

12. The Relative Locations of Tanith, Khepera, Beowulf and Amaterasu

Before proceeding into the next stage of the Future History, however, let's take a closer look at the *Space Viking* period. Starting with the three-planet raid by the *Nemesis* and *Space-Scourge*. We've already determined that Tanith is in the southwestern Federation, and Amaterasu was tentatively placed 200 ly to its southeast. As a planet named for a deity of ancient Egypt, Khepera¹³¹ should be closer to Terra, while Beowulf, named for a character from Anglo-Saxon literature,¹³² should be farther out. The relative locations of all four planets can be estimated from evidence in *Space Viking*.

When Lucas Trask decides to raid a few nearby worlds for supplies needed to establish a base on Tanith, he consults his expert on such matters, Otto Harkaman. Harkaman recommends Khepera, Amaterasu and Beowulf from among "half a dozen within five hundred light-years". When they return from the three-planet raid, Trask realizes that "they had been gone only thirty-odd Galactic Standard days".¹³³

If we assume that by "thirty-odd", Piper meant 32.5 days (like his sixty-odd hour ship speed in *Four-Day Planet* means roughly 62.57), then their trip takes about 780 hours. And their itinerary gives us some real clues about distances, because Space Viking ships travel a convenient one light-year per hour, and Beam was unusually specific on many details of their raiding expedition.

First, Khepera is "only thirty light years from" Tanith, so it takes 30 hours to reach that planet. While on Khepera, they raid "three cities in five days", which equals 120 hours.¹³⁴ The time to Amaterasu is not given, so we'll tentatively place mark that with question marks; as ??? hours. They spend seven days on the planet, which is 168 hours.¹³⁵ Then, from Amaterasu to Beowulf is at least 3 days, because after the successful double-crossing of both Eglonsby and Stolgoland, "the parties lasted three Galactic Standard days, and nobody was at all sober." I would assume the crew needs at least one day to recover from such a binge (aided by their alcodote-vitamin pills),¹³⁶ and probably a few more to prepare for what is going to be a very tough fight against Beowulf. So if we assume seven days to Beowulf, that equals another 168 hours. They only seem to be on Beowulf for one single, hellish day,¹³⁷ which means that we can add another 24 hours. The distance from Beowulf to Tanith is given later in the story, being "sixty-five hours", or light-years, away.¹³⁸

So here's what we get.

Total trip time, about 32.5 days = 780 hours
Tanith to Khepera is 30 lys, which = 30 hours
On Khepera for 5 days, which = 120 hours
Khepera to Amaterasu = ??? hours
On Amaterasu for 7 days = 168 hours
Amaterasu to Beowulf, approximately another 7 days, which = 168 hours
On Beowulf for 1 day = 24 hours
Beowulf to Tanith = 65 hours

Adding the known times together, plus the estimate for Amaterasu to Beowulf, equals 575 hours. Subtracting that from 780 hours equals 195 hours from Khepera to Amaterasu; or say 200 hours for convenience. This solves the final unknown. As the approximate time between Khepera and Amaterasu, 200 hours would make this the longest leg of the trip. It's more than 8 days, or about a day longer than the estimated time between Amaterasu and Beowulf.

The greater distance is supported by the way Harkaman talks about their plan before they leave on the raid, which makes it sound like Beowulf is actually closer to Khepera than Amaterasu. "We won't take enough damage on Amaterasu to make any difference there [Beowulf], but if we saved Amaterasu for last, we might be needing too many repairs [after raiding Beowulf]."¹³⁹ They go to Amaterasu first because, even though it is much farther away from Khepera than Beowulf, Beowulf is the tougher planet, so they save that planet for last. After that, it's a fairly short hop back to Tanith and much-needed repairs; only 65 hours rather than nearly 230. (Figure 17.)

Thus, at roughly 200 light-years from Khepera, and less than 230 from Tanith, Amaterasu is well within the "five hundred light-years" that Trask suggests to Harkaman for candidates in their first Viking raid. Later on, Harkaman makes "quick raids on half a dozen planets",¹⁴⁰ which presumably includes a couple of these nearby planets not chosen for the first raid.

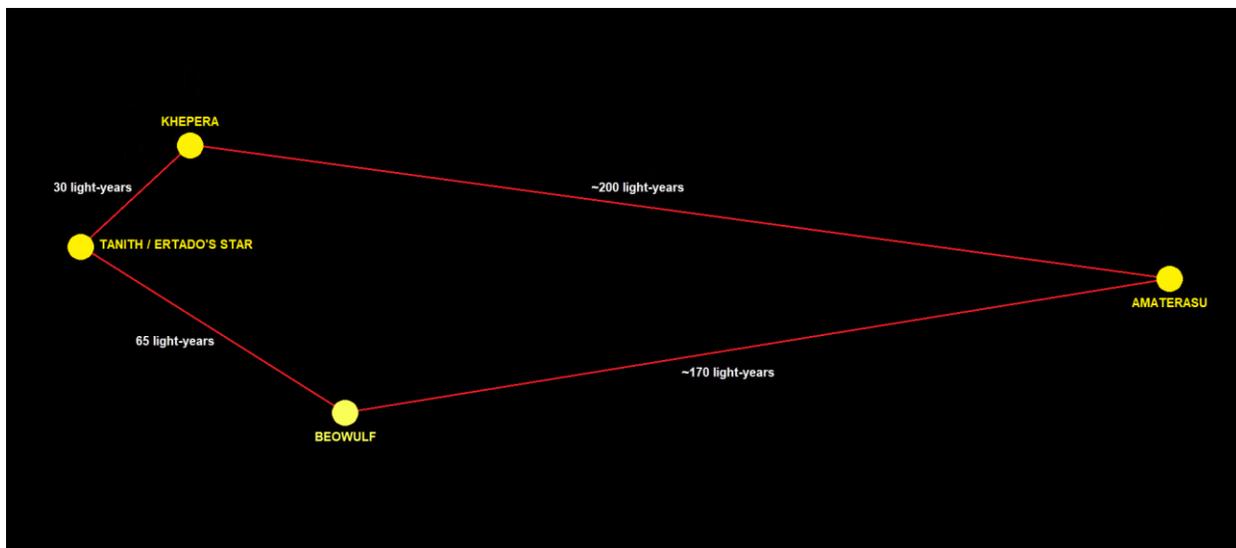


Figure 17. Estimated configuration of the three-planet raid in *Space Viking*.¹⁴¹

13. Base Planets and Trade Planets

Now let's look at Viking base planets and trade planets. During their period of dominance, some Sword-Worlders take over several planets in the Old Federation, and use them as operational bases. This is due to the "distance and voyage time" involved. Instead of wasting more than 4000 hours in hyperspace traveling from the Sword-World cluster to the Orion Arm and back, their base planets in the Old Federation allow the Space Vikings to directly engage in their "raid and trade" expeditions.¹⁴² Xochitl is one of these Old Federation worlds, currently ruled by Prince Viktor, a nobleman from Haulteclere. Tanith is another, ruled by Prince Trask, a nobleman from Gram. And Piper mentions several others; Tobbin of Nergal, the Evertards of Hoth, Fedrig Barragon of Dagon and Nikky Gratham of Jagannath.¹⁴³

There are also "planets known to be temporarily occupied by Space Vikings". The reason being that "A crew could have fun there, much less expensively than on a regular Viking base planet". One of these temporary base planets is Melkarth. It is occupied for 8 years by Captain Niall Burrik of the *Fortuna*; "taking his ship out for occasional quick raids and spending most of the time living from day to day almost on the local level." Then the *Honest Horris*, *Enterprise* and *Starhopper* arrive, and Burrik joins them when they leave, abandoning Melkarth.¹⁴⁴

In addition to base planets, the Space Vikings also have trade planets. In the case of Tanith, after raiding Khepera, Amaterasu and Beowulf, Prince Trask begins trading with all three. And he has at least a few others, since Trask hands "a list of planets...with which Tanith was trading" to the captain of the *Viking's Gift*, to prevent him from raiding them. Indeed, Prince Trask does so much trading, he receives a rebuke from his sovereign, King Angus of Gram, who thinks he should concentrate on raiding. "[A]fter all, why barter with barbarians when it was possible to take what you wanted from them by force?"¹⁴⁵

Can we locate any of these base planets and trade planets on our map? Well, Boake Valkanhayn says that Hoth is "about a thousand hours" from Tanith, or roughly the same distance from Tanith as Xochitl. That would place Hoth in the northern Federation, and—strangely for a Norse-named planet—well outside the Norse Core. Valkanhayn adds that while he and Garvan Spasso were on Hoth, "a Gilgamesher brought the news from Xochitl" about the proposed Gram base on Tanith. This suggests that Hoth and Xochitl are not too far apart.¹⁴⁶ So I placed Hoth 300 light-years northwest of Xochitl.

Sometime after Trask establishes his base on Tanith, he begins trading with Vitharr. And sometime after that, Vitharr is raided by a ship from Xochitl. Otto Harkaman, in the *Corisande II*, happens upon the scene. "He had fought a short but furious ship-action, battering the invader until he was glad to hyper out. Then he had gone directly to Xochitl, arriving on the heels of the ship he had beaten, and had had it out both with the captain and Prince Viktor, serving them with an ultimatum to leave Tanith trade planets alone in the future."¹⁴⁷

Vitharr is presumably somewhere between Tanith and Xochitl. And fortuitously, the Norse Core also lies between them, wherein Vitharr, as a Norse-named planet, should be located. I also assume that Vitharr is closer to Tanith than Xochitl, but farther from Tanith than Amaterasu. So I placed it in the central Federation, 400 ly from Tanith and 600 ly from Xochitl.

Later on, another one of Tanith's trade planets is attacked, this time by a different Viking base planet, Dagon. Admiral Harkaman, apparently reasoning that Tanith will lose credibility if it doesn't respond, takes action. "Barragon's ships were raiding...Ganpat. They looted a couple of cities, destroyed one, killed a lot of the locals. I found out about it from Captain Ravallo of the *Black Star*, on Indra; he'd just been from Ganpat. Beowulf wasn't too far out of the way, so we put in there, and found the *Grendelsbane* just ready to space out...So she joined us, and the three of us went to Dagon. We blew up one of Barragon's ships, and put the other one down out of commission, and then we sacked his base." ¹⁴⁸

After the battle, "The *Grendelsbane* went back to Beowulf; she'll stop at Amaterasu to do a little trading on the way. The *Black Star* went to Xochitl. Just a friendly visit, to say hello to Prince Viktor for you. Ravallo has a lot of audiovisuals we made during the Dagon Operation. Then she's going to Jagannath to visit Nikky Gratham." ¹⁴⁹

To me, these references suggest that Indra is another one of Trask's trade planets, and that Ganpat and Indra are both within 500 ly of Tanith. Given the deduced locations of Beowulf and Amaterasu in relation to Tanith, Indra might then be not far southwest of Tanith, while Ganpat is farther to the south, leaving Dagon even farther out, probably southeast of Tanith.

In addition, since Xochitl is 1000 ly from Tanith, Jagannath should be somewhat closer, and therefore probably to the galactic west. The news of the Dagon Operation will then spread from Xochitl northwest to Hoth, and from Jagannath northeast to Nergal, which I presume is farther away than Jagannath. One would think that Captain Ravallo could have visited all the base planets, rather than just two. Possibly Xochitl and Jagannath are seen as the greatest threats to Tanith's growing trade empire; or maybe Prince Trask just preferred to let his Space Viking rivals spread the word of his resolve in defending Tanith's declared rights. In any case, these references led me to locate the planets this way. (Figure 18.)

Using that map, Piper's references would be explained like this. Barragon's ships raid Ganpat, which is actually closer to Dagon (250 ly to the east) than Tanith (300 ly north). Captain Ravallo lands the *Black Star* on Ganpat, and learns of the raid. He heads for the nearest Tanith trade planet, Indra, 188 ly to the north-northwest. There he meets Harkaman, who is patrolling the trade planets in the *Corisande II*. Instead of going straight to Dagon, 357 ly southeast, or back to Tanith, 125 ly north-northeast, Ravallo and Harkaman once again go to the nearest trade planet. This is Beowulf, a detour of only 110 ly to the northeast. Here, they are joined by the newly-commissioned *Grendelsbane*. For a second time, Admiral Harkaman decides not to return to Tanith. It's 65 ly northwest of Beowulf, so it's out of the way; plus, he apparently reasons that three ships are enough to take on Dagon. So they proceed on a southeasterly course 333 ly to the southeast, arriving at Dagon. Harkaman's judgment is accurate, and after defeating Barragon's ships and sacking his base, the *Corisande II* returns to Tanith, about 400 ly to the northwest, where Otto finally reports back to Trask. Meanwhile, the *Grendelsbane* leaves Dagon in a different direction, voyaging north 250 ly to Amaterasu, where it does some trading; and then turns homeward, west-northwest for Beowulf, which as we've seen is about 170 ly from Amaterasu. And finally, the *Black Star* goes on a much longer trip. From Dagon, it's over 1100 ly northeast to Xochitl, where Captain Ravallo shows Prince Viktor some movies; then 815 ly west-southwest to Jagannath, where he does the same for Nikky Gratham. After this, he presumably takes the *Black Star* back to Tanith, which I estimate to be 500 ly from Jagannath.

Incidentally, the names Nergal, Jagannath, Xochitl, Tanith and Dagon suggest that all these planets are outside the Norse Core. Since the Core was presumably the richest sector of the Federation, one would think there would be at least one Norse planet inside the Core which is used as a Viking base. Hoth could have filled that role, but as we've seen, its distance from Tanith places it well outside the central Federation. The lack of such a Norse-named base planet could mean that this area was hardest hit in the Interstellar Wars; plus, we've already deduced the central Federation to be one of the major targets of earlier Viking raids, when they were still traveling all the way from the Sword-Worlds. So that by the time of *Space Viking*, the richest pickings in the Old Federation could lie outside the Norse Core, and this is where all the known base planets are.



Figure 18. Estimated location of Space Viking base planets (red) and Tanith trade planets (black) in the Old Federation.

The placement of Dagon in the southern Federation, far from the rest of the base planets, can be justified.¹⁵⁰ First, Dagon is apparently a newer base planet. There are only two ships operating from it, in contrast to Tanith, which has three ships right off the bat, when Lucas Trask first sets up his base. Second, as a newer base planet this means Dagon should be fairly weak, in relation to Xochitl, Hoth, Nergal and Jagannath, which are all suggested to be longer established and more prosperous bases. Indeed, Xochitl (and possibly Jagannath) is viewed as a major threat to Tanith, while Dagon is essentially a paper tiger, taken down in a single operation by Tanith and its ally, Beowulf. And third, by crushing Dagon—which is never mentioned again, and so probably doesn't recover—and warning off the other base planets (Xochitl in particular), Prince Trask effectively consolidates his hold on this corner of the Old Federation. A situation which undoubtedly contributes to the founding of the League of Civilized Worlds.

Speaking of which, let's now move on, and take a look at what happens after the time of *Space Viking*.

14. The League of Civilized Worlds

Since the Sword-Worlds are steadily decivilizing, Prince Trask makes it his life's work to help planets in the Old Federation to recivilize. According to King Mikhyll VIII of Marduk, this historical process has already begun, and is partly due to the Space Vikings themselves. Viking base-planets spread advanced Sword-World technology, including the education and training of local populations to use it; while in some cases even their raids have beneficial effects. For example, the major nations of Aton were once on the brink of an Atomic War, which probably would have led to the decivilization of the planet, when six Viking

ships from Haulteclere arrived. “That raid saved civilization on Aton...The Space Vikings forced them to unite. Out of that temporary alliance came the League of Common Defense, and from that the Planetary Republic.”¹⁵¹

Trask’s solution is to create an interstellar version of the League of Common Defense. “And there would be the treaty—Tanith, Marduk, Beowulf, Amaterasu; eventually, treaties with the other civilized planets. Nebulously, the idea of a League of Civilized Worlds began to take shape in his mind.”¹⁵²

So let’s start with what can be called the ‘Four Worlds Treaty’; the agreement between the four planets which becomes the foundation of the League of Civilized Worlds. Marduk is obviously a civilized planet, while Tanith, Beowulf and Amaterasu become so by the end of *Space Viking*.¹⁵³ In addition, Marduk has fourteen trade planets, which include Tetragrammaton, “Seshat, Obidicut, Lugaluru, Audhumla” and Gimli.¹⁵⁴ These can be considered part of the Mardukan component of the League. Only the distances from Marduk to Audhumla and Gimli are known, while the distance from Tanith to Tetragrammaton is “less than two hundred and fifty” light-years.¹⁵⁵ I have therefore tentatively placed Tetragrammaton east-southeast of Tanith, west-northwest of Marduk and south of Amaterasu.

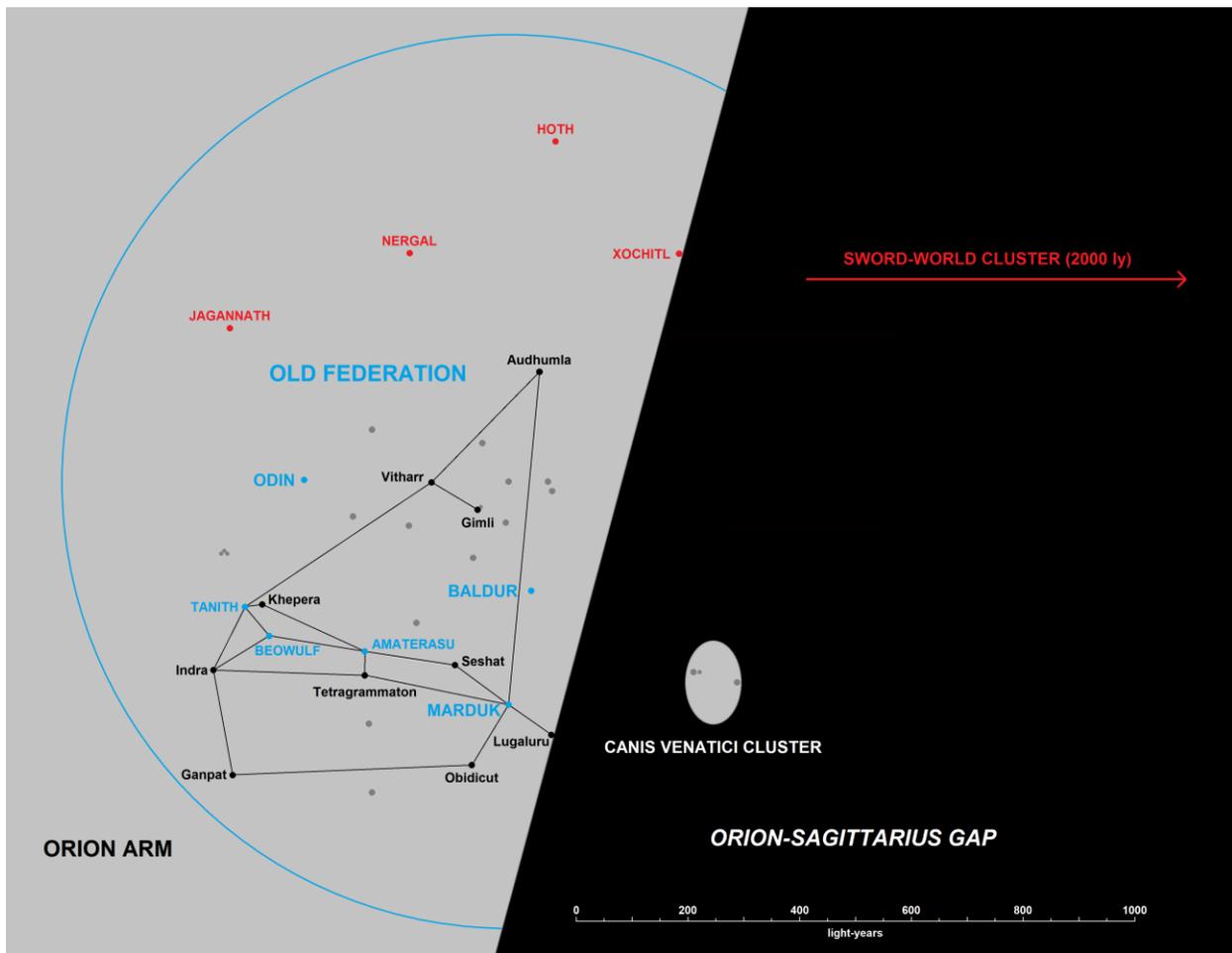


Figure 19. Estimated initial extent of the League of Civilized Worlds and associated trade planets, circa AE 1725.

