

THE FOUR FUNDAMENTAL FREQUENCIES OF UNIVERSAL OSCILLATION

THE HARMONIC CONNECTION FOUND WITHIN
THE RESONANT TONES OF THE GREAT PYRAMID OF GIZA
AND THE BASE ELEMENTS OF DNA

An excerpt from



THE TOTALITY OF GOD
AND THE IZUNOME CROSS

Unlocking the Secret to the Riddle of the Ages

Al Leone

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Author's Note: The following excerpt occurs about midway in the text of the First Print Edition, near the end of an extensive presentation on the Theory of Harmonic Creation, my original proposal for the energetic truth underlying all existence. Included in it are references to other core aspects of my philosophy: the Five Laws of Being and Existence, also detailed in that section of the book, as well as the Four Pathways to Light and Truth. The latter is the archetype for human consciousness with which I began my quest to unlock "the secret to the riddle of the ages." Both have been excerpted in separate articles for easy review. All these terms should clearly indicate the speculative nature of my work. Nonetheless, it is thoroughly rooted in the physical sciences, from which I was able to draw conclusions concerning the governing spiritual principles involved. Even so, I could offer little evidence to back up my intuitions until I was able to apply those spiritual principles in analyzing some remarkable data that came my way in May of 2002. My deepest gratitude goes to John DeSalvo, Ph.D. – director of the Great Pyramid of Giza Research Association – for making it possible. The title of this article, which may have enticed your reading, I regret might also have somewhat spoiled the surprise. But I feel the way in which is revealed what the Theory of Harmonic Creation calls the perfected merging of Music and Mathematics, will still bring a smile as you take this trip through the System of Quadrality.

In postulating and offering to you my vision for the course of evolution based on harmonics, I've focused on the general principles. Aside from making the process as easy to visualize as I could, it is the truth underlying all creation that we've actually been seeking, and the specifics of the myriad forces and particles involved are not necessary to achieve that understanding. The one thing I have needed to emphasize is the role that *Harmonic Alignment* and *Dynamic Stability* play in the proceedings. But the reason *Harmonic Alignment* works at all is that there are certain frequencies for which the Universe seems to have been pre-designed. And these frequencies are harmonics of *four fundamental frequencies of universal oscillation*. They are the frequencies responsible for the **Four Pathways to Light and Truth**, and are the guiding forces for everything we've studied in this work. Whether they've manifested in the Physical Realm as the four forces in nature, the four seasons, the four energy fields and ancient elements, the four philosophical functions, the four noble truths, or any four related states, they all have their origin in the *Four Frequencies of God*.

Whenever I have made a claim to the existence of any Spiritual Law, I've tried to substantiate it with its tangible reflection. The fact that the Universe seems to be tuned to four fundamental frequencies is one that the Ancient Egyptians apparently understood. A fascinating book was written by Christopher Dunn on his research into

the technologies of Ancient Egypt hidden among the mysteries of the Great Pyramid. Called **The Giza Power Plant**, it includes Chris's personal discoveries, as well as some earlier research. A quote from Boris Said, a member of Tom Danley's team, which did acoustic analysis within the King's chamber, is illuminating:

Subsequent experiments conducted by Tom Danley in the King's Chamber of the Great Pyramid and in Chambers above the King's Chamber suggest that the pyramid was constructed with a sonic purpose. Danley identifies four resident frequencies, or notes, that are enhanced by the structure of the pyramid, and by the materials used in its construction. The notes from [sic] an F Sharp chord, which according to ancient Egyptian texts were the harmonic of our planet. Moreover, Danley's tests show that these frequencies are present in the King's Chamber even when no sounds are being produced. They are there in frequencies that range from 16 Hertz down to 1/2 Hertz, well below the range of human hearing. According to Danley, these vibrations are caused by the wind blowing across the ends of the so-called shafts – in the same way as sounds are created when one blows across the top of a bottle.

[This quote is footnoted as having come from Said's web site: <http://www.lauralee.com/said.htm>]

So, the Great Pyramid of Giza was built with the *Principle of Harmonic Alignment* in mind! And its frequencies are sub-sonic, all the way down to 1/2 hertz. There is no doubt in my mind how that could serve to harmonically couple the pyramid to the Universe's, and the Earth's, sonic glue. Now, I don't mean to imply that every celestial body in the Universe is tuned to F#. Specific frequencies are relative to the body involved. Only the *Principle of Harmonic Alignment* is absolute throughout the Universe. But F# is the resonant chord for the Earth, a fact apparently intrinsic to ancient wisdom in a diversity of cultures. A documentary video was produced by Mr. Said on the Giza Plateau, and the web site also mentions:

Included in the program is a meeting with a Native American maker of sacred flutes from Oregon. His flutes, which are made to serenade Mother Earth, are tuned to the key of F Sharp! [Ibid.]

