

Da Vinci Omega: Perturbation - Part 1 (Version 0.00)

Chapter 1: Seekers in the Void

"We'll be farther away from anywhere anyone from our homeworld ever has been" Leonardo thinks for himself. Actually, he should be used to the thought of being more far out than anyone else, because he used to transcend limits in all of his previous lives and is still going on to do so. Somehow, this time is different, though. He is not only going to move in space or time or even just an alternative timeline, but this time he is going to seriously jump out of known reality altogether to enter *another* multiverse. Even though the changes in the physical constants are minimal, almost infinitesimal, this new mission is going to introduce a completely new way of travel. There is no name for the direction in which they are going to move, because there is no direction in which they could move to get towards their target. Their target multiverse lies outside of all points in spacetime that could be reached by moving in their cosmos in any way - whether the laws of physics permitted that method of movement or not.

No further time for such reflexion is granted, because Anif invites the whole crew into the conference space. Wherever the crew members are, one-way portals towards the conference space appear right next to them and transmit the urge to enter as soon as possible. Even during their training period the crew members have agreed that some slight emotional manipulation was acceptable, if it promised an increase in performance.

In fact, this time such manipulation isn't necessary, because Leonardo really wants to be alone in a situation like this. So they enter their portals to meet all the others: The whole crew of ten more or less separate minds. Seeing those childish sketches of planets, galaxies, magic forests, coral reefs and celestial sky cities on the walls, Leonardo is once again reminded of the designer of this cylindrical conference room, which was about 12 meters in diameter and 12 meters high. Eda's intention has been to give the crew the impression that they were living in a fantasy world - which isn't far from the truth after all.

The truth is that ten avatars are now sitting, standing or floating inside of this small simulated space, which is simulated on some computation substrate that even can neither be produced nor run, nor contained with any technological means inside of their homeworld, without changing the laws of physics dramatically. That strange substrate is called a fabric computer, because it uses the fabric of reality/space/time directly for computation, but actually it's not the usual reality/space/time, but some special kind of it, which is optimized for the purposes needed in an interreality ship. It's really alienating, but the origin of either that reality/space/time nor the technology of that fabric computer are completely unknown to the crew. However, the ship uses that kind of fabric of reality, because it's quite useful to have the computational power of

thousands of galaxies turned into *nucleotronium* under one's command.

On the outside of the virtual cylindrical room there is nothing, because it is just a simulation space of a single cylindrical room. Outside of the physical manifestation of the ship itself, surprisingly, there's nothing, too. Actually the ship creates its own spacetime, which is currently not connected to any other spacetime. Currently it's in a completely isolated state, outside of space, outside of time, outside of any conceivable reality that doesn't contain an exact copy of the interreality ship in the same modus of isolation itself, which more or less means: Only in the minds or computers of the *Dreamers*.

In reality there is no chance to think deeper about those issues, because mission commander Anif Doli, whose avatar is an androgynous shining white angel in silver retro-nano-medieval armor, standing to the left of Leonardo, has to announce the situation to the crew: "As you all know the modifications to our interreality-sensors, which Kiran has done, have shown us a part of this new multiverse, which we will simply call M2, for convenience. While the first scans after the calibration turned out to be pretty fruitless, we have finally found a timepath of about eight billion years and an area that spans a small galaxy cluster, which shows signs of life!" At that moment Anif rises his arms in a majestic victorious gesture and spreads his wings proudly. "Interestingly, it doesn't seem to be a very static picture. Although the resolution of our sensors can show us single stars as smallest objects, we can perceive some rapid change on a scale of single years in certain areas with the size of lightyears. It looks like the civilization we are observing here engages in rapid and massive stellaforming. In some regions many stars quickly disappear from our sensors. The reasons for that are not known. Maybe those stars collapsed to denser states of matter or they simply exploded, we just can't tell the difference with our clumsy observation tools. Kiran thinks that those patterns of signal loss probably indicate interstellar wars, but that's not the only possible conclusion. Neja suggested that those 'extinction waves' resemble waves of memetic propagation in galactic non-FTL cultures. We don't have sufficient data to prove that point, because our best data points come from pan-stellar games in which such cultures are simulated. Although we could still wait here and hope that we find ways to improve our sensor resolution, somehow I have the feeling that such an approach would turn out as rather unpromising. So, we have to go in. The real questions which are still open are: When and where? Any suggestions?"

An embedded 3+1-dimensional hologram, which is placed in the middle of the crew showed the galaxy in which the first signs of stellaforming appear, all points in time are shown simultaneously, which challenges the mental capabilities of the crew members, because they are already downsized to a level which is practical for interreality jumps. Unfortunately, regaining their full capabilities would result in a dramatic loss of *dreamforce*, which would leave the ship stranded in this isolated pocket universe. For convenience, a big 3-dimensional hologram hovering some meters above the first one, displays some other galaxies at single fixed points in time.

