# Dual Universe Fanstories



Serious Spaceship Drama

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#### **Dual Universe Website:**

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# **Publishing Details**

Editor: Daniel Nusser | Munich, Germany

E-Mail: contact@spaceshipdrama.com | Discord: Agilolfing#8694

Website: <a href="mailto:spaceshipdrama.com">spaceshipdrama.com</a>

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# CONTAINS



# THORAMINE

Based on a true Dual Universe story

by Kurock

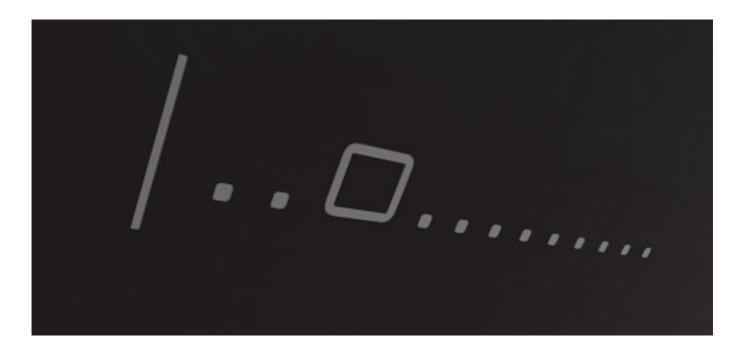
#### 20.08.12477/0AA - Near Alioth's North Pole

Clear cloudless blue skies above and blinding snow below, a figure clad in a white space suit stumbled across the frozen wasteland covering Alioth's North Pole, lit by the pair of moons suspended on the horizon. The Novean looked back at the ankle high obstacle that caused the stumble: a small black triangle poking out of the packed snow. The figure raised their hand and their nanoformer hummed as large spheres of snow disappeared, revealing a pyramid the height of a human.



The Novean continued to dig, uncovering more and more of the dark glossy pyramid. Alien angles and ridges of the unidentified seamless dark material marked this construct as a mystery. An artifact that preceded the Novark's landing on Alioth.

The Novean dug into the bowels of the pyramid. No door or window could be found, but in a cleft through the center that could easily fit a spaceship or three, the Novean found the inscription.



A line, two dots, an "O" followed by 9 dots. The 11 dots and "O" reminded the Novean of the 12 planets of the Helios system. The Novean flicked open their system map and counted out the rings which formed the planetary paths around Helios, their surrogate sun. The Novean laughed. The ominous monument was nothing more than a cosmic sign pointing to the third planet in the system: Thades.



Dear reader,

I sit on an ornate wooden chair before a fireplace, dancing flames reflecting off my metallic green space suit. Above the mantle rests a painting of Alioth and its three moons. I look up from the open book I was reading and turn to you.

I introduce myself, the words form in your head: Dear reader, I am Kurock. I wear many hats.

I will be serving as the narrator and storyteller, as well as providing occasional asides, like this one. Not because I enjoy it, but because I am very much involved from beginning to end. As an author, I do not enjoy inserting myself into my writings. I find it cringe-inducing to the highest degree. That said, you will have to excuse me for getting into your head, and I will overlook that you haven't cleaned up here in a while.

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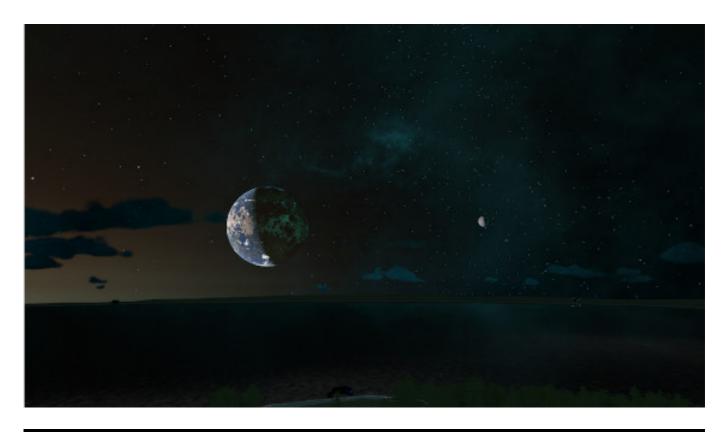
#### 28.08.0AA - Helios System

After the arkship, Novark, landed on Alioth, carrying its cargo of a million or so survivors of an eradicated Earth, it was only a few hours before the Noveans spread to the nearby planets. To the blue seas of Jago, the archipelago island paradise. To the tundra of Teoma and its strangely temperate lakes. To the desolate sodium mines of Madis. To Thades with its fourteen kilometer deep

and seven wide ravine that divided the planet in two; a product of an unknown past cataclysm with the asteroids hovering silently overhead as the only mute witnesses.

But Thades was not alone among the twelve planets of the Helios system to have suffered a devastating blow. Feli also showed a vast impact crater that made this rocky planet seem like a blinded eyeball staring into space.

A clue to the cause of the cataclysms of Thades and Feli might be found in the center of the Feli crater. A sphere made of the same enigmatic material as the Alioth pyramid. Of course, once found, the Noveans showed the ancient wonder its due reverence and respect by claiming it for themselves and releasing celebratory fireworks from its summit.

