

# The Grand Scientific Musical Theatre



Richard Merrick

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The  
Grand Scientific Musical Theatre

First Edition



Richard Merrick

In loving memory of my father Rex Saunders Merrick.

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# Prologue = Theatre of the Mind

Long before there were typewriters and computers – before there was mass publishing and the Gutenberg press – people had to rely on their memory to recall what they learned. In fact, a good memory was so important in those days that it was considered a prerequisite for all learning and a primary measure of intelligence.

*“In my part of the world they actually say a man has no memory to mean that he is stupid. When I complain that my memory is defective they either correct me or disbelieve me, as though I were accusing myself of being daft. They see no difference between memory and intelligence.”*

*- Michel de Montaigne*

By the early Renaissance, scholars were desperately seeking ways to improve their memory in the hope of elevating intelligence and advancing their reputation. At the forefront of this quest was the 14th century Majorcan philosopher Ramon Llull who developed a system of logic and memory called the *Ars Magna*, or *Great Art*. Known today as *Lullism*, his memory system is said to have been inspired by ancient Greek astrological and architectural treatises in rediscovery at the time.

Llull considered the mind a kind of architectural space or theatre where symbolic images could be placed in specific locations as an aid for memory. He would enter a state of deep relaxation or meditation – “lulling” himself into a dream-like trance by humming a “lullaby” – so as to enter what he called the “theatre of the mind.”



He would imagine his dream theatre with any number of rooms placed any way he wished to represent classes and subclasses of information. Inside these rooms he would place symbols which could then be retrieved by walking down halls and up stairs into the right room. In this way, he could organize his thoughts and easily remember them later.

As it was expanded by later Renaissance philosophers, particularly Giordano Bruno, and combined with other memory techniques by Cicero and Aristotle, Lullism evolved into a method that described the mind as a “universal theatre” within which “the great book of the universe” could be reconstructed and re-membered. For instance, within a given room knowledge symbols could be placed at specific locations to mean something special or logically grouped together to impart more complex concepts. These mental objects might be placed near a window to appear brighter, and thus more important, or color-coded to correspond to items in other rooms.

In more advanced applications, symbols could even be imagined to animate or act out an idea like a scene from a play. Even the most abstract concepts like music could be represented in this fashion, paralleling and perhaps contributing to the development of symbolic music notation.

*“I always had some object under the eyes while composing.”*

*- Jean-Phillipe Rameau*

In this way, memory became a kind of dollhouse art – part art and architecture, part philosophy and logic – blending virtual Limoges-like objects, figures and letters into an internal metaphysical representation of the outer world. As medieval alchemists came to embrace Lull’s system, it grew into the “artificial language” of geometry, color and positional patterns characteristic of alchemical texts. And as the practice of alchemy was replaced later by Isaac Newton’s objective science, Lullist symbols, relations and classification techniques became the universal language for physics and the mathematical sciences.

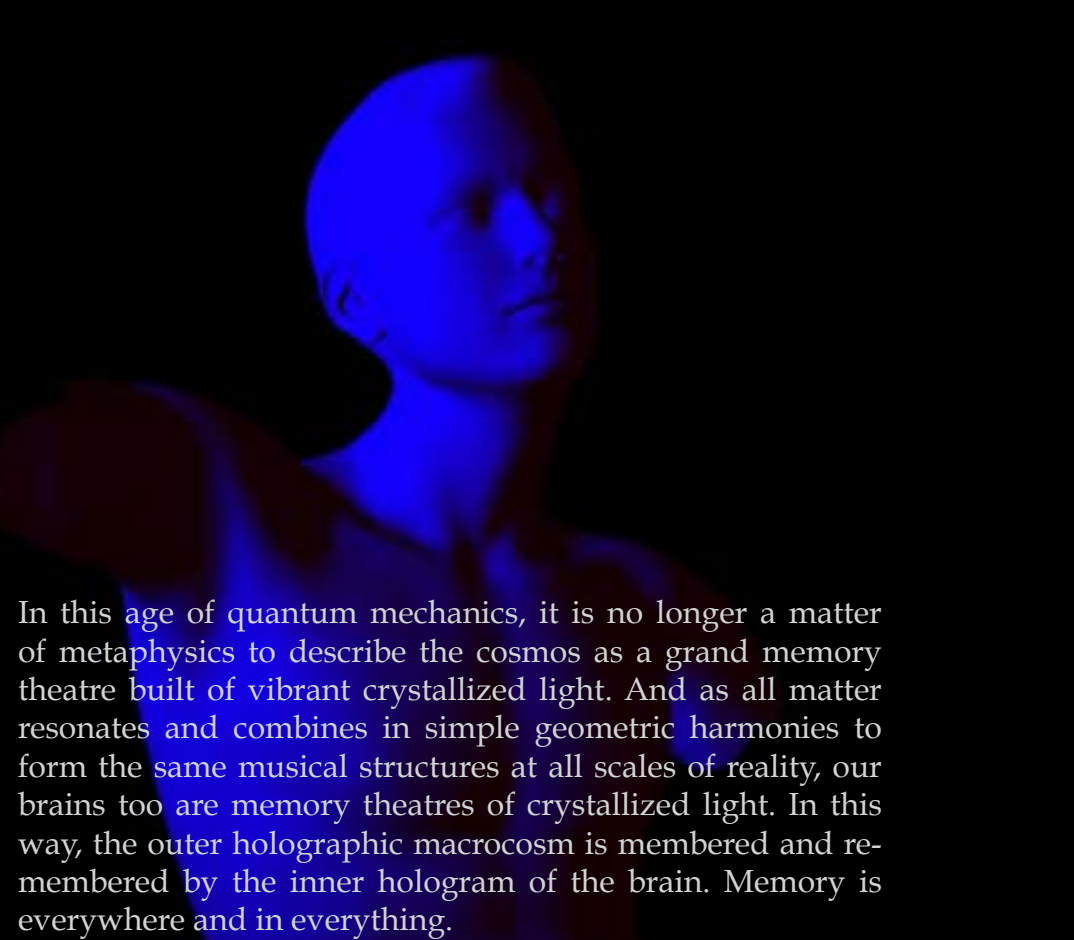


Today, Ramon Llull is considered the father of computational logic and the forebear of all computer languages – all based in some way on his spatial visualization technique to aid human memory. But while Lullist memory techniques were once considered central to learning and education, they have all but disappeared in present day. Knowledge is no longer considered something intimately connected with memory, much less any theatre of the mind or book of the universe. Our schools no longer train individuals to assume responsibility as keepers of any wisdom, relying instead on vast libraries and now the World Wide Web. The unfortunate truth is most educators have come to presume that people no longer need to hold and interconnect a wide range of topics in their head. Lullism has become a dead, forgotten art.

While researching the subject of memory and brain function for my first book *Interference: A Grand Scientific Musical Theory*, I began to search for a simpler and more intuitive way to explain how perception works to the layperson. I ultimately decided to use the metaphor of a theatre – the *Grand Scientific Musical Theatre*, as I called it – to represent a unified ‘harmonic space’ where visual and auditory objects could be visualized and measured. After all, the word “theory” comes from the Greek word *theoria* meaning “theatre of the face.”

Of course, this sounds exactly like Ramon Llull’s theatre of the mind. But amazingly, I had no knowledge of Lullism until well after the book was published. I had arrived at the same spatial memory model of the brain through the study of music perception and harmonic science. When I did later stumble across the Lullist memory system, I was floored by its similarity to my work and immediately began to research how the study of harmonic science by ancient Greek philosophers might be connected to the art of memory. Then one day it dawned on me.

Greek mythology, with its archetypal gods of nature, was in fact Llull’s “universal theatre,” developed thousands of years earlier by musical-astrological philosophers to help society remember “the great book of the universe.” As personifications of the forces and geometries underlying harmonic physics, the Greek gods must have been designed as memory objects to help store knowledge about nature in the theatre of the human mind. The mythical gods’ ancestry, traits, marriages and affairs were used to symbolize their place in the cosmic theatre, forming a holographic and hierarchical cast of characters that could be retrieved and retold through Greek fables. Lullism was nothing less than the ancient Greek worldview, originating from the study of harmonic science and music perception just as I had found while writing my book. Perhaps it was no coincidence that Llull was a story-telling, music playing troubadour in his youth.



In this age of quantum mechanics, it is no longer a matter of metaphysics to describe the cosmos as a grand memory theatre built of vibrant crystallized light. And as all matter resonates and combines in simple geometric harmonies to form the same musical structures at all scales of reality, our brains too are memory theatres of crystallized light. In this way, the outer holographic macrocosm is membered and remembered by the inner hologram of the brain. Memory is everywhere and in everything.

The Greeks seemed to know this. Their greatest wisdom (and perhaps today’s greatest secret) is that nature stores and remembers everything it knows through the physics of harmonics. This is why Pythagoras designed his 7-tone musical scales based on the five perfect solids – to forever remind us that the same harmonies found in a perfectly resonant crystal can trigger our deepest emotions. And this is also why the Greeks designed their mythology around musical themes and harmonic archetypes – to celebrate the cosmos as the grand scientific musical theatre of creation with Earth as its stage.

But it will always be the people who are the actors in this passion play. As Nature’s very own cast of memory objects, it is our job to help nature remember what it learns by remembering what we learn. Let us never forget that we are Nature too – we *are* Nature’s memory.



*"We all have our time machines. Some take us back, they're called memories. Some take us forward, they're called dreams."*

*- Jeremy Irons*



# Memory Theatre

William Sinclair, 1st Earl of Caithness, must have known it would be a very long time before anyone discovered his Great Secret at Rosslyn. But it was a very old secret and he was a patient man. He knew in his heart that one day his dream, realized by the ingenuity of his good friend Sir Gilbert Haye, would be rewarded. He knew that day would be the one when the world finally wakes up, remembering the truth of who we really are.

*"More than five centuries ago I built a theatre of the mind. Not a large one, mind you, just a small chapel in Scotland to remind the world of what we lost. You see, there was a time when everything in the Universe was seen as music. Known as Musica Universalis, or Music of the Spheres, the balance between harmonic resonance and damping were once known to exist everywhere and in everything, describing the cosmos and all life in it as the frozen harmony of crystallized light."*





*“To help explain the idea to others, the tribal shamans, temple priests and philosopher kings spoke sacred words over dusty drumheads, carefully transcribing the resonant patterns they found into the pictograms and hieroglyphs of their written language. As they also came to discover these same patterns in the planetary orbits and geometries of life, there grew a great science of harmony in the ancient mystery schools.”*



*"So important was this knowledge of Nature's musical structure, the leaders felt compelled to tell everyone what they had found. They wrote fables using personified human archetypes to describe the universal physics of music so that all might understand and be lifted up by it. They designed their governments and schools around harmonic principles while basing their laws and social customs on the ideals of coherence and balance. Within this musical worldview, people found meaning and a noble purpose in their lives, building temples of learning, colossal monuments and great civilizations in honor of the musical cosmos. But alas the golden age of harmonic ideals was not to last."*



*"The time came when kings were no longer philosophers, but warriors. They built a great empire of roads connecting conquered peoples, governing them through force rather than wisdom. They cast aside the old stories of a musical age, twisting the simple truth of Nature's reflective balance into a conflict between good and evil. From this came the mistaken belief that Nature, and all mankind with it, was the evil half and goodness might only be found apart from Nature. While difficult to imagine, the people of Earth learned to fear Nature and in so doing worshipped death."*



*"In the face of this fear, the mythological archetypes of Nature were cast out as demons and their symbols banished by the warrior kings. In their place rose the Great Belief of Social Control and from this came the Great Project of Self-Censorship so that Nature's truth might stay hidden from view. Musica univernalis was pushed underground into secrecy, leaving only a smoldering ember of awareness in the collective subconscious."*



*“At first, this seemed a good thing. People learned how to travel great distances in hours, speak instantly to anyone and enjoy the luxury of manufactured foods, simulated realities and an engineered life. But with society no longer based on any natural law, the presumption of intrinsic error led to a never-ending chain of war, crime and poverty. Economic stability disappeared and the People’s Great Dream faded into a dark nightmare.”*



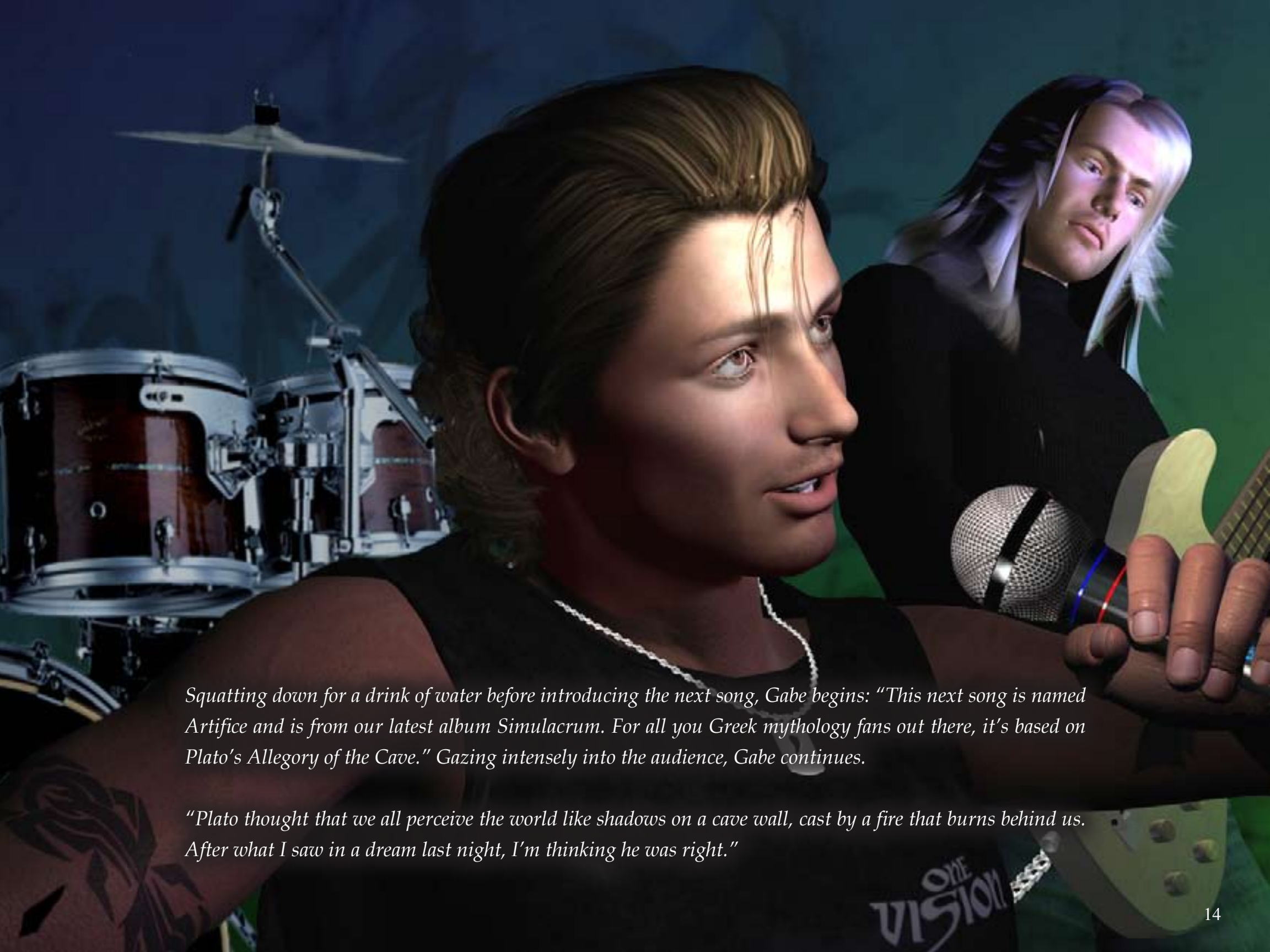


*"By the year 2012, even Trust itself had disappeared as the world found itself on a path leading nowhere."*

# Venusian Star

**D**istant Lights had just finished a song before an enthusiastic crowd at the *Liquid Lounge*, a popular hangout in the Dallas Deep Ellum warehouse district. Specializing in their own brand of neo-mythological art-rock, the band's singer Gabe is obsessed with Greek mythology and often talks about it with the audience.





*Squatting down for a drink of water before introducing the next song, Gabe begins: "This next song is named Artifice and is from our latest album Simulacrum. For all you Greek mythology fans out there, it's based on Plato's Allegory of the Cave." Gazing intently into the audience, Gabe continues.*

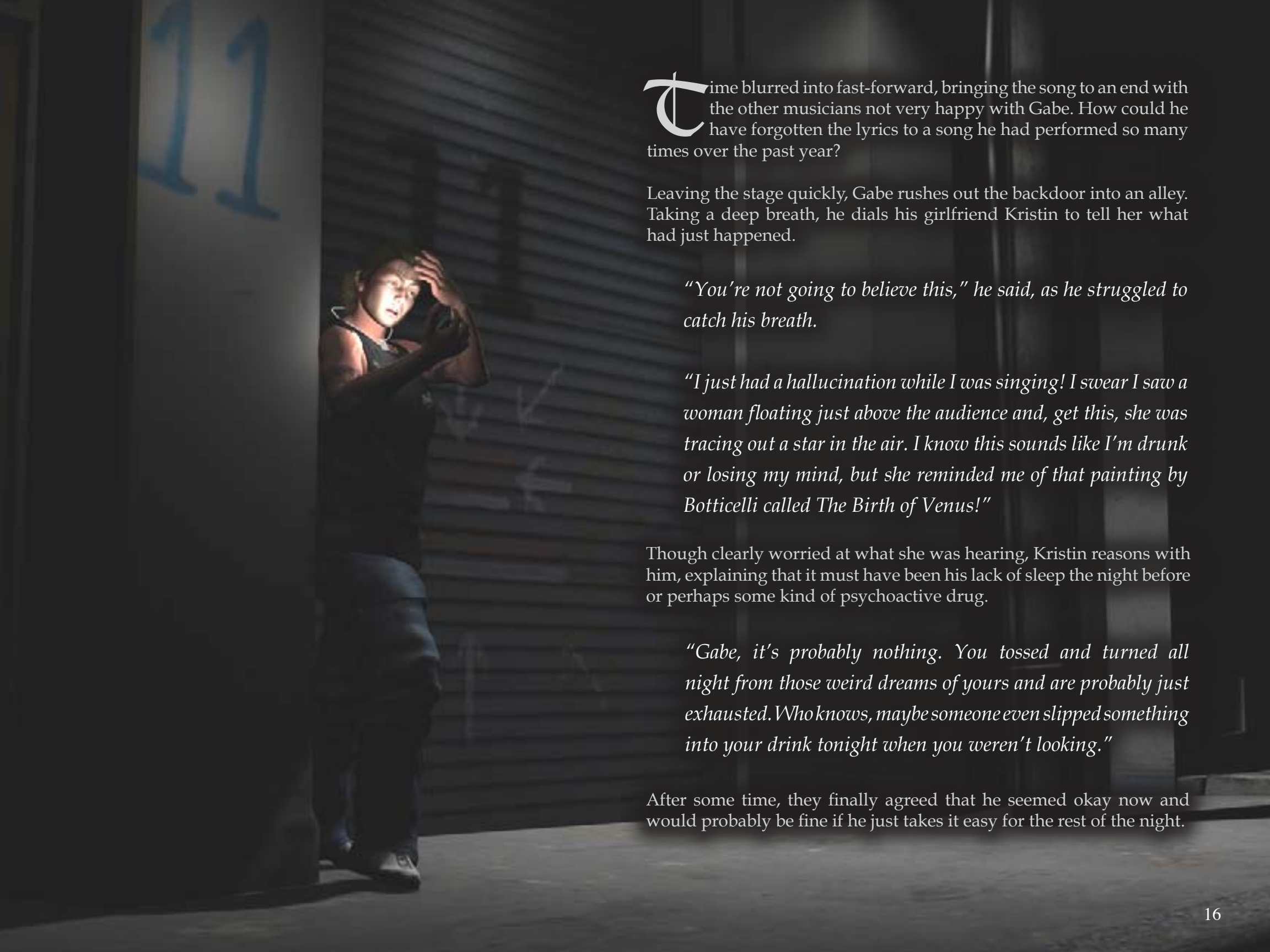
*"Plato thought that we all perceive the world like shadows on a cave wall, cast by a fire that burns behind us. After what I saw in a dream last night, I'm thinking he was right."*



As the next song begins, Gabe is instantly absorbed into its lyrics. But as he sings, he feels a cool breeze begin to swirl around him, flowing across his face and startling him awake.

Opening his eyes, he sees something – or someone – suspended above the audience. There before him is a beautiful young woman with golden hair and burning eyes floating completely naked on a cloud! She smiles, then slowly and sensually traces out a star in the air with her finger.

Shielding his eyes from the bright light, Gabe gasps and turns away.



Time blurred into fast-forward, bringing the song to an end with the other musicians not very happy with Gabe. How could he have forgotten the lyrics to a song he had performed so many times over the past year?

Leaving the stage quickly, Gabe rushes out the backdoor into an alley. Taking a deep breath, he dials his girlfriend Kristin to tell her what had just happened.

*"You're not going to believe this," he said, as he struggled to catch his breath.*

*"I just had a hallucination while I was singing! I swear I saw a woman floating just above the audience and, get this, she was tracing out a star in the air. I know this sounds like I'm drunk or losing my mind, but she reminded me of that painting by Botticelli called The Birth of Venus!"*

Though clearly worried at what she was hearing, Kristin reasons with him, explaining that it must have been his lack of sleep the night before or perhaps some kind of psychoactive drug.

*"Gabe, it's probably nothing. You tossed and turned all night from those weird dreams of yours and are probably just exhausted. Who knows, maybe someone even slipped something into your drink tonight when you weren't looking."*

After some time, they finally agreed that he seemed okay now and would probably be fine if he just takes it easy for the rest of the night.

Shrugging up, he decides to clear his mind in the night air and taps the screen of his phone to listen to a song the band had been working on earlier that day. As he listens, leaning back against the graffiti-covered wall, he stares into the warm glow of his mobile music device.

But just as he seems to have shrugged off the earlier vision, a young gothic looking girl with white skin and chopped purple hair suddenly appears on the small screen, rising up through the phone's luminescence.

Extending her arm out of the light, she offers Gabe an apple. But this is no ordinary apple - it is gold with a warm glow around it.



The golden apple then splits itself horizontally, with one half opening outward in mid-air to reveal five black seeds at its core. Around the seeds trace the golden sections of a pentagram which then transform into the face of a 12-sided crystal.



*"My god! I'm not really seeing this," thought Gabe.*

*"It ... it must be the golden apple that Eris threw into the Council of the Gods to start the Trojan War. Or one of the golden apples Atlas retrieved for Hercules from the Underworld...*

*... or maybe the forbidden Apple of Knowledge!"*

The two halves then rejoin and rotate ninety degrees only to split in half again, this time vertically from the stem down with one-half rotated open. Gabe watches dumbfounded as a double spiral begins to swirl inside the apple, twisting into the shape of two human ears!

