time travel to their country’s advantage. They sponsor a few scientific missions but generally work to embed

individual personnel into multinational missions instead. Japanese corporations have been cool to the new field too, and most travelers are working on their own behalf.

## Organizations

### The Department of the Interior

“The United States has claimed sovereignty over the lands that make up the United States through a swatch of time ranging from Q -9500 to Q +0, which is to say the period in which North America is a distinct continent due to the opening of the Atlantic Ocean. Only the presence of the Terminals has kept them from claiming a similar stretch in the future.



The bulk of the work enforcing this has been assigned to two of the Department of the Interior’s operating units. One is the Bureau of Land Management, which licenses and issues permits to corporations (and even individuals) looking to set up on American land in any of these quanta. The other is the Geological Survey, which carries out the scientific study of the same timelines. Despite big increases in their budgets they are stressed beyond capacity and most of the American Claim makes the old Wild West look like Singapore. But they do try. If nothing else, they keep control over the various long-term scientific facilities throughout the Claim and run law enforcement in the American colonies up- and down time. The sight of a BLM Ranger is a sign that our civilization, however tenuous, is present.

### NASA

“Grav plates and time travel have transformed NASA’s mission. They’ve always been strongly associated with showy outward facing missions like the Apollo Moon landings and sending probes to other planets, but since 2000 what had been their less well-known mandate to observe Earth from space has come to the forefront. After all, why go to Mars or Jupiter when you can study a million other versions of Earth more easily?

“To that end their 1997 Earth Observing System program has expanded to include quanta in other key timeframes from the Cryogenian to the Iliosian, working to better understand all of the Earth’s large-scale processes from glaciation to the evolution of the atmosphere to continental drift. As the agency’s budget has remained flat, NASA administrators and legislators have zeroed out its space operations, space telescope, and exploration budgets and transferred it to Earth sciences. Basic space research is still underway, and agency scientists have come up with some clever ways to use grav technology in space missions while staying within the newly constrained budget, nothing much has come of them yet. For the foreseeable future Time is king, not Space.

## The Smithsonian Institution

“Washington’s Smithsonian museums have entered a new golden age comparable to their heady days of the late 19<sup>th</sup> century, when scientifically minded explorers fanned out across North America and the world. Now they’re tapping into a much wider and just as interesting a field of inquiry. The National Museum’s previous Fossil Hall and Hall of Mammals have been expanded up 12<sup>th</sup> Street and covers specimens of life from up-time too, while the Smithsonian-run National Zoo in Rock Creek Park displays live versions of them too, along with dinosaurs and the traditional wildlife from Q0.

## The International Geographic Society

“Another Washington, DC institution, but this one in private hands, the IGS has a strong rivalry with the Smithsonian. Both compete to their utmost when it comes to making amazing discoveries out in the timestream, all with an eye to impressing the general public and keeping their coffers full of donations so that they can go out and do it all again.

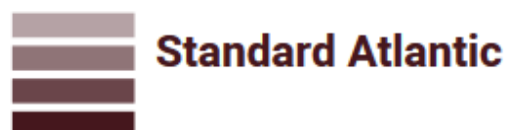
While the Smithsonian has the advantage of government backing, the Society has their distinctively bordered monthly magazine, which even in this electronic day and age is the prestige place to get one’s discoveries in the field of natural and physical geography published. Lavishly illustrated, the magazine’s photographers are acknowledged as some of the world’s best.

## Discover TV

“An integrated pay television channel, website, and associated magazine (*Discovery!*), Discover TV is the poppier competitor of the IGS. Where the IGS focus on exploration as a scientific endeavor, Discover brings the wonders of the timestream to the masses. That’s not to say that they don’t do useful work, it’s just that they prefer to focus on things that are big and colorful and will play well with an audience that’s curious but not necessarily highly educated. Their *Dinosaur Week* has become a pop cultural phenomenon, but on the other hand they’ve been accused of taking a colonial attitude to the tribal human societies up-time in their *Native Planet*.

## Standard Atlantic Petroleum

“A mid-sized oil company based in New Jersey, they’ve bet the farm on being able to bring oil from out-time back to Q0. So far, they’re still shipping single tankers full for experimental purposes, but they are looking to ramp up production to profitable levels in the next few years.



“There’s a lot of popular opposition to this on environmental grounds. The feeling is that climate change is going to be bad enough with just the greenhouse gas of oil from one

quantum, and that adding in large quantities from elsewhere is just piling stupidity on stupidity. The amount of money involved is potentially enormous, though, and they've been able to keep the governments of the US and China on their side, enough to stay the course with their plan.

### **Farallon Mining**

“Mining is strongly discouraged in the American Claim as, unlike oil, using up a mineral deposit can have very long consequences. The thinking is that if you dig it up then, you don't have access to dig it up now...I don't even pretend to understand the causality of that, but that's the policy.

“The big exception to this is any land on the Farallon Plate. In Q0, it's literally under North America where no-one can get at it, but for about 150 million years prior to that it was between the Pacific and North American plates. Some of it mashed islands into the Pacific side of the continent—part of the reason why the western half of the US is so rugged—but most of it ended up smashed to bits and buried under miles of North American rock. Farallon Mining was put together to extract resources before they dived deep down to where no-one could get at them.

“Farallon is extremely jealous of their claims, since the plate is entirely unexplored. They have to put in a lot of work finding what's worth extracting and have only just started showing a profit after years of bleeding capital. They don't want anyone else to benefit from that work, which is fair enough, but they make as much trouble as possible for anyone headed to western America in the last 200 million years or so. It's an issue for other explorers, I can tell you that from experience.

### **APM Monrovia**

“A large Swedish shipping concern before the discovery of time travel (despite the name), APM Monrovia have moved aggressively into cargo handling between quanta and have the largest fleet of ships of any single organization, even including governments. Most are the simplest possible haulers, designed to attach to a half-dozen stacked containers, haul them 100 km up, and then set out for transport missions to colonies or trading with other civilizations. They even handle letter mail, contracted out by the USPS and other countries' postal



services; the volume is so low that it takes up only a corner of one container, so they do it at no cost in return for the prestige. Their blue star logo is a welcome sight to colonists.

### **King's College Edinburgh**

“In a way a competitor to the Smithsonian, King's College is quite deliberately more highbrow, devoted to pure research with no pretense to public outreach. They do run similar kinds of expeditions, but if they come up with something showy, they usually donate it to the British Museum in London—though not before squeezing every last bit of science out of it. KCE runs numerous important but eye-wateringly boring research projects through all quanta, but their devotion to gathering knowledge of all types means that they often notice something *really* odd long before anyone else would.

### **VSEL**

“A mid-sized shipbuilding company based out of Barrow in the UK, VSEL bought a nearby ailing aerospace company and pivoted from maritime vessels to time ships. The hybrid entity rolled out its first prototype a year later, and since has built several models of small- to mid-sized cargo and military ships. Many of APM Monrovia's ships are VSEL Class Bs, Cs, and Ds.



### **Geoje Shipbuilding**

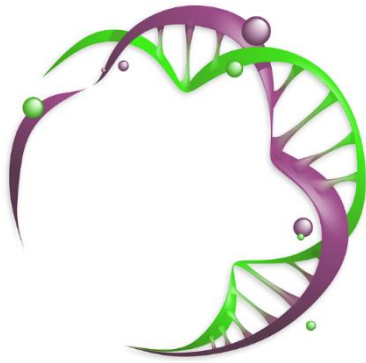
“If VSEL is an example of a corporation quickly taking up time ship technology, South Korea is an entire nation that's done so—with government assistance, all that country's heavy manufacturing conglomerates have got into the business, and Geoje most of all. Their specialty is large merchant vessels and warships of all types; in the latter case they cater to all governments that don't have their own indigenous warship building capability (in other words, anyone except the US and China).

### **Chinese Colonial Bureau (中国殖民局/Zhongguo Zhimin Ju)**

“Like the US, China has moved to claim parts of out-time, in this case entire quanta primarily in the late Quaternary. To do this, the CCB have taken the 19<sup>th</sup> century British idea of penal transportation and updated it for the 21<sup>st</sup>. After reforms in the early 2000s, the Chinese administrative prison camp system for petty criminals and dissidents was reoriented to sending people out-time and using their labor to establish a Chinese presence. After their sentences are over, usually after 1 to 5 years, they are encouraged to stay, and many do. Almost all Q0 colonies with more than 10,000 people are Chinese, and at any given time about 100,000 people are waiting out their sentences on a foreign quantum.

“As well as taking jobs helping to administer the prisoners that follow them, these now-free immigrants get opportunities to start up regular businesses or farms, and generally create

new colonies separate from the prison system. If they still harbor incorrect ideas, the government attitude is that they are at least away from the homeland and less able to cause trouble.



### **Garden of Eden** (جنات عدن /Jaanat Eadn)

A relatively new project founded and funded by the Emir of Bahrain, Garden of Eden is actively studying out-time animals with the goal of importing them back to Q0. As well as supplying zoos and research institutions with any kind of animal, their goal is to use nearby down-time quanta to recover animals that have gone extinct on Q0, or nearly so, in order to reintroduce them or increase the species' genetic diversity.

“This is a controversial undertaking, with many ecologists speaking against it in vituperative terms. Among their fears are worries about out-time diseases being introduced to existing populations, escapes of species to become invasive where they should not be, and a reduced emphasis on conservation if the old saying “extinction is forever” is no longer true. Some also accuse Garden of Eden of being a front for actual crime, not just misguided, such as supplying the East Asian market with medicinal animal parts or engaging in the underground ivory trade.

### **Operation Emancipation**

“There are a lot of people around the world who are deeply offended by the Terminal Empire's slave-holding society. Some of them have banded together to make a clandestine organization dedicated to freeing them on an individual-by-individual basis, Operation Emancipation (OE). The group is slowly gaining strength, and their spray-painted sigil is starting to appear on t-shirts on college campuses in Europe and North America.



“One of OE's focuses is to be alert for circumstances where a slave brought to Q0 wants to leave their master's service—not as common an occurrence as one might first think, but it happens—and then maneuver him to freedom through a legal minefield. Slavery is illegal throughout Q0 and so a suit is often successful. The Terminal nobility have started avoiding this problem by ginning up manumission documents (a previously non-existent thing on Q +1) that are *de facto* dead letters on return to the Empire.

“Officially OE claims that's their only tactic, but ‘everyone knows’ about their second approach: raids on Terminal colonies where some of the underclass have been told where

and when to gather if they want to make an escape. Regardless of the circumstances from which they are extricated, Operation Emancipation then sets up its newly made freedmen in one of a few colonies up- and down-time.

“This final step is necessary as the former Terminals have no citizenship, and Q0 nations are cool to granting it. OE is popular with the general public but remains in the shadows as governments are not keen on another pain point in formal relations with the Empire. More than a few raids have been pre-empted by government action. There are also those who think that OE is a bad idea, as both their people and the people they rescue end up dead fairly often.”

### **Peace Society**

“The inverse of Operation Emancipation in a way, the Peace Society is devoted to avoiding war between Q0 and the Terminals. Unlike their counterparts, they can operate quite openly—who is against peace? —but their critics say at least some of them, particularly in the leadership, act as if they’re against hostility on the part of Q0 but not so much in the opposite direction. Some of their funding (maybe most, say critics) comes from the Empire, to be sure, but there’s no law against that.

“Whatever the truth, PeaceSoc have offices in several major cities—New York, Stockholm, Shanghai, among others—and its people often act as liaisons between civilians on Q0 and the Terminal nobles who want to hire them.”

### **Cesar Ray Robles**

776668 Age 32 Cr40,000

Admin-0, Athletics-2, Carousing-1, Electronics-1, Mechanics-1, Natural Weapons-0, Recon-0, Slug Pistol-1, Slug Rifle-0, Survival-1, Tracked Vehicle-0, Wheeled Vehicle-0

Cesar is a freelance photographer working mostly for the International Geographic Society, and has been since he left school. First working as a hand on an APM Monrovia cargo ship, he quickly caught the attention of the IGS with his first submissions and has worked as a freelancer ever since. He signs up with IGS expeditions as their official photographer, and advertises his services to other organizations, and knows all the players out-time. He’s probably best known for his pictures of the Yellowstone Supervolcano at the end of the Late Quaternary. He’s well-connected with the Los Angeles and New York art and journalism communities, well-known among them for his work.

He’s a Hispanic-American male of average height and weight. Since he became an adult he been consumed with wanderlust and can’t bear to stay in once place for too long. He’ll turn

down expeditions to places he's been before in favor of ones that break new ground, even if they pay better.

### **A Word About Currencies**

The Earth of Q0 has many currencies, ranging from the near-universally convertible US dollar and European euro, to the useful Chinese yuan and British pound, down to oddities like the Uzbekistani so'm. For simplicity's sake, all Q0 prices, character wealth, salaries and so on are quoted in nominal *credits* (Cr) as per the base Cepheus Engine rules. Referees looking to avoid this can convert to USD from Cr on a 1:1 basis, with other currencies following depending on the daily exchange rate.

# The Terminal Empire

Day 3: Lt. Col. Anthony J. Clay, 614<sup>th</sup> AOC USAF, temporarily assigned to ESDC

“The human species naturally occupies a short stretch of time from Quantum -15 to Quantum+1. The people of the 21<sup>st</sup> Century are the first to have discovered time travel, not only within this period but in the entire known timestream. However, if you’ve absorbed Professor Lécuyer’s talk from Day 1, you understand that the peculiarities of the quanta gave the people of Q +1 a *de facto* head start in exploring the timestream.

“Eight centuries before the year in which Q +1 and Q0 are synchronized (in other words, approximately AD 20,100) the *Khavik Tore Oloima*—which translates as “The Commonwealth of Order and Peace” but commonly known as the Terminal Empire—took control of all Earth after a devastating war. Despite their high-sounding name, the Empire is an oligarchic slave state where 1 in 50 rules absolutely over the remaining forty-nine, restrained only by endless, murderous competition from others in his own class—or even his own family. A member of the underclass has no civil rights, no personal property, and likely toils on a *latifundium*-style farm; a few work in more specialized trades. Meanwhile, the lords of the manor occupy themselves with what they see as higher callings like art and science, or more commonly nothing at all except politics.

“Lordly families rise and fall and are sometimes exterminated to be replaced by cadet branches of a victorious pedigree; there is no mobility between upper and lower classes, in either direction. If they rise far enough, one of their number may become Emperor, a prestigious but relatively powerless figure. This hold usually lasts for a few generations and is often followed by a spectacular, blood-soaked fall.

“Many of the quanta further up-time from Q +1 are Terminal colonies now, and even more are exploited by them in one way or another—that includes conquest of primitive human civilizations up-time. To them the ideal colony is between one and five million people, with a few dozen ruling families on top, spread over the entire Earth and separated from other colonies by approximately 2 million years—long enough for local resources to recover completely after the eventual extinction of the previous colony.

“Some of you may already be doing the math, so let me give you the number: 1.25 billion of them. Fortunately, even 800 years is not nearly enough to establish control over all the vast number of quanta accessible to them in the future and they are probably not as numerous as a back of the envelope calculation suggests. This is backed up by what reconnaissance we’ve been able to do. Even so, they’re as numerous and as powerful as the people of any nation in Q0.

“Another point in our favor is that they were aware of and paranoid about the discovery of time travel in the 21<sup>st</sup> century and have been quite circumspect about visiting Q -1 or earlier. As an aside, did you know that they call us ‘ghosts’? If you look at it from the right standpoint, we’re all dead and gone nearly twenty thousand years. We’re unsettling to them. Practically, this means that they only travel to the past if they feel they can leave no trace that could be fossilized or otherwise detected by Q0’s archaeological and paleontological communities; this precludes most colonization but not expeditions with a shorter timeframe and lighter touch. Certainly, the effort paid off—we never suspected their existence until Aurora probes sent upstream to certain quanta kept meeting destruction.

“Well, we know they’re there now. Past or future, if one takes precautions it’s not too difficult to travel to any time safely. But it’s necessary to take those precautions as the Terminals constantly act in ways that hinder our own efforts in time, up to and including the murder of entire expeditions. Ultimately it seems to me that either one day the Terminals will decide to strike against us—or that we, one day, will find a way to end their hold over a billion slaves.”

### **Anthony J. Clay**

668784 Age 46 Cr70,000

Admin-0, Comms-1, Electronics-2, Grav Vehicle-1, Gravitics-1, Heavy Weapons-0, Leader-1, Natural Weapons-1, Piloting-1, Rotor Aircraft-2, Slug Rifle-2, Space Sciences-0, Survival-0, Turret Weapons-1

Lieutenant Colonel Clay is an officer in the United States Air Force, currently on detached duty with the European Security and Defence College. As well as bringing acting as a bridge between the United States and Europe, sharing what his country has learned about the Terminal Empire, Clay also has his own personal experiences to share. Six years ago, he was part of the *Mandrake* mission, which stumbled across a Terminal outpost in the Ordovician and would have been lost if it weren’t for his quick thinking. He has a price on his head now, having killed the outpost’s commander, a nephew of the Emperor, as part of retrieving the *Mandrake* personnel who had been taken captive before the ship could make its escape.

Since his return, he’s made it his specialty to analyze the Terminal threat and coming up with ways to counter it. He’s skeptical of diplomatic efforts on that front, except to the extent that they help advance the cause of the Empire’s defeat.

Anthony is an African-American man in early middle age, of average size but very muscular and in excellent shape. He keeps his hair very short and is clean-shaven. He hates being called “Tony” and his middle name is Jerome, which he thinks is even worse. He joined the Army to get out of poverty in rural Indiana, enlisting when he was 19. He was aghast when the first details of the Terminal Empire came out and hates their slave-holding society as much as he’s

ever hated anything. His deepest secret is that he's supports the New Underground Railroad and will pull strings on the sly for it.

## Characters

The citizens of the Terminal Empire are human, and so they have stats and skills much like other humans. The main exception is in Social Standing, where there are very many with low standing, many with high standing, and none between.

Social Standing	Class	Examples
0	Slave	Agricultural worker or laborer
1	Slave	Skilled worker (servant, blacksmith, cook)
2	Slave	Police or soldier "grunt", overseer
A	Upper-Class	Low level member of the upper class, low-level officer in the police or armed forces.
B	Upper-Class	Family head or his/her spouse, owner of a small-trading concern.
C	Upper-Class	Most important family head on a colony world, high-level officer, rich merchant.
D	Upper-Class	Head of a family that controls several worlds, military officer with connections or great family wealth.
E	Upper-Class	Leading member of a Terminal faction ( <i>de facto</i> head of 100 or more worlds), or family member of the Emperor further than cousin, niece, or nephew.
F	Upper-Class	The Emperor/Empress, or a close family member of him/her.

For slave NPCs or escaped slave characters roll  $1d6 \div 2$  (rounded down) for Social Standing. Upper-class characters can be given a randomly generated Social Standing by rolling three 1d6, choosing the lowest of them, and adding 9; this makes about 1 in 200 of them close family of the Emperor, but does reflect how often they might impact an adventure if not their actual numbers. They are the movers and shakers in the Empire.

By contrast, Education also has a similar distribution, with the difference that the values 3 through 9 are not non-existent, merely rare. Even slaves may have an Education of 7, 8, or even 9 if they are a trusted servant of a permissive owner. Examples include a personal doctor, a research assistant, and so on.

## Colonies

A Terminal colony begins with an assay of the target quantum's Earth for viable colony sites. These range from the size of a Central American nation to something as much as five times that depending on the quality of its agricultural land. Some are conservatively discarded as unsafe (e.g., in a hurricane corridor, or a severe earthquake zone) but the rest are doled out to families. These are usually new foundations, either by promising but landless sons or often the feckless detritus of whatever family has enough power and wealth to wrangle a slot.