Of course, the exact notes in the chord would be significant, especially when one considers how the four frequencies would need to maintain the balance between Order and Chaos for both harmonic and non-harmonic conditions, as we earlier explored. But, as Said's web site points out, the information Danley may have on the matter is currently tied up in a legal battle. However, Chris Dunn's own research can afford us a clue to narrow it down:

Without confirmation that the granite beams were carefully tuned to respond to a precise frequency, I will infer that such a condition exists in light of what is found in the area. While I have not found any specific record of anyone striking the beams above the King's Chamber and measuring their resonant frequencies, there has been quite a lot written about the resonating qualities of the coffer inside the chamber itself. The coffer is said to resonate at 438 hertz and is at resonance with the resonant frequency of the chamber. This is easily tested and has been noted by numerous visitors to the Great Pyramid, including myself. [<http://www.gizapyramid.com/chrisdunn.htm>]

438 hertz is within the tuning range for A natural. Chris himself measured 439 and 440 for different samples of sound he recorded in the pyramid, 440 being the most common tuning for A. In the context of F#, this would produce an F# minor chord, assuming the third note is a consonant, perfect 5th, and not a dissonant, diminished – or flatted – 5th. Given the Universe's need to seek Order over Chaos, I'd go with this assumption and call the third note C#. The clue to resolving how the Universe would accomplish *Dynamic Stability* through *Harmonic Alignment* lies in the fourth note. Briefly, here's why. Let's assume we only have to account for the 12 tones between octaves of the tempered scale, and not the 70 chromatic possibilities discussed in *Footnote 149*, p. 369! The tempered scale is sufficient to create beats. Actually, all it takes is a few cycles difference between two notes. These produce slow beats. But even in a tempered scale, faster beats will occur between adjacent, half-step tones. Now, realize that while the F# chord being considered has four tones with a harmonic relationship to each other – with F# as the fundamental, or *First Harmonic* – each note in the chord is its own *First Harmonic* in the *Theory of Harmonic Creation*. Thus, each fundamental can, through harmonics, manifest its own seven-tone major scale (the eighth is the octave):

A key is a family of seven related tones. These tones are all derived from one tone, the head of the family, called the *Key-tone*. If a vibrating string gives the pitch C, and we wish to find a tone most nearly related in vibration, but differing in pitch, we would first divide the string into halves and set either half in vibration. Either segment vibrates twice as fast and gives the pitch C, one octave higher. Next try dividing the string C into thirds, and set the two-thirds or longer segment into vibration. This gives the pitch G, or the fifth tone above C. This fifth tone is the most nearly related tone, differing in pitch, to the fundamental. In the same way the next nearest related tone will be two-thirds of G, or a fifth above G, which is D; the next, a fifth above D, which is A; the next, a fifth above E, or B.

Conversely, if D is two-thirds of G, and G two-thirds of C, C must be two-thirds of a tone a fifth below, or the tone F. We now have seven different pitches all derived from C, and therefore related to C. These pitches constitute the Key of C. C is the *Key-tone*.

When the seven pitches are arranged in a progressive order, C D E F G A B C, they form a *Major Scale*.

[George A. Wedge, *Ear-Training And Sight-Singing*, 4th ed. (New York: G. Schirmer, Inc., 1921), pp. 17-18.]

When you account for the notes in the major scales the first three tones can generate, you can cover all but one note in the twelve-tone tempered scale. Now, whether the triad is F# major or minor will change which that lonely note is; but for an F# minor, that note is G. How can we generate it from the seven-tone F# major scale? With F# and C# already selected, let's look at the notes we've yet to use. G# will do it. G is its major 7th. But G# in an F# minor chord is dissonant to A, the minor 3rd. A#, the major 3rd, will do it, too. But we've already ascertained this to be a minor chord, and playing the major 3rd with the minor 3rd is likewise dissonant. Of the remaining three, B, the 4th to F#, doesn't have G in its major scale. Only D# and F will generate G when applied as the fundamental. F is a major 7th to F#, which is quite beautiful against a major triad but not nearly so against a minor one.

However, D# is the 6th to F#, and against a minor chord you'd have an F# minor 6th. That's musical. And it would provide all the notes the Universe would need to create beats in a tempered scale customized for Earth.

Now, in case you think I'm implying the Universe needs only twelve tones to satisfy *Dynamic Stability* for the diverse number of particles and forces it contains, think again. I only mentioned this phenomenon re the Giza Pyramid to show how its ancient wisdom reflects the *Theory of Harmonic Creation*, and how four fundamental frequencies can generate harmonics to accomplish *Harmonic Alignment*. The 12-TET (tone equal temperament) scale is easily seen as an evolutionary step from the initial four frequencies, and we already know how powerful number 12 is in the *Big Picture*. But, the Universe would certainly need the diversity of the 70 possible tones between octaves noted in *Modern Physics*, if not many more, to accomplish *Dynamic Stability* with the particles and forces manifested at the Big Bang and ever since.