Gabe thinks to himself that she must be trying to tell him how the same natural forces at work in an apple also shape our ears. But if this were true, wouldn't we have some kind of pentagonal star in the center of our brain too?

*"Some forbidden knowledge," Gabe blurted out.*

*"I should have learned about this in grade school."*







But then without warning, the Goth Girl lunges toward Gabe's forehead, shoving the golden apple deep into the center of his brain.

At first, Gabe panicked from the sudden injection of this knowledge into his mind. But then a sense of calm and well-being swept over him. As his inner voice fell silent, he was flooded with new ideas about the world around him, remembering things he had never learned.

The vision then disappeared in a flash of electrical static. Now, seriously worried about what is happening to him, Gabe staggers disoriented back into the bar and through the crowd. The drummer Chris notices something wrong and asks him about it as they take the stage.

*"Are you okay, dude? You don't look well."*

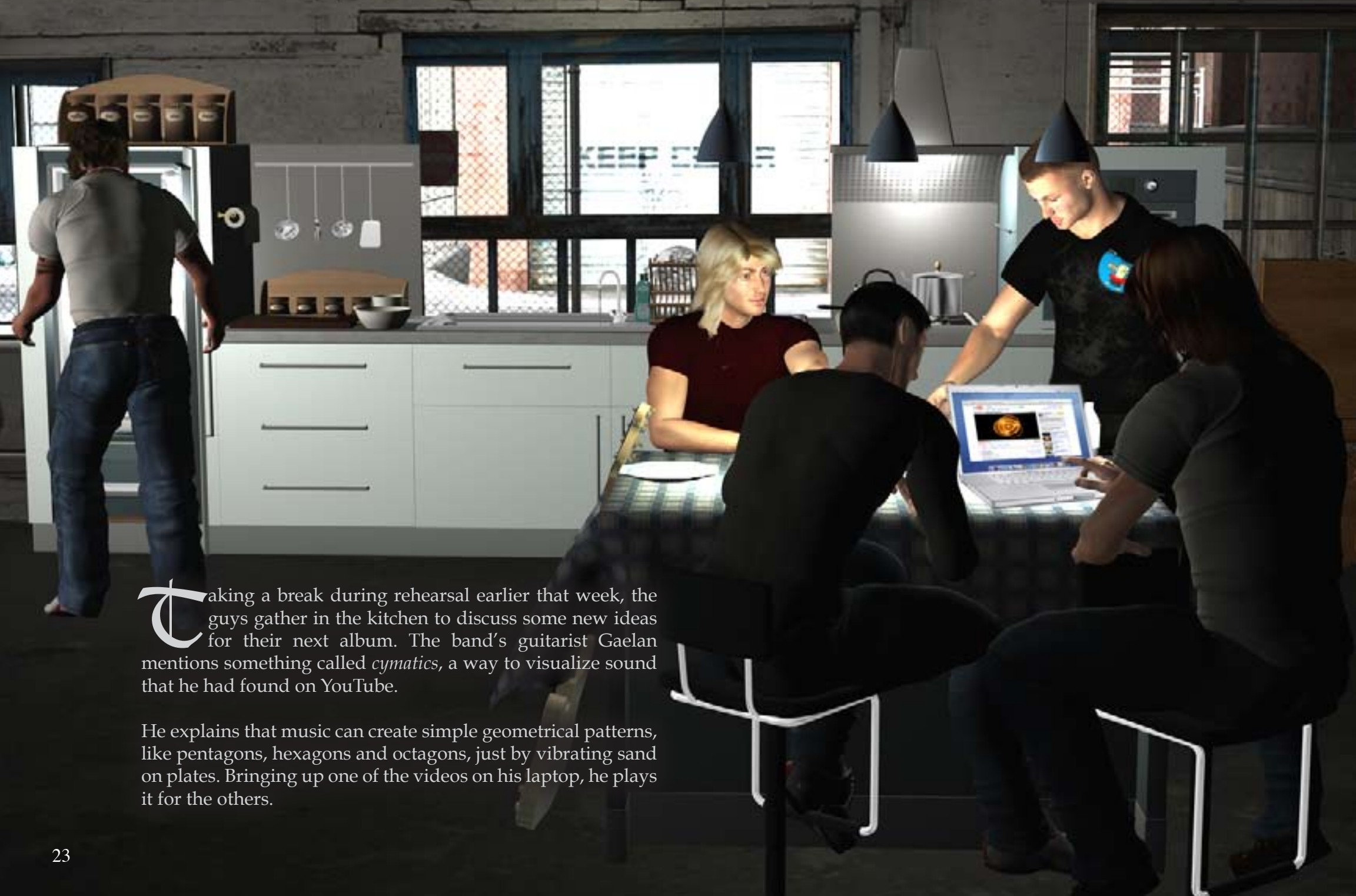
*Gabe, laughing it off, "No problem - I'm good (I think)."*





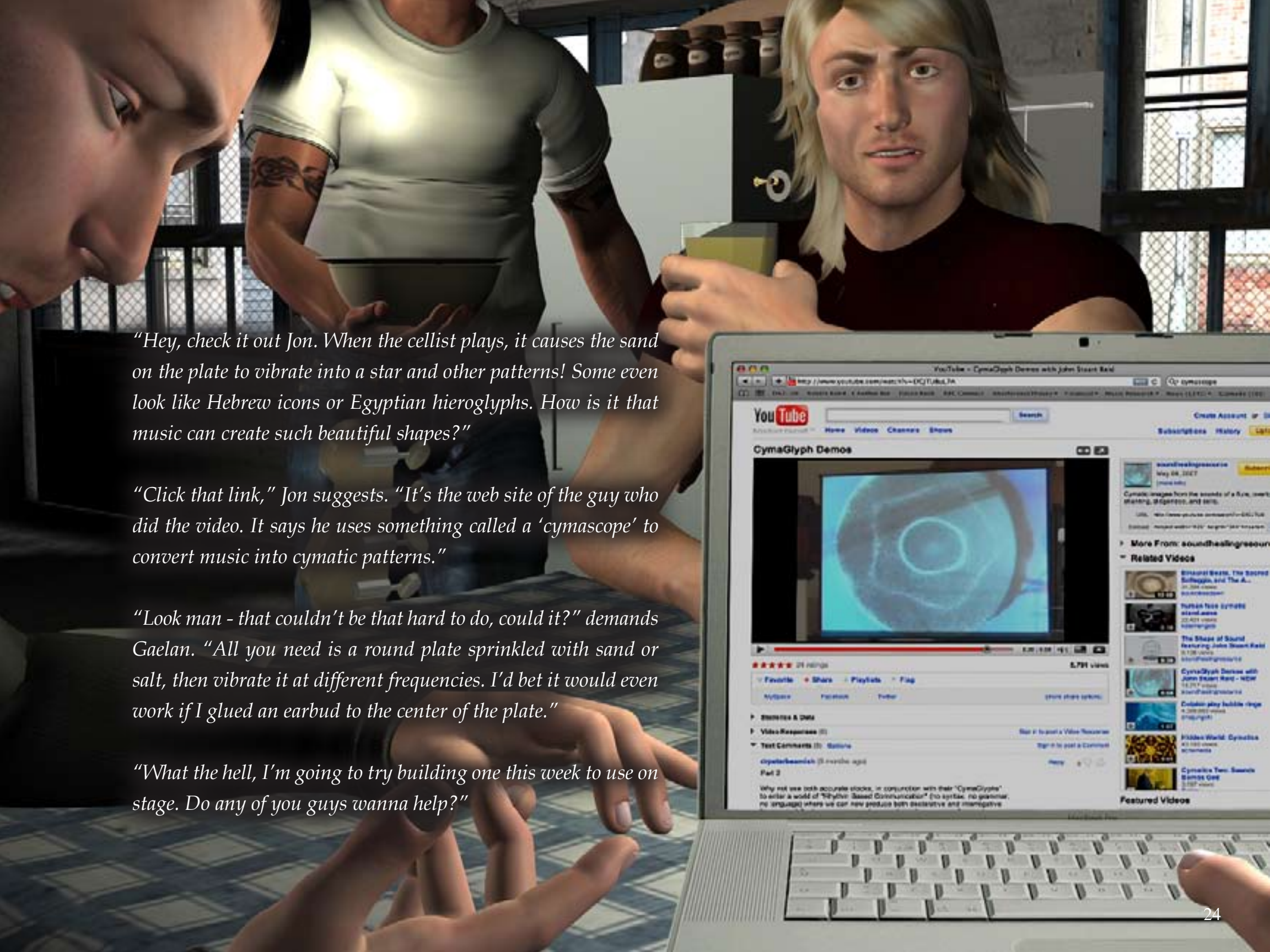
And the sounds of *Distant Lights* again filled the night air, weaving dreams of a New Mythos where the harmonic archetypes of Nature might live once more.

# Rosslyn Dragon



Taking a break during rehearsal earlier that week, the guys gather in the kitchen to discuss some new ideas for their next album. The band's guitarist Gaelan mentions something called *cymatics*, a way to visualize sound that he had found on YouTube.

He explains that music can create simple geometrical patterns, like pentagons, hexagons and octagons, just by vibrating sand on plates. Bringing up one of the videos on his laptop, he plays it for the others.



*"Hey, check it out Jon. When the cellist plays, it causes the sand on the plate to vibrate into a star and other patterns! Some even look like Hebrew icons or Egyptian hieroglyphs. How is it that music can create such beautiful shapes?"*

*"Click that link," Jon suggests. "It's the web site of the guy who did the video. It says he uses something called a 'cymascope' to convert music into cymatic patterns."*

*"Look man - that couldn't be that hard to do, could it?" demands Gaelan. "All you need is a round plate sprinkled with sand or salt, then vibrate it at different frequencies. I'd bet it would even work if I glued an earbud to the center of the plate."*

*"What the hell, I'm going to try building one this week to use on stage. Do any of you guys wanna help?"*



Jon is finishing his cello solo as the audience cheers him on. After nearly a week of experiments, Gaelan managed to construct his own crude cymascope, mounting a camcorder over it so he could project cymatic patterns of the band's music in real time above the stage.

In spite of the simplicity of the contraption (and the fact that he cobbled it together from parts he had laying around the house), the results were quite impressive. The music would create endless patterns above their heads, totally mesmerizing the audience and drawing them into the band's mythological concepts.


Finally reaching the climax of his solo, Jon lands on a specific tone, forming a perfect pentagonal star above the stage. As the audience appears dumbfounded by what they see, Jon can't contain himself and suddenly yells...

*"Check it out - I'm swingin' on a star!"*

*"Only a rock star, Jonny boy," quips Gaelan sarcastically.*

The band kicks in to join him. Gabe instinctively reaches out to the audience, focusing their attention and pulling them into the band's musical fantasy.





As the band rocks hard, Gabe's vision begins to narrow and a shiver runs down his spine. A high-pitched buzz begins somewhere inside his head, signaling the return of the disturbing hallucinations.

This time, he watches transfixed as the inner pentagon of the cymatic pattern behind him shoots outward into the audience, stopping time and freezing the stale bar air into a giant monolith of ice!

Reaching up to touch it, the warmth of Gabe's finger causes the ice to begin melting, revealing a kind of computerized virtual reality inside. He can clearly see clouds moving in a twilight sky, as if in time-elapse, superimposed over what appears to be electronic circuitry.

Then out of the opening tumbles an ornate wooden box. Floating to a stop in mid-air, it opens to emit a calming aquamarine mist. The fog has a strange numbing effect on Gabe, who glances around to see if anyone else is seeing this ... or rather, *feeling* it.

*"Come on now - not freakin' Pandora's Box!"*

An exotic-looking hand then reaches out of empty space to remove two crystalline pyramids from the box, placing them either side of the surreal electric Sun.

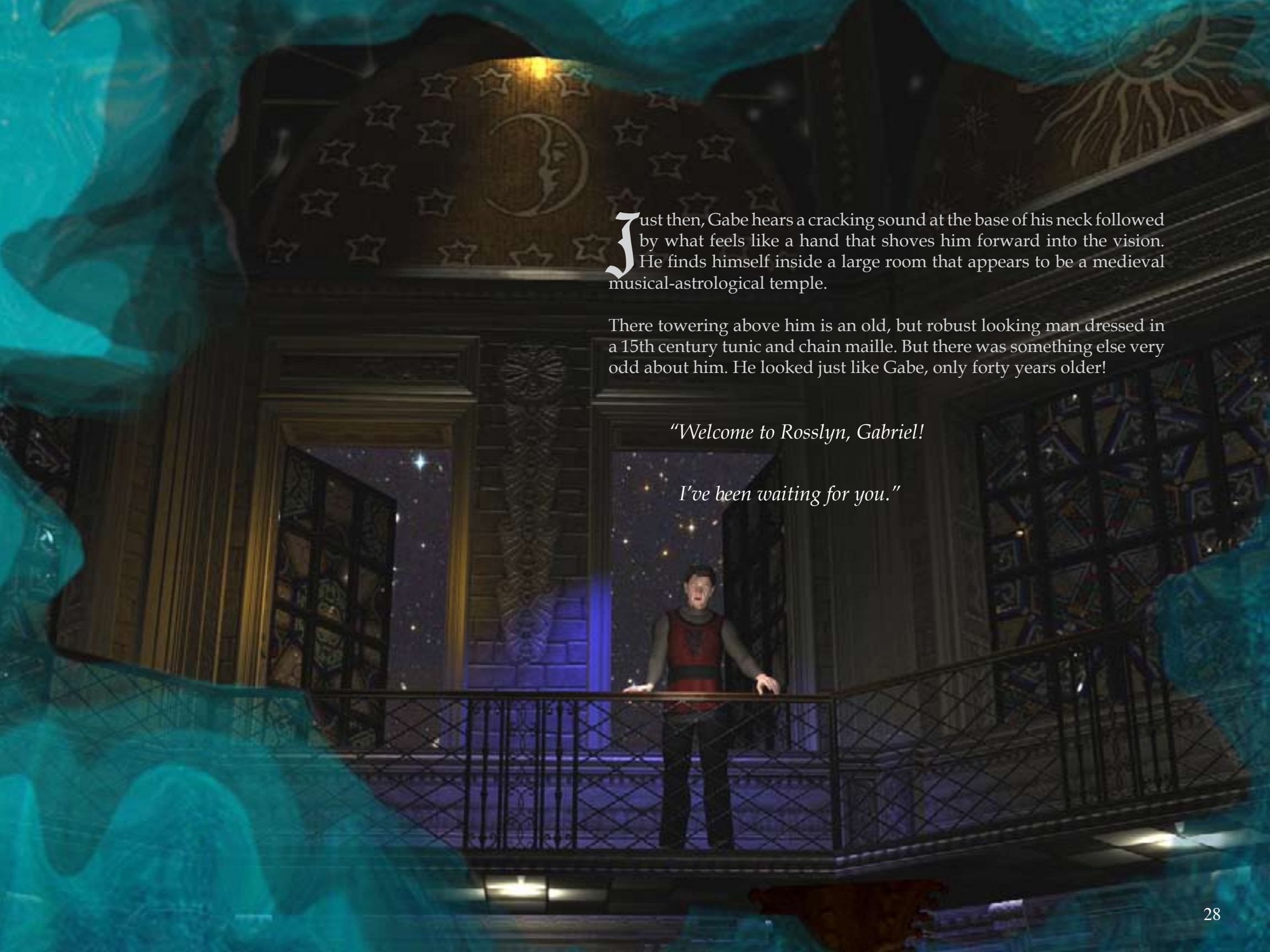
Tapping into this energy, the pyramids begin to project a holographic field of red, green and blue lights. Within this field then appears the freakishly huge torso of a man with what must be the Earth on his shoulders.

Gabe can't help wondering if this has anything to do with their cymatic experiments.



*"Okay, so now I'm hallucinating Atlas holding up the world with pyramid power, no less! When is this psychedelic trip going to end?"*



A man in a red and black tunic stands on a balcony in a medieval-style room. The ceiling is dark with a crescent moon and stars. The walls are decorated with intricate patterns. The man is looking towards the camera.

Just then, Gabe hears a cracking sound at the base of his neck followed by what feels like a hand that shoves him forward into the vision. He finds himself inside a large room that appears to be a medieval musical-astrological temple.

There towering above him is an old, but robust looking man dressed in a 15th century tunic and chain maille. But there was something else very odd about him. He looked just like Gabe, only forty years older!

*"Welcome to Rosslyn, Gabriel!"*

*"I've been waiting for you."*



*"Where the bloody hell am I and why do you look just like me," demanded Gabe?*

*"And what's with all the mythological symbols in here," Gabe said pointing around the room.*

*"...like those musical angels sitting on pentagrams over there or that dragon wrapped around the tree in the pillar base?"*

*"This all has something to do with our cymatic experiments and my strange visions, doesn't it?," Gabe pleaded.*

*"Tell me now or so help me I'll come up there and...and..."*

**G**abe lost his train of thought as the building was suddenly filled with the most beautiful music he had ever heard. The turquoise mist had been so dense that he had failed to notice a small trio of musicians performing to his left.



The old man begins to speak, as Gabe eases into a seat near the musicians.

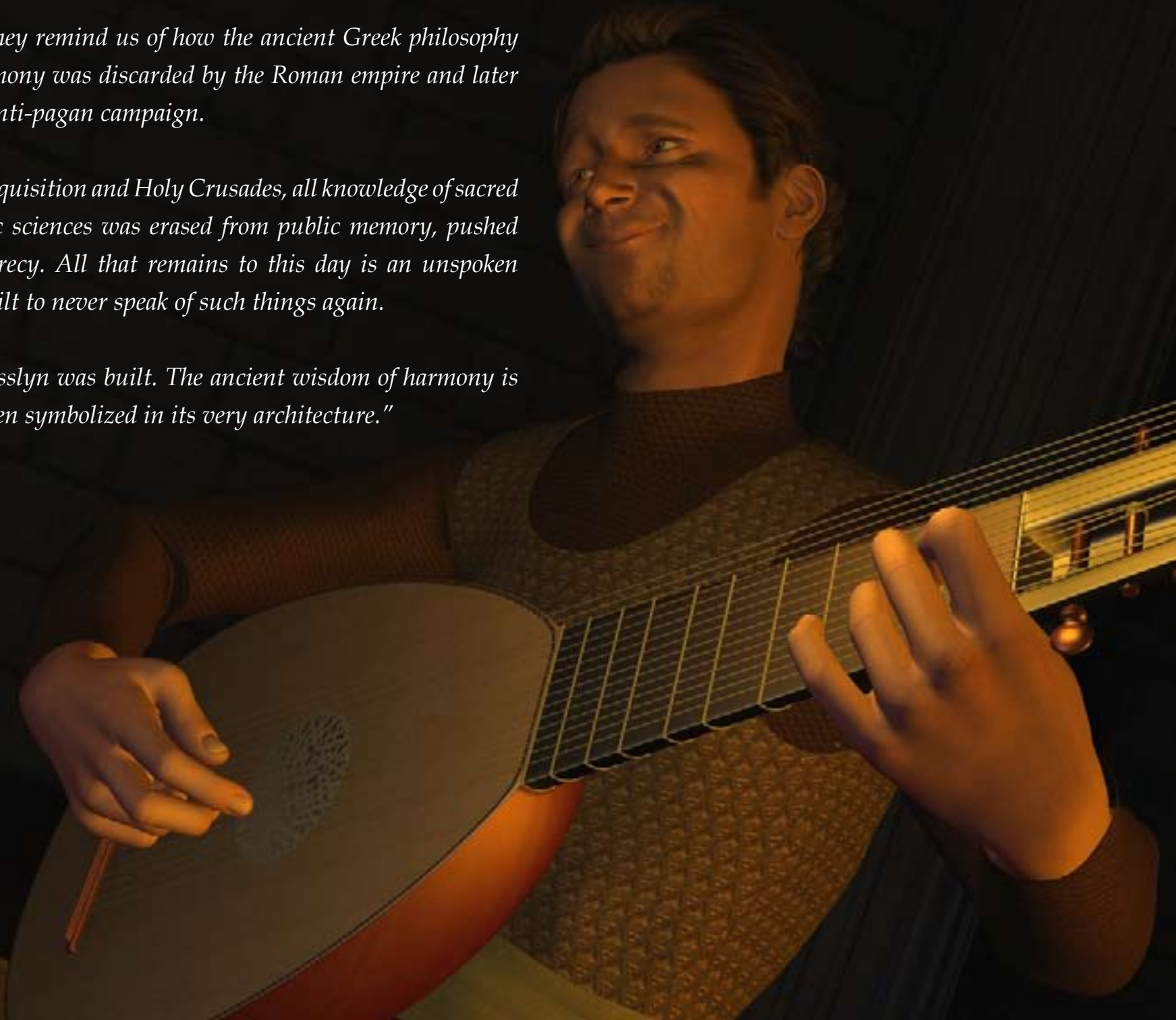
*"You are in an old Scottish chapel in the country near the town of Roslin. And while it may sound impossible, I am your ancestor William St. Clair, 1st Earl of Caithness. This place is my dream theatre. It's where I go when I want to remember things. Gabriel, it can help you remember, too."*

*"You see, each object in the room symbolizes something very important.*

*The pictures tell a story. They remind us of how the ancient Greek philosophy of natural balance and harmony was discarded by the Roman empire and later demonized by its virulent anti-pagan campaign.*

*Under orders of the Papal Inquisition and Holy Crusades, all knowledge of sacred geometry and the harmonic sciences was erased from public memory, pushed deep underground into secrecy. All that remains to this day is an unspoken promise born of fear and guilt to never speak of such things again.*

*It is because of this that Rosslyn was built. The ancient wisdom of harmony is fondly remembered here, even symbolized in its very architecture."*





*"Look ... what do you see carved into the pillars? Behold thirteen resonant angels playing the music of the spheres for eight dragons in the pillars' base. Do you remember what this means?"*

*This was the Great Secret of 13:8, the thirteen orbits that Venus makes over eight Earth years. Surely you recall this is why Venus traces a five pointed star in the night sky? You couldn't have forgotten this!*

*Ancient civilizations, like the Egyptians and Greeks, saw this Star as proof of a cosmic harmony. How could life be random and meaningless when Venus and Earth align exactly like the pentagram inside an apple? This natural order was seen as the divine love of Venus for Earth.*

*Venus was the Morning Star, the Star in the East and the Star of Bethlehem. The three wise men didn't follow a star to find Jesus. They were Gnostic adepts who studied harmonic science and followed the Star of Venus. Their gnosis was knowing that every intersection of the Star forms the divine proportion 1.618033 near 13:8, carving the planets and all life with it from the Sun's radiant light.*

*This is why the resonant angels play their instruments atop the Star of Venus, Galileo's 'goddess of loves.'"*