The Terminal upper class is deathly afraid of slave uprisings—few have succeeded for any length of time before suppression, but they know that every exposed ruler in a stricken colony will be dead long before that. Accordingly, they like to dig in wherever they live, either into a bedrock-solid natural feature or by building massive bunkers in concrete and rebar.

The lands around the redoubt are almost entirely agricultural, with a little labor-intensive mining mixed in. As most colonized quanta have a handful of colonies and no more than a few million people in total, larger settlements are rare, with cities based around redoubts of more than 50,000 people restricted to the oldest and most politically important.

## Technology

The Empire's technology is a curious mix of advanced and relatively primitive. Prior to the war that ended in the Empire's foundation the Earth was ahead of the 21<sup>st</sup> century, with such near-miraculous items as fusion pistols and force shields at hand. Some knowledge seems to have been lost in the violent convulsions 800 years ago and some deliberately suppressed as irrelevant to the new Terminal culture, leaving them where they are now. While the Terminals do have a concept of "science", since then there's been no advancement or new discoveries that we would recognize as scientific: self-proclaimed Terminal scientists largely engage in pointless cruelty and their laboratories are houses of horror. The concept of sharing their results so others can build on them is alien.

Field of Science/Tech	Terminal Level
Astronomy	Primitive: (4 or less): Despite possessing the means to explore space using grav plate technology, Terminals simply don't care. Time travel is the source of imperial power and wealth and space is just the place you go to start a jaunt through time. Lack of a satellite capability for spying/monitoring is a weakness compared to the 21 <sup>st</sup> century.
Communications	Radio. They've never bothered with microwave relays and lasers are for shooting people with. Primitive computers mean traffic is not encrypted, and the codes they use make the NSA

	laugh derisively (though they can be a speed bump for amateurs).
Computers	Industrial (5): Analog or vacuum tube, no transistors or IC though they do possess ancient machines to make circuits for advanced weaponry
Defenses	Advanced: (F): Black globes for large, important installations. No personal shielding.
Genetic Engineering	None: Long-term breeding experiments are the best technique available to them; they have had eight centuries to work with, however.
Grav Tech	Equivalent to the 21 <sup>st</sup> Century (9): The Terminal Empire knows how to make grav plates and vehicles that use them, but they are largely playthings for the rich. Yachts abound, and patrols keeping the slaves down are well supplied with more-practical craft. Cargo is moved by manpower. Have more cargo? Use more slaves.
Medicine	Industrial (5): Surgery, anesthetics, no antibiotics. 21 <sup>st</sup> century medics are in demand, though this means slavery when found and not a job offer.
Power	Industrial (6): The Empire relies on bulky fission reactors, though some of the handmade ones on ships are miracles of design. Both are hard on the slaves who load them, and the residue is intensely radioactive, but it can be thrown into a subducting oceanic trench and be destroyed before the next quantum up-time has to deal with it.
Time Travel	Equivalent to the 21 <sup>st</sup> Century (9): The Terminals have time ships up to J6 capability, and they are similar in size and other capabilities too.
Weaponry	Advanced (E): portable and large-scale fusion weapons. Upper-class Terminals carry legacy weapons like swords and daggers for prestige purposes and know how to use them.

## Names

Terminals speak an agglutinative language and their names reflect it. Males are usually given a personal name that is a verb with positive connotations (e.g., conquer, shine, stride) and often the future tense marker *-es*, though not always. This gives male names a curiously Puritan feel if translated, though they rarely are.

Female names follow a similar principle, though the stem is usually a feminine noun, or another noun with the feminine *-em* marker attached to it.

Family names come first when a full name is written out, and Terminals think it's barbaric to do the opposite. Using the names in the wrong order or mistaking family name for personal name is insulting.

For a slave Terminal, their whole name is made up of the family and personal names. However, upper-class Terminal adults also use a status name depending on their Social Standing (something like the use of *von* in German), which goes between the other two:

<b>Soc</b>	<b>Marker</b>
A	<i>Jura</i> . Sir. In the absence of any other title, all non-slaves use <i>Jura</i> . Note that 21 <sup>st</sup> century people do not qualify in a Terminal's eyes.
B	<i>Chi</i> . Baron
C	<i>Jol</i> . Count
D	<i>Kalet</i> . Duke
E	<i>Dalet</i> . King or Prince.
F	<i>None</i> . Everyone knows who the emperor and his immediate family are.

English title equivalents are approximate, and don't necessarily translate into the same level of power over subordinates. Social status names are not marked for gender (on the model of Count/Countess of King/Queen in English) as one's personal name usually conveys this information.

When speaking with each other, full names are used for introduction. After that, social inferiors use the social status name and personal name of a superior while family names alone are used between people of equal class or by a superior to an inferior. Family members use only personal names with each other.

**Example:** Given the name *Kanguzchu Jura Kanates*, we know we are dealing with an upper-class male but one with no outstanding notability or wealth—an upper-class “commoner”, so to speak. He is a member of the *Kanguzchu* family and his personal name means “I Will Strike”, though he doesn’t think of it that way; it’s just a name. His friends call him *Kanguzchu*, as does his boss the feared General Kinev, while his brothers and sisters call him *Kanates*. He expects slaves and 21<sup>st</sup> century people to call him *Jura Kanates* and is offended if they don’t. If ever gets much experience with those from Q0, though, he’ll probably become tolerant of mistakes in that vein, if only because he’ll think “What else to expect from ghosts?”



### **Kanguzchu Jura Kanates**

8344AA Age 30 Cr70000

Admin-0, Athletics-2, Broker-0, Carousing-1, Computer-1, Engineering-0, Gambling-1, Leadership-0, Riding-1, Slug Pistol-2, Social Sciences-0, Tracked Vehicle-0

The Jura is a good example of an everyday noble in the Terminal Empire. He’s not very bright and that’s kept him firmly in the Jura class as he’s likely to fail in some pathetic way if given real responsibility—and has done so in the past. He’s a minor assistant in the entourage of General Sirekal Kalet Kinev, one of the more important members of the Sirekal family, infamous for her ability to put down slave rebellions. She’s smart enough to keep him making hot drinks and shuttling paperwork between her adjutants, but he resents the fact. On his next long leave he plans to invest his stake in an expedition he’s been planning, using Q0 hirelings *outside* of the purview of his family and the military, and make a fortune. It remains to be seen how badly this will go.

**Sample Personal Names:** (*Male*) Minaves, Buretes, Tultaves, Sulkinates, Dorsikes, Jakhaes, Jureses. (*Female*) Tarhavik, Jolur, Sukluem, Chorem, Kinev, Nakhem, Ateshem.

**Sample Family Names:** Emauton, Osrasar, Shajiuk, Otoi, Sirekal, Kaitos, Kaleis

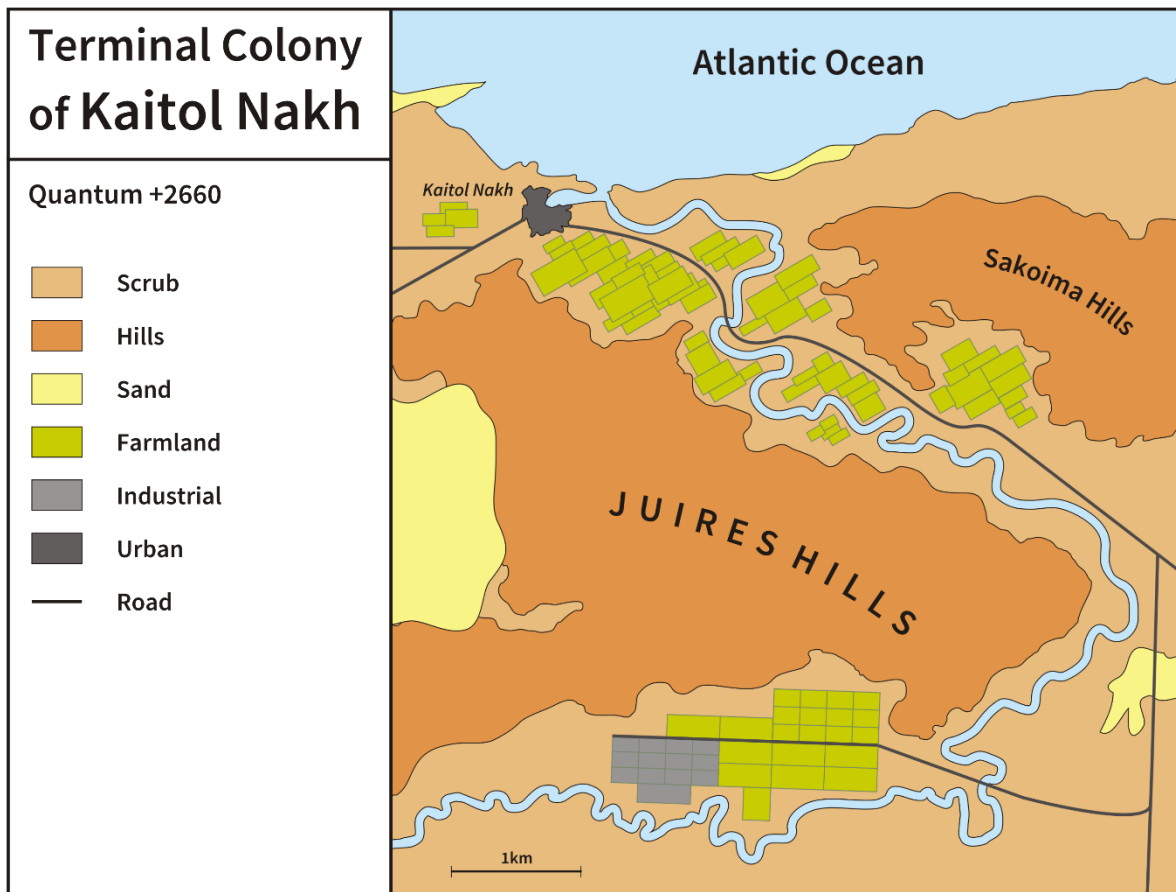
### **Kaitol Nakh**

Jura Kanates’ “home town” is a typical Terminal colony, Kaitol Nakh, which is one of a dozen on Q +2660. Located on the coast of West Africa in what was once Mauretania, that part of the

world has moved north out of the desert zone and now sports a pleasant, Mediterranean climate.

It's held by the Kanguzchu family, and in particular is the home of Jol ("Count") Burasar, the head of that clan. They're not particularly notable, but there are a half-dozen Chi ("barons") subordinate to him in the bloodline sense if not politically. Jol Burasar is likewise not a major player in Terminal politics and is generally content to stick to running his holding.

The colony is primarily agricultural, with fields stretching far and away to either side of the Yoksei River, which is used as a source of irrigation water. There are a few villages—gathering points for taxation in kind, as much as anything else—and a small city of about 12,000 people hugging Kaitol Nakh proper: the bunker/palace of the Count. The large majority of the colony's couple thousand nobles lives here in a rambling complex around the palace, while the rest live here and there in manor houses dotted throughout the agricultural country and the surrounding nature reserves. This minority rules absolutely over the colony's 125,000 people, with actual power invested in an even smaller minority related to the Kanguzchu family and trusted members of subsidiary clans.



This noble center is at the mouth of the Yoksai, and the ocean is the playground of the rich—there's minimal fishing based out of a small village some distance up the coast and dedicated to serving only the rich. The river scribes a wide 180-degree loop around some inland hills, the Juires, and what little industry there is lies on the far side of the hills where its smoke and wastes will not bother the nobility. Most off-world trading is in uranium, which is dug out from a mine far inland in near-desert conditions.

## **Terminal Spies**

As Terminals are fully human, they're capable of blending in with any Q0 society, and have been doing so since they developed time travel. That means that they've had the ability to monitor the home quantum beginning in the 13<sup>th</sup> century. They've taken advantage of that and pop historians and amateur detectives have had a field day accusing figures as diverse as the Comte Saint Germain, Wallace Fard, and the Man from Porlock. They think Terminal agents are behind every shadowy organization from the Knights Templar to the Men in Black too. More seriously, the KGB actually caught one as far back as 1957, lurking around the Mayak nuclear production facilities there, but they decided he was insane and shot him for good measure.

These days, intelligence agencies can detect people suddenly inserted into Q0 using social network analysis, especially now that they know they should be looking, but travelers that are circumspect can still last a few months in the US or EU and longer in underdeveloped countries. In the United States they often hide themselves in the homeless community or slot into the shadow economy exploiting undocumented immigrants. In Europe they've made similar inroads posing as refugees or *gastarbeiter*.

The other kind of spy that is even more difficult to detect is the long-term mole. In general, these did not start out this way, but rather were Terminal nobles who decided to cast off their native society or escaped political violence by establishing themselves of Q0 Earth. Previously they risked being murdered by the Empire if rediscovered, but in the last few years the Terminals have been recruiting them instead—usually by that same threat of death. As they've been embedded in Q0 societies for decades, they're much harder to catch; sometimes they were even born here to parents who may or may not have told them their true heritage.

### **Alfonso Cain**

655783 Age 24 Cr7500

Engineering-0, Linguistics-0, Mechanics-0, Natural Weapons-1, Recon-1, Slug Pistol-0, Streetwise-1, Wheeled Vehicle-0,

Alfonso is one of those mentioned previously: a born Quantum 0 citizen whose parents are self-exiled from the Terminal Empire. They're dead many years now, killed by Terminal

agents though the cover story is that they died in a light plane crash—which is true as far as it goes, since planes don't fly well after their hydraulic systems are sabotaged. Alfonso suspects this is the case but has made the decision to work with the Empire anyway, now that they've contacted him and asked him to become an agent.

In the years between their death and his recruitment, Alfonso lived in various orphanages and halfway homes, falling afoul of the law and living the life of a runaway drifter when he can. Now an adult, he's acutely aware of his poverty and lack of station: no job, no girlfriend, a



sociopathic outlook that makes it hard for him to fit in. The sporadic cash payments from his Terminal contact keep him afloat and Alfonso fools himself that he works with him and not for him. He's been pointed at various time-related research projects in the American Southwest and told to break in and wreck them, which he's done well. Recently he's graduated to killing targets given to him, again with the aim of retarding Quantum 0's time travel though he doesn't really care why.

Alfonso is a tall and thin American male aged 24, with long, straight black hair and dark brown eyes. He has a

wispy moustache and thin beard. He dresses like what he is, a drifter. By nature, he's a fast-talker and avoids violence if there's any chance it can be targeted at himself, but if he can engage in it without immediate repercussions, he might indulge in some. He smokes almost constantly and is insincerely apologetic about it.

# Other Human Civilizations

“It’s a sad, newly discovered fact of sociology that human beings can’t sustain a technological society for the length of a full quantum. Q0 collapsed before Q +1 produced the Terminal Empire, and Q +2 sports no human presence besides ruins—the human race has gone extinct.

“Time travel has let both Q0 and the Terminals colonize further up-time, however. There are many examples of Terminal colonies dying out entirely between the quantum where they are founded and the quantum next up-time, 18,900 years later, and none where a continuous Terminal civilization has been maintained. Our own colonies are less numerous but suffer the same ultimate fate.

“Losing civilization doesn’t mean dying out, though. Humans are sometimes still living in the following quantum, but they’ve gone through at least one period where advanced society comes to an end and life reverts to a pre-civilized state. There it either remains or a new civilization climbs up out of the wreckage. We’ve even found some quanta where the cycle has happened more than once. Very few reach industrial levels of technology and about the only thing we can say is that none of them have developed time travel on their own—that discovery seems to have been restricted to us in Q0 and the non-human Chovu Imoi (*see p. 45—ed.*), while the Terminals are in the unique position of having maintained the necessary knowledge through a collapse.

“What this means in practical terms is that there are dozens of human civilizations up-time and a few, all primitive, down-time. Some are descended from the Empire, others are paradoxically our own descendants. All of them are very different from either of us.”

## The Turonians

Most of the human societies that have been contacted are world-wide. This is largely due to a selection effect: with several tens of thousands of quanta full of life to explore, a small hunter-gatherer society alone on a world is easy to miss.

One exception is the Turonians, who were encountered entirely coincidentally by an expedition to the Cretaceous. No-one knows what they call themselves as they’ve been extremely hostile to contact—attacking interlopers with thrown spears when they can and running for the cover of the forest when they can’t. For now, they’re named for the time period where they’re found, Q-4779, which is in the Turonian age of the larger Cretaceous epoch. Despite their low numbers and the difficulty of contacting them, they’ve caught the attention of the general public in Q0. There are not many colonies down time from the present day, and this is the only human culture in a time when dinosaurs walked the Earth.

Though not a lot is known about the Turonians, a few basic facts are certain. They are fairly small and thin, either for genetic or dietary reasons, about 165 cm (5'5") and 50 kg (110 lbs) for men and smaller still for women. They have dark black hair, which they wear long—men shave it down the middle, leaving it on both sides—and light brown skin. Approximately 10,000 of them live as hunter-gatherers in the dense rainforest of what will one day be southern Egypt. They appear to be entirely TL0, with stone tools, fire, and language, though in general their level of technological achievement is only known through a few brief contacts.

### **The Aleasak**

An early industrial civilization in Q +580 of the Late Quaternary, the Aleasak are the first culture to regain that technological height after Q0 and the Terminal Empire on Q+1, having descended from a Terminal colony in Q+577. The Earth has not recovered many of its natural resources in the time since they were rapaciously mined by the earlier civilization, and the Aleasak's technical achievements have come only slowly in the absence of easily accessible coal, oil, copper, and the like.



The Terminal Empire tried to conquer this quantum not long after re-inventing time travel some 800 years ago, one of the first to suffer their aggression. The Aleasak managed to win the war; the Terminals conquered several countries but were eventually defeated by what remained of this Earth's great powers swamping them faster than the invaders could bring in reinforcements. It's possible that the Empire could conquer Q +580 now with the experience they've gained on other quanta they've invaded since, but the Aleasak's many nations have settled their differences with one goal in mind: preventing a second invasion, or winning a second war too if it comes to a showdown. While this has meant concentrating their meagre resources on the problem rather than their own comfort, they now have a few

railroads and a radio communications net, alcohol-fueled dirigible balloons, and a small military cadre with TL 5 weapons ready to expand into a mass army.

From the standpoint of Q0, the Aleasak are interesting because they're not as backwards in other fields as their resource-starved industrial development might suggest. They've been slowly slogging their way through TL 3 and 4 for more than a millennium, but in that time the mental side of things is very refined—mathematics, theoretical physics, sociology, psychology, and other sciences that don't rely much on technology. In those fields they can match or exceed experts in Q0, to the point that there are already a few Aleasak thinkers in university and research positions throughout the US and Europe. Even time ship crews are bringing some Aleasak on-board, particularly as medical personnel.

The Aleasak trade this knowledge, as well as whatever else they can scrounge up that we want, for Q0's technology. They're tough negotiators, but they have an appetite for solar power cells, copper electrical transmission wires, computers, and other items they can't make for themselves.

### **The Errekano**

Living toward the very end of the Xiramedusid Period, the Errekano have made a very harsh version of Earth their home. A few million years after their time, multicellular life on land becomes extinct as surface temperatures reach an extreme under an ever-brightening Sun. In the Errekano's quantum, Q +52,887, conditions are not quite that bad, but they're close. Even the poles are hot, but the southern polar region is mostly ocean and the shores around it maintain a few oases where people can still live among what is left of the planetary ecology.

Unfortunately for them, the forces of the Terminal Empire appeared in the skies some 400 years ago and set up a hegemony over them. The planet won't support the usual Terminal approach of vast agricultural plantations, but each area of oases has had typical lordly bunker imposed on it and heavy taxes are extracted from the population.

Every generation or so the Errekano rise up, are crushed, and then engage in a desultory insurgency based out in the desert, particularly in the winter when it's night for months on end, but conditions are so hard that even the most determined bands of warriors die out within a few years. If given support from the outside, however, they may be able to keep a revolt going indefinitely.