While documenting my efforts, I've often remarked how some person or thing appeared in my life just at the right moment. So, I may risk your kind indulgence if I do so once again, now. But amazing information came to me literally within days of completing this speculation on the Pyramid's resonant frequencies. I didn't ask for it. It was sent to me by Chris Dunn as a result of an email correspondence relating to his research. He suggested I do a web search for Susan Alexjander. I did!

Ms. Alexjander is an internationally known musical artist who, in collaboration with Dr. David W. Deamer, professor of Chemistry and Biochemistry at the University of California, Santa Cruz, recorded something quite remarkable. The music of DNA! Rather than explain what they did, it is best to let their words speak for themselves; and I'm grateful for the opportunity to present them. The following excerpt is from her article, ***The Infrared Frequencies of DNA Bases, as Science and Art***:

In 1988 the author and biologist Dr. David Deamer collaborated on a science/art project that consisted of measuring the vibrational frequencies of the four DNA base molecules, translating them into "sound," programming them into a Yamaha synthesizer and using this tuning system as the basis for original compositions entitled *Sequencia* (1990 and 1994 CD). The realization of biological, infrared frequencies into sound has resulted in unusual insights into the harmonic fabric of DNA, and reactions from listeners suggest that our bodies may have a way of recognizing their own electromagnetic patterns through the resonance of tone. . . .

One significant constraint with this project required that, rather than "mapping," or assigning arbitrary pitches to "hear" patterns, the actual vibrational frequencies were to be collected directly from the molecular realm. These frequencies would then be arranged as "scales" of tones, and used as the basis for musical composition. . . .

There are about three billion base pairs in the DNA of each human cell. If they were strung out they would measure about three feet long. Yet each of these bases remains absolutely consistent in its chemical makeup. The four DNA bases, adenine, cytosine, guanine and thymine, consist each of carbon, hydrogen, oxygen and nitrogen. There exists a variety of chemical structures, including C=O, N-H, C-H, O-H, and C-O, whose bonds bend, stretch, and rock upon absorbing infrared light with a specific frequency related to the energy and strength of the bond and the mass of the nucleus of the atom. . . . The tuning system for *Sequencia* was derived directly from the laboratory chemistry of the four bases, and had nothing to do with a particular gene, or configuration of bases along a helix. . . .

. . . The bases of DNA and RNA have certain resonance frequencies related to the absorption of infrared light. This is a common property of all organic molecules, and in fact infrared spectra are used as a primary diagnostic characteristic in analytical procedures.

As the light is passed through the sample, it is absorbed by the sample at specific frequencies and the instrument plots the absorption bands as a spectrum. . . .

The problem of getting the frequencies within hearing range can be solved by recognizing that any hertz number divided in half or doubled will produce its corresponding lower or upper octave, respectively, whether it be sound or light. Thus, 8.7×10^{13} Hz can be divided in half, again and again, to create lower and lower octaves. Finally we derive, after dividing 36 times, a workable frequency that, if it were sound, would fall within the range of hearing. Thus we would have for the example above 1266, which is a very comfortable frequency for the ear, corresponding to a (slightly sharp) D#.

The question of "translating" light into sound is more a philosophical one. Sound sped up can of course never be light, since the former depends upon molecules to push around while the second derives from electromagnetic radiation. One could argue that what is important here is not so much the medium but the ratios involved; the relationships between frequencies. . . . By discovering patterns of ratios in light, we are simply translating into a sound medium to "hear" what information they might contain and how they relate to each other. It could also be argued that both light and sound refer back to a common archetype, which as yet is unknown to us, not unlike cousins who relate back to a common relative.

Again, four base molecules were measured: adenine, cytosine, guanine and thymine. Each base molecule after being subjected to light yielded about 15 to 18 frequencies; 60 in all. Once this data was collected, it was iterized down into a hearing range and programmed into a Yamaha DX7 IID synthesizer, which would create sound banks from any hertz numbers provided as input. A special electronic keyboard was needed because the tunings that were derived were almost all microtones, or tones smaller than a normal half-step (for instance any C to C#) on a piano. . . .

The four individual bases – adenine, cytosine, guanine and thymine – are very similar in terms of the ratio relationships, or the distances between the separate "pitches" within each base. If they are configured like a musical scale, arranged from lowest frequency to the highest, there is about a 2.5 octave span for all four with a noticeable gap, or distance, of a major sixth/minor seventh in all bases. Intervals on the keyboard are named major and minor seconds, thirds, sixths, and sevenths, depending on how many steps they are away from the beginning note, or tonic. . . .

In addition to difficulty of tone production, microtones play havoc with the idea of "key," or tonality. What one is working with is a clump of "random" sounds with no seeming tone order or organization at all. However, something very interesting began to happen. After weeks and weeks of experimenting with different sound combinations on the synthesizer, a tonal center began to emerge. One pitch seemed to draw other pitches to it – to lend coherency to the mass. This pitch turned out to be a kind of a C#, common to all the bases. . . .