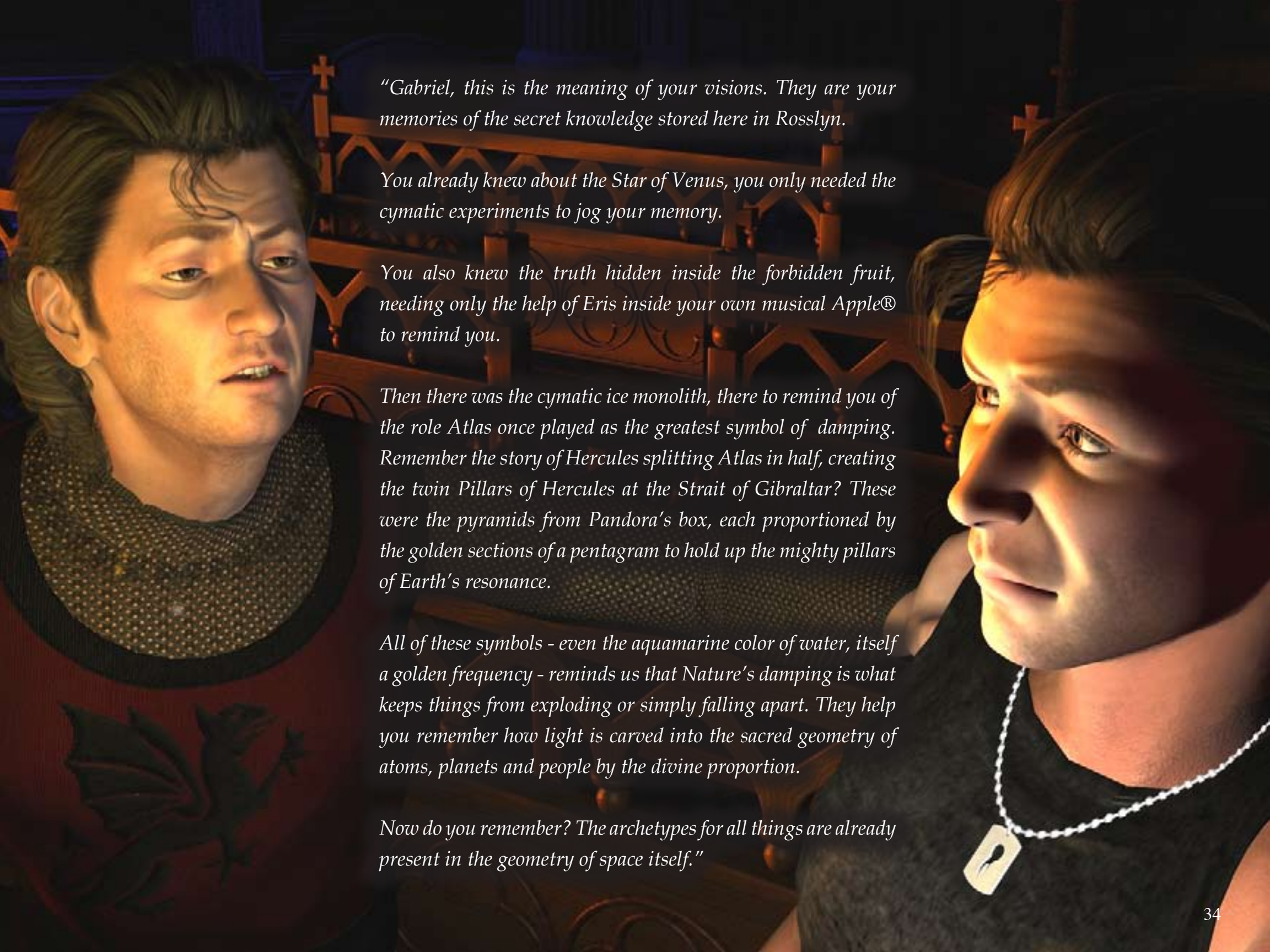
*"But there is more to all of this than the Star of Venus, much more.*

*You see, everything is formed from the same delicate balance of harmonic resonance and damping. As energy is damped and cooled by the geometry of space and pressure of its gravity, it is trapped into bundles of resonating particles like cymatic patterns in music.*

*And as atoms resonate at different frequencies, they bond harmonically with other atoms. It is the proportional frequencies between different atoms that enable them to harmonize into molecules and living cells like the geometric chords of an organic symphony.*

*And just as different minerals crystallize under pressure to form the regular geometries and colors of precious gems, carbon resonates under the damping pressure of water to form the beautiful geometries of life. It is this harmony between the periodic resonance of  $\pi$  and the spiraling damping of  $\Phi$  (a golden spiral) that shapes all things.*

*Look at the cymatic cubes carved into the arches above. They tell this story in music - a sacred melody frozen in stone. This is the Music of the Spheres that plays in an apple's core."*



*"Gabriel, this is the meaning of your visions. They are your memories of the secret knowledge stored here in Rosslyn.*

*You already knew about the Star of Venus, you only needed the cymatic experiments to jog your memory.*


*You also knew the truth hidden inside the forbidden fruit, needing only the help of Eris inside your own musical Apple® to remind you.*

*Then there was the cymatic ice monolith, there to remind you of the role Atlas once played as the greatest symbol of damping. Remember the story of Hercules splitting Atlas in half, creating the twin Pillars of Hercules at the Strait of Gibraltar? These were the pyramids from Pandora's box, each proportioned by the golden sections of a pentagram to hold up the mighty pillars of Earth's resonance.*

*All of these symbols - even the aquamarine color of water, itself a golden frequency - reminds us that Nature's damping is what keeps things from exploding or simply falling apart. They help you remember how light is carved into the sacred geometry of atoms, planets and people by the divine proportion.*

*Now do you remember? The archetypes for all things are already present in the geometry of space itself."*

# Fallen Angel



Gabe was regaining consciousness on the stage floor with Gaelan and Sam helping him up. They were pretty worried after he had fainted in the middle of a song, hitting the floor so hard.



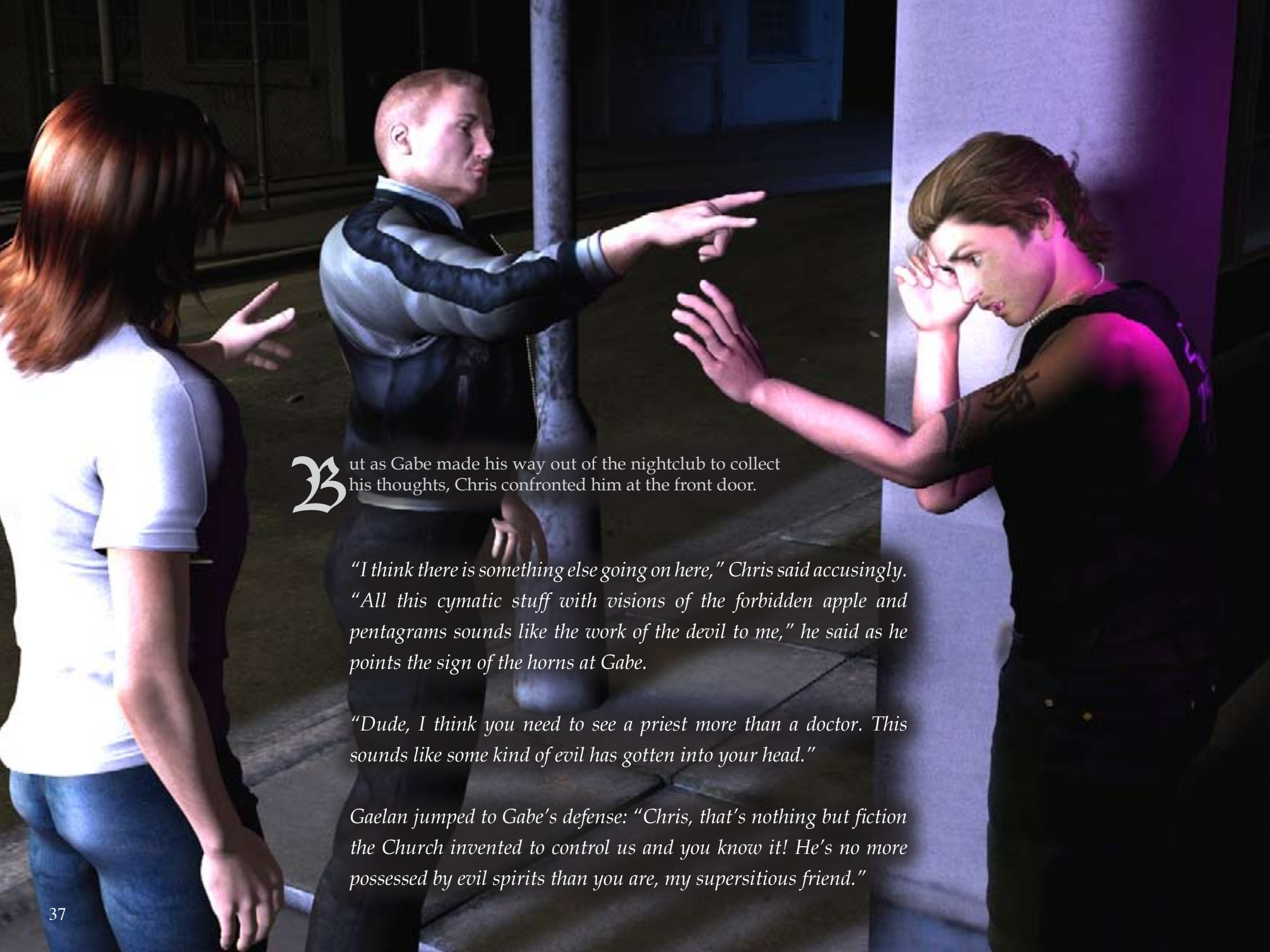


*"Gabe, you were out for over a minute. What happened?"*

*"I had another vision ... only this time I actually went to another place," Gabe said slowly. "I went to a Scottish chapel where I met with one of my ancestors from five hundred years ago! I know it sounds crazy, but he told me some things."*

*"You need to see a doctor," Gaelan suggests. "Are you sure you can play any more tonight?"*

*"Yeah, I think I can play this last set. I just hope that I'm not losing my mind or ... possessed by demons or something."*



**B**ut as Gabe made his way out of the nightclub to collect his thoughts, Chris confronted him at the front door.

*"I think there is something else going on here," Chris said accusingly. "All this cymatic stuff with visions of the forbidden apple and pentagrams sounds like the work of the devil to me," he said as he points the sign of the horns at Gabe.*

*"Dude, I think you need to see a priest more than a doctor. This sounds like some kind of evil has gotten into your head."*

*Gaelan jumped to Gabe's defense: "Chris, that's nothing but fiction the Church invented to control us and you know it! He's no more possessed by evil spirits than you are, my supersitious friend."*

*"I don't know, Gaelan. Maybe Chris is right."*

*"Maybe it's just like all those horror movies where an evil spirit takes residence in your body and controls your mind. Maybe I'm possessed and all these visions are elemental spirits trying to turn me to the dark side. Isn't this what the Bible says?"*

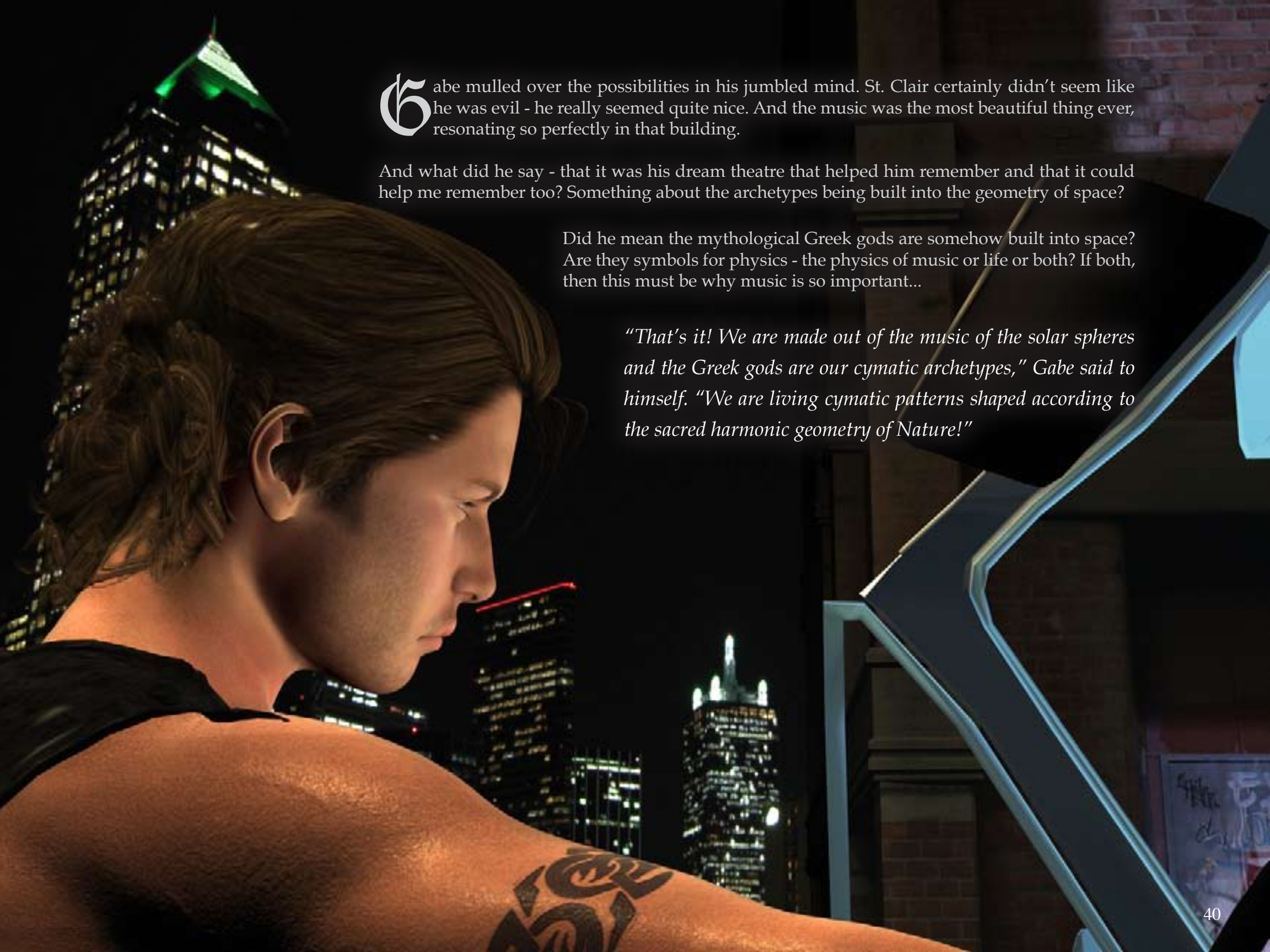
*"Gabe," replied Gaelan, "Nature is beautiful - like music. You are the only one who is controlling your mind and body. While we may think dark thoughts, it is our own actions that are at work in this world. There is no fallen angel or demonic serpent trying to turn you to evil."*

*"Yeah, well," replied Gabe, "This fallen angel is going for a drive. I'll be back in time for the last set."*



As Gabe turned the ignition, he wondered why all of this was happening to him. What did he do to deserve such frightening hallucinations? What could he have done to trigger visions of mythical gods or be transported into Rosslyn chapel? It sure seemed real enough. And what about that man Sinclair, rather St. Clair, who claimed he was his ancestor?



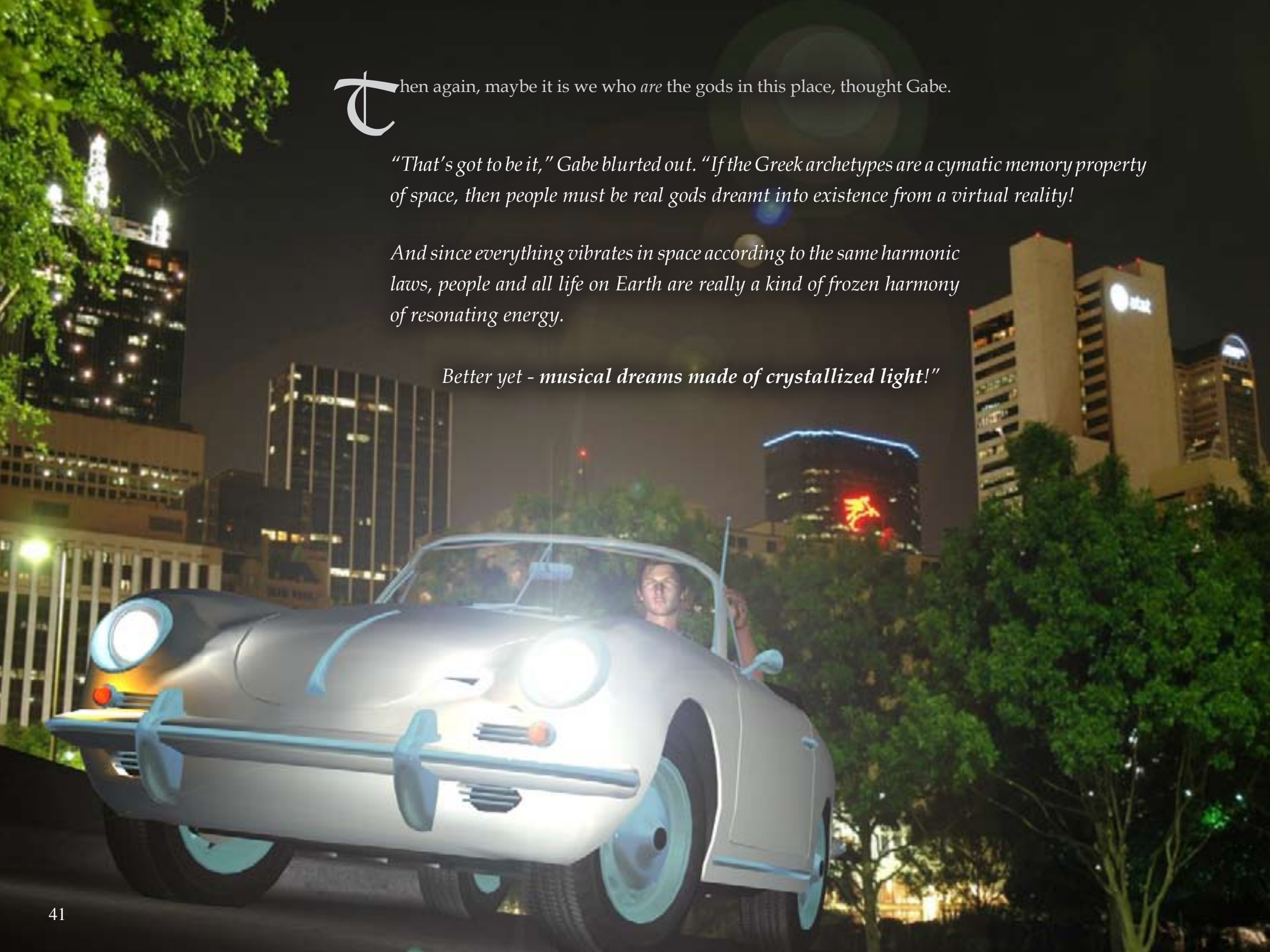
A man with long, dark, wavy hair is shown in profile, looking out over a city skyline at night. He has a large, dark tattoo on his right shoulder. The city lights are visible in the background, with a prominent building featuring a green light on top. The scene is dimly lit, with the primary light source being the city lights and the ambient light from the room.

Gabe mulled over the possibilities in his jumbled mind. St. Clair certainly didn't seem like he was evil - he really seemed quite nice. And the music was the most beautiful thing ever, resonating so perfectly in that building.

And what did he say - that it was his dream theatre that helped him remember and that it could help me remember too? Something about the archetypes being built into the geometry of space?

Did he mean the mythological Greek gods are somehow built into space? Are they symbols for physics - the physics of music or life or both? If both, then this must be why music is so important...

*"That's it! We are made out of the music of the solar spheres and the Greek gods are our cymatic archetypes," Gabe said to himself. "We are living cymatic patterns shaped according to the sacred harmonic geometry of Nature!"*



Then again, maybe it is we who *are* the gods in this place, thought Gabe.

*"That's got to be it," Gabe blurted out. "If the Greek archetypes are a cymatic memory property of space, then people must be real gods dreamt into existence from a virtual reality!"*

*And since everything vibrates in space according to the same harmonic laws, people and all life on Earth are really a kind of frozen harmony of resonating energy.*

*Better yet - musical dreams made of crystallized light!"*



*"Well, whatever the purpose behind my visions, I think they are trying to help me do the right thing. There's nothing evil to them because ... how could music ever be evil?"*



*"Okay, guys, let's do it," Gabe said enthusiastically.*

*"Are you sure you're up to this," Gaelan asked?*

*"I've never been more sure of anything in my life,"  
Gabe whispered.*





*"It's all good."*

# Messenger's Return

But then, just as the band strikes the first chord...




6 Gabe leaps into the air...

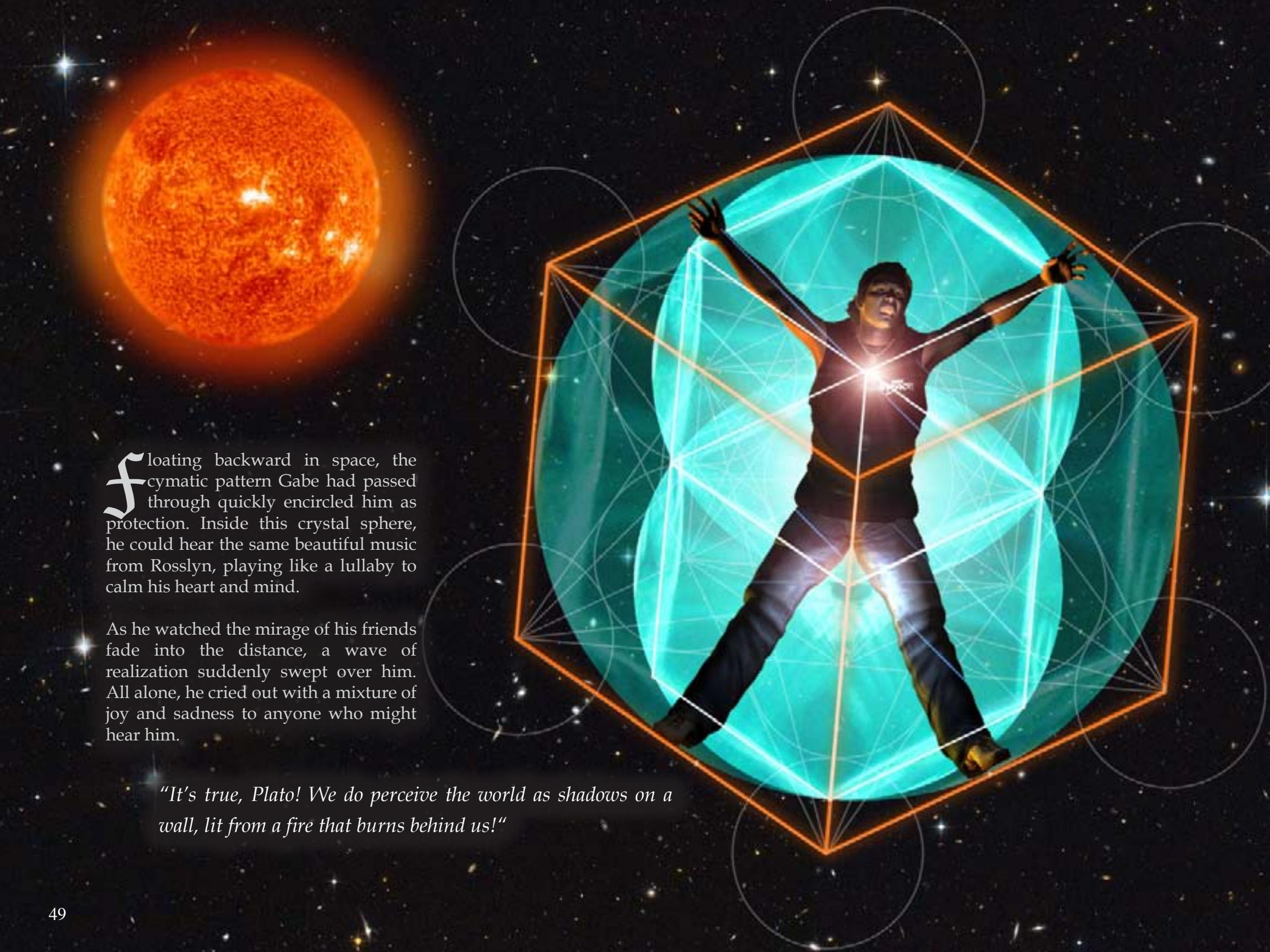




**A**nd is sucked backward into the center of a giant hexagonal cymatic pattern behind the stage, disappearing completely into the wall!