### **The Grenusheer**

The Grenusheer of Q +18,501 have confused legends of gods and magic that might refer to the initial colony from which they derive, but Q +18,500 is uninhabited—for now. One of either the Terminal Empire or a Q0 group are assumed to have founded a colony there at some year in

the future, but neither has done so yet. The Grenusheer's tales are too vague to settle the question and so only time will tell.

As is common, the Terminals have tried to conquer them several times but unusually they've been unable to prevent most of them from fading back into the landscape to avoid slavery—only a few plantations have been forced into place and much of the planet is still wild.

While this history of violence has made it harder for Q0 to establish contact with a new group, but once they do the Grenusheer can become good allies, especially if the newcomers promise help and are not looking to remain neutral. Some exceptional members of a Grenusheer society have even become valuable members of time ship crews, particularly crews that visit other parts of the Mesopneumid Era where a Grenusheer's familiarity with the wild can be very handy.

Like the Turonians, the Grenusheer are TL0 in that they have no agriculture or large settlements, but they are a little more advanced: they use native copper for some tools and adornment, live in small villages, have some social stratification with a priestly caste, and possesses proto-writing (written symbols used to aid memory). Likewise, they're more widespread: perhaps one to two million of them over the whole planet, though they're difficult to count. If the Terminal Empire hadn't come along, they likely would have started a civilization somewhere on Earth within a few thousand more years.



# A Timeline of Earth

*Earth and Life evolve together* –Léon Croizat

Time ships are not restricted in range by any fundamental limitation—given enough food, air, and water aboard they could theoretically travel back to the Big Bang and forward into the untold trillions of years that follow the present day.

In practice, however, there are practical limitations which time travelers bump up against. In the past, the Earth only develops a permanently solid surface about 4.41 billion years ago; prior to this it is periodically molten, leaving a ship with nothing to land on more and more frequently until 4.49 billion years ago. At this point the Earth collided with Theia, a Mars-sized protoplanet, in a catastrophe that formed the Moon. The debris cloud left by their meeting is not survivable in any time ship ever built, current or projected.

In the other direction, there is a barrier at 1.139 billion years in the future. At the end of a hundred million-year-period-where the Earth is in a rather boring state, one reaches 1.139 billion years and those on a ship feel a tremendous wrench—the frame-dragging that holds ships in orbit around a moving Earth suddenly displaces them several million kilometers all at once.

Many ships do not survive the forces they experience on jumping into this quantum. Even those that do are lucky to escape: an encroaching alien species is quick to react to anything appearing in orbit, and their reaction is hostile. Since the return of the battle-damaged *Janus* six years ago, there has been a formal embargo on trips that far up the timestream, though a few probes have returned data leading to the few facts at the end of this chapter. Until a solution is reached, anything beyond this time is unreachable.

Despite the limitations on both ends of the timestream, time travelers do have a span of 5.5 billion years to explore, and there are many destinations and civilizations to visit. With stops every 18,900 years, this can be pictured as roughly 300,000 different versions of Earth. Even accounting for the fact that much of Earth's early years are not very interesting, perhaps 80,000 of them are very much like the Earth that you know: an entire world covered with life, any one of which could take up the lifetime of an explorer. Twenty years into the exploration era, there is still far more unknown than known.

## Day Length

The length of the Earth's day is slowly increasing as tidal effects caused by the Moon drag on the planet. Depending on where in time an expedition goes, characters will have more or less daylight for their activities (or night hours if operating in secrecy!)

Millions of Years before Present	Day Length (hours)
-4500 (formation of Earth)	6.1
-3500	8.7
-3000	10.5
-2300 (Start Rhyacian)	12.9
-2000 (End Rhyacian)	14.2
-1200	17.7
-900	19.2
-850	19.5
-715 (Cryogenian)	20.1
-635 (Ediacaran)	20.5
-540 (Cambrian)	21.0
-405 (Mid-Paleozoic)	21.7
-345	22.1
-280 (Late Paleozoic)	22.4
-230 (Early Mesozoic)	22.7
-180	23
-136 (Cretaceous)	23.2
-66 (Chicxulub Impact)	23.6

Millions of Years after Present	Day Length (hours)
0	24
44 (End Quaternary)	24.3
100	24.6
235	25.4
300	25.8
400	26.4
512	27.1
621	27.7
700	28.2
800	28.8
900	29.4
964	29.8
1013	30.1
1139	30.8

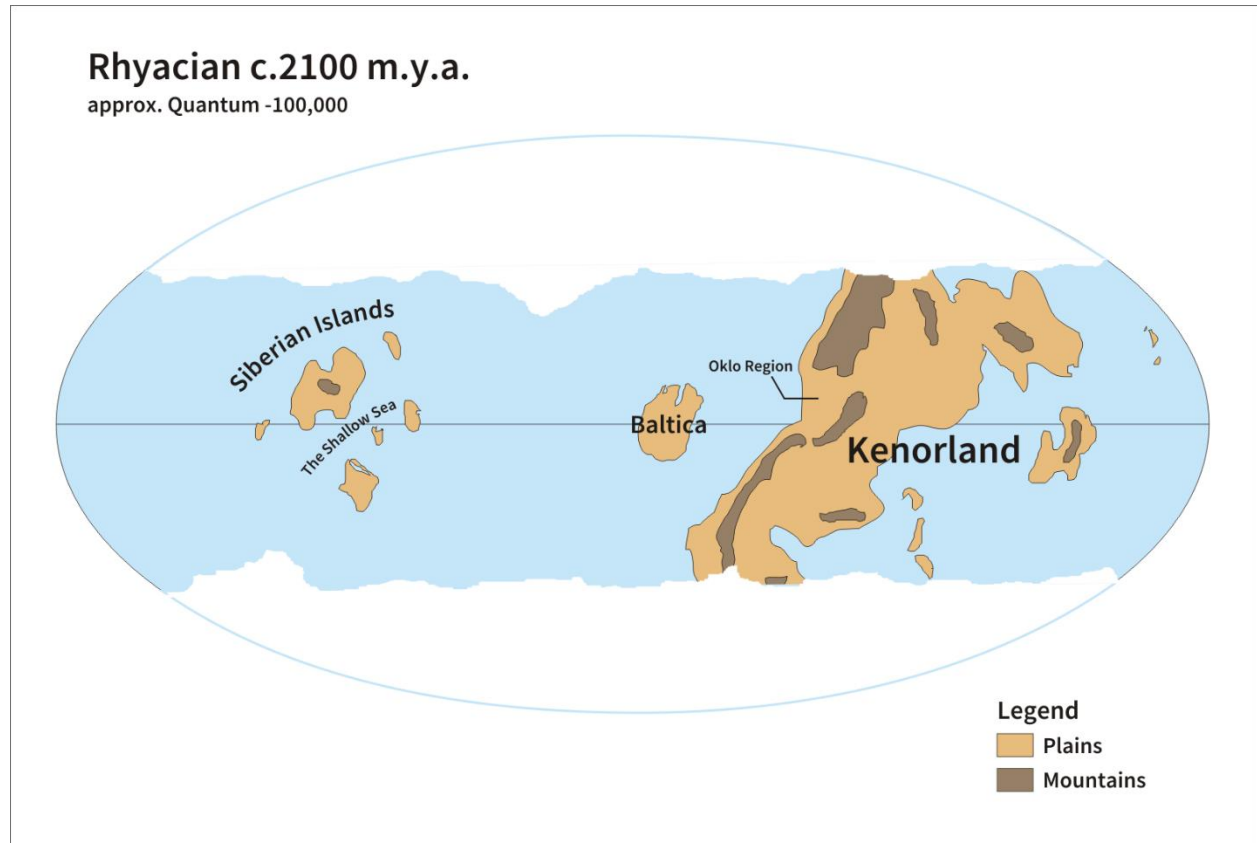
Years listed above are based on those referenced in the remainder of this chapter, plus a few others. While the relationship is non-linear, once one reaches 1 billion years ago it is nearly so from that point onwards, and GMs can calculate a difference of +0.3 hours every additional 50 million years for any year between -1 billion and +1.1 billion years and be at worst a few minutes off from the correct value.

### The Rhyacian

The most distant period visited regularly, the Rhyacian begins 2.3 billion years ago in the range of Q-127,700 to Q-110,000, a period of about 250 million years. For that relatively short period in the distant past, oxygen levels in the air approached and then surpassed those of the present day, after which they crashed back down when sulfide-eating bacteria became dominant and green, oxygen-producing varieties of microbe became rare until the following Cryogenian Period.

Distant though it may be, this time period is of intense interest to scientists as two further unusual events took place, and both within a small geographic area. One was the Oklo Natural Fission Reactors, a unique happening in the Earth's history. During the Rhyacian the

proportion of fissionable Uranium-235 in uranium ores was the same as that of artificially enriched uranium used for power in the 21<sup>st</sup> century (this variety of Uranium decays relatively quickly, so the proportion is considerably lower in natural ores found on Q0). In what is the current nation of Gabon the local geology allowed rainwater to permeate the ore, acting as a neutron moderator, and starting a chain reaction. Each natural reactor--and there are several of them—produces up to 100kW of power for a few minutes to an hour, which boils off rainwater and stops the reaction for a few hours until the water seeps back in. Then the cycle begins again, over and over for nearly 100,000 years.



The other unusual event was known first from sedimentary rocks found in almost the same vicinity, the so-called Francevillian biota. This time period's temporary increase in oxygen was accompanied by what appeared to be fossils of sessile soft-bodied organisms living in shallow, sunlit waters—a controversial position, as no other large living things were known until the red algae pulled it off more than a billion years later, and animals another 450 million after that. One of the first long-distance scientific expeditions into the timestream settled the question positively: the fossils were of living things, and they went entirely extinct when oxygen levels went back down at the end of the Rhyacian—a novel attempt at multicellular life by organisms that did not lead to modern plants and animals.

Biologists have been piling into the time period ever since, studying the weird sponge-like organisms, while geologists unravel the puzzles of the region's natural nuclear reactors. A few brave souls have linked the two: after all, the Francevillian biota doesn't seem to have spread around the world and is curiously only found near the source of power.

This time period is also the first to feature an ice age, the Huronian, which ran the entire length of the period. Not as severe as the Cryogenian that followed and much harder to reach than the Quaternary Glaciation, it's been little studied to date.

Altogether, the Earth is basically an alien planet during the Rhyacian: the day is 12-13 hours long, the land masses are dominated by ice sheets as far as the forty-fifth parallels, and there is no life on land outside of bacterial mats that live in tide pools on quiet coasts. There are no plants, animals, or fungi, and the multicellular creatures that do exist are sessile—the first ecology with lifeforms capable of predation (or even directed movement) are hundreds of millions of years away.

### **The “Boring Billion”**

From the end of the Rhyacian, the Earth entered a period of considerable stability: oxygen levels were low, oceans were tainted with sulfuric acid, almost all land clustered into a supercontinent (Atlantica) before breaking apart again, and evolution seems to have slowed to a crawl. It's not a pleasant time to visit and few do, but some scientists interested in the origin of eukaryotes (the major division of life containing all plants, animals, and fungi) have no choice but to head here, where they are first believed to have lived.

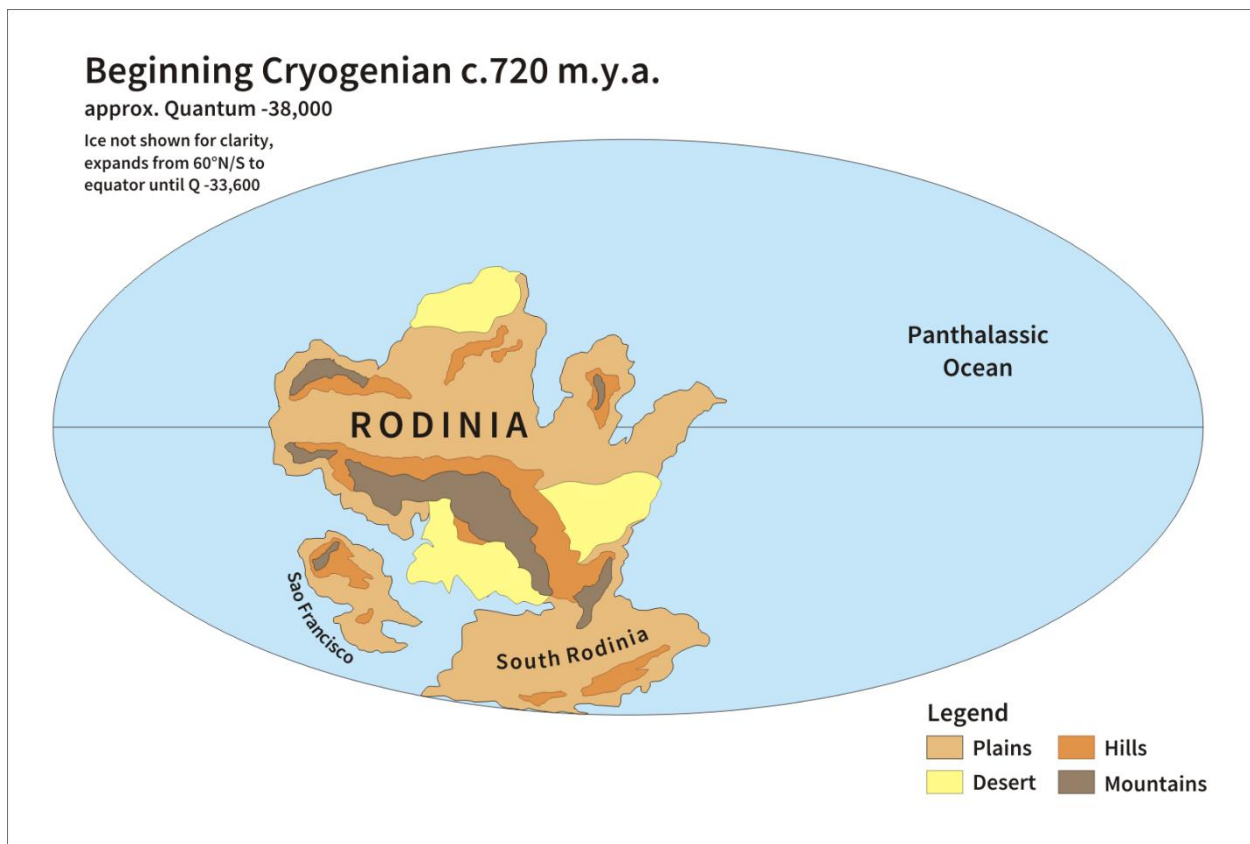
Characters visiting this time period need supplementary oxygen or they will fall unconscious in  $END \times 10$  seconds. While the water is not actively corrosive it contains enough sulfuric acid as to be undrinkable even if gathered from rain; either it must be de-acidified or potable water needs to be brought in from out-time.

### **The Cryogenian**

From 720 million to 635 million years ago the Earth was frozen over almost entirely, with only a thin band of ocean around the equator and some liquid water under the ice in parts further north, particularly where there was undersea volcanism. Though an extremely forbidding landscape, the origin of macroscopic animals lies during a slightly warmer period between the two long ice ages marking the beginning and end of the age. There are research outposts here studying climate and biology, and a few thrill-seekers travel here to what is popularly called “the beginning of time” (the Rhyacian being largely out of layman consciousness). Everyone else prefers literally any other time period over this forlorn version of Earth.

Oxygen levels grew slowly in the last part of the “Boring Billion” and reached about 5% during the Cryogenian. This is too low for humans to tolerate, and visitors need some supplemental oxygen. CO<sub>2</sub> levels spiked considerably toward the end of the Cryogenian, as the solid rock that would normally erode and remove carbon dioxide expelled by volcanoes were covered with ice. By about 635 million years ago, levels were 350 times what they are in Q0. This caused an enormous greenhouse effect which finally pushed the Earth out of its deep-freeze and launched the massive increase in biological diversity that carries on to and past the present day, but also causes hypercapnia. At the levels of CO<sub>2</sub> found here, this means an extremely unpleasant feeling of suffocation, followed by severe mental confusion in 1d6 minutes and eventual death in END hours. As a result, in the final 40 million years of the Cryogenian a visitor needs not only extra oxygen, it must be a closed cycle as well (all breathing air drawn from a bottle or sealed environment) or have its CO<sub>2</sub> removed chemically.

By now the day has lengthened to 20 hours, but the land is still barren—either icy or rocky and lifeless. The overall effect is like Antarctica in the modern era.



## The Ediacaran and Cambrian

The next era begins with the sudden melting of the Earth’s all-encompassing ice and the rapid draw-down of atmospheric CO<sub>2</sub> to bearable levels, all of which took only 10,000 years.

Beginning 635 million years ago and ending 485 mya, this stretch of time is one where life as

we now think of it first developed its basic shape: large, multicellular creatures feeding on plants which in turn were predated on (or scavenged, after death) by other large animals. Though restricted entirely to the water, they also showed several of the forms they would use for the first time: fish, molluscs, crustaceans, and corals, among others.

This familiarity only came in the second half of the time period, though. An initial diversity of soft-bodied animals came before, and as many of them bear little to no resemblance to modern forms they are an object of much interest to scientists. A jointly funded US-International Geographic Society marine station has been parked on the south coast of what then existed of North America, just south of the equator. It buzzes with activity—boats, divers, weather radar and planes—in stark contrast to the barren landscape all around it.

This is the first time period where humans can breathe without artificial aid, a state the planet would keep with only short exceptions through to the end of the Xiramedusid Period nearly a billion and a half years later. The day is still too short, though, 20 or 21 hours, which wreaks havoc on peoples' biological clocks. After a few days, characters will be at -1 to INT due to a perpetual feeling of jet lag.

### **The Mid-Paleozoic**

Life on land begins in the next period, which spans 485 to 359 million years ago. The middle of this time is punctuated by a short burst of glaciation, which covered Africa at the time, lowering sea-levels and causing the Earth's first great mass extinction. Before it ended the land was still largely barren, with only lichens and small fungi slowly converting the surface to soil. On the coasts there is springy turf here and there, but examination shows it to be made of moss and tiny wort plants, not grass. Nothing resembling a tree can be seen anywhere.

More familiar plants evolved shortly before the ice age and are at least partly responsible for it—their wood locked up carbon dioxide, and so cooled the planet until organisms evolved that could digest their cellulose and release it.

There are still no animals until late in the period when the first amphibians start to peek above the surface of the water and insects make modest inroads onto fully dry land.



## The Late Paleozoic

Animal life retreated for about 15 million years at the start of this period, which runs from 359 million to 252 million years before Q0. Oxygen levels dropped some in this relatively short time and forced them down, but as the air recovered the ecology came roaring back. The first full-blown forests, consisting of gigantic ferns, grew and insects developed flight, which caused an explosion in their diversity. The scale trees are so named due to their strange scale-



like bark and have distinctive tops that superficially resemble palm trees. A close look shows some leaves curled up on themselves and full of seeds; these disperse when the leaf opens for the first time.

The spread of land plants to continental interiors increased oxygen levels to 35%, well above today's level, and brought carbon dioxide down to a few hundred parts per million. As the sun was not quite as bright then as it is in Q0, this launched the Earth's second great age of ice, the Karoo Glaciation, marking the start of the Carboniferous.

Despite the planetary average temperature going down, the era still saw insects able to partially overcome the limitations of the breathing spiracles and reach extreme sizes. They were common in the Earth's equatorial jungles, where the trees were busy laying down the coal beds and future oil reservoirs that would mechanize the 19<sup>th</sup> and 20<sup>th</sup> centuries. Ironically, the Carboniferous is one of the most-visited section of the Earth's past, as scientists and explorers use the money on offer from major petroleum companies, which are keen to

understand the first stage of how their eventual product came to be. As usual it's the Americans leading the charge, but Royal Dutch Shell and ZHP Holdings out of China have a presence too.