Moreover, Piper’s stated order of planets—Seshat, Obidicut, Lugaluru, Audhumla—implies their order of distance from Tetragrammaton. This is confirmed by “Seshat was the closest; they went there first. They were too late. Seshat had had it already, and on the evidence of the radioactivity counters, not too long ago. Four hundred hours at most.”¹⁵⁶ Seshat is an Egyptian deity, the goddess of writing; implying that the planet Seshat is closer to Terra than Marduk, which is named for a Babylonian deity. So I placed

it east-northeast of Tetragrammaton, and northwest of Marduk. Obidicut, however, is a literary figure, being the fiend of lust in Shakespeare's *King Lear*. This means Obidicut should be farther from Terra than Marduk, among the outer planets named "for almost anything". I therefore located it southeast of Tetragrammaton and south of Marduk. But Lugaluru, like Marduk, is named from Babylonian mythology. This implies a similar distance from Terra as Marduk. So Lugaluru was placed not far to the southeast of Marduk, on the edge of the Orion Arm. (Figure 19.)

Why Beam didn't include Gimli, which should be the next farthest trade planet from Tetragrammaton, is unknown. Perhaps Gimli isn't an official trade planet, after all. Or, since the allied fleet later gathers at Gimli,¹⁵⁷ it might be the site of a Mardukan Space Navy base—possibly the old Federation-era base mentioned in *Four-Day Planet*. It could therefore be too well defended for Dunnan to attack. In any case, Prince Trask decides to take his ships to the farthest trade planet instead. "Say we try Audhumla next. It's the farthest away. We might get there while [Dunnan is] still shooting up Obidicut and Lugaluru."¹⁵⁸

Incidentally, even though Gimli is very close to Fenris, Fenris is not mentioned in *Space Viking*. So I assume that this hellish world is not among Marduk's trade planets. Its only export during the Federation period was tallow-wax, and a carniculture form was likely invented not long after *Four-Day Planet*.¹⁵⁹ There would be little reason to go there. As stated previously, a Gilgamesher, not a Mardukan ship, brings some Zarathustra sunstones to Tanith. This might suggest that Zarathustra is also outside the Mardukan trading network. However, Zarathustra's position between Marduk and Tanith also suggests that, if it is not a trade planet now, it will be when the League of Civilized Worlds gets going.

As seen in Figure 19, the names Tanith, Beowulf and Amaterasu are now in blue, since these planets have become civilized; but in a smaller font than Marduk and the other major civilized worlds. And due to the loss of Tanith (now civilized) and Dagon (destroyed), all the remaining Viking base planets are in the northern part of the Old Federation. The estimated initial extent of the League therefore includes a large part of the Federation's southern region, with Gimli, Vitharr and Audhumla as northern outliers.

If correct, this could be Piper's fulfillment of the old adage about the Confederacy; "the South shall rise again."¹⁶⁰ For as a parallel of the Confederate States of America, and described as an 'alliance' rather than a union, the System States Alliance was presumably a confederal league of equal but sovereign systems. Similarly, Beam's use of the word 'league' suggests that the League of Civilized Worlds is a 'confederal' alliance of equal but sovereign planets, coincidentally lying mainly in the same part of the Old Federation as the Old Alliance.

15. The Spheres of Influence

a) Spheres and Expansion of the League, Baldur and Odin

So at first, the League of Civilized Worlds is very similar to the old System States Alliance. But since the Terran Federation is no longer around to put this 'new Alliance' down, the League is free to expand and thrive. Ironically, this leads to Lucas Trask becoming one of Piper's self-reliant men, who win the battle but lose the war. Because the evidence suggests that the League of Civilized Worlds fails to fulfill his dream, at least as originally conceived. Trask's vision—"eventually, treaties with the other civilized planets"—certainly implies that he intends for "Odin and Baldur and Isis and Ishtar and Aton and the other civilized worlds" to eventually join the League.¹⁶¹ An 'Alliance' of 'Federation' size, as it were.

But in "The Future History", Beam states that "Lucas Trask organizes League of Civilized Worlds; work continued by the Bentricks, reigning house of Marduk. By the time of the Nineteenth Century [AE], the League has turned into the Galactic Empire." Thus, "Marduk, [is] where the Empire had begun," not Tanith; and it is the House of Bentrick, not the House of Trask, that supplies its rulers.¹⁶² So even though Trask recivilizes Tanith, saves civilization on Marduk by organizing the allied fleet which liberates it from Zasparr Makann and Andray Dunnan, and furthermore is the driving force in creating the League, Marduk comes to dominate it. Probably through its sheer size as a fully-civilized planet of two billion people, plus the strong leadership of its reinvigorated monarchy.¹⁶³

Tanith, by contrast, is a low population planet. It was colonized not long before the System States War, or roughly three centuries after Marduk, and much of what population Tanith did have was killed off during the Interstellar Wars. "Harkaman thought most of the fighting had been done with subneutron bombs or Omega-ray bombs, that killed the people without damaging the real estate. Or bio-weapons; a

manmade plague that had gotten out of control and all but depopulated the planet.” Thus, over the long run the heirs of King Lucas just don’t have the manpower to compete with the rulers of Marduk. ¹⁶⁴

In turn, Mardukan dominance probably means that the “treaties with the other civilized planets” never materialize; save perhaps for one or two early acquisitions. The vast majority, including Odin, Baldur, Isis, Ishtar and Aton, do not voluntarily join the League. Compared with Marduk, they likely have similar populations and relative strength levels, paralleling the old European powers like France, Spain and England. So if they did join the League of Civilized Worlds, there would likely be power-struggles between them, which would doubtless have destroyed the League, not united it into an Empire.

The probable outcome is that, when the League is created and begins expanding, the other civilized worlds react with expansion of their own. Creating their own leagues, alliances, associations and coalitions, they begin carving out their own spheres of influence in Old Federation space. And following Marduk’s lead, they start this process by developing and exerting greater control over their trade planets. Resulting in a Mardukan Sphere (the League), an Odinic Sphere, a Balduran Sphere, an Isisian Sphere, and so on. These gradual but concurrent expansions would include competition over trade and planetary resources, undoubtedly leading to tensions and wars between the rival alliances. The conflicts which involve Marduk presumably include “the battles that had created Imperial power.” ¹⁶⁵ The reference to these battles certainly suggests that the League has enemies whose prowess rivals its own.

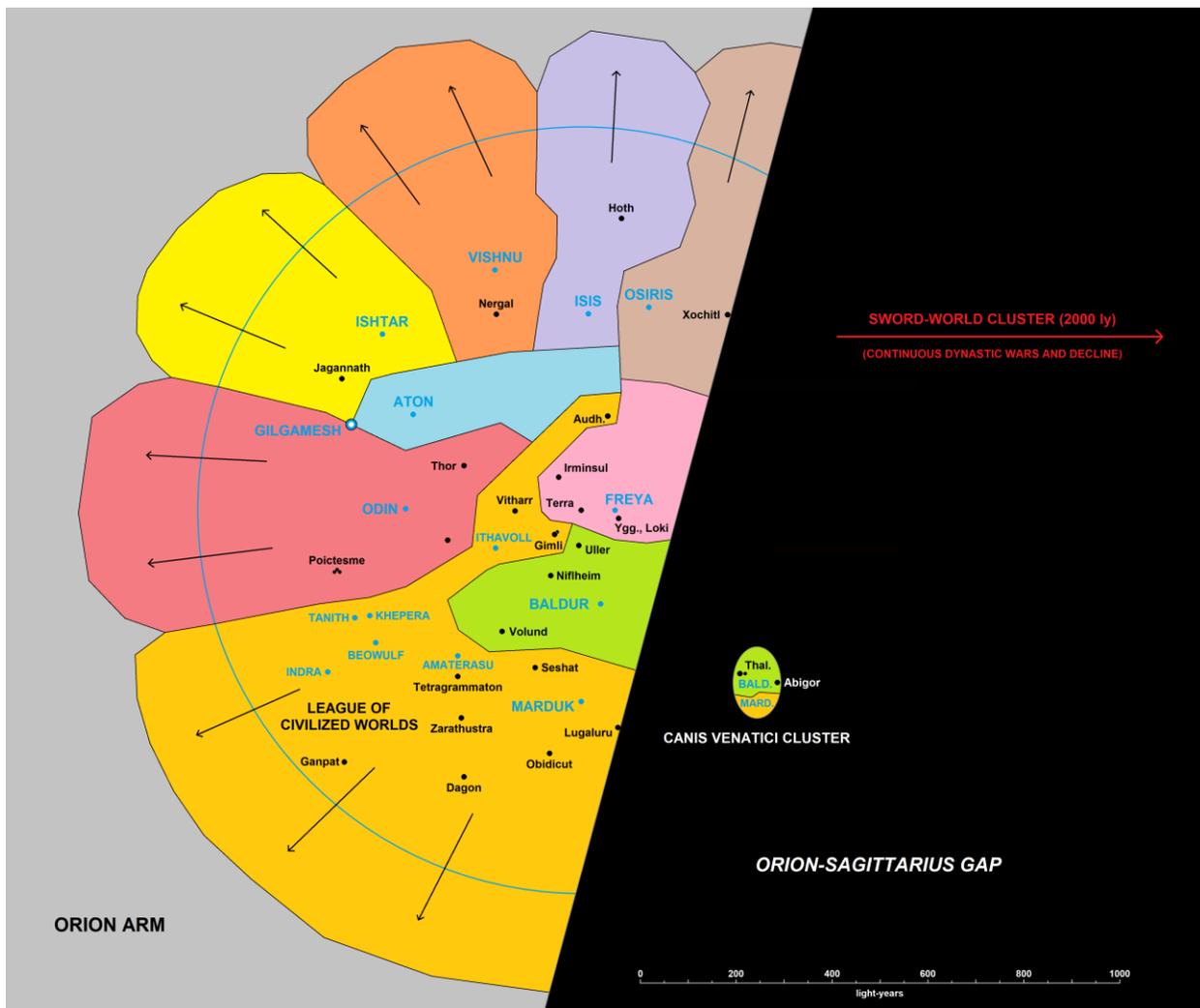


Figure 20. Estimated configuration and expansion of the post-Space Viking spheres of influence, circa AE 1800.

Once these spheres completely encompass the Old Federation, the only direction for peacefully obtaining new resources—and thereby gaining an advantage over rival coalitions without war—would be on new planets beyond the Federation’s old frontiers. So I assume a new era of expansion begins. This would be made easier by the starships of the Interregnum era, which are eight times faster than those of the late Federation. The civilized planets whose spheres are along its periphery would lead the way in this new outward wave deeper into the Orion Arm. That should include Marduk, at the outer end of the old Terra-Baldur-Marduk Spacelines route; and Odin, the outer stop of the old Terra-Odin milk run.¹⁶⁶

Expansion is also supported by the case of the Galactic Empire. As noted earlier, at the height of its power Imperial hyperships can travel “light-years an hour”, which is several times faster than those of the Interregnum period. And the Empire contains 1,365 inhabited planets, which is 2.73 times as many as were in the Terran Federation. So I assume the Empire has a radius roughly that much greater than the Federation’s (see **The First Galactic Empire**, below). The faster ship speed enables this larger area to be successfully unified and governed. But not all of this growth is necessarily due to the Empire, which may merely be continuing a historical process of expansion begun during the days of the League and the other spheres of influence.

Sometime after *Space Viking*, I therefore assume that League expansion brings the rest of the south and southwestern Federation under its sway. (Figure 20.) This includes Zarathustra, control of which may be contested with Baldur. Since Baldur is the closest known civilized planet to Marduk, I assume there is at least one war between these two worlds. And though on the map, Marduk is closer to Zarathustra than Baldur is, Baldur is actually closer to Marduk’s trade planet Audhumla than Marduk is. Meaning that the early issues of contention between them could be over who controls the sunstone trade, as well as whatever valuable export Audhumla is known for. But by possessing formidable allies like Tanith and Beowulf, Marduk is undoubtedly victorious over Baldur.

Another ally aiding Marduk is probably Ithavoll. At the time of *Space Viking*, Ithavoll is a former colony of Marduk that has become “a civilized world, and one of Marduk’s best friends.”¹⁶⁷ I therefore assume Ithavoll is an early recruit of the League. Possibly even the first to join after the initial quartet of Tanith, Marduk, Beowulf and Amaterasu. In *Space Viking*, Khepera begins sending students to schools on Tanith, Beowulf and Amaterasu.¹⁶⁸ So although it’s only a trade planet at first, Khepera probably becomes a full member of the League when it develops enough knowledge and technological expertise to be considered a civilized world. Also depicted in Figure 20 is that Indra becomes a civilized member of the League. Currently a trade planet, Indra seems to be fairly close to Tanith, and so probably becomes civilized not long after Amaterasu; possibly around the same time as Khepera, or soon after.

Another acquisition of the League is a wide swath of new territory beyond the Old Federation’s southern border. Tanith’s position not far from the southwestern frontier could mean that it is the instigator of expansion in this direction. A new endeavor; possibly motivated by its loss of influence to Marduk within the League, which Tanith may be trying to recover. However, given Marduk’s much greater population, the Mardukans will probably come to dominate this new expansion as well. And since the creation of the League precedes those set up by the other civilized worlds, I presume the LCW is the largest of the new spheres.

Assuming Baldur fails to acquire Zarathustra, its sphere would probably include Volund, a planet known for manufacturing weapons; and nearby Niflheim and Uller, which are both mining planets.¹⁶⁹ The Baldurans would need the resources of these worlds to maintain and extend its growing sphere. Moreover, the acquisition of Uller creates the interesting possibility that Kragan soldiers are recruited to fight for the Baldurans, in their wars with Marduk and other spheres. And why not, since Beam staffed the Household Guards of the later Galactic Emperors with dog-like Thorans, rather than humans?¹⁷⁰

So the mines of Niflheim and Uller could provide Baldur with raw materials, some of which are shipped to Volund for making weapons, and some to Baldur for building warships; while Uller also supplies mercenary soldiers. All three would contribute to the development of a strong Balduran military, whose sphere could then provide the League of Civilized Worlds with its first serious rival. And given that Baldur is rather hemmed in by the League to the south and west, it could occupy most if not all of the Canis Venatici cluster, while the League’s attention is concentrated on consolidating its control of the southern Federation. Marduk may already have a trade planet in the southern part of the cluster (which is much closer to Marduk than far-off Audhumla), or they move in to counter Baldur’s activities in the area.

Odin’s sphere would likely take in much of the western Federation. Confronted by the growing League

to its south, Odin probably sends a force to occupy Poictesme, thereby gaining the resources of the Trisystem. In addition, the Mardukan presence on Gimli and its close friendship with Ithavoll would force Odin into annexing the Norse planet west of Ithavoll, which was part of the old T-O milk run; and it probably brings Thor into its initial sphere as well. After gathering as much of the western Old Federation as it can, Odin would then expand into its own share of ultra-Federation space, west of the old frontier. Given Odin's later importance as the capital of the Galactic Empire, I assume that its sphere is the second largest. In *Space Viking*, Marduk and Odin have already fought one half-hearted war, around AE 1640,¹⁷¹ but Beam may have intended this reference as a foreshadowing of later wars, which will be waged much more seriously.

b) Spheres and Expansion of the Other Civilized Worlds

That covers the three major civilized worlds whose locations can be estimated from evidence in Piper. It must be emphasized that, as in the case of most of the Space Viking base planets, there is nothing to go on for the other civilized worlds, so their locations and spheres of influence in Figure 20 are highly speculative, as are the following analyses of their effects. With that in mind, let's start with Aton, Osiris and Isis, which I located at a middling distance between Sol and the Old Federation's outer border; north and northwest of Terra and northeast of Odin. This is because Beam's quote about "Celtic and Egyptian and Hindu and Assyrian" suggests the Egyptian-named planets are somewhat farther out than Odin and the planets of the Norse Core.

As they are named for mythological spouses, I placed Isis and Osiris much closer together than either is with Aton. Together, Isis and Osiris divide up most of the northeastern Federation. And given Prince Trask's statement that "Sooner or later, civilization in the Old Federation would drive [the Space Vikings] all home to loot the planets that had sent them out",¹⁷² the Viking base planets must go through a period of decline, followed by their abandonment and/or conquest by the civilized worlds. In the present scenario, Isis eventually acquires Hoth, while Osiris takes Xochitl. Xochitl's decline is hinted at the end of *Space Viking*. Prince Viktor of Xochitl lands on Gram with a fleet of eight ships. Trask suspects that he wants the throne of Gram for himself, and Viktor could easily arrange for Duke Omfray of Glaspyth, the nominal claimant, to be killed in the fighting. Prince Viktor would then become a Sword-World king, by right of conquest. With the bulk of his military forces now in the Sword-Worlds, and absent his strong leadership, Xochitl would weaken, and become vulnerable to the rising power of the civilized worlds.

Now for Aton. I made its sphere a bit smaller than those of Isis and Osiris, because it undergoes repeated political turmoil, which I presume translates into a slower (and therefore smaller) expansion. As stated previously, Aton was once on the brink of a nuclear war between its two most powerful nations, which would probably have decivilized the planet. It was only prevented by the arrival of Space Viking raiders, which forced the Atonians to unite in self-defense. Later, Aton presumably loses "the war with Baldur", because this causes a "crisis" which brings the Planetary Nationalists to power. And as a "damned nasty" dictatorship, the Planetary Nationalists are eventually "smashed" (whether by interior or exterior enemies Beam does not say), and replaced with a monarchical government.¹⁷³

Moving on to the northwestern Federation, I split the majority of this region between Vishnu and Ishtar. Vishnu I assume is the civilized world which eventually acquires Nergal, while Ishtar takes Jagannath.

Next is Freya. Beam only specified the names of 9 out of the 17 or so civilized worlds which survive the Interstellar Wars,¹⁷⁴ and I like to think that Freya is one of the unnamed ones. It already had an indigenous human population when it was discovered by Terrans in the Third Century, so Freya should have developed much more rapidly than the average colonial planet. Moreover, the Terrans found that the Freyans were constantly at war with each other;¹⁷⁵ a fighting instinct which I presume resurfaces as the Federation begins collapsing, and the Freyans have to defend themselves from off-world threats.

Freya's deduced sphere would include Yggdrasil and Loki, only 20 ly away; and Freyan troops could also land on Terra, a mere 70 ly to the west. This would involve an ironic reversal of fortune. In the early days of the Federation, the star-traveling Terrans discovered the medieval-equivalent Freyans; but now, the star-traveling Freyans discover that their erstwhile Terran superiors are the inferior ones, having become a primitive, savage race. And it's even worse. Because to the Terrans, pristine Freya was a valuable planet, but the Freyans find that Terra was completely ruined in the Interstellar Wars. It is therefore probable that Freya's interest in irradiated Terra is mainly strategic. Sol is now a something of a border system, lying not far from the frontiers of the Mardukan (Gimli) and Balduran (Uller) spheres.

Notice that I located most of the civilized worlds in the northern part of the Old Federation. This was deliberate, because “The Terran Federation had impoverished a hundred planets, devastated a score, actually depopulated at least three, to keep the System States Alliance from seceding.”¹⁷⁶ One would think that the devastation inflicted on the southern Federation during the System States War means more northern planets remain civilized when the TF finally falls apart for good. Harking back to the American model put forth in the early part of this paper, having all these civilized planets in the northern Federation would parallel Union cities like Boston, New York, Philadelphia, Pittsburgh, Detroit and Chicago, which after the Civil War, and through Piper’s lifetime, had no equal among the southern cities.