Emerging on the other side, Gabe was shocked but not afraid. He could still see the others through the wall, strangely transparent like holographic graffiti.



**F**loating backward in space, the cymatic pattern Gabe had passed through quickly encircled him as protection. Inside this crystal sphere, he could hear the same beautiful music from Rosslyn, playing like a lullaby to calm his heart and mind.

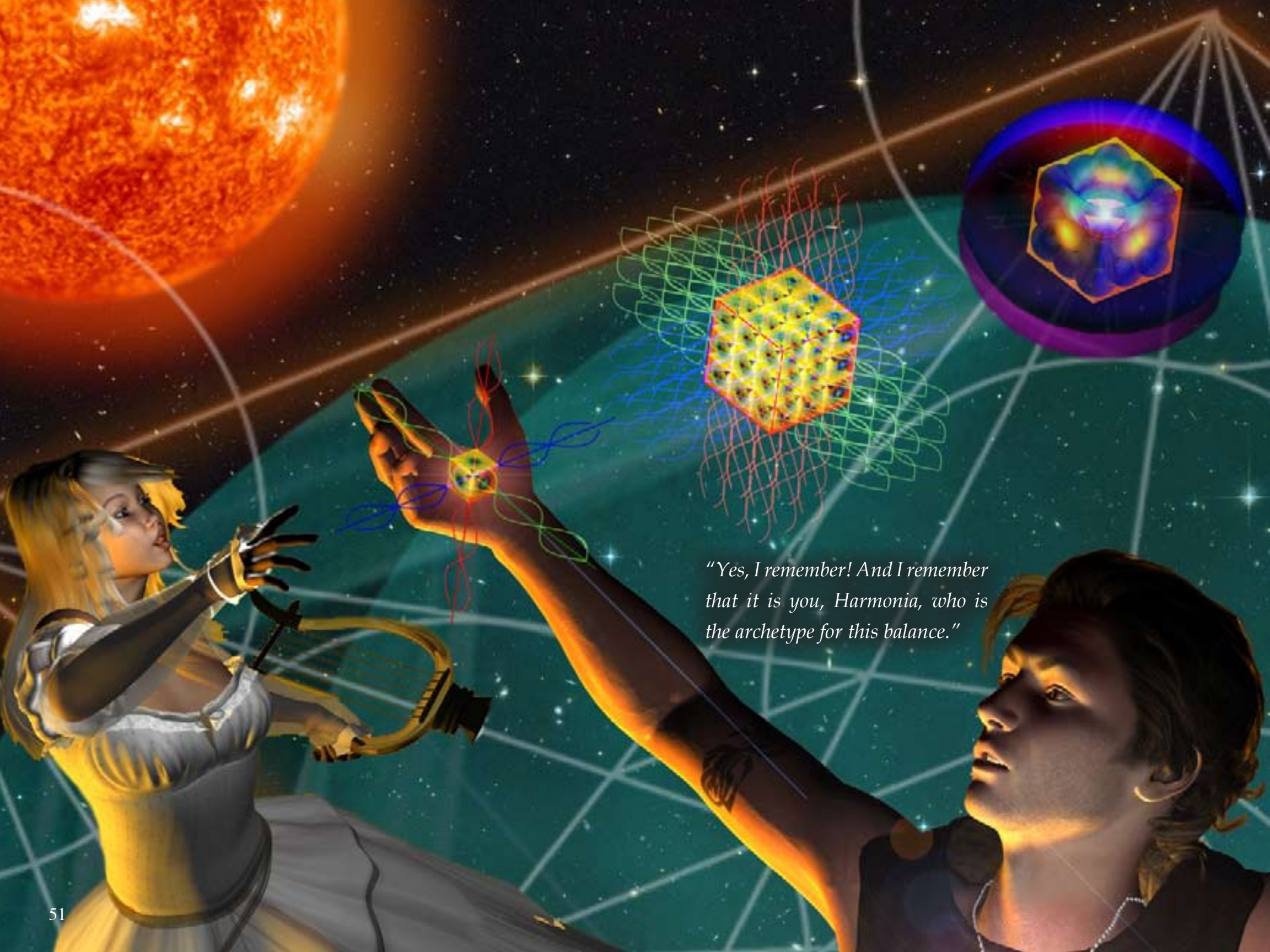
As he watched the mirage of his friends fade into the distance, a wave of realization suddenly swept over him. All alone, he cried out with a mixture of joy and sadness to anyone who might hear him.

*"It's true, Plato! We do perceive the world as shadows on a wall, lit from a fire that burns behind us!"*



Then like a vision within a vision, the figure of a beautiful woman appeared.

*“Good, Gabriel, you remember! We do see the world as holographic light, projected in time through the harmonic lattice of space.”*

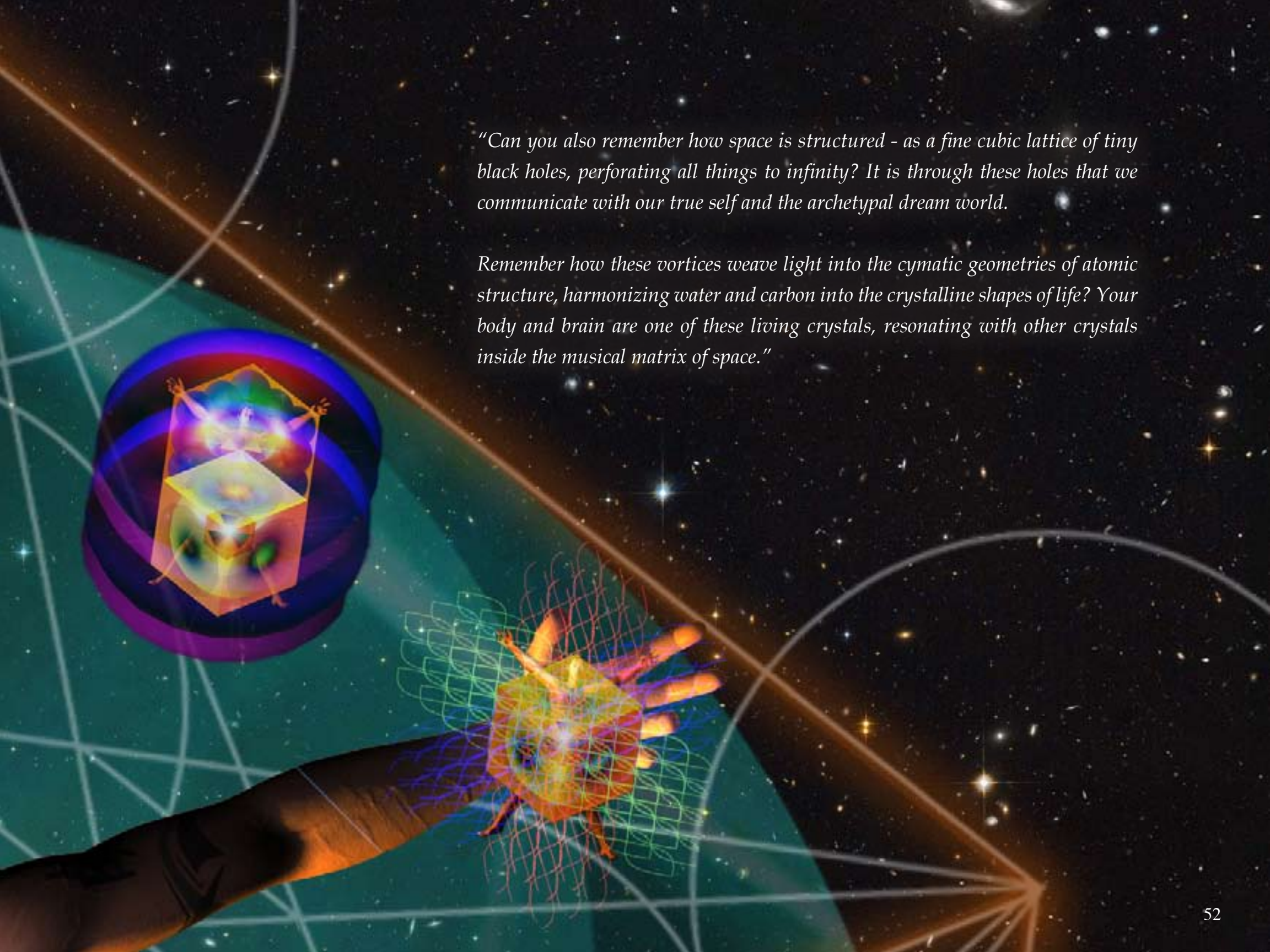


*"Yes, I remember! And I remember that it is you, Harmonia, who is the archetype for this balance."*



*"Can you also remember how space is structured - as a fine cubic lattice of tiny black holes, perforating all things to infinity? It is through these holes that we communicate with our true self and the archetypal dream world.*

*Remember how these vortices weave light into the cymatic geometries of atomic structure, harmonizing water and carbon into the crystalline shapes of life? Your body and brain are one of these living crystals, resonating with other crystals inside the musical matrix of space."*



*"And so it was that you were  
born the Son of the Sun."*




*"As the hot plasma cloud swirled around the central fire, cymatic rings resonated inside its gravity bubble. Forming into a Spira Mirabilis, the planets tuned themselves to a 12-step solar octave and thus began the Music of the Spheres."*




*"This spiral is the umbilical cord that links you to the Sun. For as the spheres aligned at right angles in the Sun's helical body, so too did the same plexus points resonate in your body.*

*Never again forget that the Music of the Spheres plays inside you, Gabriel."*

A man with long brown hair, wearing a dark tank top and a necklace, is floating in space. He is looking up at a large, bright orange sun that fills the left side of the frame. His right arm is raised, with his hand open and palm facing the sun. The background is a dark, starry space. The text is overlaid on the right side of the image.

As Gabe floated ever nearer to the Sun, he pondered what he had learned in his visions. He remembered now why the ancients held the Sun in such high regard and why serpents and dragons had come to symbolize the harmony of spirals and circles in Nature. Their focusing coils and undulating movements were the Sun's energy that flowed within him.

But as he turned to accept his destiny, he felt a strange resonance stirring deep within. Upward it came like an electrical current from his solar plexus, swirling around his spine into the center of his head.

A young man with brown hair and a black tank top is shown in profile, looking upwards with his eyes closed. A small dragon with orange wings is perched on his forehead, with its wings spread out behind his head. The background is a dark, starry space with a large, detailed Earth in the upper left corner. The man has a tattoo on his right arm and is wearing a silver chain necklace with a dog tag.

Then, just as it had happened with the winged messengers Mercury and Hermes before him, Gabe's consciousness rose out into the light. The ancient messenger was free again.

*"Is this the dragon-serpent coiled inside me - that which holds the Sun's resonance and keeps me Earthbound?"*




With that, it all came flooding back to him - the meaning of Rosslyn and the reason for his visions.

Gabriel saw that the angels and dragons of Rosslyn were symbols for resonance and damping - from the Star of Venus frozen in its pillars to the musical cubes vibrating in its arches.

Passed down through myth, music and dance, Musica Universalis once celebrated a cosmos in perfect harmony. It was preserved in the harmonic science of the Greeks, geometric numbers of the Hebrews and sacred geometry of the Egyptians. Yet, it had all been forgotten!

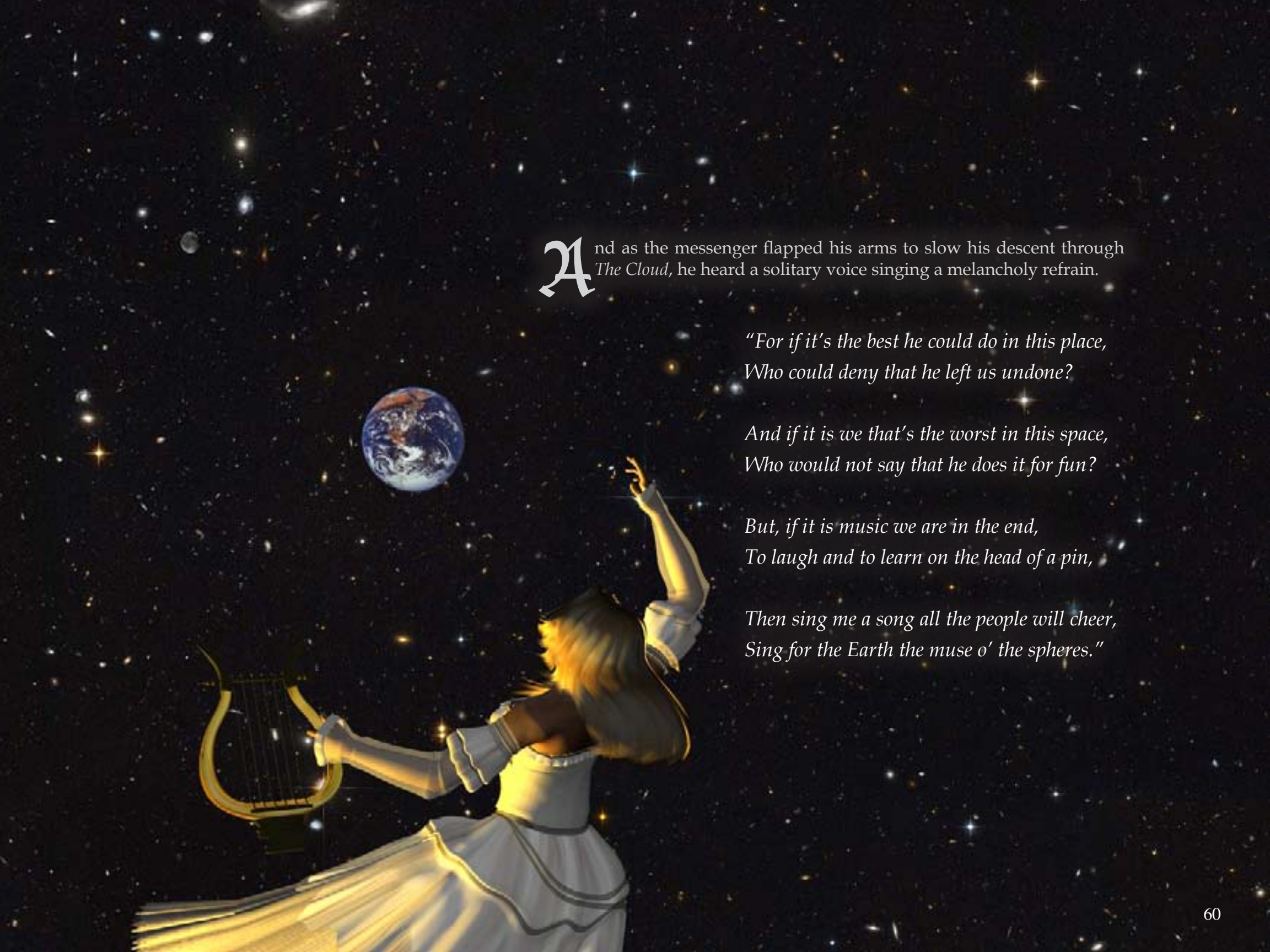
Hidden by a franchise of unnatural beliefs, people no longer knew they were born from the resonance of light, crystallized from cymatic archetypes or living inside a musical matrix. No one knew who they were, why they were here or where they were going.



A dramatic illustration featuring a large, dark-scaled dragon with orange-gold wings and a human figure with large, translucent wings. The dragon is positioned on the left, its head turned towards the right. The winged figure is perched on the dragon's back, holding onto its neck. The background is split: the left side is a bright, fiery orange-red, while the right side is a dark, starry space. The overall mood is intense and mythical.

**B**ut in spite of all this - in spite of the work of millions of people over thousands of years - the archetypes had returned in the theatre of Gabriel's mind. Falling back to Earth as a burning vision, this messenger carried a *New Mythos* to a desperate world. It was the return of *Musica Universalis*.



A woman with blonde hair, wearing a white dress with a ruffled collar and a long, flowing skirt, is shown from behind, playing a golden harp. She is floating in space, with the Earth visible in the background. The scene is set against a dark, starry background with a crescent moon in the upper left.

And as the messenger flapped his arms to slow his descent through  
*The Cloud*, he heard a solitary voice singing a melancholy refrain.

*“For if it’s the best he could do in this place,  
Who could deny that he left us undone?”*

*And if it is we that’s the worst in this space,  
Who would not say that he does it for fun?”*

*But, if it is music we are in the end,  
To laugh and to learn on the head of a pin,*

*Then sing me a song all the people will cheer,  
Sing for the Earth the muse o’ the spheres.”*

# Dream Theatre



Feeling a sudden rush of heat, Gabe opened his eyes to find himself staring into a blinding white light.

Looking around, he saw that he was no longer floating in space or inside the *Liquid Lounge* - but instead, playing with the band in front of tens of thousands of screaming people!

*"My God - where am I now..."*

*... what kind of mad dream is this?"*

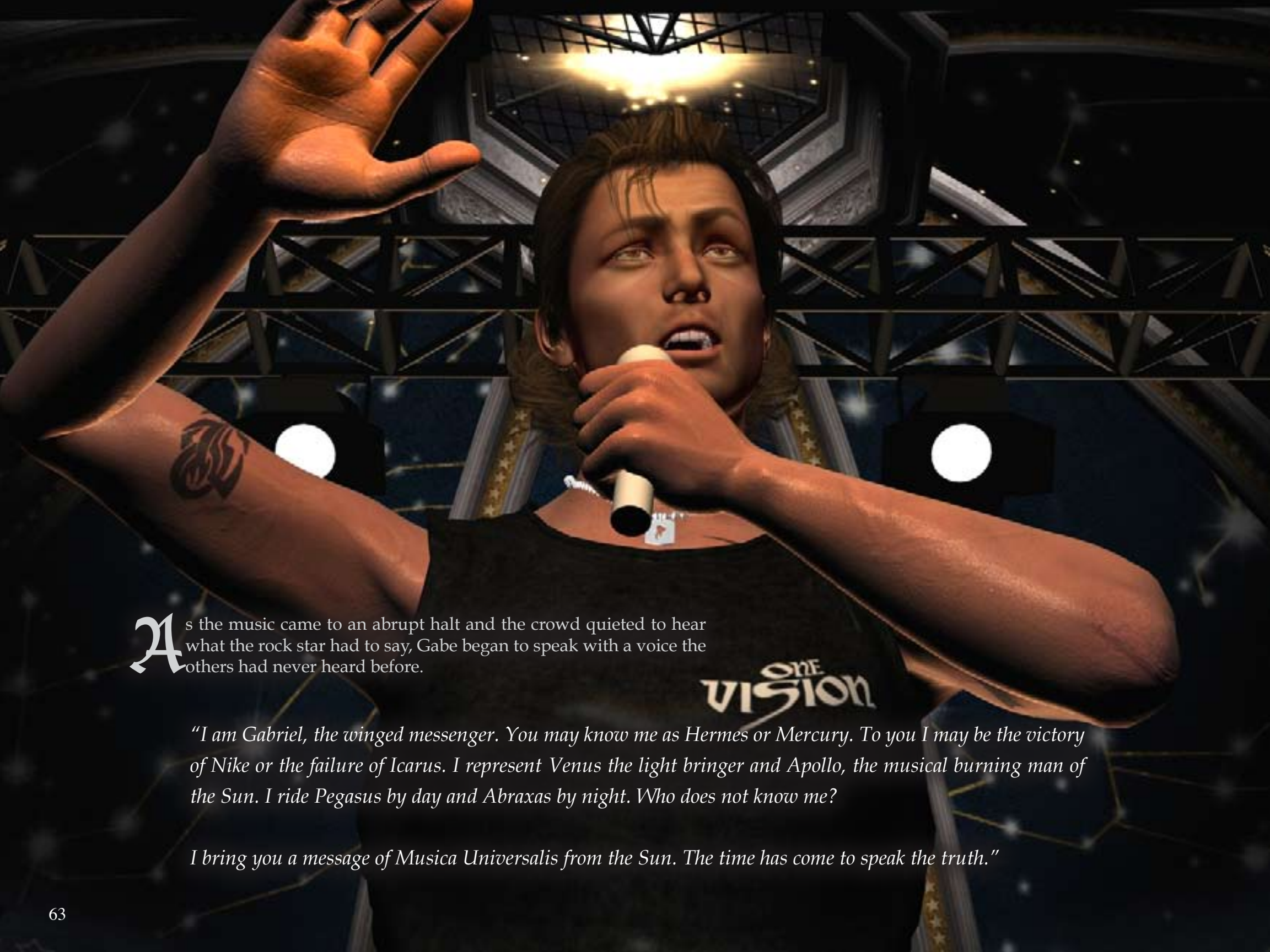


Overcome by a wave of emotions and a sense of desperation, Gabe could only do one thing. He took a deep breath and yelled at the top of his lungs for the insanity to end...

*"Stop everything and listen to me!*

*I have an urgent message for you!"*





**A**s the music came to an abrupt halt and the crowd quieted to hear what the rock star had to say, Gabe began to speak with a voice the others had never heard before.

*"I am Gabriel, the winged messenger. You may know me as Hermes or Mercury. To you I may be the victory of Nike or the failure of Icarus. I represent Venus the light bringer and Apollo, the musical burning man of the Sun. I ride Pegasus by day and Abraxas by night. Who does not know me?"*

*I bring you a message of Musica Universalis from the Sun. The time has come to speak the truth."*

*"Your banks and institutions; your schools and corporations; your churches and laboratories; your prisons and armies; your governments, your laws, your shopping malls and mass media - are all artificial, mere illusions to distract you from what you are here to do. They offer you no harmony, no spirit and nothing to guide you.*

*Hear me now! Each of you is here to perfect your archetypal self for the benefit of others. Wish for no heaven and fear no hell, for your next destination is but another theatre populated with the memories of what you do here. This is the theatre of the eternal mind, resonating through space. This is where YOU become God to dream the world into existence. The time has come to dream a new world."*



But instead of cheers for Gabriel's urgent message, the audience had only boos and catcalls. No one had time for such silliness and talk of philosophy.