## The End Permian

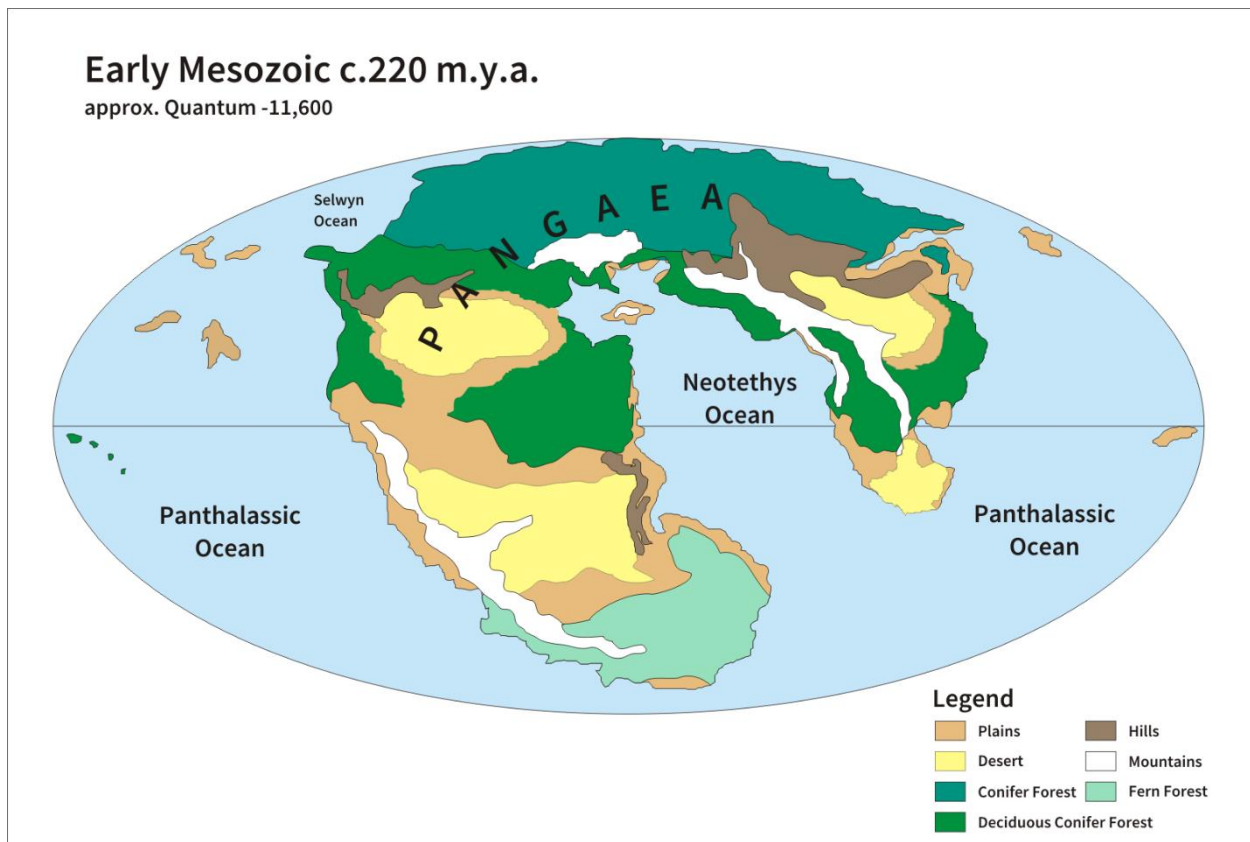
The Karoo Glaciation had come to an end 260 million years ago and the Earth was in a warm period for some eight million years after that before a massive upheaval hit. By far the largest supervolcano in history began erupting in Siberia, covering 10 million square kilometers with basalt over the next two million years. This first cooled the planet with atmospheric dust, which also led to a spike in acid rain. This unbalanced the ecology so badly that it led to a massive increase in greenhouse gases and a temperature rise.

The wildly varying conditions led to the largest of all mass extinctions, the so-called Great Dying. Some 90% of all species went extinct, including the large insects and other invertebrates that had dominated animal life on land. A short series of quanta after the

extinction is then overrun with fungi living off the bountiful dead before conditions rebounded fully and the Mesozoic began.

## The Mesozoic

Arguably the best-known of all past times, at least to the layman, this is the unquestioned “Age of Dinosaurs”. From 252 to 66 million years ago, animal ecological niches were dominated by dinosaurs or allied reptilian species, with only fish and crustaceans breaking the sweep in the water. Except for the last 35 million years or so forests are dominated by conifers, including hot and wet regions that would be colonized by flowering plants, grasses, and trees in Q0.



While the Carboniferous may be heavily visited due to corporate money, the Mesozoic thrives on the entertainment dollar and sheer general interest. People in Q0 are fascinated by dinosaurs and the world they lived in so, while this will presumably fade in time, for now it’s a golden age of discovery. The era hosts everything from proper scientific expeditions that make a profit through museum shows back home to trophy hunting holidays and sight-seeing.

This time is ended by a 12-kilometer wide asteroid impacting the Yucatan Peninsula 66 million years ago. The resulting continent-sized firestorm and worldwide impact winter killed off 75% of all animal species as well as many species of plant. A diversification of mammals

that had begun prior to the impact was supercharged in the absence of large reptiles and the Age of Dinosaurs definitively transformed into an Age of Mammals.

## The Cenozoic

Though strictly speaking this era of time carries through to the present day, time travelers have taken to using the term Pleistocene to refer to the so-called Age of Mammals before humans and their close kin, ranging from 66 million years ago to the beginning of the current Ice Age period two-and-a-half million years ago.

## The Jingyi

Within the Cenozoic, not long after the Chicxulub Impact that brought the dinosaurs to extinction, a short period of global warming took place on the boundary between the Thanetian and Ypresian ages some 56 million years before the present. Lasting just 20,000 years (and based on a few thousand years at most of carbon dioxide being injected into the atmosphere), the event was assumed to be natural until the advent of time ships allowed a direct examination of the scene.

Much to the surprise of everyone, the crew of the ship *Zhang Qian* returned with guests: human beings were not the first intelligent species in Earth's history, and not even the first industrial civilization.

What the *Zhang Qian* expedition found is a mystery that remains to be solved. The Jingyi were a dinosaurian species—to be precise, descendants of a ceratopsian variety. This kind of dinosaur went extinct at the K-T boundary ten million years before the Jingyi appeared, but the anatomists are adamant about it and molecular studies show that they're in the mainstream of terrestrial life when it comes to their cells and other biochemistry.

The Jingyi homeland itself is suspicious too: the Kerguelen microcontinent, which would subside below the Indian Ocean once not long after the Jingyi's time, rise and again—this time permanently—submerge 20 million years before present. If one were looking to hide an intelligent species' existence from the rest of history, you'd be hard pressed to pick a time and place better than the one the Jingyi occupy.



Taking all this into account, the best current theory is that the Jingyi are a creation, bred or genetically engineered from dinosaurs obtained prior to Chicxulub. However, of known species only humans and Chovu Imoi have the technology and no-one will own up to it. It's possible that the uncontacted Xenoterrestrians or some other species even further up the timestream than them may be responsible, but there are currently few avenues available to investigate these possibilities.

Unfortunately, Jingyi history provides few-to-no clues. In Q-2963 they're not there, and in Q-2962 they are, living in an Early Industrial civilization after a few thousands of years of recorded history going back to early agricultural days. By Q-2961 they're extinct, or at least gone again, with no obvious signs of what happened in their crumbling cities. It may well be that nothing untoward happened and that the Jingyi succumbed to the global warming they started in the previous quantum: Q-2961 is 8 Celsius warmer than the quanta immediately before. Following the Jingyi, the Arctic Ocean is covered with massive floating fields of Azolla fern, which slowly draw down the atmospheric CO2 over the next ten quanta.

**Jingyi Characters:** The Jingyi are smaller than humans, 140cm (4'6") and 50kg (110 pounds) on average. They are also less dexterous, as their thumbs do not fully oppose like humans' do, though they are still capable of carrying and manipulating objects. When generating characters, use 1d6+1 for STR and 2d6-1 for DEX. In return, they have Natural Weapons (Claws)-0, and do 1d6+1 damage with them. They are obligatory herbivores and cannot eat meat.

Psychologically the Jingyi tend toward placidity and incuriousness; during their time on Earth, they apparently never think to explore the world outside their subcontinental home.

## The Pleistocene

Beginning 2.58 million years ago, the Earth enters a new period of ice ages, the first since the Karoo Ice Age 260 million years before.

The Pleistocene ends with the retreat of the last glacial ice sheet retreat prior to the present day, partway between Q-1 and Q0.

## The Holocene

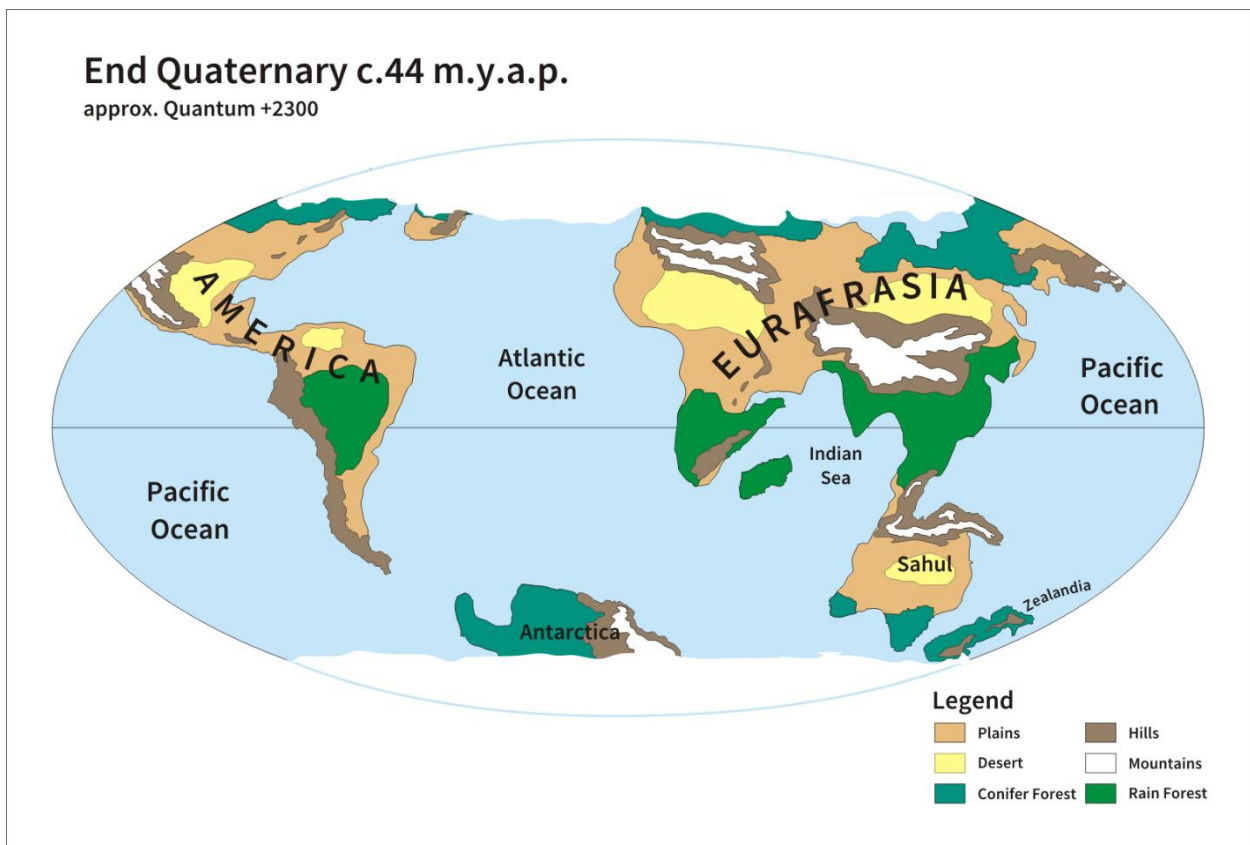
There are only two quanta in this epoch, Q0 and Q+1. No other subdivision of time is as small, and this is solely because it is of primary interest to human beings as the only two quanta where they have a naturally developed civilization. Q0's history is too well-known to require telling, but the gap between Q0 and Q+1 is the focus of intense speculation. What little historical evidence remains in Q+1, coupled with the even smaller amount of archaeological work the Terminals have allowed in the home quantum suggest that Q0's

## The Late Quaternary

Mammals survived the mass extinctions caused by humans and the rapid rise in temperature caused by CO<sub>2</sub>, and continued as the dominant type of species on Earth throughout the late Quaternary Period—another 44 million years. Global warming subsided and the Earth carried on through a series of ice ages much like those of the 2.5 million years prior.

No other species reached an industrial level in the Late Quaternary after humans went extinct. A second primate descended from hylobatid apes did get to the stage of stone tools in the range of Quanta +150 to +200, while a small cetacean species developed language from 21-25 million years after the present, but neither developed any culture or technology after that. Contact with them is largely limited to researchers.

The Age of Mammals finally came to an end with the creation of the Yellowstone Traps, vast fields of igneous rock thrown up by the Yellowstone Supervolcano, a revisit of the Great Dying in miniature. After 500,000 years of this the resulting mass extinction and change in the planet's climate ushered in the Neopulian.



## The Neopulian

While there were still mammals on Earth during the Neopulian, the dominant species descended from birds. A few of their type came back to ground on several different island

continents and then radiated into most available animal niches, introducing a pseudo-dinosaurian ecology.

The Neopulian ended with the largest non-natural extinction event in history: after a neopulid species developed intelligence and then a technological society, a multi-sided nuclear war premised on MAD doctrine saw over a million megatons of explosive set off over the course of three days. Q0 is currently synchronized with a time forty years after this event and the state of the world is grim: all bird, mammals, and lizards are extinct as are many kinds of insect and plant. The ocean is less-affected, but radiative materials and dead organic matter washing into the seas has killed off much of the plankton, with corresponding die-offs of fish species.

### **The Tsantirrew**

The culprits are the one known sentient species to have evolved in the Neopulian. The Tsantirrew are bird-derived animals of the type that dominates the era, and first appear right before the end of the period at 245 million years after the present.

The Tsantirrew are highly territorial, with anyone outside of their accepted group in constant danger of being attacked. The history of their civilization is one of constant discovery and refinement of techniques and psychological tricks that would expand this group, eventually leading to their equivalent of a nation. Unfortunately for them they had not yet figured out how to get their entire species into a single group before discovering industrialized war and nuclear weapons, so the final hundred years of Tsantirrew technological civilization was an orgy of unprecedented violence ending in a massive exchange of fusion bombs.

All was not lost for the species, though. The Terminal Empire have found them useful as soldiers, overseers, and bodyguards, and have recruited individuals from before their Final War. More recently Q0 have done the same, though their primitive state in the quantum prior to the war (the only ones they can reach before the species basically kills itself off) have kept them in a limited variety of roles. The Tsantirrew may yet recover their independence and become an integral part of a future cross-time civilization, but for now time-traveling Tsantirrew are the common lackeys of the Empire.



**Tsantirrew Characters:** The species is close to human sized, with average weight and height being 75kg (160 pounds) and 150cm (4'11')—with the latter being as low as it is only because of the Tsantirrew's natural forward-tilted stance. At rest, they lean on the knuckles of their hands, though they walk with them raised somewhat and counterbalanced by their tails. They have quite high metabolisms, with their normal body temperature being 39.5 Celsius (103.1°F). This gives them +2 on initiative rolls, but their END is halved (rounded down) for the purpose of calculating fatigue. They are on the borderline between carnivores and omnivores, with their diets consisting primarily of meat (with a preference for fish) mixed with some sugary fruits. They derive little to no nutrition from starches.

As mentioned, their most notable difference from humans psychologically is an enhanced territorial aggressiveness. They also show their evolutionary heritage by being avid producers and consumers of music, and they have perfect pitch.

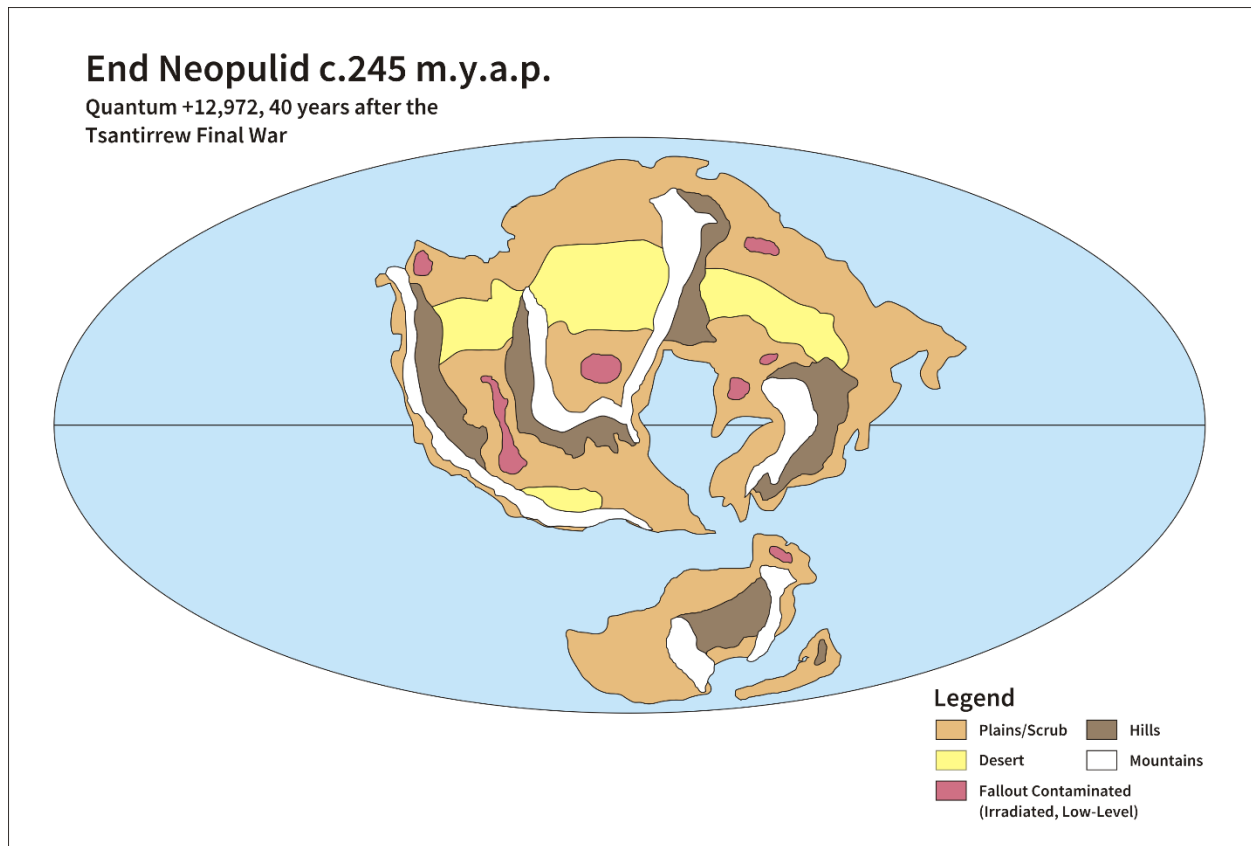
### **Conditions in Quantum +12,973**

There are some hostile timelines out there, but the Tsantirrew may have made the worst one of all. Even forty years after their final war, the air, water, and land are fouled with radioactivity, and the ozone layer has been badly damaged by all the particles thrown into the air. After a period of nuclear winter lasting until those particles washed back down again, the massive burning of forests had spiked atmospheric CO<sub>2</sub> and spiked temperatures by eight Celsius. At least one of the warring nations unleashed long-lasting chemical weapons and bioweapons that have compounded the nuclear disaster, and there are even signs that a prototype “grey goo” nanobot weapon ate some cities after being developed by some Tsantirrew genius fifty years ahead of his quantum's general level of technology, though thankfully it's dormant now.