This parallel would be particularly true because, unlike the Civil War model, the Alliance planets do not appear to have a period of Reconstruction after the war. John Carr describes the postwar period as one of “retrenchment.” The Terran Federation “is no longer expanding and the economy is deteriorating.”¹⁷⁷ In fact, it appears to have fallen into the state of “economic *rigor mortis*” which leads to the “petrification” of a universal state, prior to “the cracking and the crumbling” attendant with its final collapse.¹⁷⁸

Assuming that most of the major civilized worlds are in the northern Federation, this is actually good news for planets like Marduk and Odin. Because with fewer competitors in the southern and western Federation, they should be able to expand to much greater distances than northern planets like Osiris, Isis, Ishtar and Vishnu, which are located much closer together. This could play a role in why Marduk is able to found the Galactic Empire. It gets a jump on the other civilized worlds by helping to found the League of Civilized Worlds, and assuming it gets the better of Baldur in their presumed conflicts, Marduk would be able to bring the vast majority of the southern Federation under its sway. At that point, it might be too powerful for comfort, causing several of the other spheres to combine against it. And one of them could be Odin, which expands by conquering Aton, thereby becoming larger and more powerful itself.

Now for the six or seven major civilized worlds unnamed by Piper. Since the map only shows 10 of the 17 or so spheres of influence, the others might be located somewhere in the upper and lower regions of the Orion Arm; ‘above’ and ‘below’ the galactic plane of symmetry, which my chart roughly shows.

But during the descriptions of the various spheres, I left one civilized planet out. Now let’s look at what may be the most interesting sphere, and quite possibly the largest of them all—that of Gilgamesh.

16. The Sphere of Gilgamesh

a) A Federation-Wide Trading Network

In Figure 20, Gilgamesh was depicted in white rather than blue because, although it is a civilized world, its democratic, Federation-era culture was interrupted by “two centuries of darkness”, and replaced by a theo-socialist system, which gravitates around the worship of “Yah the Almighty”. It’s “an absurd potpourri of most of the major monotheisms of the Federation period, plus doctrinal and ritualistic innovations of their own.” Thus, unlike the major civilized worlds like Odin, Marduk and Isis, Gilgamesh did not ‘retain the culture of the Terran Federation uninterruptedly’. However, it is noteworthy that their new religion’s emblem is “a blue triangle in a white circle”.¹⁷⁹ This is an apparent holdover (and reversal) of the old Terran colors, which were a white emblem on a blue field. That provided another appropriate color to use in depicting Gilgamesh on the map.

At first glance, Gilgamesh doesn’t have any sphere, or only a tiny one. For also unlike the inhabitants of other civilized worlds, the Gilgameshers do not have expansionist ideas. “They didn’t raid; they traded. They had religious objections to violence, though they kept these within sensible limits, and were able and willing to fight with fanatical ferocity in defense of their home planet.”¹⁸⁰ Their ‘sphere’ should therefore include only Gilgamesh itself, or perhaps their stellar system. It is shown as such on the map.

But with Piper, one often has to read between the lines. And by doing so, you quickly realize that Gilgamesh’s unofficial sphere of influence is actually much larger. Because “Their ships went everywhere to trade, and wherever they traded a few of them usually settled, and where they settled they made money, sending most of it home.” These references suggest that there are Gilgameshers all over the Old Federation.¹⁸¹ And this points to a subtle web of influence stretching throughout Federation space; interpreted by Zasparr Makann, a “political demagogue”, as “the Gilgamesh Interstellar Conspiracy”.¹⁸²

Part of the reason for Makann’s paranoia is that there’s “a large Gilgamesher colony” on his home planet of Marduk.¹⁸³ But since the Gilgameshers are “everywhere”, there are probably large colonies of them on all the other major civilized worlds as well. Zasparr’s conspiracy theory would then make more

sense. The civilized worlds are where the most money can be made, which means more to send home to Gilgamesh. One can also assume that there are smaller but sizeable groups of colonists on the primary trade planets of the civilized worlds. These would include Loki (gold) and Gimli (uranium).¹⁸⁴ In addition, there's "a few on Tanith", who settle there during *Space Viking*.¹⁸⁵ As previously mentioned, the first Gilgameshers who land at Rivington carry a cargo which includes "vegetable-amber and flame-bird plumes from Irminsul; ivory or something very like it from somewhere else; diamonds and Uller organic opals and Zarathustra sunstones." Assuming the ivory is actual ivory, then it came from Terra; so Irminsul, Terra, Uller and Zarathustra can be included in the 'web' of Gilgamesh.

Also included are Beowulf, Amaterasu and Khepera, which probably obtain a few Gilgamesh settlers in the process of becoming fully civilized planets, just as Tanith did. Another is Xochitl. Although it's a Viking base planet, Xochitl may also have a Gilgamesher settlement, because Dagon, another base planet, does.¹⁸⁶ In fact, there are probably few Old Federation worlds which lie outside the Gilgamesh network. (Figure 21.) Most likely, these are minor worlds such as Aditya, which "dropped out of history" for 500 years; and Seshat, which is the victim of a Dunnan terror-raid. It is hit with "two hellburners... a planetbuster... And half a dozen thermonuclears." "There were quite a few survivors...but within a century or so they'd be back to the loincloth and the stone hatchet."¹⁸⁷ With little money to be made, the Gilgameshers would probably not stay on Seshat, though they could stop by to trade occasionally.

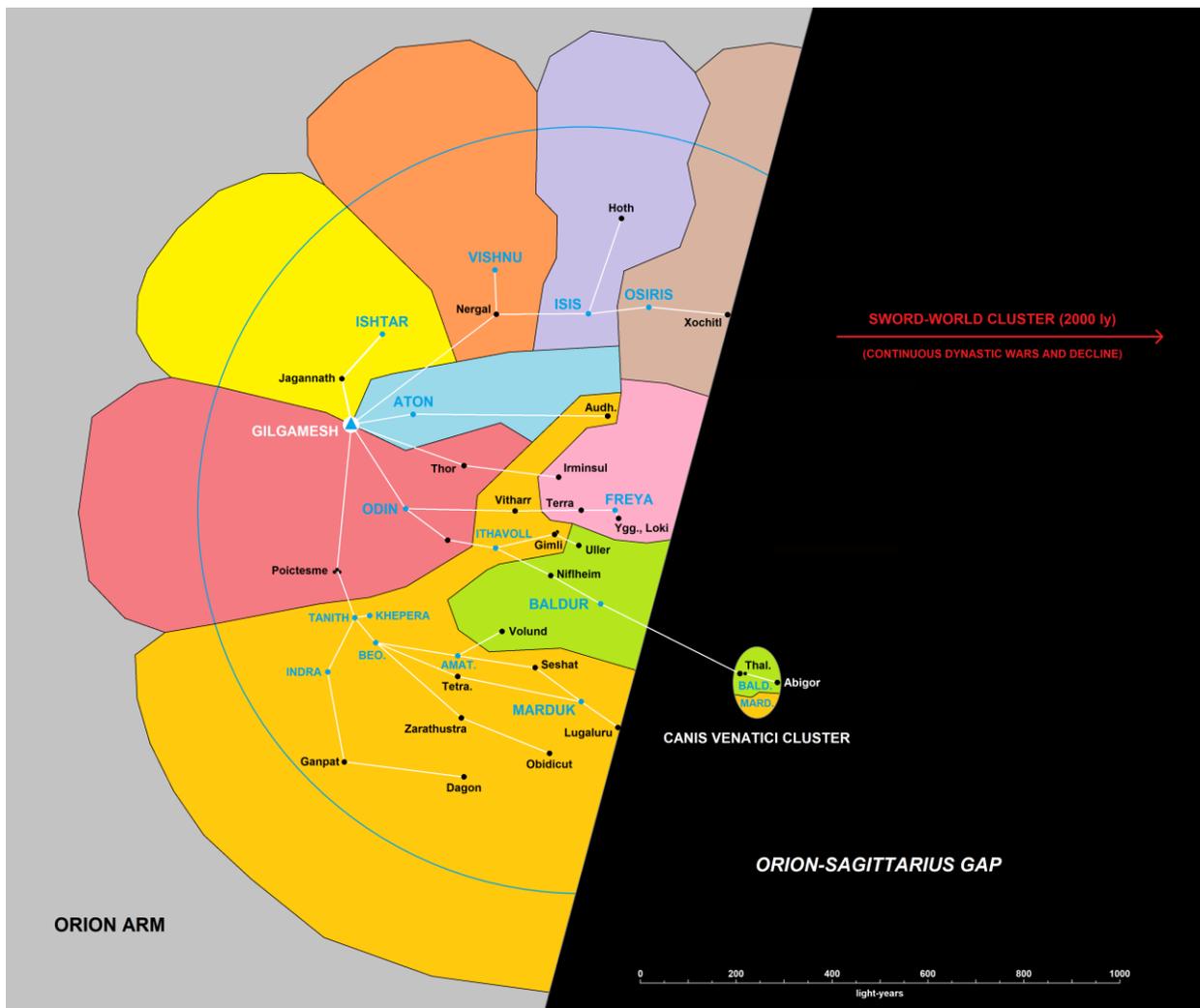


Figure 21. Estimated minimum extent of Gilgamesh's unofficial sphere of influence, circa AE 1800.

This brings us to the specific location of Gilgamesh. There are no references in Piper, but John Carr and William Taylor estimate its location as 1000 ly from Marduk.¹⁸⁸ That would put the planet well into the northern Federation. I retained the region, but reduced their figure to 750 ly. And that's because on a two-dimensional map, Gilgamesh at 1000 ly from Marduk would be far out toward the periphery of the Old Federation, somewhere in the "naming planets for almost anything" region; but its Assyro-Babylonian name should put it at a Marduk-like distance of 400 ly or so from Terra. So I placed it farther out than Aton and the other Egyptian-deity planets, but closer than Hindu-deity planets like Vishnu and Jagannath. (I know, this reverses the order as given by Piper in "Graveyard of Dreams", where the Hindu planets are closer than the Assyrian ones. But Hoth is unquestionably far outside the Norse Core, when it should be within. I therefore presume that Gilgamesh is another one of these exceptions to the general rule.)

Assuming that Gilgamesh is not far from Aton, it would be in danger of falling into the Atonian sphere. Indeed, it could be vulnerable to several major worlds, including Ishtar and Odin. This can partly explain why Gilgamesh needs its off-world settlers to send so much money home. Not only to defend against Space Viking raids, which is put to the test at least once,¹⁸⁹ but to maintain a strong defensive posture against the other civilized worlds, which are comparable if not larger threats. One or more could try to take control of Gilgamesh, in order to raid its presumably well-filled planetary coffers, as well as acquire its trade fleet and extensive trading network, which would produce yet more wealth.

Indeed, this might be one of the few (and theoretically easiest) ways for Aton, completely boxed in by other spheres, to try and expand. But that would probably provoke a reaction among the other civilized worlds, who would resist such a move, in order to keep Aton from acquiring all that wealth and potentially becoming much more powerful. Moreover, in *Space Viking*, Gilgamesh seems to be acting as a behind-the-scenes ally of Marduk.¹⁹⁰ So if they ever find their planetary defenses inadequate in the face of, say, a rising Atonian or Ishtar threat, the Gilgameshers could call on the Mardukans for assistance. And that could result in the space navy of the League of Civilized Worlds (in all likelihood primarily Royal Mardukan Navy units) entering the northern Federation in substantial force for the first time. Not something the civilized worlds of that region would welcome.

b) That Doubles as a Federation-Wide Intelligence Network

But even apart from these balance of power considerations, the Gilgameshers probably need not worry overmuch about being conquered. Because their Federation-wide trading network appears to be involved with more than just making money. It also functions as an intelligence-gathering network, which should give them a big advantage over any potential foe.¹⁹¹

Prince Edvard of Marduk says that "anything one Gilgamesher knows, they all know"; while Captain Manfred Ravallo puts it similarly. "[D]on't let anybody with side-whiskers and buttoned-up coats see them ...What any of those people know gets all over the place before long." Both references imply a very efficient system of gathering and transmitting information.¹⁹² The Gilgameshers are not only everywhere, they are constantly listening, and seem to know just about everything.

While they certainly use all this intelligence in planning their defensive needs, the Gilgameshers have a more important reason for gathering it. For as revealed by John Carr, Piper told Jerry Pournelle that the Cosmic Computer, Merlin, is moved to Gilgamesh during the Interstellar Wars.

It therefore seems significant that in *The Cosmic Computer*, "Merlin is a religion" to most people on Poictesme. Called by Rodney Maxwell "Merlinolators" (Merlin-worshippers), the Poictesmeans consider it "a robot god", easily capable of delivering their planet from its current destitution. In fact, Merlin even considers itself a god. "And if you'd asked such a computer, "Is there a God?" it would have simply answered, "Present." " A man naming himself the Reverend Carl Leibert appears; claiming to be a priest of what he calls "the Great Computer". "He says that Merlin could formulate an entirely new religion, which would regenerate humanity."¹⁹³

Thus, the late-Federation religion based on Merlin the robot god seems very similar to the entirely new interregnum religion based on Yah the Almighty god. The most likely conclusion is that, after being transferred to Gilgamesh, Merlin 'formulates' this new religion, and becomes its 'god', Yah himself.

In support of this deduction, the Gilgameshers seem to be Piper's 'cosmic' version of orthodox Jews, and Yah is presumably short for Yahweh, the Old Testament God of the Hebrews. Yahweh means "I am that am", so that the short form "Yah" should mean approximately "I am". Yah the Almighty would then mean "I am the Almighty". And this is essentially what Merlin would say in response to the question of

whether there is a God. For by answering “Present”, Merlin would simply mean that “I am God”, or “I am.” Yah is Merlin.

That Merlin becomes Yah would be another instance of the “*Falsification*” that Merlin recommends at the end of *The Cosmic Computer* as “*the best course to be followed under these conditions*”.¹⁹⁴ For when Merlin is moved to Gilgamesh, the conditions on Poictesme are probably dire. For some reason, the Merlin Plan fails; probably resulting in a renewal of the sectarian violence seen in that novel, or possibly even civil war. Such a development would necessitate an off-world getaway by Merlin and his handlers, in order to preserve the Great Computer and its ability to predict the future; or “handle large-group behavior with absolute accuracy”.¹⁹⁵ But it is likely that conditions in the Federation as a whole are equally bleak. The Interstellar Wars have begun, and there is fighting on, and around, many worlds.

In the parlance of *Space Viking* (written close in time to *The Cosmic Computer*), this would be a good time for Merlin to tell a Big Lie. “Such a big lie that nobody will dare to disbelieve it.”¹⁹⁶ The lie is that Merlin was destroyed in the fighting. With the Great Computer allegedly blown to smithereens, ‘God is dead’; no one will search for Merlin or fight to possess it any longer. Which is what the Poictesmeans did in the novel; they searched for Merlin, fought over Merlin, and in the process almost provoked the devastation of their planet by super-missiles from Koshchei.¹⁹⁷ Assuming they’re fighting over Merlin once again, the result this time could be just that—annihilation.

Thus, with Poictesme in nuclear shambles and its robot-god believe to be destroyed, Merlin and his handlers would be free to find an inconspicuous planet, in this case Gilgamesh, where they can hide. There, Merlin adopts a cover identity; a new, but appropriately godlike, form. And behind this disguise, it secretly crafts a second Merlin Plan, which will again attempt to “regenerate humanity” by creating a universal state. Since the first Merlin Plan failed to establish “a new [Federation]” based on Poictesme,¹⁹⁸ Merlin apparently calculates that Marduk is now the best candidate. Like Poictesme, Marduk is a planet hundreds of light-years away from decadent Terra; probably one of the reasons for its selection.

In turn, this explains why the Gilgameshers are cooperating with the Mardukans in *Space Viking*, and it becomes not so coincidental that Marduk later founds the Galactic Empire. These Yah-worshippers are simply helping Marduk to unknowingly fulfill the second Merlin Plan, which was initiated on Gilgamesh. The Plan was dependent on the political, social and economic information the Gilgameshers sent home from the various worlds of the Old Federation. This was given to “Yah”, probably by the same method as in *The Cosmic Computer*. There, all information “had to be abstracted and summarized and translated from verbal symbols to the electro-mathematical language of computers and fed in” to Merlin.¹⁹⁹

Parenthetically, planets like Aditya, which “dropped out of history”, can be safely left out of Merlin’s future historical calculations, since their socio-economic conditions do not affect other worlds. At least, until “A Slave is a Slave”, “when history returned in the black ships of the Galactic Empire.”²⁰⁰

Thus, the top priority of Gilgamesh’s formidable defenses is probably to protect “Yah” from harm, while the safety of its own citizens is of secondary concern. This also explains why the Gilgameshers are “able and willing to fight with fanatical ferocity in defense of their home planet.” As the abode of their god Yah the Almighty, their planet is probably considered ‘holy’ by the Gilgameshers. To fight against Gilgamesh is to fight against Yah, who must be protected at all costs. The One (Robot) God ain’t ‘dead’ after all.

c) *The Universal State as a Religion*

In their failure to create a new Federation, the Poictesmeans may be said to have not taken their ‘mission’ seriously enough. Competing groups fought over Merlin, which brought the original Plan to ruin. That’s probably why Merlin creates a new religion on Gilgamesh—in order to unite the planet during its centuries of darkness and chaos, and in the process obtain the unquestioning faith of fanatically devoted followers necessary for the second Merlin Plan to succeed. It therefore explains why Merlin made the new religion “an absurd potpourri of most of the major monotheisms of the Federation period”. This was to unite the various factions on post-Federation Gilgamesh, many of which were probably religion-based. Similar to Poictesme, which had “the Armageddonists (Merlin is Satan)”, “the Human Supremacy League (Merlin is the Golem)” and “the Cybernarchists” (Merlin is a cybernetic Hitler).²⁰¹ On Gilgamesh, the most important factions must have been monotheistic groups like Christians and Jews, which were apparently fighting each other for survival and/or supremacy. Since the Gilgameshers are Piper’s Jews, and their god is named “Yah”, I assume that orthodox Jews were actually the largest faction on Gilgamesh, and the one whose religion was the main influence on the new faith promulgated by Merlin.

But wait, you say; if Merlin formulated this new religion itself, then why did it include the “maze of dietary and other taboos in which [the Gilgameshers] hid from social contact with others”? And moreover give them a “bigoted refusal to regard anybody not of their creed as more than half human”? Because both of these characteristics make the Gilgameshers “generally disliked” by the people of other worlds.²⁰² On the face of it, having the rest of the galaxy against your followers doesn’t make much sense. One would think Merlin would want its religion to be *welcomed* by the people of other planets, perhaps even adopted by them. The answer is to keep the faithful in line, or ‘on mission’. Because if the agents of “Yah”, traveling and living all over the Old Federation, fall victim to the blandishments and easier morals of these outside worlds, “Yah” could lose followers. That would mean a loss of money for defense, and more importantly, a loss of information for Merlin’s memory banks. Gilgamesh and the Plan would suffer. In addition, keeping the Gilgameshers separate from the people of other worlds is good for secrecy. Similar to a communist society, the “theo-socialist” system of Gilgamesh has something to hide.²⁰³

As to the bigotry of the Gilgameshers; well, their ‘god’ Yah/Merlin really does exist, contrary to the opinions and jokes of off-worlders. Moreover, it can actually predict the future with absolute accuracy, which reinforces and sustains their blind and unshakeable faith. Their haughty self-righteousness toward people not of their creed was likely fueled by these facts, rather than any ‘commandment’ of their god.

For these reasons, I located Gilgamesh closer to the Old Federation’s center, though still outside the Norse Core. This would be a better position from which to gather the resources most needed for the new Merlin Plan to succeed. Thus, although the Gilgameshers are Piper’s Jews, and the triangular symbol of their religion is modeled on the Star of David, its colors, as we’ve seen, are also suggestive of the Terran Federation, a universal state. And this ties in with Yah/Merlin’s plan to create “a new one”.

In fact, given Beam’s attention to detail, the colors may be more than just a random holdover of the Federation era. Because the origin of “Yah” may actually lie with Federation officers like General Mike Shanlee, for whom “The Federation was our religion.” The man calling himself ‘Reverend Carl Leibert’ was really Shanlee in disguise; a clue to which was the fact that this so-called priest “wore Federation fatigues”. After his disguise is penetrated near the end of *The Cosmic Computer*, Shanlee “stayed on Poictesme as nominal head of Project Merlin, and intended to remain there for the rest of his life.”²⁰⁴ This implies a continued Federation military presence quite close to the Cosmic Computer; one whose ‘religion’ is represented by the white and blue Federation flag.