. . . If one looks at the pitch chart [Fig. 2 in the original article, omitted at the below-referenced source] one can see that this C# is found in all four bases, almost exactly in the middle of each column. Also, it is positioned almost exactly in the center of the absorbency rates, and shows up as the average. This C# seems to act as a balancer for the entire spectrum of frequencies.

The pitch that shows up the most frequently and ought to have asserted itself as a tonic, or tonal center, is F#. It is found no less than three times in each base collection. But instead it is its fifth, the C#, that acts as the organizing force. . . .

Are the frequencies in DNA bases harmonically ordered? They most certainly are. By comparing all 60 pitches one can find all of the precise ratios found in the first 16 harmonics of the overtone series: octaves, perfect fifths, perfect fourths, major and minor thirds, major and minor seconds and sevenths; even a "flat" seventh. Mathematically, the odds of this happening at random are almost non-existent. . . .

It is not known what information is encoded in these ratios, but one particular pattern appears striking. Fig. #3 [again, only in the original article] shows a curious leap in all four bases from the pitch F# up to the D# above, roughly a major sixth/minor seventh. The interval in between, G to D, contains no measurable frequencies at all. Its mirror, the G to D an octave below, contains a tightly packed cluster of 22 frequencies, over a third of the total frequencies measured.

What is the function of this "shadow" gap? Is it just a coincidence, or are we looking into some kind of anti-matter, fourth dimension? More and more we are finding that things contain their complements; their opposites. It is almost a given "law" of the universe. This "gap" could be important, especially because both are balanced on their lower and upper edges by D#-F# intervals: nine pitches in the lower cluster and 10 pitches in the upper cluster. Almost perfect symmetry. . . .

Again, *math* makes processes visible. It decodes meanings. We can see the self-organizing power of the universe, and because the universe is a community it is constantly communicating. Are the sounds of DNA communicating anything to us?

Sequencia first begins to communicate through its concept, that we can hear the hidden beauty of life. This helps to give us a perspective – to find our place in the "Great Tone." . . .

. . . These particular DNA ratios, originating in light, are profoundly arresting to the ear. This first wakes up the nervous system, puts it on alert. What follows in sound is then allowed to enter our psyches on a deep level. People report feelings of connectedness, familiarity. "I feel right at home," they say. It is tempting to speculate that the body is recognizing itself, and is communicating this to the psyche.

[<http://www.healingmusic.org/SusanA/infraredfreq.html>. Note: this URL was the source for the excerpt at the time of my researching and writing this portion of the text in May 2002. It has since moved to <http://www.oursounduniverse.com/articles/IEEE.html>, with the published figures included. However, I have left my original text as it was to maintain the integrity of the discovery and writing process.]

I had been quite excited when I learned of the four fundamental frequencies in the Great Pyramid, but this blew me away. I inherently understood the structural nature of DNA as it applied to the *Quadralitic Grids*, but was unaware of its harmonic nature. I should have intuitively realized this, since all structure has resonant characteristics; and when those aren't properly accounted for, either in nature or by us, destruction is the result. A little later we'll talk of the Tacoma Narrows Bridge disaster, a benchmark example of such. Yet, this information took me by surprise. I'd allowed myself to be blinded by the very law I spoke of in *A SPIRITUAL APPENDIX* in the *THIRD VERSE*, where I commented that *you won't find what you're not looking for*

because your Mind's eye won't see it. I had seen what I needed to see and didn't look to see if there was any more to see! Well, I saw it now, and more than I would have seen then because my own knowledge had since grown. Let's cover the article's key points (double entendre intended), and add our own in brackets.

Ms. Alexjander and Dr. Deamer set out to create music from DNA, not using arbitrary assignments but from the actual molecular frequencies. As light was passed through the various samples, frequency spectra were generated that related to the energy and strength of the bonds and the mass of the nucleus of the atoms. This is a common property of all organic molecules. [The frequency property of all elements enables the *Theory of Harmonic Creation* to account for how frequencies inherent in the forces and masses generated following the Big Bang would allow *Dynamic Stability* to occur through *Harmonic Alignment*.]

Using the property of frequency division, the very high frequencies associated with light absorption spectra could be resolved to the lowest frequencies of sound. It was not a direct equating of light to sound, but more a translation of information based on the understanding that all waves are related to a common archetype through the property of frequencies. [The ability to gather and respond to frequency information is found in our *paradigm for creation*, the *Quadralitic Cube*, which from Moment One established relationships between all waveforms, irrespective of their frequency range or means of transmission. And in *Harmonic Creation*, it is the ratios between frequencies, as Susan posits, that is important, not the medium involved.]