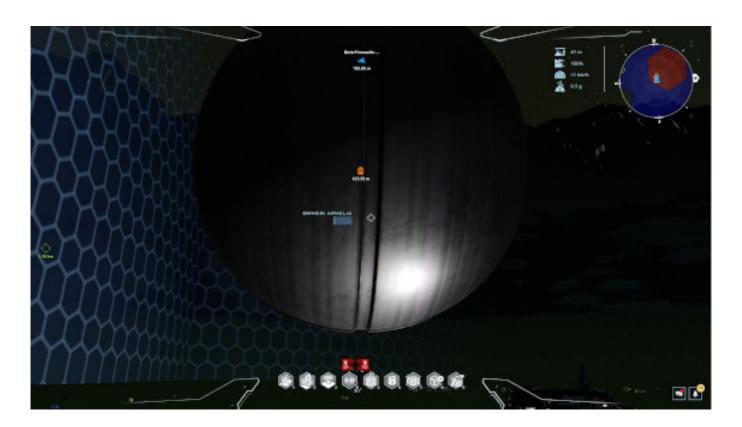


17.08.12474/-3AA - Alpha Academy Lecture Hall, Alioth



"Good morning, class." I said as I strode to stand behind the podium. I dusted some unseen lint off my metallic green space suit as I peered into the crowd of similarly suited Noveans seated in the lecture hall.

"Today's topic is 'Decrypting the Feli Artifact'," I said as the extra large screen behind me flickered to show a vast dark metallic orb hovering over dimly lit grasslands.



"If you are not interested in the Feli artifact, you are free to skip to the next section, but otherwise eyes on the screen please," I informed those gathered.

The screen zoomed into a close up of the Feli Sphere showcasing its alien inscription.



"Converting the inscription to a slightly more readable font we get the following..."

~ PJVM AHETY TH ZYMAH VL GHV AGROJ, MRBF RAJT MV GWZT VL GHV NXYQSS AAW GHV DXWDZ PS GAR SYAMYX ~

"...utter gobbledygook. It is easy to assume a substitution cipher and brute

force an answer (which was done by some), but let's see if we can use a few more of the little grey cells," I pontificated as I tapped my temple.

I paused for effect before continuing, "Notice the comma? That is an indication of a sentence structure with only the alphabet jumbled. Sounds like a substitution cipher. But wait, there is more. The three letter word GHV repeats itself three times. And, assuming English, the most used word is "THE".

So let's change all 'G' to 'T', 'H' remains 'H' and 'V' to 'E' and leave the rest unchanged."

~ PJEM AHETY TH ZYMAH EL THE ATROJ, MRBF RAJU ME TWZT EL

THE NXYQSS AAW THE DXWDZ PS TAR SYAMYX ~

"Well, that didn't work."

"Clearly this isn't a simple jumbled alphabet. But what about the most well known substitution cipher? Caesar Cipher or ROT13 (short for 'rotate 13') takes each letter and changes it to a letter 13 letters over, wrapping around to the beginning of the alphabet as necessary. But our "THE" example isn't ROT13 as the H remains itself. That is effectively ROT0. There is a cipher that uses a different rotation value for each letter: the Vinegar cipher.

A Novean mumbled a few words in the front row.

"Ah. I stand corrected, it is the Vigenère cipher. But instead of using numbers, it uses letters to indicate the effective rotation. In the Vigenère cipher, 'A' is

equivalent to ROT0 and 'N' is equivalent to a ROT13. This word that is used by Vigenère cipher to determine this rotation is called the key. The key is usually a single short word which is applied over and over to a bit of text like a template, rotating each group of letters a specific amount. This can be used to decrypt the message because we have a repeating pattern 'GHV'. The distance between the two 'GHV' are 24 and 12. This implies the cipher repeats every 12 characters which implies a key that is 12 letters long."

~ PJVM AHRTH TH ZYMAH VL THE AGROJ, MRBF EAST MV GWZT VL THE NXYQSS AAW THE DXWDZ PS GAE SHAMYX ~

"Wake up!" I swept the resting hand out from under another Novean dozing in the first row, who collapsed to the ground, waking with a startled grunt, and scrambled back to their seat.

I continued, "The word 'EAST' appears without any further manipulation, but is it correct? Now the puzzle becomes a game of completing the word. For example 'AHRTH' could be 'EARTH' or 'NORTH'"

~ PJVM NORTH TH ZYMAH IS THE AGROJ, MROM EAST MV GWZT IS
THE NXYOSS AND THE DXWDZ PS THE SHAMYX ~

"Continue competing words until the full inscription appears."

 $^{\sim}$  FROM NORTH TO SOUTH IS THE ANKER, FROM EAST TO WEST IS THE NERGAL AND THE DEPTH IS THE SHATRN  $^{\sim}$ 

"And as an interesting by-product we have the shift sequence of '10,18,7,0,13,19,13,0,17,0,19,7' or in other words, the Vigenère cipher key of 'KSHANTNARATH'. This will become important later. Is it lunch time already? Class dismissed."

I watched as some Noveans left the lecture hall while others stood stiffly for a moment before winking out of existence.

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28.08.0AA - Dual Universe Wayfarers Territory, Alioth

"You have 1 new message," the discord bot chimed far too cheerily for so early in the morning. I hadn't had my morning coffee yet.

A group chat with hdparm and WhiteMeat. That is very unusual.

"Hello, Kurock. We are forming an elite team to find the secret behind the artifacts and we thought of you for your puzzle-solving skills."

Ah.

"hdparm will use his radar Lua scripts to help detect the artifacts," said WhiteMeat.

"And WhiteMeat has the Ministry's people and resources to do the looking. You in?" asked hdparm.

"Definitely." I answered without hesitation.

"This is a top secret mission," WhiteMeat warned, "so tell no one." For me, that might have been the most difficult part of this entire story.

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29.08.0AA - Helios System



The key to solving the mystery are the monoliths: rectangular artifacts of the same strange metal as the Alioth pyramid and the Feli sphere.

At the beginning, very few of the monoliths were known: A grand total of seven each with the inscription of either ANKER, NERGAL or SHATRN followed by a 0 or a 1.

The ANKER, NERGAL and SHATRN was mentioned in the Feli sphere inscription which lead to the longest lasting theory: The monoliths were galactic markers, indicating a group of planets as a "North-South" line and another group of planets as a "East-West" line, while a third set of planets defined an "Up-Down" or "Depth" line. So finding where the N-S and E-W lines met and following them "down" would lead to an unknown treasure buried on a hidden thirteenth planet or asteroid.



