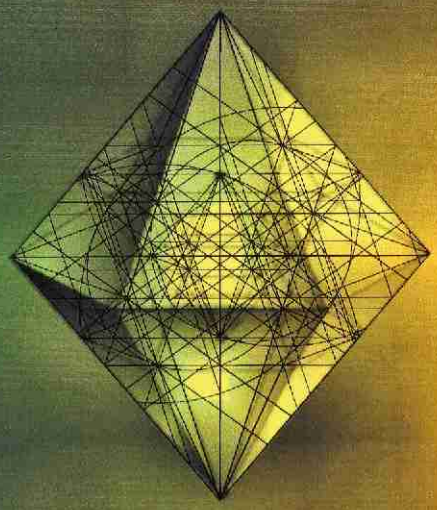
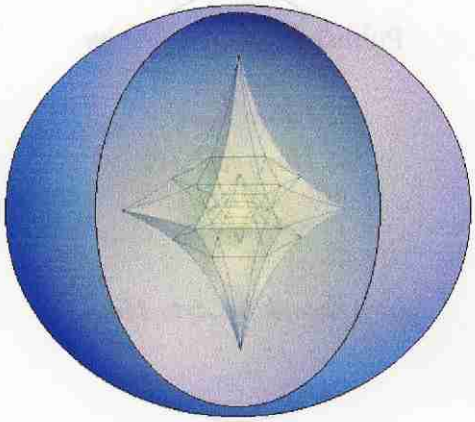


The Magic Square of Three Crystal

by Arto Juhani Heino

The Magic Square of Three Crystal



8	1	6
3	5	7
4	9	2

By
Arto Juhani Heino

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Contents

The Magic Square of Three Crystal

This book is dedicated to those that seek knowledge and truth without hindrance from conventions.

Introduction

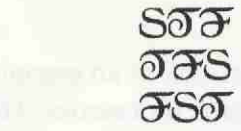
The inner ear is in vibration with the universal flux of an organic ether, or life force, as it is a product of a high evolution in natures cyclotronic processors. The content of this book is a *Poetic* and *Artistic* endeavor to find a higher meaning to simpler forms. The mathematics of what I have written is only a pathway I chose so a clearer understanding can be gained. The numeric forms I have found are only due to others who have shown a clearer way through the forest. The work of Nicola Tesla, Bruce Cathie, Robert Adams, John Searl, Victor Shauberger, Kepler, Einstein, Wilhelm Reich, Hans Coler, Harold Aspen, Otis T Carr, Leonardo Da Vinci, Poussin, Pythagoras, Euclid, Euler, Hans Alfven and Buckminster Fuller.

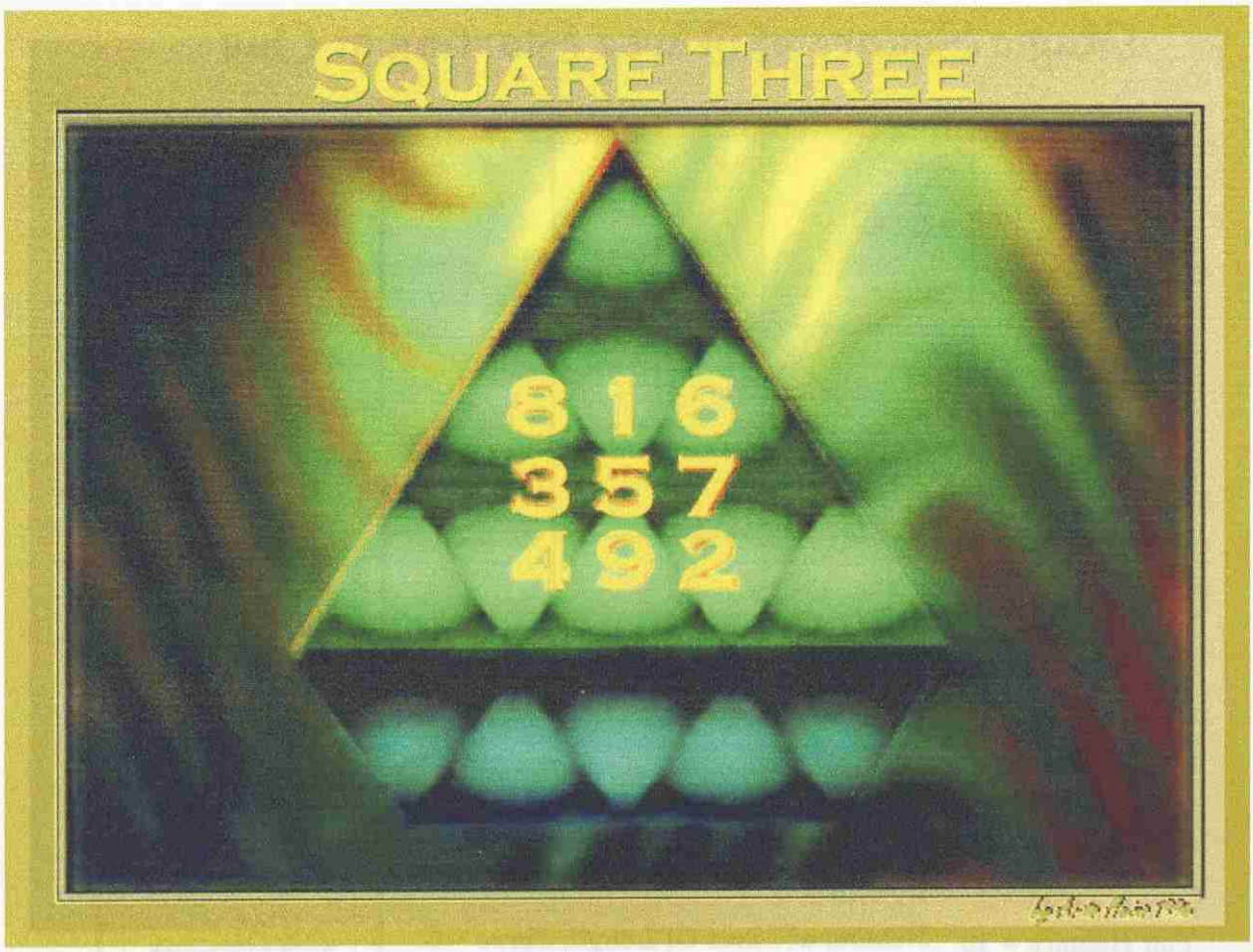
The dynamics of a system requires that each part play its role, as the only true system in nature is an open system, this means hyperbolic correlation's to parts of the larger system, which could be called links. The linking must be on a exponential scale so as to satisfy an inverse relationship between its unit values. The writing of this work will hopefully part a new understanding or at least the idea of a convergence of properties, that unite rather than destroy, giving us a better appreciation of our surrounding universe.

As you ***See***
you ***Think*** *and* ***Feel***

As you ***Think***
you ***Feel*** *and* ***See***

As you ***Feel***
you ***See*** *and* ***Think***



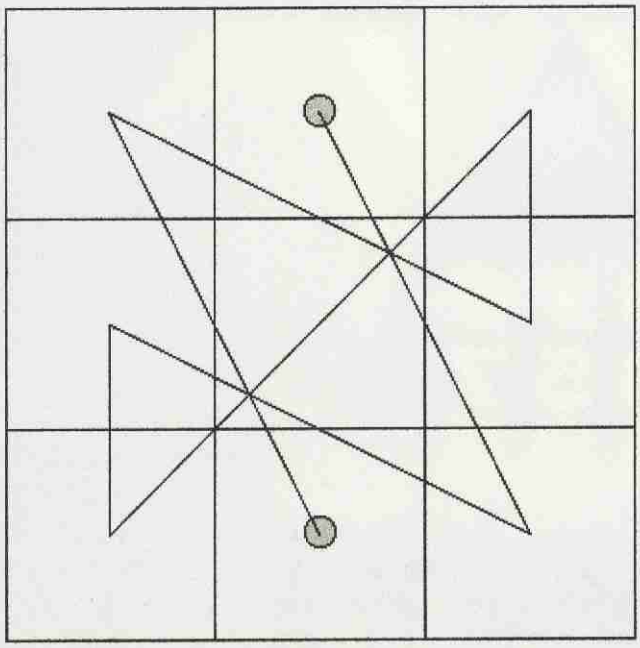


The Magic Square of Three Crystal

by Arto Heino

The Natural path for anything by a Least Action Principle is a cycloidal line, one which balances between different potentials, and in the process create a higher order, being the Equilibrium function of Nature. As it begins it will encounter Harmonic Affinity with its surroundings and with a unit number affinity. The least action principle is not only at work in nature but must be also seen to be at work in the mechanisms of the magic squares, this lays the ground for a couple of number series that are naturally occurring and self replicate as each type of magic square transforms and grows larger.

Magic Square of Three Starting at One



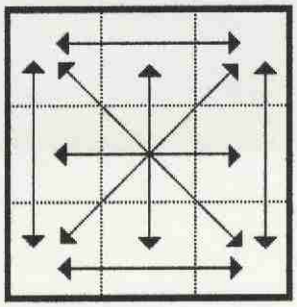
Magic Square Number Placement

8	1	6
3	5	7
4	9	2

Balanced

1	4	7
2	5	8
3	6	9

Unbalanced



Line Number Options

Center Value = 5
Pair Balance = 10
Line Value = 15
Corner Values = 20
Total Value = 45

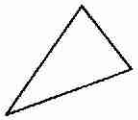
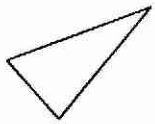
Options = 8
Number of Lines Of Length Three = 8
Area of Square = 9
Perimeter of Square = 12
Number of Lines of Length Two = 16
Number of Lines Of Length One = 24

The first magic square is the square of 3, 9 parts acting in harmony to give you a balance of number lines equal to 15. The pair that enclose the base level zero foundation crystal form is Three and Five, being the fifth and sixth of the Fibonacci series (0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, 233, 377, 610, 987, 1597). All Magic squares start there number-trail at Zero, same as the Fibonacci number do.

The product of these numbers are fifteen (3*5), this is extra ordinary if you consider that the line number value of the next higher square is fifteen, which is the base that we will study. The fifteenth Fibonacci number is 610, which I will show later as the turning point for the 11 series before reversal.

The Addition of 3 and 5, again show that it is self-referencing, the number of line number options is also 8. This again demonstrates continuance, Eight numbers surrounding only one, which happens to be a five on the next level of square 3. The largest value number is 8 in the base zero square. The number of possible reflections and inversions of the square 3 are also 8.

The length of the traveling line from 1 to 9 is sqrt(5)*4 + sqrt(2)*2 + 2 = 13.772699 (*refer Earth Res*)

Fibonacci		*Base Zero square*	*First Level*
0	0	7 **0** 5 = 12	8 1 **6** = 15
1	1	2 4 **6**	**3** 5 7
2	1	**3** 8 1	4 **9** 2
3	2	= 36	= 45
4	3		
5	5		
6	8		
7	13		
8	**21**	line value sqr 3, level 3	3 * 7 (Primes)
9	**34**	line value sqr 4, level 1	2 * 17
10	**55**	line value sqr 5, level 0	5 * 11
11	89		
12	144		

The two numbers that should be considered as base properties are Twelve and Thirty-six, as this is the line value and totals of the Base level 0 square for all the square three numbers, this cannot be used as part of the building process. Therefore its numbers become the either the degrees of a circle or divisionary factor with parts of the square 3 systems and can be utilized more clearly as a foundation stone. The Druids of yor made the circle of stone to imply the importance they held about its divisions. Just to add a note, the earth spins 15 degrees every hour, 15 is also the line number for base 1 sqr 3.

There are many types of Magic square three, the fractional, the whole number addition, the whole number multiple, 3 set groups and each has its inverse operation depending where you start.

Ordered	*Addition*	*Multiple*	*Fractional*		
Level 1					
1 4 7	8 1 6	8 1 6	2	1	1.6875
2 5 8	3 5 7	3 5 7	1.25	1.5625	1.875
3 6 9	4 9 2	4 9 2	***1.4375***	2.125	1.125
Level 2					
2 5 8	9 2 7	16 2 12	2.25	1.125	1.8984375
3 6 9	4 6 8	6 10 14	1.40625	1.7578125	2.109375
4 7 10	5 10 3	8 18 4	***1.6171875***	2.390625	1.265625

As this is about affinity with a phi ratio universe and its harmonic number order, we cannot continue until we add another level to this most intricate puzzle. The Pentagon shape has as its cofounder the **PHI** Ratio of 1.618034 :1 and **Phi** 0.618034:1 also as a conjunct 2.618034. These numbers are the divisions of the sides of the larger Triangle in the pentagon with finding the center of equilibrium.

PHI = (Sqrt(5) - 1) / 2 = Φ

Phi = PHI - 1 = 1 / PHI = ϕ

Looking at the diagram you can easily see that the original Pentagon and its five divisions are of 72 degrees each, making five triangles of 72, 54, 54 angles each (reduced number = 9). It can be made also into a larger size of 36, 72, 72 triangle, which is the one with the most number affinity.

The Golden Triangle

a = 36 degrees

b = 72 degrees

c = 72 degrees

FC : BF = 1 : 1 / Phi

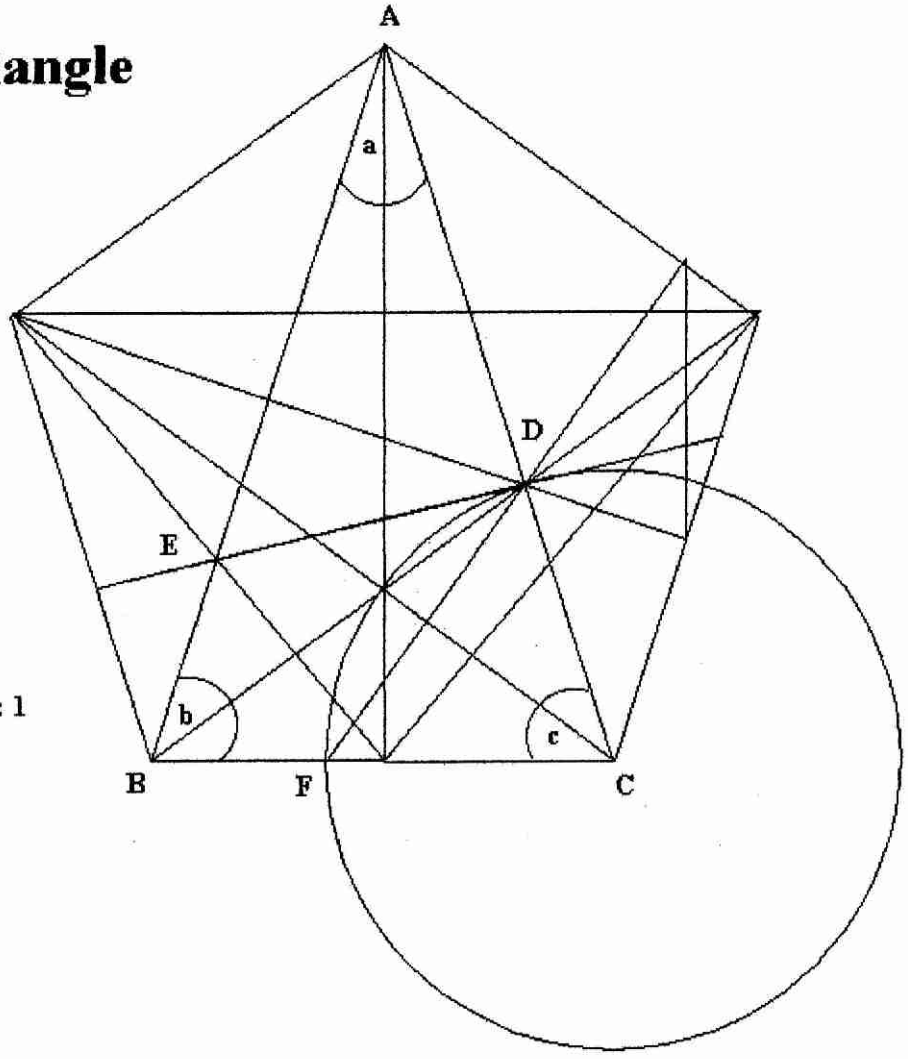
AE : EB = 2 : Phi

CD : DA = 1 : Phi

CD : DF = 1 : Sqrt (Phi^2 + 2)

CD : ED = 1 : Sqrt (Phi^2 + 2)

ABC : ABD : DBC = Phi^2 : Phi : 1



36 = 36 = Total value of Square , Base level
72 * 2 = 144 = The Twelfth Position in the Fibonacci series
36 * 4 = 144 = The Harmonic number of Light

Golden Section

The Golden Section is the geometric proportion in which a line is divided so that the ratio of the length of the longer line segment to the length of the entire line is equal to the ratio of the length of the shorter line segment to the length of the longer line segment.

A_____C_____B

A golden section is created by the point C on line segment AB if

AC/AB = CB/AC

This ratio has the numerical value 0.618034, which can be derived as follows:

If

AB = 1

and the length of

AC = x

then

AC/AB = CB/AC

becomes

x/1 = (1 - x)/x.

Multiplying both sides of this equation by x gives

x^2 = 1 - x

therefore

$x^2 + x - 1$ = 0

This equation can be solved by using the quadratic formula, which yields the equation,

x = (- 1 + sqrt(5)) / 2 = 0.6180339....

= 2 * sin(18deg) = 0.618034

Phi + 1 = 1 / Phi

The properties of the golden section helped the followers of Greek mathematician and philosopher Pythagoras to discover incommensurable lines, which are the geometric equivalents of irrational numbers. The letter phi is also the 6th letter of the Greek alphabet.

Since antiquity many artists, philosophers, and mathematicians have been kept intellectually alert by the golden section, which Renaissance writers called the divine proportion. A rectangle with sides in this ratio exhibits a harmonious beauty, as noted by generations of artists.

As natural movement exhibits a spiraling action, we need to explore how we construct a spiral forms. By using the Pythagoras theorem and a series of exchanges between the base and the hypotenuse we can make the spiral grow.

XA	=	1	
AB	=	1	
BX	=	sqrt(2)	= 1.414213562373
BC	=	1	
CX	=	sqrt(3)	= 1.732050807569
CD	=	1	
XD	=	sqrt(4)	= 2
DE	=	1	
XE	=	sqrt(5)	= 2.2360679775
EF	=	1	
XF	=	sqrt(6)	= 2.449489742783
FG	=	1	
XG	=	sqrt(7)	= 2.645751311065

Areas of triangles

	Form	*number*	*ratio to 9*	*accumulated*
ABX	= 1*1 / 2	= 0.5	=1 : 18	= 0.5
BCX	= sqrt(2)/ 2	= 0.7071067811865	=1 : 12.72792206136	= 1.207106781187
CDX	= sqrt(3)/2	= 0.8660254037844	=1 : 10.39230484541	= 2.073132184971
DEX	= sqrt(4)/2	= 1	=1 : 9	= 3.073132184971
EFX	= sqrt(5)/2	= 1.11803398875	=1 : 8.049844718999	= 4.191166173721
FGX	= sqrt(6)/2	= 1.224744871392	=1 : 7.34846922835	= 5.415911045112

Angles

BAX = 90
AXB = 45
XBA = 45

CBX = 90
BXC = arcsine(1/sqr(3)) = arcsine(0.5773502691896) = 35.26438968275
XCB = arcsine(sqrt(2)/sqrt(3) = arcsine(0.8164965809277) = 54.73561031725

DCX = 90
CXD = arcsine(1/sqrt(4)) =arcsine(0.5) = 30
XDC = arcsine(sqrt(3)/sqrt(4)) = arcsine(0.8660254037844) = 60

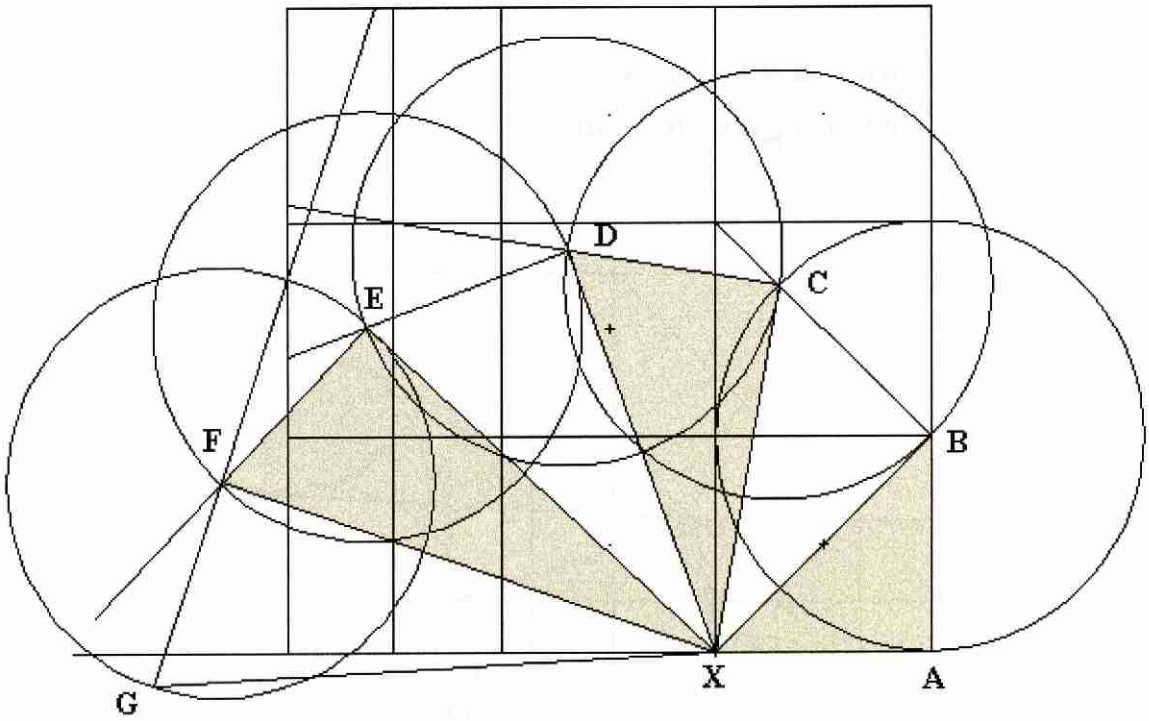
EDX = 90
DXE = arcsine(1/sqrt(5)) =arcsine(0.4472135955) = 26.56505117708
XED = arcsine(sqrt(4)/sqrt(5)) = arcsine(0.8944271909999) = 63.43494882292

FEX = 90
EXF = arcsine(1/sqrt(6)) = arcsine(0.4082482904639) = 24.09484255211
XFE = arcsine(sqrt(5)/sqrt(6)) = arcsine(0.9128709291753) = 65.90515744789

GFX = 90
FXG = arcsine(1/sqrt(7)) = arcsine(0.3779644730092) = 22.2076542986
XGF = arcsine(sqrt(6)/sqrt(7)) = arcsine(0.9258200997726) = 67.7923457014

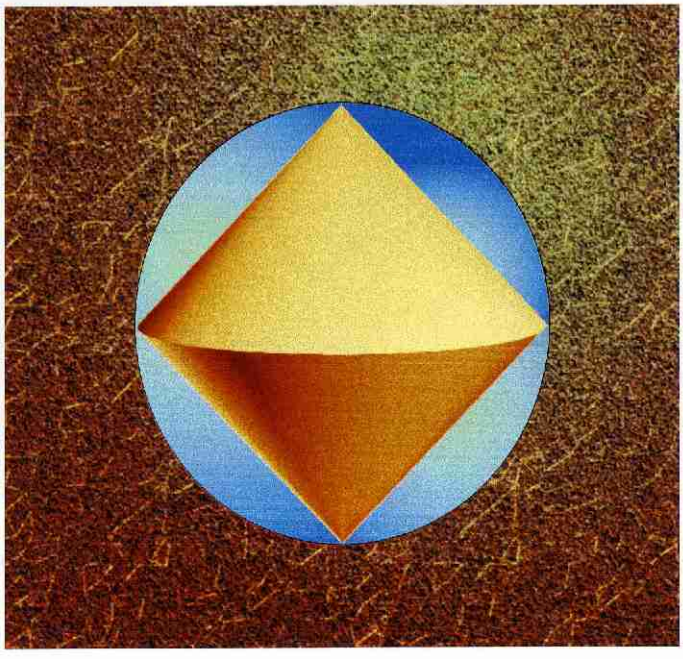
HGX = 90
GXH = arcsine(1/sqrt(8)) = arcsine(0.3535533905933) = 20.70481105464
XHG = arcsine(sqrt(7)/sqrt(8)) = arcsine(0.9354143466935) = **69.29518894536**

IHX = 90
HXI = arcsine(1/sqrt(9)) = arcsine(0.3333333333333) = 19.47122063449
XIH = arcsine(sqrt(8)/sqrt(9)) = arcsine(0.9428090415821) = 70.52877936551



The external angles are also an interesting series;

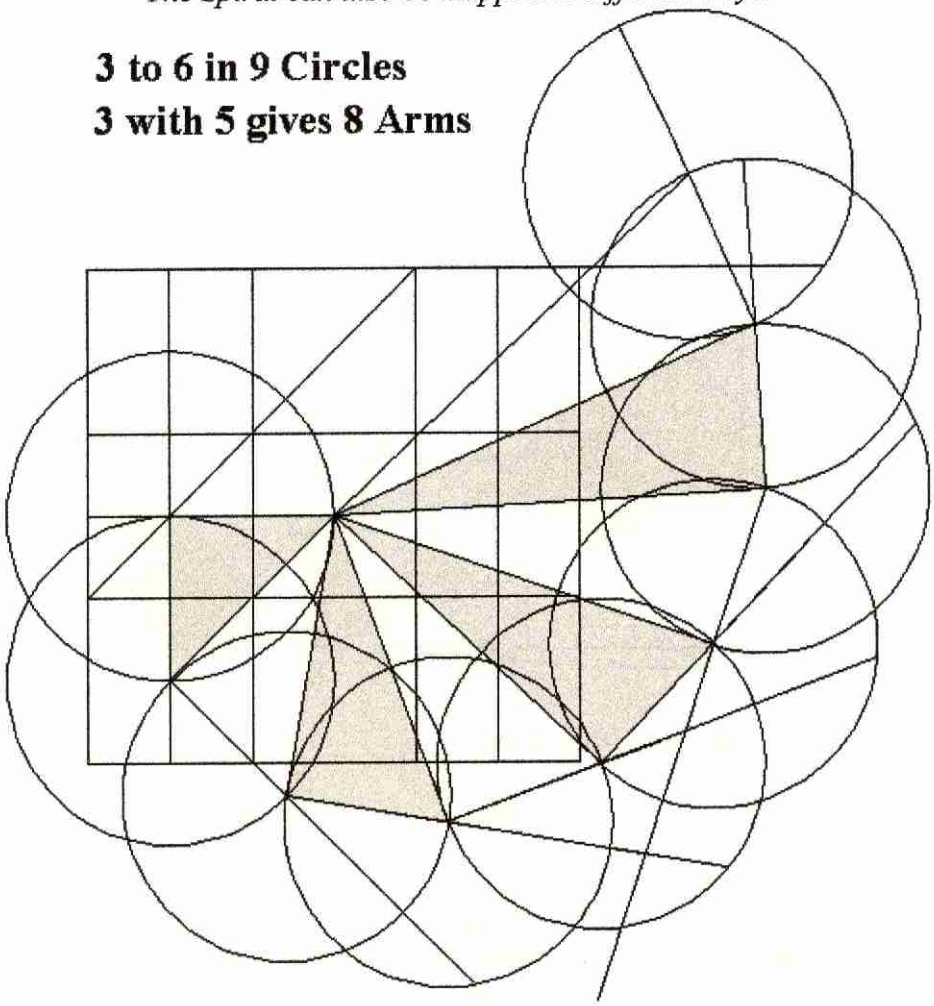
			Difference	*Ratio Increase*	*Ratio from 135*
ABC	=	135		1: 1	1:1
BCD	=	144.7356103173	9.7356103173	1: 1.07211563198	1: 1.072115631
CDE	=	150	5.2643896827	1: 1.036372456448	1: 1.111111111
DEF	=	153.4349488229	3.4349488229	1: 1.022899658819	1: 1.136555176
EFG	=	155.9051574479	2.470208625	1: 1.01609938703	1: 1.154853018
FGH	=	157.7923457014	1.8871882535	1: 1.012104719846	1: 1.168832190
GHI	=	159.2951889454	1.502843244	1: 1.009524183428	1: 1.179964362
HIJ	=	160.5287793655	1.2335904201	1: 1.007744053215	1: 1.189102069
IJK	=	**161.5650511771**	1.03627181158	1: 1.006461544748	1: 1.196778156

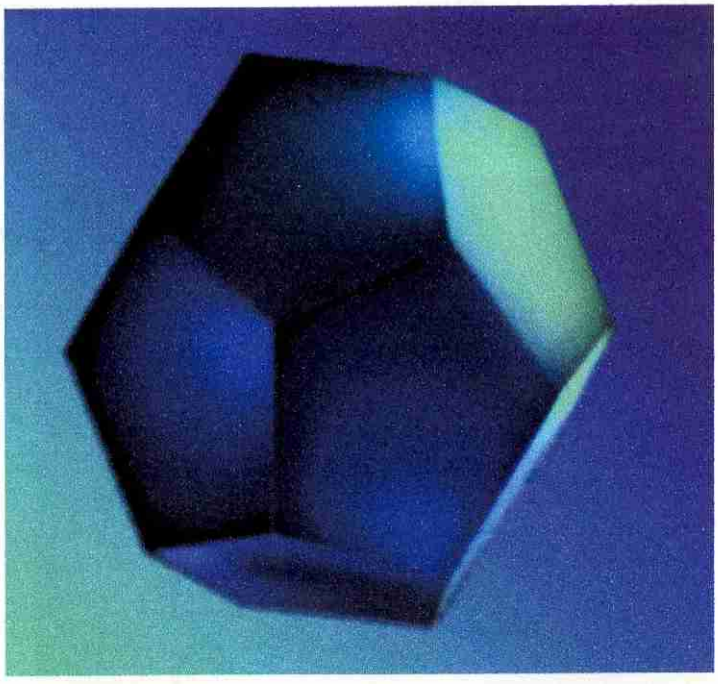


The Magic Square of Three Crystal

The Spiral can also be mapped in different ways.