Quickly analyzing the patterns of those "extinction waves", Jonn Nyuman changes the configuration of his avatar's nanobot cloud, hovering in the air to the right of Leonardo Da Vinci, to represent many question marks in different languages, which glow inside from bright lightnings, and comes to a conclusion: "Those waves only propagate with about 99.3% of the speed of light, so it's quite unlikely that they are only the result of some exchange of information between star systems. There must be some transfer of matter which is responsible for that slow speed. The most probable scenario is that this matter are colonization seeds. But it's not clear whether it is the initial colonization or rather some kind of interstellar conquest. Because we see the first obvious stellaforming events at the border of that galaxy on the 3+1 holo, it seems highly probable that it is in fact an initial colonization and that culture just quickly 'burns up' all the stars they colonize. But exactly that doesn't make much sense. Why would any culture do that? We all know that a complete transformation of a star into *nucleotrium* doesn't make much sense, because of its relatively bad data storage abilities. And as far as I have understood, our sensors would show any signs of surrounding *matrioshka brains*, which could serve as data storage capabilities, but only quite few stars have such around them. Has anyone here a sound theory which could explain all that? If not, I'll propose that we simply ask some of the locals over there." After stating that analysis Jonn undoes his puzzlement formation so that his avatar is again the semi-transparent retro-holographic projection of the young John von Neumann surrounded by a swirling cloud of flying nanomachines in various sizes, except that now they make hasty movements indicating excitement.

Their individual thinking space darkens with the idea that the foreign civilization might be spectacularly unstable in most cases so that they quickly use novabombs in intrastellar conflicts just to gain an edge over their enemies. Then they would quickly move on to the next stars and this game would repeat itself, unless the newly founded stellar culture would find some way to live in peace. Nevertheless, none of the crew members dares to express that thought as an individual. Their own civilization once stood on the brink of using a novabomb, but hopefully hadn't done so. Thanks to the resourcefulness and courage of Kiran Sollice, who once stood in the center of history and now hovers as time-inverted waterfall directly opposite of Anif Doli in the conference room. Behind the facade of that waterfall, whose ripples form the outlines of a seemingly old humanoid face, you can see the river feeding the falling waters with his stream. It looks like that river would flow downwards, but actually it has to flow upwards towards the cliff of the waterfall, only reversed in time. Every moment you can see how there are spawning more and more whirls in that river, because Kiran is getting agitated from the density of individual thoughts surrounding his person.

Finally, breaking the acoustical silence, Kiran bursts out with his feelings: "It can't be! No! I don't think any civilization could be that stupid. They must realize that they simply destroy their whole cosmos with that kind of mindset that allows the use of weapons of mass destruction all the time. There must be another explanation for those transformations! We shouldn't waste our time with random speculations and just observe the changes of those stars in real time. Please,

sooner or later we will do so anyway. Better we do so before we entangle ourselves in wild fantasies of what could have gone wrong."

Everyone knows that this is Kiran's weak spot. The incidents around the mission of Kiran's legendary ship *Starhack* were very ambiguous and troubling. Afterwards Kiran became one of the most discussed persons in history, a kind of fame Kiran never wanted to achieve, and himself perceived as never diminishing curse. The next moments in the meeting are overhung by disturbing silence and nagging feelings.

As psychologically most trained person, Akira Amithaba breaks the silence with her soothing elven voice: "I can understand your dislike for the assumption of military conflicts. Such a vision would trouble all of," thinking silently that Neja might be an exception, because she is troubled by almost nothing, "so maybe we should approach the 'problem' from another perspective, instead of being overwhelmed by fears, hopes or other emotions. Let's, just for the sake of having an unburdened discussion, assume that this M2-civilization is the most peaceful we can imagine. Now, that would exclude the possibility of novabombs or similar weapons being used. Also, let's assume that there were no accidents, because our friendly M2-dwellers are so awesomely clever that they would never give any possible accident a chance of ever occurring. What possible chain of events or developments could lead to something similar to that, which we are observing here, under those restrictions?"

All are grateful for those liberating words from the hovering elf to the right of Jonn, with her beautiful appearance in her long, light, shiny bright brocade dress with those almost painfully amazing embroidery with those details which range down to the molecular scale, her fair hair on which rainbow colours flow down in a calming speed, her white skin that is animated and displayed clouds passing by on the sky that her whole body is, and especially her fine face expressing limitless confidence and the overwhelming love of a purely benign goddess. As it would have been done when at home, the gratefulness towards Akira is saved in a database in the ship's computing fabric. It's not that they would use some kind of reputation economy on the ship, but virtually everything is captured anyway to provide a maximum level of life logging, especially for historical records, which are considered incredibly valuable, probably not only in their home multiverse.

Thoroughly spontaneously Leonardo voices his first attempt of an explanation: "Well, it may be far fetched, but maybe the M2-dwellers have found out a method to create some special high-density data storage nucleotrium. That would explain most of what we see here. Possibly their technology is far superior to ours, because they had incredibly much time to refine it. Or it's simply possible to build better hardware in M2, because of those small differences in the laws of physics. Perhaps we just underestimate their effects."

Disbelief and skepticism fill the individual thinking space, which is fought against by the waves of thought emerging from Akira and Anif who want to give Leonardo's ideas a chance. Kiran retreats from those interpersonal wind streams of thought and opinion and remains neutral and distanced, while Neja's own mind races to find another possible explanation. Neja Kallisti is that blue nanotech-augmented Genarian skytiger to the right of Kiran.

The most important differences between Terran and Genarian tigers is that the Genarian variant have an incredible lot of super-sharp senses, ranging from infrared-eyes, over x-ray perception, detection of electric and magnetic fields, ultrasonic and infrasonic, to cells which can find out about the level of radioactivity in the environment. Of course, the planet Genari is just a fancy fantasy world, but so what. At least it is physically accurate most of the time. And of course skytigers can fly with their skinny wings, which also have blue fur on them. A less important difference is that Genarian tigers are only two thirds of the size of Terran tigers, which doesn't make them much less deadly however.