Monolith on Madis

That theory was completely wrong. It only became evident as more and more monoliths were discovered using unaltered radar and peeled eyeballs. These relics were found on every planet, on their moons, or suspended in space.

Dear reader,

For players decrying "We didn't know about the secret" or "Alpha players had a huge head start."

As for the first: it's called a secret for a reason. Some exploration would find one of the 53 artifacts scattered throughout the system and even the most jaded Novean can't help but start wondering: what are they for? Every so often a player would find one and ask what it was about in public places like the Dual Universe discord.

Some saw the announcement JC made during a stream that the grand artifact hunt was open and just beginning. They got it backwards, he only mentioned the artifacts because he already knew it was solved. So while many ignored the signs and built their industries, others spent the time hunting the artifacts.

As for Alpha players getting a huge head start, only a handful of the artifacts existed for most of the Alpha period and all of the artifacts (except the pyramid and sphere) had been moved so they had to be rediscovered. And that discovery was no small feat.

In summary: Keep an eye out, you never know when the next secret will roll around.

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30.08.0AA - Helios System



It was at the end of August that the hunt truly began. The covert search teams scoured the twelve planets, collecting screenshots, positions and inscriptions of the artifacts. Surprisingly, many of the artifacts were found without the use of any advanced Lua scripts as normal radar showed static constructs without a name, which aided the search immensely.

The dedicated artifact hunting team was small, only around ten to fifteen members that were briefed on the artifacts and were explicitly told that the information would be funnelled to those higher up. They would only have so much access to what was going on for security purposes, which they surprisingly agreed to. Only WhiteMeat, hdparm and myself had the full picture of the artifacts. Even then, hdparm and I didn't know who was doing the searching for WhiteMeat.

At this point I helped from the side-lines, directing the teams to likely locations, but ultimately I could have just sat and watched as the teams went about uncovering artifact after artifact. By 9 September, all but six of the 36 monoliths had been found, each with a 0 or 1 forming a binary sequence.

But in what order should they be placed?



Church on Madis

This is where the "churches" come in. These are artifacts that look like a conglomerate of rectangular blocks of dark metal that were haphazardly thrown together. Each "church" has the inscription of "-" (or "=" depending on your interpretation) followed by a number followed by a letter (See appendix i and appendix iii). For example, the one on Madis has the inscription "-1K".



Madis Church inscription

These served two purposes. The first was to provide the key for the Vigenère cipher that was used on the Feli sphere. The second is to number the planets and give order to the monolith inscriptions. For example, Madis is planet 1 while Ion is planet 12. While the planet orders could have been deduced (which is what we did), the churches gave clear signs of what went where.

Because we guessed the order of the planets and had already known the Vigenère cipher key, finding the churches were of secondary concern. The monoliths were far more important, and were the primary focus of the search teams.

Dear reader,

Some of the names for the artifacts are internal NQ design names that were adopted by Noveans. This is mainly thanks to images depicting the types of artifacts being openly browsable files on early Dual Universe clients.

For example, the Feli sphere was called a "chapel", the Alioth pyramid was called a "cathedral", and the monoliths were named "relics". These names didn't stick because it was easier to call them by their shape (and the 2001 Space Odyssey monolith). Unlike the basilicas and churches which defied a reasonable naming replacement.

The DU client has since had its security tightened slightly.

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05.09.0AA - Thades Ravine



The first big surprise waited on Thades. The three basilicas were found during the first week of September. Each with a short encrypted inscription.

Luckily, the same key that was used in the Feli sphere worked to reveal these artifacts' secrets.

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| THE TENTH PLANET ~

~ FROM THE SUN ~

~ CONTAINS THORAMINE |
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The tenth planet: Lacobus. It should be noted that only a select few knew about Thoramine in that first week of September. But that wouldn't remain the case for very long.

The second large surprise while finding the monoliths was a new type of inscription. There were no longer just 0's and 1's but also lines? a space? These could be interpreted in many different ways and eventually one was found for each ANKER, NERGAL and SHATRN.



The Thades basilicas pointed to Lacobus and we thought we had found

"enough" of the monoliths. We thought we had enough information to start digging.

Yet again, we were wrong.

ANKER 10?1??1101?0

NERGAL 1?00101?|11?

SHATRN ?111|?0?1101

We made some educated guesses and began digging. Two days later, only six monoliths' inscriptions were still unknown. But we had time. The guessing and digging continued as we relaxed knowing no one was anywhere near as far as we were. No one was even searching seriously.

That was until the very next day when "Thoramine ore" appeared on everyone's scanner filter. Noveans noticed. Some quickly put two and two together and started searching for the artifacts. We were still no closer to finding the solution and the pressure was mounting.



Dear reader,

You might be wondering where we were digging on Lacobus with incomplete information. The answer: Anywhere we could think of. We tried straight binary to decimal conversion, Binary-coded decimals, Excess-3 code, Elias Gamma, XOR, as well as a few completely unrelated ciphers. All these with multiple possible locations.

But how did we know where to dig? We created a position location for ourselves which we set as a waypoint and dug to it. For example, the following position is derived from a direct binary to decimal conversion ::pos{0,100,717.0,138.75,-7101}. The format for a ::pos is system, planet, latitude, longitude, depth. The system was always 0: the helios system. The planet: Lacobus whose planet ID from other waypoints was always 100. The latitude was the ANKER, the longitude was the NERGAL and the depth the SHATRN.