For visitors, the main problems are cesium-137 and strontium-90 from fallout. Both have decades-long half-lives and are still everywhere. The strontium has killed off any animal with bones or shells due to its chemical similarity to calcium, and plants have been hard hit as they use the same element in their cell walls. Those coming from outside the timeline will need to bring their own food and water, and filter the air to avoid ingesting particles of the stuff and incorporating it into their own bodies—when outside a minimum of a cloth facemask is recommended. Meanwhile the cesium formed soluble salts after numerous weapons went off in seawater (in a fruitless attempt to destroy nuclear-armed submarine fleets), which have soaked into everything the least bit porous. The concrete ruins of the Tsantirrew cities are awash with the stuff, embedded in the material's many crevices. Much of the world is safe to visit for extended periods up to a year, but there are geographic areas that should be treated as Irradiated, Low Level (1d6 rads per hour), and even some hotspots—usually no larger than a city block—where levels are Moderate (2d6) or High (6d6).

Away from the ruins, the landscape has been reduced to scrub and weeds. Timberlands are either burned and gone, or are stands of dead trunks slowly disappearing as the weather wears them down—there are not even many insects left to break them down naturally. With the time period’s equivalent of grass largely extinct, rain brings flash floods, and rivers and creeks slash gullies through the loose soil.

So why come to this quantum at all? The Tsantirrew are not quite extinct, though they’re well on the path along with most other multicellular life on land—the radioactivity is gone in Q +12,974, but so is much of anything else. Rather than leave them to their fate, a desultory attempt to save what remains of them is underway. Unfortunately, the effort is hampered by an iron-clad rule to not come to the attention of the Empire, a schism between participants that want to set them up on a new timeline and those who want to get them a place in Q0 society, and the general hostility of the Tsantirrew themselves; they won’t even co-operate with each other as the hatreds that led to the war burn on, so humans have to work hard to win trust.



## **The Mesopneumid Era**

With the previous animal ecology shattered and tetrapod life swept off all but the watery margins of the continents, it was up to the Amphibia to recreate their first conquest of the land in the Devonian. Evolution never repeats itself, so this time the conquerors were descendants of a species that had neotenuously stayed in tadpole form for their entire lives, living in a few brackish water environments and following a fish-like lifestyle. After diverting their gills inwards, they found themselves with lung-like structures that could evolve toward the land—at first only riverbanks and shorelines where they could often return to water, but eventually radiating into purely terrestrial environments.

To date no intelligent species have been found in the so-called “Age of Frogs”, but as it’s a long and relatively distant period it’s entirely possible that one or more will be found. It does seem unlikely that the era produced a world-wide technological civilization, however.

The end of this era came with a relatively nearby supernova explosion that irradiated the land. Oceanic lifeforms were only barely touched, but the stellar disaster temporarily wrecked Earth’s ozone layer for a while and killed off many plants and animals, as well as the seas-dwellers that had the bad luck to live in shallow waters.

## **Ankyropod Era**

Though the mesopneumids remained dominant from 245 to 621 million years after the present day, toward the end of this time a second kind of animal worked its way on to the land. An enterprising abalone-like gastropod managed to convert its hard shell and hinge muscle into a pumping system that allowed active air breathing. These so-called ankyropods eventually colonized parts of the Earth’s coasts and while they produced only a few species at first, they did evolve some real novelties. Examples include the startling “flying clams”, which can leap several meters into the air and then glide away down the steep cliffs where they live into the safety of the water below.

After the supernova that ended the age of the Mesopneumids, this shelly fauna came to the forefront. The Ankyropod Era is a long one, and evolution produces a riot of bizarre (to Q0 eyes) species before it ends. It does finally come to a close with the Great Comet Impact, when a very large diameter (~60km) comet nucleus impacted the ocean.

## **The Chovu Imoi**

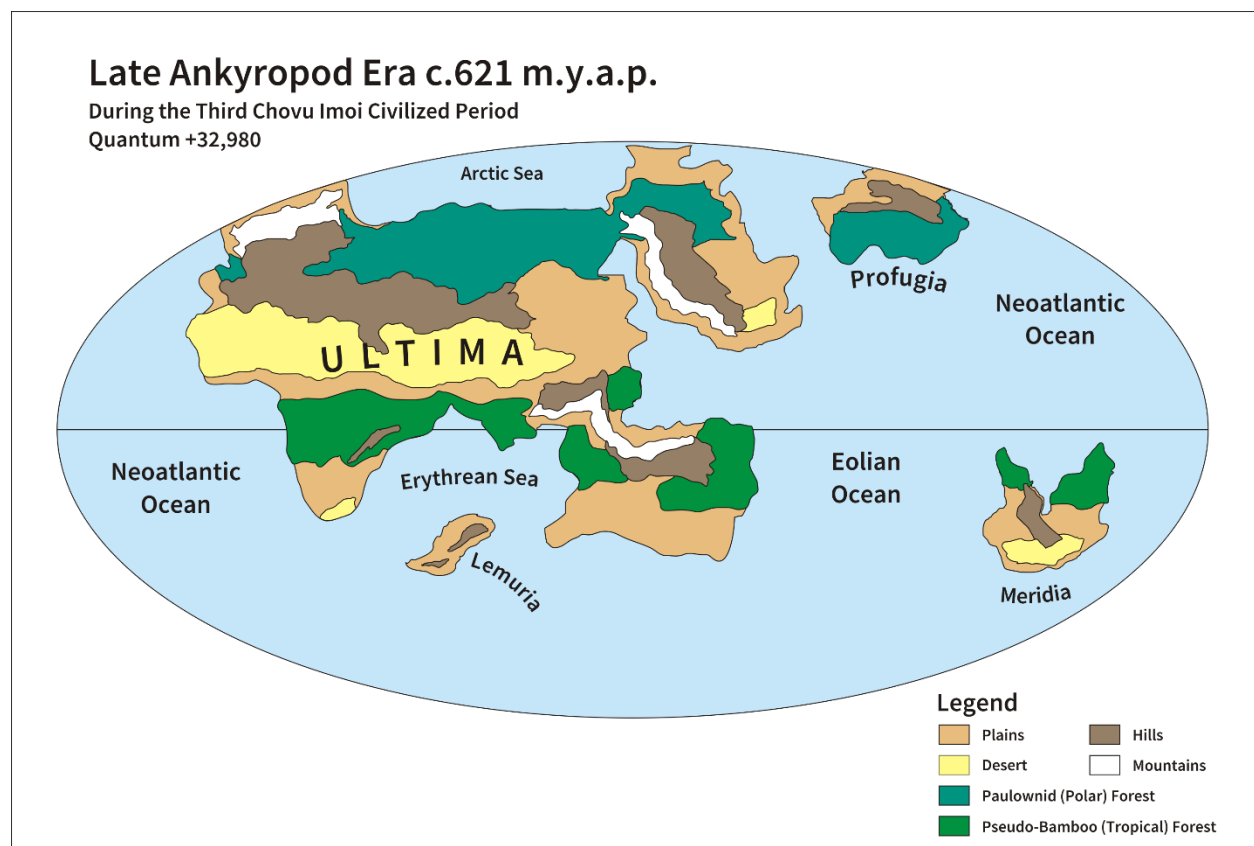
The ankyropods also managed to produce one intelligent species some 600 million years from now, the Chovu Imoi. Next to human beings, these beings produced the most technologically advanced terrestrial civilization in the known timestream. Despite their alien appearance they promise to be valuable confederates; of course, every intelligent species’

cultures runs the gamut of reactions to humans over their existence, but in general these hulking descendants of gastropods have been quite accommodating and only the relative newness of contact has them still a bit of a mystery.

Even so, the Chovu Imoi's technological sophistication means that they are also the only other species to develop an indigenous time travel capability (excepting possibly the alien Xenoterrestrians at the far end of human travel range), which does cause conflict at times. It's not unusual for an expedition to some quantum (past or future) to find that there are some Chovu Imoi on-hand engaged of some alien business of their own.

Puzzlingly, the species disappears entirely between Q +32,870 and Q +32,871. Unlike Humans and Tsantirrew, there is no sign of war or, really, any other reason for them to become extinct.

**Chovu Imoi Characters:** The Chovu Imoi are the most intelligent species Earth produces in its long history, and after they reach civilization their cultures tend to leverage this: INT is 2d6+1 and EDU is 2d6+1 unless the character is a barbarian, in which case roll without modifiers. They are much less strong however, as—not counting their shelly exteriors—they only mass on average 60kg (130 pounds). Their height (200cm/6'6") does not help matters as they are top-heavy and so can't lift or pull on something nearly as hard as a human; STR is 1d6. Their shells do give passable protection, +1 point of natural armor. Their trilateral symmetry grants



them 360° vision, making them impossible to surprise by approaching from behind; in game terms, give them a +2 DM to initiative rolls if it is unclear on what basis surprise is being achieved.

Both physically and mentally the Chovu Imoi vary far more from averages than humans do. They are considered mature once they finish developing their adult form (three legs, three arm-tentacles, three eyes, and shell), which they do at the age of one year. However, a yearling Chovu Imoi is rarely more than 100cm tall, and it continues to grow through the remainder of its life. Death from natural causes does not occur until an individual is within a very wide range of  $100+10D6$ , and some natural characteristics slowly increase over this time. Unless engaged in a long-term campaign, this increase can safely be ignored (it takes years for STR to increase by 1, and decades for the same to happen to INT), but as a rule of thumb a Chovu Imoi character with low scores is young while high scores suggest a molluscan patriarch.



Furthermore, as a legacy of their gastropodal past, they are r-selection reproducers, which is to say that they have many offspring of which only a few reach maturity (contrast with human K-selection for few offspring on which resources are concentrated). Civilized Chovu Imoi organize in very large and often-splitting or recombining families, each of which maintains several breeding pools. Eggs are fertilized and grow to larval stage within the pools, and by varying conditions Chovu Imoi “nursemaids” can put selection pressure on them to produce a set of survivors tending towards (say) physical size and strength or a certain turn of personality. “Child shaping” is a fundamental part of their society and, while there’s no formal caste system, individuals tend strongly toward jobs that match the conditions of their birth pools. Given a few years warning, a Chovu Imoi society can produce vast numbers of thinkers or farmers—or soldiers.

## Intermediate Era

The Great Comet Impact nearly wiped the land of animals once again, and for a relatively short period of time (some 80 million years) two kinds of species competed to reclaim the barren continents. It was the medusoids that would eventually win out, but the tardigrade-descended clade that faded away was the first to produce an intelligent species.

Coincidentally this was also a time of transition for the other side of life on land, the plants. As the sun warmed and drove surface erosion at ever-higher rates the air's carbon dioxide was being drawn down faster than it could be replenished. For the layman, the details are uninteresting, but a biologist will note a change in the planet's forests: one major class of plant goes extinct and only the one that could get by with minimal CO<sub>2</sub> remains.

Now even this minimum and any time traveler will notice the difference. Every tree is covered with fungal pseudo-vines and growths. Much of the time they appear dead and dried out even with abundant rain, and snapping a stem feels and sounds like breaking glass. A few times a year (and for a few days or weeks at most) there's a riot of green for no apparent reason—though a chemist would be able to tell that a forest fire or volcanic eruption somewhere in the world has added some CO<sub>2</sub> to the air—and is now rapidly being consumed by the suddenly active plants. It becomes hard to breathe for pollen and spores as everything blooms at once, all looking to reproduce.

Any botanists in the group will be able to explain the clever symbiosis between plant and fungus and the amazing chemical tricks being used to go into suspended animation when the air can't sustain plant life, but most people will not care. What they may care about is that the "Green hills of Earth" are no more, and from this point on any journey will be to a much more alien place. There is a dried, stony quality to the forests and plains rarely seen outside

drought-stricken areas in the past, and the wind rattles the foliage in an uneasy clatter.



### The Dreiyari

This era's sole intelligent species is distantly descended from another notoriously resilient clade, the tardigrades—though ironically, they have evolved away from extreme environmental resistance in exchange for the ability to grow large and its corresponding advantages.

The Dreiyari are herbivorous, their fearsome appearance notwithstanding. Spiky teeth and claws are built for ripping up the toughened hibernating vegetation to get at the glassy sugars within. The food value from almost any plant is enough that the Dreiyari only rarely developed agriculture and instead repeatedly lapsed back into a gathering lifestyle. The latter did not prevent them from developing a relatively high culture, however, roughly comparable to Classical Civilization on Han China in human times. In most periods, only an hour or two of gathering is needed to feed one Dreiyar, and specialized occupations from soldier to philosopher could live on the bounty. Their disinclination to reach industrial levels of technology serves them well, and they manage to bridge several quanta with one civilization before dying out, a feat unmatched by any other civilized species known.

**Dreiyari Characters:** The Dreiyari are the smallest of Earth's known sentient races, a mere 130cm (4'3") on average with some individuals as much as 10cm shorter than that. However, their squat shape and peculiar musculature—a dense mixture of protein and chitin unlike any found among animals in previous periods—keeps them around 60kg (130 pounds). They suffer only a -1 on their STR characteristic and gain +1 on their END. Their small size does make them slow (3m). All Dreiyari have Natural Weapons-0 (Claws), which do 1d6+1 damage. They are obligate herbivores but cannot eat the vegetation found outside their era—only plants from the Intermediate Era, or Dreiyari foods prepared from them, will do.

Psychologically, the Dreiyari are hierarchy oriented. They like knowing their place and role in a group and tend to stick to them for longer than any other species would if the current arrangement proves to be faulty. Once they lose confidence in a social arrangement, though, it's difficult to get them to come back to it; doubt spreads like wildfire once it starts and quickly crystallizes into a new hierarchy. If only Dreiyari are involved, an individual can go to sleep as a king and awake to discover that no-one in 20 kilometers accepts their authority, so fast does the whisper network go when it finally begins.



### **Xiramedusid Period**

The end of the Intermediate Era and the start of the next is unusual in that it was not sparked by a catastrophic event like an asteroid impact or massive volcanic eruption. Instead it was a simple case of one class of living thing outcompeting another over the long run.

An element of the Intermediate Era's fauna was a few cnidarians (animals in the same phylum as

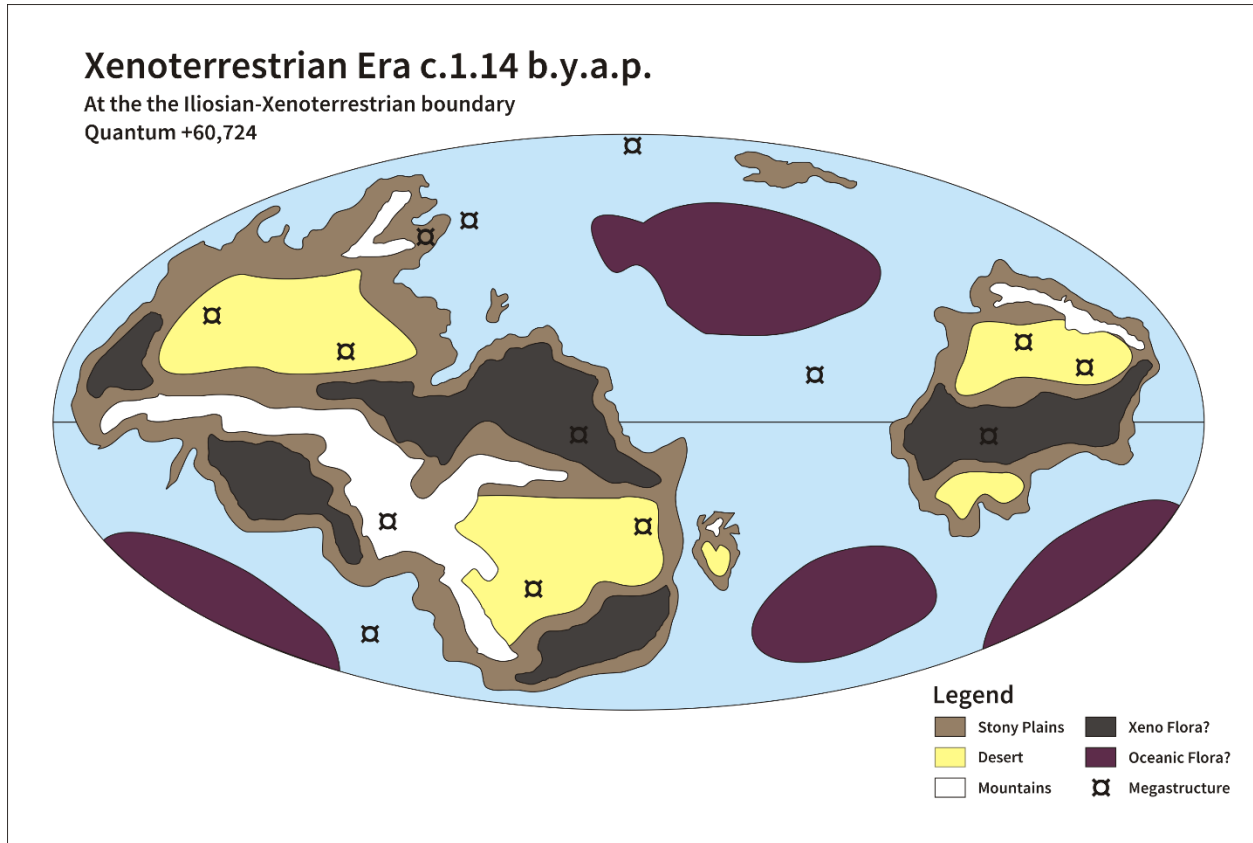
the jellyfish and corals of human times) that made the leap onto dry ground and inhabited a similar ecological niche to snails. They were not very successful at first, playing second fiddle for a long period while they picked up several new tricks like building coral-like structures externally to build “plants” or internal ones to make skeletons that allowed larger animals. The plant type became common when proper land plants started dying out during the Intermediate Period, then the mobile animal type gradually pushed the Dreiyari’s relatives out of the picture. From about 710 million years in the future, virtually every living thing one sees while walking around on Earth is, colloquially speaking, a jellyfish: the so-called trees and grass, the “birds” and “insects”, the carnivores large and small, and most of the herbivores they prey upon. A determined search might turn up a thumb-sized insect or mesopneumid, but no more,

Many time travelers say that this is the era where they most feel they have stepped from Earth onto an alien world rather than merely progressing through time. No longer reliant on chlorophyll, the forest and plains are every color *except* green—anthocyanin purple is a popular choice. Animals can put down apparent roots, staying in place for days, and trees occasionally walk—or have mouths that snatch as you walk by. Despite this variety, there are no native intelligent species known in the period, though it’s possible that the sheer oddity of animals in this timeframe means that their variation on intelligence is too alien to recognize.

The Xiramedusid Period is the longest of any era post-Cambrian Explosion, lasting a full 250 million years before coming to an end. Another asteroid strike causes a mass extinction 50 million years before that, but unlike after previous dyings neither the medusids nor another group rebuilds life on land. Instead what is left of complex life slowly peters out over the remaining years.

## **Iliosian Period**

Despite the vast, mindless efforts of Earth’s biosphere to moderate the climate, the warming Sun eventually wins out and, with the death of the last multicellular life on land, the Iliosian Period begins. This is by far the most ecologically impoverished era since the Cryogenian as the climate becomes too warm and too short on carbon dioxide for Earth life to convert sunlight into food by any means in its arsenal of tricks. A few biomes linger around deep-sea vents, but the Earth enters a moist greenhouse phase—it is now warm enough (50 Celsius to begin, increasing as the millennia pass) that water vapor from the oceans makes up an ever-larger portion of the air. By the end of the period the oceans themselves have started to shrink and Earth’s percentage of land approaches 35%



## Xenoterrestrial Period

The Iliosian ends with the most drastic event in known history: the relocation of the Earth to a larger orbit. Unlike all but one other era-ending event, this was no natural catastrophe, but rather the deliberate action of the new period’s intelligent species, one which is first encountered in Q +60,724, not quite 1.14 billion years from now.