Many years later, when the first Merlin Plan fails, military officers of the short-lived ‘Poictesmean Federation’ probably accompany Merlin and its programmers to Gilgamesh. There, Merlin fuses their faith in a universal state with its own godlike ability to predict the future, and overlays it with the need for secrecy, plus the large numbers of fanatical followers to gather the information it needs. Thus creating the religion of “Yah the Almighty”. Given the extensive military stores on Poictesme in *The Cosmic Computer*, these soldiers presumably also bring a good deal of military equipment, establishing what eventually becomes the formidable planetary defenses of Gilgamesh.

In *Space Viking*, Lucas Trask observes that “Perhaps Gilgamesh deserved more credit; its people had undergone two centuries of darkness and pulled themselves out of it by their bootstraps. They had recovered all the old techniques, up to and including the hyperdrive.”²⁰⁵ But since Merlin’s “memory-bank contained all human knowledge”,²⁰⁶ perhaps the Gilgameshers don’t deserve more credit after all. While they did have to work hard to unify and rebuild their planet, they didn’t have to reinvent anything. At the proper times, ‘Yah’ could simply provide them with the necessary knowledge. And this undoubtedly contributed to the fanatical faith of the people in their god. For Yah is not only Almighty, but All-knowing.

After the re-acquisition of hyperdrive, the ships of Gilgamesh fan out all over the Old Federation, creating an appropriately blue-and-white network of trade. This is likely a very important step in the Plan, as it would foster *economic integration, in preparation for political unification*. The agents of Gilgamesh—led by the shipborne priests of Yah, the spiritual descendants of ‘Reverend Leibert’ (alias “the Prophet of Merlin”²⁰⁷) and his Great Computer—are strategically positioned all over the Federation. And—hiding behind the scenes this time—Merlin is once again promoting the growth of a new universal state.

Assuming my analysis is correct, this scenario results in a case of Piper-style irony. Because Zasparr Makann may have been “a raving lunatic” with “Mad eyes”, who modeled himself after Adolph Hitler;²⁰⁸ but he was absolutely right about the Gilgamesh Interstellar Conspiracy. He just had no idea how strange its origin was, or how vast its goals really were.

So now let's move on to the next stage of Beam's Future History, and take a look at that new universal state, which becomes known as the First Galactic Empire.

17. The First Galactic Empire

a) "Roughly the Shape of a Pork Chop"

The Empire begins as the League of Civilized Worlds, and the 'Four Worlds Treaty', which establishes the League, is presumably signed soon after the end of *Space Viking*. From John Carr's timeline, that would be about AE 1726.²⁰⁹ The League becomes the Galactic Empire sometime in the Nineteenth Century; possibly around AE 1848.²¹⁰ There follows a century-long "Period of Interstellar Wars", during which the Mardukan-led Empire finishes off its rivals in the Old Federation. During this time, the clandestine support of Gilgamesh and its interstellar network undoubtedly continues. Once the Imperial Space Navy completes its operations in the Orion Arm, its ships cross the Orion-Sagittarius Gap, and effect the conquest of the Sword-Worlds. This occurs around AE 1950.²¹¹

Parenthetically, this is probably the point at which the first Gilgameshers arrive in the Sword-Worlds; there to settle, make money—and most importantly, collect information for the memory banks of Merlin, so that it can include the Sword-Worlds in its future historical calculations. In this regard, it seems significant that the Galactic Empire is *run by computers which can predict the future*. In "Ministry of Disturbance", Emperor Paul XXII is told that an increase in Durendal's grain exports will "cause all kinds of dislocations on other agricultural planets. At least, that's what our computers all say." This future-predicting capability is very similar to that of Merlin, though to a lesser degree.

Also noteworthy is that the Emperor's reply to the computers' prediction of future effects is religious in nature. "And that, of course, was *gospel*."²¹² Taken together, these references suggest that the Empire is actually functioning under 'The Gospel according to Yah'. Thus, after the second Merlin Plan succeeds, 'Yah' apparently continues to run things from behind the scenes. This can explain why the Galactic Empire is perfectly stable in "Ministry of Disturbance". Yah/Merlin and its affiliated future-predicting computers are working to keep it so. "[A] stable economy, a static population, a peaceful and undisturbed Empire...Well, that was what everybody wanted, wasn't it?"²¹³

That Merlin continues its clandestine role—rather than revealing its existence and coming back out into the open—is consistent with the status of the Gilgameshers in the Galactic Empire. Their fanatical devotion in sending money and information home greatly contributed to the establishment of the Empire, and yet there is mention of "a pogrom on Anath", which was stopped by Commodore Hastings.²¹⁴ A pogrom is defined as "an organized massacre, esp. of Jews."²¹⁵ So the attempted pogrom on Anath was probably an organized massacre of Piper's Jews, the Gilgameshers. This indicates that they are still "generally disliked" among the people of other worlds, and Prince Trask's observation still holds. "Well, that was one thing you had to give [Zaspar Makann] credit for. He wanted to run out the Gilgameshers. Everybody was in favor of that."²¹⁶

Does that include Yah/Merlin? Because by this time, the Empire has taken over the job of collecting the information necessary for future-predicting computers to maintain its interstellar civilization. It would seem the Gilgameshers are no longer needed. But since Merlin can predict the future at least several centuries in advance, it may have already calculated that the Galactic Empire, like the Federation before it, is doomed. So in the coming Second Interregnum, the Gilgameshers will likely resume their old game. Outwardly bigoted and engaged in trade and collecting money, all while covertly collecting information, in order to assist 'Yah' in planning for the *next* universal state.

But now we've gotten ahead of the tale. Many centuries after its initial conquests, the long-peaceful Empire contains 1,365 inhabited planets. As noted in the last section, this makes it 2.73 times larger than the Terran Federation, which contained only 500 inhabited planets.²¹⁷ Our assumption will therefore be that the radius of the Galactic Empire is 2.73 times greater than that of the Terran Federation. That would place its border 2,184 light-years out from Sol (800 ly x 2.73), enclosing about two-thirds the width of the Orion Arm. I actually rounded the figure down to 2,000 ly, since some of that expansion will be on a line to the galactic east, in order to link up with the Empire's Sword-World province.

The resulting configuration (Figure 22, below) can explain the shape of the Galactic Empire, which Emperor Paul XXII says is "roughly the shape of a pork chop".²¹⁸ The meaty part of the chop would be

the reunified region of the Old Federation, plus all the extra planets around its northern, western and southern frontiers settled by the old spheres of influence, and afterward by the burgeoning Empire. All this is in the Orion Arm. The Sword-Worlds would lie at the tail-end of the chop, with the rest of the tail consisting of mostly empty space in the Orion-Sagittarius Gap. But this space probably contains at least a few habitable planets, orbiting stray stars. And these could be settled by one of the civilized worlds during the spheres of influence period (such as Osiris or Baldur); or earlier in Federation times (though only out to 800 ly from Terra); or even later by the Empire, after they conquer the Sword-Worlds.

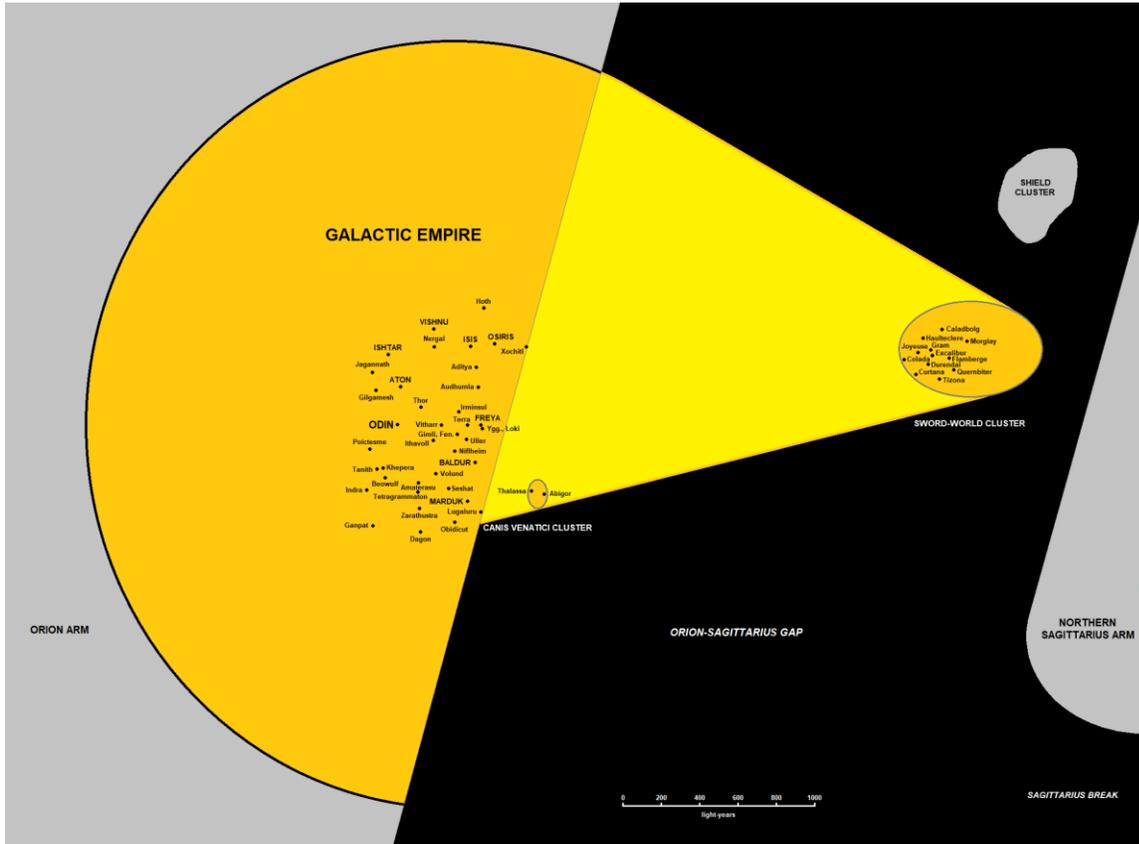


Figure 22. Estimated extent of the First Galactic Empire, “roughly the shape of a pork chop”, circa AE 3050.

One would guess that after the conquest, regular trade is established between the Empire proper and its Sword-World province. So there would be a natural tendency to explore the stars along these routes, and settle any habitable planets discovered in this region, thereby ‘filling in’ (as much as possible) the empty space between the Empire and the Sword-Worlds.

Of course, the Empire could claim this space right after the Sword-World conquest. The filling-in which follows would then be part of the ‘consolidation’ process mentioned by Paul XXII. “There had been some excuse for staying inside that patch of stars then; a newly-won Empire must be consolidated within before it can safely be expanded.”²¹⁹ More expansion isn’t necessary, because the much greater radius of the Empire means there should be plenty of habitable planets suitable for colonization in the outer reaches of its space-area. For instance, I assume that the Empire colonizes the eastern half of the Sword-World cluster, which was neglected for centuries by the Sword-Worlders themselves. Continuing their theme, the Empire could name at least some of these new planets for historical, legendary or mythical swords.

Also included in the consolidation process is the Empire’s annexation of unimportant worlds like Aditya, which were presumably missed or bypassed during the march to Empire. I placed the planet, belatedly mopped up by the Galactic Empire in “A Slave is a Slave”, in the northeastern Federation. Because Piper’s historical model for Aditya appears to be Russia, which is in the northeastern quadrant of

standard world maps. Internal evidence suggests that Aditya is about 500 ly from Odin, which could place it near the northeastern corner of the old Atonian sphere. An interesting result, to say the least, given that the first Imperial Proconsul of Aditya, Count O Bray of Erskyll, is actually from Aton.²²⁰

This location also means that Aditya would not be too far from Xochitl. Both are conquered by men from the Sword-Worlds; Xochitl by Hauteclere, and Aditya by a fleet from Morglay. But while Xochitl rises to become a powerful Space Viking base planet, Aditya descends into obscurity. For when the Galactic Empire annexes Aditya, it is said that “there hasn’t been a ship in or out of this system for five centuries”.²²¹ So although I placed the planet in the sphere claimed by Aton, Aditya is never visited by the Atonians, much less occupied or annexed.

Figure 22 can also explain why Odin becomes the capital of the Galactic Empire, rather than Marduk. Marduk’s estimated position is not far from the ‘bend’ in the Imperial frontier, where the tail in the Gap connects to the Orion Arm. It is not centrally located. But Odin, once almost halfway out to the western frontier of the Terran Federation, is now more or less in the middle of the meaty part of the Imperial pork chop. Its estimated location is 1635 ly from the new western frontier of Terro-Human space, 2000 ly from the southern border, and a little more than 2000 ly from its northern limit.

Using the NASA source map from Figure 1, a more ‘natural’ chart of the Galactic Empire would look something like this (Figure 23).

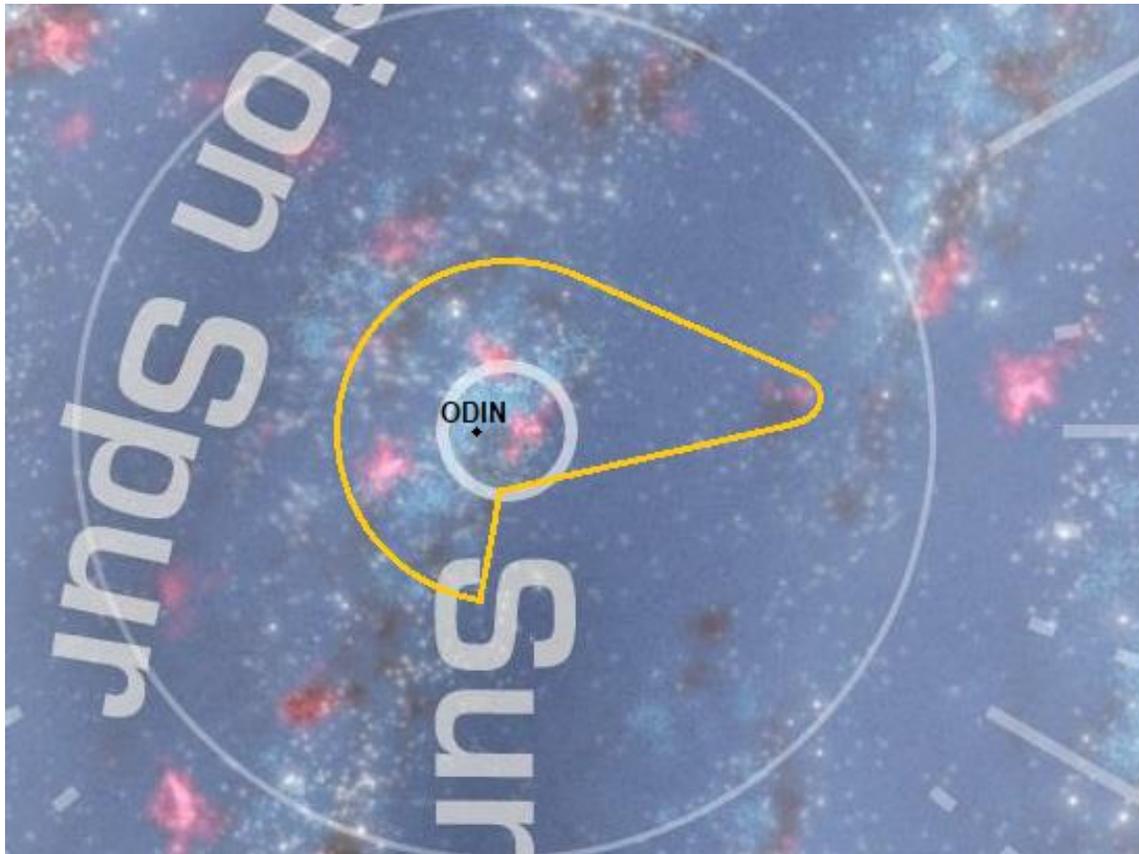


Figure 23. Star chart of the First Galactic Empire.

From Figures 22 and 23, it is evident that the Sword-Worlds would be the most distance province of the Empire. Something of a backwater, compared with the new Imperial center at Odin and the other major worlds in the Orion Arm like Ishtar, Osiris and Marduk. That is in fact how Piper makes the Sword-Worlds sound. In “A Slave is a Slave”, he has Commodore Shatrak compare the decadent conditions on Aditya to the Sword-Worlds, as they were “two centuries ago when we took them over.”²²² This is

echoed in “The Future History”, which says that by the time of the Galactic Empire, “The Sword Worlds have declined to near barbarism.”²²³ And in “Ministry of Disturbance”, Galactic Emperor Paul XXII muses that the Sword Worlds “all had monarchical and rather picturesque governments; Durendal, he seemed to recall, was a sort of quasi-feudalism.”²²⁴

To me, the word ‘picturesque’ always suggested that the Sword-Worlds have become rather quaint and rustic. Somewhat behind the times, compared to the rest of the Empire. This would parallel those smaller European cities which still retain the medieval charm of their old independent days, like having cobblestone streets and a local castle; as compared to the impressive grandeur of much larger and more modern cities, like London and New York.

The picturesqueness of Durendal’s government includes the fact that “The whole object of Durendalian politics...is to get possession of the person of the king.” It is thus an inherently unstable system, and even possessing the king’s person can be problematic. Durendal’s current monarch, King Ranulf XIV, is a rather ‘picturesque’ individual himself. An effeminate, gaudily-dressed and implied homosexual, Ranulf seems more concerned with raiding the Imperial ballet on Odin than in being a king. He often wishes that he could be one of the “*wonderfully* happy and carefree” peasants on Durendal, even though “they’re all poor, and wear such *funny* ragged clothes, and travel about in rickety old aircars”. He compares his humble planetary kingdom unfavorably to the Imperial center. “Everything is so *wonderful*, here in Asgard; it makes our little capital of Roncevaux seem so *utterly* provincial.”²²⁵

b) Of Imperial Proconsulates, Prefectures and Viceroyalties

Speaking of provincial, this brings us to the ‘provinces’, or subdivisions, of the Galactic Empire. The lowest level is the Proconsulate. As we’ve seen, Obay, Count Erskyll, becomes the Imperial Proconsul of Aditya. But as “the limits of [Adityan] sovereignty” extend to “the orbit of the outer planet of this system”, his Proconsulate probably has jurisdiction over the entire system, not just Aditya. And since there are 1,365 inhabited planets in the later Empire, I assume there are roughly that many Proconsuls.

The next level is the Prefecture, followed by the Viceroyalty. “It had been transmitted from Planetary Proconsulate to Prefecture, and from Prefecture to Viceroyalty, and from there to Odin, all by ship.” An Imperial Prefect presumably oversees a relatively small number of stellar systems, while an Imperial Viceroy handles a much larger group. Piper doesn’t mention how many Prefectures there are, but the Galactic Empire as a whole is divided into “ten Viceroyalties”.²²⁶

This is very close to the number of civilized planets given names after the fall of the Terran Federation. It is therefore possible that nine Viceroyalties are based on the old spheres of influence ruled by Marduk, Baldur, Odin, Freya, Aton, Vishnu, Ishtar, Isis and Osiris. Leaving out Gilgamesh, which as we’ve seen has no ‘official’ sphere. The tenth Viceroyalty would then cover the Sword-Worlds and environs.

But another thing Beam failed to provide are the names of the Viceroyalties. My first thought was that, if they are based on the old spheres of influence, their names could be the same as the civilized world which ruled them. That would give us the ‘Viceroyalty of Marduk’, the ‘Viceroyalty of Baldur’, and so on. The Sword-Worlds could come under the ‘Viceroyalty of Excalibur’.

But while planet names are fine for Federation Member Republics and Planetary Kingdoms, they don’t seem appropriate for vast areas of space like viceroyalties. So then I thought that the planet names could be used for the Prefectures, which cover a much smaller area. Piper’s five Galactic Empires were almost certainly inspired by the two Galactic Empires of Isaac Asimov’s Foundation series, and in Asimov, the names of Imperial Prefectures are the same as those of their capital planet. For instance, the Prefecture of Anacreon, whose capital is the planet Anacreon.