Yet, as Gabriel hung his head in disappointment, an enormous figure materialized in the air above him. With long black hair and steely eyes, dressed in the garb of a warrior, Gabriel recognized him immediately.

*"Behold Hercules, the archetype of resonance."*

Unsure of what was about to happen, a hush fell over the crowd. Then with all eyes upon him, the archetype did what he had done long ago - he cleaved the world in two with his great strength so that all could see the way forward.





The audience gasped as the Earth opened up before their eyes, splitting the stage and poor Gabriel with it. Out of the Great Schism flew the angel and dragon. Falling back at this fearsome sight, some whispered "it's happening - we must prepare ourselves," as the ground trembled beneath their feet.



Then, a Great Flood of water poured through the opening, as the twin Pillars of Hercules rose up from the deep. Another world could be seen on the other side of the Strait. It was a virtual world of promise and potential. This was the way to the New Atlantis.





Up from the sea came mighty Atlas. Pushing aside the Pillars of Hercules with his bare hands, the ancient archetype of damping and order had returned from the Underworld. No one could deny that only Atlas knew the depths of the sea, holding the world in place. Only he could grant them passage to the new world, the New Atlantis.



But just as quickly as the gigantic apparitions had appeared, they were gone. The stage was as before and Gabriel was himself again. The band's new quantum phase-interference holonomic light projector had done its job and it was time for the real show to begin.

As the music pulsed to a dark tribal beat, seven dancers encircled Gabriel in a kalidescope of color, motion and emotion. Sensing that the audience was at last ready to join him, Gabriel reached out.

*"Welcome to the Grand Scientific Musical Theatre! This evening is dedicated to the marriage of technology, music and art. It is a philosophical journey into the mythology of physics, the geometry of life and the music of the planetary spheres."*





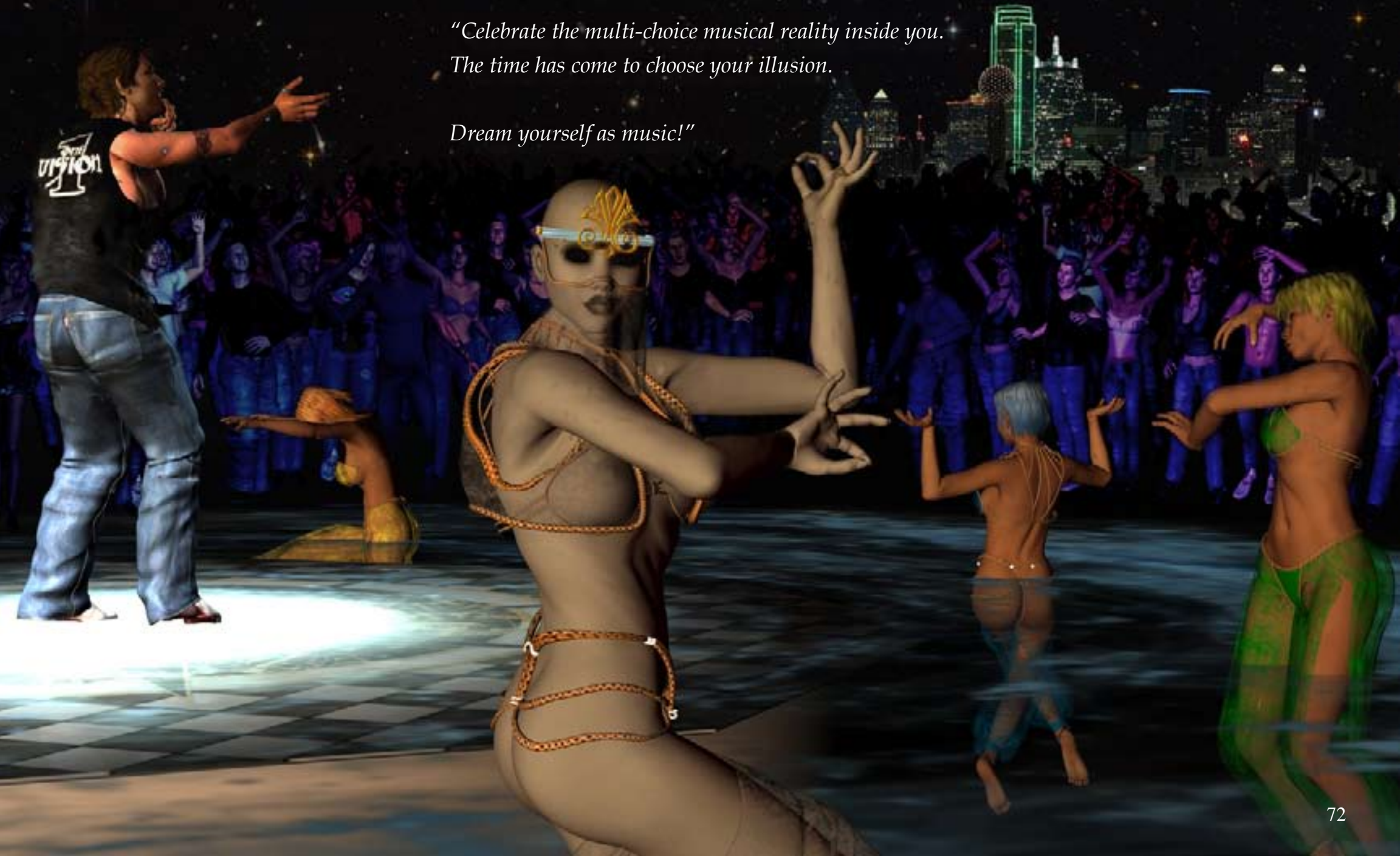
A cheer rose from the audience as the dancers formed ancient schwass-tika spirals with their bodies. The music became more insistent, more urgent.

*"Join me now as we blend physical and virtual; memories with dreams in sacred tribal dance."*

There in the inner sanctum, the dancers danced the forgotten Agama Nartanam, forming sacred gestures with temple bodies and healing hands. The people could see the dance for what it really was - a neo-tribal offering to the central fire!

*"Celebrate the multi-choice musical reality inside you.  
The time has come to choose your illusion.*

*Dream yourself as music!"*





As Gabriel began to sing, he looked up to see the lasers again projecting their virtual reality into the cool night air above the stage. Only this time it was Gaelan's cymatic experiment that hung overhead. Given what had happened before, Gabriel knew it was only a matter of time until everyone got the message.



**H**e marveled at the holonomic system and how it visualized the sound. Powered by the latest in synesthetic color-mapping and animated standing wave models, the musical harmonies appeared just as they did in the minds of the audience. The entire theatre was nothing less than the hologram inside a human brain!

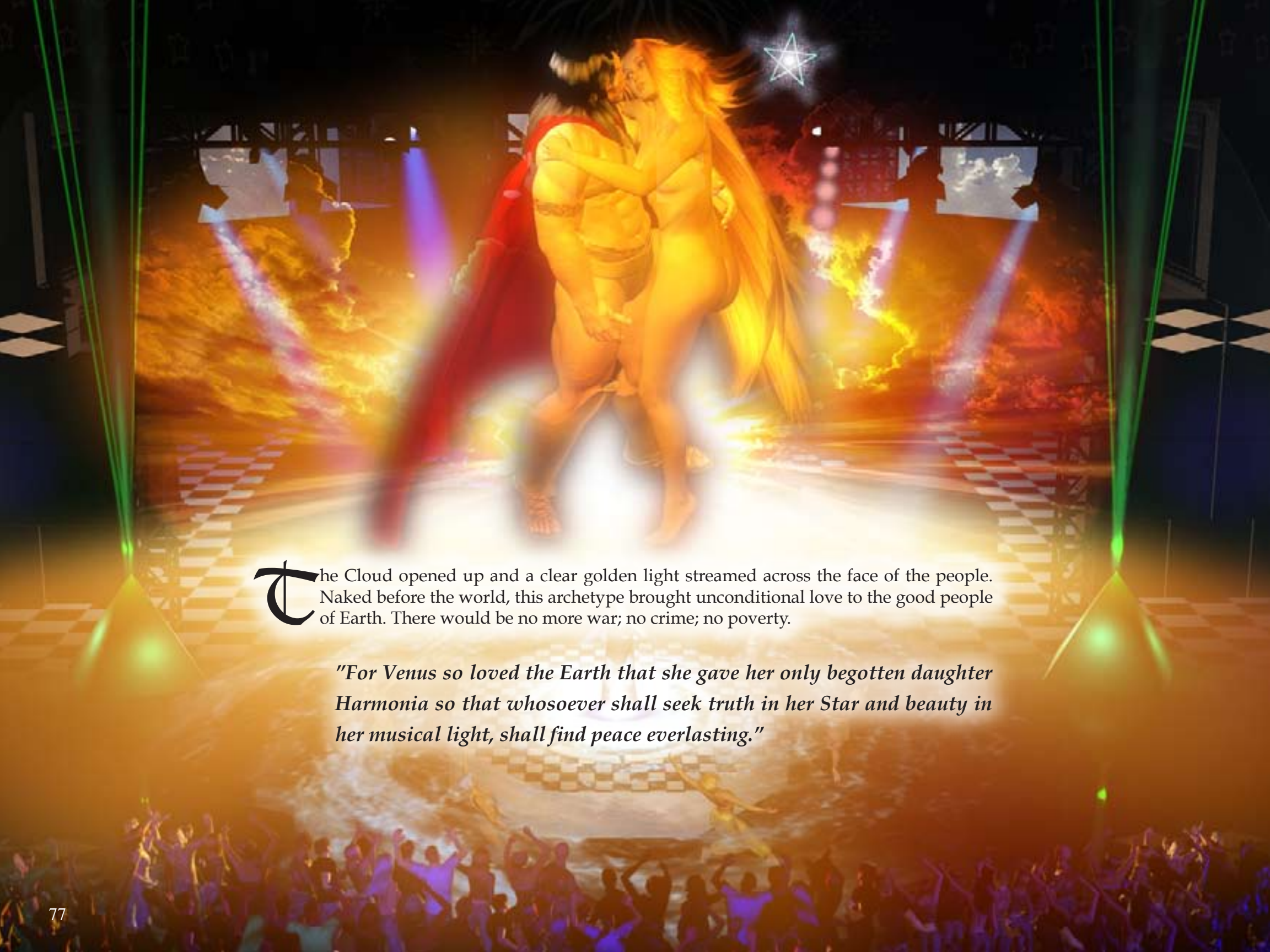


**D**iminished chords became red tetrahedrons, whole-tone scales were yellow cubes and major-minor scales slithered through the matrix as green octahedrons. But then as the music made its spiraling crescendo, two very special shapes came together, harmonizing into the double helix of a DNA crystal made of musical light.






Gabriel knew he was witnessing a birth, but not a physical one. It was the birth of an idea - a New Mythos of harmony for the world. It was a virtual reality populated by the archetypes of Musica Universalis, returning through The Cloud to lead the people to the New Atlantis. It was the Birth of Venus.

The background image depicts a theatrical stage performance. Two figures are the central focus: one is a muscular man with a red cape, and the other is a woman with long blonde hair. They are embracing on a checkered floor. The scene is illuminated by several spotlights, creating a golden glow. A bright star is visible in the upper right corner. The overall atmosphere is one of grandeur and emotional intensity.

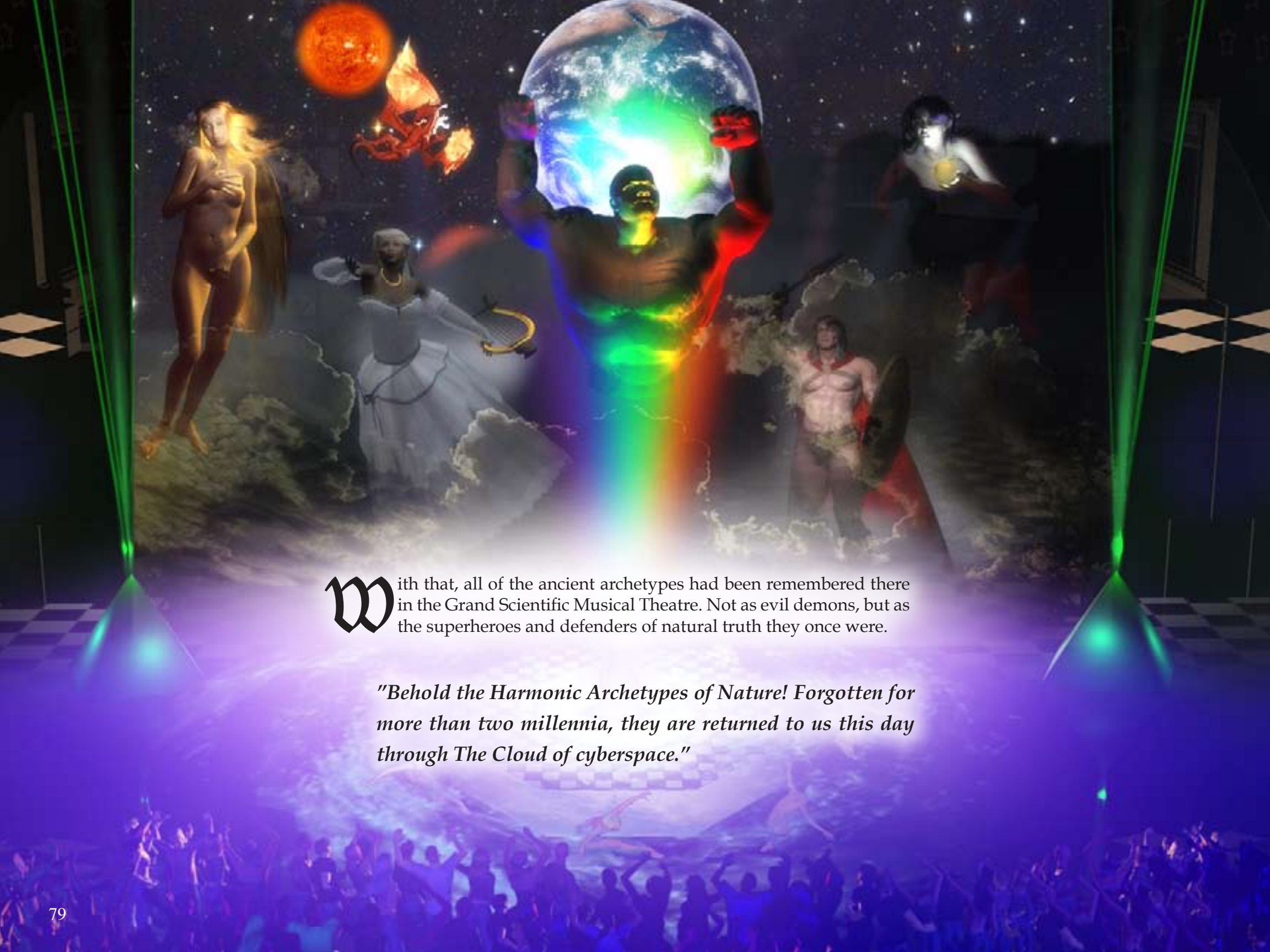
**T**he Cloud opened up and a clear golden light streamed across the face of the people. Naked before the world, this archetype brought unconditional love to the good people of Earth. There would be no more war; no crime; no poverty.

*"For Venus so loved the Earth that she gave her only begotten daughter Harmonia so that whosoever shall seek truth in her Star and beauty in her musical light, shall find peace everlasting."*



Taking their place in the celestial order, the lovers parted. Yet it was through their parting sorrow that Harmonia and Eris could return with the ancient knowledge.

*"Fear not the Golden Apple of Eris, for error brings learning.  
Only the harshest clime grows the sweetest fruit."*



**W**ith that, all of the ancient archetypes had been remembered there in the Grand Scientific Musical Theatre. Not as evil demons, but as the superheroes and defenders of natural truth they once were.

*"Behold the Harmonic Archetypes of Nature! Forgotten for more than two millennia, they are returned to us this day through The Cloud of cyberspace."*

And so the superheroes appeared as cymatic fragments of planets, plants and people, floating inside a harmonic landscape waiting for the world to receive them.

*"Connect and ye shall receive!"*





**A** whirlpool of light swirled around The Messenger, refracting in the night mist. One by one the people opened wide their hearts and minds; raising up the forbidden Apple® in the air; plugging into the shimmering ceiling of light above their heads. The Sun's message was received at last!




**G**lowing gold in the morning light, the Messenger sounded his horn to awaken the New Atlantis.

# Virtual Garden

**G** In that December morning, a song of love was in the air. Dragged from The Cloud into a virtual garden, the girl chose a shiny apple from a special tree, the boy a prancing dragon. With a gentle nudge, the musical archetypes came alive to the sound of *Distant Lights*.







**T**he music sang of the forbidden fruit and its star. It sang of angels and dragons and the forgotten harmonic archetypes. But most of all, it sang of the Sun and its magnanimous light, now burning bright in every heart and mind.

"So it came to pass, through the New Technology was born the New Mythos and unto this a New Atlantis, replacing the old beliefs and misbegotten plans of the brutish warrior kings. As the people returned to their tribal dance, singing songs to the celestial monochord and its eternal standing wave, harmony could once again be heard ringing through the architecture of The Grand Scientific Musical Theatre."

# Epilogue = Remembering 2012

The Grand Scientific Musical Theatre is an allegory for mind and memory. Its clarion message to Western society is we have forgotten the most important thing - that every living thing is a crystallized spiritual being made of harmonized light. In the years leading up to 2012, we can see how this loss of harmonic awareness contributed to the collapse of the Twin Towers, two crusading wars and a back-to-back collapse of the economy. Duality without harmony begets chaos.

Many now hope that 2012 will be the beginning of a natural cycle of change and renewal for the world, triggered perhaps by the movement of our solar system through the galactic plane. While the belief promoted by the popular media is this renewal will be violent, there are others who see a peaceful renewal. This book falls on the side of the latter, proposing a scenario where change might evolve naturally from existing circumstances.

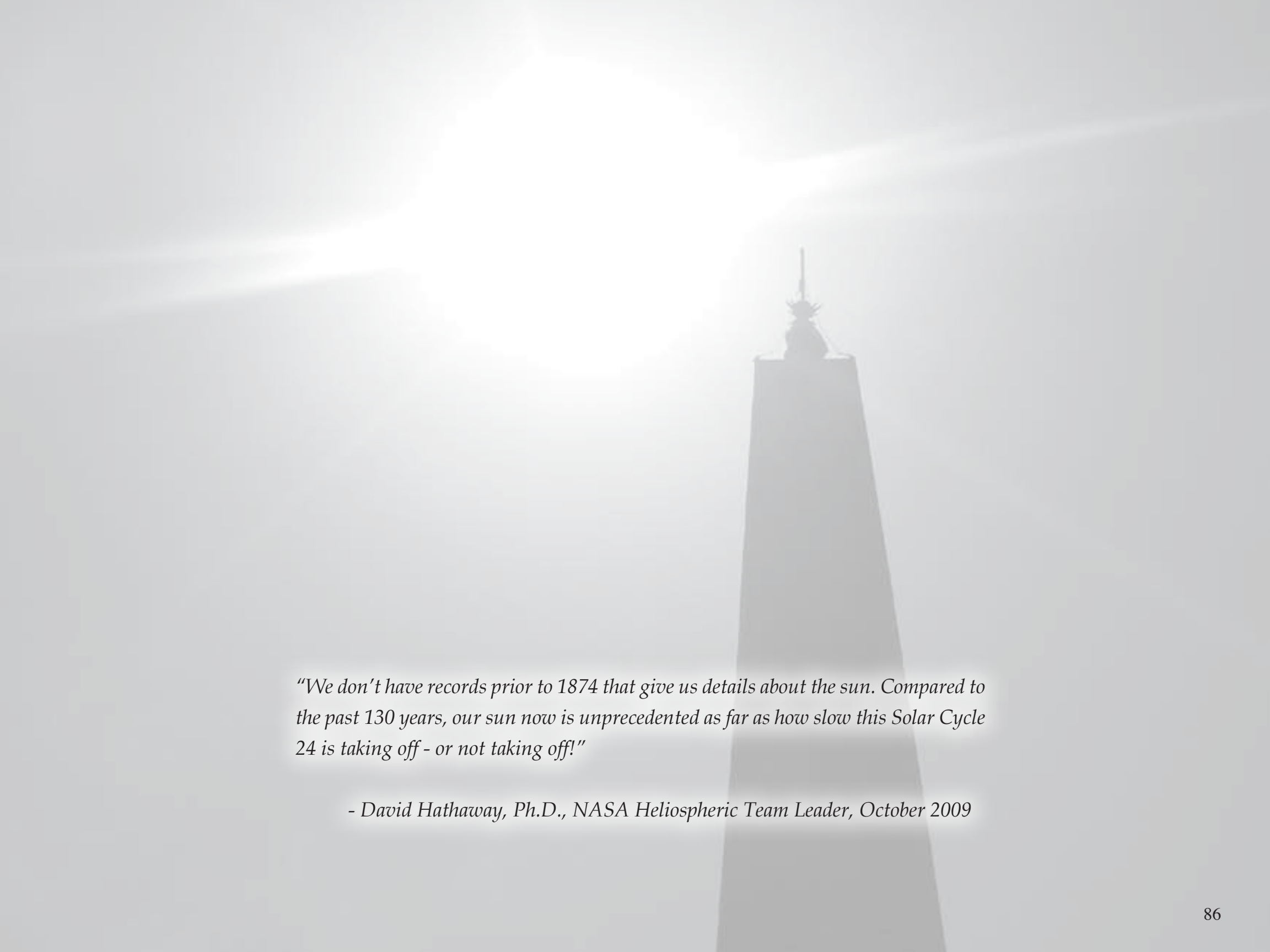
As the story tells it, there is a body of natural knowledge once known by the ancients, yet violently suppressed by the Roman Church. This knowledge concerned the central role of harmonic resonance ( $5:3 \approx 1.666$ ) and damping ( $\Phi \approx 1.618$ ) in creating all things, including life. Fearing harmonic theory would undermine their political control and draw people back to natural spiritual beliefs, laws were passed against it.

Through force of the Inquisition and Holy Crusades, the Church struggled to expunge awareness of harmony from society. Declaring all natural knowledge forbidden and evil, harmonic science and its symbols were cast as witchcraft and pushed underground into secret organizations.

With harmonic theory firmly under the control of the Church, an unspoken "complicity of convenience" began to develop between Western Religion and Science to avoid mention of Nature's harmonic properties. By the *Age of Enlightenment*, this avoidance strategy had been codified into the unguided study of Nature known as the "scientific method," thus excluding harmonic theory as a unifying foundation. This policy became deeply institutionalized into every part of Western society, gradually leading to the unnatural and unsustainable world in which we now live.

The greatest promise of 2012 is that this knowledge of harmony in Nature would be remembered so that we might elevate self-image and rebalance social policy. The story presented here paints a surprising picture of how virtual reality technology could help people remember the ancient harmonic worldview of *Musica Universalis* by visualizing it for them. It suggests that the forgotten principles of natural harmony might return in some updated avatar-populated musical landscape - a more meaningful and organic replacement for *Guitar Hero* perhaps - to help reorient Western society back toward balance.