As life on Earth had lost all complexity by this time, the identity of this species was mysterious, not least because they quickly responded to any openly visible time ship jumping into the Xenoterrestrial with extreme hostility. After one crewed expedition and several uncrewed probes were destroyed when they reached this quantum or beyond (J-3 and higher ships can skip over Q+60,274, but no further than Q+60,276), specially designed stealthy drones were jumped in and lasted long enough to send back information about Earth, the vast installations that are reforming and rewilding it, and the alien people— “Xenos”, for short—that are responsible.

Though no-one noticed until after the first encounter, the quanta just prior to the Xenoterrestrial Period saw a non-descript, orange-yellow K7V star slowly closing the gap with the Sun in what seems to be a typical convergence caused by the slightly different orbits



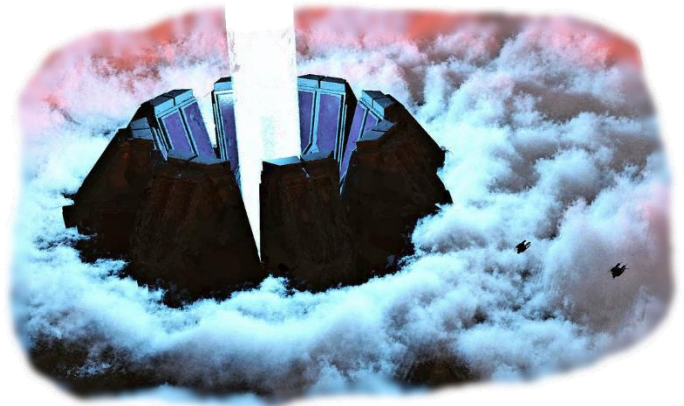
of all the stars in the Milky Way. In Q0, the Alpha Centauri trinary system was closest to Earth, but countless other stars both past and future had claimed the title.

What made this one different is that it was home to a truly alien race, Jumping the two light years from what's been named the Visitor Star—either by sublight means or perhaps a unique take on time travel technology—they found the Earth.

It was apparently not to their taste. The skies in this time period are lousy with Earth-crossing comets, tens of thousands of them, apparently outer-system bodies nudged

inwards into close encounters with the Earth and using the gravity assist effect to slowly push out the planet's orbit. A surreptitious coronagraph of the Sun shows that most of the comets have ended up there, but the rest will (it is presumed) be cleaned up before the Xenos move in. One probe, which managed to sneak through six more quanta past the first where the Xenos appear before returning, shows the planetary engineering slowly becoming less intense but continuing through all six—a fact which suggests a frightening ability to maintain one culture over long time periods which humans don't have.

In the meantime, the surface of the Earth looks very different from how it did in the past. New kinds of life, all presumably related to the Xenos rather than the previous rulers of Earth, have covered the surface. The plant cover is mostly black, and while animals are in typical niches, they don't resemble any species seen before. Apart from a new biosphere, the planet is also supporting enormous megastructures of unknown purpose. All are more than a kilometer wide and many are ten times that. If they are buildings, they are single structures like an arcology rather than many like a city. Similarly, large structures orbit the planet and seem to house the majority of Xenos for now, tens of millions of them at least if one assumes human-like need for living space.



# Characters

**Barbarian:** Not every time traveler comes from 2019 AD. Whether a human from one or two quanta down time, someone born to a long-lost colonial culture like the Grenusheer (see p), or a member of a non-human species at a pre- or post-technological stage, those loosely termed “barbarians” are more common throughout Earth’s history than the technologically sophisticated. What they are not, is common as time travelers, but even so they do have a role in the enterprise. As local guides in their home quantum or, more rarely, as full-fledged members of a traveling team, they supply valuable local knowledge of their era as well as more general low-tech knowledge that is handy in survival situations.

**Colonist:** The Terminal Empire has many colonies, but they are mostly mature and their inhabitants are hardly colonists in the usual sense. However, the 21<sup>st</sup> century has already started several new settlements spread up and down the timestream, and those who live in them do qualify. Like barbarians they have good local knowledge of an era, if not to the same extent, and can serve as useful members of a group otherwise unfamiliar with that stretch of time. Unlike barbarians, they share a common culture with humans in the 21<sup>st</sup> century and are better able to integrate with them—always assuming, of course, that they didn’t become colonists specifically to get away from the bulk of the human race.

**Diplomat:** An uncommon career out in the timestream, diplomats primarily negotiate with the Terminal Empire and Aleasak. Some work with non-human intelligent species, particularly the Chovu Imoi, but by and large those interactions are still in the hands of scientists.

**Engineer:** In the context of time-travel adventures, engineers are practical, hands-on types who fulfill several needs. A time ship needs someone who understands the workings of spaceships, grav tech, and the plant that drives the ship through the quanta. They also serve as support for more prosaic tech: the gear the team uses once they are on the ground and exploring. Engineers also come in handy when evaluating what’s been left behind by dead civilizations—the principles of mechanics are the same whether it’s the year 2019 or 250,000,000.

**Explorer:** Explorers are the leading edge of human expansion into time. It’s up to them to learn about the ground conditions of any quantum, survive any hazards and report what they find back to Q0. They tend to have a wide range of skills: they can fire a gun but know when and how to be diplomatic; they can survive in the wilderness, but also know how to evaluate an intelligent species’ technology. Most importantly, they know enough about everything to notice when something is different or unusual, and so potentially worth following up with in

detail. The best explorers—though far from all—are also smart enough to know when it’s time to call in the real experts.

**Hunter:** Between the Pleistocene Extinction and the destruction of African wildlife in the 19<sup>th</sup> and 20<sup>th</sup> centuries, there’s not a lot of charismatic megafauna left in the present day. Life abounds in other time periods, however, from the dinosaurs of the Mesozoic to the elephant snails of the Ankyropod era. It’s to the credit of the year 2019 that many hunters shoot their prey with cameras on behalf of popular science and nature magazines, but old-fashioned big game hunters abound too. Most hunt for pleasure, but many colonies rely on hunters for meat too.

**Noble:** There are no nobles on 21<sup>st</sup> century Earth, at least not in a sense that it is a career as opposed to a variation on being rich. However, the Terminal Empire’s oligarchy qualifies, and displays all the stereotypical bad aspects of the type: haughty, cruel, and vengeful. They usually make better villains than characters, but some do have a few positive attributes as well. They will hire time travelers for their own missions and can be useful members of a time ship’s retinue—though it’s wise to watch them closely. The authorities back in the 21<sup>st</sup> century aren’t comfortable with one of them dictating where a Q0 time ship goes, but there is no law saying they can’t. The Terminal Empire and Q0 are not at war (yet).

**Pilot:** People tend to focus on the expeditions on the ground, but someone must fly the time ship. Even accounting for grav plates, the ships are still space vehicles and correspondingly complex to operate. For that matter, even after landing a well-funded expedition has a grav or tracked vehicle that they use to get around, or an ultralight aircraft. All of those require a pilot.

**Medic:** One of the first things learned by time travelers from the 21<sup>st</sup> century is that one of the deadlier aspects of the timestream can’t be seen. Variations on many of humanity’s old bacterial and viral enemies abound, as do new ones eager and capable of taking advantage of a new kind of host. Medical personnel were soon in heavy demand and are embedded in almost any mission team now.

Even apart from this a doctor is just handy to have around. Crew can spend weeks on their ships and get sick or injured easily enough. After landing, events can lead to broken limbs, parasite infection, and worse. An accidental encounter with a Terminal Empire facility or patrol can lead to serious injury, and even a minor hurt can be a problem if you’re 100 million years away from the nearest hospital.

**Scientist:** Some branches of this general career have been having a (literal) field day since the invention of time travel. Biologists, geologists, botanists, and paleontologists have all had

their fields revolutionized, while access to a massively larger number of plant and animal species has affected those who research new medicines. Linguists, anthropologists, and psychologists can now compare the objects of their study with humans in the distant past and future, as well as entirely non-human intelligences. Any of these specialists might be included in a time-traveling group, and not necessarily as a pure researcher. Many sciences have practical applications in deep time as well.

**Soldier:** Unfortunately, it's often necessary to fight. While they're shying away from outright war to date, the leaders of the Terminal Empire view most problems with Q0 through the lens of solving them with force. It's necessary to meet them on that front. Expeditions from Q0 don't usually set out to fight (though there are already covert operations), but it's wise to bring along at least one person who knows the ways of controlled mayhem.

**Spy:** Sometimes it's not necessary to use force to obtain what one wants from an adversary. Simply knowing their plans is often enough to thwart them, and there's no easy way to distinguish humans of Q0 from those of Q +1, it's possible to infiltrate their far-flung society and spy on them for our own benefit. The job is dangerous, as the Terminals are not kind to those they catch, but the intelligence obtained is vital.

**Trader:** Time ships in private hands are becoming more common, and traders are starting to appear on the scene. The profit potential of the timestream is immense, particularly trading with the other civilizations found there, and still largely untapped. Individual traders might even have an advantage over larger corporations too: the uncertainties of these early days are better resolved by someone on the scene, and scare off larger houses interested in certain profit. Difficulties to be overcome include a lack of common currency, alien ways and morals, and no backup if the other party decides to renege on his side of the deal.



# Bestiary

## Arctotherium

1500 kg Hunter/Hijacker (Carnivore), Forest Walker, J7F161, #App: 1 or 1d3 (>1 are cubs)  
Athletics-1, Melee (Natural Weapons)-3, Recon-2, Survival-1  
Claws (4d6+1), Teeth (4d6+1); Hide (1); Speed: 8m  
Attack: 7+ Flee: 5-

A major carnivore in southern South America on quanta immediately in the negative direction from QO (Q-2 to Q-60), *Arctotherium* was a species of short-faced bear. Half again as large as any bear in modern times—up to 1700 kilograms (3800 pounds) and 4.5 meters (15 feet)—North American varieties, pictured here, were smaller but still the size of polar bears. Contemporary Eurasian cave bears were a mere 1000 kilos and much less inclined to be meat-eating.



## Arthropleura

60kg Eater (Omnivore), Forest/Plains Crawler, 637031, #App: 1d3  
Athletics-0, Melee (Natural Weapons)-1, Recon-0, Survival-2  
Mandibles (1d6) + possible poison; Hide (1); Speed: 2m  
Attack 9+ Flee: 4-



2 meters

several species. In particular, the name usually applies to the interesting carnivorous or poisonous types that are a threat to human beings, even though paleontologists grumpily maintain that the original species they gave the name to was definitely a herbivore.

The Arthropleura of the Carboniferous was famously the largest land invertebrates in the fossil record, known even before the invention of time travel. Now that people can see them in the flesh, the name has come to be applied to any very large centipede or millipede from that time period—of which there are

## Campiscursor

40kg Grazer (Herbivore), Plains Walker, 58716D, #App: 4d6  
Athletics-1, Melee (Natural Weapons)-1, Recon-1, Survival-1  
Claws (Kick, 1d6); Armor (1); Speed: 18m  
Attack 10+ Flee: 10-

Continental drift ran Australia into the side of Southeast Asia at the end of the Quaternary, a glancing blow that threw up tall mountains but not an insurmountable barrier like India did with the Himalayas. Accordingly, a few Australian kangaroo species spread into Asia, but they never made up a large part of the fauna until after the Yellowstone eruptions.



It was at that point that one species radiated out into an ecological niche that had previously been held by the now extinct deer of Eurasia. Within a few million years some had settled on a rather ostrich-like arrangement dubbed a “plains runner” by explorers from Q0, and formed large, browsing herds that roved the Old World’s grasslands.

While individually not very dangerous—though their kick can inflict severe wounds—sheer numbers makes a campiscursor stampede a threat. They are also potentially aggressive during mating season, when males butt heads over the right to female partners. On the flip side, they do make a handy source of meat for hunters and human colonies in the same time period as them.

## Coeteonycteris

4kg Chaser (Carnivore), Forest/Hills/Mountain Flyer, 29218C, #App: 4d6  
Athletics-0, Melee (Natural Weapons)-1, Recon-4, Survival-1  
Teeth (1d6) + paralyzing poison (-1 to Dex on each hit); No Armor (0); Speed: 16m  
Attack 5+ Flee: 2-

An airborne threat in the Late Quaternary (approximately Q +1600 to Q +2300), *Coeteonycteris* AKA packbats are a group of species that have learned how to hunt in groups by coordinating through their ultrasonic squeaks. Though most types are small enough that they focus on small animals, the largest are up to 4kg (10 pounds) and are a credible threat to human beings. Armed with numbing saliva, a swarm of packbats cumulatively knock out or paralyze a target by biting it repeatedly as they chase it through the forest. Some species then drink their victim's blood, while the larger ones are simply carnivorous.



## Dimetrodon

250kg Pouncer (Carnivore), Swamp/Riverbank Walker, F68160, #App: 1  
Athletics-1, Melee (Natural Weapons)-2, Recon-1, Survival-0  
Teeth (2d6); Hide (2); Speed: 6m  
Attack 4+ Flee: 4-



An apex predator from the middle of the Late Paleozoic, the *Dimetrodon* is popularly classified as a dinosaur, and certainly looks the part to the untrained eye despite being an early cousin to mammals—which were still evolving their distinctive characteristics and lie another seventy million years in the future.

No matter what it was, the Dimetrodon was a fierce creature, with the largest specimens reaching 4.5 meters and 250 kilograms (15 feet and 450 pounds), while even the smallest were the size of a large dog. As far as time travelers are concerned, the main problem

with them is that they are aggressive and stupid. They attack anything that could plausibly be prey and are slow to realize when they are outmatched. At least their distinctive sails make it easier to see them coming, and they are too dumb to hunt in packs.



## **Dolofonia**

250kg Siren (Carnivore), Woods/Forest  
Sessile, 994040, #App: 1  
Melee (Natural Weapons)-2  
Radula × 2 plus poison (1d6); Speed: 0m  
Attack 2+ Flee: N/A-

An apparent plant from the Xiramedusid, as always, the confused biology of the time period makes the actual situation more complicated. A dolophonid is sessile, true, but it's otherwise more like its animal ancestors than any plant. More to the point, it can't support itself on light, though it does contain the same purple pigments as Xiramedusid

photosynthetic organisms. For the “murder plant”, though, the coloration is camouflage: it needs to be inconspicuous to attack its prey. When anything unwary wanders into range, the tentacles on top reach out to scrape it with venom-impregnated scratchy paddles (“radulae”, if anyone is listening to the biologist after surviving an attack). If the target is killed, the dolofonia pulls it into its mouth down into its hollow interior and injects a tissue softener that lets it live off the liquefied juices for the next while; the only time it's safe to go close to a dolophonid is when the flower is draining its meal. Fortunately, they are one-trick ponies, and easy to avoid if their presence is known.

## **Froghemoth**

20,000kg Filterer (Herbivore), Open/Deep Ocean Swimmer, L1R4050, #App: 1  
Recon-0, Survival-1  
No offensive attack; Armor (2); Speed: 3m  
Attack N/A Flee: 0

The Mesopneumids are an entire class of animal that didn't evolve until humans (not counting time travelers) had departed the scene. There are others, such as the Ankyropods, but the Mesopneumids are unusual in that they in turn spawned another class of animal much like (some) dinosaurs became birds, a class which lasted well into the Intermediate Era, long after their ancestral type had disappeared from land. The sacciranids took to the oceans and inhabited much the same ecological space as the baleen whales of the Quaternary, filtering tiny animals from the water in vast quantities to feed on.



To do this the sacciranids pulled off a very unusual trick—like the amphibians before them, their ancestors laid masses of moist eggs, but instead of separating into individual animals as they grew, sacciranid eggs stuck together and made a colonial animal along the lines of a Portuguese man 'o war. Each symbiotic animal would develop into one of several types that, together, had the capabilities of a complete (and much larger) living thing: some became eyes, for example, while others turned into filtering frills and gills, and some took on the role of muscles for movement.

The result is a bizarre slug-like creature, the smallest of which species is the size of an orca. The largest, the froghemoth, rivals a mid-sized whale: 15 meters and 20 tonnes. They are not dangerous to attackers, relying solely on their ability to submerge to great depths (>800 meters) to escape violence.

*Note:* The froghemoth is as-yet unknown to 21<sup>st</sup> century science, living as it does in the ocean depths. News of their existence brought back to Q0 could cause a sensation and bring fortune to a group lucky enough to discover them.



## Grenilla

100-180kg Gatherer (Omnivore), Jungle Walker, F98241, #App: 2d6 (1 male, 1 or more females, and offspring) Athletics-3, Melee (Natural Weapons)-2, Recon-1, Survival-1 Fists (2d6); Hide Armor (1); Speed: 6m Attack 10+ Flee: 3-

The grenilla is a case of convergent evolution, inhabiting the same mountainous rainforest niche as its near-namesake the gorilla—but 400 million years later during the Mesopneumid Era. Unlike most mesopneumids, grenillas are still highly dependent on water and they jealously guard their home pools and waterfalls. Though not very closely related to the Grenusheer, they inhabit the same range of quanta and the species interact violently.

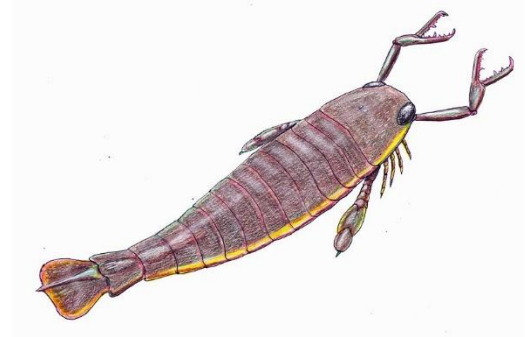
## Jaekelopterus

150kg Hunter (Carnivore), Lakes/River Swimmer, A4A071, #App: 1d3 Athletics-0, Melee (Natural Weapons)-1, Survival-0 Claws (1d6); Armor (2); Speed: 6m Attack 6+ Flee: 5-

A massive eurypterid from the Early Devonian, about 400 million years ago, to the untrained eye

Jaekelopterus is basically a 2.5 meter long (8'2") sea scorpion—and that's not including the extensible claws. During its era, it was the apex predator in any body of fresh water such as lakes and rivers.

On the plus side, once killed a Jaekelopterus is edible, a lobster-like delicacy in fact, though it takes considerable effort to get through its chitinous shell.



## Phorusrhacid

250kg Hunter (Carnivore), Plains/Forest/Rough Walker, AC6072, #App: 1d3

Athletics-2, Melee (Natural Weapons)-3, Recon-1, Survival-1  
Beak (1d6+2), Claws (2d6); No Armor (0); Speed: 12m  
Attack 7+ Flee: 7-

The Terror Birds of the Miocene live in South America on Q-95 to Q-400. Smaller examples exist almost all the way back to the extinction of the dinosaurs, some 62 million years, but for several million years near the end of their span they could be much larger—up to three meters (10 feet) tall. After the joining of the Americas at the Isthmus of Panama 2.7 million years ago, the largest species of all would spread into what would be the Continental US before dying out. Thankfully, Eurasia was spared anything like them stalking its plains and forests.

Phorusrhacids are aggressive and designed to run (upwards of 70km/h), making them deadly opponents, but like other birds they flee instantly if startled. Their main difference in behavior after that is that unlike other birds, they will often circle around after they've regained their composure and attack hours later.