Hastily the skyblue hermaphrodite shares hypotheses with the crew: "There are a whole lot of theories what could happen over there. For example the M2-civilization could decide to blow up their stars to live in the dust of the nova explosion fronts. They may be excentric artists who know about their existance in a dream and make fun of it that way. Or they really think it's pretty cool. Or they are really technologically advanced and even found out a way to do effective black hole- or fabric computation and need the energy of their stars to create and drive their computation substrates. Or they commit suicide for some strange religious reasons. Or it's some kind of intergalactic signal of grief, because something bad happened to some important persons and their material corpses are duplicated and sent between the stars and they blow up their stars to show their affection towards those persons in the afterlife. Or they are just so terminally bored that the continuation of their existance as stellar cultures would only cause suffering, so they prefer suicide over life. Maybe something else is true. I don't know. Whatever it is, it's probably very interesting, indeed. The Apeiron is a blessed place."

That outburst of the most famous of crazy/excentric geniuses inspires the female dolphin named Silvia Nansen, which is floating in a bubble of water, hovering to the left of Anif, to come up with her own speculation:" What about the idea that in M2 they just try to homogenize the space between the stars to live on as patterns of interstellar medium? I haven't calculated whether that was a good or even feasible idea, but it might be another exotic possibility."

While those fantastic theories make everyone else think about their likelinesses, the tall anthropomorphized sunflower called Argen Rightwill, who has digged his roots in between Kiran and Akira, raises es voice, which e produces with a structure that looks like a mouth and is placed in es bloom:" Hold on! I think you all overlook a very important detail. At first, we have tried to analyze those so called 'extinction waves', but there is a very similar phenomenon,

we haven't discussed, yet. Sometimes it does happen that a star which is located inside an 'extinction front' doesn't disappear from our sensors, but remains stable for a very long time, sometimes even until the end of the time we observe. More interestingly, this star seems to produce a 'stability wave' which is almost identical with those 'extinction waves'. There must be some phase transition happening at those critical stars, which are the source of stellar stability. Your colorful theories should try to explain what's happening there. Unfortunately, I have no reasonable idea how to interpret this piece of information under the assumption that the M2-civilization is peaceful and immune to 'accidents' all the time!" Having said so, Argen throws a critical look towards Akira, using his white eyes above his flower mouth.

Before anyone else can reply, Anif jumps to a conclusion:" Thank you for your ideas. It seems that we have found a rather obvious answer to those questions I've put before. We should visit one of those 'critical stars' at that moment in time when it ought to disappear like the others in its 'extinction front'. Unless you have any good reason to choose another candidate, I propose that we visit the first of those critical stars stars, right there at the outer border of this galaxy."

To represent the chosen star more clearly, the 3+1-holo zooms in to show its nearest neighbours and a time period of about 100 years, so that the spherical 'extinction front' and the competing 'stability wave', which is of roughly conical shape, can be recognized clearly. Nothing really special is revealed by the interreality sensors. It's just a normal red star, which is the usual kind of star in any older galaxy in any universe resembling the home-universe of the crew. Only it fails to disappear at the predicted time when extrapolating the effect of the observed 'extinction wave'.

Pointing with a finger towards the star in the 3+1-holo, Akira creates a red sphere expanding in space and time, spreading at the speed of light. " There are basically two problems with this choice: Firstly, our cloaking technology hasn't been perfected yet, so that even if we try not to interfere with the M2-dwellers directly there is a chance that they will find some signs of our appearance. This could strongly interfere with the historical development. Secondly, we won't get an optimal amount of data if we jump to the first critical star in time. Better we chose the last one, so that the historical recordings of the M2-civilization reveal most their history until that point in spacetime. Here's the star which will probably give us the most insight on what's happening over there."

On the 3+1-holo the first galaxy is minimized at the main display now presents Akira's chosen star, which lies in another galaxy and obviously survives the passing of three different 'extinction waves' running over it. While most of its neighbours are affected by one of those waves, that small orange star remains visible until the very end of the scanned period in time. Anif takes over the control of the holo and zooms in to the star at that time when some kind of haze appears around it. For emphasizing the old-school style of the interdimensionally travelling

starship mission blue text describes the haze with the letters '?Matroshka Brain?', additionally to the same info that is integrated into the semantic layer of the holo. The whole appearance of the crew and the ship is designed to make sense even to fairly unadvanced minds for the sake of mass-compatibility.

Apparently, the resolution of the scanner suffices to detect supernova-shockfronts and gamma ray bursts. They are marked in the holo with bright colours now and inside one of those gamma ray bursts, about 2 lightyears outside of the system, the suggested entry point appears. Anif sets for an explanation: "If we want to get some information without interacting with the M2-dwellers too much and taking the risk of altering their future histories, the best way to do so is to listen to their omnidirectional radio messaging. They probably will still use that means of communication while their 'Matroshka Brain' is still in construction, if their culture turns out to be comparable to ours. Entering later would reduce the chance of detecting omnidirectional signals and catching directed messaging would be riskier. Our cloaking field has been adapted to the laws of M2-physics, but it probably won't work all too well, so I've chosen an entry point with a lot of noise that is produced by this gamma ray burst. And we'll land so far off the star itself to further decrease the chance of detection. Unless you have some further comments to make, we will enter right now."