Moreover, when Asimov’s First Galactic Empire begins breaking up, the prefectures near Terminus are converted into the small interstellar kingdoms of Anacreon, Smyrno, Konom and Daribow.²²⁷ Piper’s First Galactic Empire would parallel this in reverse, by having former Planetary Kingdoms, like Marduk, become the capitals of their respective interstellar Prefectures. For example, the King of Marduk could also bear the title ‘Imperial Prefect of Marduk’, and be responsible for overseeing a number of systems in the vicinity of his own system. Some of these systems could actually contain former trade planets, such as Seshat, Obidicut and Lugaluru. Thus, the Prefecture of Marduk could end up covering much the same area as Marduk’s original ‘kingdom’ in *Space Viking*. And the same could hold true for the other major civilized worlds, giving us the small interstellar Prefectures of Baldur, Freya, Osiris, Isis, Vishnu, Ishtar and Aton.

I assume that the major worlds do not have Imperial Proconsuls. As Proconsul Erskyll puts it to the Adityan government, "I am a noble of the Galactic Empire, and on this pigpen of a planet I represent his Imperial Majesty."²²⁸ But on major worlds like Marduk and Ishtar, the Galactic Emperor's representative would be the Imperial Prefect. So the Prefects presumably oversee their planet directly, with subordinate Proconsuls on each of the other inhabited planets of the Prefecture.

Now back to Piper's Viceroyalties, which seem to need 'regional' names. This would parallel historical viceroyalties, like those of the Spanish Empire in the Americas. The Viceroyalties of New Spain and New Granada, for instance, encompassed large regions, which were later subdivided into various nations. The Viceroyalty of New Spain became Mexico and the Central American republics, while the Viceroyalty of New Granada became Colombia, Venezuela, Ecuador and Panama.

In the context of star maps, at least those whose viewpoint is from a planetary surface, the major 'regions' are constellations. Constellations include many stars, usually spreading over a large section of the heavens, just as the Imperial Viceroyalties do. So I decided to use constellation names for the Viceroyalties. Ideally, these would be the names of constellations as seen from Odin, the capital planet and Imperial center. (They should also be in "Imperial", the language of the Empire.²²⁹) But we don't know exactly where Beam's planet of Odin is located, nor what the stars would look like from there. Of necessity, the Terran constellations were therefore used. This is defensible, as Piper referred to one actual constellation in the Future History (Canis Venatici in *First Cycle*), while two others are inferred (Hydrus and Puppis in *Uller Uprising*). And due to social inertia, many Terran constellation names, including those used for the Galactic arms, are probably still in use during the First Empire.

The Viceroyalty names I decided on were based on another galactic source map, whose coordinate system used the directions to various constellations, rather than degrees in a circle. As seen in Figure 24 below, the three-letter designations of Ori, Aur, Cas, Cep, Cyg, Aql, Sgr, Nor, Cen, Vel and Pup stand for Orion, Auriga, Cassiopeia, Cepheus, Cygnus, Aquila, Sagittarius, Norma, Centaurus, Vela and Puppis.

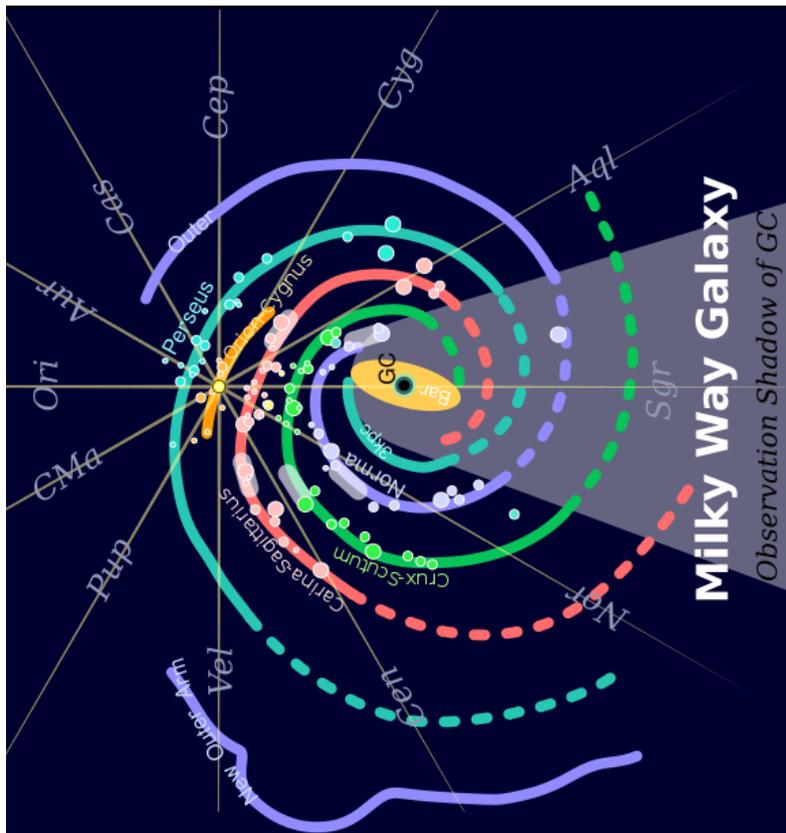


Figure 24. Schematic of our galaxy, using constellation names for the directions from Terra.²³⁰

Using this as a guide, a map of the Galactic Viceroyalties could look like this.

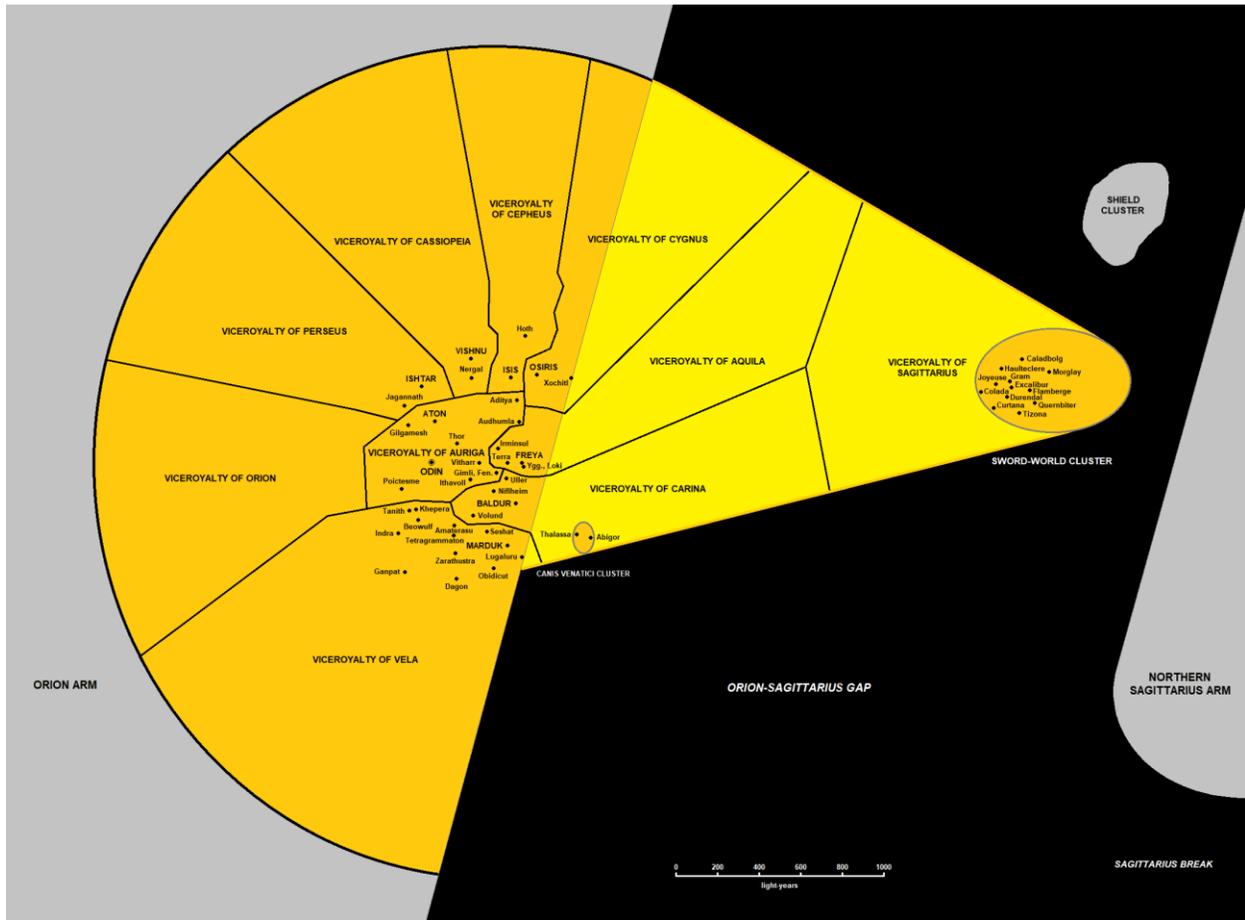


Figure 25. Possible configuration of the ten Viceroyalties of the First Galactic Empire.

In clockwise order from the top, the ten Viceroyalties of the Galactic Empire would then be Cepheus, Cygnus, Aquila, Sagittarius (appropriately close to the Sagittarius Arm), Carina (rather than Norma, a female personal name; or Centaurus, the name of the arm inside Sagittarius in my main source map), Vela, Orion, Perseus, Cassiopeia and Auriga. Auriga was used for the central Viceroyalty, rather than the one to the northwest, which the schematic would suggest. So I decided to name that one Perseus. Perseus is the constellation between Auriga and Cassiopeia along the Ecliptic, as well as the name of the galactic arm northwest of the Orion Arm. As neighbors to the west of the Aurigan Viceroyalty, the Viceroyalties of Orion and Perseus would then reflect the directions of expansion out toward the western edge of the Orion Arm, and the Perseus Arm beyond.

Given the elongated shape of most of the Viceroyalties, their capital cities are probably not located on the major civilized worlds they contain. Because Marduk, Baldur, Freya, Osiris, Isis, Vishnu and Ishtar are all close to the inner borders of their respective Viceroyalties. In order to more effectively govern them, the Imperial authorities likely establish their capitals on planets in roughly central locations, even as Odin is centrally located in the Empire. This means the viceregal seats could be on worlds along the old frontier of the Terran Federation (an obsolete line now removed from the map), or even on the newer planets beyond it, which were founded by the spheres of influence and the Galactic Empire.

In the eastern Viceroyalties of Aquila and Carina, their capitals would lie within the Orion-Sagittarius Gap, assuming suitably habitable planets are found. The capital of Cygnus could lie on a planet along the eastern edge of the Orion Arm, which that Viceroyalty straddles. And the capital of Sagittarius could

be one of the Sword-Worlds. Colada and Joyeuse, near the western end of the Sword-World cluster, are not too far from the center of the Viceroyalty. Either one of them would therefore be a good candidate for the viceregal seat. Unless, that is, the Empire prefers a brand-new planet, located some distance away from those 'decadent' and 'barbarous' Sword-Worlds.

In order to make the Viceroyalties of fairly comparable size, several adjustments were made to the estimated boundaries of the old spheres of influence. For example, the spheres of Osiris, Freya and Baldur were fairly small, because they were all along the eastern edge of the Orion Arm. All these viceroyalties were therefore given extensive territories in the Orion-Sagittarius Gap. The Atonian sphere was similarly small, and moreover was completely surrounded by the other spheres. So I combined it with the eastern part of the old Odinic sphere, which together became the Viceroyalty of Auriga. The Mardukan sphere, on the other hand, was too large, so its possessions in the central Old Federation were likewise transferred to Auriga.²³¹

As an aside, the constellation of Auriga is defined as "the Charioteer", but its first syllable *aur-* is suggestive of the Latin word for gold, *aurum*. This could tie in with the center of the First Galactic Empire with its official emblem, a "gold sun and superimposed black cogwheel".²³² Symbolically making Auriga the 'golden center' of the Empire, where the reins of power direct the galactic chariot of Terro-Humanity.

Odin itself is "the Imperial planet", ruled by the Galactic Emperor as "Planetary King of Odin."²³³ So while it may lie within the Viceroyalty of Auriga, it could be a special case. I therefore surrounded it with a small circle, replacing the one formerly around Gilgamesh. Gilgamesh was also transferred into the Aurigan Viceroyalty. Along with the planet and its people, this brings 'Yah' into the central region of the Empire. An appropriate move, since as stated earlier, Yah/Merlin the Almighty robot-god appears to be keeping the Empire stable, and running smoothly, from behind the scenes.

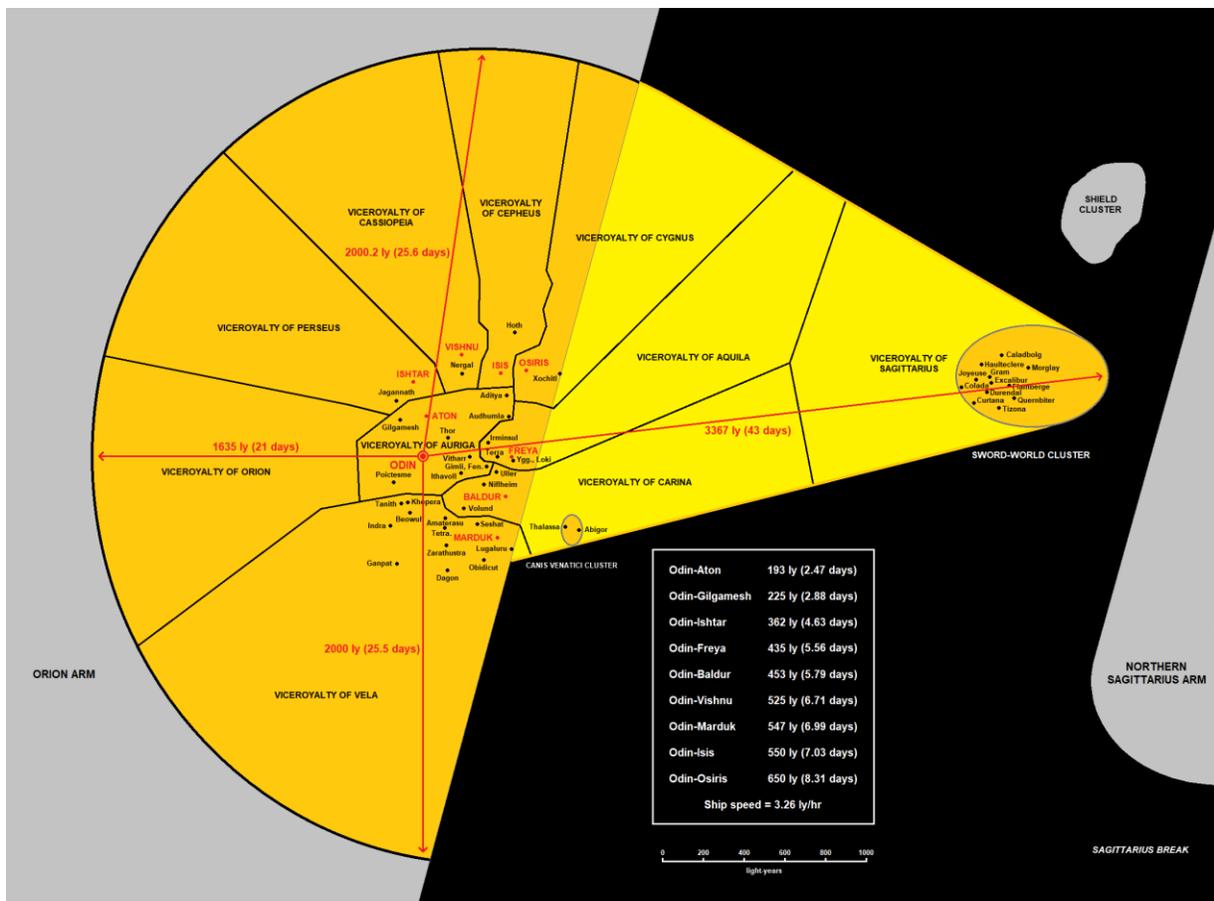


Figure 26. Distances and trip-times from Odin to the frontiers and major worlds of the Empire.

c) “The Stuff Was All At Least Twenty Days Behind Date”

In “Ministry of Disturbance”, the Imperial subdivisions are mentioned in relation to how long it takes information to travel from them to the capital on Odin. “[A] graph chart, with jiggling red and blue and green lines, appeared...It was the interstellar trade situation chart from Economics. Red line for production, green line for exports, blue for imports, sectioned vertically for the ten Viceroyalties and subsectioned for the Prefectures, and with the magnification and focus controls he could even get data for individual planets...The stuff was all at least twenty days behind date, and not uniformly so, which accounted for much of the jiggling. It had been transmitted from Planetary Proconsulate to Prefecture, and from Prefecture to Viceroyalty, and from there to Odin, all by ship.”²³⁴

This means that it takes more than 20 days for ships to bring the information from Proconsulates along the outer frontiers to the Imperial capital on Odin, but that Odin is not at the exact center of the Empire, or else all the information would be coming in at the same time. This is borne out by the map in Figure 26. As mentioned earlier, the estimated location of Odin is about 1635 ly from the western frontier of the Empire, 2000 ly from the southern, and a fraction more than 2000 from the northern. To the east, it is about 3367 ly from the eastern end of the Sword-World cluster.

Using our estimated speed for ships during the Galactic Empire, 3.26 ly/hr, it would then take a little less than 21 days to reach Odin from a planet on the western (nearest) frontier, and about 25 ½ days to reach Odin from planets at the southern and northern borders. A ship traveling from the eastern (farthest) frontier would need a trifle more than 43 days to reach Odin.

So the Viceroyalties of Vela, Orion, Perseus, Cassiopeia, Cepheus and Carina should all be able to send their socio-economic data to the Imperial capital in anywhere from 21 to 26 days. The data from the Viceroyalties of Cygnus and Aquila should take a little longer, say 30 days, since their outer reaches in the Orion-Sagittarius Gap are more than 2000 ly from Odin. And the data from the Viceroyalty of Sagittarius would take the longest to reach the Emperor in Asgard; upwards of 43 days.²³⁵

As relatively long as that may sound, 43 days is actually a far cry from the era of the Federation, when it took at least 182 days (6 months) to travel from outer planets like Poictesme to Terra; and even the Interregnum, when it took about 100 days (more than 2000 hours) for Space Viking ships to merely cross the Orion-Sagittarius Gap. Given the speed of its ships, the Galactic Empire should theoretically be able to expand to a much greater distance. And that is precisely what the Emperor intends.

d) Late Imperial Expansion

In Beam’s story, Emperor Paul XXII and Prince Yorn Travann scheme to “to move the Empire out of its complacent rut”.²³⁶ Their plans include a new period of Imperial expansion, after “eight centuries...of historyless tranquility.” Since the Empire has been quiet and peaceful for so long, the public at large are likely to be afraid of major changes. And Paul realizes that since “Any change frightens most people”, “It would have to be done stealthily, while nobody was looking, but some...[Space Navy] ships would go far beyond the boundaries of the Empire, and new things would happen. New worlds, new problems.”²³⁷

The goal of this expansion is to rectify the current paralysis of the Galactic Empire, and get it to “start growing again”. And it will be done through the forced emigration of the Empire’s numerous class of “nonworkers”, thereby giving them productive work to do, rather than living off the dole and selling their votes. This in turn will solve the problem of politics on Odin (and presumably many other worlds), which have “become unbearably corrupt” due to vote-selling.²³⁸

Given the configuration of the Empire, most of these involuntary settlers will be transferred into more distant reaches of the Orion Arm; north, northwest, west, southwest and south-southwest of the Imperial frontier. Although it’s not certain, perhaps a few of them will even reach the Arm’s western edge, on the eastern ‘shore’ of the Orion-Perseus Gap. Over at the eastern end of the Empire, other nonworkers could become the first Terro-Humans to settle in the Sagittarius Arm, enabling the Viceroyalty of Sagittarius to finally live up to its name. (Figure 27, below.)

This eastern sector of expansion also includes the colonization of another real-life star-cloud, to the north-northeast of the Sword-World cluster. I don’t know if it has a name, but its shape is suggestive of an irregular shield, so I have dubbed it the ‘Shield Cluster’. A seemingly fitting name, given its proximity to the ‘Sword’-Worlds and their ‘Helm’ shape. And since all this expansion is at the behest of the Emperor, these new worlds could be given names reflecting that fact. In 2016, I proposed several possible Imperial categories, including Scepter-Worlds, Crown-Worlds, Palace-Worlds, Jewel-Worlds,

Lord-Worlds and Lady-Worlds. (As a new name, the Shield Cluster could become the home of the Shield-Worlds, one of which would be named Aegis.) These categories could also be used for planets which were settled earlier by the Empire, in its initial expansion phase.