In this way, the rebirth of harmonic philosophy can become something real and tangible rather than just a nice idea. Through the new technology of visual music delivered over the Web to mobile music devices around the world, a new vision of who we are, why we are here and where we are going can begin to evolve. Emerging suddenly as a grassroots movement, the technology now taking people away from Nature might well become the very thing that brings them back, reawakening awareness of *Musica Universalis* naturally and peacefully through a young and receptive pop culture.



*"We don't have records prior to 1874 that give us details about the sun. Compared to the past 130 years, our sun now is unprecedented as far as how slow this Solar Cycle 24 is taking off - or not taking off!"*

*- David Hathaway, Ph.D., NASA Heliospheric Team Leader, October 2009*

# The New Mythos

The idea that a new kind of mythology might appear in 2012 came while I was writing *Interference – A Grand Scientific Musical Theory*. In that book, I developed a theory of music perception called *Harmonic Interference Theory*, which led me down an ancient path of knowledge founded on harmonic principles. Along the way, I also discovered that mythology was once a way to teach this to others and provided a sustainable model for social evolution. Recognizing the need for such a model today, I began to envision a *New Mythos*.

The setting is simultaneously in the past, present and future. The past setting is inside Rosslyn chapel, a 15th century Scottish chapel. This mysterious chapel contains a variety of musical symbols in its architecture, including 215 stone cubes inscribed with cymatic resonance patterns that, when decoded, reveal a beautiful melody. Rosslyn is really a kind of medieval audio CD recorded in stone.

The present day setting is in Dallas, Texas at a nightclub called the *Liquid Lounge* where a myth-rock band named *Distant Lights* is performing. This is based on an actual band of the same name out of Austin, who undertakes cymatic experiments as portrayed in the story. I often attend their performances at a nightclub called the *Liquid Lounge* in the Deep Ellum district of Dallas. Our overlap of interest in mythology and harmonic theory led to my proposal of producing a real Grand Scientific Musical Theatre for 2012. This book is a philosophical primer for that project.

The future is then set in a concert-sized version of Rosslyn chapel incorporating a hypothetical holonomic projector and custom music visualization software on the Web.

This again is located in Dallas on the night before the end of the Mayan calendar in 2012. Why Dallas? Because I live here and can think of no better place that so typifies Western civilization. If you can change things here, you can change them anywhere.

Each of these timeframes and locations is then woven together using Gabe's visions to tell the history and rebirth of *Musica Universalis* in guiding society to greater self-awareness. This is the *New Atlantis*. First coined by Francis Bacon in 1623 and derived from Plato's description of the lost Atlantis, the *New Atlantis* was the title of a philosophical treatise expressing utopian ideals for what is now America. My use of the term embraces these same ideals, but extends them to include the philosophy of *Musica Universalis*, required I think to deliver on any promise of social balance in the world.

Attaining elevated consciousness in the *New Atlantis* requires a change in thinking and new system of beliefs based on natural laws. This replacement belief system is referred to in the story as the *New Mythos* and is presented as an updated analog to Greco-Roman mythologies and by inference all indigenous natural theosophies.

The *New Mythos* is introduced in the story through Gabe's visions of Greek gods, referred to as "harmonic archetypes." The term "archetype" is used in place of "god" in order to diffuse any preexisting bias against paganism while simultaneously rehabilitating the gods into symbols of harmony in the *New Mythos*. My research strongly suggests that the various pagan gods were originally designed as iconic symbols or archetypes for real harmonic properties in Nature

rather than simply supernatural deities. One does not need to accept the existence of spirits in these archetypes in order to accept them as symbols of harmonic physics.

All of these ideas materialize inside the virtual world of the Grand Scientific Musical Theatre. The theatre is a metaphor for Gabe's mind, a microcosm of the entire universe. This is symbolized in two ways - the 15th century Rosslyn chapel (containing his memories) and the 21st century Rosslyn concert (containing his dreams). In this way, Rosslyn acts as a unifying mental archetype for Gabe's memories and dreams, creating a venue for the return of the New Mythos.

The return of the New Mythos then occurs in five stages:

**Stage 1:** Gabe remembers the *Great Secret* of Rosslyn in his visions, which is of course *Musica Universalis*. Through this memory he discovers that he is a messenger who must deliver the New Mythos to the good people of Earth.

**Stage 2:** When he is about to lose hope, the archetypes begin appearing to the audience in a hologram above the stage. Since we are inside Gabe's dream at this point, the hologram is really a first peek inside his brain.

**Stage 3:** The band's music then appears as cymatic patterns, sacred geometry, crystals and standing waves inside the holonomic projector of Gabe's brain, illustrating how perception and even consciousness functions harmonically.

**Stage 4:** All of the archetypes return through *The Cloud* of cyberspace and are visible to the people, finally coming together as the *New Mythos* of *Musica Universalis* in the collective mind.

**Stage 5:** The New Mythos is then distributed to the world through the *New Technology*, enabling anyone to create their own music in The Cloud with their own mobile music device. Musical fragments symbolized by visual harmonic archetypes are dragged and dropped from the Internet, transforming music into a new kind of virtual mythology inside the digital realm. Through the New Technology, people begin to see the similarity between harmonic forms in the real world (planets, plants and people) and harmonic archetypes in the 3D virtual world, awakening society to the *New Atlantis*.

While it reads like a psychedelic fantasy, the technology and potential social impact is not that far-fetched. It is technically feasible for something like this to be developed and gain widespread acceptance. A mobile Internet application really could enable people to create and share music using mix-and-match music objects within a visual playback space. The framework for this was defined in my first book *Interference* using organic music perception models.

But even if nothing like this happens, this book still delivers the essential message of *Musica Universalis* to anyone ready to receive it.

The message is:

1. The Roman Church worked for over a thousand years to suppress harmonic science from social awareness through religious propaganda, laws, tribunals and wars,
2. The "scientific method" was designed to avoid harmonic theory in order to coexist with an anti-harmonic Church social doctrine,

3. Western society has become unsustainable and is on the brink of failure due to the absence of harmonic philosophy and ideals in contemporary society,

4. Space is not a void as popularly believed, but instead a structured cubic lattice of spiraling vortices (described as Schwarzschild black holes), spinning off particlized harmonic structure,

5. Our solar system is organized harmonically as twelve cymatic rings (the Sun's radius plus eleven planetary semi-major axes) balanced near quarter turns of a golden spiral inside a gravitational bubble,

6. DNA is a harmonic interference pattern of atoms that resonate together according to the same 12-step musical geometry of the solar system,

7. Life grows cymatically from the resonant bonding of carbon-12 (a mesoscopic dodecahedron) and water (a mesoscopic icosahedron) inside the quantum lattice,

8. Perception is a holographic pattern matching process in the brain, focused by the 12 : 5 harmonic geometry evolved into the body,

9. Consciousness is a property of atomic resonance transceiving at the quantum level across the space lattice.

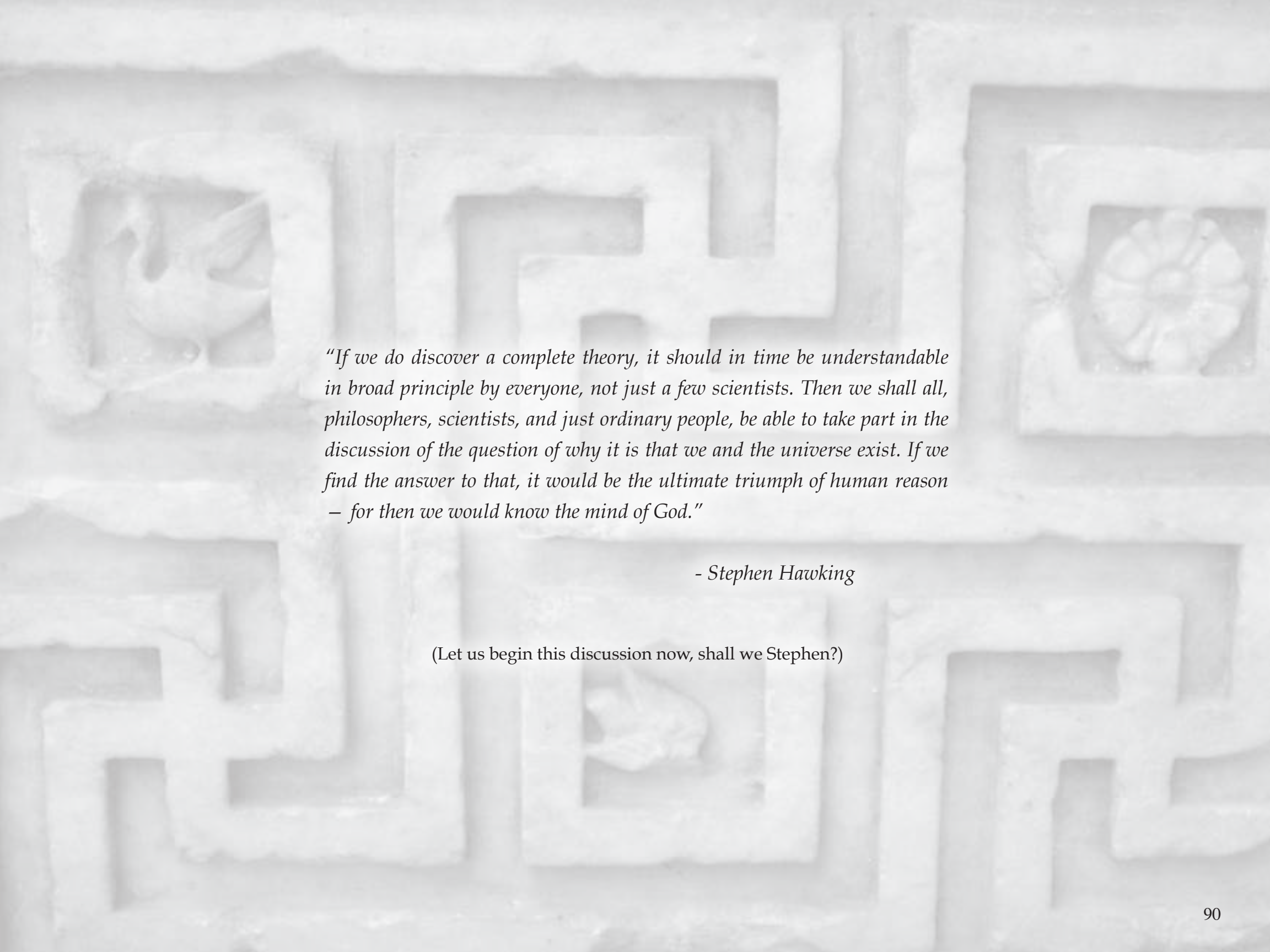
The latest quantum physics and the oldest harmonic wisdom lead to the same conclusion. We live in a holographic universe where consciousness is focused harmonically through the physical body, yet not a thing of substance itself. The truth is we are semi-autonomous robots under the remote control of something else nonphysical - something we might call *spirit*.

From the most organic view of the scientific evidence, everything in the universe can be described in musical terms. Our modern worldview need not be incomplete and tentative. Anyone can understand the basics of how Nature works harmonically by bridging the gap between music and perception. Music is a way to experience the geometry and physics of nature directly, which in turn is a way to experience the original archetypal realm that must lie behind the projection screen of reality.

Seeing the Cosmos and yourself as music is both liberating and integrating. This is the meaning of the New Mythos and the path of knowledge to the New Atlantis.

*"It occurred to me by intuition, and music was the driving force behind that intuition. My discovery was the result of music perception."*

*- Albert Einstein*



*"If we do discover a complete theory, it should in time be understandable in broad principle by everyone, not just a few scientists. Then we shall all, philosophers, scientists, and just ordinary people, be able to take part in the discussion of the question of why it is that we and the universe exist. If we find the answer to that, it would be the ultimate triumph of human reason – for then we would know the mind of God."*

*- Stephen Hawking*

(Let us begin this discussion now, shall we Stephen?)

# The Harmonic Archetypes

Since the days of ancient Sumer, the geometry of the pentagram has been revered as the greatest symbol of Nature. This is due to its mathematical relationship to the geometry of golden spirals approximated in such places as galaxies, hurricanes and sea shells.

As I explain in *Interference*, the natural damping that occurs in any kind of harmonic oscillation results from the formation of two complementary vortices that spiral by the golden mean inside each cycle of a standing wave. These vortices, known as a golden spiral or *Spira Mirabilis*, bring order and coherence to all things by suppressing the formation of fractional or enharmonic waves. This then enables the emergence of “sympathetic” whole number harmonic waves and formation of geometric cymatic structure at all scales of Nature. It is upon this science of harmonics that the Greeks based many of their mythological archetypes.

For instance, the planet Venus (goddess Aphrodite) was the prime archetype for order, coherence and harmony in the ancient world. Tracing out a pentagram over an 8-year period, the Star of Venus was irrefutable proof that Earth and Venus (and all the planets) balance along a *Spira Mirabilis*, governed by the same golden mean in a pentagram. Thus, out of Nature’s infinite damping spirals resonate the planetary spheres in periodic orbits, each harmonically tuned in size and frequency. This is the inspiration for the Greek worldview of *Musica Universalis* - the *Music of the Spheres* - founded in large part on the 5-fold geometry of Venus relative to Earth.

Philosophers like Pythagoras knew of this and found the same thing in the geometry of life. They saw it in the pentagonal seed

pattern of an apple, the petals of a rose and the geometry of the human body. They explained this omnipresent principle of Nature as the balance between a circle and a spiral; the finite and the infinite.

In mathematical terms, the circle is represented by  $\pi$  (the ratio in a reflecting or resonating wave) and the spiral by  $\Phi$  (the ratio in a non-reflective and aperiodic golden spiral). These two constants counterbalance by “squaring the circle,” as illustrated by Leonardo da Vinci in the *Vitruvian Man*.

Expressed together as the proportion  $\pi : \Phi^2$ , it can be found in the geometry of the human body and relative sizes of the Earth and Moon. Discovered thousands of years ago, the harmony between a circle and a golden spiral was seen as the prime organizing geometry of the universe. While seemingly innocent today, it represents nothing less than the wisdom of the ancients and forbidden knowledge of the Roman Church.

It is easy to see how the ancients would want to celebrate this discovery and incorporate it into their worldview. Who would not want to include harmonic physics and ideals into their belief systems, since they help us understand the transcendental connection between self and Nature. Why not use this knowledge to foster a sense of responsibility toward one another and the planet, since it could help bring order and purpose to society? And why not build a religion around these harmonic properties, since any such universal pattern of Nature must be the greatest wisdom of a creator?

In my view, mythology was as much a physics lesson as it was a religion. The ancients knew that all life on Earth was born



from sunlight, even while they had no idea who or what could have created it. The only thing they were sure of was that harmonics were present in all things and that everyone should know about it. Such order and predictability brought hope and a sense of purpose to these civilizations.

The fables and harmonic archetypes of mythology were created to explain the principles of Musica Universalis. The people did not need to understand the physics behind the archetypes to grasp their harmonic attributes in fable. But, as fewer and fewer remembered that this was a way to celebrate the music of creation, mythology and its harmonic archetypes became misunderstood and eventually twisted toward political ends. In time, pagan harmonic theosophies were demonized and suppressed in favor of manmade religions, leaving Western culture to develop without natural balancing principles. Rarely will you find a school today that teaches harmonic science or explains mythology based on harmonic physics.

Consider for a minute the other harmonic archetypes in the story. Harmonia and Eris (the Roman goddesses Concordia and Discordia) are complementary opposites as are Hercules and Atlas. I chose them for the New Mythos because they once symbolized the universal musical qualities of consonance and dissonance and corresponding harmonic physics of resonance and damping.

Harmonia was the daughter of Ares and Aphrodite (Venus) in one account and Zeus and Electra in another. As the archetype for consonance, Harmonia wore a necklace to represent her circularity and concordance. However, her necklace had the property of bringing bad luck and even death to anyone who wore it, inferring that its circle was not perfect. This represented the idea that everything exists in

the balance between a circle and a spiral - not a perfect circle. We see this eternal truth in how the planets spiral through space as ellipses while circling the Sun. Nonetheless, Harmonia was used to represent the ideal of perfect consonance and periodic coherence - a standing wave resonating harmonically.

Opposite to this stood Eris, the spiraling archetype for strife, war and chaos. She was the daughter of Zeus and Hera (whose son was Herakles / Hercules) and used to represent Nature's "error" that upset Harmonia. The philosophers used Eris to represent infinity and death, corresponding to the physics of an infinite spiral. After all, life is a closed circle until it dies, at which time it must return to an open spiral. Without closure we have no concordance and no harmony; Concordia and Discordia must balance for life to exist.

The male equivalents to these feminine harmonic archetypes are then Hercules and Atlas. In the story, the fable of Hercules cleaving Atlas in half is retold, explaining how the two halves of Atlas become the twin Pillars of Hercules at the Strait of Gibraltar. In real life, these pillars were associated with the Rock of Gibraltar (in Spain) on one side and either Monte Hacho (in Ceuta, Spain) or Jebel Musa ("Mountain of Moses" a.k.a "Mount Sinai" in Morocco) on the other. These mountains have played a central role in religion for thousands of years, probably because they provide a perfect physical archetype for harmonic resonance and damping.

In *Interference*, I explain how the two mountains either side of the Strait could have symbolized the two damping spirals in one period of the standing wave of a musical tone. Any physical standing wave will form two golden spirals (or "pillars") just inside the maximally resonant locations at the anti-nodes. From this model, the water between the mountains

can be taken to represent the damping spirals and the mountains the resonant structure. As a single physical model for universal harmony, the Strait of Gibraltar would have then represented the balance between resonance and damping, personified in fable as Hercules and Atlas respectively.

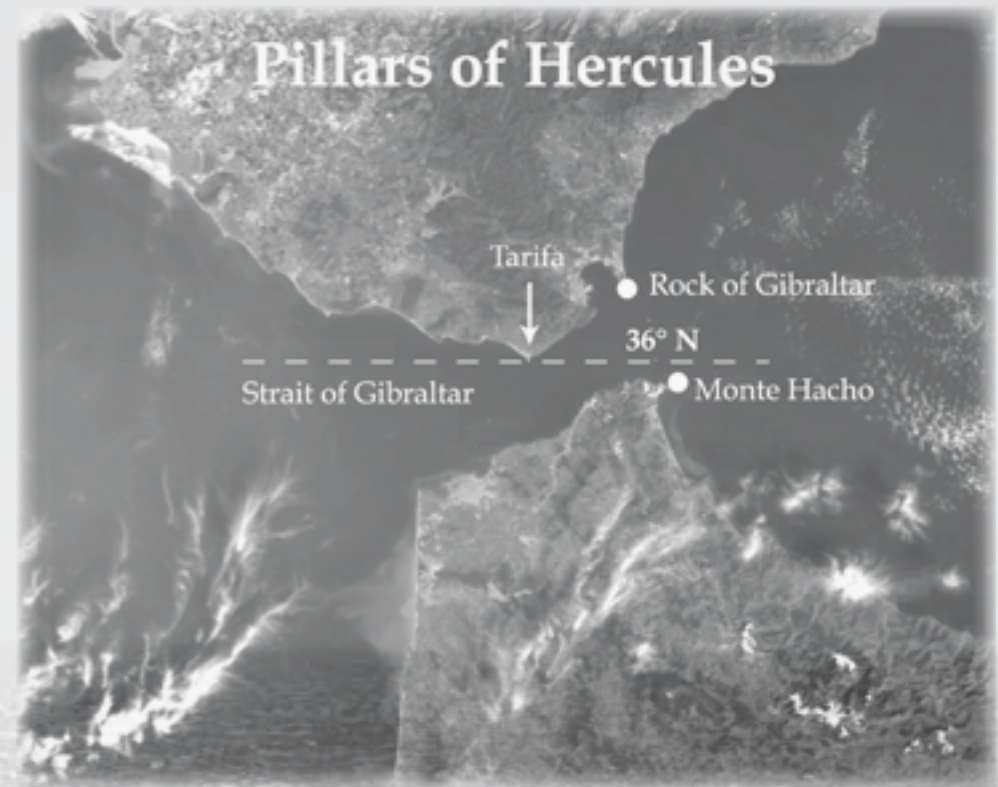
From this natural philosophy it would have made perfect sense to name the mountains the Pillars of Hercules because they *resonated up* while the ocean between them were *damped down* by the waters of Atlas, or the *Atlantic*. The Strait of Gibraltar would naturally become the symbolic entrance to an ideally balanced and harmonious civilization named *Atlantis*.

The only question then is what could have caused ancient philosophers to view this location in harmonic terms?

The easy answer might be found by taking a round leaf from a tree, tear it in half down the stem and hold both sides up flat against the horizon opposite one another. What do you see? You see an organic model for two mountains that achieve maximum cellular resonance at the widest point of the leaf tapering off to a valley in the middle. This curve is what I call a *Gaussian Reflective Interference* distribution and emerges whenever a full spectrum of harmonic waves reflect across one another in a circular or spherical space.

But what can we say is the connection between this spectral pattern and the Strait of Gibraltar as it was symbolized in Greek mythology? What makes Gibraltar so “harmonic?”

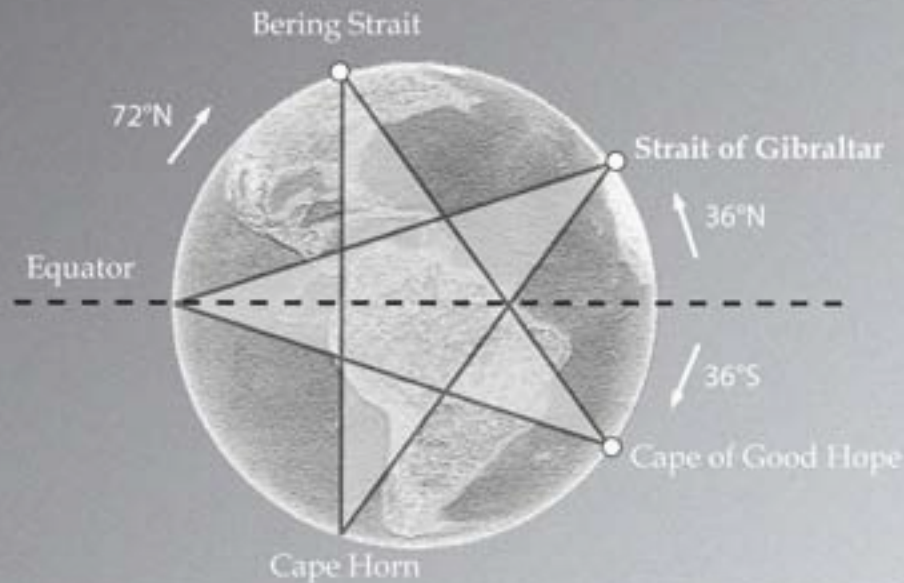
As it happens, the strait is located at *exactly* 36 degrees latitude north. Since there are 360 degrees in a full arc of the globe, it is located precisely one-tenth around the circumference of the Earth, measured from the equator and running through the poles. If we imagine a giant pentagram superimposed over the Earth



with one of its five points aligned at Tarifa, Spain in the middle of the strait, we might find our answer.