Some mental murmur goes through the individual thinking space, but no idea got enough traction to be discussed further. After all, it was discussed beforehand that the first step when entering another cosmos was to listen to omnidirectional signals, because that was the least intrusive action that still provided a significant amount of information. Further steps would be planned later on. It's simply a bad idea to jump into another cosmos directly visible to all the locals over there without the faintest idea what kind of technology and communications protocols they use and how their culture works.

Chapter 2: First Entry

Finally the murmur fades out and is replaced by excitement and agreement. Therefore, the entry sequence starts. All the little details - and there were an awful lot of them - have already been calculated when this mission was devised. The most difficult part was to program the *interreality tunnel* the right way, because it had to provide a smooth transition between the laws of physics in the ship's own reality bubble and M2. Next in difficulty came the construction of the ship's avatar inside of the *entry singularity* in M2-space. This need for creating an avatar for the ships results from the problem that the Da Vinci cannot exist within M2 directly, because the fancy spacetime fabric technology doesn't work over there. And since an equivalent model can't be created in M2, some pretty tuned down version of the ship has to be used, unless the interreality tunnel is kept open all the time, which would use up all the dreamforce very quickly.

As controller of the ship's systems Leonardo coordinates the whole process. It basically consists in feeding the interreality manipulation interface with the right instructions to establish the interreality tunnel (IRT), at whose outer end the entry singularity is created. In essence, the entry singularity defines an area where the laws of reality are bent and the surrounding vacuum can be modified in almost any conceivable way. Unfortunately the process of manipulating the very essence of reality is quite troublesome and hard to control, so that the entry singularity produces all kinds of nasty radiation. To compensate for that, the first thing that is forged out of pure vacuum is the cloaking field, that prevents most of that fancy *interreality radiation* from escaping, absorbs all incoming energy and matter from the outside and reemits it on the other side of the field, as if the whole place actually consisted of normal vacuum with nothing special within it.

After the formation of the cloaking field the ship's avatar is formed out of pure energy, which is simply created through the manipulation of the vacuum by using a small portion of dreamforce. Because for this mission no special design or functionality is needed the avatar is just a ball of nucleotrium, about half a light-nanosecond in diameter, surrounded by various necessary ship systems which mostly consist of nuclear matter. All the needed matter is simply made out of the vast amounts of energy inside of the entry singularity, which constantly creates pairs of virtual particles and anti-particles. By using various kinds of force fields those particles are then separated and put into the right places, like in some game of femtotech-lego. Actually, the ship does consist half of matter and half of anti-matter. While the matter is used for all the usual systems of the ship, the anti-matter is confined inside of various sections of the ships, which can be configured to create force fields which separate the anti-matter from the rest of the ship.

In fact almost all of this is done by an automated routine running on the fabric computer of the real interreality ship. Leonardo's work is to make sure that the cloaking field works in the best way that can be managed with their current level of knowledge about interreality physics. He can't stop all of the particles and energy quanta from tunneling through the field, but hopefully they won't be noticed in the noise of the surrounding gamma ray burst. Actually, there are two kinds of cloaking fields, the first one is a high quality field directly under the control of the entry singularity. Since this costs some dreamforce, the new ship's avatar now starts creating a second cloaking field which soon replaces the first one and doesn't use any dreamforce. Meanwhile all the remaining energy and particles are absorbed by the avatar's quark shield, which represents the pinnacle of femtotech that can be applied in M2 - or M1.

Finally, the most important software systems, including the crew itself, are transmitted into the avatar ship and the Da Vinci itself is put into sleep mode. The entry singularity and the interreality tunnel are retracted into the *interreality attractor* of the avatar, which consists its very core and enables the reestablishment of the tunnel. Basically, the attractor is a computer simulation of a very weird spacetime, which contains even weirder stuff, which is so insane

that no normal mind can even imagine a meaningful approximation to it. Somehow that level of weirdness seems to be required to catch the attention of the dreamers and enable the storage and use of dreamforce.

As the crew is reactivated in M2-space a light blue special effects energy wave appearing from the bottom and rising into the sky passed their whole virtual conference room, dematerializing Eda's unicorn horn, leaving her as more plain snowwhite mare, standing right besides Neja, but having no otherwise noticeable effects. It's merely a sign that the magic of residing in a spacetime bubble outside of every normality. Without such hints some crew members might even miss the fact that they have changed the reality in which they are embedded, much like uploads usually don't necessarily notice it when they are moved to another location in the computation substrate, because they are reactivated in exactly the same state of mind as they were in when they left their original location. Of course all crew members are notified about the interreality jump on various channels, but there is this guideline that all dramatic relevant events should also be visible in the near-baseline physical simulation space they are in. And the jumping event is visible indeed, because the fantasy wallpaper is replaced by a highly detailed view on space from the point of view they are actually residing in.

Escedin Luminar, the silver translucent sphere standing still in the air between Eda and Silvia, surrounded by a golden Möbius strip, becomes active and displays millions of fiery red holographic symbols in the air around em in a multitude of real, synthetic and fictitious languages all telling: "Oh, mighty and glorious DREAMERS, thank you so much for making this absolutely awesome miracle possible!" Actually this ritual seems to increase the amount of Dreamforce available to the ship by a microscopic fraction, hardly enough to justify the effort of this display of gratitude, but it's better than nothing.