From Figure 27, it appears that the Empire's final period of growth will not fundamentally change its shape. It will still resemble a pork chop, just a bit larger. The tail end of the chop will now reside in the

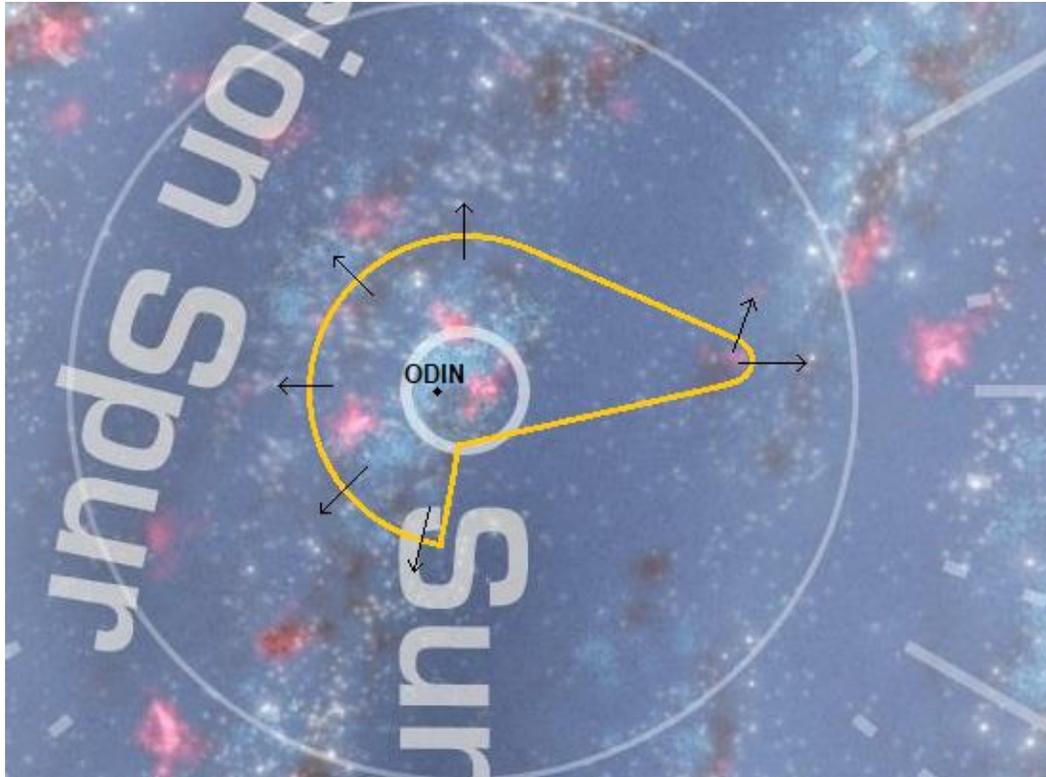


Figure 27. Estimated directions of late Imperial expansion, circa AE 3075.

Sagittarius Arm, and include the Shield Cluster along with the Sword-World cluster. And the meaty part of the chop will enclose a larger semicircle of the Orion Arm, possibly reaching its western edge.

It is probable that the worlds settled during this time are added to the existing Viceroyalties, moving their frontiers outward. With 1,365 inhabited planets currently in the Empire, the ten Viceroyalties should presently contain about 136 planets each. For reasons implicit in Piper, I believe the Empire only adds a bit more than a hundred new worlds, for a final total of about 1,500, or 150 per Viceroyalty. Thus, if each Viceroyalty gains about 14 new planets, it should mean one new Prefecture is added to each of them.

Why so little new growth? Because while at the end of “Ministry of Disturbance” the future looks bright for the Galactic Empire, Emperor Paul XXII is another one of Beam’s self-reliant men, who win the battle but will lose the war. As John Carr explains, “Paul’s plans to save the Empire—like those of Conn Maxwell in *The Cosmic Computer* and Lucas Trask in *Space Viking*—are destined to fail because of the deterministic forces of history.”²³⁹ Paul’s and Prince Travann’s efforts are therefore only successful in the short term. The Galactic Empire does begin growing again, the nonworker problem diminishes, the politics on Odin and other worlds becomes less corrupt, and a few scientific advances are made.

But it’s too little, too late. The Empire has been passive for too long to sustain this energetic impulse, which eventually diminishes and ceases. It then returns to its previous state of paralysis. And just as Prince Travann predicts, “when petrification is complete, the cracking and the crumbling starts, and there’s no way to stop it.” The Galactic Empire inevitably breaks apart. Indeed, in some Piper-style irony, the “Great and frightening changes” Paul and Yorn encourage—particularly the development of “Instantaneity” in interstellar communications—may contribute to the Empire’s ultimate demise.²⁴⁰

When the First Empire falls, perhaps only a century or two after Paul's time, it is followed by another period of Interstellar Wars. Given the larger size of the Galactic Empire as compared to the Terran Federation, these wars probably last about four centuries, or roughly twice as long as the two-century-period of Interstellar Wars after the fall of the Federation. The interregnal dark age following the First Empire's fall is likely of a similarly extended length. Until the next universal state finally emerges out of the ruins, to begin a great new age of growth and advancement for Terro-Human civilization.

This is the Second Galactic Empire.

18. The Second Galactic Empire

a) *Extent of the Second Empire*

So now let's look at the later Galactic Empires. There is very little to go on, as Beam never even mentions the Second Empire. The Third and Fourth receive only a passing reference in his story "The Keeper", and the Fifth Galactic Empire fares little better, being barely described. The following maps will therefore be much more speculative, and the sections generally shorter (save for the current one).

As we've seen, the First Galactic Empire has 2.73 times more planets than the old Terran Federation, and was therefore estimated to be 2.73 times larger. So our assumption will be a continuation of that level of expansion. The Second Galactic Empire could then contain about 4,095 inhabited planets (1,500 x 2.73). In addition, given the estimated radii of the Federation and First Empire (800 and 2184 ly), the radius of the Second Empire should be about 5962 light-years, or roughly 6000.

Plotted on our base map, this means the Second Galactic Empire would roughly take in the central third of the Orion Arm. It would also be the first universal state to incorporate a substantial part of the Sagittarius Arm to the east, although this stretch contains a major break between what can be called the 'northern' and 'southern' parts of the arm (marked as "*Sagittarius Break*" below the Northern Sagittarius Arm in Figures 25 and 26.). To the west, the expansion of the Second Galactic Empire could reach the inner edge of the Perseus Arm. (Figure 28.)

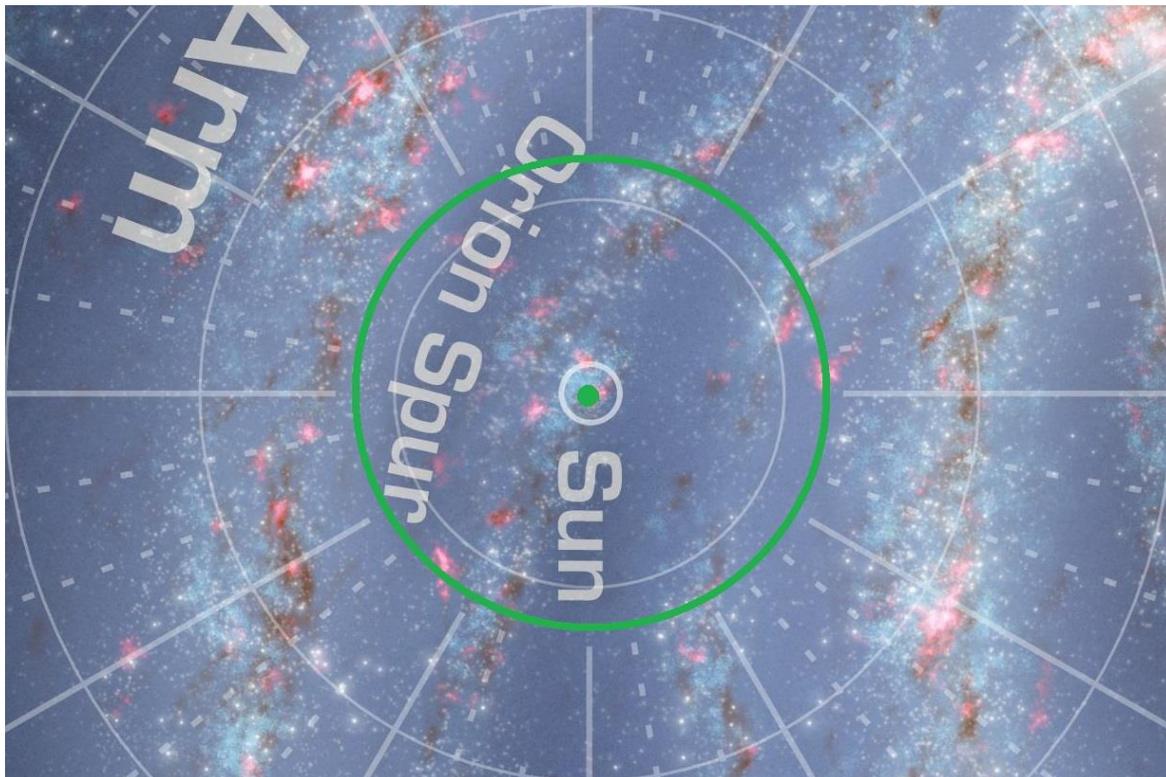


Figure 28. Estimated extent of the Second Galactic Empire, and its possible capital planet, circa AE 5650.

Such a major increase in area compared with the First Empire would therefore entail the first great hypership voyages across the largely empty interarm gaps. Particularly the western one, the Orion-Perseus Gap. For while the First Galactic Empire incorporated the Sword-World cluster, and probably settled parts of the nearer 'shore' of the Sagittarius Arm, it may not have made it to the western edge of the Orion Arm, and almost certainly didn't explore the gap beyond. Moreover, Perseus is a major arm; much more substantial than the relatively thin and broken Sagittarius Arm, and even wider than the Orion Arm. Potentially containing a correspondingly greater amount of habitable planets and other resources, the Perseus Arm should be a much more attractive goal for explorers than the Sagittarius Arm.

Thus, these interarm voyages, which are probably initiated by the successor states of the First Empire, will herald a new Age of Exploration. A parallel of the European ships of the Age of Discovery, which explored and crossed the Atlantic and Pacific Oceans, beginning in the late 1400s AD. Indeed, going back once again to the Orion Arm's parallel with the Western Hemisphere, the break in the Sagittarius Arm, separating it into a northern and southern part, makes a pretty good parallel of the Straits of Gibraltar, separating the continents of Europe and Africa.

If we assume the same ship speed as during the First Galactic Empire, then the first explorers sent out from the western Orion Arm would take about 38 days to cross the Orion-Perseus Gap (3000 ly divided by 3.26 ly/hr). This seems about right, given that after leaving the Canary Islands on his first voyage, Christopher Columbus took 33 days to cross the uncharted Atlantic Ocean.²⁴¹ There's more support if we take into account Piper's habit of consistently making distant planets in his Federation stories six months from the center. Because in six months, a ship traveling 3.26 ly/hr would travel a distance of 14,279 ly. As the radius of the Second Empire is estimated to be only 6000 ly, there would seem no pressing need for faster ships.

b) Capital of the Second Empire

While we know that Odin was the capital of the First Empire, and its major worlds included the civilized planets which survived the fall of the Old Federation, the complete lack of information about the Second Empire would seem to preclude knowing anything about its capital and major worlds. However, there are several interesting facts in Piper's stories, and about the man himself, which may give us some clues.

First, Beam seems to have been a fan of the Norse myths, often swearing by Odin and Thor.²⁴² Second, as noted earlier, he used the Norse myths as the starting point of interstellar expansion. ("The first extrasolar planets, as they had been discovered, had been named from Norse mythology—Odin and Baldur and Thor, Uller and Freya, Bifrost and Asgard and Niflheim.") Third, several of his tales are set on these Norse-named worlds. Including Freya ("When in the Course—"), Fenris (*Four-Day Planet*) and Odin ("Ministry of Disturbance"). And finally, as the very first extrasolar planet to be mentioned, it seems no coincidence that Odin eventually becomes the very 'first' among planets; the center of the First Galactic Empire, with its capital "Asgard [as] the capital city".²⁴³

Asgard of course is named for the 'heaven' of Norse mythology, the celestial home of the gods; and Odin for the king of the Norse gods. So when the First Galactic Empire inevitably collapses, sometime after "Ministry of Disturbance", the result will include the 'fall of Asgard'; an interstellar Ragnarok of sorts. A new period of Interstellar Wars will occur, a cosmic *gotterdamerung* on a scale almost three times greater than that which followed the fall of the Terran Federation. Otto Harkaman says that "There aren't a dozen and a half planets in the Old Federation that still have hyperdrive, and they're all civilized. That's if 'civilized' is what Gilgamesh is".²⁴⁴ So roughly 16 out of 500 planets survived the Federation's fall intact. Using that ratio as a guide, the fall of the First Empire should result in about 1,321 planets suffering destruction and/or decivilization, with only 44 or so remaining completely civilized.

Many of the planets named from Norse mythology will probably be destroyed in this 'Twilight of the God-Worlds'. And since the capital planet of the Federation, Terra, was "*bombed back to the Stone Age*" in the Interstellar Wars, one would expect that the Imperial planet, Odin, suffers a similar fate when the First Empire collapses. The destruction of Odin would naturally include its capital city, Asgard, and thus the deaths of the Household Guard of the Emperor, which is composed of Thorans. The planet of Thor may also suffer destruction, to prevent any of the escaping Imperial Family's members or branches from recruiting more Thoran guards, and thereby laying claim to the throne, or attempting to resurrect it.

This parallels Ragnarok, in which Asgard is destroyed, and Odin and Thor are both killed. In fact, Odin's mythical demise is caused by the Fenris-wolf, which suggests that the lowly planet of Fenris could

actually play a role in the destruction of the Imperial planet, Odin.

Moreover, if the Norse model holds true, then the collapse of the First Empire should be preceded by a disaster of huge proportion on the planet Baldur. For the mythical death of Baldur was the major event which preceded the coming of Ragnarok.²⁴⁵ The gods mourned the passing of their bright god of light, and sent Hermod to try and bring him back from the underworld of Niflheim. But Hela's demanded price, that all things weep for Baldur, was denied by only one creature, the giantess Thok. So Baldur was not allowed to return to Asgard, remaining in Niflheim with the other souls of the dead.²⁴⁶

If this myth is applicable, it indicates that the whole Empire is horrified and bereaved at the planet-wide destruction on Baldur. Plans are made to rebuild, but at the critical point, these are blocked by a single person, or possibly a small group. It may therefore be at this crucial moment, many years after the dynamic reigns of Paul XXII and his son Rodrik XXII,²⁴⁷ that the Imperial leadership finally loses its renewed political and moral will to take positive action. Afterward, the Galactic Empire reverts to its previous paralytic state, back on the slow and inevitable slide to dissolution and devastation.

After Ragnarok, however, the Norse myths tell us that a new heaven and earth will be created. And after the First Empire falls, we know that a Second Empire will arise. So the First Galactic Empire, or the 'First Empire of the Heavens' (Odin, Asgard, Thorans), parallels the 'First Norse Heaven' (Asgard, Odin, Thor); while the model for the 'Second Empire of the Heavens', or Second Galactic Empire, should be the 'Second Norse Heaven'. This new Norse heaven is called Gimlé, or Gimli; and interestingly enough, Beam just happened to include a habitable planet with that name. Thus, the Second Empire which eventually arises may be founded by none other than the surprisingly unlikely planet of Gimli, or at least Gimli becomes its capital.

This line of reasoning can explain why Beam scattered so many references to Gimli among his stories, a fact which many fans have remarked upon. In *Four-Day Planet*, Gimli is "the next planet out" from Fenris, and is the site of a Federation Navy base. A TFN destroyer is sent to transport Steve Ravick from Fenris to Terra for trial, because of his "enslavement of from twenty to thirty thousand Lokian natives, gentle, harmless, friendly people, most of whom were worked to death in the mines."²⁴⁸ In *Fuzzy Sapiens*, we learn that Gimli has its own native sapient race, and is "the nearest planet" to Zarathustra, where another, highly unusual native sapient race (the Fuzzies) has just been discovered.²⁴⁹

In *Space Viking*, Gimli is merely one of Marduk's 14 trade planets, yet it is where Princess Bentrik and her son Count Steven escape to, before proceeding to Tanith, after Zaspas Makann 'wins' the Mardukan election. Gimli then becomes the 'rally planet' where the allied fleet assembles (possibly at the old Federation Navy base) prior to liberating Marduk from Zaspas Makann and Andray Dunnan.²⁵⁰ And the liberation of Marduk is a critical event in the Future History, since the reinvigorated Mardukan monarchy later goes on to establish the First Galactic Empire.²⁵¹

Finally, ten years before "Ministry of Disturbance", the popular professor Van Evaratt is exiled to Gimli from Odin, and it is where he taught Klenn Faress. In turn, Faress went from Gimli to Odin, became an even more popular professor and made the first new major scientific discovery in 800 years. This paves the way for Vann Evaratt's triumphant return from Gimli to Odin, where he is appointed Chancellor of the Imperial University in Asgard, while Faress becomes the head of a new "Imperial Office of Scientific Research".²⁵²

Thus, throughout the eras of the Terran Federation, First Interregnum and First Galactic Empire, the apparently minor planet of Gimli seems to be constantly hovering behind the scenes, providing military, moral, historical and technical support toward the maintenance and advancement of Terro-Human civilization. Taken as a whole, I contend that these indicate Piper meant for Gimli to eventually play a much greater role, finally coming into the foreground as a major world in its own right.

c) Major Worlds of the Second Empire

Only a few of the Norse gods survive Ragnarok, which suggests that only a few of the Norse-named planets survive the fall of the First Empire. The myths tell us that the new heaven of Gimlé is inhabited by once-lesser gods, like Vidar and Vali, Hoenir and Hodur, as well as the sons of Thor, Modi and Magni. They walk together on the plain of Idavold, where they are joined by the only major Norse god to survive. This is Baldur, who finally returns "out of the dark underworld where he had languished so long".²⁵³

The major civilized worlds of the Second Empire should then include Vitharr (Vidar), in *Space Viking* a mere trade-planet of Tanith; Hoth (Hodur), a *Space Viking* base planet; Ithavoll (Idavold), a former colony

of Marduk which seceded,²⁵⁴ and apparently will eventually surpass its once-great parent; and Baldur, which maintains a shadowy existence through the darkness of the Second Interregnum, eventually recovers from whatever destructive event preceded the fall of the First Empire, and once again becomes a great planet of light. The only major Norse world to do so.

Thus, the Second Galactic Empire, like the First, may contain a 'Norse Core'; with the major worlds of this time one the planets of Gimli, Vitharr, Hoth, Ithavoll and Baldur. But the 'ragnarok' of the First Empire could indeed represent the Twilight of the Norse God-Worlds. Because out of the Second Empire's 4,100 inhabited worlds or so, only a few of the major ones have Norse names. The vast majority will be non-Norse, or even non-deity names. And among them could be Isis, Ishtar, Zarathustra, Gilgamesh and (possibly) Poictesme.

Although they are not mentioned in Piper, I added the habitable planets of Modi and Magni, placing them in the northeastern section of the old Norse Core. I assume these hypothetical bodies are in the same stellar system, and possibly twin worlds. This enables the Second Empire to have seven major Norse-named planets, even as seven Norse gods survived Ragnarok. Notice also that the whole region of what was once the Terran Federation, divided into many Viceroyalties during the First Empire, should now constitute merely the single central province of the Second Galactic Empire. (Figure 29.)