3 to 6 in 9 Circles
3 with 5 gives 8 Arms





The inclusion of a table for the Fibonacci series is a must if you are going to start to co-ordinate your number forms.

Fibbonaci Numbers

1 + -1 = 0 As you can see by this sequence the addition of
1 + 0 = 1 numbers in a basic pattern. I have deliberately
0 + 1 = 1 started on the zero to show that it has an important
1 + 1 = 2 relevance later on.
1 + 2 = 3
2 + 3 = 5
3 + 5 = 8

F * ***n*** = F * ***n*** - 2 + F * ***n*** - 1

F = Fibonacci number

n = ordinal number (a number indicating position in a series e.g., second, fifth etc.)

Starting from 1 every "n" term is divisible by C

n	F	C								
1	1	1								
2	1	1								
3	2	1	2							
4	3	1	3							
5	5	1	5							
6	8	1	2	4	8					
7	13	1	13							
8	21	1	3	7	21					
9	34	1	2	17	34					
10	55	1	5	11	55					
11	89	1	89							
12	144	1	2	3	4	6	8	9	12	**16**	**18**
		24	36	48	72	144				
13	233	1	233							
14	377	1	13	29	377					
15	610	1	2	5	10	61	122	305	**610**	
16	987	1	3	7	21	47	141	329	987	
17	1597	1	1567							
18	2584	1	2	4	8	17	19	34	38	68	76
		136	152	323	646	1292	2584			
19	4181	1	37	113	4181					
20	6765	1	3	5	11	15	33	41	55	123	165
		205	451	615	1353	2255	6765			
21	10946	1	2	13	26	421	842	5473	10946	
22	17711	1	89	199	17711					
23	28657	1	28657							
24	46368	1	2	3	4	6	7	8	9	12	14
		16	**18**	21	23	24	28	32	36	42	46
		48	56	63	69	72	84	92	96	112	126
		138	144	161	168	184	207	224	252	276	288
		322	336	368	414	483	504	552	644	672	736
		828	966	1008	1104	1288	1449	1656	1932	2016	2208
		2576	2898	3312	3864	5796	6624	7728	11592	15456	23184

Having observed this sequence, I have concluded that the ***n*** position 7, 11, 13, 17, 23 are primes and the maximum number of divisors always reach a peak at intervals of 12.

Reduced number sequence = from 1
1,1,2,3,5,8,4,3,7,1,8,9,8,8,7,6,4,1,5,6,2,8,1,9

1 5 7 8 4 2 = 1/7 numbers = 0.142857142857
1 8 1 8 1 8 = repetition of pairs
2 4 8 7 5 1 = reverse 1/7 numbers
3 3 9 6 6 9 = multiple of 3

1 1 4 8 5 = 1 & 5 reversed
2 1 3 8 6 = 2 & 4 same sequence
3 2 7 7 2 = palindromic
4 3 1 6 8 = 4 & 2 same sequence
5 5 8 4 1 = add = 18 multiply = 160
6 8 9 1 9 = palindromic around 1 891989198 etc

Alternate reduced numbers 1 , 2 , 5 , 4 , 7 , 8 , 8 , 7 , 4 , 5 , 2 , 1 are also palindromic.
As you move up the series the ratio between each number becomes closer to PHI (1.618034) and alternates between higher and lower ratios.

FIBONACCI SERIES 64 STEPS

0	1	1	2
3	5	8	13
21	34	55	89
144	233	377	610
987	1597	2584	4181
6765	10946	17711	28657
46368	75025	121393	196418
317811	514229	832040	1346269
2178309	3524578	5702887	9227465
14930352	24157816	39088168	63245984
102334152	165580128	267914272	433494400
701408640	1134903040	1836311680	2971214848
4807526400	7778741248	12586267648	20365008896
32951275520	53316284416	86267559936	139583848448
225851408384	365435256832	591286632448	956721922048
1548008554496	2504730345472	4052738899968	6557469245440

RATIO BETWEEN CONSECUTIVE STEPS

0	1	2	1.5
1.666666666666667	1.6	1.625	1.615384615384615
1.619047619047619	1.617647058823529	1.618181818181818	1.617977528089888
1.618055555555556	1.618025751072961	1.618037135278515	1.618032786885246
1.618034447821682	1.618033813400125	1.618034055727554	1.618033963166706
1.618033998521803	1.618033985017358	1.618033990175597	1.618033988205325
1.618033988957902	1.618033988670443	1.618033988780243	1.618033988738303
1.618033988754322	1.618033988748204	1.618033988750541	1.618033988749648
1.618033988749989	1.618033988749859	1.618033988749909	1.61803398874989
1.618033921772239	1.618034014333084	1.618033978977986	1.618033992482432
1.618033909148922	1.618033970839786	1.618033995590948	1.618033912318129
1.618034017944233	1.61803397759865	1.618034062714234	1.618033917418011

As you can see, the PHI ratio is never quite reached but alternates around the figure. With reduced numbers:

0 1 2 3 4 5 6 7 8 9 10 11 **12** 13 14 **15** 16 ....
0 1 1 2 3 5 8 13 21 34 55 89 **144** 233 377 **610** 987 ....
0 1 1 2 3 5 8 4 3 7 1 8 **9** 8 8 7 6 ....

Reduced square form:

0	2	8
1	**3**	4
1	5	3

0	3	3	9
1	5	7	8
1	8	1	8
2	4	8	7

0	5	1	7	6
1	8	8	6	2
1	4	**9**	4	8
2	3	8	1	1
3	7	8	5	9

I have also observed that the center square of the odd numbered form has a reduced number divisible by 3. There are a great many relationships to be found in this form.

All good artists and naturalists make observations when looking at nature, and consequentially note numerical consistencies like the Fibonacci numbers and the PHI ratio.

The center spiraling of the daisy flower has two opposing spiral forms one with 34 convolutions going anticlockwise and one with 21 going clockwise. The pine cone has 8 + 13, pineapple has 8 + 5 and the horns of sheep etc.., also have these numeric ratios.

Another example is when you alloy Iron & Nickel in 5 to 3 ratio you will have only 1/10 the expansion when heated than either will individually.

The common formulas for deriving PHI is :

(sqrt(5) + 1) / 2 = PHI
2 / (sqrt(5) - 1) = Phi

I have derived a formula for choosing any number that can produce PHI :

$(\sqrt{n^2 + \{2 * n\} * 2} + n) / (2 * n) = PHI$

The resultant is the 36 step ratio of the Fibonacci series:

9227465 / 5702887 = 1.61803398874989

Inverse reduced number	Step 1 = 37 / 35	= 1.0571429	(refer to musical ratio)
Inverse reduced number	Step 2 = 8 / 1	= 8	(8 surrounding 1)

At this point we must know how our square 3 will grow as a whole

Base number	*Line number*	*Total*	*Balance Pair*	*Corner values*	
0	12	36	8	16	
1	15	45	10	20	
2	18	54	12	24	
3	**21**	63	14	28	(note 7's)
4	24	72	16	32	
5	27	81	18	36	
6	30	90	20	40	
7	33	99	22	44	(note 11's)
8	**36**	**108**	24	48	
9	39	117	26	52	
10	42	126	28	56	
11	**45**	**135**	30	60	(note 15's)
12	48	**144**	32	**64**	

The Twelfth position again is occupied by 144, note that eleven has a line number of 45 which is the total for the square level one.

7 **0** 5	507 + 111 = 618	7 | 0 5
2 4 6	618 + 111 = 927	2 | 6
3 8 1	729 = 3^6	3 8 | 1

05 + 11	= 16	= 4^2
16 + 11	= 27	= 3^3
27 + 11	= 38	= $6.164414^2 = 1.43873^{10}$
38 + 11	= 49	= 7^2

The Moving Phi Number

7 **0** 5	618034 , 572 (572 = 143 * 4)
2 4 6	
3 8 1	
8 1 6	Top three numbers = 618
3 5 7	618934 , 572
4 9 2	618034 the replacement of 9 with a zero is due to the way the numbers increase by 9 0 + 9 = 9
9 2 7	618034, 572
4 6 8	6108934, 572
5 **10 3**	618034 this time the ten also is replaced by the 1,10 - 9 = 1
10 3 8	618034, 572
5 7 **9**	6108934 , 5711
6 11 **4**	The 11 becomes the 2
11 **4** 9	618034, 572
6 8 10	61089124, 5711
7 **12** 5	The 12 becomes the 3

Try to split the numeric forms so they are in accord to number 6 harmony

6 digits	division/multiply	add/sub
618**0**34	2.24732281489	893043
275**00**9	169964912306	343025

275.009= 215.99156 * 4 / π in nautical feet

R1 = (215.99156* 4 * 3.2398) / (2 * π)
= 42.442246 mtrs

C = 299792500 m/s
q = 1.602E-19 C
me = 9.11e-31 kg
B = 0.0000402 Tesla
Earth's Magnetic Field density
R2 = Cyclotron Radius

R2 = C /(q * B) / me)
= 42.442246 mtrs

Note that 215.99156 relates to 216 as a number 6 harmony.

I will list the 9 number transformations of the magic square three:
Adding nine to the base number sequence

					Reduced Number
6	15	24	33	42	6
1	10	19	38	47	1
8	17	26	35	44	8
0	**9**	**18**	**27**	**36**	**9**
3	12	21	30	39	3
4	13	22	31	40	4
5	14	23	32	41	5
7	16	25	34	43	7
2	11	20	29	38	2

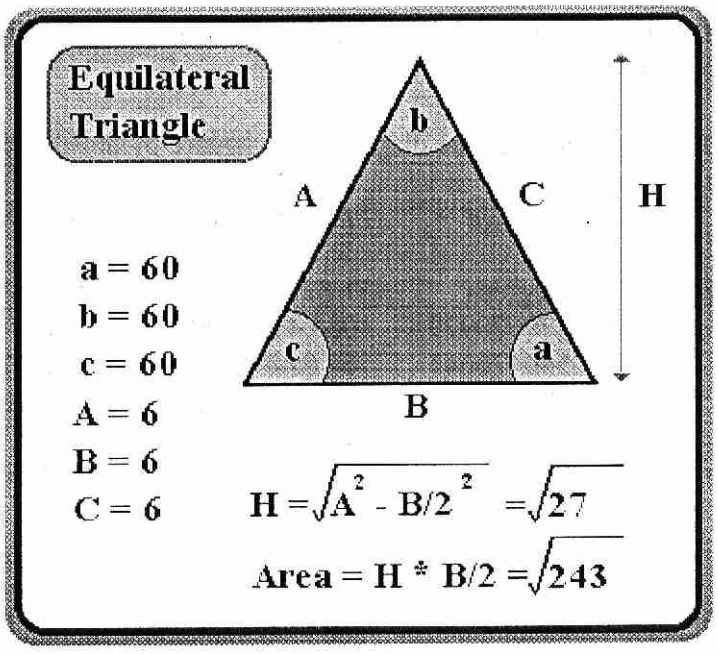
The base number and the reduced numbers are the same value, excluding the zero which becomes 9 as the continuing reduced number.

The number 572 is a harmonic number of 143, the quarter value donates a maximum of the compression of a longitudinal wave if you relate Velocity with C and then this number becomes the Wavelength L.

Frequency	=	C / (143 * 4)	=	C / 572	=	C / L
The velocity of light	=	299792540 m/s	=	618034 units/s	=	C

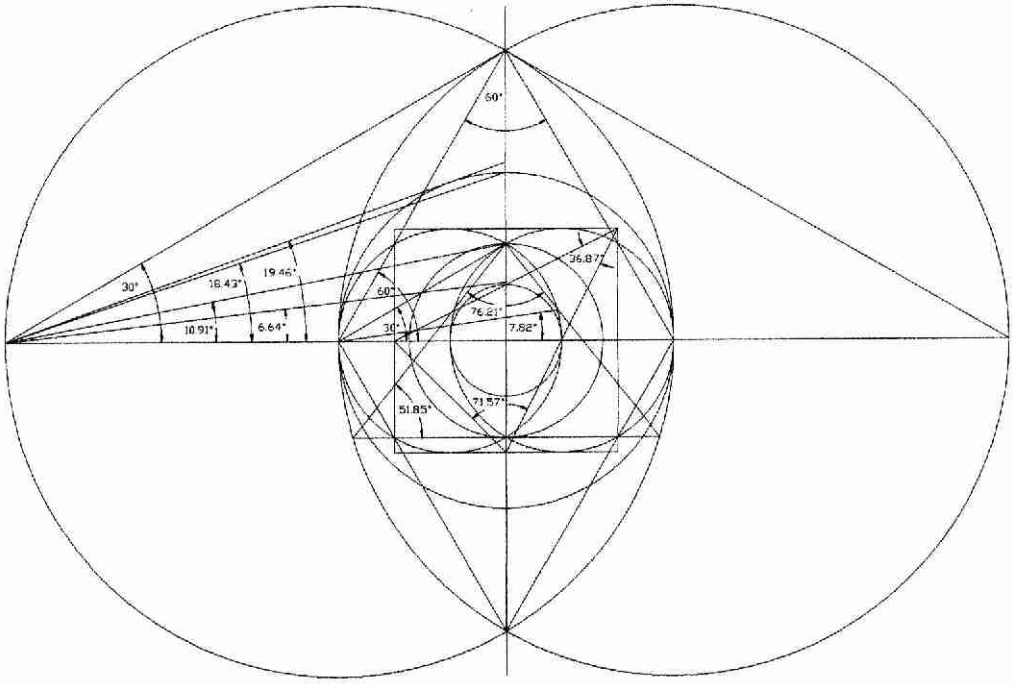
This ratio is 1: 485.0745104638 , which is a B note Harmonic, or can be taken as the leading tone when resolving in the musical key of C. The frequency of C = 256 constitutes the correct form, when looking at the wavelengths of living structures. This number is also related to 486 / 2 = 243. This correlation becomes more apparent when you realize the *P* wave oscillation of the sun is 160 minutes and the rotational spin of the sun is 27 days. The value 10.125 also relates to magnetic alloy ratios.

27 * 24 * 60	=	38880 minutes		38880 / 160	=	243	$= 3^5$
27 * 60	=	1620		1620 / 160	=	10.125	

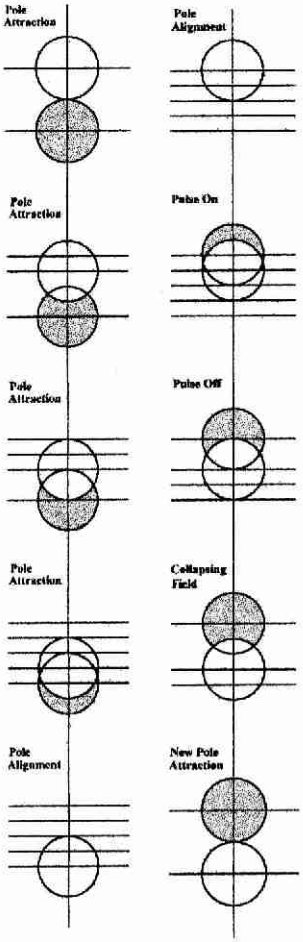


The Magic Square of Three Crystal

Below is the traditional way to design a pyramid with these parameters



This is the pole face actions of a Adams Motor.



Study the form of this diagram, it can also be interpreted as the crossing of pole faces of a rotor with the stator. When working out the timing pulse for the Adams motor the same diagram can be used, relating the geometric position with that of time.

If I substitute C = 618034 units per time unit as Velocity the we have :

F = C / L = 618034 / 572 = 1080.479020979
≅ 144 * 7.5

The number 1080 is a Harmonic of 270 which is C# in musical terms.

1080 / 486 = 2.22222222 = 1/ 0.45

Not forgetting the unified vector geometry number for the amount of points is 4862 .As this relationship shows, the numbers will have harmonic forms.

The value of F now becomes the diagonal of a square pyramid with these dimensions :

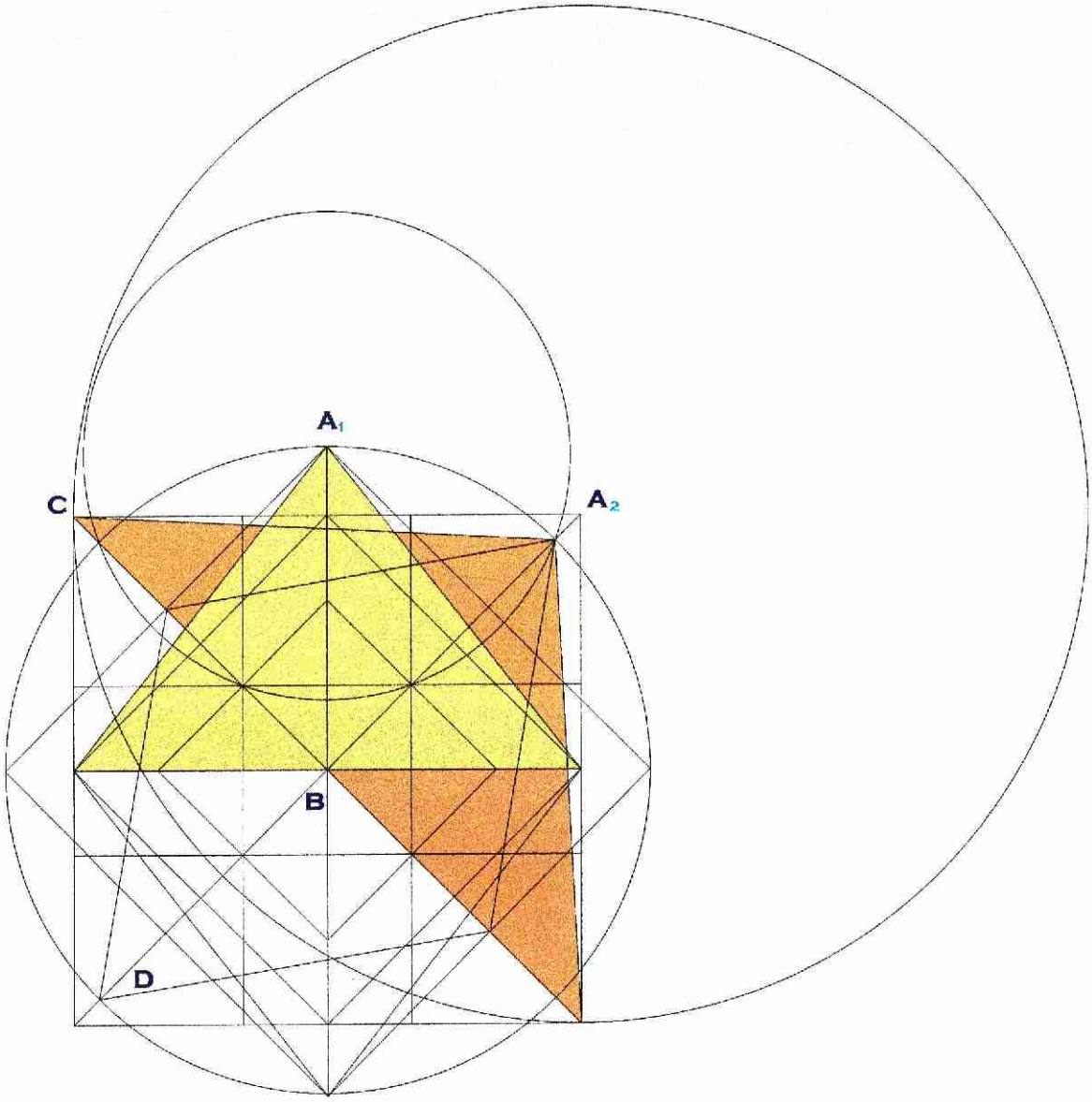
	Great Pyramid	***Phi Slope Length***	***No Fraction***	***Sqr 3***
Angle of side	=51.85 degrees	51.82245693863 dg	51.85	51.85
Diagonal	=1080.479020979	1080.479020979	1080	sqrt(18)
Base side	=764.0140426641	764.0140426641	763.6753236815	3
Height	=486.3170027363	485.8360431349	486.1013983217	1.9095866394
Slope Face	=618.4121534199	618.034	618.1379857689	2.4282753413
Slope Edge	=726.8857928481	726.5640986885	726.5635343522	2.8542111227

The Slope Face becomes 1.5 * 1.618034 when measuring using the square scale.

51.85	=	51 51 = 51 degrees 51 minutes	= (3000 / 60) + (11.1 / 60)
51.82245693863	=	51 49 20 50 41 55 28 37 40 41 5 16 48	
		as a sexadecimal Degree scale	

sin 38.15	=	0.**61**77223704604	=	a
sin 51.85	=	0.7863962570058	=	b
sin 90	=	1	=	c
Base Side / 2	=	382.007021332	=	BC
a / BC	=	0.001617044546214	=	x
1 / x	=	**618**.4121534199	=	AC
b / x	=	**486**.3170027363	=	AB

The dimensions here listed look very much like the figures quoted for the Great Pyramid of Giza in Egypt. The indications are that the oscillation between B to C# with the median being C, is instituted with its numeric framework.

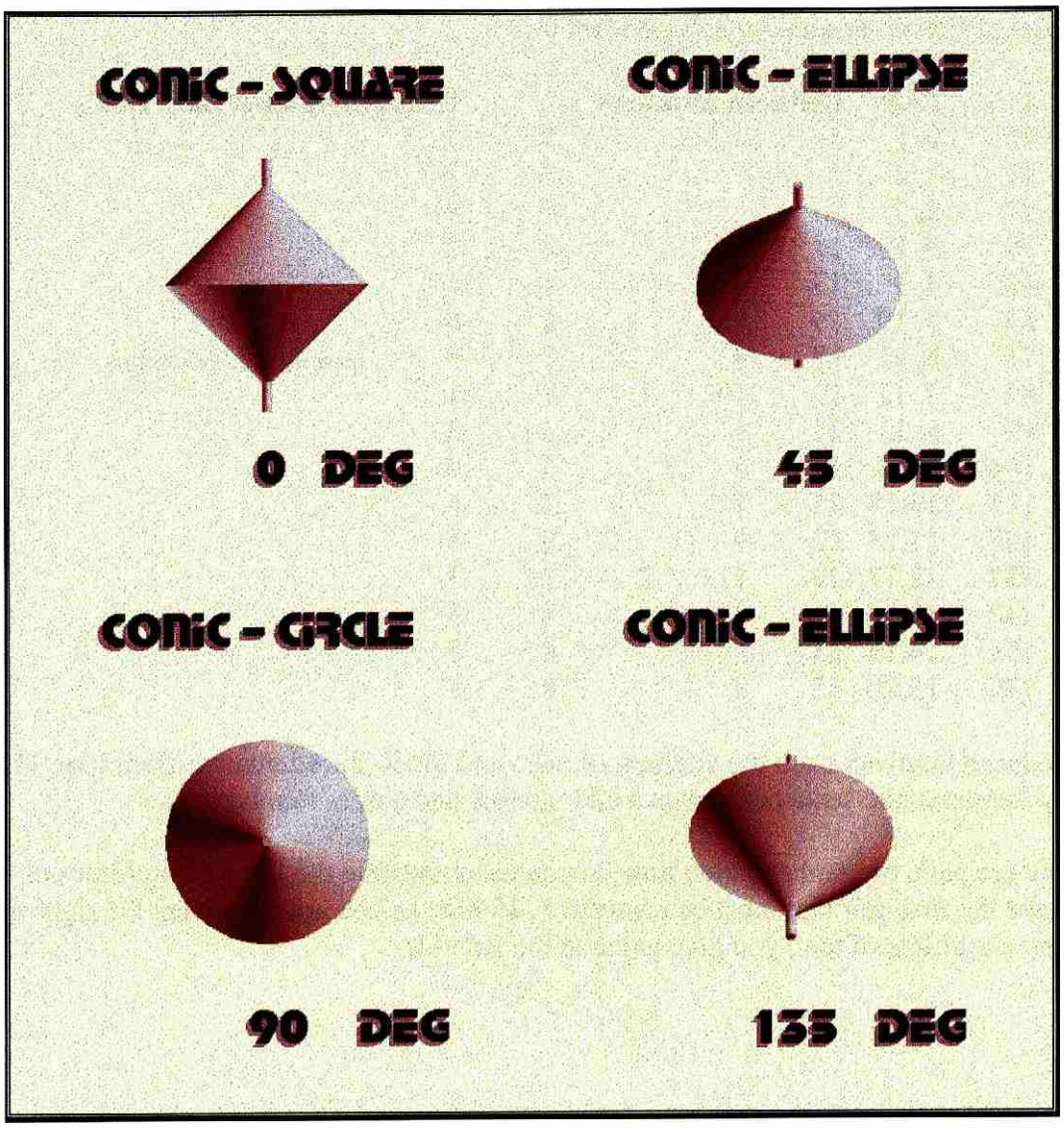


Angles

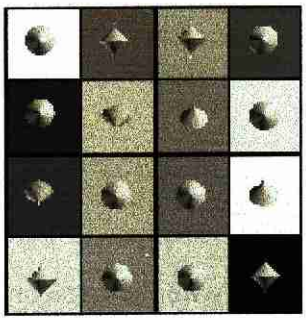
A1 76.3
A2 96.06
D 71.565 (*Square 3 angle of base to apex*)

If you consider the shape as a side view of double conical gyroscope with its axis in line with A_2B of the darker triangle, rotation can be now effective in either CB or BC direction. At the point A_1 of the lighter triangle you place a polar device that can be oscillated with the required frequency, that we previously figured.