After confirming that the situation is safe and the quark shields are unnecessary the ship's mundane sensors are activated which promptly produce a large stream of data which is analyzed in an instant and included into the various perception channels of the conference room and the crew. What those sensors are telling the crew is more than surprising: The radiation from almost all of the stars who have been hit by some of the various extinction fronts indicates with very high probability that they have turned into black holes.

Even more unexpected than that, there is no radiation at all coming in from the stars which have been hit by the latest extinction fronts just recently. Comparing this data with the the information from the interreality scan, the crew infers that the stars which are hit by an extinction front just seem to disappear in an instant, and then leave a black hole, at the position where the star itself should be, some thousands of years later, depending on the mass of the stars; heavier stars last longer.

Pretty the whole crew is quite shocked by this discovery, except Neja and Anif - Anif, because es job is not to be shocked and to keep cool at all times and Neja, because e achieved mastership in neutral perception. In bewildered puzzlement about this conundrum the crew dividuum forms the collective conscious thought: "What could cause this?"

A few subjective seconds later Kiran comes up with the most likely scenario: There is a relatively dominant culture which colonizes star systems and quickly creates a dauntingly effective cloaking field around every newly colonized system. At some time in the development of the system a black hole is created in the center of the star, which is used to convert the mass of the star system into energy. Finally, after all mass in the star system has been fed into the black hole, the last thing that fails is the cloaking field, so that at the end the barren black hole is revealed.

Sure, that's a possible explanation, all crew members agree, but what for would anyone do that? Eagerly the crew attempts to solve the mystery. At first, Eda comes up with an observation: "This whole situation reminds me strongly of my alternate reality game 'Metaschism' in which various groups are in full conflict about some minor or major memetic differences. At some point in history, one of the warring parties starts with using up the resources of a star system as quickly as possible to gain an edge over the competition. They actually use a black hole to turn the sun into energy to run a nucleotrium cluster at maximum speed. Of course, the other parties have to do the same to keep up. Quickly the conflict escalates dramatically, burning down the whole galaxy quickly. Sometimes stellar cloaking fields are used to prevent the leak of strategically important information. What we are observing here in M2 looks pretty similar, but somehow only the star systems are cloaked, which are turned into black holes. Perhaps the stars that remain uncloaked belong to a neutral party which doesn't participate in the conflict and all others just burn up every star they can get."

Being a passionate professional gamer, Jonn responds: "Yes, I know that game. The real point to it is that those who remain passive will be the winners at the end. But that's counterintuitive enough to be the strategy of a minority. The vast majority wants action and quick victories, so they start wasting their resources and don't pull back later, because they have already invested so much into their aggressive strategy. But then, it's just a game, and I doubt that many intergalactic civilizations are deluded enough to wage war for billions of years."

Applying radical cultural relativism to the situation Neja remarks: "While you think such actions are deluded, from their point of view they might act absolutely reasonable. It's really just a question of perspective. If they actually do think they are just playing a game and will wake up in some deeper reality after they will have wrecked this whole cosmos, then why bother? Even not all of our cultures share the majority view that we should use our cosmos 'responsibly'."

Anif has some memories about the troubles es greater self at home had with dealing with these groups. Especially directly after the arrival of the *Whisper* there was a lot of mindless panic about the high likeliness that their homeworld itself is just a simulation. A whole lot of people suggested to hurry with the transformation of the cosmos into mental information, before time would run out, because the simulators decide to shut down the whole cosmic simulation. Those radicalist groups hadn't enough thelematic power to put their plans into practice, but there's still the danger that things get out of control, if the mission of the Da Vinci fails in some way. But those are not the current worries of Anif, so e puts the focus on the tasks at hand: "While we could go on guessing the causes for this situation forever, the right answers can probably be found in the radio messages that we are catching up right now. I suggest that we put all our efforts in making sense out of them right now."

Indeed the finding of disappearing stars and reappearing black holes has caught the complete attention of the crew until now, so that the radio messages coming from the nearest star were ignored. While it's great to receive signals from alien cultures, it's pretty difficult to interpret them correctly, especially if they come from an advanced intergalactic civilization. Actually the biggest problem is not that the thoughts and data transmissions from an alien culture are too foreign to be understood, but rather the fact that they use compression algorithms which are so efficient, that the signals are barely distinguishable from noise. Usually omnidirectional radio signals don't use too much encryption, so that's not supposed to be a real problem.

It has been determined beforehand who is responsible for doing the job of interpreting signals from alien cultures. While Jeff Nyuman provides the basic mathematical skills to decompress and encrypt such signals, Kiran is well known for his skill to crack into every system that's not absolutely waterproof, and even into some which are supposed to be waterproof. But dealing with an alien civilization is a much more complicated task than that, because everything has to be interpreted in a way that makes sense - from the viewpoint of the aliens or the viewpoint of the crew. Who could fit better to such a task of interpretation than the famous inventor of the Universal Netcast Protocols, also called 'universal translator' by most people? So, this inventor Neja, Jeff and Kiran are the right task force for the job at hand. In order to increase their effectiveness, they initiate the dividualation process for this task.