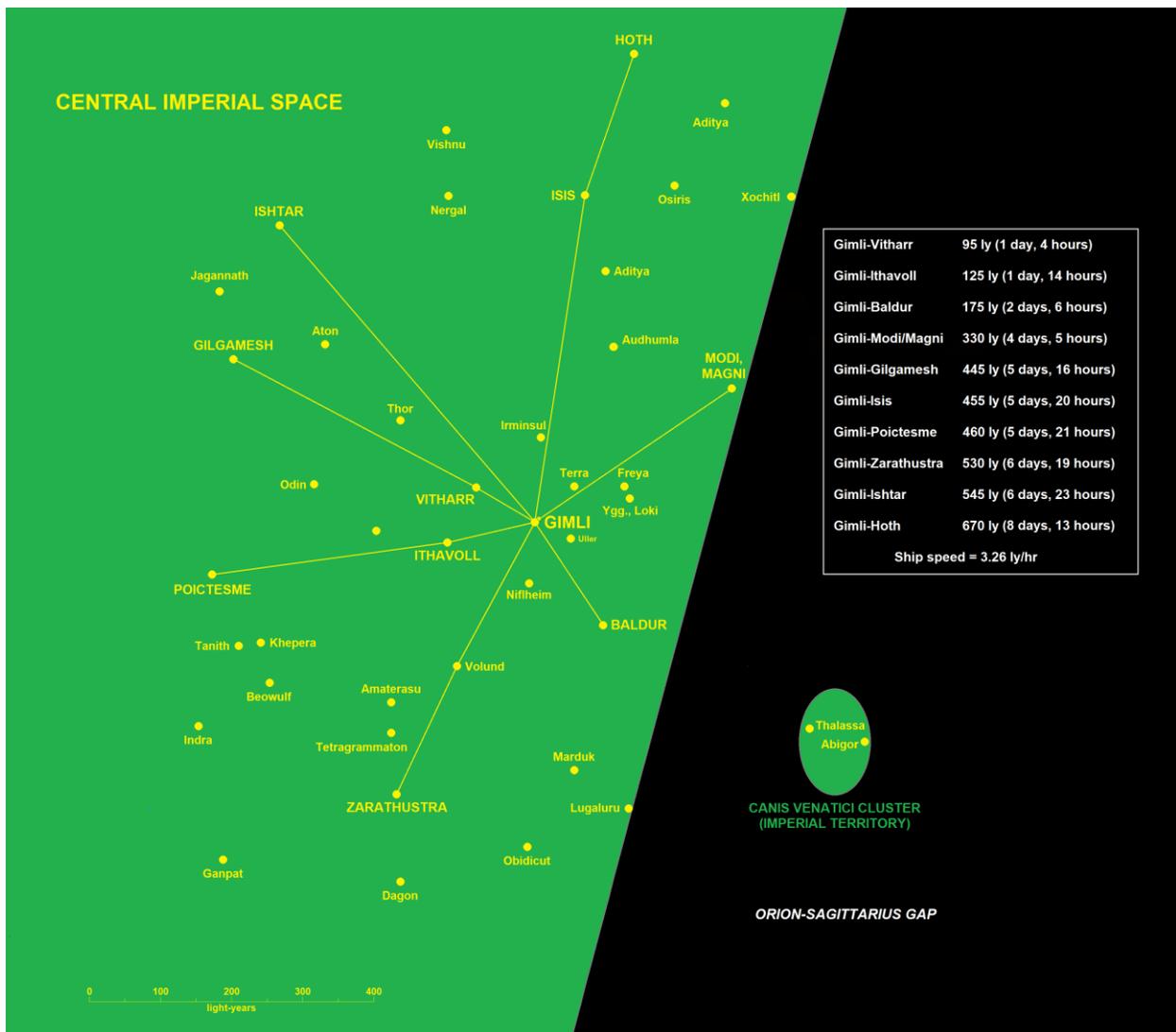


Figure 29. Estimated central region of the Second Galactic Empire, including its capital planet Gimli and a few of its major worlds.

And perhaps not even all of it. For given the estimated ship speed of 3.26 light-years (1 parsec) per hour, the box on the right side of Figure 29 shows the new times from Gimli to the various major worlds. These reveal that the farthest reaches of the Old Federation, which used to be more than 6 months from Terra, would now be not much more than a week from Gimli. And the 6000 ly distance to the outer frontier of the Second Empire would only take 1840.5 hours, or 76.7 days, to reach. A little more than two and a half months.

In Norse mythology, the new heaven of Gimlé represents a new and peaceful golden age, unlike the warrior's heaven of Asgard which preceded it; and the new earth which arises after Ragnarok will be "beautiful and green, in which self-sown crops grow."²⁵⁵ This suggests that the planet Gimli is a more beautiful world than the standard Terra-type. As John Carr and William Taylor describe it, "Piper often worked under the conception—at least in the first six centuries of the Federation—that the founders used those gods that best described the discovered planet. Therefore, we can safely assume that Gimli was a beautiful world, more lovely than even Terra."²⁵⁶

For this reason, I used green and gold as the colors of the Second Galactic Empire, and its possible capital planet Gimli, which establishes a verdant new golden age among Terro-Humanity. Indeed, the references to Gimlé in the Norse myths also suggest that the Second Empire will be a more egalitarian state. And this could include its relations with its constituent alien races; such as the Gimlian natives (making Gimli the first Imperial capital to possess a native sapient race), and the nearby Fuzzies of Zarathustra, who are once again recognized as intelligent beings.²⁵⁷

19. The Third Galactic Empire

As serene, equitable and wonderful as it may be, however, we know that the Second Empire will eventually fall in its turn, to be succeeded some time later by the Third Galactic Empire. But the Second Empire probably lasts longer than the First. Of human government, Prince Simon Bentricks says that "we'll just have to make it work the best way we can, and when it breaks down, hope the next try will work a little better, for a little longer."²⁵⁸ So continuing the trend, the Second Galactic Empire is followed by the Third Interregnum and Third Galactic Empire, both of which last longer than the Second Interregnum and Second Empire. The Third Empire is probably larger than the Second as well. If we apply our working figure of 2.73 once more, then the Third Galactic Empire could include more than 11,000 inhabited planets, and extend more than 16,000 light-years from the original center of human space.

This expanse would encompass practically the entire Orion Arm, the central sections of the Perseus and Sagittarius Arms, plus most of that section of the Centaurus Arm closest to the galactic core. Indeed, it would even include a little of the Norma Arm, almost but not quite reaching the outer edge of the galactic core. This is mirrored in the west, where the Third Empire almost but not quite reaches the inner edge of the Outer Arm. (Figure 30, below.) In this era, Terro-Humanity is therefore closing in on both the Core and the western edge of the Galaxy itself.

A radius of 16,000 ly puts us just beyond the 6 month range of ships traveling at 3.26 ly/hr. The frontier of the Third Galactic Empire would be more like 7 months from the astrographic center. So it is possible ship speeds remain the same, but I would guess that sometime during the Third Empire, they improve once again. To keep things simple, let's estimate that hyperships can now travel twice as fast; 2 parsecs, or 6.52 ly/hr. At that speed, the outer frontier of the Third Empire would be about three and a half months from the center.

The Perseus Arm and Centaurus Arm are both more substantial than the Orion Arm. Eventually, therefore, these should become the homes of greater realms which eventually challenge the supremacy of the old center in the Orion Arm. But in the days of the Third Empire, they are still newly-settled worlds, so I assume the capital of Terro-Humanity remains in Orion.

Piper provided only one detail of the Third Empire, beside the name. In "The Keeper", the Lord Dranigrastan states that "the glaciation [on Terra] hadn't started in the time of the Third Empire."²⁵⁹ That's it. So there are many possibilities as to the Imperial capital. It could be an Old Federation world, or one of the newer worlds of the First or Second Imperial periods. However, in *The Cosmic Computer*, the planet Poictesme is poised to create a new universal state.²⁶⁰ For some unknown reason or reasons, it fails and falls, and is later replaced by Marduk, which eventually creates the new state; a Galactic Empire instead of a new Federation. But Poictesme's potential status may have been another one of

Beam's foreshadowings, meaning that the planet might indeed create a new universal state, sometime later in the Future History. If so, I would guess that it is the capital of the Third Galactic Empire. That Poictesme belongs to a 'Trisystem' might have been another one of Piper's subtle hints in this regard.

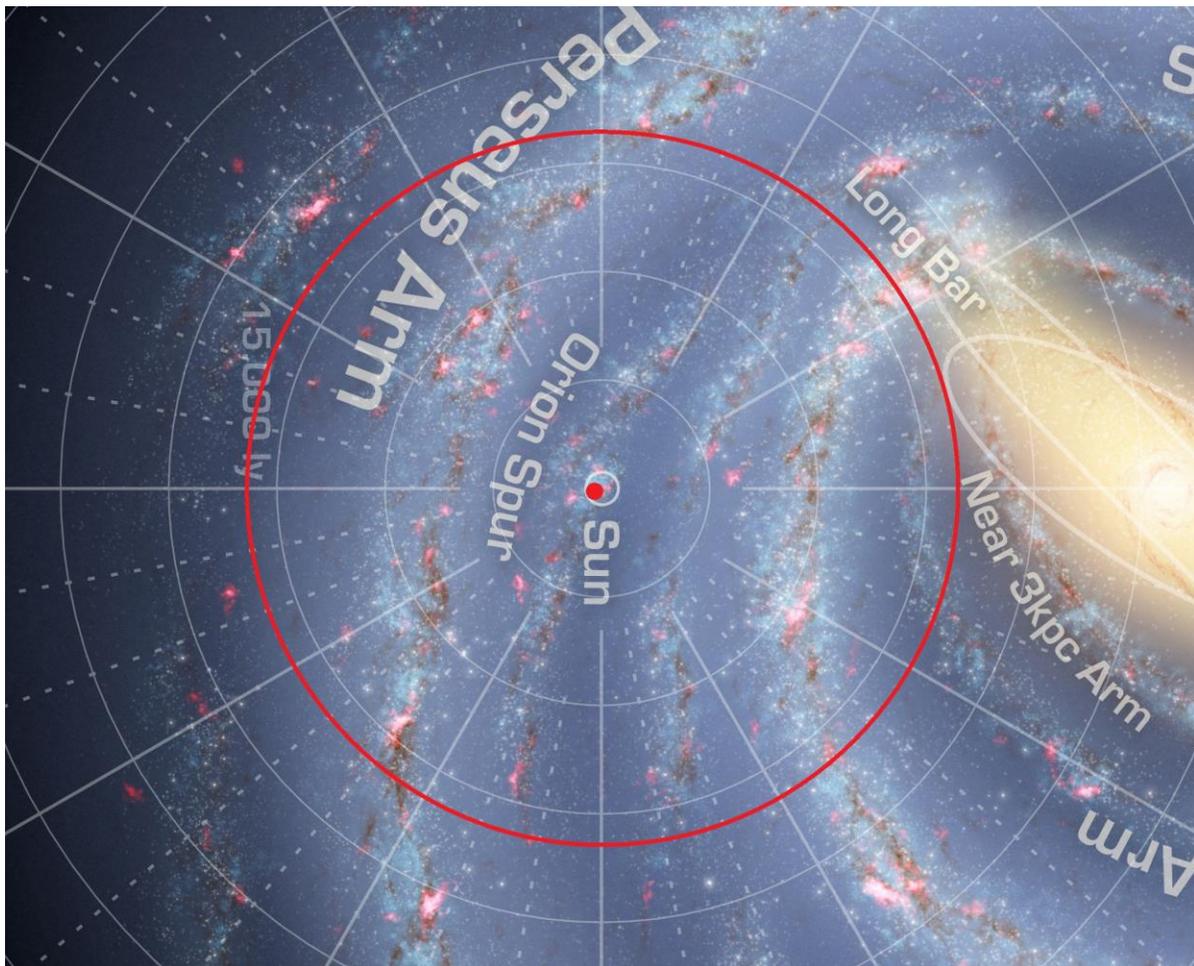


Figure 30. Estimated extent of the Third Galactic Empire, with its possible capital planet Poictesme, circa AE 11,000.

Thus, Poictesme, the boom-and-bust planet which just couldn't seem to make good during the later Federation era and immediately after, may finally become the gleaming center of Terro-Human space. A 'planet of light', a galactic capital; paralleling the City of Light, Paris, one of the great cities of the world and capital of one of the greatest nations. Red and white are "the planetary colors" of Poictesme,²⁶¹ so I used red to delineate the estimated border and possible capital of the Third Galactic Empire.

Another interesting possibility for the capital of the Third Empire would be Excalibur, or another one of the old Sword-Worlds. That's because Sword-World civilization initially expanded much like the Terran Federation. With Excalibur paralleling Terra, and the other Sword-Worlds paralleling the initial extrasolar colonies of the Federation; such as Odin, Baldur, Yggdrasil and Freya. Given a normal course of development, Sword-World civilization should have expanded to a much greater size, and eventually could have created its own universal state. But as we've seen, its natural growth was interrupted by the diversion to plundering and conquering planets in the Old Federation.

During the First Empire, the Sword-Worlds are an Imperial backwater. Yet it is possible that, during the Second Galactic Empire, the Sword-Worlds once again achieve a high level of civilization, and become a major player in Galactic affairs. Not to raid and destroy this time, but to build, progress and preserve. This would parallel their historical model, the Vikings. For after the fury of the Norsemen was

spent, they settled down, renounced their pagan ways, and became highly advanced and respectable Christian nations. A couple, like Denmark and Sweden, even achieved an imperial level of power.

This could mean that, after the Sword-Worlds are properly 'civilized' by the First Empire, one or more of them proceed to become empires themselves. Going way back to our comparison maps in Figure 13, Denmark and Norway would be paralleled by the Sword-Worlds themselves, and Sweden by the undiscovered worlds of the eastern Sword-World cluster, which I assume are settled during the First Empire. So that during the Third Interregnum after the Second Empire collapses, there could arise a 'Western Sword-World Empire', paralleling the Danish Empire, followed by an 'Eastern Sword-World Empire', paralleling the Swedish Empire. Powerful interstellar states, if not universal ones.

20. The Fourth Galactic Empire

After the Third Galactic Empire comes the Fourth Interregnum and Fourth Galactic Empire. Nothing is known of the Fourth Empire, save that there are no records of Terra during that time.²⁶² But assuming that it is a similar 2.73 times larger than the Third Empire, the Fourth Galactic Empire will contain about 30,500 inhabited planets, and extend out to roughly 45,000 light-years. Thus, the Fourth would be the first to expand to the galactic core, and beyond it into the far side of the galaxy. It would also be the first to control the majority of the Milky Way. As seen in Figure 31, it should encompass almost the entire

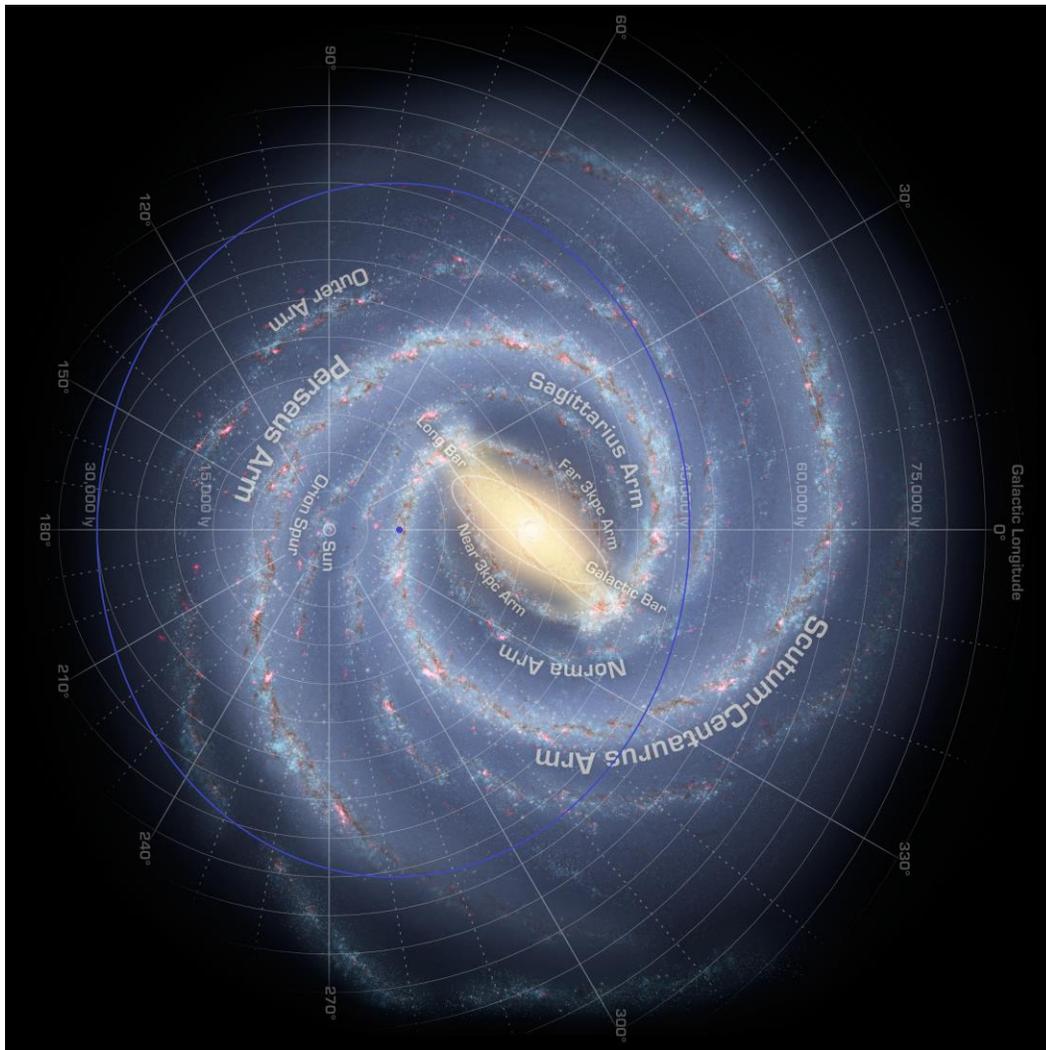


Figure 31. Estimated extent of the Fourth Galactic Empire, with its deduced capital in the Centaurus Arm, circa AE 20,000.

Perseus Arm, save for its tail; about half of the Sagittarius Arm, and most of the Outer Arm. The largest expanse of territory it would not control would be the majority of the Centaurus Arm, followed by the eastern half of the Sagittarius Arm, and then the southern trailing reaches of the Outer Arm.

It must be noted, however, that 45,000 ly of expansion toward the west takes us well into intergalactic space. Expansion in this direction will therefore cease at about 25 or 30,000 ly, just beyond the Outer Arm. That would give the Fourth Empire more of an oval shape, rather than circular. And with an east-west diameter of 70 to 75,000 ly, that means the astrographic center of the Fourth Galactic Empire will be at the 35,000 to 37,500 ly mark, which is in the Centaurus Arm, not Orion.

Thus, the capital of Terro-Human space may finally make a major move toward the center of the galaxy, as well as transferring from a minor arm to a major one. And a capital in Centaurus would be on a planet founded during the Third Empire, when I assume that arm was first colonized.

I also assume another increase in ship speed. Because if the speed is the same as the estimate for the Third Empire, 6.52 ly/hr, it would take a hypership 287 days, or almost nine and a half months, to travel from the capital of the Fourth Empire to its northern and southern frontiers. So let's increase the speed to 3 parsecs per hour, which would be 9.78 ly/hr, or say 10 for convenience. At 10 ly/hr, the farthest reaches of the Empire would be 187.5 days, or a little more than 6 months, away.

The only major colors I haven't used for a universal state yet are orange, indigo and violet. I chose indigo for the Fourth Empire, because it controls most, but not all, of the galaxy. That leaves Beam's penultimate state, the Fifth Galactic Empire, to receive the 'Imperial purple'.

21. The Fifth Galactic Empire

This universal state makes just one appearance, in the last story of the Future History, "The Keeper". The tale appropriately takes place on Terra, whence humanity's expansion into the galaxy began "about 30,000 years" earlier.²⁶³ Assuming the Fifth Galactic Empire is 2.73 times bigger than the Fourth, it will contain more than 83,000 inhabited planets, and extend to more than 120,000 light-years. This of course encompasses the entire Milky Way, which is usually estimated to be about 100,000 ly in diameter.²⁶⁴

A unified galaxy is suggested by Raud the Keeper. When he learns that his visitors "from the Far Stars" are actually from the capital planet Dremna, he is surprised and impressed. "Why, Dremna was the Great World, at the middle of everything! Dremna was the Empire."²⁶⁵ I have always taken "the middle of everything" to mean 'the center of the galaxy', which has finally been completely settled and united by Terro-Humanity.