If you also let natural precessive movements to accumulate in an angular rotation, the switching of a harmonically aligned commutator will be the pattern for the exchange energy involved.



The visual difference when two squares are compared is the fact that the four pairs of numbers that surround the center number are increments of eleven, starting from a base value as shown in the figure(05, 16, 38, 27) if incremented it shows 16, 27, 38, 49, now with the last value the 4 is put into the center, the 9 can't be accommodated in the base level, so must be made to increase the total value by just that amount, 36 + 9 = 45 .



Multiples of Eleven Beginning at Base level 0

Base	**11's**	**Pair**	**Reduced numbers**				**Reduced number only 1,10's**	
0	05	0, 5	5			5	5	
1	16	1, 6	7			7	7	
2	27	2, 7	9			9	9	
3	38	3, 8	11	2		2	2	
5	49	4, 9	13	4		4	4	
6	**60**	5, 10	15	**6**		**6**	**6**	
7	71	6, 11	17	8		8	**8**	*(note sqr 4 relationship)*
8	82	7, 12	19	10	1	1	**1**	
9	93	8, 13	21	3		3	**3**	
10	104	9, 14	23	5		5	**4**	
11	115	10,15	25	7		7	6	
12	126	11,16	27	9		9	8	
13	**137**	12,17	29	11	2	2	1	
14	148	13,18	31	4		4	3	
15	159	14,19	33	6		6	5	
16	170	15,20	35	8		8	7	

The Reduced numbers from the addition of pairs and the Reduced number from base 11 are exactly the same, the sequence shows a odd number and a even number set.

As there are pairs of numbers, then how do you accommodate the left side multiples of ten , easy, take the first pair that must be resolved 5, 10 then as you are increasing the right side value by a multiple of ten , you give value to the left side

5 , 10
50, 10
60, 0
6 , 0
60 = 50 + 10

Look at the combination of harmonic values

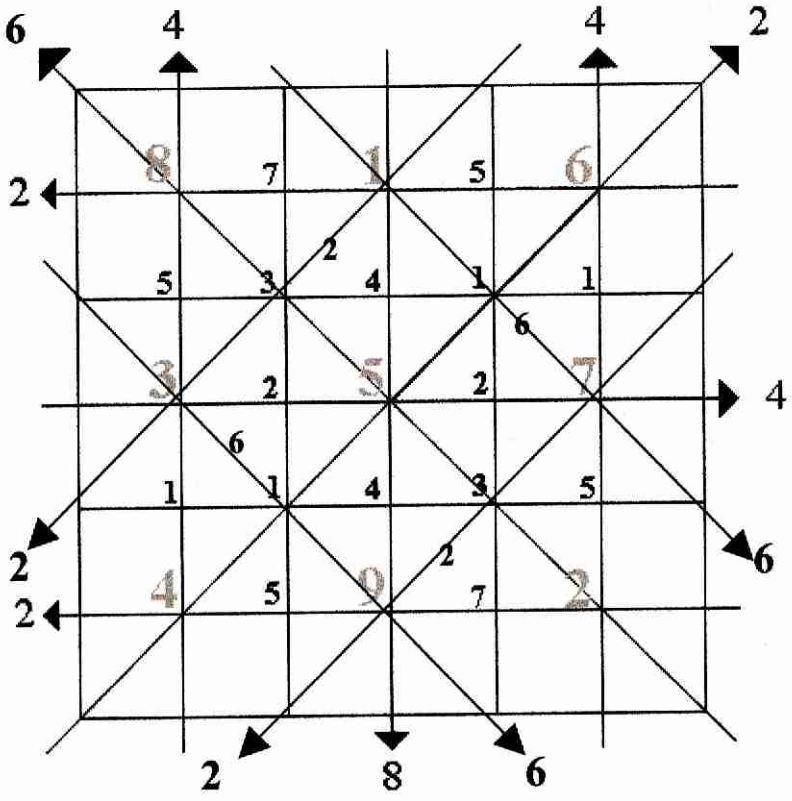
5 + 10 = 15 = Line number value for Square level 1
60 / 4 = 15

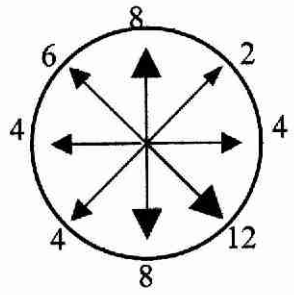
The next number that encounters a transformation is 104 (note, number of elements)

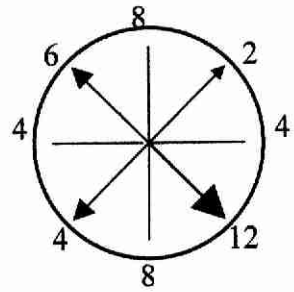
9 , 14
90 , 14
100, 4
10 , 4
104 = 90 + 14

The amazing self referencing takes place with the number five as a pivotal role in all the transformations. For example number 104, the components added 1 + 0 + 4 = 5, using reduced numbers in this way you have a very efficient system when dealing with a self referencing logic.

Vector Relationship







$Vl = sqrt((4-2)^2 + (12-6)^2)$

Differential Vector Summing	9-5 + 5-1	=	8
	8-5 + 5-2	=	6
	7-2 + 7-6	=	4

The relationship between the internal values and the resultant balance in vectors, also shows the diagonals are not equally balanced. The combined diagonal vectors is sqrt(**40**), aiming down. This arrangement regardless of the size of the square, is always imbalanced in one direction, to me this denotes a fundamental activity of an arrangement that has a inherent gravitational direction.

The system involves 4 left/right, 8 down/up, 6 and 2 diagonals. The number reads 4862, the Unified Vector Geometry number for the quantity of points.

This brings about my reference on the Gravity Constant

		SI	***CGS***	
G	=	6.672E-11	=6.672E-8	Universal Constant of Gravity
C	=	299792540 m/s	=2997925.4 cm/s	the Velocity of Light
G	=	1 / (50 * C)	=1 / (5 * C)	True Ratio of G

therefore using CGS

1 / 5 = G * C = 0.2 = 9 / 45 = 3 / 15 = 9 * 0.0222222 = 3 * 0.0666666
9 * (1 / 45) 3 * (1 / 15)

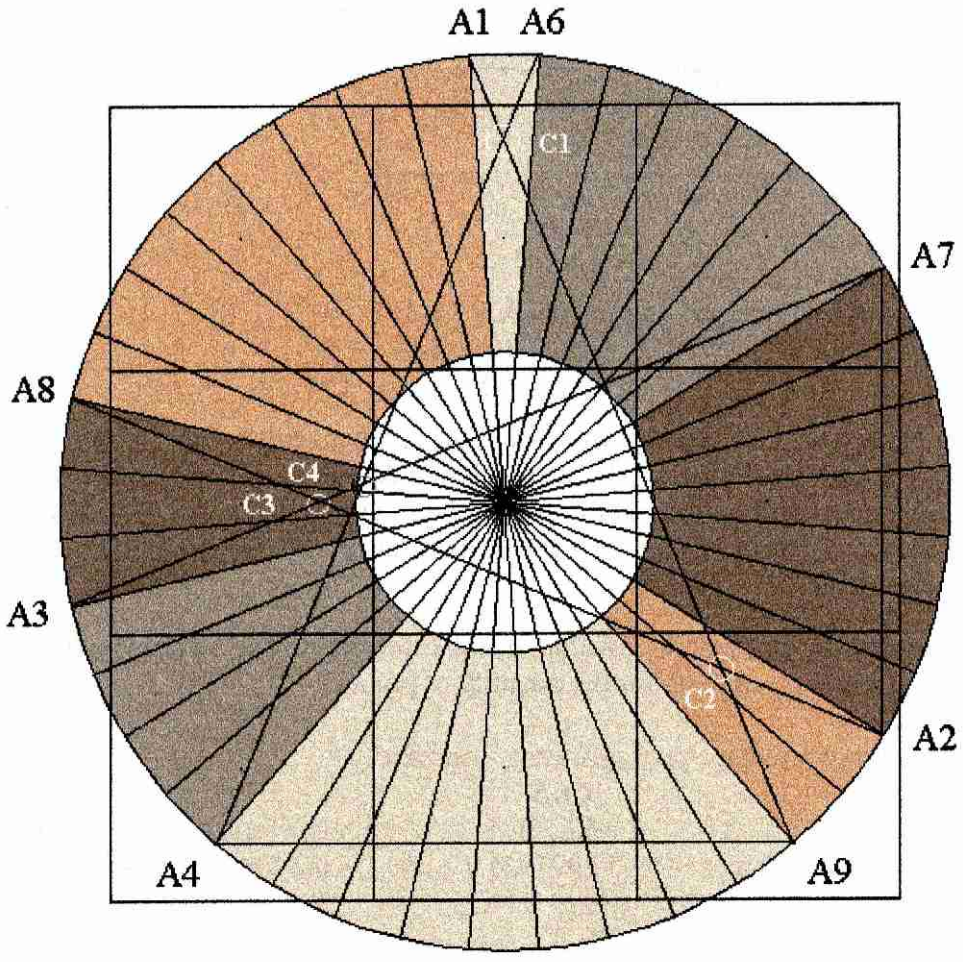
G1	=	1/45
G2	=	1/15
C1	=	9
C2	=	3

As the total value of a base 1 square 3 is 45 then each number represents a quantity, the equation is demanding nine parts of the total to be a harmonic ratio, so you can now see a correlation with the number pairs of that add to 9.

Pairs of 9

0	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
0	9	9	9	9	9	9	9	9	9	18
1,8	1,8	10,8	10,8	10,8	10,8	10,8	10,8	10,8	10,17	10,17
2,7	2,7	2,7	11,7	11,7	11,7	11,7	11,7	11,16	11,16	11,16
3,6	3,6	3,6	3,6	12,6	12,6	12,6	12,15	12,15	12,15	12,15
4,5	4,5	4,5	4,5	4,5	13,5	13,14	13,14	13,14	13,14	13,14

Looking at this table you can see the gravity function begins at the first level being 1/45 = 1 = G, this looks more like the true situation regarding the way masses react with each other. The smaller mass is always attracted to a larger mass, 1 grows to 10 then to 19 by a circular action within the magic square, in a cycle of 10 before repeating.



The diagram can help show you that a mass within a hollow body has no gravity;

$g = G * m / d^2 \qquad = 0$
$F = m1 * m2 / G * d^2$

Circumference of Large Circle = Cir1 = 10.634723
Circumference of Small Circle = Cir2 = 3.544907701806
Cir2 * 3 = Cir1
Perimeter of square / Cir1 = 1.128379167096
As you can see the center area is 5 units of 45 total and the outside ring is divided into proportional areas, numbering 40 (4 sets of 10).
Area of Whole circle = 9
Radius = R1 = sqrt(9 / π) = sqrt(2.864788975654) = **1.692568750643**
Inner circle area = 9 * 5 / 45 = 1
Radius = R2 = sqrt(1/ π) = 0.5641895835478
Outer ring area = 9 * 40 / 45 = 8
Each segment area = 8 / 40 = 0.2
Angle of segment = 360 / 40 = 9
length of segment arm = R1 - R2 =1.128379167096 = cube root (**1.436696977003**)

The lengths of each line set;

Base length		Center to base
A1A6 =	0.2656	**1.6875**
A2A7 =	1.7688	**1.44**31
A3A8 =	0.7902	1.6458
A4A9 =	2.1984	1.2871
A1A8 =	1.9898	1.3693
A2A9 =	0.5296	1.6717
A3A4 =	1.046	**1.6097**
A6A7 =	1.5368	1.5081

A1A9 = 3.2195457
C1A9 = 2.8618183 = 8 * 3.2195457 /9
C1A1 = 0.35772729 = 3.2195457 / 9

A3A7 = 3.33333
C3A7 = 2.3148148 = 3.3333 / **1.44**
C3A3 = 1.018518518518 = 27.5 / 27

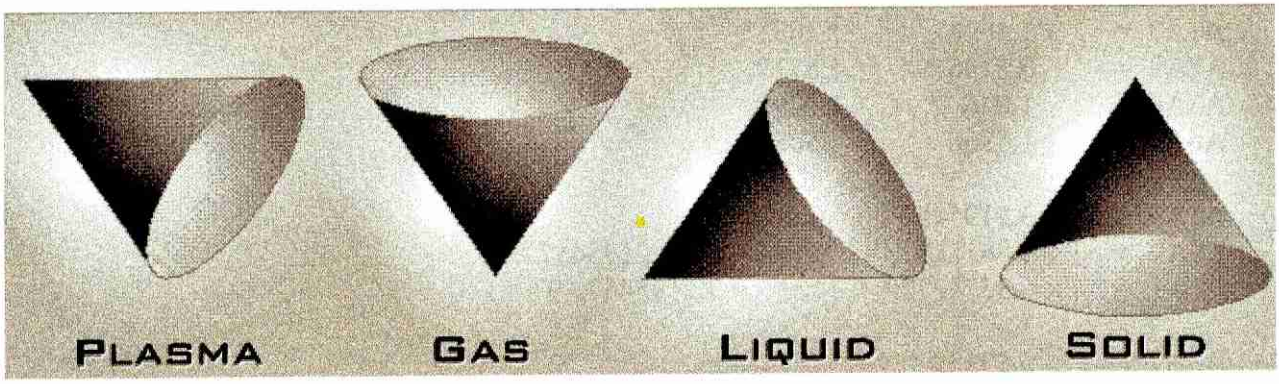
Angles of all cross pairs = 45 degrees *Reduced number 9*
Outside angle = 135 degrees *Reduced number 9*
Now if you treat the circle as a sphere with 3 pairs of solid angle cones, and the area of the formed hemispheres at each end of the cone, and give them a mass which only a depth and a density are required working out as;
Area of sphere surface = 4 * pi * r^2 = 36 (*base level total*)
Area1 = Ar1 = 4 * pi * r^2 / ratio1 = 36 / ratio1
Area2 = Ar2 = 4 * pi * r^2 / ratio2 = 36 / ratio2
Amass1 = Ar1 * thickness * density
Amass2 = Ar2 * thickness * density
Where the thickness and density are both uniform
Ar1 / R1 = A2 / R2
Ar1 * R2 = A2 * R1
Amass1 /Ar1 = Amass2 / Ar2

The cancellations of the masses and the distances by the inverse square law will give you zero gravity. The illustration can also be seen as a Toroid transformer with each segment being looked as a single winding, the transformer equations can be put to use in this situation.

The density could be the line value of the square 3 being 15, this seems the most likely form it could take, and the thickness as a single unit value.

Fraction of total			*Ratios between steps*			*Decrease in ratios*
1 / 45 * 45	=	1	0/1	=	0	= 0
1 / 45 * 54	=	1.2	1/1.2	=	0.83333333	= 1.2
1 / 45 * 63	=	1.4	1.2/1.4	=	0.85714286	= 1.1666666
1 / 45 * 72	=	1.6	1.4/1.6	=	0.875	= 1.1428571
1 / 45 * 81	=	1.8	***1.6/1.8***	=	0.88888888	= 1.125
1 / 45 * 90	=	2	1.8/2	=	0.9	= 1.1111111
1 / 45 * 99	=	2.2	2/2.2	=	0.90909090	= 1.1
1 / 45 * 108	=	2.4	2.2/2.4	=	0.91666666	= 1.0909090

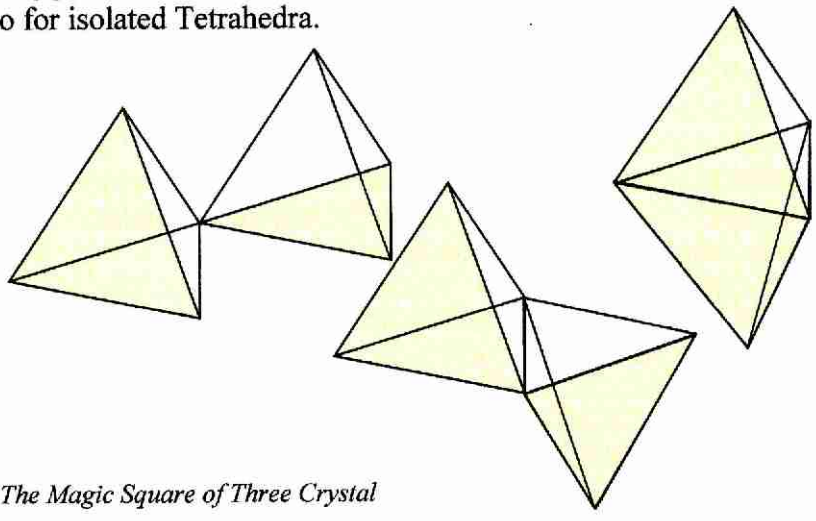
This particular line of thinking has not been fully explored, notwithstanding some new revelation as to its true nature. This illustration below can, with deeper understanding can be the true model for matter.



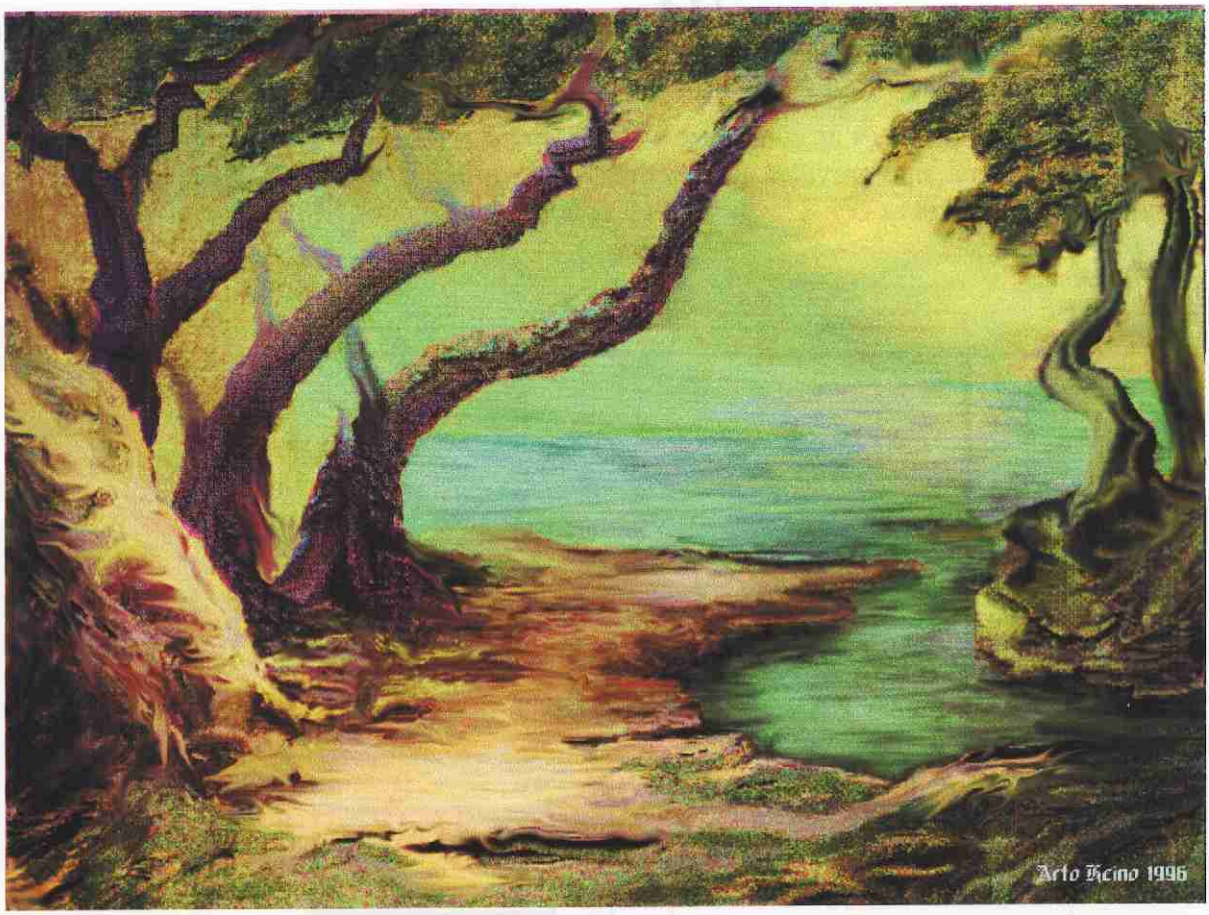
Bridging Oxygen's

In silicate structures an oxygen atom that is bonded between two silicon atoms represents a corner shared between 2 Tetrahedra, is called a bridging oxygen. The unshared tetrahedral corners are called non-bridging Oxygen's. In the Si-O groups the percentage of oxygen atoms that are bridging oxygen's is zero for isolated Tetrahedra.

Single	0
Double Tetrahedra	**14.3**
Single Chains	33.3
Rings	33.3
Double Chains	45.5
Sheets	60
Frame Works	100



The Magic Square of Three Crystal



Musical Interlude

The Natural progression of harmonious sound is not one of continuous increase without limits, there is basically four forms it can take:

1. Harmonic
2. Octaves
3. Modal
4. Chromatic

These have the basic interval sequences, and algorithms that can derive a multitude of scalar and chordal forms. I will only cover some of the harmonic category due to the massive amount of data.

Harmonic

Every musical sound has as its components firstly, the harmonic content, which changes the Timbre of the sound, and provides us with the most exquisite instrumental tones that can literally make us laugh or cry. This is the first order magic squares I will show.

Harmonics Harmonics of Each Harmonic

Fundamental		C 1	C 2	G 3	C 4	E 5	G 6	A# 7	C 8	D 9	E 10	F 11	G 12
	1	1	2	3	4	5	6	7	8	9	10	11	12
C	1	1	2	3	4	5	6	7	8	9	10	11	12
C	2	2	4	6	8	10	12	14	16	18	20	22	24
G	3	3	6	9	12	15	18	21	24	27	30	33	36
C	4	4	8	12	16	20	24	28	32	36	40	44	48
E	5	5	10	15	20	25	30	35	80	45	50	55	60
G	6	6	12	18	24	30	36	42	48	54	60	66	72
A#	7	7	14	21	28	35	42	49	56	63	70	77	84
C	8	8	16	24	32	40	48	56	64	72	80	88	96
D	9	9	18	27	36	45	54	63	72	81	90	99	108
E	10	10	20	30	40	50	60	70	80	90	100	110	120
F	11	11	22	33	44	55	66	77	88	99	110	121	132
G	12	12	24	36	48	60	72	84	96	108	120	132	144
A	13	13	26	39	52	65	78	91	104	117	130	143	156
A#	14	14	28	42	56	70	84	98	112	126	140	154	168
B	15	15	30	45	60	75	90	105	120	135	150	165	180
C	16	16	32	48	64	80	96	112	128	144	160	176	192

8	1	6	15	15
3	5	7	15	15
4	9	2	15	15
15	15	15	15	45

1	12	8	13	34
15	6	10	3	34
14	7	11	2	34
4	9	5	16	34
34	34	34	34	34	136

16	2	12	30	30
6	10	14	30	30
8	18	4	30	30
30	30	30	30	90

2	24	16	26	68
30	12	20	6	68
28	14	22	4	68
8	18	10	32	68
68	68	68	68	68	272

24	3	18	45	45
9	15	21	45	45
12	27	6	45	45
45	45	45	45	135

3	36	24	39	102
45	18	30	9	102
42	21	33	6	102
12	27	15	48	102
102	102	102	102	102	408

32	4	24	60	60
12	20	28	60	60
16	36	8	60	60
60	60	60	60	180

4	48	32	52	136
60	24	40	12	136
56	28	44	8	136
16	36	20	64	136
136	136	136	136	136	544

40	5	30	75	75
15	25	35	75	75
20	45	10	75	75
75	75	75	75	225

5	60	40	65	170
75	30	50	15	170
70	35	55	10	170
20	45	25	80	170
170	170	170	170	170	680

48	6	36	90
18	30	42	90
24	54	12	90
90	90	90	90 270

56	7	42	105
21	35	49	105
28	63	14	105
105	105	105	105 315

64	8	48	120
24	40	56	120
32	72	16	120
120	120	120	120 360

72	9	54	135
27	45	63	135
36	81	18	135
135	135	135	135 405

80	10	60	150
30	50	70	150
40	90	20	150
150	150	150	150 450

88	11	66	165
33	55	77	165
44	99	22	165
165	165	165	165 495

96	12	72	180
36	60	84	180
48	108	24	180
180	180	180	180 540

6	72	48	78 204
90	36	60	18 204
84	42	66	12 204
24	54	30	96 204
204	204	204	204 204 816

7	84	56	91 238
105	42	70	21 238
98	49	77	14 238
28	63	35	112 238
238	238	238	238 238 952

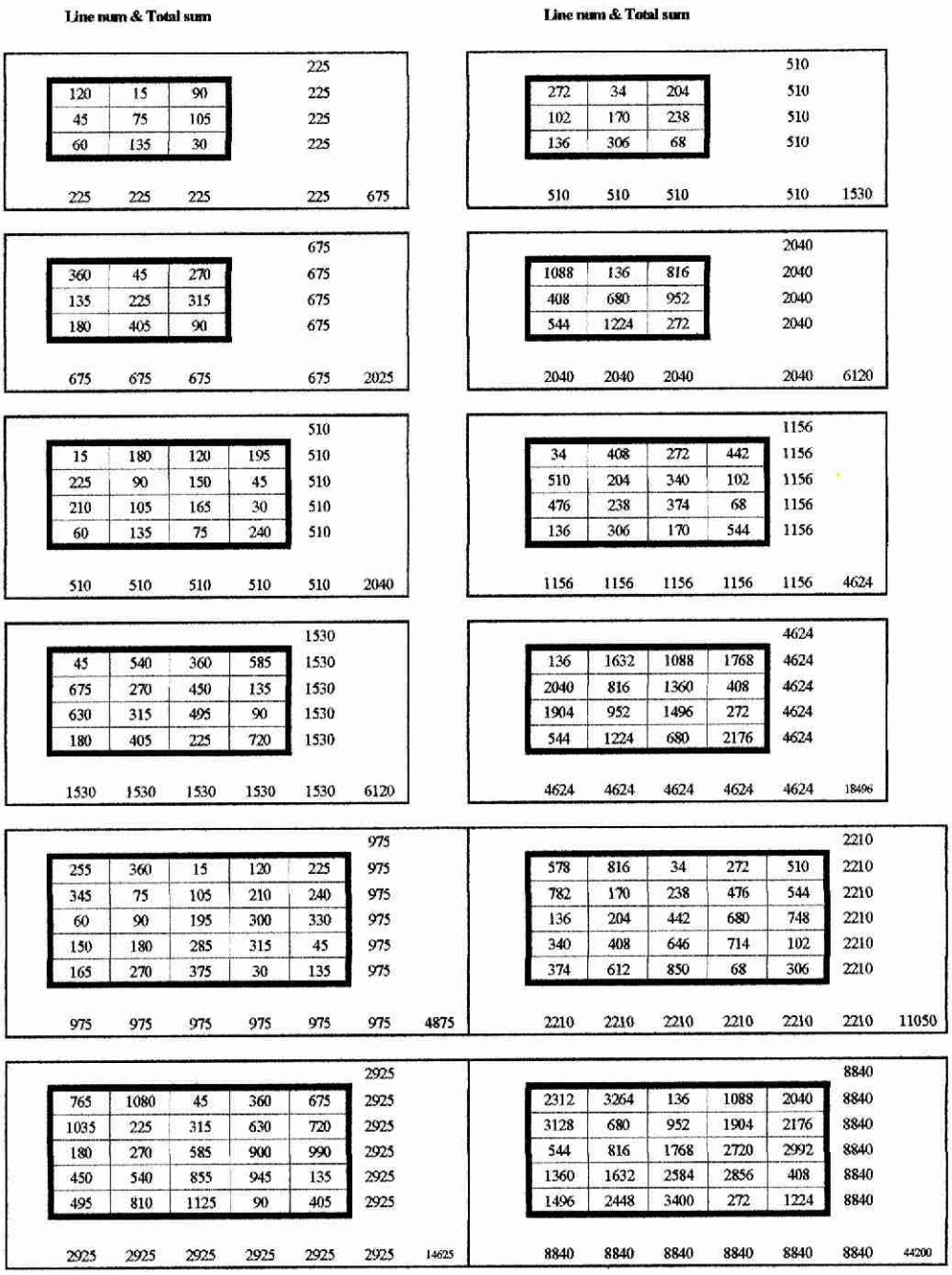
8	96	64	104 272
120	48	80	24 272
112	56	88	16 272
32	72	40	128 272
272	272	272	272 272 1088