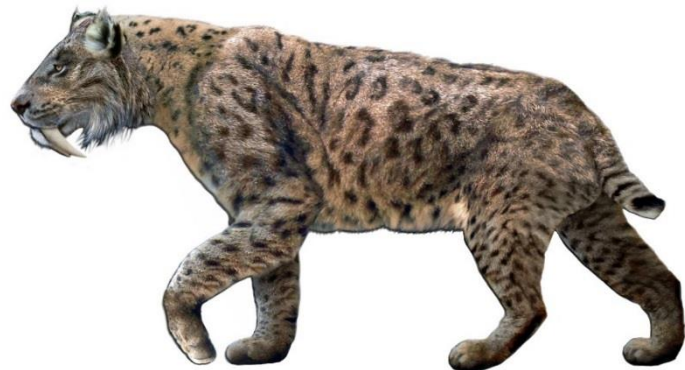


## Smilodon

260kg Pouncer (Carnivore), Forest/Woods Walker, FA6291, #App: 1d3

Athletics-1, Melee (Natural Weapons)-3, Recon-3, Survival-1  
Teeth (2d6); Hide (1); Speed: 12m  
Attack 6+ Flee: 3-

The famous saber-toothed cat, *Smilodon* lived in North America from 2.5 million years ago to just 500,000 years ago—Quantum -27. An earlier form, *Megantereon* lived in North America from about 4.5 million years ago and spread to Europe and Africa before dying out about 1.5 million years before the present.



## Spinavis

2kg Intermittent (Herbivore), Desert/Woods Walker, FA6291, #App: 1d3

Athletics-0, Melee (Thrown Weapons)-2, Recon-0, Survival-1

Projectile (Short range, 1d6); No Armor (0); Speed: 3m (running) 8m (flying)

Attack 9+ Flee: 3-



Not everything dangerous looks it. At the end of the Neopolid Era a few species of bird evolved beaks that dealt with the thorns of that period's succulents. They could daintily envelop a thorn and pull it loose, then eat the watery flesh underneath. One species, which resembles little more than a chicken-sized kiwi bird, took the trick a step further. When threatened an unable to

escape it would reload its beak with a discarded thorn and then propel it with great force at a target, a biological blowgun. With a firing rate of one per round over Short range (12m/8 squares) attacking a flock of thornbirds is potentially fatal—though the succulents like the nutrients and moisture they can scavenge from any corpse the birds create.

Fortunately, they startle easily and will usually fly (awkwardly) away when encountered.

## Subtervermid

150kg Trapper (Carnivore), Clear/Plains/Desert Tunneler, B87050, #App: 1

Athletics-2, Melee (Natural Weapons)-2, Survival-2

Claws (Spines 2d6); No Armor (0); Speed: 1m

Attack 2+ Flee: See below

A heavily derived mollusk from the Ankyropod Era, the subtervermids or “tunnel worms” are trappers that burrow in sandy soil and explode up and outward to attack anything that walks nearby. Large, but thin and flat with sharp spines around the edges, their “trap” is their own bodies, which they try to wrap around anything they want to eat—one hit means a subtervermid has grabbed hold of its target, and a second means it is now enveloped and will try to flee back underground with its meals. Suffocation finishes off their prey. If one fails to



envelop a target it will try to flee as well, as its awkward shape means it must have surprise to have any chance at winning a fight. Travelers to quanta infested with tunnel worms soon learn to stand only on frozen ground, or solid rock.

## **Titanosaur**

80,000kg Grazer (Herbivore), Clear/Plains, (Z)1(Z)198, #App: 1d6+6

Athletics-1, Melee (Natural Weapons)-1, Survival-1

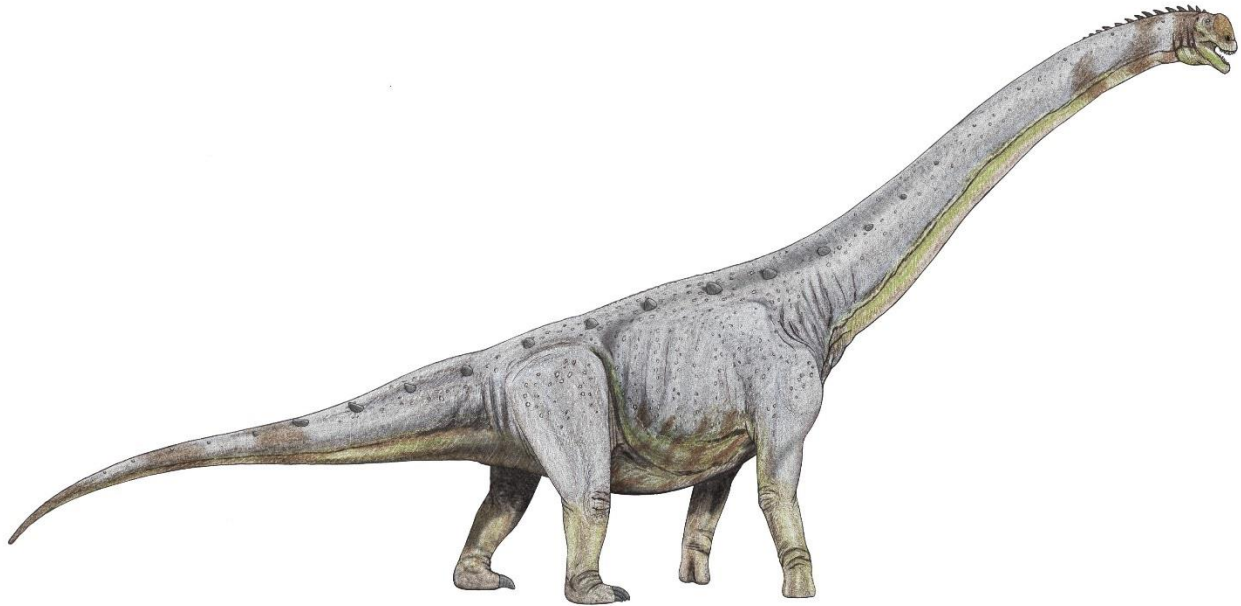
Trample (4d6); Armor (5); Speed: 4m

Attack 8+ Flee: 6-

The titanosaurs of the late Cretaceous are the largest land animals known from any time period, and just before their extinction they moved in large herds and were covered in pebbly armor, making them extremely dangerous game. Naturally they’ve attracted the attention of time-traveling hunters.

*Note:* Characteristics in brackets are the highest possible in the Cepheus Engine rules, but probably understate the case. Also, the stat block above is for the kind most-desired by hunters, the largest kind of titanosaur (and so the largest land animals in history, forward or

backward from Q0). Many species in this group, such as the famous Brachiosaurus are notably smaller than this, and some mass as little as one-tenth the upper limit here.



### **Tonitruavis**

150kg Hijacker (Herbivore), Clear/Plains/Forest, 897190, #App: 1  
Athletics-2, Melee (Natural Weapons)-2, Recon-1, Survival-1  
Beak (1d6); Armor (2); Speed: 6m  
Attack 5+ Flee: 4-

The “thunder bird” is a major carnivore from the Neopulid Era, evolving just a couple of million years before the mass extinction that ended the age of birds. To some extent it’s a recapitulation of the Tyrannosaurus Rex, though there are a few differences. Most noticeably it’s smaller, more like a wolf than the immense predator: 2 meters in length, about 1 meter



tall when standing, and weighing 150kg. It hunts similarly to the T. rex, though, mostly looking to hijack the prey of smaller predators but also quite capable of killing something on its own with its sharp, parrot-like beak.

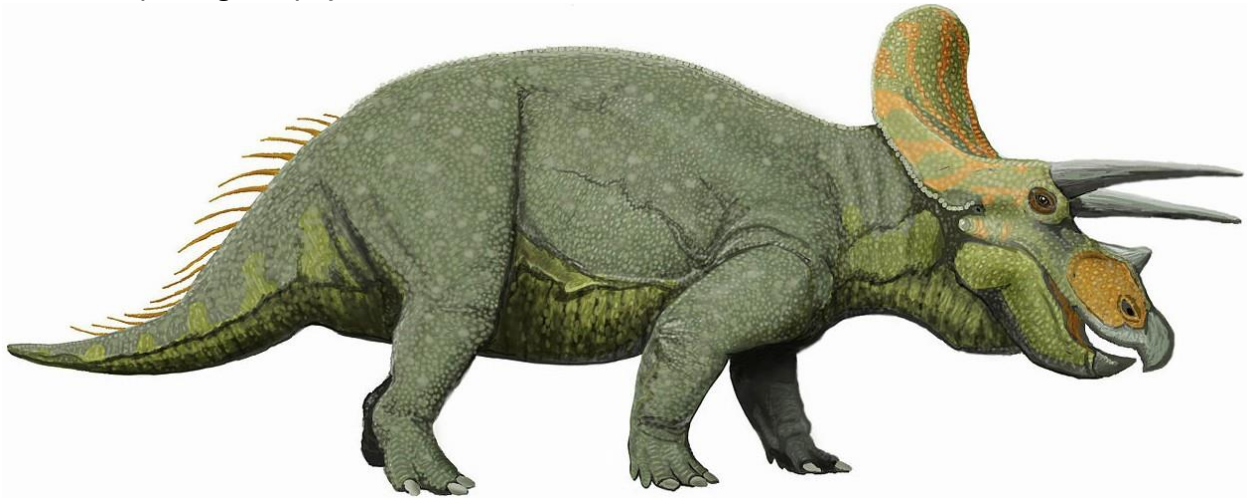
It’s also exclusively a nocturnal animal, with poor eyesight and relying almost entirely on scent and hearing. The Tonitruavis is attracted by the smell of fire, as in its world

smoke is a hint that tasty dead (and cooked) things might be just lying around for it to eat. This instinct has led to several dangerous encounters with humans, but at least the species is solitary and only appears one at a time.

## Triceratops

8000kg Grazer (Herbivore), Clear/Plains, Q3Q19B, #App: 4d6  
Athletics-2, Melee (Natural Weapons)-1, Survival-1  
Horns or Trample (3d6); Armor (5); Speed: 8m  
Attack 7+ Flee: 6-

Another famous animal from the Cretaceous, the name is now synonymous with any horned, frilled, four-legged dinosaur (also to the dismay of biologists). Like the titanosaurs, they've become a prestige trophy for rich hunters out of time.

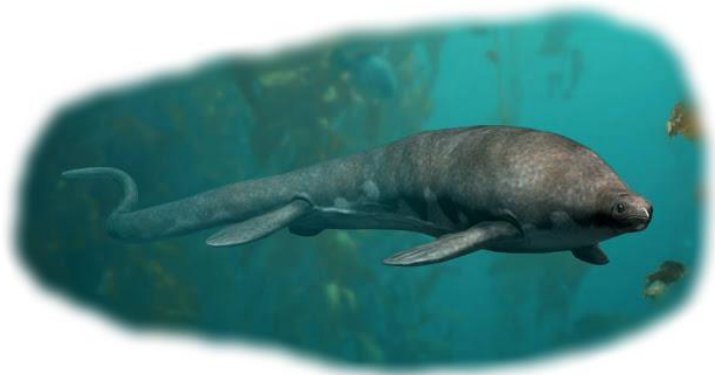


## Miscellaneous Plants and Animals

Not every living thing encountered in the timestream will be dangerous to adventurers. Many, even most, will be merely interesting and the GM should consider mixing in encounters with this wildlife simply as a way of emphasizing that the PCs are “not in Kansas anymore”.

## Amphidelphus

Inhabitants of the Mesopneumid era, the Amphidelphids are an example of a lesser-known adaptive radiation by the amphibians—more famously, their descendants became the dominant land animals, but unlike their current-day types they also took to the

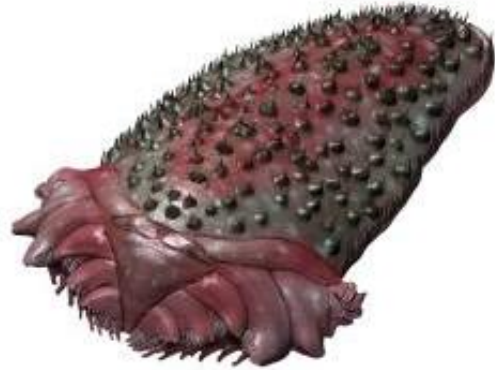


oceans. Never very large, they filled the ecological niches of seals and sea lions for a couple of hundred million years.

### **Caltrops**

A hazard in Ankyropod times, the caltropsids are mollusks found on the ground in almost any environment. Living somewhat like snails, though larger (about hand sized), they invert the snail defense strategy into offense by sporting a multitude of prongs and short spines instead of a shell.

Thankfully they never develop poisons or other neurotoxins to up their punch, but stepping on one without foot protection is an accidental rite of passage for explorers in their time period.



### **Fish Star**

The echinoderms first appeared in the Cambrian and lasted through to the end of the Xiramedusid period.

During the Earth's last quarter of a billion years, vertebrates had all but disappeared from the oceans and one type of pentamerous starfish radiated out into many of the ecological niches previously used by fish. One arm of the star specialized into a swimming fluke, while the remaining four evolved in a variety of ways depending on the species' inherited lifestyle.

### **Pistrix**

Its common name is derived from its species name *Pistrix captiosus*, literally "the smart sea-beast" and they deserve their name. A dwarf cetacean that lived in tropical waters for a short time in the mid-Late Quaternary, they were the last of a few mammalian species to develop sentience in succession after humans died out naturally.



While they do have a language (only partially translated yet) their aquatic existence kept them from developing any material civilization. Whether or not that's a disadvantage is arguable—they managed to live through several quanta, unlike almost all those that developed industrial technology.

### **Running Rat**

Common to the late Quaternary, running rats are a group of related species found in open terrain throughout Eurafasia. A kind of rodent, they adopted a bipedal posture that let them run quickly through the grass or underbrush while carrying seeds or other food items in their forepaws. Several types became social animals, building dry-land equivalents of beaver hutches from sticks and twigs for protection. None of them became very large, no bigger than rats or mice, before they became extinct during the Yellowstone Eruption.





# Other Aspects of Time Travel

## Diseases

New diseases develop all the time, even on Q0. A virus or bacterium confined to some non-human species will evolve a way of jumping to and living on humans, and in many cases will be deadly until its new host species evolves a tolerance for it. If there were no native humans besides those of Q0 and The Terminal Empire time travelers would be relatively safe from sickness, but as there are many remnants of colonies and cultures descended from them scattered throughout the timestream there are hundreds of new diseases for outtimers to deal with.

Fortunately, the fundamental types of many infections have not changed. Bacteria evolved 3.5 billion years ago and are among the few remaining lifeforms when the Xenoterrestrial Period begins. Antibiotics are (usually) effective on them no matter when they are encountered. Viruses are older still, but just as susceptible to antiviral drugs. Only other kinds of diseases, such as parasitical ones that are the future equivalent of malaria or sleeping sickness, are difficult to fight off even if caught early.



Essentially a time traveler is playing a game of genetic Russian roulette when stepping into a new quantum for the first time. Many take some basic precautions like cloth facemasks and not drinking the local water, but medical personnel are a must in any time ship crew. Such personnel must be creative and widely read to do their jobs, as there's a good chance that a disease they encounter will be the very first time *anyone* has encountered it.

## Example Diseases

*Cellulophaga*: A bacterial disease of the mid-Ankyropod era whose ferociousness is hinted at by a translation of its name: "cell eater". After catching cellulophaga, a character rapidly (1 hour) develops a high fever, muscle pains, and then drops into unconsciousness in 1d6 hours. At the same time his skin swells and turns red from the massive immune system response to

countless fragments of cells torn loose and set swirling in his circulatory system. From this point onward, the character loses 3 damage per hour until death. Fortunately, cellulophaga is so well-known and so distinctive that characters with Medical skill have a +2 bonus to diagnosing and treating it. Treatment is beta-lactam antibiotics and glucocorticoids. After being cured, characters recover the damage they suffered normally.

*Deinovirus:* A paralytic infection, 90% of those afflicted by the Late Quaternary deinovirus will experience nothing worse than apparent cold. The remaining 10% are genetically predisposed to a much worse symptom: swelling of the spinal cord and brain. For 1d6 days he will feel a little dizzy and light headed, then he will suddenly be stricken with complete paralysis. The next day the character gets one END roll modified by the level of Medical skill possessed by whoever is caring for him (if anyone). If he succeeds, he recovers almost immediately. If he fails, he is permanently paralyzed. The paralytic crisis can only be avoided by the administration of antiviral drugs during the initial run-up period.

*Marinicaulis:* Endemic to the Xiramedusid period, marinicaulis is a waterborne disease. Its symptoms are relatively gentle compared to some of the other killer diseases found out-time (abdominal pain and bloody diarrhea) but the symptoms are signs that the germ is killing the inner lining of the infectee's intestines. Stripped of the ability to absorb water or food after 1 day, a patient will lose 5 points of damage each day until he dies of dehydration and weakness. Treatment prior to the 1-day threshold is cephalosporin, while afterward the patient will also need 1d6+1 weeks of intravenous fluids and nutrition while his digestive system recovers. After this all damage is healed at a normal rate.

## Travel Zones

Several nations—the US, China, the various members of the EU, and so on—have agreed on a basic set of travel restrictions on quanta. These are not binding on the governments themselves, but apply to any travelers not specifically sanctioned by one of them.

**Green:** The quantum is open, and travelers can transit the quantum, enter the atmosphere, land, and otherwise interact with the Earth in that time.

**Amber:** Travelers can transit the quantum, and enter the atmosphere, but landing and interaction is not allowed without sanction from one signatory government. A permit can be obtained for \$1000 and is good for multiple visits over the next year. Q +1 is an Amber Zone, as are many (but not all) Terminal colonies.

**Red:** The zone may be transited, but entry to the atmosphere is forbidden. Any contact will be allowed on a case-by-case basis, but in general is very difficult to obtain (use it as an

opportunity for role-playing). The first quantum in the Xenoterrestrial period, Q +60,724, is the most notable Red Zone.

Zones are generally policed retroactively, as too many are restricted for all of them to be actively monitored. If caught and convicted after the fact, fines are up to \$50,000 per person involved and confiscation of any profits if the mission made a profit (either by design or accident). Signatories to the pact commit to extraditing people charged with violating a zone law to the country claiming the place where they landed (or entered the atmosphere)—a nod to China's and the American claims on other quanta—or to prosecuting the crime themselves.

## Interacting with Yourself

**Author's Note:** While prior items in this section discuss aspects of the game as seen from within the game, this one is about a bit of metagaming that your players are going to be tempted to try, and discusses the ways that you as GM can handle that.

In the real world, it's the nature of our poor understanding of time travel (potentially possible in relativity, not possible in quantum mechanics) that we do not know how paradoxes of cause and effect are resolved. In *Empire of Time* the 18,900-year gap combined with the rules of time passage, both while in the timestream and when travelling it, provide insulation in that it's not possible to meet oneself directly or return to the exact same point in time to change events on a second pass. You cannot kill your own grandfather because you can't meet him either, and some basic math will show that *everyone* in Q -1 whose line survives to Q0 is related to you, so killing one person just proves that they weren't.

However, a sufficiently determined group could successfully *communicate* with their past selves by:

1. Deciding on a static feature in the landscape where they will leave a message after an adventure is over.
2. Going there and picking up the message.
3. Acting on the advice they've given themselves to get a successful outcome of their mission.
4. Traveling back one quantum.
5. Leaving a message at the static location describing what they did to be successful.

This section of the book offers suggestions to the referee how to handle this without flatly banning players from trying it.

One approach is to consider step 2 above from the standpoint of game mechanics. Your players will not know what their characters should say in the message until the end of step 3. There is only one possible source of that information and that is the GM. Accordingly you can

write the message while simultaneously taking a role like that of a genie granting wishes: their future selves accidentally phrased things ambiguously, suggesting one action while actually pointing at another.