The trick was massaging the binary values for ANKER, NERGAL and SHATRN into something that made sense. In the above example the values were hopelessly out of bounds as the latitude for a planet is between -90 and 90, the longitude is between -180 and 180 and the depth is the radius of the planet. The 717 for the latitude worked by simply wrapping around the planet a few times, so while out of bounds it still gave a location. In Lacobus' case, the depth could be up to 55650 meters or 55.65 kilometers. Which is a very very long way to dig. **So we dug.** 

#### 15.09.0AA - Space near Lacobus

"Welcome to the Dragons!" the voice boomed welcoming another subscriber to MarkeeDragons stream. The grey-bearded Novean did not notice this time as he was completely absorbed by the two ships closing in on his colonization vessel, headed for Lacobus.

The AH Hornet and AH Javelin slid into position behind the dragon, weapons locked and without warning started firing their missiles. In less than a second, the missile volley struck the hapless ship, causing it to smoke and explode.



**AH Hornet** 

"One shot? What? Why did I?" exclaimed the confused MarkeeDragon as he was lurched from the once comfortable seat on his ship to appear blinking against the sunlight baking the sanctuary moon's surface, his resurrection

node humming its completed duty.

It took a moment for MarkeeDragon to process what had just happened. "Alright. Single shot," he said incredulously holding up a single finger.

"Yeah, that really sucks."

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#### 11.09.0AA - Undisclosed Location

"Crusade!" Shouted TheMasterArchitect a few days earlier as he banged his fist on the Alioth wood conference table.

"Calm down, TMA. Not everything is a holy war for the All Father." Firestorm said attempting to placate the self-professed crusader.

TheMasterArchitect glared back, "Isn't it? These artifacts were placed by the All Father himself. It is our duty to secure them."

"Correct," WhiteMeat interjected, "Ministry is close to finding the Thoramine, but we need more time. Infinity Corporation is catching up fast. Informants say they have found nineteen of the thirty six monoliths in a single day. And it sounds like Objective Driveyards is also searching."

"ODY are more interested in creating their space elevator," Underhand Aerial said dismissively, "What do you need from the Ascendancy Alliance, WhiteMeat?"

WhiteMeat smiled, "We blockade the planets to prevent others searching for artifacts and the Thoramine. Specifically Ion and Lacobus."

"Sit and wait while we could be crusading? Boring," scoffed TheMasterArchitect.

"Let me remind you of the importance of this mission. There is only a single Thoramine ore deposit in the entire system. It is vital that the Ascendancy secure it," WhiteMeat reasoned.

"WhiteMeat, you will have command of Dark Star Imperium ships," Firestorm promised, "and DSI's continued support."

"Hyperion will aid as well," Underhand Aerial agreed.

"New Genesis too!" shouted TheMasterArchitect, not to be left out.

Firestorm continued, "This is a secret mission. We will need an IFF tag so that people don't know it's us. What about AH for Artifact Hunters?"

The others nodded in agreement.

"We will claim and cover any artifacts we find." WhiteMeat said, "That and blowing everything up around the planets should buy our hunters some time."

WhiteMeat concluded the meeting, "Execute: Operation Viper."

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#### 11.09.0AA - Lacobus

Meanwhile, the digging continued. We deployed territory scanners before learning that they had a limitation: they could not find the Thoramine likely because they couldn't scan more than five kilometers down. All the monoliths were found which narrowed down the digging to single guesses. But they remained guesses and still nothing was found.

Some more brains were called in to glean more ideas. What if the binary values gave a pair of tile numbers which together formed a large X on the surface of Lacobus? What if the binary had to be reversed? What if it needed to be shifted around to get the final solution? Still nothing was found.

Between all the digging teams, we dug more than six hundred kilometers of tunnels into Lacobus (a very conservative estimate). But they all came up empty. We knew that all three latitude, longitude and depth had to be exactly correct to find that single node of Thoramine. However, realization was slowly dawning that something was missing.

So the artifacts were checked and rechecked. The churches which we had neglected were now a concern. Perhaps there was an additional inscription which we missed somewhere?

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15.09.0AA - Base Camp, Lacobus

"This isn't good," WhiteMeat told hdparm and I, "We just received intelligence reports about Infinity Corporation and it's really not good."

"What's Knoober been up to?" I asked.

"They have deciphered the Feli sphere." WhiteMeat started.

"Everyone has deciphered that by now. KSHANTNARATH and all that," I interjected.

"They have found twenty-four monoliths already," WhiteMeat continued grimly, "nineteen in a single day."

"We have them all. What's the problem?" hdparm asked.

"They have found the basilicas on Thades and deciphered them too." WhiteMeat informed.

"Not good," hdparm said.

"I thought they were covered," I said.

"They got uncovered somehow. And they have landed on Lacobus." WhiteMeat finished.

"But what about the blockade?" I asked.

"They warped straight through into the safe zone around the planet. And no saying 'I told you so'" WhiteMeat added. I swallowed my words.

"What now?" asked hdparm.

"Have him join us," I suggested, "We have been digging for a week now with no luck. I know Knoober. He is trustworthy and I need his brains. His piloting skills, less so."

It took many days of deliberating whether Knoober should join the team. With each passing day, they got closer and WhiteMeat agonized over whether he would have to order a potential ally and his fellow searchers to be shot down.

"Infinity Corp is convinced that BOO is also looking for the Thoramine." WhiteMeat said.

"Since when did BOO stop being 'Band of Outlaws' and start being the local BOOgieman?" I asked, "Either way, I vote Knoober joins us."

"Me too." hdparm nodded.

"I prefer he works with us rather than against us." WhiteMeat agreed.

And so the trio that held all the information became four.

"Knoober, I am curious. How did you find so many artifacts in such a short time?" I asked.

WhiteMeat quickly added, "I'm guessing a combination of some from Objective Driveyards, some from Dual Universe Wayfarers, and...?"