9	108	72	117 306
135	54	90	27 306
126	63	99	18 306
36	81	45	144 306
306	306	306	306 306 1224

10	120	80	130 340
150	60	100	30 340
140	70	110	20 340
40	90	50	160 340
340	340	340	340 340 1360

11	132	88	143 374
165	66	110	33 374
154	77	121	22 374
44	99	55	176 374
374	374	374	374 374 1496

12	144	96	156 408
180	72	120	36 408
168	84	132	24 408
48	108	60	192 408
408	408	408	408 408 1632



Line num & Total sum				
120	15	90	225	
45	75	105	225	
60	135	30	225	
225	225	225	225	675

Line num & Total sum				
272	34	204	510	
102	170	238	510	
136	306	68	510	
510	510	510	510	1530

360	45	270	675	
135	225	315	675	
180	405	90	675	
675	675	675	675	2025

1088	136	816	2040	
408	680	952	2040	
544	1224	272	2040	
2040	2040	2040	2040	6120

15	180	120	195	510	
225	90	150	45	510	
210	105	165	30	510	
60	135	75	240	510	
510	510	510	510	510	2040

34	408	272	442	1156	
510	204	340	102	1156	
476	238	374	68	1156	
136	306	170	544	1156	
1156	1156	1156	1156	1156	4624

45	540	360	585	1530	
675	270	450	135	1530	
630	315	495	90	1530	
180	405	225	720	1530	
1530	1530	1530	1530	1530	6120

136	1632	1088	1768	4624	
2040	816	1360	408	4624	
1904	952	1496	272	4624	
544	1224	680	2176	4624	
4624	4624	4624	4624	4624	18496

255	360	15	120	225	975	
345	75	105	210	240	975	
60	90	195	300	330	975	
150	180	285	315	45	975	
165	270	375	30	135	975	
975	975	975	975	975	975	4875

578	816	34	272	510	2210	
782	170	238	476	544	2210	
136	204	442	680	748	2210	
340	408	646	714	102	2210	
374	612	850	68	306	2210	
2210	2210	2210	2210	2210	2210	11050

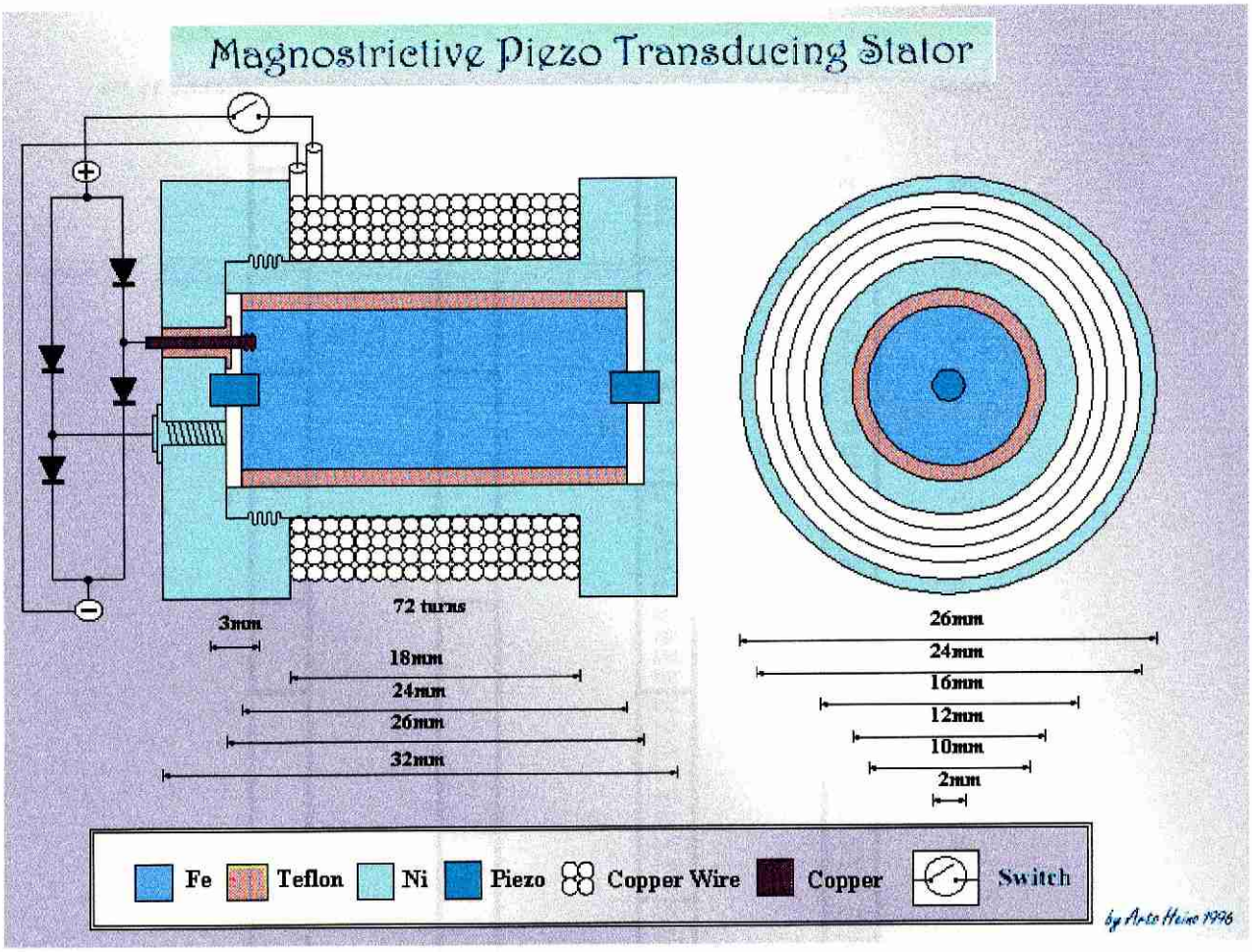
765	1080	45	360	675	2925	
1035	225	315	630	720	2925	
180	270	585	900	990	2925	
450	540	855	945	135	2925	
495	810	1125	90	405	2925	
2925	2925	2925	2925	2925	2925	14625

2312	3264	136	1088	2040	8840	
3128	680	952	1904	2176	8840	
544	816	1768	2720	2992	8840	
1360	1632	2584	2856	408	8840	
1496	2448	3400	272	1224	8840	
8840	8840	8840	8840	8840	8840	44200

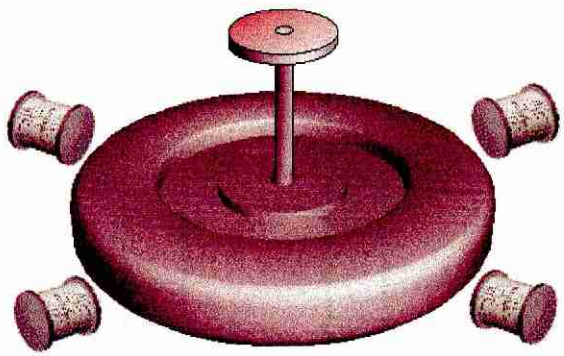
The most obvious fact is the harmonic table is the same as a multiplication table and the increase in number is exponential. The fundamental frequency I have chosen as one, will help you plan the foundation for your numeric linkage within the Energy structure. The careful study of these tables can help you understand that each component in a system has its place when it is considered and designed in the correct proportion.

In the frequencies that we hear in the range of the middle C at 256 Hz, there are many harmonic components in a higher frequency that we don't hear. This limitation is because we are band-width dependent and have limits to our receiving devices. The human ear has a range from about 30 Hz to 20000 Hz , ultrasonic devices can easily be made to pulse at 1 Megahertz. The most useful is a transducer, which can have multiple energy transformations simultaneously, or sequenced as required by the design or idea.

The diagram below illustrates a pulse coil that can also acts like a electron pump, by utilizing the magnostrictive properties of Iron and Nickel acting on a Piezo Electric material (crystals, ceramics). The main thrust of this is, if you make a design from the tables shown here, you will begin to see the prospects of achievable results, such as this simple device, which could be used as a stator in a Adams Motor Generator as its main pulsing coil.



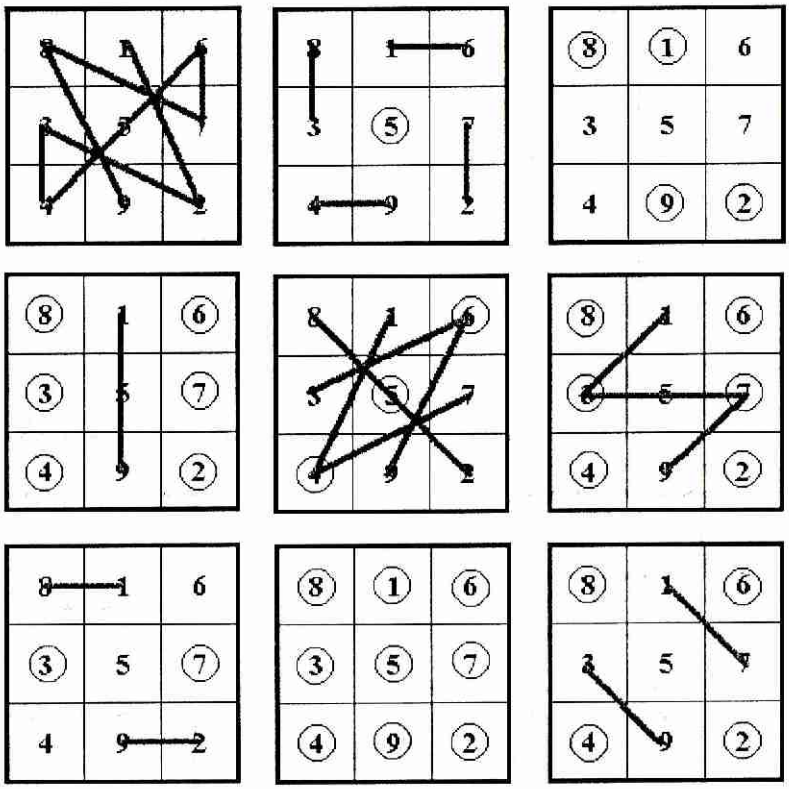
This is only one type of design that can be employed as a transducer, the incorporation of many other outside stimuli with this coil can also be harnessed, if considered by the design parameters..



The next listing is the 11 sequence with all the other sequences blocked in, so you can study the fundamental actions with a magic sqr 3 numeric layout. Remember that Pascal's triangle can also be built from a multiple of 11's.

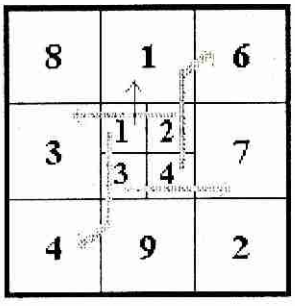
Internal Sequences

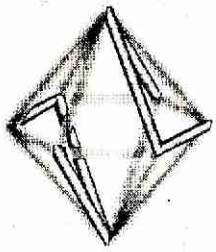
Position	Eleven Sequence	Nine Grouped Symmetry	Blocks of Ten	Odd/Even 1's ,10's
-4	-50	-50		
-3	-39	-39		
-2	-28	-28		
-1	-17	-17		
0	-6	-6		
1	5	5		
2	16	16		4
3	27	27		
4	38	38		
5	49	49		
6	60	60		5
7	71	71		
8	82	82		
9	93	93		
10	104	104		
11	115	115		5
12	126	126		
13	137	137		
14	148	148		
15	159	159		
16	170	170		4
17	181	181		
18	192	192		
19	203	203		
20	214	214		6
21	225	225		
22	236	236		
23	247	247		
24	258	258		
25	269	269		
26	280	280		3
27	291	291		
28	302	302		
29	313	313		7
30	324	324		
31	335	335		
32	346	346		
33	357	357		
34	368	368		
35	379	379		
36	390	390		2
37	401	401		
38	412	412		8
39	423	423		
40	434	434		
41	445	445		
42	456	456		
43	467	467		
44	478	478		
45	489	489		
46	500	500		1
47	511	511		9
48	522	522		
49	533	533		
50	544	544		
51	555	555		
52	566	566		
53	577	577		
54	588	588		
55	599	599		
56	610	610		



This set of squares has the 11 sequence(1's,10's), broken down with the odd/even sequence grouping(sets of 9), creating a stable equilibrium as it counts down the paired numbers.

This same group can be reduced to a set of 6 equilibrium states and will show extraordinary patterns when mapped onto the hexagonal dypyramid.





The square illustrates how the center 5 works to keep the numbers balanced, as you can see the diagonals of the center are equal to 5, and 4 pairs of numbers help make 3,4,6,7. The 1 and 2 are singular with the remaining 3 adding to the balanced number 8,9.

The Harmonic 9 sets will show most of the numbers that you will encounter in a sqr 3 dissection.

Harmonics

Harmonics of Each Harmonic

Fundamental		9	C 1	C 2	G 3	C 4	E 5	G 6	A# 7	C 8	D 9	E 10	F 11	G 12
C	1		9	18	27	36	45	54	63	72	81	90	99	108
C	2		18	36	54	72	90	108	126	144	162	180	198	216
G	3		27	54	81	108	135	162	189	216	243	270	297	324
C	4		36	72	108	144	180	216	252	288	324	360	396	432
E	5		45	90	135	180	225	270	315	720	405	450	495	540
G	6		54	108	162	216	270	324	378	432	486	540	594	648
A#	7		63	126	189	252	315	378	441	504	567	630	693	756
C	8		72	144	216	288	360	432	504	576	648	720	792	864
D	9		81	162	243	324	405	486	567	648	729	810	891	972
E	10		90	180	270	360	450	540	630	720	810	900	990	1080
F	11		99	198	297	396	495	594	693	792	891	990	1089	1188
G	12		108	216	324	432	540	648	756	864	972	1080	1188	1296
A	13		117	234	351	468	585	702	819	936	1053	1170	1287	1404
A#	14		126	252	378	504	630	756	882	1008	1134	1260	1386	1512
B	15		135	270	405	540	675	810	945	1080	1215	1350	1485	1620
C	16		144	288	432	576	720	864	1008	1152	1296	1440	1584	1728

72	9	54		135	
27	45	63		135	
36	81	18		135	
135	135	135		135	405

9	108	72	117	306	
135	54	90	27	306	
126	63	99	18	306	
36	81	45	144	306	
306	306	306	306	306	1224

144	18	108		270	
54	90	126		270	
72	162	36		270	
270	270	270		270	810

18	216	144	234	612	
270	108	180	54	612	
252	126	198	36	612	
72	162	90	288	612	
612	612	612	612	612	2448

216	27	162		405	
81	135	189		405	
108	243	54		405	
405	405	405		405	1215

27	324	216	351	918	
405	162	270	81	918	
378	189	297	54	918	
108	243	135	432	918	
918	918	918	918	918	3672

288	36	216		540	
108	180	252		540	
144	324	72		540	
540	540	540		540	1620

36	432	288	468	1224	
540	216	360	108	1224	
504	252	396	72	1224	
144	324	180	576	1224	
1224	1224	1224	1224	1224	4896

360	45	270		675	
135	225	315		675	
180	405	90		675	
675	675	675		675	2025

45	540	360	585	1530	
675	270	450	135	1530	
630	315	495	90	1530	
180	405	225	720	1530	
1530	1530	1530	1530	1530	6120

432	54	324		810	
162	270	378		810	
216	486	108		810	
810	810	810		810	2430

54	648	432	702	1836	
810	324	540	162	1836	
756	378	594	108	1836	
216	486	270	864	1836	
1836	1836	1836	1836	1836	7344

504	63	378	945
189	315	441	945
252	567	126	945
945	945	945	945 2835

63	756	504	819	2142
945	378	630	189	2142
882	441	693	126	2142
252	567	315	1008	2142
2142	2142	2142	2142	2142 8568

576	72	432	1080
216	360	504	1080
288	648	144	1080
1080	1080	1080	1080 3240

72	864	576	936	2448
1080	432	720	216	2448
1008	504	792	144	2448
288	648	360	1152	2448
2448	2448	2448	2448	2448 9792

648	81	486	1215
243	405	567	1215
324	729	162	1215
1215	1215	1215	1215 3645

81	972	648	1053	2754
1215	486	810	243	2754
1134	567	891	162	2754
324	729	405	1296	2754
2754	2754	2754	2754	2754 11016

720	90	540	1350
270	450	630	1350
360	810	180	1350
1350	1350	1350	1350 4050

90	1080	720	1170	3060
1350	540	900	270	3060
1260	630	990	180	3060
360	810	450	1440	3060
3060	3060	3060	3060	3060 12240

792	99	594	1485
297	495	693	1485
396	891	198	1485
1485	1485	1485	1485 4455

99	1188	792	1287	3366
1485	594	990	297	3366
1386	693	1089	198	3366
396	891	495	1584	3366
3366	3366	3366	3366	3366 13464

864	108	648	1620
324	540	756	1620
432	972	216	1620
1620	1620	1620	1620 4860

108	1296	864	1404	3672
1620	648	1080	324	3672
1512	756	1188	216	3672
432	972	540	1728	3672
3672	3672	3672	3672	3672 14688

Line num & Total sum

Line num & Total sum

1080	135	810	2025
405	675	945	2025
540	1215	270	2025
2025	2025	2025	2025 6075

2448	306	1836	4590
918	1530	2142	4590
1224	2754	612	4590
4590	4590	4590	4590 13770

3240	405	2430	6075
1215	2025	2835	6075
1620	3645	810	6075
6075	6075	6075	6075 18225

9792	1224	7344	18360
3672	6120	8568	18360
4896	11016	2448	18360
18360	18360	18360	18360 55080

135	1620	1080	1755	4590	
2025	810	1350	405	4590	
1890	945	1485	270	4590	
540	1215	675	2160	4590	
4590	4590	4590	4590	4590	18360

306	3672	2448	3978	10404	
4590	1836	3060	918	10404	
4284	2142	3366	612	10404	
1224	2754	1530	4896	10404	
10404	10404	10404	10404	10404	41616

405	4860	3240	5265	13770	
6075	2430	4050	1215	13770	
5670	2835	4455	810	13770	
1620	3645	2025	6480	13770	
13770	13770	13770	13770	13770	55080

1224	14688	9792	15912	41616	
18360	7344	12240	3672	41616	
17136	8568	13464	2448	41616	
4896	11016	6120	19584	41616	
41616	41616	41616	41616	41616	166464

2295	3240	135	1080	2025	8775	
3105	675	945	1890	2160	8775	
540	810	1755	2700	2970	8775	
1350	1620	2565	2835	405	8775	
1485	2430	3375	270	1215	8775	
8775	8775	8775	8775	8775	8775	43875

5202	7344	306	2448	4590	19890	
7038	1530	2142	4284	4896	19890	
1224	1836	3978	6120	6732	19890	
3060	3672	5814	6426	918	19890	
3366	5508	7650	612	2754	19890	
19890	19890	19890	19890	19890	19890	99450

6885	9720	405	3240	6075	26325	
9315	2025	2835	5670	6480	26325	
1620	2430	5265	8100	8910	26325	
4050	4860	7695	8505	1215	26325	
4455	7290	10125	810	3645	26325	
26325	26325	26325	26325	26325	26325	131625

20808	29376	1224	9792	18360	79560	
28152	6120	8568	17136	19584	79560	
4896	7344	15912	24480	26928	79560	
12240	14688	23256	25704	3672	79560	
13464	22032	30600	2448	11016	79560	
79560	79560	79560	79560	79560	79560	397800

These tables should help you to find re-occurring numeric patterns, note that the totals of each square three has either a 5 or a 0 are at the ones column. Another amazing fact is, that every number in these columns becomes a reduced number of 9. The appearance of both an equilibrium condition and a pattern must now be the criteria to further unify these different approaches to the same problem, it is only by visually following certain conditions that numbers can be mapped onto grids for geometric analysis.

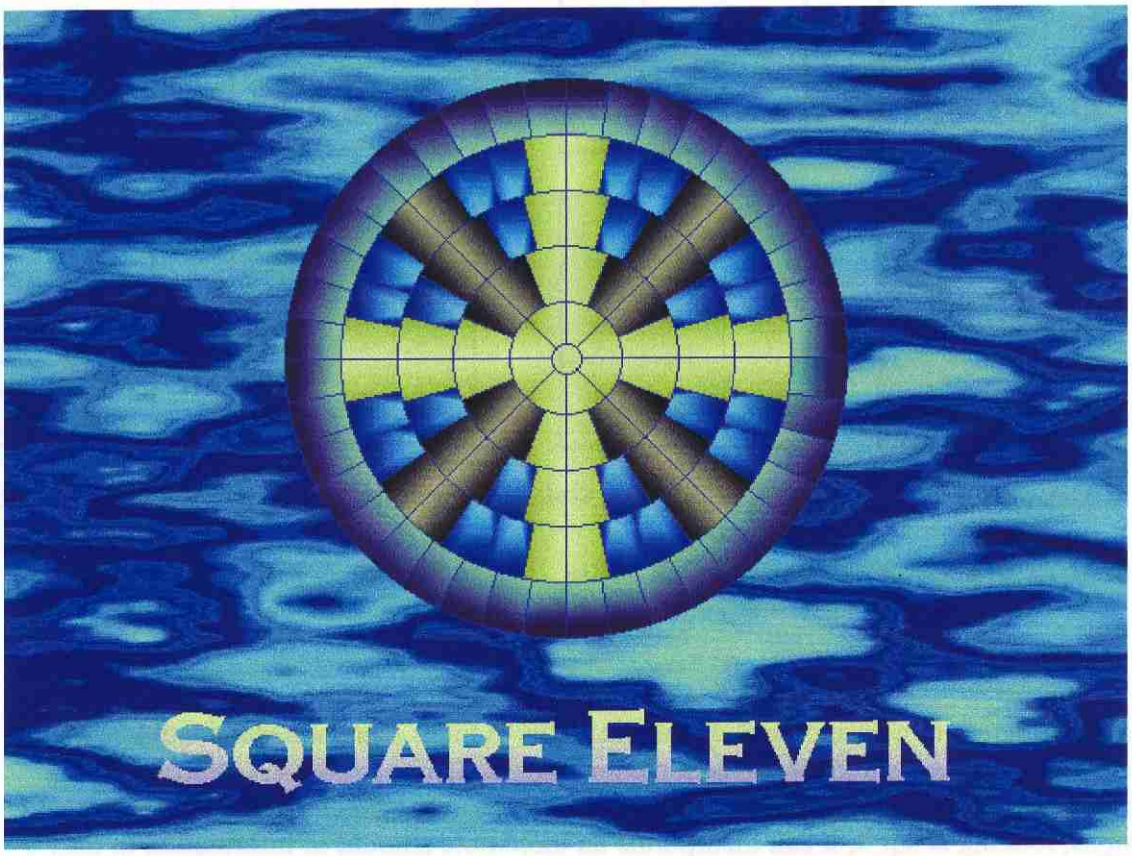
If you treat each number as a volumetric increase in the direction of the page then it simplifies the problem of ratios and balance accordingly to the mass density of your basic units. To be positive about this, the magic square balance sheet must be unified before any results in harmonic energy transformations can take place. Having only shown 3, 4, 5 magic squares so far the other form that will play a role is the magic square of 6, which I will explain in another chapter.

Now the linkage between the numbers 0,3,5,8, 9, 10, 11,12, 15 is somewhat clearer, again what's must be made clearer is 2, 4, 6, 7, 13, 14. The linkage between 4 and 6 is very obvious, look at the their position in the level 1, it lays diagonally across the center skipping the addition of the center 5, making it act as a pair to add to 10. The pairing tens or other number pairing occur around the perimeter of every layer in a magic square system, they also move in a perfect square spiral towards the center. The other way the pairs display pattern is when their opposite pair doesn't add to the equations of the Pairing numbers and balance by compensating with a set of four. Note the fact we are dealing with 4 units acting as a unity such as nature does. The exploration of this 4 set numbers will be covered by studying magic squares 4, 8, 12, 16, 20 or any that are divisible by four. The other even numbers 6, 10, 14, 18, 22 are used as combinations with odd square numbers and divisible by 4 sets. The even number set that doesn't divide by 4 is the same number set as electron shells around atoms.

Here are the equations to workout the numeric conditions of the magic squares to any size:

Sv		=Start value of the lowest number used in a magic sqr eg,base 1=1
(Sv -1)	= V	=Positional adjustment for scale length e.g. sqr 3 base 1 is 0
n		=Which Magic square number you will use e.g., sqr 3
n^2		=The quantity of squares in a magic square e.g., sqr 3 has 9
$n^2 + 1 + V * 2$		=Pairing of the orbital numbers e.g., sqr 3 base 1 is 10
$(n^3 + n) / 2 + V * n$		=Line number value of square e.g. , sqr 3 base 1 is 15
$(n^4 - n^2)/ 2 + V * n^2$		=Total value of the square e.g. sqr 3 base 1 is 45
$2 * n + 2$		=The number of options for line numbers e.g. sqr 3 base 1 is 8
$2 * (n^2 + 1) * V * 2$		=The four corner values e.g. sqr 3 base 1 is 20

The constant of 2 is present in all of the equations, this alone shows the pairing nature of magic square balance. There are a few more reasons to choose a 6, 4 correlation, that as either 8 parts acting on an rearrangement of the same 8 parts due to a numeric affinity of rotations , 8 * 8 = 64 or as the value of the Ethers impedance which is 6.4e-16 kg mtr3 m/s. The fact that 64 Hz = Low C, and that there is 64 condon sets in the genetic code or maybe if we just divide 6 / 4 we will certainly be surprised here as the result equals 1.5. The greater assured affinity is with the step-wise nature of the number sequence in the squares, traveling across the center of the square will balance both sides. This particular idea occurred when I was working on musical scale equilibrium, below is the working for this square set.