Dividualation is nothing else than creating a group-mind consisting of still mostly autonomous individuals. Being part of at least one dividual at any time is pretty normal in all those different cultures the crew members live in. Usually the depth and intensity of sharing thoughts, feelings, judgements and perception data is not very high, because that would annoy most individuals terribly. Small groups of people who know each other well however, can form rather intricate mental connections to cooperate on a certain task intensely. Completely unlike the simple mind from the pre-hedonic era the progressive hedonics minds have the ability to do many things at the same time without serious problems. They can also operate at different levels of

cognition at the same time, for example consciously evaluating the flow of unconscious personal mental processes some subjective moments ago, communicating with hundreds of people and contributing to the thought processes of higher level group minds all at once. While being embedded in a dividual the mind of any participating individual does the astonishing task of both doing all the stuff the individual emself wants to do and all the stuff the dividual tells it to do. In the case of conflicts of interest between the individual and the encompassing dividual usually the individual can decide what's still acceptable and what not. After all the characteristic property of a dividual is that it can be divided into all composing individuals without any harm, except some more of less strong inconvenience.

Demonstrating to the crew and any potential curious observer of the conference room that they quickly make progress in their dividualation efforts, Neja, Kiran and Jeff cooperate on configuring their dividual avatar, which just takes shape in a transparent bubble floating between Kiran and Neja. Behind a cylindrical curtain out of time-inverted waterfalls an anthropomorphic Genarian skytiger hermaphrodite made out of water, that is saturated with all kinds of nanobots, which give the water a colourful, but mostly greyish hue, appears. It looks like the tiny hovering rivers coming from the inverted waterfalls flow into the tips of the wings of the new dividual avatar, but that's only because of the time-inversion field. Actually the water flows upwards out of the wings, according to laws of physics which hold when you change the direction of time and gravity. Finally, the creators of the avatar agree that it's sufficiently impressive and therefore finished. The watertiger collapsed es surrounding bubble, jumps to the ground and pronounces: "Time to crack another alien nut! Let's go!"

Chapter 3: Stellar noise

Any pre-singularity civilization would have even failed at noticing that there is a signal at all, because the difference to normal cosmic and stellar radiation is almost zero. Luckily it isn't actually zero, so the sensor data is filtered, so that expected radiation not coming from intelligent sources is filtered out. Since that is a rather mechanical task the ship's non-sentient systems do that job for the crew. But even that single step would have been almost impossible if they didn't actually know very well what they are really looking for: Very weak signals that are repeated two, three or more times on the nano- to microsecond scale. In their home system the Domain of Life uses the whole specturm from infrared down to radio signals with extremely long wavelength for omnidirectional communitcation, but the intensity is kept at a minimum, in order to save energy and not to pollute space with high energy transmissions - those are specially reserved for communication by laser. Because of the low intensity those signals are hardly distinguishable from background radiation, so the signals are repeated multiple times so that it is possible to actually find them.

Indeed the ship's sensors have found such repeating signals, but only very few of them,

because at that distance to the star you can't get a good signal with such a small ship, even with the best technology in the cosmos. The solution lies at hand: Use a bigger antenna. To build one the femtotech replication systems embedded into the ship's hull are activated, so that they produce a small nanofactory, which then builds parts for bigger ones. Of course, the crew doesn't want to be found, so the cloaking field is expanded slowly to some meters and then later on to several kilometers.

During this whole construction process, which will take several hours, the crew members spend their time debating about what they could find. Silvia is rather astonished: "I don't get it. We have found a civilization, which is billions of years old and they are still apparently using radio signals. Why haven't they completely shifted to more advanced methods of communication? And do we use this slow nanofactory assembly instead of a high-speed replication bubble?"

At the same time Kiran and Eda answer to the different questions that Silvia has come up with. The creative and fanciful mare Eda Selene tells with a smile: "Consider our setting, Sil! Here efficiency and time are virtually meaningless. We can jump to any point in time and space we want, so there's no reason for haste. If something takes a lot of time we simply adjust our mental speed to the process, so we don't spend eternities for waiting. Style is much more important for us, because it could grant us some of this almost incomprehensible Dreamforce, if we are lucky." It's just that a look at the ship's statistics reveals that there was no rise in Dreamforce because of the slower construction process - bad luck.

While Eda focuses on style the serious waterfall Kiran Sollice rather thinks about technical feasibilities: "Yeah, it would be good if there was a better alternative to this unimaginative radio stuff, but obviously the inhabitants of this space, unlike ourselves, can't use magic. Like in our homeworld there is apparently no better way for omnidirectional communication than radio. Sometimes it is better to use this kind of omnidirectional transmission if you want to make sure that every mind in the whole star system gets the signal. I just hope not everything we will find here turns out to be spam." At expressing the word "magic" Kiran splits up into tiny mini waterfalls, which teleport through the whole conference room and even apparently outside into deep space, just to put himself back together horribly wrong for a moment. After that stunt he reassembles himself back to his original shape, although some mental voices in the ship's individual state that the funny arrangement is some amusing and refreshing change.

Absolutely curious, the universal genius Leonardo DaVinci can't wait until Eda and Kiran have finished their answers and throws another question into the room, almost bursting with excitement: "Please tell me what you all expect to find here. Do you think we will only find solar weather forecasts and soap operas or will we find some actually valuable piece of M2-culture?"