Knoober nodded, "Those got us started. But once we learned that there were three per planet and you guys were in the lead, Infinity Corporation started manually searching the map for tiles owned by Ministry folks and went straight to them."

Ironically, attempting to cover some of the artifacts had led other hunters straight to them. I have never more felt the urge to facepalm.

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16.09.0AA - Lacobus Planet Core

One of the possible solutions, assuming the binary was in first or second complement, pointed to a few locations fifty-three kilometers below Lacobus's surface. In other words, at the core of the planet. One of the most trusted of Ministry, BrownSterring, was the first to experience it.

"Kurock! Help! I am lost! It's a freakin maze down here" BrownSterring sent in a direct message. "I can't get out."

"Kill yourself," I answered. By that I meant, you can never be truly stuck since you can always force respawn to get out of any hole you fall into. You lose whatever you are carrying but that is a small price to pay for freedom.

"You should come look," BrownSterring continued messaging, "it's very weird".

The core of the planet is unmineable but surrounded by mineable material, so you can create tunnels in any direction and won't know whether the way is blocked until you hit a wall. That, coupled with walls being highly irregular blocks with hundreds of meters long grooves and indentations that lead to dead ends, makes for a very confusing maze. And the final kicker is the subtly changing direction of gravity which slowly turns walls into floors or ceilings.

In a word, the planet's core was (and still is) disorientating. An ideal place to

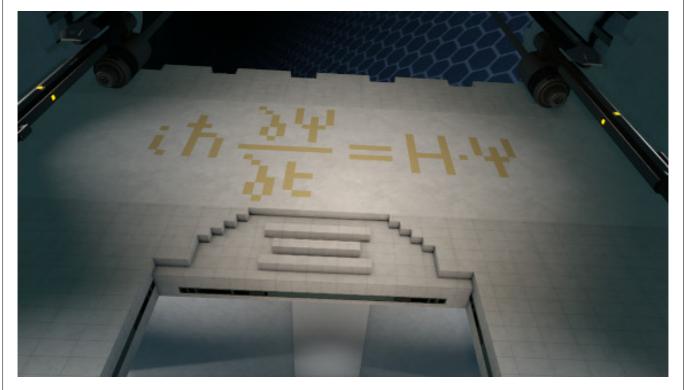
hide something valuable. But the Thoramine was not to be found there.

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Dear reader,

It's easy to think that the artifact puzzle is very simplistic with all the information laid out neatly in one place. It is easy to forget that there is an abundance of information that must be considered and then discarded.

One example would be the golden equation on NQ-Sophon's castle entrance on Alioth that had nothing to do with the artifact hunt.



Schrödinger equation on the entrance to JC's castle

Another was some binary text which was found in an out of the way room in some of the markets owned by Aphelia.



Binary at the Markets (one page of two)

This was a straight binary to ASCII text conversion which reads "shattari was here". Which may at first glance I appear to be linked to SHATRN in some way. It isn't. The conclusion was that this bit of binary was an Easter Egg left by the creator of the markets.

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17.09.0AA - Helios System

"ATTENTION!" The announcement rang, " According to current reports by

those in the official Dual Universe Discord server and a certain large streamer, the planet Lacobus is currently under a blockade. It is believed that this is a French organization. So far we have been able to confirm that several ships with the tag "AH" are hunting there. Therefore, under no circumstances fly to Lacobus!"

And so the rumors started to spread. The chatter continued...

"French organization? FrogSwarm is blockading Lacobus?"

"I heard there were fifty PvP ships blockading Lacobus"

"Pirates are surrounding Lacobus."

"I think it's more than just pirates."



DSI blockade ships

In actuality, Operation Viper kicked into full swing, blockading the designated planets. The fleet was made up of around twenty-five assorted ships from Dark Star Imperium, New Genesis, Ministry, and Hyperion. Each doing their share of killing anything that neared Lacobus under the watchful eye of Firestorm and the other Ascendancy leaders.

Hyperion hastily organized a covert mining operation to dig out even more of Lacobus deploying over seventy people on the ground. They collected millions of liters of the ores of Lacobus to fuel their factories, but also to have a large presence on Lacobus should they be needed.



Hyperion arrive on Lacobus

All this movement didn't go unnoticed. What was a very secret mission suddenly didn't seem so secret anymore.



What's happening on Lacobus in #DualUniverse - ships are gathering in orbit around the planet (\*\*)



5:49 PM · Sep 18, 2020 · Twitter Web App

NQ-Sophon aka JC stirs the pot.

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#### 18.09.0AA - Space near Lacobus

Lacobus was also home to the Shadow Union, a group in the Band of Outlaws, and they were not going to let "AH" stomp around their home ground without a fight.



The Shadow Union ship *Last Starfighter* broke through the clouds of Lacobus and quickly reached space, it's radar detecting nearby AH ships. Before the handful of spread out AH ships could react, *Last Starfighter* engaged the closest, locking on and quickly destroying it. AH Scout 6 was greyed out. Because AH Scout 7 and AH Hornet were also severely damaged, the AH ships all turned and ran. *Last Starfighter* broke away to complete some hasty repairs of its own before returning to the battlefield.

Viper, the captain of the *Last Starfighter*, broadcasted a warning "All AH Constructs can now vacate the area around Lacobus. This area is owned by

Shadow Union. Any attempts to remain in the area or shoot upon any allied ships will be met with force. The four ships our vessel just dealt with is only a taste of what will come should you remain in this area."



Last Starfighter returned to find two AH ships accosting a rickety civilian hauler. Last Starfighter scared the pair away. Finding the crew long dead, they claimed the broken hauler for themselves and took the spoils back to their base.

Last Starfighter returned once again to find four AH ships waiting. This quickly became six as the AH ship, Black Pearl, also waded into battle. Outnumbered,

and taking heavy fire, the *Last Starfighter* dealt considerable damage to three before disengaging back to safety, to fight another day.