A Major Chord

by Arto Heino 1996

A C# E
6 9 3

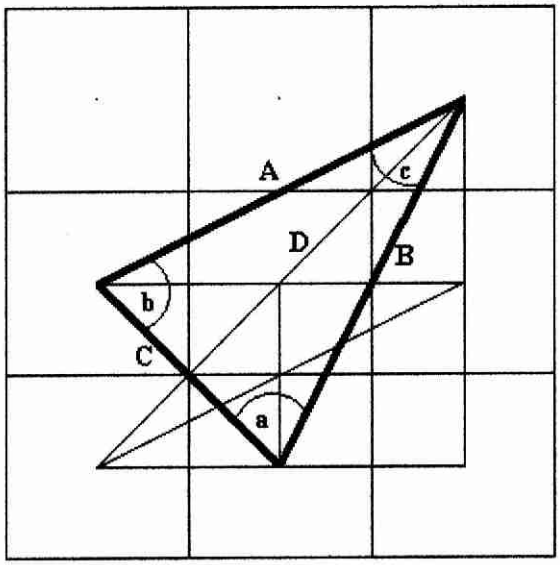
$A = \sqrt{5}$
$B = \sqrt{5}$
$C = \sqrt{2}$
$D = \sqrt{4.5}$

a = 71.565051

b = 71.565051

c = 36.869898

Options = 8



Frequencies of Musical Scales
Only Whole Tone Numbers

Perimeter of Triangle = 5.8863495

Area = 1.5

Ratio = 9 / 1.5 = 6

75 / 5 = 15

$\sqrt{225} = 15$

	A Major	A Hminor
Line Value	= 75	= 90
Total Value	= 225	= 270
8 * 75	= 600	= 720

Shifted Frequency Scale Forms

32	16	27
20	25	30
23	34	18

C	C	A
E	G#	B
F#	C#	D

D#	F	C
G#	B	D
A	E	F#

37	21	32
25	30	35
28	39	23

C	C	(A)
E	G#	B
F#	C#	D

A Major Scale

A B C# D E F# G#

C	C	(A)
E	G#	B
F#	C#	D

A Melodic Minor Scale Ascending

A B C D E F# G#

D#	F	C
G#	B	D
(A)	E	F#

A Harmonic minor scale

A B C D E F G#

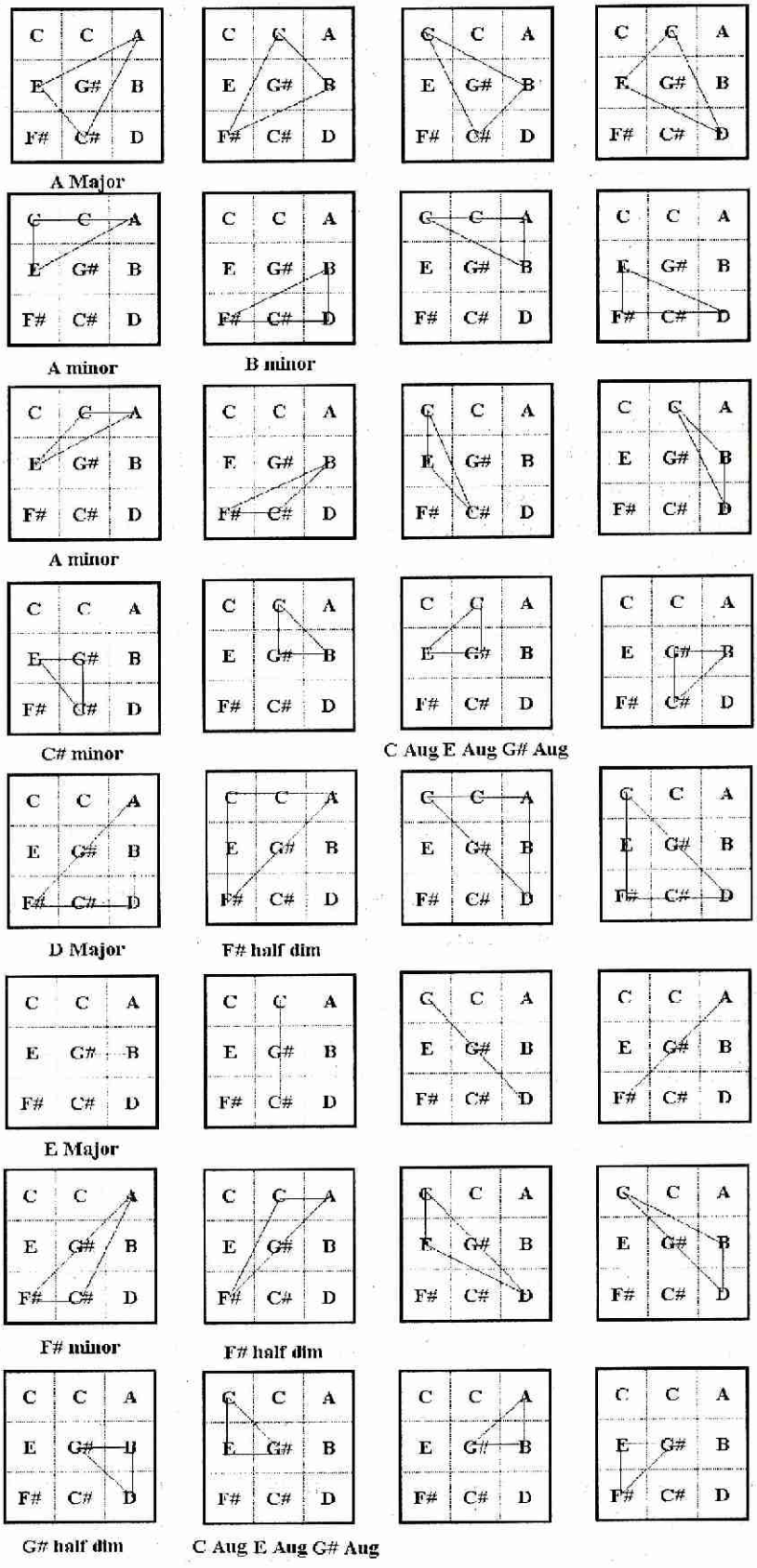
D#	F	C
G#	B	D
(A)	E	F#

A Melodic Minor Scale Ascending

A B C D E F# G#

The appreciation of a harmonic and melodic status to these arrangements, would be quite rewarding for those who have musical composition skills. The rich vein of artistic composition based on magic square forms can now be seen related to many other types of designs, looking at sqr 3, it can incorporate an incredible amount of information in only 9 numbers.

32 Balanced Transformations



Look at that 32 sets of triads , 96 single numbers, 96/64 = 1.5. Noting that there is two pairs of triads at opposite poles therefore there is 16 sets of pairs working together. Here is the numeric list for the set of triads in order:

					Reduced numbers	***Chord symbols***
A C# E	=	27, 34, 20	=	81	9	A
A C E	=	27, 16, 20	=	63	9	Am
B F# D	=	30, 23, 18	=	71	8	Bm
C E G#	=	16, 20, 25	=	61	7	C Aug
C# E G#	=	34, 20, 25	=	79	7	C#m
D F# A	=	18, 23, 27	=	68	5	D
E G# B	=	20, 25, 30	=	75	3	E
F# A C#	=	23, 27, 34	=	84	3	F#m
F# A C	=	23, 27, 16	=	66	3	F#Half dim
G# B D	=	25, 30, 18	=	73	1	G#Half dim

The Ten chords that are shown are used in music for modulation and highly melodic passages. The chords A and E are what they call in classical music a fifth apart, and they are very concordant when sounded together or in a sequence. The Cycle of Fifths and its inverse the cycle of Fourths are natural ways of resolving harmonies, if you have built accordingly to the harmonic series and the magic squares you will make any device sing in tune with itself.

The clear idea of a system that begins its oscillatory journey from a foundation mono-chord, must be upper most on the designers criteria.

C	G	D	A	E	B	F#	C#	G#	D#	A#	F
16	24	18	27	20	30	23	34	25	37	29	21
256	384	288	432	320	480	368	544	400	592	464	336

The higher set of numbers is 16 harmonics above the base of 16. The number 16 was the first base pair when we went through the eleven building sequence.

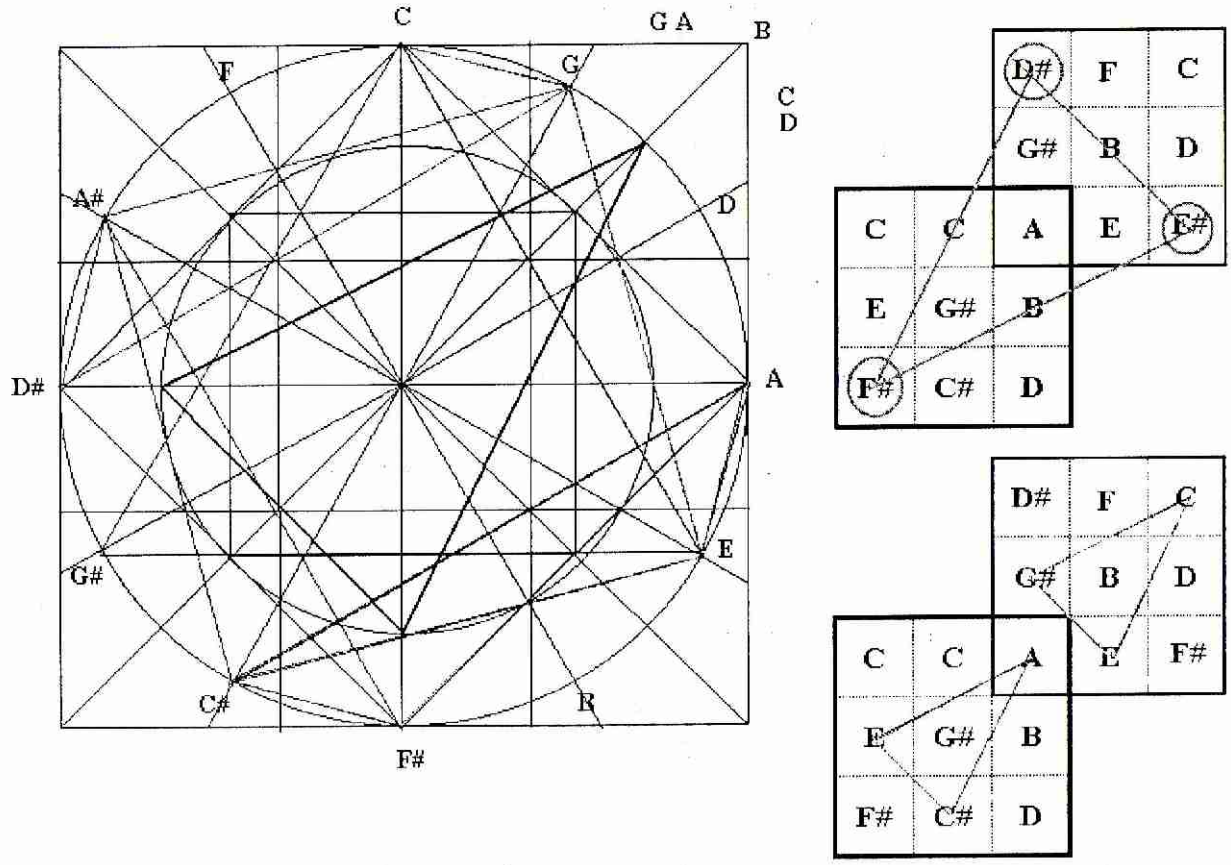
d1	= half step	diminished
M2	= Whole step	Major second
m3	= Whole step + half step	minor third

Notes in the eleven sequence.

16	27	38	49	60	71	82	93	104	115	126	
C	A	A#	G#	B	D	F	F#	G#	A#	C	
m3	d1	M2	m3	m6	m3	d1	M2	M2	M2	d1	
137	148	159	170	179	190	201	212	223	234	245	256
C#	D#	E	F	F#	G	G#	A	A	A#	B	C
M2	d1	d1	d1	d1	d1	d1	d0.5	d1	d1	d1	

How simple to see this list grow rapidly to divisions between notes, beginning when the separation between consecutive notes equals eleven. This range of numbers is the close to the actual musical scales used by all the instruments during Mozart's day. Remember the actual Chromatic Interval ratio is 2^(1/12) = 1.05946.

The Cycle of Fifths Running Clockwise



Another level of complexity has shown itself when the two related squares are joined by the shift of value 23, 25, 27 to 28, 30, 32 being only a value of 2 separating the next number.

2 2 2 1 2 2 2 = 13 the next number after 8 in the Fibonacci series

The shift of A from 27 to a sharper 28 is a micro tonal adjustment, which can normally constitute a sense of feeling when heard and the ear responds more cycloidaly from the tonal shift. If the transition time is too quick and the ear wasn't prepared then that will normally be heard as a noise. Adding 27 and 28 will give us a Fibbonaci number 55.

Looking at the large triangle joining D#, F# being of value when added,

23 + 37 + 23 = 83

With 83 surrounding 55 what becomes the difference 28, is a tendency for modulation from the starting 27.

The self-replicating patterns are fractal in nature, by listing the ratios between each note and develop the magic square for it then maybe we will see if the Feigenbaum number appears.

			4.6875
2	1	***1.6875***	4.6875
1.25	1.5625	1.875	4.6875
1.4375	2.125	1.125	4.6875
4.6875	4.6875	4.6875	**4.6875** **14.0625**

The Feigenbaum constant has the value of 4.6692016..., so we must rework the equation of growth so we can find the values for population and values for environment..

Bifurcation

(in Latin means fork)

If we choose a basic model for growth it will be a factor of 2 e.g..

♋ = 1 ♋ ♋ = 2 ♋ ♋ ♋♋ = 4 *Quantity of each generation*

= 1 = 3 = 7 *Accumulative population*

if $a = 2$ and $x = 1$ as it starts $x \rightarrow ax$

therefore if let to continue : $x0 = 1$ $x1 = 2$ $x2 = 4$ $x3 = 8$ $x4 = 16$

$x5 = 32$ $x6 = 64$ $x7 = 128$ $x8 = 256$ $x9 = 512$

As you can see this can grow very fast at only 9 generations it has increased by 512%. If let to continue, generation 19 would be a whopping 524288% increase, this is obviously too great an increase for any environment. Restricted growth can easily be accommodated by including a boundary for maximum values.

The model for restricted growth relies on the Malthusian factor a , which can be interpreted as the degree of fertility of the insect population., a decreases as the number x increases. As there are x insects, $n - x$ is a measure of the space nature permits for population growth.

The value n is the environment factor, as this is about sqr 3 this will be 45 .

If $n = 45$ then $0 > x > 45$.

In this equation we replace a with $a(n - x)$. The model then becomes $x \rightarrow ax(n - x)$ Using indices the equation becomes: $xn+1 = axn(n - xn)$. If it is written in a computer language such as basic, the equation becomes:

X = 9	*population*	(Total Number of Squares)
A = 0.0333333	*fertility*	(= 1/30 = 1/(15 +15), refer diagonals)
N = 45	*environment*	(Total Value of sqr 3)
PRINT **X**	*initial population*	
FOR **Z** = 1 TO 23		
X = **A*** **X** * (**N** - **X**)		
PRINT **X**	*consequential populations*	
NEXT **Z**		

a	= 0.033333	n = 45		x = 9
$x0$	= 9	$x1$	10.8	
$x2$	= 12.312	$x3$	13.41516	
$x4$	= 14.12385	$x5$	14.53634	
$x6$	= 14.76101	$x7$	14.8786	
$x8$	= 14.93881	$x9$	14.96928	
$x10$	= 14.98461	$x11$	14.9923	
$x12$	= 14.99615	$x13$	14.99807	
$x14$	= 14.99904	$x15$	14.99952	
$x16$	= 14.99976	$x17$	14.99988	
$x18$	= 14.99994	$x19$	14.99997	
$x20$	= 14.99999	$x21$	14.99999	
$x22$	= 15	$x23$	15	

This set of tables show you that an equilibrium has been reached by the 22nd generation, starting with a 9 set reaching 15 by 11*2, does show you a simple numeric relationship between these values. The numbers move in a curved, non-linear fashion.

The complete set of tables within a reasonable accuracy, are compiled so you can find the numeric patterns of diminishing and stable single numbers, 2,4,8 or more set number oscillations, and the final Chaos of numbers.

FERTILITY 0.001			
1	0.324	2	0.014475
3	0.0006512	4	2.93E-05
5	1.319E-06	6	5.934E-08
7	2.67E-09	8	1.202E-10
9	5.407E-12	10	2.433E-13
11	1.095E-14	12	4.927E-16
13	2.217E-17	14	9.978E-19
15	4.49E-20	16	2.02E-21
17	9.092E-23	18	4.091E-24
19	1.841E-25	20	8.285E-27
21	3.728E-28	22	1.678E-29
23	7.55E-31	24	3.397E-32
25	1.529E-33	26	6.88E-35
27	3.096E-36	28	1.393E-37
29	6.269E-39	30	2.821E-40
31	1.27E-41	32	5.717E-43
33	2.522E-44	34	0
35	0	36	0

FERTILITY 0.002			
1	0.648	2	0.0574802
3	0.0051666	4	0.0004649
5	4.184E-05	6	3.766E-06
7	3.389E-07	8	3.05E-08
9	2.745E-09	10	2.471E-10
11	2.224E-11	12	2.001E-12
13	1.801E-13	14	1.621E-14
15	1.459E-15	16	1.313E-16
17	1.182E-17	18	1.064E-18
19	9.573E-20	20	8.615E-21
21	7.754E-22	22	6.978E-23
23	6.281E-24	24	5.653E-25
25	5.087E-26	26	4.579E-27
27	4.121E-28	28	3.709E-29
29	3.338E-30	30	3.004E-31
31	2.704E-32	32	2.433E-33
33	2.19E-34	34	1.971E-35
35	1.774E-36	36	1.596E-37

FERTILITY 0.003			
1	0.972	2	0.1283856
3	0.0172626	4	0.0023323
5	0.0003148	6	4.25E-05
7	5.738E-06	8	7.746E-07
9	1.046E-07	10	1.412E-08
11	1.906E-09	12	2.573E-10
13	3.473E-11	14	4.689E-12
15	6.33E-13	16	8.546E-14
17	1.154E-14	18	1.557E-15
19	2.103E-16	20	2.839E-17
21	3.832E-18	22	5.173E-19
23	6.984E-20	24	9.428E-21
25	1.273E-21	26	1.718E-22
27	2.32E-23	28	3.132E-24
29	4.228E-25	30	5.707E-26
31	7.705E-27	32	1.04E-27
33	1.404E-28	34	1.896E-29
35	2.559E-30	36	3.455E-31

FERTILITY 0.004			
1	1.296	2	0.2265615
3	0.0405758	4	0.0072971
5	0.0013133	6	0.0002364
7	4.255E-05	8	7.659E-06
9	1.379E-06	10	2.481E-07
11	4.467E-08	12	8.04E-09
13	1.447E-09	14	2.605E-10
15	4.689E-11	16	8.44E-12
17	1.519E-12	18	2.734E-13
19	4.922E-14	20	8.86E-15
21	1.595E-15	22	2.871E-16
23	5.167E-17	24	9.301E-18
25	1.674E-18	26	3.013E-19
27	5.424E-20	28	9.763E-21
29	1.757E-21	30	3.163E-22
31	5.694E-23	32	1.025E-23
33	1.845E-24	34	3.321E-25
35	5.977E-26	36	1.076E-26

FERTILITY 0.023			
1	7.452001	2	6.435578
3	5.708241	4	5.158597
5	4.727092	6	4.378597
7	4.090889	8	3.849157
9	3.64311	10	3.465357
11	3.310445	12	3.174253
13	3.053607	14	2.946019
15	2.849512	16	2.762492
17	2.683658	18	2.61194
19	2.546447	20	2.486432
21	2.431263	22	2.380404
23	2.333392	24	2.289833
25	2.249381	26	2.211736
27	2.176636	28	2.14385
29	2.113175	30	2.08443
31	2.057453	32	2.032103
33	2.008249	34	1.985778
35	1.964584	36	1.944574

FERTILITY 0.024			
1	7.776	2	6.946893
3	6.344421	4	5.885935
5	5.525349	6	5.23467
7	4.995801	8	4.796473
9	4.628044	10	4.484237
11	4.360375	12	4.252896
13	4.159037	14	4.076618
15	4.003896	16	3.93946
17	3.882153	18	3.831018
19	3.785259	20	3.744204
21	3.707283	22	3.674011
23	3.643972	24	3.616806
25	3.5922	26	3.569882
27	3.549616	28	3.531191
29	3.514423	30	3.499149
31	3.485224	32	3.47252
33	3.46092	34	3.450323
35	3.440636	36	3.431776

FERTILITY 0.025			
1	8.1	2	7.472251
3	7.010419	4	6.658073
5	6.382084	6	6.161571
7	5.982644	8	5.835674
9	5.713757	10	5.611801
11	5.523969	12	5.453307
13	5.391507	14	5.338737
15	5.293527	16	5.254683
17	5.221226	18	5.19235
19	5.167382	20	5.143759
21	5.127008	22	5.11073
23	5.096582	24	5.084277
25	5.073565	26	5.064235
27	5.056103	28	5.049012
29	5.042826	30	5.037427
31	5.032714	32	5.028598
33	5.025003	34	5.021863
35	5.019119	36	5.01672

FERTILITY	0.026		
1	8.424001	2	8.011024
3	7.704309	4	7.470777
5	7.289684	6	7.147305
7	7.034164	8	6.943506
9	6.870394	10	6.811093
11	6.762814	12	6.723366
13	6.691044	14	6.664501
15	6.642662	16	6.624666
17	6.609818	18	6.597536
19	6.58742	20	6.579035
21	6.572095	22	6.566349
23	6.561589	24	6.557644
25	6.554374	26	6.551663
27	6.549415	28	6.54755
29	6.546004	30	6.544721
31	6.543656	32	6.542773
33	6.54204	34	6.541432
35	6.540928	36	6.540509

FERTILITY 0.045			
1	14.57999	2	19.95855
3	22.49059	4	22.78123
5	22.77768	6	22.77777
7	22.77777	8	22.77777
9	22.77777	10	22.77777
11	22.77777	12	22.77777
13	22.77777	14	22.77777
15	22.77777	16	22.77777
17	22.77777	18	22.77777
19	22.77777	20	22.77777
21	22.77777	22	22.77777
23	22.77777	24	22.77777
25	22.77777	26	22.77777
27	22.77777	28	22.77777
29	22.77777	30	22.77777
31	22.77777	32	22.77777
33	22.77777	34	22.77777
35	22.77777	36	22.77777

FERTILITY 0.046			
1	14.90399	2	20.63332
3	23.1272	4	23.26939
5	23.26026	6	23.2609
7	23.26086	8	23.26086
9	23.26086	10	23.26086
11	23.26086	12	23.26086
13	23.26086	14	23.26086
15	23.26086	16	23.26086
17	23.26086	18	23.26086
19	23.26086	20	23.26086
21	23.26086	22	23.26086
23	23.26086	24	23.26086
25	23.26086	26	23.26086
27	23.26086	28	23.26086
29	23.26086	30	23.26086
31	23.26086	32	23.26086
33	23.26086	34	23.26086
35	23.26086	36	23.26086

FERTILITY 0.047			
1	15.22799	2	21.30828
3	23.72699	4	23.72298
5	23.72344	6	23.72339
7	23.72339	8	23.72339
9	23.72339	10	23.72339
11	23.72339	12	23.72339
13	23.72339	14	23.72339
15	23.72339	16	23.72339
17	23.72339	18	23.72339
19	23.72339	20	23.72339
21	23.72339	22	23.72339
23	23.72339	24	23.72339
25	23.72339	26	23.72339
27	23.72339	28	23.72339
29	23.72339	30	23.72339
31	23.72339	32	23.72339
33	23.72339	34	23.72339
35	23.72339	36	23.72339

FERTILITY	0.048		
1	15.55199	2	21.9828
3	24.28715	4	24.14668
5	24.16983	6	24.16615
7	24.16674	8	24.16664
9	24.16666	10	24.16665
11	24.16666	12	24.16665
13	24.16666	14	24.16665
15	24.16666	16	24.16665
17	24.16666	18	24.16665
19	24.16666	20	24.16665
21	24.16666	22	24.16665
23	24.16666	24	24.16665
25	24.16666	26	24.16665
27	24.16666	28	24.16665
29	24.16666	30	24.16665
31	24.16666	32	24.16665
33	24.16666	34	24.16665
35	24.16666	36	24.16665

FERTILITY 0.067			
1	21.70799	2	33.8767
3	25.24697	4	33.41316
5	25.93923	6	33.12623
7	26.35331	8	32.92392
9	26.63865	10	32.77113
11	26.8505	12	32.65063
13	27.01537	14	32.5527
15	27.14793	16	32.47131
17	27.25712	18	32.4025
19	27.34874	20	32.34354
21	27.42675	22	32.29245
23	27.49396	24	32.24777
25	27.55246	26	32.2084
27	27.60378	28	32.17348
29	27.64913	30	32.14232
31	27.68945	32	32.1141
33	27.72548	34	32.08925
35	27.75783	36	32.06653

FERTILITY 0.068			
1	22.03199	2	34.41008
3	24.77918	4	34.07174
5	25.31943	6	33.88443
7	25.61182	8	33.76651
9	25.79346	10	33.68739
11	25.91426	12	33.63229
13	25.99788	14	33.59299
15	26.05729	16	33.56449
17	26.10023	18	33.54359
19	26.13165	20	33.52814
21	26.15484	22	33.51665
23	26.17206	24	33.50806
25	26.18492	26	33.50164
27	26.19454	28	33.49681
29	26.20176	30	33.49318
31	26.20719	32	33.49044
33	26.21128	34	33.48838
35	26.21436	36	33.48682

FERTILITY 0.069			
1	22.35599	2	34.9298
3	24.27074	4	34.71488
5	24.63621	6	34.61636
7	24.80162	8	34.56571
9	24.88613	10	34.53837
11	24.93159	12	34.52326
13	24.95668	14	34.5148
15	24.97072	16	34.51003
17	24.97863	18	34.50732
19	24.98311	20	34.50579
21	24.98565	22	34.50492
23	24.98709	24	34.50442
25	24.98791	26	34.50414
27	24.98838	28	34.50398
29	24.98865	30	34.50389
31	24.9888	32	34.50384
33	24.98888	34	34.50381
35	24.98893	36	34.50379

FERTILITY	0.07		
1	22.67999	2	35.43521
3	23.7251	4	35.33242
5	23.91052	6	35.29821
7	23.97189	8	35.28583
9	23.99406	10	35.28123
11	24.0023	12	35.2795
13	24.0054	14	35.27885
15	24.00656	16	35.2786
17	24.00701	18	35.27851
19	24.00717	20	35.27847
21	24.00723	22	35.27846
23	24.00726	24	35.27845
25	24.00727	26	35.27845
27	24.00727	28	35.27845
29	24.00727	30	35.27845
31	24.00727	32	35.27845
33	24.00727	34	35.27845
35	24.00727	36	35.27845

Returning briefly to a different set of parameters.