Each base yielded about 15 frequencies, 60 in all, over a 2.5 octave span, and all are very similar in terms of ratio relationships. Moreover, all manifested a tonal center around C#, which seemed to act as a balancer for the entire spectrum of frequencies. This was in spite of the fact that the most frequent pitch was F#, to which C# is its 5th. [So, the Universe seemingly does need frequency specialization on the order of the microtonal (less than half-step) scale used in **Sequencia**, to accomplish *Dynamic Stability*. But even more significantly, the frequencies of DNA have a Balancing Center that acts as its organizing force. And the note she found to be such is the third one we assigned within the Pyramid. If we now allow the F# at each end of an octave to represent tonal extremes, C# serves as their means, especially with the C# average being a 1/4 tone flat, as pointed out in the article. And this seems to reflect the phenomenon Science has yet to be able to account for – why the Universe appears to be so precisely tuned between Order and Chaos. Naturally, all this is in accord with the *Principle of Balance* and the *Law of Order*. C# is not exactly midway between octaves. C, the tritone, is. But C# is harmonically consonant; and having it as the organizing force would indicate that while the Universe has to account for both Order and Chaos, it obviously favors the former. Moreover, while we can't assume the planetary frequencies DNA elsewhere in the Universe may need to align with, here it resonates to the same root as the home from which it was born. And how that relates to my original theory surrounding the origin of the **Four Pathways to Light and Truth** should be very apparent!]

Finally, the authors assert that the frequencies in DNA bases are most certainly ordered, and within the 60 pitches can be found the precise ratios in the first 16 harmonics of the overtone series, with the mathematical odds of this happening at random being almost nonexistent. They also explain that all bases contain what they describe as a shadow gap [a major 6th/minor 7th, which we'll see is clearly relevant]. While they are not sure of its function, they feel it is important because both upper and lower edges are balanced in a way that reflects almost perfect symmetry.

We have likewise maintained that *there are no accidents in a perfect Universe*. But to resolve the issue of a shadow gap deserves more attention than a few bracketed comments would provide. When I first read of the shadow gap, I made an assumption that it was a repeating phenomenon, and thus drew a conclusion based on that supposition. Without the original illustrations, which were unavailable on the web site, to guide me, my own imagination had led me astray. This is understandable. I wasn't even sure if the 2.5 octave spans containing the four bases' harmonics were concentric, tangential, or perhaps overlapped in some way, which would certainly make a difference. So, I emailed Ms. Alexjander about getting them, and she was kind enough to send me a copy of the original magazine article (including corrections for the published Fig. 3, which we'll see proved to be crucial). It was a revelation.

Two illustrations were particularly riveting. Fig. 2 in her article included all the harmonic data for the four bases – the wave numbers for their infrared spectra with corresponding frequencies and pitches. This showed how often particular pitches appeared. Fig. 3 placed those pitches onto a keyboard diagram so the note clusters, and spaces between, were obvious. The four spans lined up concentrically, and with remarkable precision. The shadow gap was striking, but more important to me was seeing the long grouping of frequencies below it. Beginning at the low end, with an average pitch of D#, was a peppering of microtonal frequencies covering more than an octave, ending at an average pitch of F#. Within that range, only A# on the keyboard's tempered scale wasn't hit dead on, a curious phenomenon we'll address in a moment. Still, with the abundance of pitches in that span, it was very clear that the Great Pyramid's four fundamental frequencies had been microtonally reflected. This is what one would expect as energy evolves from general to specific. Plus, it allows the Universe to adjust resonant frequencies away from natural frequencies – precisely fine-tuning itself to accomplish growth through *Dynamic Stability* while avoiding Tacoma-like conditions. Thus, it makes sense when frequency clusters average slightly flat or sharp of one of our fundamental four. And when you think about it, the extent to which these frequencies were covered is actually quite remarkable. After all, the bases of DNA, though essential to life, are only a few soldiers in the army of existence that the Universe has to keep in balance.

The next thing that grabbed me, though, was what appeared above the shadow gap. There were two tight clusters of notes – the aforementioned corrections! At the top was a cluster with an average pitch that looked slightly flat from F#. Below that was a second cluster with an average pitch approximating D#! There it was, the note that just pages ago I had derived as the fourth note of the Pyramid! Its appearance at the bottom of the main cluster had been no accident, just as neither had been the F# at its top. In fact, D# had been so strongly represented overall in the data that it seemed to give the appearance of another root. I actually think it is, and that's why D# and F# are harmonically powerful enough to be alone in the octave above the gap.

Consider first how the gap at the top of that large region, before the D# and F# concentration at the highest end, focuses on the nature of the fundamentals involved, literally drawing your attention to the two above it. Also recall how we derived the four notes. F# is given as the root in the Great Pyramid, as well as in the DNA bases. A is in the Pyramid's coffer, and is tonally represented in three bases. Ms. Alexjander mentioned the significance of C# in DNA, and while I can't say for sure it is one of the missing Pyramid frequencies, I'm strongly inclined to believe it is and expressed my reasons for it earlier. The only note truly in question then was the fourth, about which my intuition now has clearly been confirmed.