Assuming *Last Starfighter* was going to call in reinforcements, Ministry deployed their main fleet, a medium class destroyer widewing, while DSI and Hyperion stood their ground on Lacobus waiting hours without seeing any action. The *Last Starfighter* didn't return.

Meanwhile, oblivious to the fighting occurring in space above our heads, digging continued on Lacobus below. Still without any luck.



Black Pearl

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#### 18.09.0AA - JC's Castle, Alioth

The combined intelligence network caught wind of a screen switching on in JC's castle back on Alioth, where the eccentric collector had gathered one of the monoliths. Or had the castle been built around the monolith? Regardless, the screen held the last vital clue to the artifact hunt.



"Quantization of the continuum is the key."

I wish I could say "Aha! Of course!" and that this clue blew the hunt wide open. It didn't. I first had to learn what quantization was, never having run into it

before. So while mathematicians and physics professors were questioned by others, I read up on "quantization".

I found it's effectively a way of dividing a "line" into multiple equal parts and giving each an address in binary. With 11 bits there are 211 (2048) subdivisions of the line. But this bit address needed to be converted to the latitude, longitude and depth of ANKER, NERGAL and SHATRN.

As an example, ANKER's range would be from -90 to 90. So converting 1011001101|0 (ignoring the I) we get 10110011010 which is 1434 in decimal. This meant we were looking for a latitude that was 70% (1434/2048\*100) along the way between -90 and 90. Which ends up around 36 degrees latitude. Doing the same for NERGAL and SHATRN, we found our location, dug and found...nothing. Wrong again.

Something was still missing and it took two days to find out what it was.

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#### 20.09.0AA - Lacobus

The game of trial and error continued. A further 350+ kilometers of tunnels were dug as the values were checked and rechecked and new theories were made and discarded.

Then one day hdparm announced "KSHANTNARATH!"

"What?" I asked bewildered, still wondering where we went wrong, growing more despondent as each day passed fruitlessly.

"I found it!" hdparm shouted excitedly.

"Where? How?" I asked, not quite believing it.

"We did it!" he answered.

"We did?" I asked stupefied.

"Yes, it was the quantized one but with all the pipes shifted to the front," he explained.

"The pyramid inscription made me think of that one. I also had a few other bits shifted to have the pipes in the third position for example but we don't need to check those now." I mused, realizing that the search was finally over.

"Come look!" he said.

"Come look at what?" WhiteMeat asked as he walked in.

"We found the Thoramine," both hdparm and I said simultaneously.

"Well, hdparm found it," I added quickly, "To the Thoramine!"



KSHANTNARATH!

We spent the rest of the day clearing the area around the Thoramine node and generally basking in a job well done.

Knoober, late to the party as usual, found out as soon as he was able and celebrations continued.

It was not long before the four of us were visited by NQ-Sophon himself.

"Congratulations!" NQ-Sophon said, "This puzzle was supposed to last three years and you completed it in three weeks. How did you do it?"

And so we told him a slightly shorter version than the one you have just read.

After that we got our turn to ask questions.

"Where do the names 'ANKER', 'NERGAL', 'SHATRN' and 'Thoramine' come from? Are there any deeper meanings to them?" hdparm asked.

"No. They were made up. No deeper meaning." Sophon answered.

"What about Noveans complaining about NQ-Sophon claiming territories on Ailoth?" Knoober asked.

"I did build the original castle but the castle will be updated and made part of the lore," NQ-Sophon said, "I don't have time to play these days."

"You're JC, the founder of NovaQuark!" I scoff at 'those Noveans', "I think you should be able to do whatever you please."

"How is Kyrium related to Thoramine?" asked WhiteMeat. Kyrium: the indestructible material whose manufacture is a lost technology but somehow all the arkships, including the Novark were made from it.

"The artifacts and the arkship are made of Kyrium, but Thoramine is not Kyrium." NQ-Sophon answered.

"What is Thoramine for?" I asked as a final question.

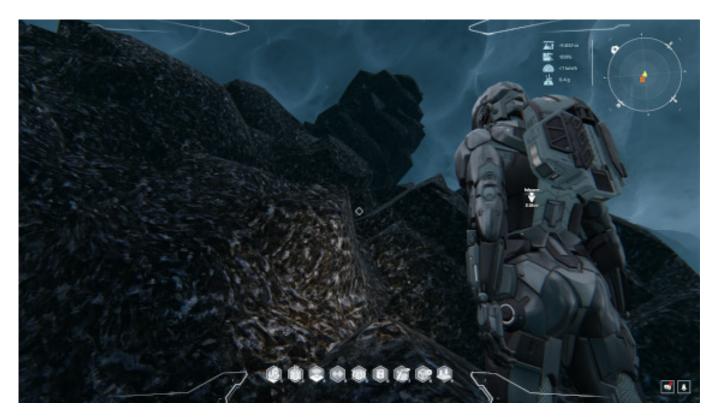
"I can't tell you. That is still a secret." NQ-Sophon answered enigmatically to a chorus of disappointment.

Just as quickly as he appeared, he was gone, back to his busy schedule.

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#### 02.10.0AA - Lacobus

Celebrations and announcements were made of the Ascendancy victory. The alliance had discovered and secured the Thoramine, but, after some photo opportunities with members of the alliance, the Thoramine was left in the ground, untouched for weeks. This was partially due to waiting for the 'mining efficiency' talent to complete, partially for security reasons and mostly because it could not be extracted yet (See appendix i).



hdparm surveys the Thoramine

When the time came hdparm placed containers at intervals all the way down to the ore. I used them to transport an XL screen to the bottom and the Thoramine to the top. It was frightfully uneventful.