The main problem with this tack is that it casts you in an adversarial role and can breed player resentment. Accordingly, the second approach you might take is to let an in-game reason obscure the message. Bear in mind that it's 18,900 years between quanta and very little of human activity lasts that long untouched. Over the course of 5,000 years every Egyptian pharaoh but one had his tomb plundered; Stonehenge has been repeatedly remodeled; the entirety of the largest city in the world 2500 years ago, Nineveh, was buried and lost for most of the years since. It's reasonable to say that a message had rotted away entirely over 189 centuries, despite your players' attempts to prevent it. Earthquake, fire, and flood are all possibilities and far from an exhaustive list. Besides natural entropy, there's also the possibility that the message was found by an archaeologist native to the years between the relevant quanta and, while it still exists, it's half the world away being displayed in a glass case.

Also consider a blend of the two approaches. Give the players their message, but only the left half of it—time has taken the other half, along with much of the meaning. They'll have to act on what they can figure out and will only discover the importance of the missing bits in time.

For that matter, there is always the possibility that the message was deliberately changed: the enemy discovered that it had been left, and they have replaced it with false information leading to a trap! This approach has dramatic possibilities but should be used sparingly as it leads to a “turtles all the way down” problem—what's to stop the characters from later replacing the replacement, and the villain countering again, *ad infinitum*?

Above all else, keep one principle in mind: *players do not have license to suck the fun out of the game*. Eliminating all challenge by means of acausal messaging qualifies. Making life a *bit* easier, especially in a critical situation, can be considered. As referee, it's up to you to gently remind them of the difference outside of the game or, (if needed) in it.

# Adventures in Time

## The Laboratory of Kalet Anangares

The group are contacted by Shajiuk Kalet Anangares, a Terminal biologist with rather extreme dreams. He wants to hire them to go the Jurassic and return with samples of various young dinosaurs and dinosaur eggs, which he wants to use for experimentation. The hunting trip to the past will be straightforward, but characters will need to be wary upon return.



1. All is as it seems. Kalet Anangares thanks them for their work and pays as promised, then invites the group for a celebratory dinner. During the dinner, his prior creations escape. He fancies himself a kind-of Dr. Moreau, not that he's ever heard of H.G. Wells, and now the adventurers must defend themselves from small dinosaurs altered in surgical ways that roam the hallways of the scientist's bunker-like home/lab.
2. It becomes apparent to the group that Kalet Anangares has plans for them during the dinner, and they must escape from him and the surgically altered dinosaurs he sets loose in the hallways of his bunker-like home/lab.
3. Kalet Anangares gets the drop on the group during dinner with drugged food, and they awaken in the depths of his bunker-like home/lab, prepped for surgery. The mixed blessing that has saved them is an Operation Emancipation raid, which has inadvertently let loose the Kalet's surgically altered dinosaurs, and the group must somehow escape despite starting with nothing more than hospital gowns.
4. Kalet Anangares gets the drop on the group during dinner with drugged food, and one of them awakens in the depths of his bunker-like home/lab, prepped for surgery. He must find the others one-by-one and escape with them, possibly using the currently secured surgically altered dinosaurs he stumbles across as a distraction.
5. Kalet Anangares gets the drop on the group during dinner with drugged food. They awake having been injected with various genetic materials from dinosaurs, which only have the effect of making them sick. Though not at their best and lacking in

equipment they must escape from confinement—at least the Kalet is reluctant to kill them during the attempt as he wants to see what happens with his genetic treatments in the long run.

6. Kalet Anangares gets the drop on the group during dinner with drugged food. However, upon awakening they find they have been rescued by some of the Kalet's previous experiments. Somewhat intelligent, a little verbal, and very interested in leaving the laboratories that birthed them, they will help the group escape so long as the group helps them to do the same. A fortuitous Operation Emancipation raid may occur once they break onto the surface.

## **Divide and Conquer**

The group need to get on the good side of a Grenusheer village and they have named their price. They are overpopulated and want to send some of the younger adults and their children to a new village site, but their first choice is inhabited by a troop of grenillas. Out-timers have a reputation for using weapons beyond those available to the Grenusheer: use them to help the tribe clear out the anthropoid animals from the pool and waterfall they have claimed so that the Grenusheer can move in.

1. All is as it seems, and the Grenusheer do intend to colonize the site once the grenillas are cleared away. They will help the party in this to the best of their ability and will follow their lead.
2. All is as it seems, and the Grenusheer do intend to colonize the site once the grenillas are cleared away. However, a young, charismatic hunter is offended by the implication that he could not lead a group made up of villagers alone and still obtain victory. He will work to upset and plans the group may make while disguising that he is doing so, in the hope that the expedition will fail, the out-timers will be discredited, and he will successfully lead a second attempt that follows his plan.
3. Things are not quite as they seem. Upon arrival at the site, the grenilla troop is gone, and has been for several days. A grenilla's skeleton is in shallow water at the edge of the pool. A large amphibious predator (referee's choice) has made its new home in the depths of the pool and will surface for its next meal shortly.
4. Things are not quite as they seem. A second Grenusheer tribe intends to clear the prospective village site too, and the tribe looking for out-timer help is trying to beat them to the punch. Unfortunately and coincidentally, the second tribe times their attack so that it is simultaneous with the out-timer assault and the melee deteriorates into a three-cornered affair.
5. Things are not as they seem. This particular place and troop of grenillas is considered holy by an opposing tribe of Grenusheer, and the villagers are hoping to offload

responsibility for killing the animals on the out-timers. By making plausible excuses they will refuse to assist the group but will take over the site as a *fait accompli* afterward. They then intend to fight off any reprisals, with the particular hope that the opposing tribe will already be down a few warriors after trying for revenge on the Q0 patsies first.

6. Things are not as they seem. If the group take the time to look around, the Grenusheer don't look to be that overpopulated. They are using this as an excuse for treachery. The Terminals are targeting Q0 people who come to this quantum and have taken some villagers hostage so that the tribe will arrange for their capture. When the group is fully engaged with the grenillas, they will be ambushed by Terminals who will try to capture them by surprise.

### **A Traitor in the Midst**

A prior corporate or governmental patron has hired the group again, looking to have them reconnoiter a quantum just prior to the Chovu Imoi civilizations. Unlike previous contracts they've added a rider—literally. Dendin Rojani is an Aleasak who's used his contacts with the patron to hitch a ride, the Aleasak generally being short on Q0 currency to pay for services. She's headed to Q +32,980, the highest-tech era in Chovu Imoi history, to join an Aleasak trading delegation already in place. After surveying their target timeline, the characters are asked to take a short jaunt further up time to drop her off before returning to Q0. To pay for the trip she has a bit of engineering experience and can help in the engine room during flight, and she will volunteer to do any needed support work during the survey—setting up and breaking camp, guard duty, anything an intelligent but unspecialized person can do.

1. Rojani is exactly as she seems. Once the survey and drop off are over, the group have a contact in Chovu Imoi times who will be inclined to return a favor if asked.
2. Rojani is an intelligence agent for the Aleasak nation of Tivanik and has come to the mistaken conclusion that the adventurers are working for the Terminal Empire. She will try to plant a small bomb in the engine room. It will be timed to go off after she has left the crew and begun her new position in Chovu Imoi space—though if the group comes looking for revenge, she will be long gone, having never had anything other than a cover job in that timeline.
3. Rojani is an intelligence agent for the Aleasak nation of Tivanik and has come to the correct conclusion that the adventurers are working for the Terminal Empire: they just don't realize it as the contracts that awoke her suspicion all come from the current patron. It is the patron which is working for the Terminals. She will try to plant a small bomb in the engine room. It will be timed to go off after she has left the crew and

begun her new position in Chovu Imoi space—though if the group comes looking for revenge, she will try to point them at the patron that is playing them.

4. Rojani is an intelligence agent for the Aleasak nation of Tivanik, and has come to the correct conclusion that the adventurers are working for the Terminal Empire, but she doesn't know that it is actually their patron that is selling out. She will try to plant a small bomb in the engine room, but if it is not discovered first it will go off before she is able to escape the ship. This gives the group the opportunity to reckon with her much more quickly, but she will not allow herself to be taken without a fight. If possible, she will take over the ship and get to Chovu Imoi times or, if truly desperate, will jump overboard at the current quantum (assuming that the bomb forces the ship to land for at least a while). The opportunity to negotiate peace exists if she comes to realize that the group are being played by their patron.
5. Rojani is an intelligence agent for the Aleasak nation of Tivanik and has come to the correct conclusion that the adventurers are working for the Terminal Empire. This is because the Terminals have been feeding her misinformation, looking to pay back the group for their interference in Terminal plans at some prior time. She will try to plant a bomb in the engine room, but if it is not discovered first it will go off before she is able to escape the ship. She may or may not realize her mistake, but the group has the opportunity do so and will have to decide what to do about the fact that the Terminals just tried to have them killed.
6. Rojani is a double-agent working for the Terminals. She will try to plant a bomb in the engine room but one way or another will arrange for it to be found, or even go off with her aboard. As the battle between her and the adventurers develops she will claim that she has been fooled by the Terminals and offer to help them get revenge. Her real goal is to get the ship to travel to a pre-arranged Terminal quantum where the Empire will try to ambush and capture it.

### **Safety at a Price**

The weather can be surprisingly fierce during the Earth's warmer periods (The Cambrian, the late Permian, and most especially the Illiosian, among others), with hurricanes stronger than anything in Q0 springing up nearly out of nowhere. One such catches the adventurers off-guard and they are too far from their ship to take shelter in space. Their best option is a chunk of nearby broken terrain that, upon closer examination, turns out to be the highly eroded remnant of buildings carved into an outcropping of volcanic rock. The wisest course would be to stay in the initial chambers and ride the storm out, but when have the group ever taken the wisest course?

1. The ruins are abandoned and empty, but this is potentially a major discovery. Out-time civilizations are the object of intense interest back on Q0 (especially ones prior to the present day, if that is the time period the GM has selected). The group has an opportunity to map out the ruin as much as they like, and then use their knowledge to score contracts with patrons in Q0 that will want to learn more (for example, International Geographic).
2. The ruins are not entirely empty. There are wrecks of ancient machinery throughout them, far beyond repair. There are flickers of activity in one deep chamber, however, implying a surprisingly long-lived power source and possibly advanced technology. The group may not discover this until the doors by which they entered seals itself....
3. The ruins are not empty. They have been taken over by the Terminal Empire, which kept it decrepit on the outside but turned the interior into an outfitted facility. They use it as a base to support missions deep in time. Fortunately, they don't use the outermost chambers, so the adventurers have a good chance to escape notice. If detected, though, they will provoke a hostile reaction.
4. The ruins are not empty. They have been taken over by an Earth organization (GM's choice). While decrepit on the outside, the organization has turned the interior into an outfitted facility, used as a base to support missions deep in time. If the adventurers are careful, they may be able to avoid detection, but it's likely the base's occupants will discover them and must figure out what to do with the unwelcome visitors.
5. The ruins are not empty. A network of underground tunnels branches off from them and occupied by an ecology's worth of underground animals that have burrowed up from beneath.
6. The ruins are not empty, and never have been. The formerly civilized occupants have slowly regressed over the centuries and now live a troglodytic existence in a network of underground tunnels that branches off in all directions. They will fight back against any intrusion.



## Political Animal

The *Druk*, or Thunder Dragon, is the symbol of the small South Asian nation of Bhutan. It is even a source of political legitimacy—during the country’s transition to democracy a decade ago, a practice election was held prior to the real one, and the mock political parties were all named for various colours of *Druk*. Now an eccentric Bhutanese millionaire, Tshering Pelden has decided to make the myth a reality and bring real *Druk* to his country as a boost to his political ambitions. A hunting trip to the past to retrieve a dinosaur is called for.

1. The patron has a specific species in mind, and the group must capture one alive and return it to Q0. Apart from the obvious difficulties, the mission is as it seems.
2. The patron prefers dinosaur eggs, which he intends to hatch back in Q0. However, he wishes to have one each from several different species so he can select the best one later. This necessitates multiple raids on dinosaur nests while fending off angry parents.
3. The patron has a specific species in mind, and the group must capture one alive and return it to Q0. Upon arrival, the patron will worriedly explain that news of his new *Druk* leaked and it is now the target of his opponents. He will hire the group to be giant lizard guards until the election next month. It must make multiple appearances in public between now and then.
4. The patron has a specific species in mind, and the group must capture one alive and return it to Q0. Upon arrival, the patron will fail to explain that news of his new *Druk* leaked and it is now the target of his opponents, as he has already arranged for his own security. Shortly after the group leaves him, but before they leave Bhutan, a botched kidnapping attempt results in a giant lizard rampaging through Thimpu, the capital.
5. As 4, but unbeknownst to the group a second politician and adventuring group have been engaged in a similar effort. When the first dinosaur breaks loose, its cries enrage the second one and it breaks free too. Downtown Thimpu is now scene to a pseudo-*kaiju* battle. There are, thankfully, no giant robots anywhere in sight (GM’s whim).
6. The patron insists on coming along on the mission, in order to ensure that the dinosaur being captured is a *Druk*. His initial description of the quarry will be vague enough that the adventurers will be able to pick an apparent match among the many species out there, but it will prove to not be a *Druk* and the patron will tighten his definition a little. As *Druk* are mythical, no dinosaur will or possibly can fit the bill, and he will continue to ask that the adventurers find another one that does. He will try to withhold payment until satisfied.

## What's in the Box?

The American NRO is looking for a downed surveillance drone. It sustained damage and crashed *somewhere* up time, stranding its cargo in the process. The range of possibilities where it could be is immense, and so the intelligence agency has reluctantly circulated word to the American (and American-friendly) time-traveling community in general to keep an eye out for it, with a reward offered. Naturally it's the group who come across it on an otherwise untouched quantum.

1. The mission is as described, with the main difficulty being recovering the drone from the inhospitable terrain where it crashed.
2. The mission is as described, and the main difficulty is recovering the drone from its location. However, another group is interested (the Empire, another Q0 nation, or any other possibility) and is also trying to capture it. The adventurers must recover the drone and avoid the other group.
3. The mission is as described, and the main difficulty is recovering the drone from its location. However, another group is interested (the Empire, another Q0 nation, or any other possibility) and got to it first. If they want the reward, the adventurers must recover the drone from them.
4. The mission is as described, but the drone contains biological material retrieved from the Xenoterrestrial period, recovered in an attempt to understand what the Xenos are doing to Earth uptime. It turns out to be highly toxic, and the drone needs to be handled with care or else handlers risk exposure. This is potentially lethal (slowly) and should be handled as a medical emergency.
5. The mission is as described, but the drone contains biological material retrieved from the Xenoterrestrial period. The material is a highly engineered fungus analog which spreads aggressively and is hard to kill. It will infect anyone exposed to it, killing them in a few hours without treatment, and it will latch onto anything even vaguely organic in the ship: food, most plastics, rubber and silicone, and so on.
6. The mission is not as described. It's a crash site, but the "drone" they have found has nothing to do with the missing NRO mission and is in fact something different. Possibilities include a small Terminal spy ship (occupant either alive or dead), a transport carrying slaves freed by Operation Emancipation (which may or may not have Terminals in pursuit) or a small wayward Xeno machine.



# Appendix A: Inverting the Empire

All but the most specialized settings need protagonists and antagonists. *Empire of Time* uses one common route, which is to make the modern day the source of our heroes and the people of the future the villains. It's possible to break out of this mold a little by allowing characters from other human and non-human civilizations like the Aleasak and the Chovu Imoi, but in general this pattern holds.

There also a well-established counter-tradition of featuring the future people. Commonly a modern-day character is inserted for relatability, but some authors have gone so far as to remove the 21<sup>st</sup> century (or, 20<sup>th</sup>, depending on when it was written) from a central role. One example is the Paratime stories of H. Beam Piper which, while in the related SF subgenre of alternate history, fits the model otherwise. Most of these tales are fronted by a detective/agent who might as well be a native of a future time.

Approaching *Empire of Time* this way is quite possible, the only stumbling block being the Terminal Empire's slave-based society. However, another SF trope, the "happy peasant" feudalism, may be acceptable to you and your group in a game even if it's laughable in reality.

If so, the set up and motivation of the Terminals flips to:

- Technological civilization is pathological, inevitably leading to extinction.
- The Empire is devoted to re-establishing the species when it goes extinct, and to imposing a stable society on them that isn't fully industrialized and technological.
- Civilizations up-time from Q +1 are fair game, as their history has nothing to do with the events leading to the foundation of the Terminal Empire.
- However, the Terminals have been restrained when interacting with Q0 for fear of changing it so that time travel is not invented. It's historical fact that the Terminals' knowledge of time travel stems from this discovery.
- This changed when Q +1 finally synchronized with Q0's 1999 breakthrough. Time travel has now been invented in Q0 and it is much safer to interfere.
- Unfortunately, Q0 is now pathological, and strong enough to disrupt Terminal plans.
- Meanwhile the Xenos lurk as a mystifying, implacable bracket on the other side of the "Terminal Era" for when a change of pace is needed.

This is where the players come in: they play high nobles, Jura-class specialists, and sturdy yeoman peasants in the military tasked with advancing the grand project of the Terminal Empire while also containing Q0 in a way that does not provoke a general war which destroys everything.



# Appendix B: Suggested Reading and Resources

*The Accidental Time Machine*—Joe Haldeman. The latter half of the book has the protagonists visiting several far future timelines.

*After Man*—Dougal Dixon. The original touchstone of speculative evolution, Dixon’s heavily illustrated book follows life as it might evolve through the next few hundred million years. A later volume, *Man After Man* is more uneven.

[\*Camp Cretaceous\*](#)—Paul Elliot. Published by Zozer Games, this Cepheus Engine supplement covers one era likely to be of interest to players: the mid-Cretaceous age of dinosaurs (the precise year quoted in first chapter is nearly halfway between Q -5220 and Q -5219, in the present book’s terms). Though geared to playing with a group of school-aged children, the book’s narrative frame slots very well into an Empire of Time campaign for players of any age. Includes stats for numerous archosaurs (and one mammal).

*Cretaceous Sea*—Will Hubbell. To the best of my knowledge, the only time travel story set (or in this case, with a lengthy section) in the aftermath of a mass extinction. Out of print, and not readily available used, but worth a look if you come across a copy.

*Last and First Men*—Olaf Stapledon. Extremely outdated from the standpoints of both biology and sociology, nevertheless still worth a read. If nothing else, absorb the author’s technique for sketching the vast scope of time: introducing new concepts that would support whole novels every second page or so. To future history what *Airplane!* is to jokes: “If you didn’t like that one, another one will be along in thirty seconds”.

*The Life and Death of Planet Earth*—Peter Ward and David Brownlee. A pessimistic view of Earth’s future history marred by an apparent need to jam the evidence into a preconceived conclusion, but still a good overview of what long-term trends for our planet can already be perceived.

*Marooned in Realtime*—Vernor Vinge. Though it fails to explore the Earths of the deep future in any detail, the main character and many of his cohort do travel through time in long leaps like the ones postulated here.

*October the First is Too Late*—Fred Hoyle. Another dated book, but more in style than substance. The latter half of the novel nicely covers what it would be like to fly over and explore an Earth of a different time.

“Palimpsest”—Charles Stross. A novella about one member of a secretive and deadly organization dedicated to ensuring the survival of the human species throughout the long future history of the Earth—red giant Suns and all.

*Wildside*—Steven Gould. An adventure about plucky young adults secretly using time travel to make themselves rich with gold from prehistoric Sutter’s Mill. Technically an alternate reality story, but it’s very easily transcribed to what might be North America in a nearby quantum prior to humans crossing the Bering Strait. Currently only available as an audiobook, so look for a used copy.

*Wonderful Life* – Stephen Jay Gould. Though superseded by more recent research, this classic of the field is fantastic for setting the reader’s mind on the right track. When considering what might happen to life, a referee is well-served by closely examining what did happen during the Cambrian Explosion. Note that this is not the same author as *Wildside*, above.

<https://www.deviantart.com/speculativeevolution>,  
<https://www.deviantart.com/futurezoology>, and <https://www.deviantart.com/spec-evo-club>  
are various DeviantArt groups devoted to long-term future animals.

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