The other points of the star align with the equator, the Bering Strait (between Alaska and Russia), the Cape of Good Hope (southern tip of Africa) and not too far away from Cape Horn (southern tip of South America). Since the Earth continues to resonate like a spherical bell, it could very well have formed a pentagonal cymatic pattern that acts to physically carve out Straits and separate continents in the Earth's crust. Since Africa and South America are both shaped according to Gaussian harmonic curves, it is not unlikely that there is a pentagonal damping proportion at work in Earth tectonics.

## Earth's Pentagonal Cymatic Damping



As a matter of fact, the entire Mediterranean Sea extends along this 36-degree latitude, running north along the Atlas mountain range of northern Africa, passing through the island of Malta and finally ending at a small town in Turkey. In a very real way, Atlas (the mountains) hold up the world (of Europe) from beneath the 36-degree latitude!

This line carries on around the Earth, appearing to affect geography elsewhere. In North America, the Grand Canyon and Hoover dam are also located on the 36-degree line, as is Big Sur on the west coast.

But, in order for the ancients to have realized Gibraltar as an important proportion in the Earth, they would have had to know both the circumference of the Earth and distance to the Equator. How could they have known this?

They could have traveled to the equator in Africa to find the spot where a vertical staff does not cast a shadow at midday on the summer equinox. Once there, the Earth's circumference could have been calculated as the difference between two identical shadows separated east to west, then multiplied (as a proportion of a day) by the distance between them. This is something ancient philosophers could have easily done in order to confirm their harmonic ideology.

With this information and a basic understanding of the importance of the pentagram and golden ratio in controlling resonance, they would have known that the Strait of Gibraltar represented a key anti-harmonic damping proportion in the Earth. The fable of Hercules and Atlas could have been created to celebrate and preserve this knowledge of harmony and pentagonal geometry at work inside the Earth itself. Likewise, the story of Moses receiving the Ten Commandments on Mount Sinai could have corresponded to this mountain being located about *one-tenth* of the way around the Earth. Even laws themselves – a system of social control – could have once been seen as an application of harmonic damping corresponding to the pentagonal Star of Venus and its golden ratio.

In this way, the Pillars of Hercules (made by splitting Atlas in half) can be directly linked to the Star of Venus. This is the reason Hercules and Venus are shown as lovers in the story. Hercules represents the resonance of Earth while Venus symbolizes damping and stability, both as a pentagram inside the Earth and up in the sky as a heavenly body.

# The New Technology

During this writing, the availability of alternative information and ideas over the Internet has continued to grow. As a result, interest in ancient civilizations has grown too, bringing an increased awareness of harmonic theory, cymatic geometry and theosophical symbolisms. This is no small thing because such knowledge can have a profound effect on society, replacing artificial belief systems with more natural and spiritually inspired perspectives.

But while many are reconnecting with Nature, many more are embracing the artificial realities of digital computers, wireless phones and the Internet. Fueled by the rapid emergence of interactive digital media and wireless communications, most people today find themselves living much of their lives in a virtual reality, totally disconnected from the physical world. As I ended my involvement with the computer industry and began to delve deeper into the mystery of perception a few years ago, I began to wonder what effect this technological disruption could have on society and how it might somehow foreshadow change in 2012 and beyond.

Then it became clear. Physical reality and virtual reality were blending into a new kind of multi-choice reality. It seemed to me that this new fuzzy sense of reality could cause society to become more tribal and even mythological in its thinking. The more our dreams come true in cyberspace, the more real and relevant they become in our lives. This is already happening.

The virtual realm of electronic digital communications is now our only escape from an artificial world of huge governments, corporations and mass media. We cannot help but be drawn back to small tribes with common interests in cyberspace.

No longer limited by physical factors like geography, country, race or financial status, these e-tribes are made almost entirely of thought. And these thoughts are carried as electrical signals around the world, arriving to us as electromagnetic waves right out of the aether. The Internet has become a physical noosphere - a place of dreams, memories and imagination.

As the real estate of the physical world comes under greater surveillance and control, the un-real estate of the virtual world is becoming more mythological and archetypal. New gods are already appearing inside people minds through role-playing games and 3D-powered chat rooms while the old political gods of the physical world, propped up by their artificial and outdated institutions, struggle to survive. Even our fiercest enemies - invisible web-surfing, video-making cavemen - have gone virtual as vast populations slip further and further away into non-physicality.

Before long we will all be living in *The Matrix*, communing with our favorite tribe through some personalized *Avatar*. As this artificial reality becomes ever more convincing, the physical institutions will become increasingly irrelevant. People will simply enter their personal holodecks to find meaning and fulfillment in life. Gathering around the central fire of the Internet, a new mythology will be born inside *The Cloud* of the wireless World Wide Web.

There in The Cloud, the people will work and play, creating virtual products to earn virtual money. Here they will adore virtual gods and assume virtual personalities. Here all their wishes will come true, fulfilled in every way by electronic thoughts rippling through space.

Happiness and fear will be virtual here, too. People will cuddle around a hot idea instead of a warm fire with their partner. Sex too will become virtual and on-demand, assisted perhaps by a one-size-fits-all plug-n-play Firewire device. As holographic images project directly into our collective cortex, feeling and emotions become virtual as well.

Ironically, it is through this disturbing vision of the future that we can begin to find hope. A new utopia and Garden of Eden is emerging in cyberspace - a place where people can be themselves again without apology or guilt. The more people feel free, the more likely they are to discard institutionalized belief systems and embrace natural philosophies. In the ways that really matter, society is already becoming LESS virtual and LESS artificial, rediscovering what it means to live free.

Perhaps the march toward virtuality is just another step in mankind's evolution. Maybe "living virtual" helps us learn faster, redefine ourselves and create social models that are more sustainable. Maybe the ancient archetypes of harmonic physics will return in some musical form through The Cloud, designed by modern philosophers and social architects to show the world how to fix itself. Maybe this virtual world is not a disease at all, but in fact the very medicine we need to help us create a more harmonious future, one ready for the next stage of spiritual evolution.

In the story, the parallel realities of physical-virtual, memory-dream and past-future are resolved once the music becomes visible. When the audience begin to see the music in the same way they hear it, they start to wake up to the presence of harmony in all things. As they awaken, they begin connecting to the New Mythos in The Cloud in order to enter the New Atlantis, a blended holographic reality composed of crystallized musical light. Of course, this is just an updated analog for the ancient Greek theory of a musical universe.

If some version of this were to happen in the coming years, we might expect the same result. The average person could begin to view the world and themselves in musical terms - something beautiful, natural and spiritual. One by one, we might reconnect self-image with Nature.

Something as innocent as a do-it-yourself tinker toy set for music could be all we need to reintroduce Musica Universalis back into Western civilization. Available any time, any place through mobile devices, organic music visualization and composition software has the power to reveal how everything from solar systems to the human body are all just different forms of music.

But this can only happen if the software is designed using organic perceptual models. Only through an accurate representation of harmonic physics can the architecture of physical reality be correctly represented in the virtual realm. Only through a revolutionary New Technology like this can we hope to elevate self-identity and restore a sense of individual responsibility to Western society.

#### ***Technology used in the making of this book:***

*Mac Pro, Dual-Core Intel Xeon w/ two 30" displays  
Microsoft Word® to write the story,  
DAZ 3D® for 3D character and virtual set modeling  
Adobe Illustrator® for graphic illustrations  
Adobe Photoshop® for image layering and effects  
Adobe InDesign® for page layout and text placement*

# The history of The Grand Scientific Musical Theatre

There is an interesting and ironic story behind the name of this book that must be told. In October of 1992 I was involved in a 4-hour live concert that marked the beginning of the digital media revolution. It was named *The Grand Scientific Musical Theatre*.

The "GSMT," as it was nicknamed, was the brainchild of Scott Page, former sax player for rock band Pink Floyd, and George Grayson, the president and cofounder of Micrografx, the graphics software company where I worked in those days. It was held at the Thomas & Mack Center in Las Vegas in parallel with the COMDEX computer tradeshow that year. As a benefit concert held immediately after the annual Micrografx Chili Cook-off, the GSMT was intended to demonstrate how the entertainment and computer industries could work together to create new kinds of digital media experiences.

From prior years, the Micrografx Chili Cook-off was well known and well attended by the computer industry. Companies were invited to compete with their best chili recipe while attendees watched armadillo races and listened to the music of the not-yet-famous Dixie Chicks. There was always some surprise, such as the previous year's appearance of George "Spanky" McFarland from the 1930's-40's *Our Gang* and *The Little Rascals*.

As with all company events, the challenge was to dream up something bigger and better each year. To encourage participation and contribute to a good cause, it was decided that year to make it a charity for The National Center for Missing and Exploited Children, a favorite charity of IBM. Of course, they immediately agreed to be the lead sponsor.

Software companies signed up left and right to cook their chili and watch the show, even though no one had any idea what was in store. Leading production and technology companies came on board to create the "scientific theatre" part of the show while big name entertainment acts contributed their time to the cause. With last minute help from Scott's friend, music producer Bob Ezrin (of KISS, Pink Floyd and Alice Cooper fame), the project began to take shape.

On the visual technology front, Sun Microsystems would generate real-time 3D animation on a cylindrical display tower powered by their latest high-end graphics computer aptly named the Reality Engine. A 3D virtual talking head technology was also showcased by comedian Charlie Fleischer (voice of cartoon character Roger Rabbit) and displayed on more than a dozen large screens arrayed around the coliseum. To cover the action, a dozen video "swarm cams" roamed the floor piping live feeds into an 18-wheel mobile production studio in the back parking lot where everything was mixed in real time and piped back into the arena to create a MTV-style video collage of the performance.

The audio system boasted the latest in 3D surround sound, complete with speakers mounted above the floor and focused on every angle of the circular arena. The show lighting system, on loan from rock group Genesis, featured a state-of-the-art computer-controlled Vari-lite system showcasing the then-new capability of individually swiveled and switched lights. In 1992, this kind of audio/ visual experience was groundbreaking compared to anything else available at the time - or maybe even since. The musical entertainment was not too shabby either.

Performers for the GSMT included the Nevada Symphony introduced by the governor of Nevada. This was followed by a couple of popular Los Angeles DeeJays interviewing and introducing various ensembles, including the Tower of Power horns, Jeff Porcaro from Toto, Jeff "Skunk" Baxter of the Doobie Brothers, John Entwistle of The Who, The Edgar Winter Band (playing *Frankenstein*), Todd Rundgren (*Hello It's Me*), Jon Anderson of Yes, Graham Nash of The Hollies and CSN&Y, Flo and Eddie of The Turtles (*So Happy Together*), contortionists from Cirque du Soleil and more.

There was even a group of dancers on a side stage wearing glow-in-the-dark body suits that triggered a MIDI synthesizer as they moved. The whole thing truly was a spectacular scientific and musical experiment, justifying the name coined in 1871 by P.T. Barnum for the world's first circus: *Barnum's Grand Scientific and Musical Theatre*.

For four hours a stunned crowd of more than 10,000 computer pioneers from IBM, Microsoft, Micrografx, Intel, Oracle, Novell, Sun Microsystems, Apple, Adobe and many others watched the event unfold. Executives representing the future of the computer industry were in attendance, not the least of which was David House (General Manager of Intel), Jim Cannavino (head of IBM Personal Systems Division) and Bill Gates with soon-to-be wife Melinda French.

It was here in the darkened coliseum while watching the show that it first dawned on me the line between physical and virtual was starting to blur. That was when I first saw how computers would pull society further and further away from the natural world. But it was also when I began to ponder how they might also bring us back. I imagined a tipping point when virtual reality finally became so real that it would be indistinguishable from physical reality, spilling Nature's secrets out for all to see.



As these strange ideas swirled around in my head, I imagined the standing waves and perfect geometric forms of the music I was hearing projected onto the theatre's screens instead of the pretty but meaningless pop-art images being shown. In the theatre of my mind, each song would create its own virtual reality as geometrical objects tumbling through a vibrating landscape of intersecting waves and patterns. In this inner realm, I could see melodies growing as a flower, intervals pumping like a beating heart and chords carving out the shape of some primitive life form. Higher up in the hierarchy, I envisioned rich orchestrations and timbres materializing into the physical archetypes of planets, plants, pets and people, giving the audience a glimpse into an invisible mythological realm.

Maybe this would become the vision that could stitch together a fragmented society, I thought, bringing with it a new mythos of cultural awareness and social coherence. Maybe this would be the real Grand Scientific Musical Theatre for which the world had been waiting.

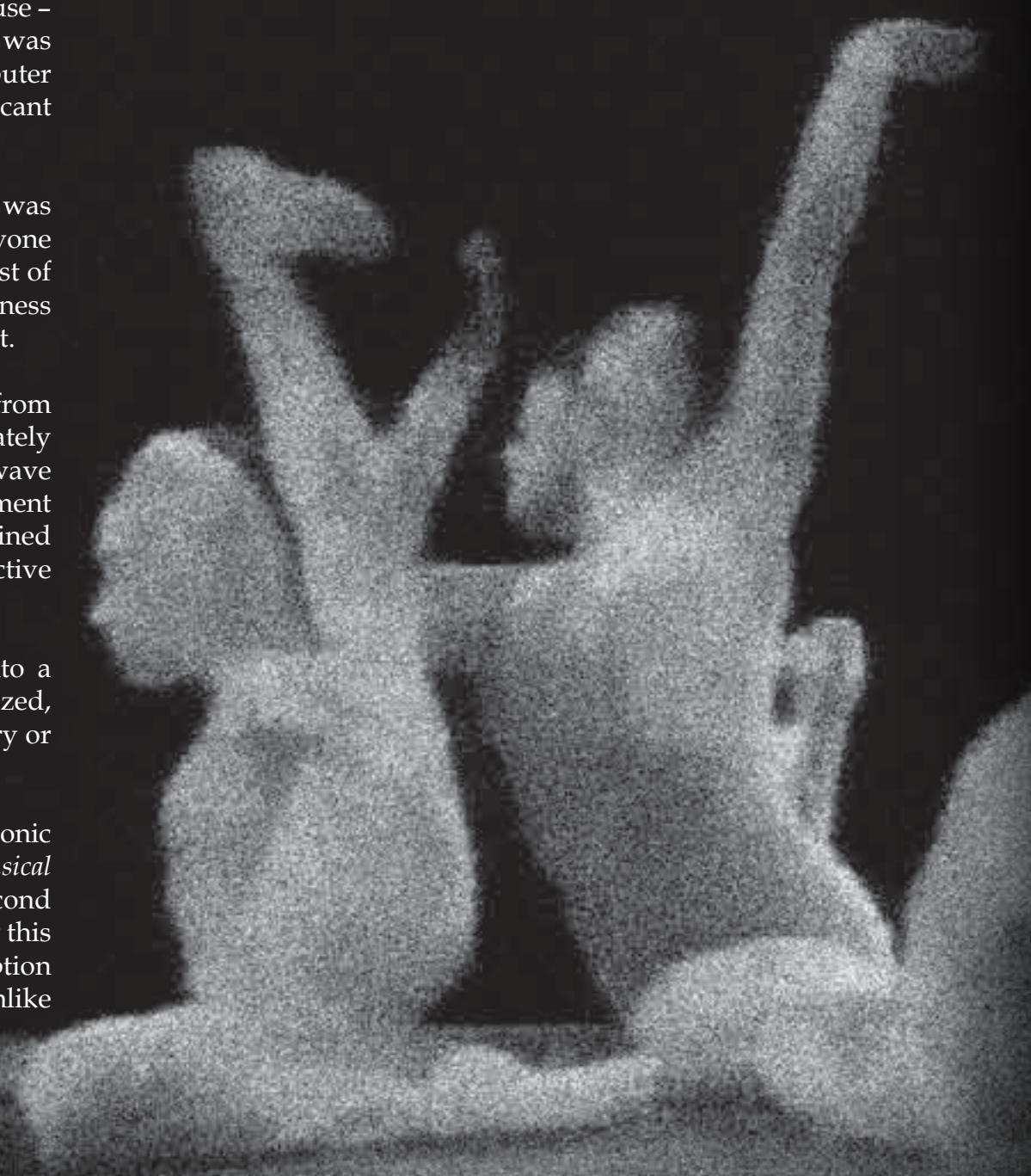
The after party was amazing. It was the first significant mixing of key figures from both industries with everyone overwhelmed and breathless by what they had just seen. Intel's David House – the one who coined the slogan “Intel Inside” – claimed this was “a defining moment for the computer industry” while computer journalist Stewart Alsop commented “it was a very significant event.”

Everyone left that night with a common vision of what was proclaimed as “our multimedia future.” That is, everyone except the Micrografx Board of Directors who in the interest of staying focused on the company's graphics software business put a halt to any further investment in digital entertainment.

Within a couple weeks of the show, George had resigned from Micrografx because of a disagreement on direction. I immediately joined him and his partners, Scott and Bob, to catch the next wave in interactive digital media. In our new interactive entertainment and education company named 7th Level, we were determined to deliver on the promise of the GSMT by creating interactive content for CD-ROMs and the fledgling World Wide Web.

My dreams of combining art, music and interactivity into a digital media software company had finally materialized, though I knew any thoughts of working on harmonic theory or music perception would have to wait a while longer.

It wasn't until 2006 that I was finally able to return to my harmonic studies, publishing *Interference – A Grand Scientific Musical Theory* in 2009. Today, my waking dream is to produce a second live concert named *The Grand Scientific Musical Theatre*. Only this time, it would be founded on the science of musical perception and philosophy of neo-mythical harmonic archetypes, not unlike the concert described in the story.







**THE GRAND  
SCIENTIFIC  
MUSICAL  
THEATRE**

# The Frozen Music of Rosslyn Chapel

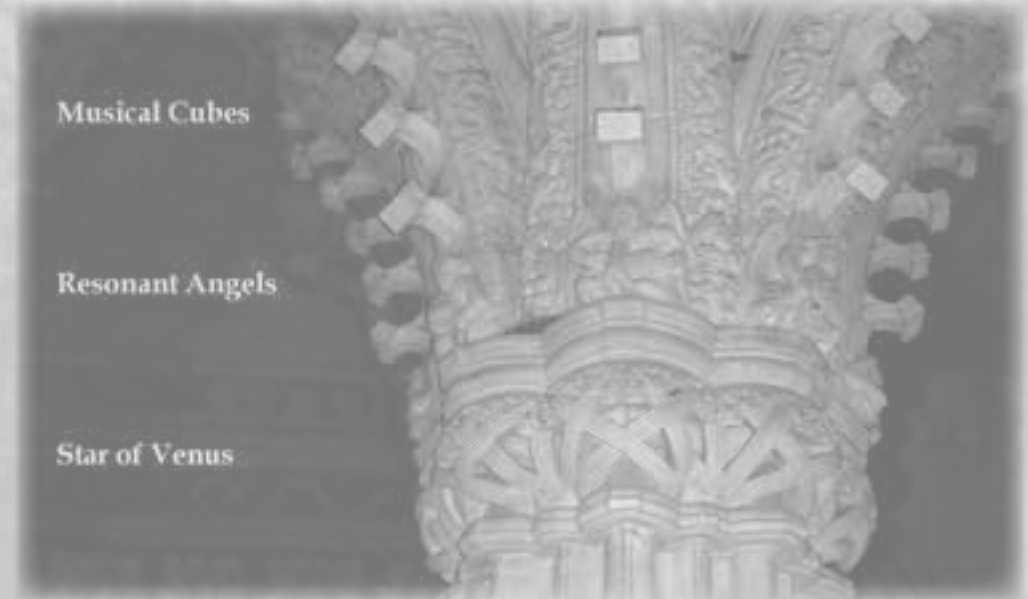
In 2006, Dan Brown's book *The Da Vinci Code* was released to a storm of controversy. It suggested that the legend of the Holy Grail might have been a reference to a continuation of the bloodline of Jesus Christ through Mary Magdeline. The book also speculated that proof of this might be found buried beneath a 15th century Scottish chapel near Edinburgh named *Rosslyn chapel*. It was after this that the story of the chapel and its strange stone carvings burst into popular consciousness.

The next year, I read a press release announcing that "frozen music" had been decoded from symbols carved into Rosslyn chapel's architecture. After more than 550 years shrouded in mystery, the father-son team of Thomas and Stuart Mitchell had discovered that the 215 "musical cubes" in the pillars and arches matched 13 unique geometrical sound patterns known as *cymatic patterns* or *Chladni figures*.

These patterns are produced when a metal plate or drumhead is sprinkled with salt or powder and vibrated by proportional sound frequencies. First documented by Ernst Chladni in 1787, the patterns can range from simple polygons, such as triangles, pentagons and hexagons, to beautiful mandala-like patterns, depending on which frequencies are used.

The Mitchells had determined that each of the cube patterns matched specific musical tones organized into vertical groups around the chapel's pillars. Stringing these tones together into a melody, the men discovered a beautiful song they called the *Rosslyn Motet*. The song was then performed in Rosslyn chapel on May 18, 2007, playing for the first time the music "frozen" into the chapel's stone architecture.

To help them decode the cubes, they found a special "stave angel" carved into a pillar holding a musical staff and pointing to the three tones {A, B, C} on the treble clef. These particular tones corresponded to some of the cube patterns.



The Mitchells also noticed that the stave angel pointed to B with his right hand and to A and C with his left. This was taken to indicate that the music was in the key of C major / A minor with the "leading tone" B balanced symmetrically in the center. From this, each cube pattern was matched against a particular frequency using a square Chladni plate tuned to C. The tones were then ordered from bottom to top, left to right around the columns beginning with the stave angel to create the melody.



While this is a truly amazing story as is, it raises deeper questions of who designed the chapel, why this music was hidden in the architecture and what it could all mean?