The next day, Knoober picked it up in one of the Infinity Corporations yellow trucks and tried to take off. It didn't budge. Even with the lower gravity of Lacobus, the ore was so heavy, the poor truck couldn't move. After shifting the load to other carriers, the truck took off and warped to Alioth.

Then Knoober burned up in the unexpectedly high atmosphere of the sanctuary moon. The truck did float to the surface in more or less one piece but it was on the opposite side of the moon from where the delivery had to be made. And with the heavy gravity of the sanctuary moon, the truck was once again going nowhere. After some weight distribution, Knoober tried again and crashed the truck as it ran out of fuel.

So Knoober brought in another truck. A few trips and a cartwheeling truck later, final delivery was made to the sanctuary moon. The Thoramine was divided among the finders with Ministry taking home the most to shared out to the very pleased Ascendancy Allies.

To celebrate, WhiteMeat placed 1 liter of the precious prize on the market for 1 billion quanta. A truly big flex that cost him around 25 million quanta. Only he can say whether that show of wealth was worth it.



Knoober prepares to transport crash the Thoramine

Dear reader,

The fire in the fireplace has burnt down into glowing coals, I close the book I was reading, once again to speak into your head.

And so, the Thoramine was found and stored safely away. But what \*is\* Thoramine? What is it for? A component for warp gates? Or overly opulent fireworks? Extra large cores? We can only guess.

That is a mystery to be solved another time.

To be continued...

# Appendix I: Bloopers

**Blooper 1:** The "|SHATRN |" monolith was misspelt as "|SHATERN |". This caused no small amount of confusion to the artifact hunters until it was revealed to be a typo. This hadn't changed at the time of this writing.

**Blooper 2**: Some of the ground was undiggable on some planets like Symeon and Thades due to a bug. This prevented searchers from reaching the inscription on some of the artifacts, most notably the basilicas, until that was fixed.

**Blooper 3**: By the time the digging started on Lacobus the Thoramine was not placed in the ground yet. A patch on 10 September added the Thoramine into the ground as well as letting everyone know something was afoot.

Blooper 4: This one is less a blooper and more a missed opportunity. In an attempt to delay artifact hunters that came afterwards, Ministry claimed, covered up, and buried the inscriptions on many artifacts. NQ GM's, on demand, ripped open the obstacles. These would have been a good reason for territory warfare that, unfortunately, wasn't implemented yet.



GM wrecks monolith covering

Blooper 5: Even NQ was not immune to the blockade...



**Blooper 6**: Once the Thoramine was found it was without texture and not minable. Both texture and ability to mine it, was only added in a patch on 1 October.

**Knoober 7**: Not a blooper, but a Knoober: the sheer number of times Knoober crashed the transport ship carrying the most precious ore in the game. If you want to know how to cartwheel a ship filled with the rarest resource in the game, ask Knoober.

# Appendix II: Fantastic Artifacts and Where to Find Them

## Alioth Pyramid

Near Alioth North Pole

::pos{0,2,88.4151,-86.8584,235.9984}

Text: | . . o . . . . . . . .



## Feli Sphere

In the center of the crater on Feli

::pos{0,5,8.9511,2.7935,139.7166}

Text: ~ pJVM AHETY TH ZYMAH VL GHV AGROJ, MRBF RAJT MV GWZT VL GHV NXYOSS AAW GHV DXWDZ PS GAR SYAMYX ~



#### **Thades Basilicas**

::pos{0,3,-29.4543,-41.5089,-0.0002}

Text: | DZL TRGGH GLTUOL ~

::pos{0,30,-58.8762,-137.6871,252.3526}

Text: ~ MRBF GHV SNU ~

::pos{0,3,38.9752,-53.2501,11908.3320}

Text: ~ MGUTNBAS KHHYKEPNR |



### Churches

Madis

::pos{0,1,31.7313,94.1091,629.7759}

Text: -1K



Alioth (Moon 4)