Thus, I think that the four frequencies in the Great Pyramid are indeed F#, A, C#, and D#. The bases of DNA, and hence their resonant frequencies and intervals, are absolute throughout the Universe. Those in our piece of it are of course relative. Yet, I've proposed consciousness on Earth resonates to four fundamental frequencies. So, is being the same a requirement for it elsewhere? Only God can say. Regardless, now consider the chord: F#m6 if F# is the root, a musically minor chord that would be considered consonant, but barely so on its side of the balance between Consonance and Dissonance. Next, take those same notes and apply D# as the root: D#dim(b7), a half-diminished chord that is still musical though it would be considered dissonant, but barely so on its side of the same balance between Consonance and Dissonance! Talk about symmetry! Differing only in note order, you would have a difficult time distinguishing them by ear except through an emphasis placed on their root-tone, or the arrangements that accompanied them. But even more significant is the fact that with the same four fundamental tones, the Universe would have all it would need to balance Consonance with Dissonance, the musical reflection of Order and Chaos! Neither would be so overbearing in either direction as to throw the two out of balance. (And yes, the intervals for the fourth notes in the two chords are major 6th/minor 7th.)

The relevance of this to the Universe's inception is powerful enough. Let's take it even further. We've established how C# serves as the *mean* for the F# octave, and thus as the Balancing Center for the F#m6 chord. But, what about the D#dim(b7)? We've only yet to use A from the Pyramid. A happens to be the tritone, or 12-TET mean, for the D# octave! So, A serves as the Balancing Center for the D#dim(b7). Now we have two chords comprised of the same four notes, where two of those notes, the roots, serve as the *extremes* of their octave; the other two, the Balancing Centers, serve as their *means*. The Universe needs both chords, and both Balancing Centers. After all, there are two *extremes* that must be kept in balance, and two *means* where that occurs – a perfect quadrality. To do so, it makes no value judgments about Consonance and Dissonance. To the Universe, it's all energy, and it's all good. Consonance and Dissonance, just like Order and Chaos, both serve a purpose.

Still, what about the reason for the existence of the shadow gap, or the smaller one between the two clusters above it? I don't think it is a result of an antimatter phenomenon, as antiparticles have the same mass as their corresponding particles but with opposite electric charges or other properties related to electromagnetism. Thus, the phase reversal of a given frequency of matter should be involved – reflecting the reversal of magnetic moment even in a charge-less neutron. But since frequency is mass related, and the mass of antimatter is the same as the matter it's in opposition to, you wouldn't find a range of frequencies specifically reserved for it. Phase reversal in the same direction would cause complete destructive interference in the resultant. But in opposite directions it would provide for the tangible standing waves that guide and power manifestation through *Harmonic Alignment*; their mass interaction would provide for the new particles with new frequencies needed for *Dynamic Stability*.

The main cluster contains the resonant frequencies related to the absorption of infrared light for the four base molecules of DNA, translated into the range of sound. While the sugar and phosphate groups that compose the backbone strands of DNA would contribute to its overall vibratory nature, they are constants in each segment of it throughout organic existence. Only the base orders differ, which, connecting the two strands, can be visualized as the tuning forks of consciousness. The main cluster of frequencies is framed by the two pitches we've established as the roots of the two chords that by their inherent nature harmonize consciousness. When the F# and D#

clusters appear above the shadow gap, I feel it is due to their harmonic strength as the roots of the two chords, their octaves being the next most prominent harmonics in the overtone series. And as the roots of the two chords, they serve as harmonic anchors for all organic existence and must harmonically align with everything that is non-organic in such a way as to afford their peaceful coexistence.

Speaking of gaps, there's a subtle one in the main grouping of frequencies from D# to F#. Since you don't have the benefit of seeing the illustrations, I'll do my best to describe them. 56 microtones in Fig. 2 are within that span. (Fig. 2 has 73 total frequencies. Those absent from the 59 in Fig. 3 are the same or within 0.4% of those included, an apparently insignificant difference.) Since there are 16 tempered pitches in the span, this averages 3½ microtones per pitch. Yet, as I earlier said, none hit A# exactly. It's not even listed as a pitch in Fig. 2. What I find particularly curious about this is, the 12-TET midpoint for the D# and F# *extremes* of the large cluster is between A# and B. If you take the time to average out the 56 microtones, the frequency midpoint is just sharp of the 12 TET, at B. Yet, only seven microtones are found in the three tempered pitches from A# to C, in which, based on the average, you'd expect 10½! The mid-span gap is even more pronounced in Fig. 3, where, with 49 microtones included in the span, or 3 per pitch, A# and B, our midpoint frequencies, together contain only 2! What could this paucity of frequencies indicate? There seems to be a node, or Balancing Center, for the Spiritual and Physical Realms symbolized by the portions of the main cluster on either side. And the node is nestled between the *mean* of A below it and the C# *mean* above it. Moreover, that node, likewise extant midway in the shadow gap, is symbolically reflected in the gap between the two clusters above it, as if to even more clearly distinguish the Spiritual and Physical Realms as a root duality. Now, I realize it may seem like I'm going out of my way to make things fit. But that is only because there is no description I could give, considering the odds of any of this occurring at all, that would adequately describe the perfection that leaps out at you when you see it, as well as the obvious truths it reveals. As the frequencies of DNA have shown, the Soul of the Universe – its Wisdom – is musical. And their respect for the *truth of separation* in structure is likewise clear. Yet, there is another truth in DNA, the *truth of interaction*, which the inhabitants of Ancient Egypt obviously understood as they aligned the corners of their Great Pyramid with the Planetary Energy Fields. Only by uniting the four forces through a common higher purpose can the true power in the Universe be revealed – the Heart of the Universe – its Love. That's what makes the mathematics in music beautiful to listen to. This is the core lesson the inhabitants of Earth desperately need to learn today. And it is the essence of Mokichi Okada's ***Izunome Cross***.