A rather disenchanting first speculation comes from the apparent representative of flowerkind, the leafy Argen Rightwill: "Hah, if we aren't really lucky, there will be no single transmission we will be able to understand at our current level of consciousness. Why? Do you really think a culture, which is billions of years old won't already have tried out and done everything simple minds can comprehend? How probable is that? it must be really tiresome to listen to the same old basic level stories for subjective eternities. If you ask me, I'll bet that they have already surpassed everything we can understand at our present level and we'll have to let the focus minds in our homeworld analyze their messages."

Immediately the floating elf Buddha Akira Amithaba replies energetically: "No, I have to object to this scary prospect! I'm pretty confident that there are still a lot of smaller minds out there who profit from messages they can actually understand. Have you ever tried to ignore the presence of all the cute simple beings in our world? Sooner or later you will experience the strong feeling that something is totally missing, except you are in the deepest focus state possible. It's much more than just simple nostalgia, small minds add to the diversity of every culture. Any civilization only consisting of really big minds would feel terribly cold and bare. Of course, you could remove those feelings from your programming, but that would be really crippling!"

Not paying any attention to the opinion of others an almost daydreaming dolphin nearly falls out of her floating water bubble as she speculates: "Worlds! Worlds over worlds in worlds beyond worlds! I see an endless number of fantastic worlds being beamed through the plain expanses of substrate space. Worlds so utterly beyond our wildest imaginations of beauty that we will never want to return into our old boring place. I hope to find richness deeper than we even dare dreaming about. Endless streams of ever greater creativity - pure perfection of existence in countless ways of bliss and exaltation."

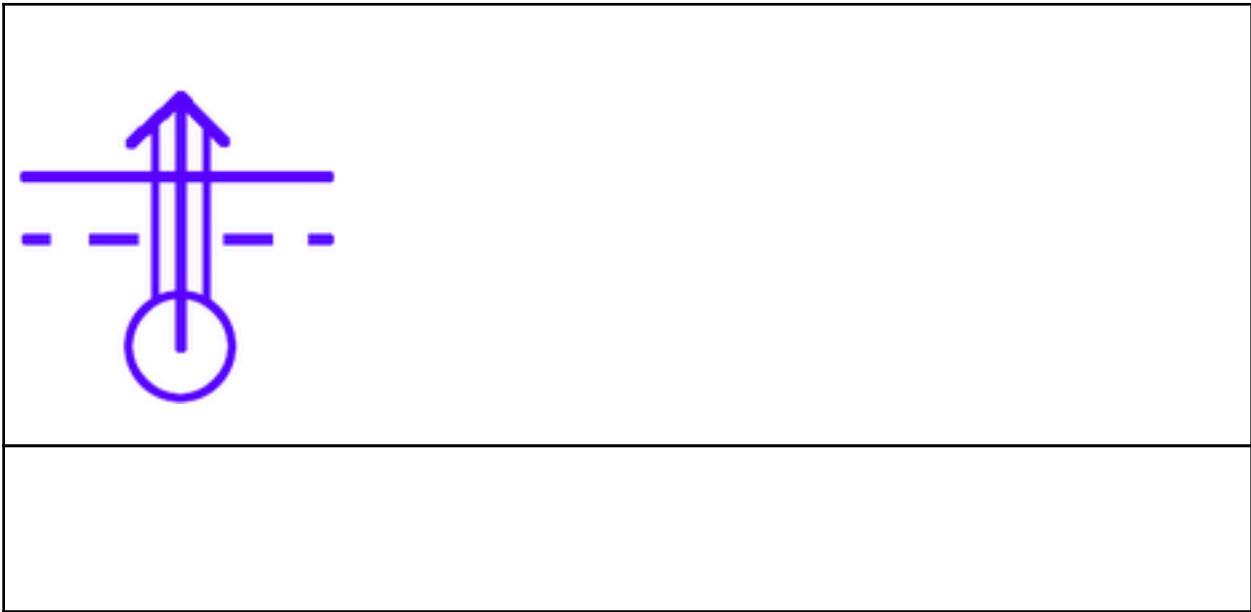
Staring at the dolphin, which is moving and turning like in a trance, like she accidentally activated the wrong neuromod, Eda remarks a bit sarcastically: "Of course, my dear dreamer. But what are worlds without connections between them? I think we will find all kinds of interreality fiction. If the Apeiron has humor one of their narratives will actually include ourselves appearing here exactly at this time and space, making exactly the same wild guesses about what we will find, which will all turn out to be fabulously wrong."

A lot less enthusiastically and down to earth, respectively water, Kiran Sollice simply states: "Pah, why do you think that civilization will change because of some billion years difference? Life stays life. And I see no compelling reason why it should behave here so much differently than at our homeworld. And what for do we use radio there? Yeah, just news, entertainment shows, thelematic debates, flame wars and of course advertisement and spam. Some things never change, trust me!" By "thelematic debates" Kiran means discussions about thelemanomic topics. Thelemanomics is the science of general will dynamics, encompassing

areas like politics, economics, ethics, psychology and sociology, which were pretty much unified after the Hedonic Revolution.