::pos{0,22,12.3304,63.2716,24.4492}

Text: -2s

#### Thades

::pos{0,3,2.7523,40.8017,13190.9336}

Text: -3н

#### Talemai

::pos{0,4,89.7615,-65.8801,575.4935}

Text: -4A

#### Feli

::pos{0,5,-9.4198,175.5771,18346.3711}

Text: -5N

#### Sicari

::pos{0,6,28.9662,108.2016,163.4197}

Text: -6T

### Sinnen

::pos{0,7,-32.4712,24.2337,-0.0000}

Text: -7N

#### Teoma

::pos{0,8,-59.8362,54.1927,0.0001}

Text: -8A

## Jago

::pos{0,9,81.4124,-97.7115,1297.6520}

Text: -9R

#### Lacobus

::pos{0,100,53.7182,-126.6886,1226.6934}

Text: -10A

## Symeon

::pos{0,110,-73.8359,-133.4115,238.5253}

Text: -11T

Ion

::pos{0,120,-48.2583,105.8135,357.0392}

Text: -12H

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## Monoliths

#### Madis

::pos{0,1,-42.0890,-7.7288,676.3972}

Text: ANKER 1

::pos{0,1,-55.9677,-121.9107,723.5372}

Text: NERGAL 1

Madis moon 2

::pos{0,11,-22.4916,-112.6606,0.0000}

Text: SHATRN 0

#### Alioth

::pos{0,2,-1.5110,158.9559,-77.3064}

Text: ANKER 0



In space near Alioth

::pos{0,0,210077.0584,-686310.3899,-13988.1658}

Text: NERGAL 0

Inside JC's castle

::pos{0,2,19.2182,40.7317,750.4938}

Text: SHATRN 1

**Thades** 

Thades asteroid

::pos{0,3,87.5900,-3.7580,70641.0703}

Text: ANKER 1

::pos{0,3,34.3992,-49.7234,13554.7070}

Text: NERGAL 0

::pos{0,3,-82.0677,135.4315,10356.2324}

Text: SHATRN 1

Talemai

::pos{0,4,-46.4310,57.8998,608.1328}

Text: ANKER 1

Talemai moon 3

::pos{0,41,71.8591,160.4204,18.0378}

Text: NERGAL 0

::pos{0,4,47.6902,-144.8308,579.8607}

Text: SHATRN 1

#### Feli

All on the edge of the Feli crater

::pos{0,5,-8.8261,17.7143,18434.1973}

Text: ANKER 0

::pos{0,5,4.6928,-20.8801,15330.3359}

Text: NERGAL 1

::pos{0,5,28.0932,14.0101,18272.0762}

Text: | SHATRN |

#### Sicari

::pos{0,6,41.3459,-86.2097,158.3757}

Text: ANKER 0

Underground in a natural cave

::pos{0,6,-44.3870,159.2366,-19.9540}

Text: NERGAL 0

 $::pos\{0,6,-32.0863,-128.3860,89.1357\}$ 

Text: SHATRN 0

#### Sinnen

::pos{0,7,-1.5808,-9.8211,0.0000}

Text: ANKER 1

Sinnen moon

::pos{0,70,13.0149,-141.6728,-1931.0009}

Text: NERGAL 1

::pos{0,7,21.5529,-178.6320,247.7188}

Text: SHATRN 0

#### Teoma

::pos{0,8,82.1331,129.4925,-289.4712}

Text: ANKER 1

Natural cave, underground.

::pos{0,8,12.3790,105.6590,246.1156}

Text: NERGAL 0

::pos{0,8,-12.1282,-103.7277,382.2792}

Text: SHATRN 0

## Jago

::pos{0,9,-20.4328,-142.0621,1258.5114}

Text: ANKER 0

::pos{0,9,43.1997,117.2401,-127.5545}

Text: | NERGAL |

::pos{0,9,11.9107,-128.7038,718.3256}

Text: SHATRN 1

#### Lacobus

::pos{0,100,-21.0609,169.1922,1338.0643}

Text: ANKER 1

::pos{0,100,-89.9961,0.0000,981}

Text: NERGAL 1

::pos{0,100,2.4115,-38.4670,1437.1338}

Text: SHATRN 1

## Symeon

::pos{0,110,-0.4965,135.6756,176.2249}

Text: | ANKER |

::pos{0,110,9.4284,-130.5830,274.2523}

Text: NERGAL 1

::pos{0,110,-7.1956,-50.2103,-0.0000}

Text: SHATRN 0

lon

::pos{0,120,1.6356,125.0786,1135.4305}

Text: ANKER 0

::pos{0,120,40.0744,-11.7174,1216.9757}

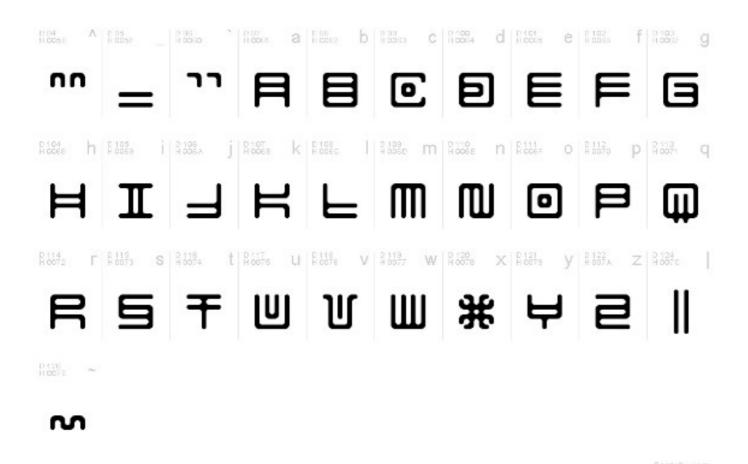
Text: NERGAL 0

 $::pos\{0,120,-84.5898,135.2613,1186.7819\}$ 

Text: SHATRN 1

# Appendix III: Alien Writing





# Appendix IV: Artifact Hunters

Besides those already mentioned and some that wish to remain anonymous, a big thanks to the artifact hunters that worked tirelessly behind the scenes. They are a mix of scouts, puzzle solvers and/or diggers: Aithan, BrownSterring, Cephie, Copper, Cowman, Deathwatch, Eftalon Quest, Elias Villd, Ginger, Ignorer, infinite\_matt, JeanLucPicard, Korisk, NicFlix, Porkchop, Ronnie, Rotta, Stacy, Virtual, WildChild85, z0Kng.

## About the Author

Kurock is one of the more popular authors writing for Dual Universe. Between juggling his children, he lives behind his keyboard in South Africa and says he doesn't want to go outside. Going outside would mean not playing pen and paper RPGs, boardgames, and most importantly Dual Universe. Two time winner of the NovaWrimo Community Vote, Kurock encourages other authors to enter their stories in the next NovaWrimo: Just DU it. You can find Kurock everywhere in the community, most prominently running DICE, the Dual Universe gaming commission. But if you want to know more, you can read Novaquark's Community Spotlight.

# Picture Credit

Dual Universe beta in-game screenshots used in this publication are courtesy of Kurock and members of the following organizations:

- Dark Star Imperium
- <u>Dual Universe Wayfarers</u>
- <u>Hyperion</u>
- Infinity Corporation
- Ministry
- New Genesis

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Hedgehog Dilemma by Kurock

An action packed adventure story of space pirates, thieves, riches and relationships with appearances by well-known organizations from the Dual Universe community.

32 pages, released: 27 September 2020





## Novean Almanac - Issue 4

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Dual Universe Development Timeline
Community Media
Organization Updates
Making History in Dual Universe
Pride before Cinderfall – A short story
based on true events by Kurock
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