With the Earth's four fundamental frequencies apparently revealed, a question immediately comes to mind re the original appearance of the *Principle of Harmonic Alignment* – the derivation of the **Four Pathways to Light and Truth**. How might we now assign those notes to the four paths? My inclination is to associate the previous chord roots with separate Root Planes. And given that they reflect the balance of Order and Chaos, I'd tend to place F# on the Horizontal, Spiritual Plane, and D# on the Vertical, Physical Plane. But to arrive at the placement of paths on each plane requires a bit more spiritual insight. Realize what F# and D# are. Not only are they separately the extremes for their own octaves, but together they're the extremes of a universal range of values. This is clearly evidenced by their placement at each end of the large span of DNA frequencies. Thus, I'm inclined to associate F# with the Spiritual path on the Spiritual Plane, and D# with the Physical path on the

Physical Plane. Placed this way as energetic *extremes*, what then happens to their *means*: the C# in balance to F# as its 5th, and the A in balance to D# as its tritone? Rather than the same plane, to define the energetic range of the two Realms for all *content* in the Universe, I'd place them on the other, to define that of the two Models for all its *activity*. And when this *Spiritual Evolution of Energy* is physically realigned, it would place F#, C#, A and D# exactly as they are in the Universe's physical span of frequencies, high to low! You'd find them thus on a piano, or clockwise around the **Four Pathways**. Moreover, there is something inherently musical in this arrangement that would seem to give the Universe the ability to handle both harmonic and non-harmonic resonance, with the first being the focus of the *Spiritual Model*, the second, the focus of the *Physical Model*. And this is much like the chords themselves, a consonant 5th and a dissonant tritone.

But there is one additional, and quite intriguing, musical association I can speak of with confidence. We're dealing with two chords derived from the same four notes, one chord being a minor, and the other, diminished. Both are in harmony to their absolute frame of reference, the F# major scale. However, the roots themselves have a special relative relationship in that context. We've considered the notes in the F# major scale, and from them drew conclusions as to the four fundamental tones in the Great Pyramid. We then found a powerful corroboration in the harmonics of DNA. We also then came to realize that these four tones had a dual-chordal relationship, one based on F# as its root, the other on D#. But specific notes aside, there is a fundamental *key* relationship in all major scales. Every major key has its relative minor key. It contains the same notes as the major key and is identified by the same key signature. Only the root changes. The root of the relative minor key is found at the interval of a 6th above the major. For the key of F#, the relative minor is D#! Can there be any doubt now about the physical perfection that exists throughout the Universe, or the Spiritual Perfection that created it? Not for me.

Ms. Alexjander comments how the music of DNA may help us to find our place in the "Great Tone," an expression she credits to Dr. Larry Dossey. We've referred to it as many things: Unity, the First Harmonic, AUM. Now we can add "The Great Tone" to the multitude of ways Humanity has found to describe God. And her thought that the body is perhaps recognizing itself, expresses the profound connection all Tangibility has to the Body of God that is the Universe. Still, what is perhaps most revealing for me in the article, aside from the science and how it applies to the **Theory of Harmonic Creation**, are Susan's reasons for doing it at all:

Pythagoras (6th century B.C.), who is credited with explaining musical harmonics to the Western world, is reputed to have described a stone as frozen music. He knew nothing of physics but intuited that the mathematics of frequency that occur in processes such as planetary rotations, cycles of the seasons, right down to the atomic world of elemental matter, are not just lifeless pieces of data but reveal movements, rhythms, relationships and meanings that may be loosely translated as "stories." Stories in turn generate meanings and artistic expression. The word "mathema" comes from the Old French "mathein," "to be aware; to awaken."