$n = 1$ $x = 0.001$ $1 < a \leq 2$ $a = 1.7$ *(note 1703 harmonic)*

$x0 = 0.001$

$x1 = 0.0016983$ *(note 16944 harmonic)*

$x2 = 0.002882207$

$x3 = 0.00488563$

$x4 = 0.008264993$

$x5 = 0.01393436$

↓

$x24 = 0.4117646$ *(4116361 = Cathie matter wavelength)*

FERTILITY 0.005			
1	1.62	2	0.3513781
3	0.0784427	4	0.0176189
5	0.0039627	6	0.0008915
7	0.0002006	8	4.513E-05
9	1.015E-05	10	2.285E-06
11	5.141E-07	12	1.157E-07
13	2.603E-08	14	5.856E-09
15	1.318E-09	16	2.964E-10
17	6.67E-11	18	1.501E-11
19	3.377E-12	20	7.598E-13
21	1.709E-13	22	3.846E-14
23	8.654E-15	24	1.947E-15
25	4.381E-16	26	9.858E-17
27	2.218E-17	28	4.99E-18
29	1.123E-18	30	2.526E-19
31	5.684E-20	32	1.279E-20
33	2.878E-21	34	6.475E-22
35	1.457E-22	36	3.278E-23

FERTILITY 0.006			
1	1.944	2	0.5022053
3	0.1340822	4	0.0360943
5	0.0097377	6	0.0026286
7	0.0007097	8	0.0001916
9	5.173E-05	10	1.397E-05
11	3.771E-06	12	1.018E-06
13	2.749E-07	14	7.423E-08
15	2.004E-08	16	5.412E-09
17	1.461E-09	18	3.945E-10
19	1.065E-10	20	2.876E-11
21	7.765E-12	22	2.097E-12
23	5.661E-13	24	1.528E-13
25	4.127E-14	26	1.114E-14
27	3.008E-15	28	8.123E-16
29	2.193E-16	30	5.921E-17
31	1.599E-17	32	4.317E-18
33	1.165E-18	34	3.147E-19
35	8.496E-20	36	2.294E-20

FERTILITY 0.007			
1	2.268	2	0.6784133
3	0.2104785	4	0.0659906
5	0.0207566	6	0.0063353
7	0.0020583	8	0.0006483
9	0.0002042	10	6.433E-05
11	2.026E-05	12	6.383E-06
13	2.011E-06	14	6.334E-07
15	1.995E-07	16	6.285E-08
17	1.98E-08	18	6.236E-09
19	1.964E-09	20	6.188E-10
21	1.949E-10	22	6.14E-11
23	1.934E-11	24	6.092E-12
25	1.919E-12	26	6.045E-13
27	1.904E-13	28	5.998E-14
29	1.889E-14	30	5.952E-15
31	1.873E-15	32	5.905E-16
33	1.86E-16	34	5.86E-17
35	1.846E-17	36	5.814E-18

FERTILITY 0.008			
1	2.592	2	0.8793724
3	0.3103877	4	0.1109689
5	0.0398503	6	0.0143334
7	0.0051584	8	0.0018568
9	0.0006684	10	0.0002406
11	8.663E-05	12	3.119E-05
13	1.123E-05	14	4.042E-06
15	1.455E-06	16	5.238E-07
17	1.886E-07	18	6.788E-08
19	2.444E-08	20	8.798E-09
21	3.167E-09	22	1.14E-09
23	4.105E-10	24	1.478E-10
25	5.32E-11	26	1.915E-11
27	6.894E-12	28	2.482E-12
29	8.935E-13	30	3.217E-13
31	1.158E-13	32	4.169E-14
33	1.501E-14	34	5.403E-15
35	1.945E-15	36	7.002E-16

FERTILITY 0.027			
1	8.748001	2	8.562579
3	8.423955	4	8.3191D4
5	8.23911	6	8.17768
7	8.130272	8	8.093546
9	8.065011	10	8.04279
11	8.025456	12	8.011915
13	8.001327	14	7.99304
15	7.986549	16	7.981464
17	7.977478	18	7.974352
19	7.9719	20	7.969977
21	7.968469	22	7.967285
23	7.966356	24	7.965627
25	7.965055	26	7.964605
27	7.964253	28	7.963976
29	7.963759	30	7.963589
31	7.963455	32	7.96335
33	7.963267	34	7.963202
35	7.963152	36	7.963112

FERTILITY 0.028			
1	9.072001	2	9.126288
3	9.167028	4	9.197494
5	9.220214	6	9.237124
7	9.249693	8	9.259023
9	9.2659-44	10	9.271074
11	9.274876	12	9.277691
13	9.279776	14	9.28132
15	9.282462	16	9.283308
17	9.283935	18	9.284398
19	9.284741	20	9.284995
21	9.285183	22	9.285322
23	9.285425	24	9.285501
25	9.285558	26	9.2856
27	9.28563	28	9.285653
29	9.28567	30	9.285683
31	9.285692	32	9.285699
33	9.285704	34	9.285707
35	9.28571	36	9.285712

FERTILITY 0.029			
1	9.396001	2	9.701522
3	9.931021	4	10.09985
5	10.22211	6	10.3096
7	10.37168	8	10.41546
9	10.44621	10	10.46773
11	10.48276	12	10.49324
13	10.50055	14	10.50563
15	10.50917	16	10.51163
17	10.51334	18	10.51453
19	10.51536	20	10.51593
21	10.51633	22	10.51661
23	10.5168	24	10.51694
25	10.51703	26	10.5171
27	10.51714	28	10.51717
29	10.5172	30	10.51721
31	10.51722	32	10.51723
33	10.51723	34	10.51724
35	10.51724	36	10.51724

FERTILITY 0.03			
1	9.720001	2	10.28765
3	10.71326	4	11.01968
5	11.23357	6	11.37953
7	11.47755	8	11.54267
9	11.58561	10	11.61378
11	11.63221	12	11.64424
13	11.65207	14	11.65718
15	11.6605	16	11.66266
17	11.66408	18	11.66497
19	11.66557	20	11.66595
21	11.6662	22	11.66637
23	11.66647	24	11.66654
25	11.66659	26	11.66662
27	11.66664	28	11.66665
29	11.66666	30	11.66666
31	11.66666	32	11.66667
33	11.66667	34	11.66667
35	11.66667	36	11.66667

FERTILITY 0.049			
1	15.87599	2	22.65624
3	24.80504	4	24.54589
5	24.60114	6	24.58991
7	24.59222	8	24.59175
9	24.59184	10	24.59182
11	24.59183	12	24.59183
13	24.59183	14	24.59183
15	24.59183	16	24.59183
17	24.59183	18	24.59183
19	24.59183	20	24.59183
21	24.59183	22	24.59183
23	24.59183	24	24.59183
25	24.59183	26	24.59183
27	24.59183	28	24.59183
29	24.59183	30	24.59183
31	24.59183	32	24.59183
33	24.59183	34	24.59183
35	24.59183	36	24.59183

FERTILITY 0.05			
1	16.19999	2	23.32798
3	25.27821	4	24.92656
5	25.01808	6	24.99545
7	25.00112	8	24.9997
9	25.00006	10	24.99997
11	24.99999	12	24.99999
13	24.99999	14	24.99999
15	24.99999	16	24.99999
17	24.99999	18	24.99999
19	24.99999	20	24.99999
21	24.99999	22	24.99999
23	24.99999	24	24.99999
25	24.99999	26	24.99999
27	24.99999	28	24.99999
29	24.99999	30	24.99999
31	24.99999	32	24.99999
33	24.99999	34	24.99999
35	24.99999	36	24.99999

FERTILITY 0.051			
1	16.52399	2	23.99739
3	25.70438	4	25.29506
5	25.4203	6	25.3838
7	25.3946	8	25.39142
9	25.39236	10	25.39208
11	25.39216	12	25.39214
13	25.39215	14	25.39215
15	25.39215	16	25.39215
17	25.39215	18	25.39215
19	25.39215	20	25.39215
21	25.39215	22	25.39215
23	25.39215	24	25.39215
25	25.39215	26	25.39215
27	25.39215	28	25.39215
29	25.39215	30	25.39215
31	25.39215	32	25.39215
33	25.39215	34	25.39215
35	25.39215	36	25.39215

FERTILITY 0.052			
1	16.84799	2	24.66383
3	26.08151	4	25.65797
5	25.8064	6	25.75651
7	25.77353	8	25.76775
9	25.76972	10	25.76905
11	25.76928	12	25.7692
13	25.76923	14	25.76922
15	25.76922	16	25.76922
17	25.76922	18	25.76922
19	25.76922	20	25.76922
21	25.76922	22	25.76922
23	25.76922	24	25.76922
25	25.76922	26	25.76922
27	25.76922	28	25.76922
29	25.76922	30	25.76922
31	25.76922	32	25.76922
33	25.76922	34	25.76922
35	25.76922	36	25.76922

FERTILITY 0.071			
1	23.00399	2	35.9257
3	23.14603	4	35.9141
5	23.16813	6	35.91204
7	23.17206	8	35.91166
9	23.17278	10	35.91159
11	23.17291	12	35.91158
13	23.17293	14	35.91158
15	23.17293	16	35.91158
17	23.17293	18	35.91158
19	23.17293	20	35.91158
21	23.17293	22	35.91158
23	23.17293	24	35.91158
25	23.17293	26	35.91158
27	23.17293	28	35.91158
29	23.17293	30	35.91158
31	23.17293	32	35.91158
33	23.17293	34	35.91158
35	23.17293	36	35.91158

FERTILITY 0.072			
1	23.32799	2	36.40062
3	22.53762	4	36.44988
5	22.43885	6	36.44971
7	22.43918	8	36.44972
9	22.43917	10	36.44972
11	22.43917	12	36.44972
13	22.43917	14	36.44972
15	22.43917	16	36.44972
17	22.43917	18	36.44972
19	22.43917	20	36.44972
21	22.43917	22	36.44972
23	22.43917	24	36.44972
25	22.43917	26	36.44972
27	22.43917	28	36.44972
29	22.43917	30	36.44972
31	22.43917	32	36.44972
33	22.43917	34	36.44972
35	22.43917	36	36.44972

FERTILITY 0.073			
1	23.65199	2	36.85936
3	21.90429	4	36.93033
5	21.75513	6	36.91573
7	21.78587	8	36.91901
9	21.77897	10	36.91828
11	21.7805	12	36.91845
13	21.78016	14	36.91841
15	21.78024	16	36.91842
17	21.78022	18	36.91842
19	21.78022	20	36.91842
21	21.78022	22	36.91842
23	21.78022	24	36.91842
25	21.78022	26	36.91842
27	21.78022	28	36.91842
29	21.78022	30	36.91842
31	21.78022	32	36.91842
33	21.78022	34	36.91842
35	21.78022	36	36.91842

FERTILITY 0.074			
1	23.97599	2	37.30127
3	21.25074	4	37.347
5	21.15043	6	37.32771
7	21.19279	8	37.33603
9	21.17451	10	37.33247
11	21.18232	12	37.334
13	21.17897	14	37.33335
15	21.1804	16	37.33363
17	21.17979	18	37.33351
19	21.18005	20	37.33356
21	21.17994	22	37.33354
23	21.17999	24	37.33355
25	21.17997	26	37.33354
27	21.17998	28	37.33355
29	21.17997	30	37.33354
31	21.17998	32	37.33355
33	21.17997	34	37.33354
35	21.17998	36	37.33355

The ratio of consecutive steps for period doubling is a constant 4.6692016... , this particular number is known as Feigenbaum's number (F). F is a universal constant like π or e, and is found in many experiments when phase transition is noted. The behavior of Helium near absolute zero is an example of this. Feigenbaum's number occurs whenever there is period doubling. The period doubling phenomenon in the model $x \rightarrow ax(n - x)$ is similar to a binary -based fractal with a scale factor roughly equal to Feigenbaum's number.

In balancing a system we can create a self-sustained engine, a natural numbering system that must by its application be the similar as what occurs in nature. The main numeric branch contains many harmonic nodes that mesh and expand in hyperbolic curves around it, visible only as the degree of accuracy is increased and the step functions are reduced. So it will look more like a number tree, with sustained growth patterns branching in harmonic affinity, with an increase in longitudinal pressure through the system (number increase). It will be due to concordant balancing of input, growth, and output in the reaction to the environment. The other constants must also be included in the totality of any system that has growth at its foundation. (π , e , Φ).

FERTILITY 0.009		FERTILITY 0.031		FERTILITY 0.053		FERTILITY 0.075	
1 2.916	2 1.104453	1 10.044	2 10.88404	1 17.17199	2 25.32668	1 24.29999	2 37.72574
3 0.436325	4 0.1749982	3 11.51091	4 11.95019	3 26.40775	4 26.02189	3 20.58201	4 37.69283
5 0.0705987	6 0.0285476	5 12.24349	6 12.43268	5 26.17384	6 26.11589	5 20.63708	6 37.71401
7 0.0115545	8 0.0046783	7 12.55187	8 12.62583	7 26.13928	8 26.12967	7 20.60879	8 37.70049
9 0.0018945	10 0.0007673	9 12.67127	10 12.69903	9 26.13298	10 26.13171	9 20.63964	10 37.70916
11 0.0003107	12 0.0001258	11 12.71592	12 12.72618	11 26.1322	12 26.13201	11 20.61984	12 37.70361
13 5.097E-05	14 2.064E-05	13 12.7324	14 12.73616	13 26.13208	14 26.13206	13 20.6325	14 37.70717
15 8.36E-06	16 3.386E-06	15 12.73844	16 12.73982	15 26.13207	16 26.13206	15 20.62439	16 37.70489
17 1.371E-06	18 5.554E-07	17 12.74066	18 12.74116	17 26.13206	18 26.13206	17 20.62959	18 37.70635
19 2.249E-07	20 9.109E-08	19 12.74147	20 12.74166	19 26.13206	20 26.13206	19 20.62626	20 37.70542
21 3.689E-08	22 1.494E-08	21 12.74177	22 12.74183	21 26.13206	22 26.13206	21 20.62839	22 37.70602
23 6.051E-09	24 2.451E-09	23 12.74188	24 12.7419	23 26.13206	24 26.13206	23 20.62702	24 37.70563
25 9.926E-10	26 4.02E-10	25 12.74192	26 12.74193	25 26.13206	26 26.13206	25 20.6279	26 37.70588
27 1.628E-10	28 6.594E-11	27 12.74193	28 12.74193	27 26.13206	28 26.13206	27 20.62733	28 37.70572
29 2.67E-11	30 1.082E-11	29 12.74194	30 12.74194	29 26.13206	30 26.13206	29 20.6277	30 37.70582
31 4.38E-12	32 1.774E-12	31 12.74194	32 12.74194	31 26.13206	32 26.13206	31 20.62747	32 37.70576
33 7.184E-13	34 2.91E-13	33 12.74194	34 12.74194	33 26.13206	34 26.13206	33 20.62761	34 37.7058
35 1.178E-13	36 4.773E-14	35 12.74194	36 12.74194	35 26.13206	36 26.13206	35 20.62752	36 37.70577
FERTILITY 0.01		**FERTILITY 0.032**		**FERTILITY 0.054**		**FERTILITY 0.076**	
1 3.24	2 1.353024	1 10.368	2 11.49007	1 17.49599	2 25.98532	1 24.62399	2 38.13213
3 0.5905542	4 0.2622619	3 12.321	4 12.88442	3 26.68152	4 26.39329	3 19.90338	4 37.96256
5 0.11733	6 0.0526609	5 13.2413	6 13.45685	5 26.51897	6 26.46527	5 20.30409	6 38.10851
7 0.0236697	8 0.0106457	7 13.58309	8 13.65564	7 26.48842	8 26.47848	7 19.95944	8 37.98445
9 0.0047895	10 0.002155	9 13.69687	10 13.72016	9 26.48276	10 26.48092	9 20.25261	10 38.09113
11 0.0009697	12 0.0004364	11 13.73326	12 13.74062	11 26.48171	12 26.48137	11 20.00066	12 38.00024
13 0.0001964	14 8.836E-05	13 13.74474	14 13.74706	13 26.48151	14 26.48145	13 20.21543	14 38.07832
15 3.976E-05	16 1.789E-05	15 13.74835	16 13.74908	15 26.48148	16 26.48147	15 20.031	16 38.01169
17 8.052E-06	18 3.623E-06	17 13.74948	18 13.74971	17 26.48147	18 26.48147	17 20.18844	18 38.06889
19 1.631E-06	20 7.337E-07	19 13.74984	20 13.74991	19 26.48147	20 26.48147	19 20.05332	20 38.02003
21 3.302E-07	22 1.486E-07	21 13.74995	22 13.74997	21 26.48147	22 26.48147	21 20.16876	22 38.06195
23 6.686E-08	24 3.009E-08	23 13.74999	24 13.74999	23 26.48147	24 26.48147	23 20.06975	24 38.02612
25 1.354E-08	26 6.093E-09	25 13.75	26 13.75	25 26.48147	26 26.48147	25 20.1544	26 38.05685
27 2.742E-09	28 1.234E-09	27 13.75	28 13.75	27 26.48147	28 26.48147	27 20.08182	28 38.03057
29 5.552E-10	30 2.498E-10	29 13.75	30 13.75	29 26.48147	30 26.48147	29 20.1439	30 38.0531
31 1.124E-10	32 5.059E-11	31 13.75	32 13.75	31 26.48147	32 26.48147	31 20.09068	32 38.03382
33 2.277E-11	34 1.025E-11	33 13.75	34 13.75	33 26.48147	34 26.48147	33 20.13622	34 38.05034
35 4.61E-12	36 2.075E-12	35 13.75	36 13.75	35 26.48147	36 26.48147	35 20.09719	36 38.03621
FERTILITY 0.011		**FERTILITY 0.033**		**FERTILITY 0.055**		**FERTILITY 0.077**	
1 3.564	2 1.624457	1 10.692	2 12.1051	1 17.81999	2 26.63909	1 24.94799	2 38.5198
3 0.7750789	4 0.3770539	3 13.14047	4 13.81542	3 26.90147	4 26.77822	3 19.22042	4 38.15305
5 0.1850788	6 0.0912372	5 14.21733	6 14.44236	5 26.83706	6 26.80918	5 20.11485	6 38.54319
7 0.0450709	8 0.0222877	7 14.56371	8 14.62775	7 26.82244	8 26.81614	7 19.16268	8 38.12363
9 0.011027	10 0.005457	9 14.66117	10 14.67849	9 26.81913	10 26.81771	9 20.1857	10 38.56883
11 0.0027009	12 0.0013369	11 14.68744	12 14.69206	11 26.81839	12 26.81807	11 19.09929	12 38.09074
13 0.0006617	14 0.0003276	13 14.69444	14 14.69567	13 26.81822	14 26.81815	13 20.26475	14 38.59652
15 0.0001621	16 8.026E-05	15 14.6963	16 14.69662	15 26.81818	16 26.81816	15 19.0307	16 38.05447
17 3.973E-05	18 1.966E-05	17 14.69679	18 14.69688	17 26.81817	18 26.81817	17 20.35176	18 38.62589
19 9.734E-06	20 4.818E-06	19 14.69692	20 14.69695	19 26.81817	20 26.81817	19 18.95783	20 38.01513
21 2.385E-06	22 1.181E-06	21 14.69696	22 14.69696	21 26.81817	22 26.81817	21 20.44587	22 38.65634
23 5.844E-07	24 2.893E-07	23 14.69697	24 14.69697	23 26.81817	24 26.81817	23 18.88214	24 37.97339
25 1.432E-07	26 7.088E-08	25 14.69697	26 14.69697	25 26.81817	26 26.81817	25 20.54545	26 38.68708
27 3.509E-08	28 1.737E-08	27 14.69697	28 14.69697	27 26.81817	28 26.81817	27 18.80558	28 37.93029
29 8.597E-09	30 4.256E-09	29 14.69697	30 14.69697	29 26.81817	30 26.81817	29 20.64803	30 38.71714
31 2.106E-09	32 1.043E-09	31 14.69697	32 14.69697	31 26.81817	32 26.81817	31 18.73057	32 37.88718
33 5.161E-10	34 2.555E-10	33 14.69697	34 14.69697	33 26.81817	34 26.81817	33 20.75032	34 38.74551
35 1.265E-10	36 6.26E-11	35 14.69697	36 14.69697	35 26.81817	36 26.81817	35 18.65966	36 37.84362
FERTILITY 0.012		**FERTILITY 0.034**		**FERTILITY 0.056**		**FERTILITY 0.078**	
1 3.888	2 1.918122	1 11.016	2 12.7285	1 18.14399	2 27.28739	1 25.27199	2 38.88814
3 0.9916355	4 0.5236831	3 13.96611	4 14.73637	3 27.06651	4 27.18221	3 18.53894	4 38.26367
5 0.279498	6 0.1499915	5 15.16318	6 15.38232	5 27.12229	6 27.15351	5 20.10501	6 39.04008
7 0.0807255	8 0.0435135	7 15.49001	8 15.54174	7 27.13729	8 27.14573	7 18.14869	8 38.01065
9 0.0234746	10 0.0126697	9 15.56631	10 15.57791	9 27.14134	10 27.14363	9 20.72224	10 39.24098
11 0.0068397	12 0.0036929	11 15.58338	12 15.58595	11 27.14244	12 27.14305	11 17.62719	12 37.63543
13 0.001994	14 0.0010767	13 15.58716	14 15.58773	13 27.14273	14 27.1429	13 21.61915	14 39.42697
15 0.0005814	16 0.000314	15 15.588	16 15.58812	15 27.14281	16 27.14286	15 17.13875	16 37.24554
17 0.0001695	18 9.155E-05	17 15.58818	18 15.58821	17 27.14284	18 27.14285	17 22.52789	18 39.48743
19 4.944E-05	20 2.67E-05	19 15.58822	20 15.58823	19 27.14284	20 27.14285	19 16.97882	20 37.10978
21 1.442E-05	22 7.784E-06	21 15.58823	22 15.58823	21 27.14285	22 27.14285	21 23.83873	22 39.47854
23 4.204E-06	24 2.27E-06	23 15.58823	24 15.58823	23 27.14285	24 27.14285	23 17.00237	24 37.13003
25 1.226E-06	26 6.619E-07	25 15.58823	26 15.58823	25 27.14285	26 27.14285	25 22.79255	26 39.48081
27 3.574E-07	28 1.93E-07	27 15.58823	28 15.58823	27 27.14285	28 27.14285	27 16.99635	28 37.12486
29 1.042E-07	30 5.628E-08	29 15.58823	30 15.58823	29 27.14285	30 27.14285	29 22.80435	30 39.48026
31 3.039E-08	32 1.641E-08	31 15.58823	32 15.58823	31 27.14285	32 27.14285	31 16.99781	32 37.12611
33 8.863E-09	34 4.786E-09	33 15.58823	34 15.58823	33 27.14285	34 27.14285	33 22.80149	34 39.4804
35 2.584E-09	36 1.396E-09	35 15.58823	36 15.58823	35 27.14285	36 27.14285	35 16.99744	36 37.1258

The study of colloidal forms, will reveal to you that scale is they key to volumetric harmony that nature has made by it constant reaction to the environment. Small plankton are of millions in variety but are scaled correctly to meet its needs, the similarity between plankton and crystals is by all means an expression of natures economy. As two different forms mesh, one very fluid and the other very stiff and formed, they play the game of viscosity and adhesion, while absorbing chemicals from the environment and converting its constitutes to a non toxic form, with a constant environmental background pressure surging around it.

sqrt (14.0625) = 3.75 = 15 / 4

This value must be relating to a root system and its division of the number 15 into 4 equal parts sitting at the base. The calculated Earth frequency is approx. 7.5 Hz in the cavity between the ionosphere and the ground. The human alpha wave frequency is at 8 Hz , this difference between the two must be harmonic.

FERTILITY 0.013

1	4.212	2	2.233368
3	1.241688	4	0.7063412
5	0.4067254	6	0.2357839
7	0.1372109	8	0.0800236
9	0.0467306	10	0.027309
11	0.0159661	12	0.0093368
13	0.0054609	14	0.0031942
15	0.0018685	16	0.001093
17	0.0006394	18	0.000374
19	0.0002188	20	0.000128
21	7.488E-05	22	4.381E-05
23	2.563E-05	24	1.499E-05
25	8.77E-06	26	5.131E-06
27	3.001E-06	28	1.756E-06
29	1.027E-06	30	6.009E-07
31	3.515E-07	32	2.056E-07
33	1.203E-07	34	7.037E-08
35	4.117E-08	36	2.408E-08

FERTILITY 0.014

1	4.536	2	2.569626
3	1.526423	4	0.929027
5	0.5732038	6	0.3365186
7	0.2228272	8	0.139686
9	0.0877291	10	0.0551616
11	0.0347092	12	0.0218499
13	0.0137588	14	0.0086654
15	0.0054581	16	0.0034382
17	0.0021659	18	0.0013645
19	0.0008596	20	0.0005415
21	0.0003412	22	0.0002149
23	0.0001354	24	8.53E-05
25	5.374E-05	26	3.386E-05
27	2.133E-05	28	1.344E-05
29	8.466E-06	30	5.333E-06
31	3.36E-06	32	2.117E-06
33	1.334E-06	34	8.402E-07
35	5.293E-07	36	3.335E-07

FERTILITY 0.015

1	4.866001	2	2.926207
3	1.8467-49	4	1.195399
5	0.7854595	6	0.5209931
7	0.3475579	8	0.2327897
9	0.1563202	10	0.1051496
11	0.0708101	12	0.0477216
13	0.032178	14	0.0217046
15	0.0146435	16	0.0098812
17	0.0066683	18	0.0045003
19	0.0030375	20	0.0020502
21	0.0013838	22	0.000934
23	0.0006305	24	0.0004256
25	0.0002872	26	0.0001939
27	0.0001309	28	8.834E-05
29	5.963E-05	30	4.025E-05
31	2.717E-05	32	1.834E-05
33	1.238E-05	34	8.356E-06
35	5.64E-06	36	3.807E-06

FERTILITY 0.016

1	5.184	2	3.302499
3	2.203295	4	1.5087
5	1.049846	6	0.7182.54
7	0.5228226	8	0.3720588
9	0.2656675	10	0.1901513
11	0.1363304	12	0.0978605
13	0.0703064	14	0.0505415
15	0.036349	16	0.0261502
17	0.0188172	18	0.0135427
19	0.0097478	20	0.0070169
21	0.0050514	22	0.0036366
23	0.0026181	24	0.0018849
25	0.0013571	26	0.0009771
27	0.0007035	28	0.0005065
29	0.0003647	30	0.0002626
31	0.000189	32	0.0001361
33	9.8E-05	34	7.056E-05
35	5.08E-05	36	3.658E-05

FERTILITY 0.035

1	11.34	2	13.35965
3	14.79464	4	15.64071
5	16.072	6	16.27258
7	16.36142	8	16.39987
9	16.41634	10	16.42337
11	16.42636	12	16.42763
13	16.42817	14	16.4284
15	16.4285	16	16.42854
17	16.42855	18	16.42856
19	16.42857	20	16.42857
21	16.42857	22	16.42857
23	16.42857	24	16.42857
25	16.42857	26	16.42857
27	16.42857	28	16.42857
29	16.42857	30	16.42857
31	16.42857	32	16.42857
33	16.42857	34	16.42857
35	16.42857	36	16.42857

FERTILITY 0.036

1	11.664	2	13.99792
3	15.62272	4	16.52231
5	16.93862	6	17.11156
7	17.17973	8	17.20601
9	17.21605	10	17.21987
11	17.22133	12	17.22188
13	17.22209	14	17.22217
15	17.2222	16	17.22221
17	17.22222	18	17.22222
19	17.22222	20	17.22222
21	17.22222	22	17.22222
23	17.22222	24	17.22222
25	17.22222	26	17.22222
27	17.22222	28	17.22222
29	17.22222	30	17.22222
31	17.22222	32	17.22222
33	17.22222	34	17.22222
35	17.22222	36	17.22222

FERTILITY 0.037

1	11.988	2	14.64267
3	16.44693	4	17.37559
5	17.75964	6	17.88982
7	17.94827	8	17.96467
9	17.97019	10	17.97204
11	17.97266	12	17.97286
13	17.97293	14	17.97296
15	17.97296	16	17.97297
17	17.97297	18	17.97297
19	17.97297	20	17.97297
21	17.97297	22	17.97297
23	17.97297	24	17.97297
25	17.97297	26	17.97297
27	17.97297	28	17.97297
29	17.97297	30	17.97297
31	17.97297	32	17.97297
33	17.97297	34	17.97297
35	17.97297	36	17.97297

FERTILITY 0.038

1	12.312	2	15.29327
3	17.26389	4	18.19566
5	18.50346	6	18.63962
7	18.6712	8	18.68043
9	18.68311	10	18.68389
11	18.68411	12	18.68418
13	18.6842	14	18.6842
15	18.6842	16	18.6842
17	18.6842	18	18.6842
19	18.6842	20	18.6842
21	18.6842	22	18.6842
23	18.6842	24	18.6842
25	18.6842	26	18.6842
27	18.6842	28	18.6842
29	18.6842	30	18.6842
31	18.6842	32	18.6842
33	18.6842	34	18.6842
35	18.6842	36	18.6842