In the far distant age of the Fifth Empire, one would think that the most important planets congregate in, or close to, the galactic center. That would mean the inner Centaurus and Perseus Arms. Following these in importance would be the inner Sagittarius Arm, then the outer Centaurus, outer Perseus and outer Sagittarius Arms, and then the Outer Arm. Finally followed by the Orion Arm, the smallest in the Galaxy and likely to be the least important by this time.

Not only because of its small size. The number of interplanetary and interstellar nuclear wars fought from the First Interregnum (after the fall of the Terran Federation) to the Fourth Interregnum (after the fall of the Third Galactic Empire) is undoubtedly very large, and during the whole of this time, the Orion Arm is the center of Terro-Human civilization. In all probability, these wars leave the majority of the Orion Arm devastated and depopulated; particularly because the destructive weapons used likely become more and more powerful. After the fall of the Third Empire, the relatively devastated state of the Orion Arm is likely another reason why the Fourth Empire's capital is located in a major arm like Centaurus.

The backwardness of Orion in this age seems to be supported by Lord Dranigrastan, who informs us that "The [Fifth Galactic] Empire has a Space Navy base, and observatories and relay stations" on Terra.²⁶⁶ The Navy base's purpose is certainly to exert control over this part of the galaxy, but also to protect the relay stations. These are likely used to maintain communications between the major worlds of the Core and the inner galactic arms to the east, and the important worlds beyond Terra to the west, in the Perseus and Outer Arms.

Incidentally, the existence of relay stations suggest that the faster-than-light or "instantaneous" method of interstellar communications, invented near the end of the First Galactic Empire, are still limited in range. The early version enabled immediate contact between planets hundreds of light-years apart, such as from Odin to "Baldur or Vishnu or Aton or Thor".²⁶⁷ During the Fifth Galactic Empire, the range has probably improved to planets thousands of light-years apart, such as in the same arm or in neighboring

arms. But the galaxy is about 100,000 light-years across. So for communications between planets, say, 10,000 ly apart or more, relay stations are necessary. This parallels Beam's story "Omnilingual", where radio communications between Mars and Terra travel "via Lunar", which implies a Lunar relay station.²⁶⁸

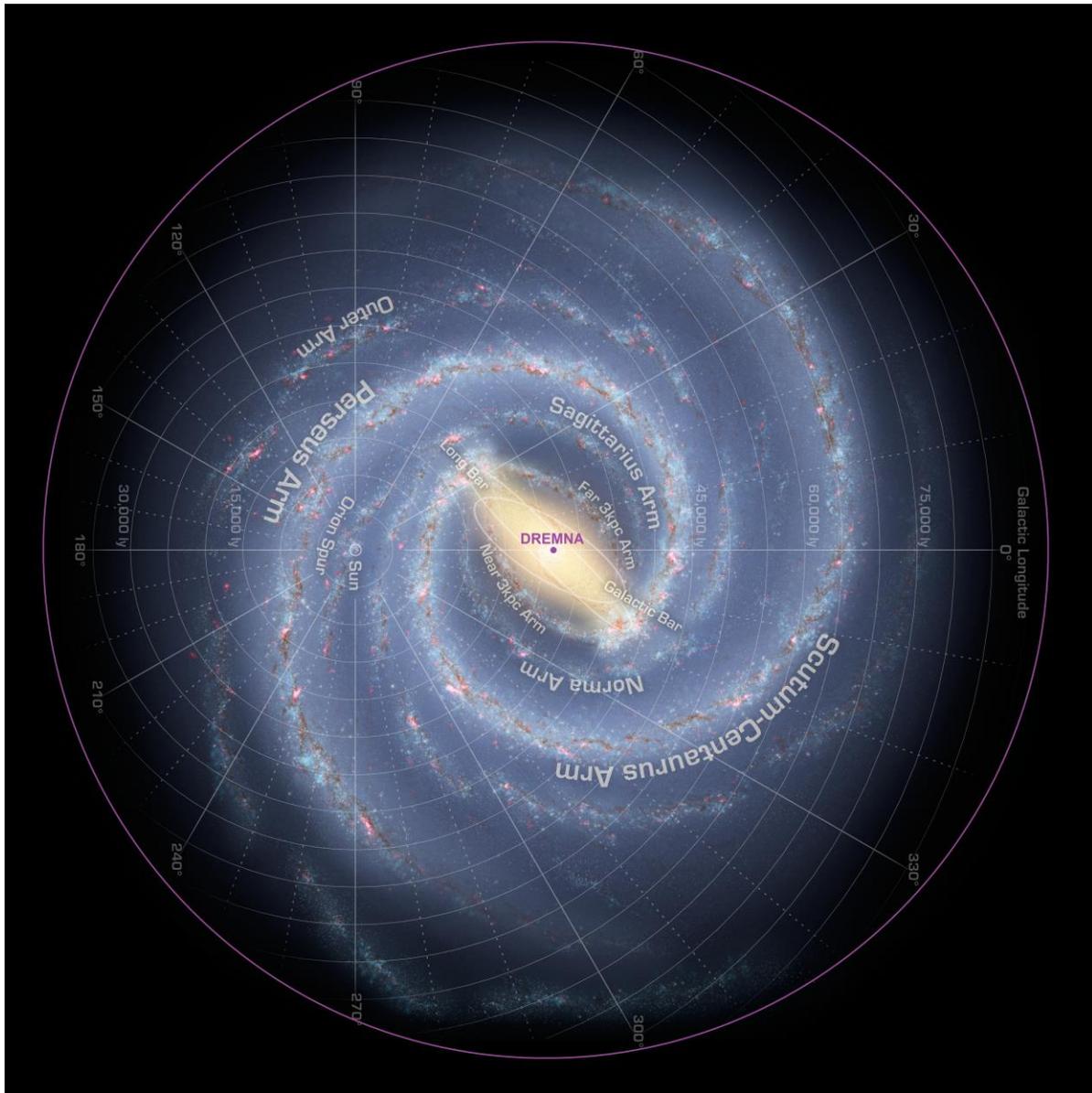


Figure 32. Presumed extent of the Fifth Galactic Empire, with its capital Dremna "at the middle of everything", circa AE 30,000.²⁶⁹

The estimated radius of the Fifth Galactic Empire, 50,000 ly, is only 5000 ly more than that of the Fourth. So I assume that the estimated ship speed during the Fourth Empire, 10 ly/hr, is the same in the Fifth Empire, at least during its early centuries. In Beam's time, Terra was estimated to be about 30,000 ly from the center of the galaxy.²⁷⁰ At 10 ly/hr, Prince Salsavadran and Lord Dranigrastan would then have taken about 3000 hours, or a little more than 4 months, to travel from Dremna to Terra. To me that sounds about right, since the reference to "the Far Stars" always suggested it takes a long time to reach them. They're far away in time as well as space. At the 10 ly/hr rate, the farthest reaches of the Fifth Empire, the outer edge of the Milky Way, would be about 5000 hours, or almost 7 months, from Dremna.

22. A General Timeline of Galactic Expansion

This brings us to the apparent end of the Terro-Human Future History, with mankind as masters of the entire Milky Way. It seems fitting that the THFH begins and ends on “the Mother-World, Terra, the world that sent Man to the Stars”.²⁷¹ From humanity’s initial baby-steps to the Moon in “The Edge of the Knife”, to the arrival on Terra of Imperial overlords from the Far Stars of the Galactic Core in “The Keeper”.

Can a timeline of the entire Future History be created? Some of its most important dates are known, or can be approximated. In “The Edge of the Knife”, we learn that the Terran Federation is established in 1974, or AE 31,²⁷² and in “The Future History”, Beam tells us that the “Terran Federation completely vanished by 1100 A.E.” The First Interregnum runs from that point to roughly AE 1850, or about 750 years.²⁷³ The First Galactic Empire’s range is from circa 1850 to at least 3050, which is the approximate date of “Ministry of Disturbance”.²⁷⁴ If we assume that it lasts another 150 years, then the Galactic Empire disappears around AE 3200.

After that we have nothing until “The Keeper”, which takes place “about 30,000 years” from now. At the time of the story, “the beginning of the Fifth Empire, [was] less than a thousand years ago,”²⁷⁵ meaning that the Fifth Galactic Empire should begin around AE 29,500. But how to figure out the durations of the intermediate Galactic Empires, plus their interregnums, between the end of the First Galactic Empire and the rise of the Fifth, an expanse of about 26,300 years? Careful readers will have noticed that tentative dates were provided for the maps of the Second, Third and Fourth Galactic Empires. These were based on estimates made by multiplying the number of years in the First Interregnum and First Empire by 1.7. That is, each Galactic Empire lasts 1.7 times longer than the previous one, and the same for each interregnum. That resulted in the following numbers.

The Second Interregnum begins around AE 3200, with the end of the First Galactic Empire. It lasts about 1277 years, ending around AE 4477. The Second Galactic Empire runs from there to AE 6775, after lasting about 2298 years. The Third Interregnum covers about 2170 years, ending circa AE 8945; and then the Third Galactic Empire runs for another 3907 years, until it falls around AE 12,852. The Fourth Interregnum spans about 3690 years, ending around AE 16,542; followed by the Fourth Galactic Empire, which lasts approximately 6642 years, until its end circa AE 23,184. The Fifth Interregnum then covers the next 6272 years, until around AE 29,456, when the Fifth Galactic Empire begins.

The estimated date of 29,456 for the rise of the Fifth Empire is 544 years, or appropriately “less than a thousand”, before Beam’s vague date for “The Keeper”, AE 30,000. In graphic form, the timeline would look like this (Figure 33). Too long to display at full length, it’s in two parts, one above the other.

The timeline begins with a gray wedge, representing the ‘end’ of normal human history, onto which Beam tacked his Future History. The little sliver marked “AE 2-30” represents the period of the United Nations, which is far too narrow to label. The white line at AE 183 represents the break between the First and Second Terran Federations.²⁷⁶ And the black line at AE 3050 is the time of “Ministry of Disturbance”.

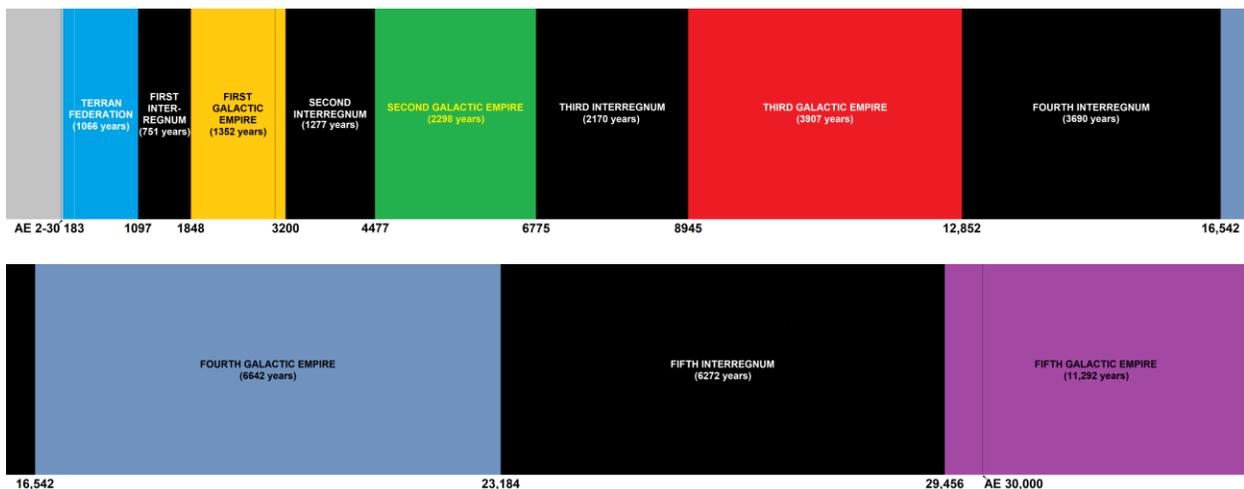


Figure 33. Estimated timeline of Piper’s Future History, from the Terran Federation to the Fifth Galactic Empire.

Moving down to the end of the timeline, a black line was added at AE 30,000, representing “The Keeper” and the end of Piper’s Future History. Beyond that, it is interesting to note that, using this ratio, the galaxy-spanning Fifth Galactic Empire is calculated to last around 11,292 years. Because this is ‘less than a thousand years’ less than the duration of Isaac Asimov’s galaxy-spanning First Galactic Empire—12,000 years. Moreover, Beam’s number of 30,000 years also has significance with regard to Asimov’s First Empire.²⁷⁷

In any case, Piper seems to have intended for his Future History to record the expansion of Terro-Humanity from its original home world out across the whole galaxy; a parallel of the expansion of Western (or European) civilization from a single continent outward across the entire globe. Terrestrial expansion involved gradual improvements in the speed of ships and communications, which are paralleled by celestial improvements in Piper. As we’ve seen, his interstellar communications become instantaneous during the late First Empire, and are probably followed in later ages by gradual increases in their range. The improvement in ship speeds over the course of the Future History can be displayed by adding the estimated rates of later hyperships to those of the chart on page 14. Like so:

Estimated Ship Speeds of the Terro-Human Future History

Period	Rate	6 month distance
Early Federation (circa AE 192 to 600)	62.57 hr/ly	70 ly
Later Federation (circa AE 600 to 1100)	8 hr/ly	547 ly
First Interregnum (circa AE 1100 to 1900)	1 ly/hr	4,380 ly
First Galactic Empire (circa AE 1900 to 3200)	3.26 ly/hr (1 parsec/hour)	14,279 ly
Second Galactic Empire (circa AE 4477 to 6775)	3.26 ly/hr (1 pc/hr)	14,279 ly
Third Galactic Empire (circa AE 8945 to 12,852)	6.52 ly/hr (2 pc/hr)	28,558 ly
Fourth Galactic Empire (circa AE 16,542 to 23,184)	10 ly/hr (3+ pc/hr)	43,800 ly
Fifth Galactic Empire (circa AE 29,456 to 40,748)	10 ly/hr (3+ pc/hr)	43,800 ly

Ten light-years per hour. After “The Keeper”, when Prince Salsavadran and Lord Dranigrastan finish investigating “the long-ago times” on Terra,²⁷⁸ they could decide to continue their archaeological investigations on planets settled during the early Interstellar Era. And if they begin by following the route of the very first hypership to the Alpha Centauri system,²⁷⁹ at 10 ly/hr it would take them less than 30 minutes to get there. Like modern seamen aboard an aircraft carrier wondering at the triremes of ancient Greece, Dranigo and Salvadro might discuss those ancient star voyagers of 300 centuries earlier, who had to take more than 270 hours, almost 11 ½ days, to travel that 4 light-year distance.

23. Piper’s Cosmogony...and Beyond?

And finally, Piper’s Terro-Human Future History contains almost all the elements of the common “Cosmogony of the Future”, which became tacitly accepted by science-fiction writers after Isaac Asimov’s groundbreaking Foundation series. As explained by Donald Wollheim, “What the Foundation series did was to create the point of departure for the full cosmogony of science-fiction future history. It is possible to analyze present-day stories and place them into that framework of millions of years to come. We can establish a pattern of premises accepted without acknowledgement. We can tell what is implied by the simple facts of a story’s background.”²⁸⁰

According to Wollheim, there are eight main elements to this cosmogony. And when we analyze Beam’s stories, we find that they fit into this framework very well. The first element is “the initial voyages to the moon and to the planets of our Solar System”. In Beam’s Future History, this era is described in

“The Edge of the Knife” and “Omnilingual”. The second element is “the first flights to the stars” and the rise of an interstellar civilization; these are covered in Piper’s various Federation tales. Third is “the Rise of the Galactic Empire” (featured in “A Slave is a Slave”), followed by “the Galactic Empire in full bloom” (“Ministry of Disturbance”). Fifth is “the Decline and Fall of the Galactic Empire”, which we know will happen sometime after “Ministry of Disturbance”; then “the Interregnum” which will follow the Empire’s collapse. The seventh element is “the Rise of a Permanent Galactic Civilization”; this seems to be fulfilled by Beam’s Fifth Galactic Empire, which has united the whole Milky Way by the time of “The Keeper”.²⁸¹

The main difference in Piper’s cosmogony is that he postulated a series of universal states and subsequent dark ages, beginning with the Terran Federation and First Interregnum. Each universal state is larger and longer-lasting than its predecessor, and each interregnum is likewise longer, until slowly, over tens of millennia, the entire galaxy is explored, colonized and finally united.

The last element in the Cosmogony of the Future is “the Challenge to God. Galactic harmony and an undreamed-of high level of knowledge leads to experiments in creation, to harmony between galactic clusters, and possible exploration of the other dimensions of existence.”²⁸² Piper wrote no stories set after “The Keeper”, but he did imply that Galactic harmony may be possible. Just not for a very long time. Because in *Space Viking*, Prince Trask says that “It may just be...that there is something fundamentally unworkable about government itself. As long as *Homo sapiens Terra* is a wild animal, which he has always been and always will be until he evolves into something different in a million or so years, maybe a workable system of government is a political-science impossibility”.²⁸³

In about a million years, Terro-Humanity will no longer be a wild animal, having evolved into a higher state of being. And Beam inserted clues that mankind is slowly evolving. In “Ministry of Disturbance”, there are references to “psi-mediums”, who “have real powers”, and whose predictions (sometimes) come true.²⁸⁴ While over in his Paratime series there are even greater indications. Set about 100,000 years after the advent of Martio-Humanity on Terra, the human beings of Home Time Line have enhanced mental abilities, including total recall of memories and “semitelepathic rapport” between individuals. Moreover, psychic research is not only an established science, on one Second Level timeline, they have perfected a technique which allows people to remember their most recent past lives.²⁸⁵

Assuming that Piper intended parallel developments in the Future History, we would expect Galacto-Humanity to gradually acquire advanced mental abilities in the tens of millennia after “The Keeper”. The Challenge to God might then eventually become possible. Although, given Beam’s agnosticism if not downright atheism,²⁸⁶ perhaps it would be better to call it the ‘Challenge to Infinity’ or (if the minds of Terro-Humans are in fact immortal as in Paratime) the ‘Challenge to Eternity’.

A vast span of time lies between the Fifth Galactic Empire of “The Keeper” (circa AE 30,000) and the postulated Challenge to Infinity and/or Eternity (beginning circa AE 1,000,000). What happens in the interim? Well, since Terro-Humanity is still a wild animal, the Fifth Galactic Empire probably falls in the end, just like the First through Fourth before it. Adding the estimated duration of the Fifth Empire to the estimated date of its beginning, this would occur around AE 40,748. And in a way, the subsequent eras would parallel the Terro-Human Future History, just on a much larger scale. The cycle would begin again.

First would be the start of an ‘Intergalactic Era’, involving the first flights to the nearest galaxies; paralleling the first flights to the planets and stars in the ancient Atomic and Interstellar Eras. This new Era would thus involve colonizing expeditions (obviously requiring a ship speed much greater than 10 ly/hr) to the Greater and Lesser Magellanic Clouds, the Andromeda galaxy and beyond. Next would be the rise of a series of ‘Intergalactic Empires’, true Universal States, paralleling the ancient universal states of the Milky Way galaxy. Each presumably containing a larger number of galaxies, and lasting longer, than its predecessor. In this way, hundreds, then thousands of new galaxies, trillions and quadrillions of new stars, planets and an untold number of alien races would be encountered. Onward and outward, rising, falling, and rising again, for hundreds of thousands of years. Until the time comes when *Homo sapiens galactica* evolves into something like ‘*Hyper sapiens universalis*’.

Mankind may then finally be on the verge of “Galactic harmony and an undreamed-of high level of knowledge [leading] to experiments in creation, to harmony between galactic clusters, and possible exploration of the other dimensions of existence.” Had H. Beam Piper lived his full span, who knows but that he could have sat down at his typewriter to craft such a tale. And if he did, it almost certainly would have been not only well-written and thought-provoking, but very entertaining.