Making a pretty absent minded impression, the famous professional gamer and hobby mathematician Jonn Nyuman hastily adds: "I just hope to find some interesting alien mathematical theorems. Maybe some of them are actually useful for something. And if they are not, perhaps I'll create some nice application of them, anyway." Obviously Jonn already tries very hard to make sense of the alien transmissions, although the recieved data is pretty minimal. He's already so fanatic about that effort that he retreats his attention from the control and perception tasks of his Avatar, although they don't require a lot of computing power compared to his overall computing capacities.

Quite surprisingly, even the rather reclusive ball of silver light Escedin Luminar wants to take part in this discussion. For that purpose e displays the silver head of an android in the middle of es bright translucent sphere. It's a bald and slender androgynous head with a face expressing deep thoughtfulness and meditative clarity, which makes Escedin look pretty removed from reality. The attributes of that head catching the most attention are a small white goatee and a big tattoo on the forehead depicting the symbol of the religion of Revealed Individual Challenge Transcendence.



With es half-closed eyes always looking at a pretty unremarkable point at the ground,

Escedin speaks with es silent and melodic voice: "Prayers! There must be prayers! Being trapped in this world for billions of years they must long for escape and transcendence. If they knew we were here, they would beg us to take them with us, far far away to the most exotic regions of the Apeiron. I can almost feel their desire to leave this old realm behind." Finishing these lasts words the head slowly fades out again until it is gone and only light and emptiness fill the big sphere of es avatar.

It's actually an old established standard that every mainstream compatible avatar in a regular 3+1-D space should have a face you can relate to. Of course there are other standardized communication channels, which are vastly more efficient, but removing both gesture and mimic from avatars would take away some of their depth.

Noticing that there is some attention directed towards em, the blue skytiger with es fuzzy fur made out of fractal hairs decides to comment with a slightly annoyed tone: "What? Do you expect from me to add another wild guess? If I wanted to express a clichéd speculation, I would claim that these M2 dwellers send around their wildest and craziest noodelic states of mind. But I don't let such pointless expectations distract myself. I'm here to find out the truth. Otherwise I could have simply stayed at home and entertain myself with some kind of interreality fantasy."

In fact, Leonardo feels that Anif thinks it's time to answer his own question, so the famous artist and visionary actually starts making up his own mind. For that purpose he increases the speed of his own thinking relative to the others by a factor of about 300 for a while. After about half a subjective minute of thinking, he presents his glorious answer proudly and in a very serious tone: "Your answers have all been quite good and I think we might see a mixture of what you proposed, but it seems that you have envisioned what more or less *normal* people would send over radio. We really can't be sure that what we'll find is representative of the mainstream cultures in any way. What if we catch up conspiracy theories or even false historic records made up by excentric revisionists? Possibly we will only find the ideas and thoughts of the most extreme outsiders of their civilization, because everymind else just uses other communication channels. If we aren't careful we could even catch some kind of malign germ programmed by a very desperate person, which wants to spread chaos or something. Whatever we find, we should be very careful with the interpretation of it." A general agreement condenses in the crew dividual that those remarks are pretty important and should be considered seriously. Leonardo himself is just pretty happy that he could come up with something interesting, which the others haven't mentioned yet.

Directed to the winged furry avatar of the encoding dividual, the tall angelic figure of Anif Doli commands loud and clearly: "Nekironn, please put all data you catch up into a quarantine

section of the ship's memory and don't let it out, unless I give a very unambiguous permission to do so. We should make damn sure that the data we will receive is perfectly safe, before it infects our mindspace in any conceivable way. Direct access to the data will be restricted to me, you and your constituents, at least at first. Sorry, but security is a top priority of our mission." Completely contrary to Anif's futile hopes, a wave of disappointment runs through the whole crew. Even Nekironn and co are unhappy, because they were looking forward to inspiring conversations about the voices from Akira's Choice.

Promptly the cloud elf Akira, whose appearance is no less majestic and determined than that of Anif, complains: "No, no, no! I have to protest! You can make some restriction for the sake of security, but it's truly not you alone who is responsible for the safety of this mission. At least three members of the Guardian Corpus should be allowed direct access to all data. Otherwise it can't fulfill its advisory function properly. I suggest that you add Argen and me to your inner circle." Looking fiercely at the astonished angel, Akira's poised gaze tells all that she is not willing to give in in any case.

Anif is really resentful, because e has made this silly mistake. It's true that e is command of the mission, but only as long as the Guardian Corpus doesn't use its veto right to appoint another commander. Leaving out too many Corpus members from crucial decision making is not a good idea at all. In this case, Anif decides that giving in is the right thing to do: "Well, my intention was to bring down those working in the quarantine area to a reasonable minimum. If you think that it's reasonable that you and Argen belong to that reasonable minimum, I have to accept that. You're in."

Still left out, the other crew members think about what to do next. Eda sends a private telepathic message to Escedin and Leonardo: "I have an idea to improve the construction process of the antenna. Do you mind joining me into a design space?" Because there is nothing better to do anyway, both recipients agree to that proposal and follow Eda through a large portal into another simulation space.

After the trio has left the conference room, Silvia stays for some moments to send a private message to Anif: "I can understand your concern and might have done the same. So, I'll do without access to the quarantine area, unless you decide otherwise. Just tell me if you find something that might be of interest to me. I really don't mind waiting until the interesting part starts." Having transmitted those thoughts, Silvia slowly retracts the bubble of water around herself until only her dolphin avatar hangs in the clear air. Then she simply disappears.

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