FERTILITY 0.057

1	18.46799	2	27.92957
3	27.17586	4	27.61
5	27.36784	6	27.50557
7	27.42805	8	27.47194
9	27.44718	10	27.46118
11	27.45327	12	27.45774
13	27.45522	14	27.45664
15	27.45584	16	27.45629
17	27.45603	18	27.45618
19	27.4561	20	27.45614
21	27.45612	22	27.45613
23	27.45613	24	27.45613
25	27.45613	26	27.45613
27	27.45613	28	27.45613
29	27.45613	30	27.45613
31	27.45613	32	27.45613
33	27.45613	34	27.45613
35	27.45613	36	27.45613

FERTILITY 0.058

1	18.79199	2	28.56502
3	27.22898	4	28.06541
5	27.566	6	27.87395
7	27.68748	8	27.8017
9	27.73221	10	27.77467
11	27.74879	12	27.76459
13	27.75496	14	27.76083
15	27.75725	16	27.75944
17	27.7581	18	27.75892
19	27.75842	20	27.75872
21	27.75854	22	27.75865
23	27.75858	24	27.75863
25	27.7586	26	27.75861
27	27.7586	28	27.75861
29	27.75861	30	27.75861
31	27.75861	32	27.75861
33	27.75861	34	27.75861
35	27.75861	36	27.75861

FERTILITY 0.059

1	19.11599	2	29.19309
3	27.22568	4	28.55114
5	27.70837	6	28.26823
7	27.90565	8	28.14469
9	27.98884	10	28.09121
11	28.02429	12	28.06818
13	28.03946	14	28.05828
15	28.04595	16	28.05403
17	28.04874	18	28.0522
19	28.04994	20	28.05142
21	28.05045	22	28.05109
23	28.05067	24	28.05094
25	28.05076	26	28.05088
27	28.0508	28	28.05086
29	28.05082	30	28.05084
31	28.05083	32	28.05084
33	28.05083	34	28.05084
35	28.05083	36	28.05084

FERTILITY 0.06

1	19.43999	2	29.81316
3	27.16604	4	29.06866
5	27.78614	6	28.69838
7	28.06978	8	28.51363
9	28.20515	10	28.42205
11	28.27074	12	28.37689
13	28.30271	14	28.35469
15	28.31833	16	28.3438
17	28.32598	18	28.33846
19	28.32972	20	28.33584
21	28.33156	22	28.33453
23	28.33246	24	28.33393
25	28.3329	26	28.33362
27	28.33311	28	28.33347
29	28.33322	30	28.33339
31	28.33327	32	28.33335
33	28.3333	34	28.33334
35	28.33331	36	28.33333

FERTILITY 0.079

1	25.59599	2	39.23651
3	17.86499	4	38.29656
5	20.28077	6	39.60466
7	16.88075	8	37.49924
9	22.22054	10	39.98757
11	15.83435	12	36.4837
13	24.51578	14	39.66311
15	16.72253	16	37.35679
17	22.55653	18	39.99349
19	15.818	20	36.46646
21	24.58385	22	39.65069
23	16.7562	24	37.38744
25	22.48452	26	39.99372
27	15.81735	28	36.46578
29	24.58535	30	39.6502
31	16.75754	32	37.38865
33	22.48167	34	39.99371
35	15.81738	36	36.4658

FERTILITY 0.08

1	25.91999	2	39.56428
3	17.20482	4	38.25688
5	20.63766	6	40.22253
7	15.37296	8	36.43642
9	24.9621	10	40.01504
11	15.95787	12	37.07604
13	23.50312	14	40.41949
15	14.81135	16	35.77076
17	26.41095	18	39.22635
19	17.98433	20	38.86869
21	19.06528	22	39.55621
23	17.22685	24	38.27551
25	20.59067	26	40.20835
27	15.41315	28	36.48212
29	24.86002	30	40.05442
31	15.84739	32	36.95942
33	23.77401	34	40.37014
35	14.95263	36	35.94297

FERTILITY 0.081

1	26.244	2	39.87083
3	16.56485	4	38.15294
5	21.16007	6	40.86081
7	13.69957	8	34.73299
9	28.88491	10	37.70411
11	22.28188	12	41.00239
13	13.27684	14	34.11584
15	30.07709	16	36.35585
17	25.45549	18	40.29871
19	15.34592	20	36.86059
21	24.3019	22	40.74325
23	14.04814	24	35.2201
25	27.90037	26	38.64396
27	19.88542	28	40.45675
29	14.88822	30	36.31316
31	25.55116	32	40.25217
33	15.47995	34	37.01448
35	23.94197	36	40.83782

FERTILITY 0.082

1	26.568	2	40.15551
3	15.9517	4	37.99632
5	21.82136	6	41.47473
7	11.98919	8	32.45338
9	33.38877	10	31.79014
11	34.43533	12	29.83139
13	37.10506	14	24.02127
15	41.32272	16	12.46031
17	33.24728	18	32.04116
19	34.04772	20	30.5778
21	36.16192	22	26.20736
23	40.38544	24	15.28159
25	37.23985	26	23.69693
27	41.39502	28	12.23673
29	32.87504	30	32.68589
31	33.0048	32	32.46374
33	33.37186	34	31.82032
35	34.38929	36	29.92137

0	0.5	1	1,5	**2**	
2.5	3	3.5	4	4.5	
5	5.5	**6**	6.5	7	
7.5	8	8.5	9	9.5	
10	10.5	11	11.5	**12**	

						30
8	11.5	0	3.5	**7**		30
11	2	3	6.5	7.5		30
1.5	2.5	**6**	9.5	10.5		30
4.5	5.5	9	10	1		30
5	8.5	12	0.5	**4**		30
30	30	30	30	30	30	***150***

The occurrence of 12 was a suprise, note the center 6, refer to Internal sequence table which has -6 at zero start position. The sqr 3 centre is 5, the magic square of 5 has 25 squares.

If we start at 3.75 we will have evened out a list of the Schumann frequencies:

3.75	7.5	11.25	**15**	
18.75	22.5	26.25	30	
33.75	37.5	41.25	45	
48.75	52.5	56.25	**60**	

					127.5
3.75	45	30	**48.75**		127.5
56.25	22.5	37.5	11.25		127.5
52.5	26.25	41.25	7.5		127.5
15	33.75	18.75	**60**		127.5
127.5	127.5	127.5	127.5	127.5	***510***

FERTILITY 0.017

1	5.508	2	3.697873
3	2.596411	4	1.871651
5	1.372261	6	1.017767
7	0.7609824	8	0.572307
9	0.4322468	10	0.3274926
11	0.2487085	12	0.1892105
13	0.1441374	14	0.109912
15	0.0838773	16	0.0640465
17	0.0489259	18	0.0373876
19	0.0285777	20	0.0218481
21	0.0167057	22	0.0127751
23	0.0097702	24	0.0074726
25	0.0057156	26	0.0043718
27	0.0033441	28	0.0025581
29	0.0019568	30	0.0014969
31	0.0011451	32	0.000876
33	0.0006701	34	0.0005126
35	0.0003922	36	0.0003

FERTILITY 0.018

1	5.832	2	4.111701
3	3.026168	4	2.286358
5	1.757856	6	1.368243
7	1.074579	8	0.8496241
9	0.6752021	10	0.5387076
11	0.4311294	12	0.3458692
13	0.2780008	14	0.2237895
15	0.1803681	16	0.1455125
17	0.117484	18	0.0949136
19	0.0767179	20	0.0620356
21	0.0501795	22	0.0406001
23	0.0328564	24	0.0265943
25	0.0215286	26	0.0174298
27	0.0141127	28	0.0114277
29	0.0092541	30	0.0074943
31	0.0060694	32	0.0049155
33	0.0039811	34	0.0032244
35	0.0026116	36	0.0021153

FERTILITY 0.019

1	6.156001	2	4.54335
3	3.492366	4	2.754237
5	2.210742	6	1.797325
7	1.475335	8	1.220056
9	1.014866	10	0.8481413
11	0.7114933	12	0.5987086
13	0.5050853	14	0.4270009
15	0.3616215	16	0.3067018
17	0.2604428	18	0.2213898
19	0.1883571	20	0.1603712
21	0.1366287	22	0.1164629
23	0.0993181	24	0.0847295
25	0.0723074	26	0.0617235
27	0.0527012	28	0.0450067
29	0.0384423	30	0.0328401
31	0.0280578	32	0.0239744
33	0.0204872	34	0.0175086
35	0.014964	36	0.01278

FERTILITY 0.02

1	6.48	2	4.992193
3	3.994534	4	3.275955
5	2.733722	6	2.310885
7	1.972993	8	1.69784
9	1.470403	10	1.280121
11	1.119335	12	0.9823431
13	0.8648089	14	0.7633702
15	0.6753785	16	0.598718
17	0.5316769	18	0.4728557
19	0.4210983	20	0.375442
21	0.3350787	22	0.2993253
23	0.2676009	24	0.2394086
25	0.2143214	26	0.1919706
27	0.1720365	28	0.154241
29	0.1383411	30	0.1241242
31	0.1114036	32	0.1000151
33	0.0898135	34	0.0806708
35	0.0724736	36	0.0651212

FERTILITY 0.039

1	12.636	2	15.9491
3	18.07009	4	18.9784
5	19.26008	6	19.33436
7	19.35291	8	19.35748
9	19.3586	10	19.35888
11	19.35895	12	19.35896
13	19.35897	14	19.35897
15	19.35897	16	19.35897
17	19.35897	18	19.35897
19	19.35897	20	19.35897
21	19.35897	22	19.35897
23	19.35897	24	19.35897
25	19.35897	26	19.35897
27	19.35897	28	19.35897
29	19.35897	30	19.35897
31	19.35897	32	19.35897
33	19.35897	34	19.35897
35	19.35897	36	19.35897

FERTILITY 0.04

1	12.96	2	16.60953
3	18.86209	4	19.72062
5	19.941	6	19.98805
7	19.9976	8	19.99951
9	19.9999	10	19.99997
11	19.99999	12	19.99999
13	19.99999	14	19.99999
15	19.99999	16	19.99999
17	19.99999	18	19.99999
19	19.99999	20	19.99999
21	19.99999	22	19.99999
23	19.99999	24	19.99999
25	19.99999	26	19.99999
27	19.99999	28	19.99999
29	19.99999	30	19.99999
31	19.99999	32	19.99999
33	19.99999	34	19.99999
35	19.99999	36	19.99999

FERTILITY 0.041

1	13.284	2	17.27392
3	19.63646	4	20.42005
5	20.57887	6	20.60492
7	20.609	8	20.60963
9	20.60973	10	20.60975
11	20.60975	12	20.60975
13	20.60975	14	20.60975
15	20.60975	16	20.60975
17	20.60975	18	20.60975
19	20.60975	20	20.60975
21	20.60975	22	20.60975
23	20.60975	24	20.60975
25	20.60975	26	20.60975
27	20.60975	28	20.60975
29	20.60975	30	20.60975
31	20.60975	32	20.60975
33	20.60973	34	20.60975
35	20.60975	36	20.60975

FERTILITY 0.042

1	13.608	2	17.94165
3	20.38979	4	21.07547
5	21.17726	6	21.18901
7	21.19031	8	21.19045
9	21.19047	10	21.19047
11	21.19047	12	21.19047
13	21.19047	14	21.19047
15	21.19047	16	21.19047
17	21.19047	18	21.19047
19	21.19047	20	21.19047
21	21.19047	22	21.19047
23	21.19047	24	21.19047
25	21.19047	26	21.19047
27	21.19047	28	21.19047
29	21.19047	30	21.19047
31	21.19047	32	21.19047
33	21.19047	34	21.19047
35	21.19047	36	21.19047

FERTILITY 0.061

1	19.76398	2	30.42459
3	27.05048	4	29.61811
5	27.79051	6	29.17387
7	28.16426	8	28.92411
9	28.3638	10	28.78379
11	28.47258	12	28.70525
13	28.53241	14	28.66144
15	28.56547	16	28.63704
17	28.58377	18	28.62348
19	28.59391	20	28.61595
21	28.59953	22	28.61176
23	28.60265	24	28.60944
25	28.60439	26	28.60815
27	28.60535	28	28.60744
29	28.60588	30	28.60704
31	28.60617	32	28.60682
33	28.60634	34	28.6067
35	28.60643	36	28.60663

FERTILITY 0.062

1	20.08798	2	31.02677
3	26.87972	4	30.1982
5	27.71322	6	29.70246
7	28.1712	8	29.3934
9	28.4413	10	29.19893
11	28.60518	12	29.07653
13	28.70593	14	28.99964
15	28.76827	16	28.95142
17	28.80698	18	28.92124
19	28.83107	20	28.90236
21	28.84608	22	28.89057
23	28.85544	24	28.8832
25	28.86127	26	28.8786
27	28.86491	28	28.87572
29	28.86719	30	28.87393
31	28.8686	32	28.87281
33	28.86949	34	28.87211
35	28.87004	36	28.87168

FERTILITY 0.063

1	20.41198	2	31.61906
3	26.65483	4	30.40618
5	27.54719	6	30.28886
7	28.07175	8	29.93793
9	28.40839	10	29.69445
11	28.63284	12	29.52419
13	28.78535	14	29.40487
15	28.89006	16	29.32125
17	28.96237	18	29.26271
19	29.01247	20	29.22175
21	29.04726	22	29.19313
23	29.07146	24	29.17313
25	29.08829	26	29.15917
27	29.10002	28	29.14943
29	29.10818	30	29.14264
31	29.11388	32	29.1379
33	29.11784	34	29.13459
35	29.12061	36	29.13228

FERTILITY 0.064

1	20.73598	2	32.20082
3	26.3772	4	31.43789
5	27.28729	6	30.93322
7	27.84835	8	30.56926
9	28.23275	10	30.29666
11	28.50956	12	30.08863
13	28.71439	14	29.92838
15	28.8684	16	29.80436
17	28.98534	18	29.70816
19	29.0747	20	29.63347
21	29.14324	22	29.57549
23	29.19598	24	29.53047
25	29.23662	26	29.49553
27	29.26799	28	29.46842
29	29.29221	30	29.44739
31	29.31094	32	29.43109
33	29.32542	34	29.41845
35	29.33662	36	29.40866

FERTILITY 0.083

1	26.892	2	40.41771
3	35.37208	4	37.80175
5	22.58484	6	42.01815
7	10.38923	8	29.86517
9	37.51635	10	23.30301
11	41.96523	12	10.57046
13	30.2067	14	37.08911
15	24.35286	16	41.7338
17	11.31381	18	31.63288
19	35.09575	20	28.85056
21	38.67139	22	20.3131
23	41.62179	24	11.67039
25	32.28446	26	34.07268
27	30.90281	28	36.15833
29	26.53506	30	40.66737
31	14.62433	32	36.87058
33	24.87812	34	41.54934
35	11.89993	36	32.69274

FERTILITY 0.084

1	27.216	2	40.65678
3	14.83282	4	37.587
5	23.40512	6	42.45618
7	9.072071	8	27.37902
9	40.52539	10	15.23216
11	38.08799	12	32.11421
13	42.51249	14	8.883009
15	26.94951	16	40.86195
17	14.20346	18	36.74306
19	25.48436	20	41.77686
21	11.31084	22	32.00842
23	34.93055	24	29.54543
25	38.3554	26	21.40794
27	42.42482	28	9.177142
29	27.61512	30	40.32718
31	15.82909	32	38.78691
33	20.24288	34	42.09705
35	10.26527	36	29.95116

FERTILITY 0.085

1	27.54	2	40.87211
3	14.34082	4	37.3726
5	24.22974	6	42.77693
7	8.083176	8	25.36444
9	42.33382	10	9.593913
11	28.87305	12	39.57891
13	18.23767	14	41.48701
15	12.38819	16	34.34011
17	31.11526	18	36.72232
19	25.83792	20	42.08421
21	10.43025	22	30.64855
23	37.38734	24	24.19246
25	42.78777	26	8.045794
27	25.2727	28	42.37778
29	9.445538	30	28.54563
31	39.92452	32	17.22406
33	40.66323	34	14.98334
35	38.22873	36	22.00285

FERTILITY 0.086

1	27.864	2	41.06306
3	13.90299	4	37.18135
5	25.00087	6	42.99962
7	7.397331	8	23.92171
9	43.36367	10	6.102324
11	20.41349	12	43.1631
13	6.818631	14	22.38964
15	43.53645	16	5.47973
17	18.6242	18	42.24562
19	10.00701	20	30.11507
21	38.55042	22	21.38253
23	43.43011	24	5.863533
25	19.7351	26	42.88006
27	7.817677	28	24.99843
29	43.00068	30	7.393619
31	23.91206	32	43.36602
33	6.093891	34	20.3897
35	43.15451	36	6.849143

The first generation of all the different fertility rates have a definite harmonic sequence, they might even directly relate to a lot of Bruce Cathie's harmonic equations. The first contraction of the variable numbers occurs at 0.027777 fertility which is the reciprocal of 36. The second contraction is at 0.055555 or 1/ 18. The idea of a wave formation is taking place, the lower fertility rates show a small oscillation at the beginning, then quickly damp out to a stable number. Only when you reach around 0.03 that you start to have continuous oscillations between 2 numbers, there are few interesting values I will list, so we can the study its actions relating to its reciprocal.

0.021333	= 1/ 46.875	population stop dying
0.027777	= 1/ 36	the population reach a nodal point
0.046296296	= 1/ 21.6	minor node
0.055555	= 1 / 18	another node
0.066666	= 1 / 15	the splitting of groups of values
0.071111	= 1 / 14.0625	intersection of 2 value streams
0.075	= 1 / 13.3333	another splitting into further groups

FERTILITY 0.021

1	6.804	2	5.457598
3	4.551938	4	3.851374
5	3.328054	6	2.912416
7	2.574108	8	2.293386
9	2.056798	10	1.854835
11	1.680571	12	1.528829
13	1.395659	14	1.277993
15	1.175405	16	1.079953
17	0.9960636	18	0.9204452
19	0.8520292	20	0.7899227
21	0.7333734	22	0.6817433
23	0.6344872	24	0.5911364
25	0.5512856	26	0.5145827
27	0.48072	28	0.4494275
29	0.4204673	30	0.393629
31	0.3687256	32	0.3455906
33	0.324075	34	0.3040454
35	0.2853816	36	0.2679754

FERTILITY 0.022

1	7.128001	2	5.938937
3	5.103586	4	4.479526
5	3.993275	6	3.602525
7	3.28098	8	3.011344
9	2.781731	10	2.583677
11	2.410982	12	2.25899
13	2.124134	14	2.00363
15	1.895274	16	1.797296
17	1.708257	18	1.626975
19	1.552471	20	1.483922
21	1.420639	22	1.362032
23	1.307599	24	1.256907
25	1.209582	26	1.165298
27	1.123771	28	1.084751
29	1.048016	30	1.013373
31	0.9806467	32	0.9496836
33	0.9203451	34	0.8925069
35	0.8660574	36	0.8408957

FERTILITY 0.043

1	13.93199	2	18.61208
3	21.11876	4	21.6867
5	21.7403	6	21.74392
7	21.74416	8	21.74417
9	21.74418	10	21.74418
11	21.74418	12	21.74418
13	21.74418	14	21.74418
15	21.74418	16	21.74418
17	21.74418	18	21.74418
19	21.74418	20	21.74418
21	21.74418	22	21.74418
23	21.74418	24	21.74418
25	21.74418	26	21.74418
27	21.74418	28	21.74418
29	21.74418	30	21.74418
31	21.74418	32	21.74418
33	21.74418	34	21.74418
35	21.74418	36	21.74418

FERTILITY 0.044

1	14.25599	2	19.28459
3	21.82008	4	22.25465
5	22.27234	6	22.27271
7	22.27272	8	22.27272
9	22.27272	10	22.27272
11	22.27272	12	22.27272
13	22.27272	14	22.27272
15	22.27272	16	22.27272
17	22.27272	18	22.27272
19	22.27272	20	22.27272
21	22.27272	22	22.27272
23	22.27272	24	22.27272
25	22.27272	26	22.27272
27	22.27272	28	22.27272
29	22.27272	30	22.27272
31	22.27272	32	22.27272
33	22.27272	34	22.27272
35	22.27272	36	22.27272

FERTILITY 0.065

1	21.05998	2	32.77144
3	26.04857	4	32.08772
5	26.93114	6	31.62995
7	27.48809	8	31.28896
9	27.88525	10	31.02117
11	28.18656	12	30.80432
13	28.42371	14	30.62535
15	28.61484	16	30.47579
17	28.77137	18	30.34978
19	28.901	20	30.243
21	29.00922	22	30.15219
23	29.10009	24	30.07475
25	29.17673	26	30.00861
27	29.24158	28	29.95205
29	29.29658	30	29.90365
31	29.34332	32	29.86222
33	29.38309	34	29.82673
35	29.41696	36	29.79634

FERTILITY 0.066

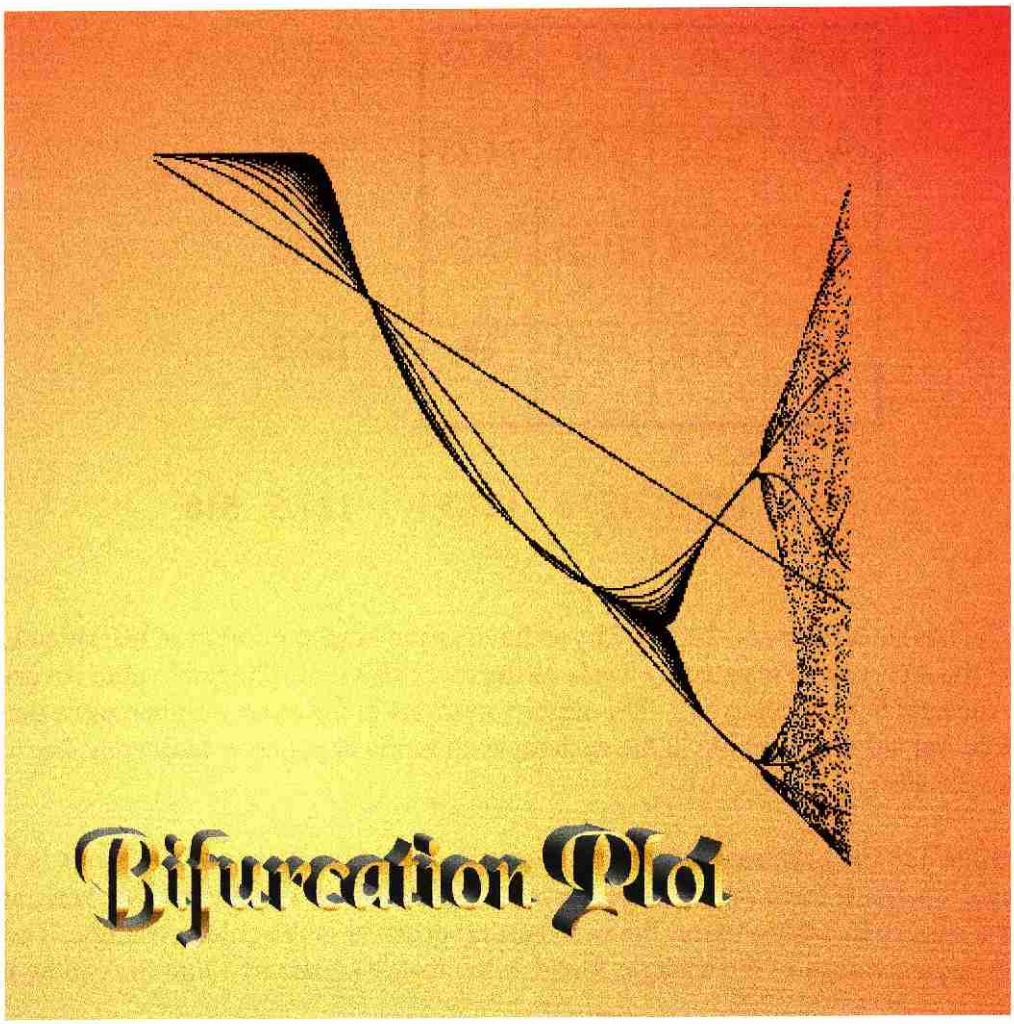
1	21.38399	2	33.33028
3	25.67102	4	32.74882
5	26.47995	6	32.36703
7	26.98683	8	32.08379
9	27.35044	10	31.85971
11	27.63061	12	31.67515
13	27.85638	14	31.51889
15	28.04402	16	31.38389
17	28.20353	18	31.26549
19	28.34145	20	31.16039
21	28.46233	22	31.06622
23	28.56939	24	30.9812
25	28.66504	26	30.90596
27	28.75112	28	30.83343
29	28.82904	30	30.76873
31	28.89995	32	30.70917
33	28.96471	34	30.65418
35	29.0241	36	30.60326

FERTILITY 0.087

1	28.188	2	41.22901
3	13.52626	4	37.03782
5	25.65647	6	43.17694
7	6.848128	8	22.73039
9	44.03913	10	3.681477
11	13.23385	12	36.57379
13	26.81152	14	42.42649
15	9.499104	16	29.33872
17	39.97492	18	17.47632
19	41.8481	20	11.47539
21	33.4696	22	33.57485
23	33.37299	24	33.75843
25	33.0163	26	34.4222
27	31.67766	28	36.71579
29	26.46204	30	42.67804
31	8.621414	32	27.28623
33	42.05075	34	10.78958
35	32.11309	36	36.00394

FERTILITY 0.088

1	28.512	2	41.36932
3	13.2175	4	36.9675
5	26.13084	6	43.3899
7	6.147876	8	21.01951
9	44.35712	10	2.509448
11	9.383247	12	29.40967
13	40.34857	14	16.51572
15	41.39857	16	13.12026
17	36.8078	18	26.53523
19	43.11709	20	7.144339
21	23.79992	22	44.4013
23	2.339315	24	8.782116
25	27.99013	26	41.89754
27	11.4387	28	33.783
29	33.34707	30	34.19602
31	32.51188	32	35.72908
33	29.14925	34	40.6593
35	15.5311	36	40.27623



The Magic Square of Three Crystal

			56.25
30	3.75	22.5	56.25
11.25	18.75	26.25	56.25
15	33.75	7.5	56.25
56.25	56.25	56.25	56.25 **168.75**

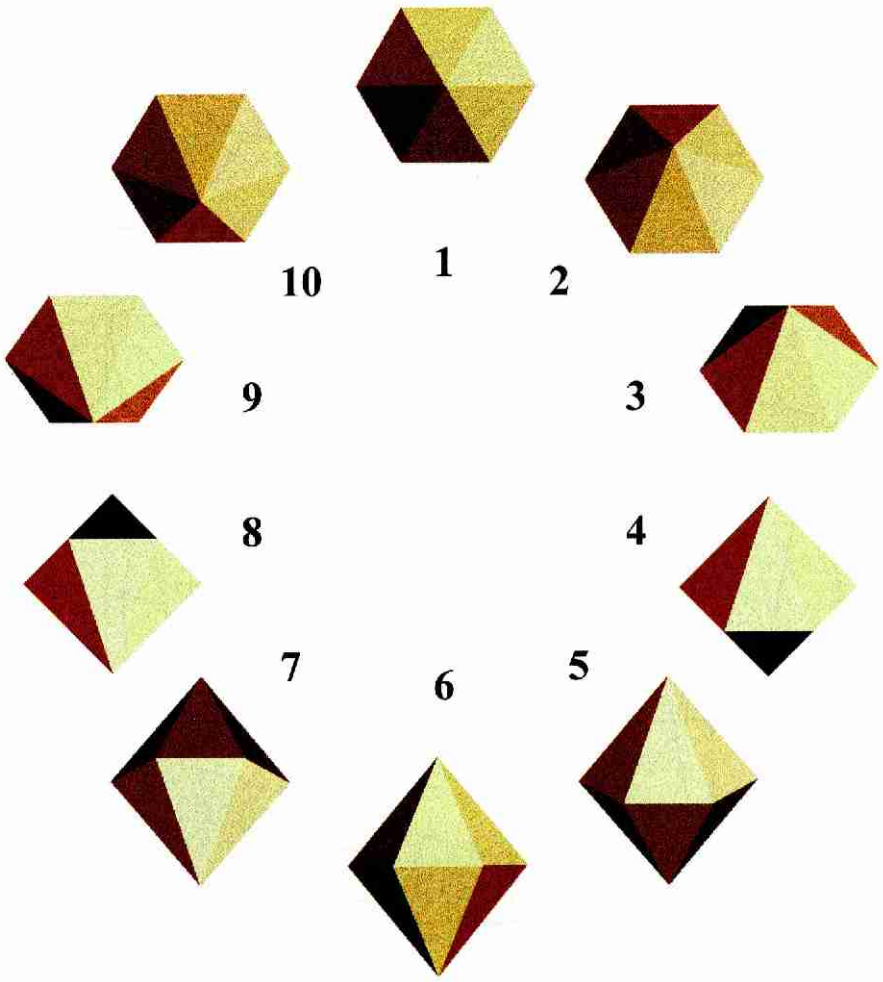
The number total 168.75 if you divide by 36 your result is 4.6875

				127.5
3.75	45	30	**48.75**	127.5
56.25	22.5	37.5	11.25	127.5
52.5	26.25	41.25	7.5	127.5
15	33.75	18.75	**60**	127.5
127.5	127.5	127.5	127.5	127.5 **510**

Looking at the Magic square of 4 base 3.75 you have as the largest number of 60 which is the frequency of the AC current insisted by Tesla as the most efficient. The total value is very close to the musical C note being 512. The slight variations in the exact number and a derived number can be but another variable in the system, such as the changes in frequency due to heat(or Ether density).