The art, then, assists in "telling the story" of the data. It is mythic as well as "mathic." There is a reasonable degree of certainty that deep within our molecular beings, beauty will show up as a central issue. It can be found in all other stellar, planetary and natural processes, in the growth of a flower or wanderings of a river; why not DNA? At another level, if the body recognized

itself in sound, might this mean something in terms of health, or at the very least, inspire the imagination, and help to understand our adaptation to the environment, or to persistent stimuli. . . .

The story that unfolds while working with the spectral tones of DNA is one of underlying beauty and order – an order suggesting freedom to express and improvise within the matrix. The fact that perfect harmonic ratios exist within its frequency data could, and should, lead to further stories of interconnectedness with the rest of life and the universe, since so much of our world is so ordered. We express creatively through harmonic proportions and their variations in our music, our architecture, paintings, dance – in virtually all that we are and do down to the design of a pack of cards, using the Golden Rectangle (whose sides have a phi relationship).

Certainly the freedom to express and improvise has been our salvation as a species for thousands of years. Our music has always reflected these two things: a love for order and spontaneity. DNA, the chemistry of life, seems naturally at home in a musical venue. For in our inner beings and in our listening there has always been a deep yearning; a knowingness that music is who we are. [Ibid.]

And now we understand why. There was harmony in God's first four notes!

The association of frequencies with the microcosmic base components of DNA points to a fertile area of research – the frequencies of macrocosmic genetic structure. Since the frequencies of all species' microcosmic genetic components are the same, it's in the genetic macrocosm that the frequencies of different species would become manifest. This is the context in which the extreme evolutionary changes we spoke of much earlier could appear. It is clear the frequencies of the Earth and the bases of DNA are harmonically connected. And it should be self-evident that those frequencies have long remained unchanged. But all earthly life, and the great planet it evolves on, exists in the context of the Universe's own energy. And it is likewise clear that the macrocosmically heterogeneous energy of the Universe, subject to universal laws, varies in its exact frequency content as you travel through the specific regions of it. It is this variation in vibration that actually provides the Universe with the information it needs to maintain *Dynamic Stability* through *Harmonic Alignment*.

So consider, then, how vibratory changes might affect any of the myriad life forms capable of responding and aligning to them through harmonics. Given the previous paragraph's disclosure, it is obvious that our planet, along with the solar system, galaxy, and supercluster it's a part of, has been exposed to vibratory changes throughout its existence. Yet, certain aspects of organic structure, the base components, have remained unchanged. These are the ones apparently connected to the fixed frequencies of the Earth (fixed at least since life has been on it). However, the composite structures of DNA, as they relate to species, certainly have changed; though, as we earlier learned, those changes are not as extreme as one would expect considering the immense variations in life. Moreover, they may be connected to the variable frequencies of the Universe that the Earth travels through.

And I think it is reasonable to draw a conclusion regarding the appearance of a large-scale genetic change, which seems to fall beyond the possibility of small-scale mutations, and a change in the resident vibrational environment. What makes this particularly relevant today is that there are some people, with a professed ability to intuit or perceive such things, who feel our solar system is beginning to enter a region of the Universe with a higher vibration. While I know of supporting but unpublicized

scientific studies, the thought of how it might affect life on Earth is intriguing. Could such an event a million or so years ago have been responsible for the evolutionary leap in consciousness as evidenced by the sudden appearance of a mind with creative capability? After 12 million years, with the birth of an imagination prehistoric man had become "human." Imagine what such a comparable leap might involve today!

On p. 268, while discussing the connection between Soul and DNA I said: "With Science and Religion seen less and less in conflict, the quantum leap from what came before Humanity as we know it, to what it is now, is within evolutionary possibility – physically and spiritually." I referred to it as a genetically complemented quantum spiritual leap. "Minute genetic changes, often called *mutations*, have been recognized and studied. Yet, the Universe, in its effort to seek balance, must provide the other side to those and contain the extreme genetic *variations* that follow from its quantum spiritual leaps, as well." You may recall from the very beginning of this book that Mokichi Okada, designer of the ***Izunome Cross***, believed Humanity was presently moving from the ***Age of Darkness*** into the ***Age of Light***. We'll discuss this increase in Light further along on our present journey. But this, as well, is a physically complemented quantum spiritual leap, what Mr. Okada said was a physical reflection of a change that had occurred in the Spiritual Realm. And for the past two millennia, the Bible has taught a tremendous change was going to occur before Jesus would return to the Earth. I won't speculate on the exact form of such change, or whether this involves a theologically invoked "Day of Judgment." But from what we now know of the nature of energy as a range of spiritual and physical manifestations, could the movement of Earth into a higher vibration in the Universe be the physical mechanism for this occurrence? I'll let you be the judge. And why should it be any different there? For that matter, is the change specific to where we're moving, or an energy transformation occurring everywhere? Regardless, whether it is to fulfill *Divine Prophecy* or achieve *Dynamic Stability*, God and the Universe need it to be that way!