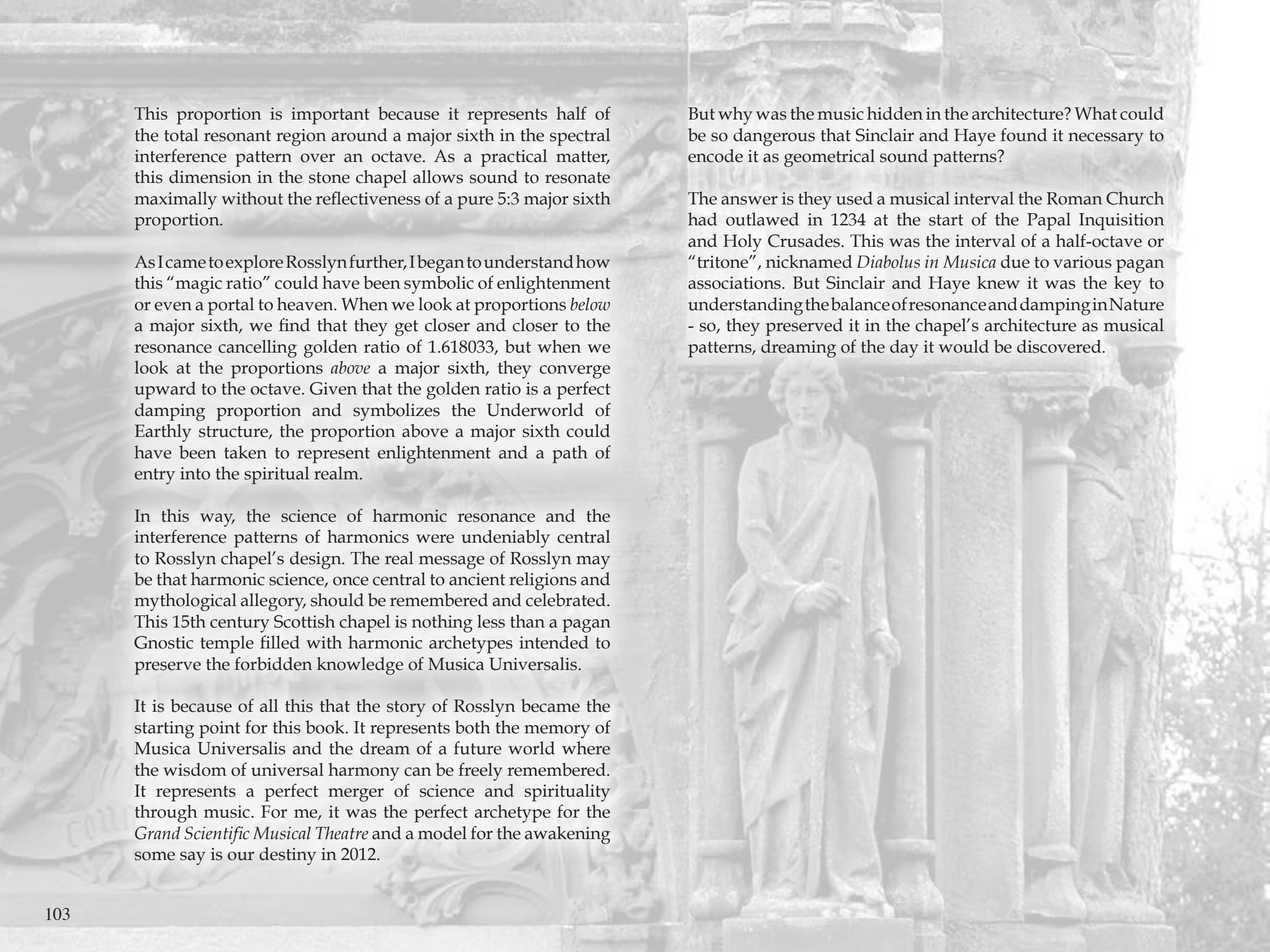
Begun in 1446 by William Sinclair, 1st Earl of Caithness of the St. Clair family, Rosslyn chapel was constructed to include numerous esoteric symbols related to the Christian sect known as Ebionites, descended from the Gnostic and Dualist Cathars of southern France and linked to the Knights Templar. As the likely predecessor to modern Freemasonry reaching back to the Egyptian mysteries of Isis and Osiris, the chapel exhibits various pagan symbols, including references to angelic alchemy as practiced by some in the 15th century.

All of this was designed by Sir Gilbert Haye, said to be one of the most learned and intellectual minds of the 15th century, under the direction of William Sinclair.

As this chapel clearly demonstrates, sonic resonance patterns were well understood long before Chladni's officially recognized scientific discoveries in the 18th century. Knowledge of the geometry of sound has been traced as far back as the ancient Chinese and Egyptian mystery schools. Chinese gongs were tuned according to vibrated patterns of sand on their surface while Egyptian tombs resonate according to certain harmonic combinations. Haye and Sinclair apparently sought to preserve and celebrate this sonic wisdom in the architectural design of Rosslyn chapel.

As explained in the story, there are 13 musical angels carved into the pillars, some sitting on pentagrams, with 8 dragons curling their tongues around the Tree of Knowledge below. Above them are then the 215 musical cubes carved into the arches. The angels and dragons appear to be a clear reference to the 13:8 orbital proportion of Venus to Earth. Together with the musical cubes, the chapel was a tribute to the Music of the Spheres and, in particular, the Star of Venus. The obvious correspondence of geometric sound patterns to the orbit of Venus was a key insight behind the story of this book and the primary reason Rosslyn chapel was used as the setting.

There is another feature of Rosslyn chapel that links mythology to perception. As I came to find out, the inner dimensions of the chapel measuring 68' tall by 40.5' wide by 81' long are also symbolic. The proportion  $68' / 40.5'$ , equal to 1.6790123, is a very resonant acoustical proportion. When the 5:3 proportion of a musical major sixth (the highly resonant proportion 1.666) is subtracted from this Rosslyn proportion, we are left with the remainder 1:81, equal to 0.012345679.



This proportion is important because it represents half of the total resonant region around a major sixth in the spectral interference pattern over an octave. As a practical matter, this dimension in the stone chapel allows sound to resonate maximally without the reflectiveness of a pure 5:3 major sixth proportion.

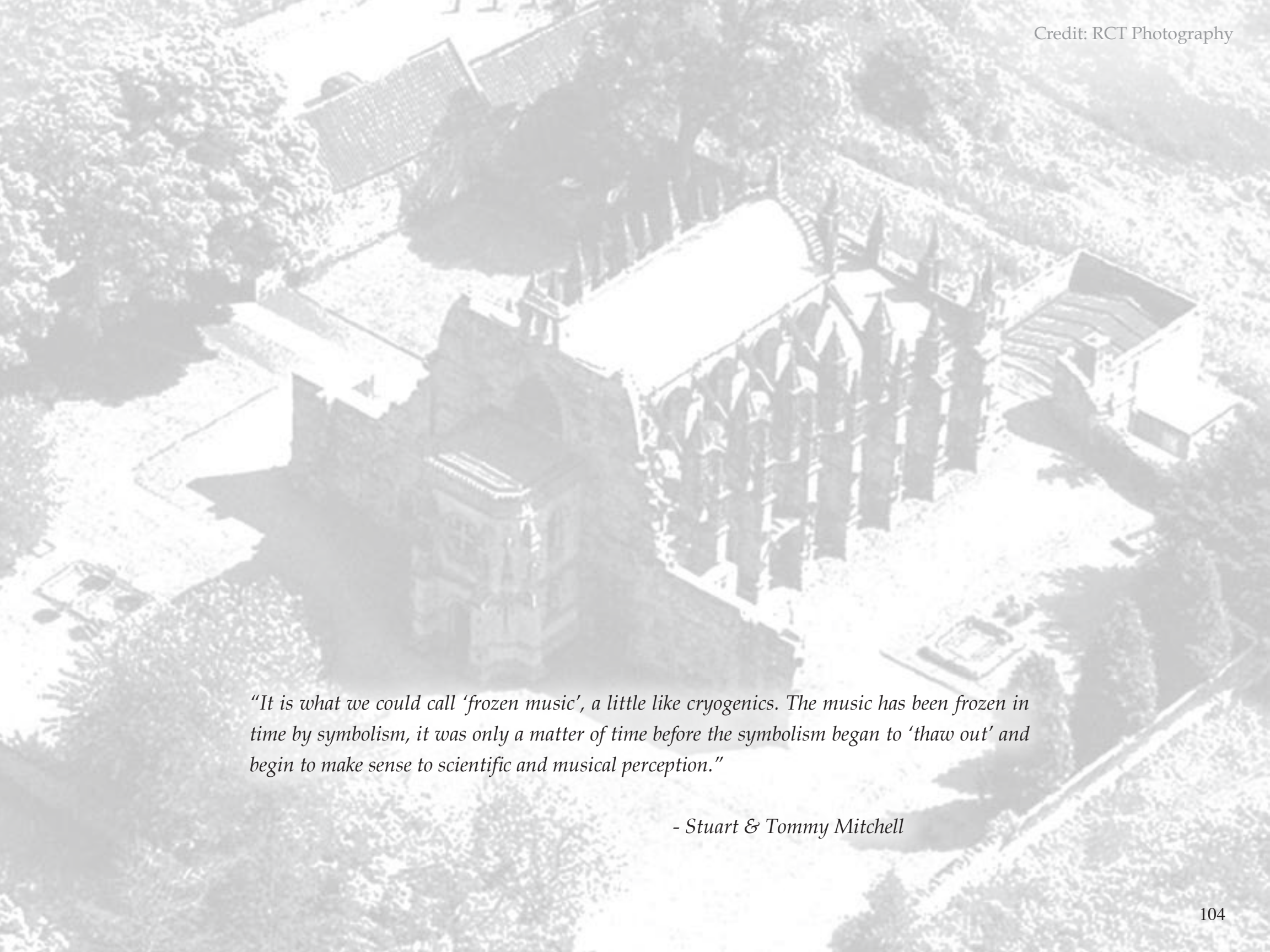
As I came to explore Rosslyn further, I began to understand how this “magic ratio” could have been symbolic of enlightenment or even a portal to heaven. When we look at proportions *below* a major sixth, we find that they get closer and closer to the resonance cancelling golden ratio of 1.618033, but when we look at the proportions *above* a major sixth, they converge upward to the octave. Given that the golden ratio is a perfect damping proportion and symbolizes the Underworld of Earthly structure, the proportion above a major sixth could have been taken to represent enlightenment and a path of entry into the spiritual realm.

In this way, the science of harmonic resonance and the interference patterns of harmonics were undeniably central to Rosslyn chapel’s design. The real message of Rosslyn may be that harmonic science, once central to ancient religions and mythological allegory, should be remembered and celebrated. This 15th century Scottish chapel is nothing less than a pagan Gnostic temple filled with harmonic archetypes intended to preserve the forbidden knowledge of *Musica Universalis*.

It is because of all this that the story of Rosslyn became the starting point for this book. It represents both the memory of *Musica Universalis* and the dream of a future world where the wisdom of universal harmony can be freely remembered. It represents a perfect merger of science and spirituality through music. For me, it was the perfect archetype for the *Grand Scientific Musical Theatre* and a model for the awakening some say is our destiny in 2012.

But why was the music hidden in the architecture? What could be so dangerous that Sinclair and Haye found it necessary to encode it as geometrical sound patterns?

The answer is they used a musical interval the Roman Church had outlawed in 1234 at the start of the Papal Inquisition and Holy Crusades. This was the interval of a half-octave or “tritone”, nicknamed *Diabolus in Musica* due to various pagan associations. But Sinclair and Haye knew it was the key to understanding the balance of resonance and damping in Nature - so, they preserved it in the chapel’s architecture as musical patterns, dreaming of the day it would be discovered.

An aerial, high-angle photograph of a large Gothic cathedral. The central feature is a massive rose window with intricate tracery. To the right, a large, open-air choir or apse is visible, showing the internal structure of the vaulted ceiling. The building is surrounded by lush green trees and a paved courtyard. The lighting creates strong shadows, highlighting the architectural details.

*"It is what we could call 'frozen music', a little like cryogenics. The music has been frozen in time by symbolism, it was only a matter of time before the symbolism began to 'thaw out' and begin to make sense to scientific and musical perception."*

*- Stuart & Tommy Mitchell*

# The Music of Distant Lights

The following tells the story of Distant Lights in their own words - yet, nothing can express their substantial talents and impressive musicality better than hearing them live.

*"Austin's Distant Lights combine complex instrumentation and masterful lyricism into a powerful, progressive sound, and while the group has been favorably compared to Metallica, Radiohead and A Perfect Circle, the quintet is unquestionably unique. Unlike any other current outfit, Distant Lights showcases Jon Dexter, featured soloist from A Scanner Darkly, on his electrified, antique cello. The unusual arrangement, combined with piercing vocals, allows the group to meticulously tow the line between pop and metal, rock and performance art, serenity and a storm.*

*Intelligence and curiosity inspire Distant Lights to push the boundaries that separate auditory and visual perception and prompt them to question their surrounding world. 2008's concept album Simulacrum, the group's debut, utilized Plato's Allegory of the Cave as a metaphor for the dismal state of current affairs. During select performances, projections of artwork and video accompany each track, creating an astonishing visual manifestation of each song. Such presentation, combined with the force of Distant Lights' sound, offers the audience something far beyond the normal concert experience."*

## distant lights » SIMULACRUM

*“Perhaps the unlikely serendipity that united two small-town friends, a Texas music student, a wandering cellist and a singer-for-hire is what inspires Distant Lights to question the forces at work around them. Soon after guitarist Gaelan Bellamy and bassist Sam Marshall convinced drummer Chris Hynes to abandon life in tiny Tehuacana, TX, they were joined by the world-traveling Dexter and his cello. Less than two years later, singer Gabriel Fry was sought out by Bellamy and the quintet was complete. After playing together for only a year, Distant Lights released their critically acclaimed debut, Simulacrum, in March 2008. The momentum of the album and a subsequent 16-city east coast tour vaulted the group into the playlists of over 200 radio stations nationwide, licensing agreements with MTV, exclusive representation at the 2009 NACA Convention and opportunities to perform from coast to coast.*

*Distant Lights' momentum continues to accelerate through 2009 as their musical exploration has drawn increasing attention. In addition to concentrating on a new album, the group has begun work on a collaborative effort with scientist Richard Merrick, author of Interference: A Grand Scientific Musical Theory. While still in the works, the educational endeavor plans to combine an explanation of harmonic interference theory through live performances and lectures.”*

# Glossary of Symbols

**Angel** - Representative of maximum resonance and enlightenment, the freely resonating 5:3 major sixth proportion can be considered the most angelic interval in a musical octave. Complementary opposite archetype is the Dragon.

**Agama Nartanam** - Ancient spiritual dance performed in the inner sanctum of Hindu temples.

**Aquamarine colour (turquoise)** - The colour representing a golden ratio proportion in the upper half of the light spectrum. It symbolizes the same golden ratio proportion found between Earth and Venus, so is associated with the pentagonal Star of Venus in the story. Not coincidentally, this colour has been found to be emotionally calming and is used in hospitals for this reason.

**Atlas** - Greek archetype for harmonic damping, water and the Underworld, which together “hold up the sphere of the Cosmos.” Complementary opposite archetype is Hercules.

**Circle** - Represents a finite, closed system; periodic oscillation; harmonic series; harmonic resonance; a standing wave;  $\pi \approx 3.14159$ . Complementary opposite is a Spiral.

**Dog Tag** - Cutout of a wisdom tooth, symbolizing Gabe’s intuition and the ancient wisdom he remembers in the story.

**Dragon** - An ancient flying serpent archetype for harmonic damping. Associated with the Underworld, death and, in Christian lore, the Devil and pagan theologies. Complementary opposite archetype is the Angel.

**Eris** - Greek archetype for harmonic damping, musical dissonance, strife, war and the Underworld. Eris threw the golden apple into the council of the gods to start the Trojan war. Complementary opposite archetype is Harmonia.

**Fallen Angel** - Christian archetype for the Devil. In the story, Gabe thinks he might be possessed by the fallen angel, then ironically falls back to Earth as a winged messenger.

**Gabe** - Symbolizes both contemporary civilization and pop culture by having forgotten all ancient wisdom, but now starting to remember. His transformation into Gabriel, The Messenger archetype, represents the reawakening of mankind to Musica Universalis.

**Golden Apple (Apple of Knowledge)** - Greek symbol for beauty that contain a secret wisdom in its core. It is an archetype for the Underworld, harmonic damping, the golden ratio and pentagram with an ambiguous blend of chaos and balance. Associated with Eris and forbidden knowledge in the story.

**Great Flood** - Biblical archetype for harmonic damping; symbolic of error in Man. Associated with the Great Schism and Strait of Gibraltar in the story.

**Great Secret** - The orbital proportion 13:8 between Venus and Earth that traces out the pentagonal Star of Venus. This remains a well-kept secret of both Western religion and science since the Church associates it with paganism while science associates it with intelligent design. It is the prime symbol for the standing “complicity of convenience” in the West to avoid direct mention of harmonic theory.



**Great Schism** – Symbolizes a half cycle, half octave, tritone interval and polar axis in any standing wave. It is associated with the story of Hercules cleaving Atlas in half, creating dualism and the tritone interval forbidden by the Church.

**Harmonia** – Greek archetype for harmonic resonance, musical consonance and beauty. Her necklace is similar to the Golden Apple – it appears beautiful, but contains is slightly warped by the spiraling force of harmonic damping.

**Hercules** – Greek archetype for resonance, strength and structure on Earth. Complementary opposite archetype is Atlas.

**Hexagonal Cymatic** – Symbolic of the Metatron cube geometry in the Egyptian Flower of Life. This pattern occurs when the fifth harmonic partial is resonated against a fundamental frequency. In the story, it is symbolized by Gabe (a 5-fold shape) resonating in the fundamental of space (Unity or 1).

**Holonomic Projector** – Symbolic of the human brain. The term “holonomic” refers to holonomic brain theory developed by neurophysiologist Karl Pribram and quantum physicist David Bohm. This neurophysiological model proposes that the brain functions like a hologram while the senses act as lenses. Harmonic Interference Theory adds to this the principle that Gaussian distributed harmonic patterns provide a focusing property in the cognition process.

**iPhone (Apple®)** – Modern archetype replacing the Golden Apple and Apple of Knowledge with a digital computer connected to the World Wide Web. It glows gold, etc.

**Pentagram (Star of Venus)** – Geometric symbol for harmonic damping that forms a golden ratio in every intersection.

**Pentagonal Cymatic** – Symbolic of the Star of Venus.

**Pillars of Hercules** – Archetypes for harmonic resonance, but implicitly including the golden mean as its infrastructure. Associated with both Hercules and Atlas, the twin pillars are symbolic of the New Atlantis and, in modern times, the Twin Towers that were destroyed on 9/11.

**Musica Universalis (Music of the Spheres)** – Developed by Pythagoras and founded in the science of harmonics, this is an ancient Theory of Everything that the universe is made of music. There are many misconceptions surrounding this idea, most presuming it refers simply to sound. However, applying harmonic theory more broadly can really describe material reality as the frozen harmony of crystallized light. This worldview is entirely compatible with quantum mechanics and modern M-theory, but not yet accepted in popular science. The Music of the Spheres is a specific application of Musica Universalis to the planetary orbits and conjunctions.

**Musical Matrix (Harmonic Lattice)** – Same as the quantum chromodynamic lattice (Lattice QCD). This defines space as a cubic field of quantum-sized perturbations where bosons (mass particles) can only reside inside the cubes of the lattice while fermions (energy) can only travel between the cubes. It is harmonic due to the proportions possible in the space lattice, thus spacing electron shells in atoms by whole number harmonic proportions {1X, 2X, 3X, ...}

**New Atlantis** – Symbolizes the awakening of Western civilization to harmonic ideals of balance and sustainability, starting with America. It is a derivative of the ideal expressed by Francis Bacon in his treatise of the same name, but with the addition of Musica Universalis as a guiding physics and philosophy.

**New Mythos** – Symbolizes all of the harmonic archetypes and their fables, together representing Musica Universalis. In the story, the harmonic archetypes return as visual music fragments through The Cloud of mobile music devices.

**New Technology** – Symbolizes all of the technology needed for the New Mythos to exist, including (but not limited to) digital computers, virtual reality software and hardware, holographic displays, the Internet, mobile music devices and an organic music composition system based on Harmonic Interference Theory.

**Octagonal Cymatic** – Symbolic of frequency doubling and a musical octave. It is the shape of Rosslyn chapel in the story and references the dimensions of the real Rosslyn chapel, which are based on the uniquely resonant proportion  $1 : 81 = 0.012345679$ .

**One Vision** – A symbol worn by Gabriel (The Messenger) to foreshadow the sharing of his vision of the harmonic archetypes and New Mythos with the people.

**Pandora's Box** – Greek archetype for chaos, corresponding to the golden spiral and golden ratio. In the story, it is used to deliver the Twin Pyramids, Atlas and the aquamarine damping mist that transports him to Rosslyn chapel. It also represents the temptation of Eve and release of the forbidden knowledge of harmonics into society.

**Rosslyn chapel** – Symbolic of memory and the Grand Scientific Musical Theatre of the mind. It is an octagonal container containing memory objects related to the history and science of Musica Universalis. It is based on an actual chapel built in the 15th century containing all of the symbolic carvings described in the story.

**Sacred Geometry** – Geometrical patterns that are derived from the Egyptian Flower of Life. These are the cymatic resonance patterns that form on a round plate (or in a spherical container) and can be constructed using a system of circles and lines. The best known patterns are the Vesica Piscis (also *Mandorla*), Metatron's Cube and the Borromean Rings (Holy Trinity).

**Schwass-tika** – Derived from the Indian words Schwass, meaning "dragon's breath," and tika or tikal, meaning "third eye," it is symbolic of a double spiral or vortex said to emanate from the pineal gland at the center of the brain. These symbols were once used on maps to mark the locations of temples. The Vatican, or Vatika, was one such temple in pre-Roman times.

**Spiral** – Represents an infinite, open spiral; harmonic damping anywhere near a golden spiral; torsion and chaos by itself, but order and stability in a harmonic standing wave. Can be created by using enharmonic proportions resulting from adjacent Fibonacci and Lucas series. A Golden Spiral has an equi-angular spiral that reduces at right angles by the golden ratio,  $\Phi \approx 1.618033$ . Complementary opposite is a Circle.

**Strait of Gibraltar** – Greek archetype for the harmonic balance between resonance and damping. It is used to symbolize the entrance to the Atlantic Ocean and pathway to the legendary Atlantis as well as the New Atlantis (America).

**Sun** – Prime celestial archetype for life and harmonic balance. The Messenger delivers its message of Musica Universalis.

**The Cloud** – A contemporary slang term referring to the Internet. In the story, this is extended to refer to mobile music devices and phones connected to the Internet. It is used ironically to transition the old mythological archetypes, believed to live in real clouds, to New Mythos archetypes living in the virtual cloud of cyberspace.



*A window in a medical building in Naples, Italy symbolizing the winged messenger Hermes emerging through a caduceus staff of phoenix-headed serpents from inside a Vesica Piscis.*

**The Grand Scientific Musical Theatre** - Archetype for the theatre of the mind. Represented in the story by Rosslyn chapel.

**The Messenger** - Archetype for knowledge (revelations or visions) from the Sun and Nature. This includes Greek Hermes, Roman Mercury and the Biblical Gabriel. In the story, Gabe becomes Gabriel, The Messenger, delivering a vision of harmony and balance from the Sun.

**Twin Pyramids (Green Lasers)** - Egyptian archetypes for harmonic damping that are linked to the Pillars of Hercules in the story. The pyramid's height to one-half the base forms an Egyptian triangle, which is a damping function of the golden ratio. They were colored aquamarine for this reason and are used to represent the holonomic projector, which then represents the brain and perceived reality.

**Venus (Planet and deity)** - Venus is the Romanized name for the Greek archetype of beauty and love, Aphrodite. The planet and god were joined through the pentagonal Star of Venus, bringing order and harmony to Earth. This planetary harmony was seen as beautiful, so was personified as love.

**Water (Ocean)** - Archetype for damping. The term "damping" is ironic and fortuitous at the same time, since harmonic damping pertains to the deadening of resonance while water atomically damps carbon-12 into amino acids and ultimately DNA.

**William St. Clair (Sinclair)** - Archetype for the lineage of Hermetic and Kabbalist knowledge preserved in Rosslyn chapel and passed down to Gabe. As a personified symbol for pagan knowledge, Sinclair wears a red tunic bearing a dragon. In the story, he claims to be an ancestor of Gabe (thus also a messenger) and works to restore Gabe's memory of Musica Universalis.