Another approach to the problem of finding geometric solutions to numeric problems is to re-map the magic square of three onto to a geometrical figure. By all the suggestions here, and the need for a shift to be taking place, the best starting position is the golden triangle. The difference in degree values of the triangle found in the magic square of 3 and the pentagonal triangle is ;

36.86988768 - 36 = 0.86988768 = 1 / 1.1495737 = $1 / 5^3 * 143.69671$



A rotational effect towards the viewer will easily account for the difference between the magic square triangle and the golden triangle.

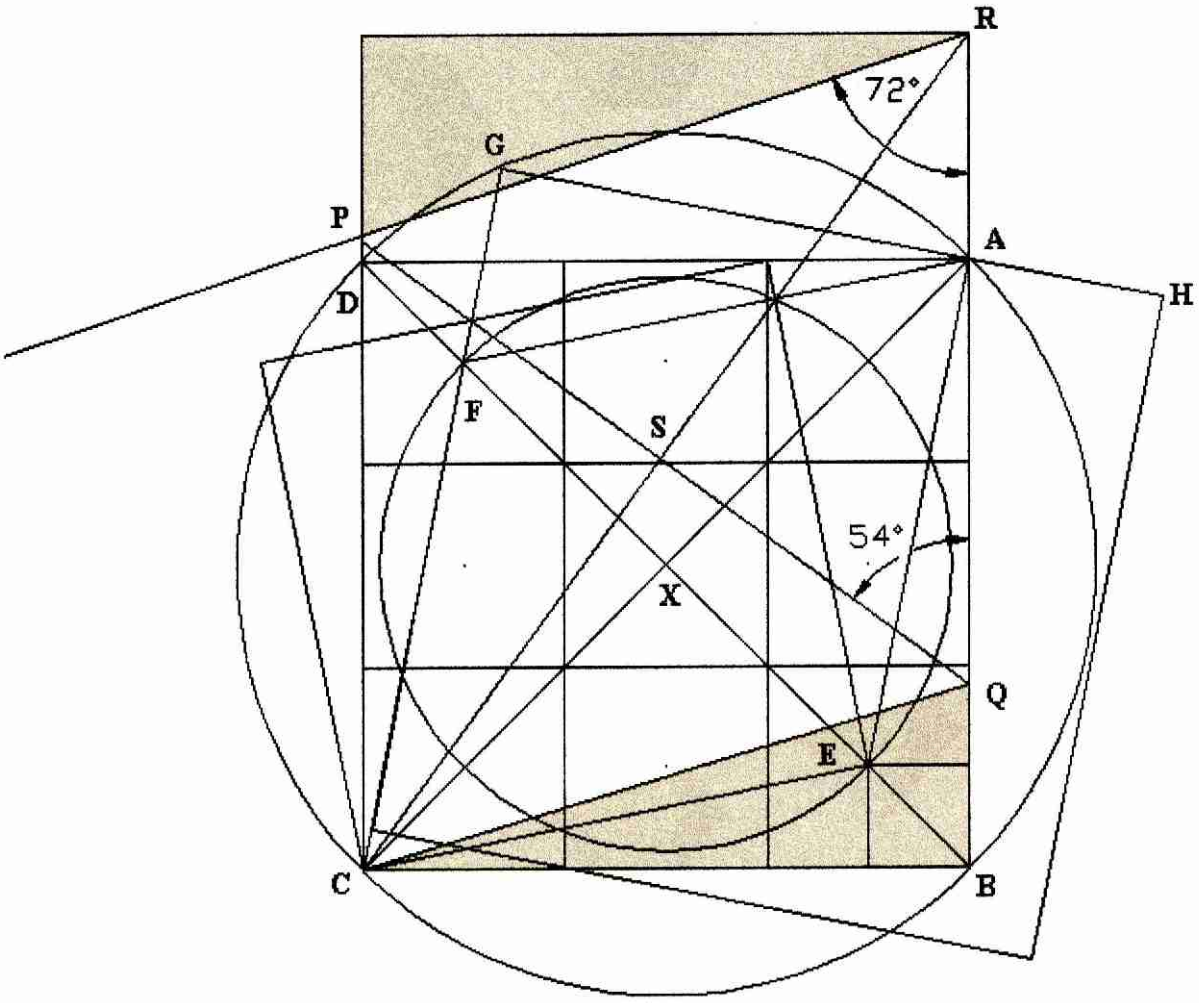
The first view is the basic hexagon which nature uses with vigor in most of its constructions, as a spin of 18 degrees will give you all the necessary angles. There are only 6 unique views out of a possible 10 rotations, making 4 repeats that are inverted.

The fourth step will give our magic square of three triangle while the fifth step will give us our golden triangle. $2^{nd} = 10^{th}$, $3^{rd} = 9^{th}$, $4^{th} = 8^{th}$, $5^{th} = 7^{th}$, while the 1^{st} and 6^{th} are unique.

The number 5 is placed in the center of this crystal construction, being a derivative of the pentagon number, it must surely hold a prime place in all harmonic geometry.

Looking at nested magic squares the possibility of a combination of a 4 set (of a sqr 4 type) equaling 20 might mean that a sqr 3 is lurking within its borders as the 4 corner values are the most likely link. Checking through my tables shows no such possibility as the increments offset by 2 keep it out of step with the corner links.

The action within a magic square can be analyzed when plotting the activities of 2 Barium Ions caught in an electrical trap, by varying the strength of the energy used for the trap, it has been observed that at one frequency the system would freeze. It would be said the ions Crystallized, so they would hover next to each other catatonically.



The Face Angle Projection

The area of the square ABCD is 1.5 times larger than figure AECF, another sign of consistency in numbering.

Square	*Area*	*Perimeter*	*Ratios of area*	*Ratios of perimeter*
CDAB	9	12	1:1	1:1
CEAF	6	10.198038	1 : 12/18	1: 1.133115333333
CKLE	6.5	10.198038	1 : 13/18	1: 1.133115333333
JGHI	11.077223	13.313089	1 : 1.2308026	1: 1.479232111111
CPRQ	9.46316	12.**61**754669086	1 : **1.051462**224238	1: 1.401949632318

The CEAF square and the CKLE parallelogram, share the same perimeter making the transformation to a shear square. The difference in area indicate a ratio decrease by 1/18 which in decimal equals 0.0555555, again the reoccurring set of 5's. The ratio of 6.5 / 6 is 1.08333333 which can be expressed as the phi root of 1.64.

6.5/6 = 1.08333333

1.64 = $1.08333333^{6.180403641}$ = 41/25 = $41/5^2$

7.5/ 6.944444 = 1.08^{5} = 1.469328077
which is the area of the pentagonal triangle with a side of sqrt(5)
= 1.46946313

1.47	=	1.0800987586^{5}	=	16.17 / 11
4.6694**8881**	=	1.47^{4}	≅	Feigenbaum constant
			=	4.6692016

Noticing that the perimeter of the CPRQ is 12 plus Phi and the ratio of areas with ratio very close to the chromatic musical interval ratio 1.05946.

Lengths

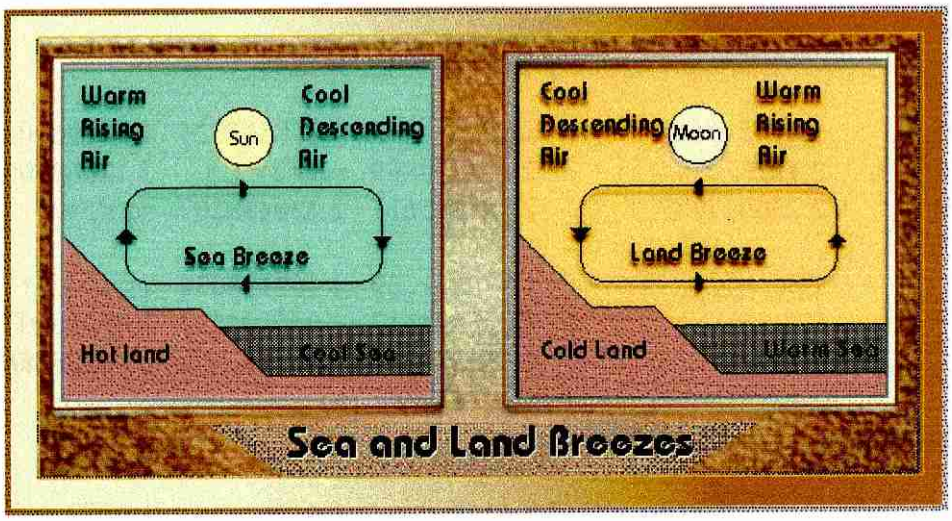
AD	3	
LK	2.5495095	sqrt(6.5)
GH	3.3282723	sqrt(11.077396) = $36.8686^{(1/3)}$ angle at A Major apex =36.869898
AC	4.2426407	sqrt(18)
FE	2.8284271	sqrt(8)
CP	3.154386672715	
SR	2.551952425056	
SP	1.85410196625	

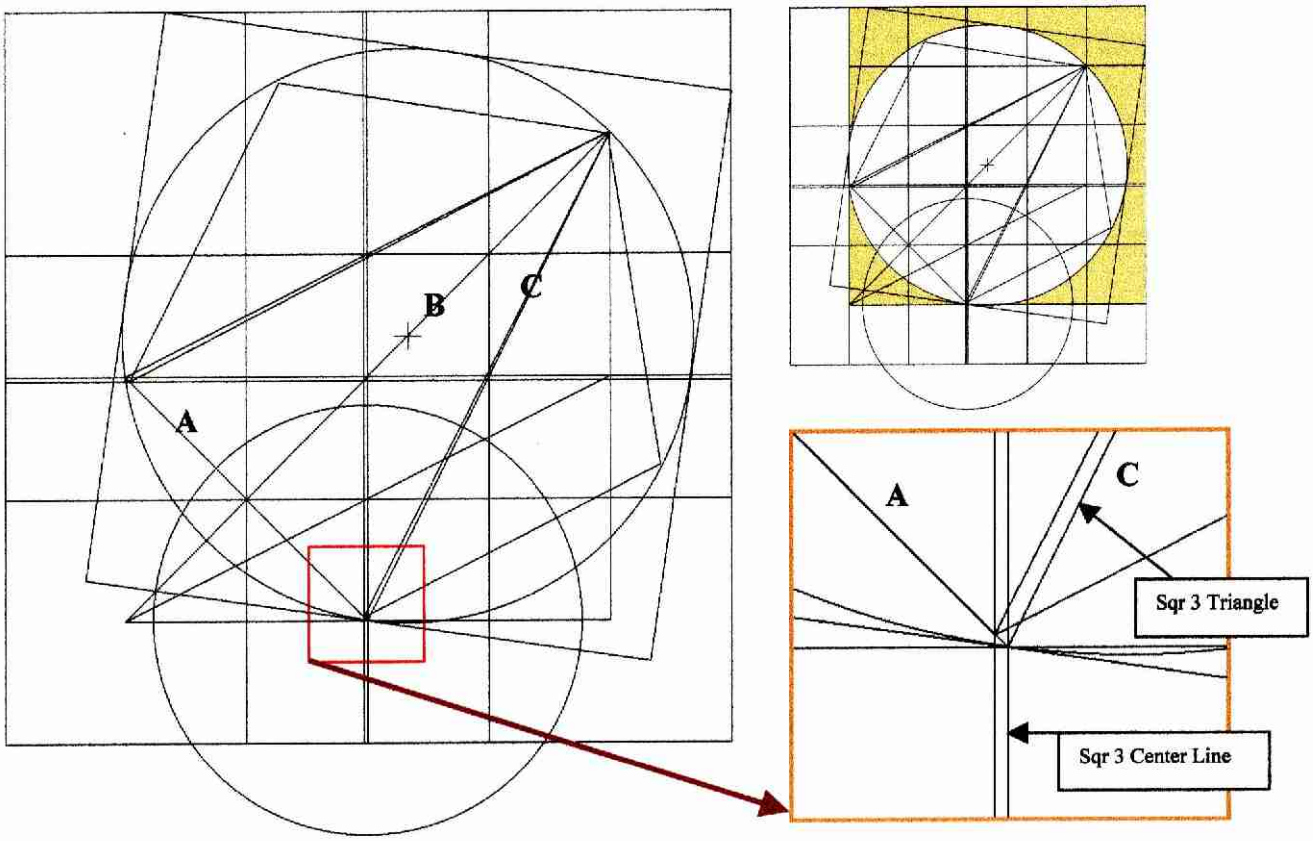
The ratio CP/ SR = PHI / 2 , now relates to the golden triangle.

Angles

ECM	11.**30**993247	11.309734	≅	3.6 * pi	=18 * pi/5
FAG	22.**619**864948	22.619864	≅	7.2*pi	=18 * pi/2.5
FAE	67.380135	67.379522	≅	sqrt(4540)	
SPR	54				
PSR	36				
CPR	108				
PRQ	72				

There is no need to try to relate the angles of the last 4 measurements as they relate directly to the golden triangle. Just adding a interesting fact about 9's like the Residual Electrical Capacity of a Quartz Crystal is 1/9 , what it is in the air. This diagram below illustrates a circular natural movement, which can be seen in the sqr 3 arrangement.





Resonant Geometry

Studying the diagram above you can see how the pentagon and its golden triangle fits into a square grid, having now more possibilities such as a sqr 3, 4, 5, and 6 existing within its boundaries. The differences between 36 degrees and 36.8698 is where you will find a wealth of harmonic information as listed below.

	Square 3		***Pentagonal Triangle***		
A	sqrt(2)	1.414213562	sqrt(2)	1.378517524	1.381966011
B	sqrt(2)*1.5	2.**121**320344	2.176250899	sqrt(2)*1.5	2.12662702
C	sqrt(5)	2.236067977	2.**288**245611	2.**230**488207	sqrt(5)
Area		1.5	1.5**388**41769	1.4**62**138634	1.4**694**6313
Area ratio		1	1.025894512	1.025894512	1.02078097
Area diff		1.5 -+	0.0**388**41769	0.037861366	**0.003053687**

21 dimensional quantities (reduced number is 3)

A	1.3786	1.**382**0	1.4106	1.4142	1.4176	1.4472	1.4506
B	2.0678	2.0732	2.1160	2.**121**3	2.1266	2.1708	2.1762
C	2.1797	2.1854	2.2305	2.2361	2.2416	2.**288**2	2.2939

This gives us a table of seven unique magic square triangles that are incremented as such;

A	difference	B	C	Ratios	Areas
1.378517524		2.067776284	2.179627583		1.425232922
1.381966011	0.003448487	2.072949014	2.18508012	1.002501591	1.43237254
1.410684607	0.028718596	2.116026908	2.**230**488207	1.020780971	1.492523294
1.414213562	0.003528955	2.**121**320341	2.236067976	1.002501591	1.5
1.417751348	0.003537786	2.12662802	2.2416 51706	1.002501592	1.507514162
1.447213597	0.029462249	2.170820393	2.**288**245611	1.02078097	1.570820394
1.450833934	0.003620338	2.**176**250899	2.293969867	1.002501592	1.578689326

The other 3 unique cases are for golden triangle;

A	difference	B	C	Ratios	Areas
1.378517524		2.**121**320344	2.**230**488207		1.462138634
1.381966011	0.003448488	2.12662702	2.236067977	1.002501591	1.469463129
1.414213562	0.032247551	2.**176**250899	2.**288**245611	1.023334547	1.538841768

ams	36.86988768	apt	36
bms	71.56505116	bpt	72
cms	71.56505116	cpt	72

The total number of triangles that are in this operation is ten, surprising enough the areas show some tangible evidence for a oscillatory pattern.. The fact being if we see that the area of 1.5 as a central node the on one side you have a decrease in ratio the same as the increase on the other side of precisely 1.**025892**512 , making a gap of about 0.0767 and just to be asymmetrical, there is a node just 0.03 less than 1.5, this almost shows an orbital arrangement with the values listed. When you take the difference of area from either side and divide the result by 2 you come very close to the 1.5 mark. (exactly 2.**025894**5)

If you noted the ratio sequence with the value 1.002501591 then you are very already seeing the sequences. You must remember that A is related to C by the ratio 1.618034.

C/A = 1.618033989

The base ratios are all related to the area of the magic sqr of 3 level 1 that being 9, lets us look at another golden triangle that fits into this scheme. The row quantity is 3 and its area is 3 in this case this is the square of the number of total squares, saying this we must now work out the values for a golden triangle with the area of 3.

A 1.97459777 B 3.038593525 C 3.194966306

Now if you multiply A dimension by 1.25 you have

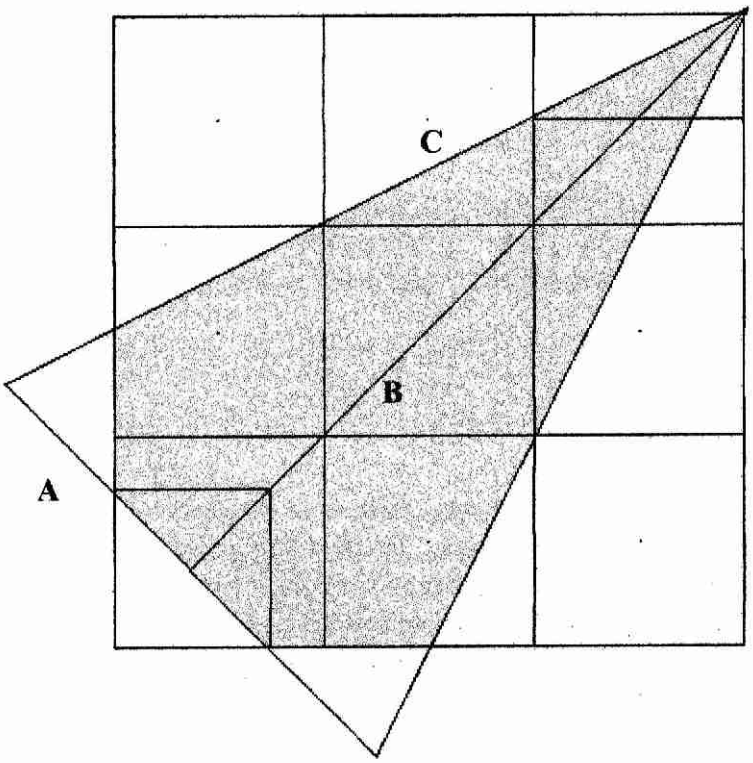
A 2.468247213 B 3.798241906 C 3.993707883

This will give you an area of 4.6875 which is a ratio of 1.92:1 to the larger magic square, the area is now the same as the line number values of the ratios in the Musical key of **A** sqr of 3.

This type of approach acts as an elliptical function by returning the ratio values from one system to another, and retain the self similarity with respect to its use of ratios. The idea of resonance of geometric forms is what can be concluded from some of these triangles.

The magic square triangle also lends itself to the 4.6875 area;

A 2.5 B 3.75 C 3.952847072



The area shades in the magic square triangle come to 4.21875 area while the remaining outside areas come to 0.46875.

15.796782	1.9745978	***11.847587***	29.61897
5.9237933	9.8729889	13.822184	29.61897
7.8983911	17.77138	3.9491955	29.61897
29.**618**967	29.618967	29.618967	29.61897 **88.8569**

The 4 and 6 position, 7.8983911 and 11.847587 could also translate to the natural frequencies of the Earth, this particular square form could be rounded to a whole number even equence,2,4,6,8.10, etc. giving you a total of 90, and now with the musical form ratios.

3.9491955	1.9745978	***3.3321337***	9.255927
2.4682472	3.085309	3.7023708	9.255927
2.8384843	4.1960203	2.2214225	9.255927
9.255927	9.255927	9.255927	9.255927 **27.76778**

The total value is between 27 and 28, suggesting another correlation. The position where 6 is at the base level 1, the value is 3.3321337 the numeric consonance between these numbers suggest a correlation.

27.76778 / 3.3321337	=	8.33333	=	1 / 0.12	=	50 / 6
	=	45 / 5.4				
4.6875	=	8.33333 * 1.777777				
15	=	5^3 / 8.3333333				
1.92	=	16 / 8.333333	being the ratio of 9 / 4.6875			

This last figure suggests an increase dealing with the value 16, either as the 11 sequence or a proportional area ratio.

The Value 1.92 is also the value for the pressure of the Ether, 1.92e-7 pa.

Looking at the ratios of a Sphere with a radius the same as a diagonal of a square 3 area of 9 This value equates to the square root of 18.

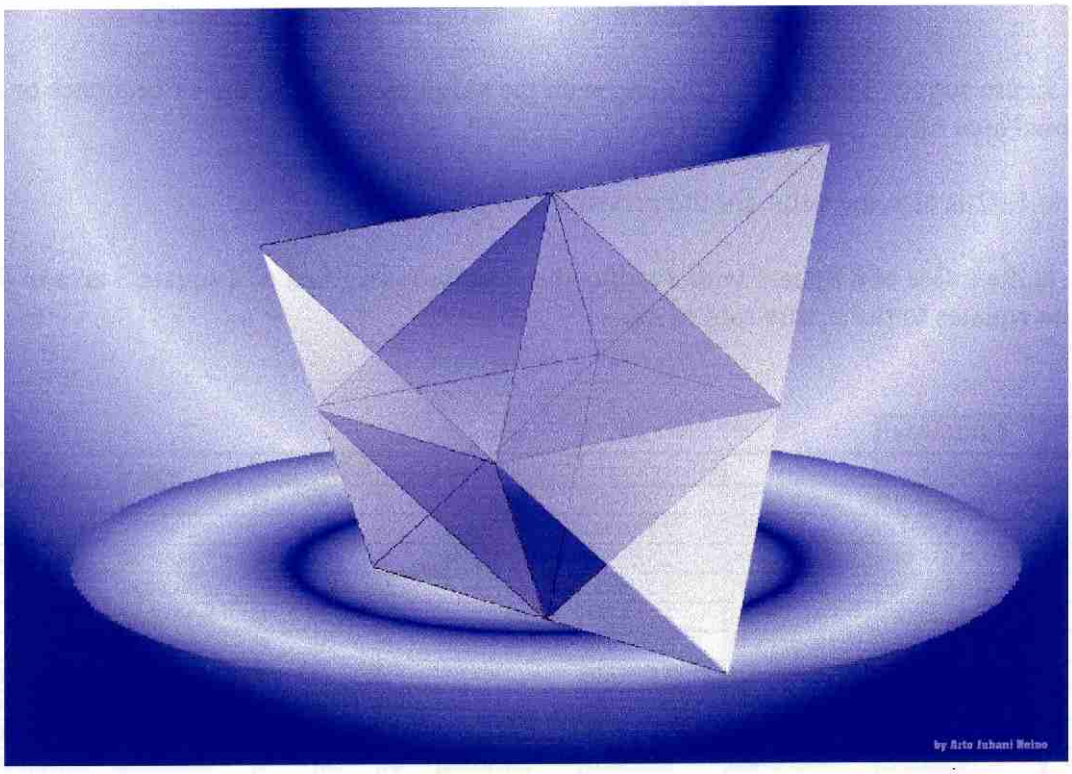
Radius	**4.242640687**		Volume	Area						
	Volume	Area	Ratio to Sphere	Ratio to Sphere	Faces	Edges	Points	Edge x	Edge y	Ratio type
Sphere	319.8875715	226.1946711	1.0000000	1.0000000	1	0	0			
Cube	117.5755077	144.0000000	2.7206990	1.5707963	6	12	8	4.8989795	4.8989795	
Square Pyramid	114.5512986	120.5307436	2.7925268	1.8766554	5	8	5	7.3484692	5.1961524	
Square Dypyramid	101.8233765	124.7076581	3.1415927	1.8137994	8	12	6	6.0000000		
Cylinder	169.6460033	169.6460033	1.8856181	1.3333333	3	2	0	6.0000000		
Double Cone	159.9437858	159.9437858	2.0000000	1.4142136	2	1	2	6.0000000		
Cone	89.9683795	127.2345025	3.5555556	1.7777778	2	1	1	7.3484692	6.3639610	
Tetrahedron	30.4374358	62.3538291	10.5096754	3.6275987	4	6	4	6.0000000	5.1961524	
Double Tetrahedron	66.1362231	104.5705503	4.8367983	2.1630820	6	9	5	7.3484692	6.0000000	
Dble Star Tetrahedron	74.5282512	93.5307436	4.2921653	2.4183992	24	24	8	6.0000000	5.1961524	
Bucky Ball (approx)	243.0000000	190.9188295	1.3164098	1.1847688	32	90	60	1.6215651		
Iscohedron	165.3405576	155.8845727	1.9347193	1.4510395	20	30	12	4.2426407	3.6742346	
Dodecahedron	152.9602306	171.3611437	2.0913120	1.3199881	12	30	20	2.8386838	4.8927600	
Ellipsoid Flat	188.4293334		1.6976527		1	0	0			2
Ellipsoid	125.6195556		2.5464791		1	0	0			3
Ellipsoid	94.2146667		3.3953055		1	0	0			4
Ellipsoid	75.3717334		4.2441318		1	0	0			5
Ellipsoid Tall	94.2146667		3.3953055		1	0	0			2
Ellipsoid	41.8731852		7.6394373		1	0	0			3
Ellipsoid	23.5536667		13.5812218		1	0	0			4
Ellipsoid	15.0743467		21.2206591		1	0	0			5
Egg Form					1	0	0			

A couple of the most notable references must be made, being the volume of a cylinder and double cone has the same value as its surface area. The number 144 turns up as the measuring stick by which harmonics are related. This list is incomplete, and can easily be finished, if you need to correlate more ratios than have so far been shown. This is the working out of the surface area of the square dypyramid:

Area $= \text{sqrt}\left((r^2 * 2) - (\text{sqrt}(r^2 * 2) / 2)^2 \right) * \text{sqrt}(r^2 * 2) / 2 * 2^3$

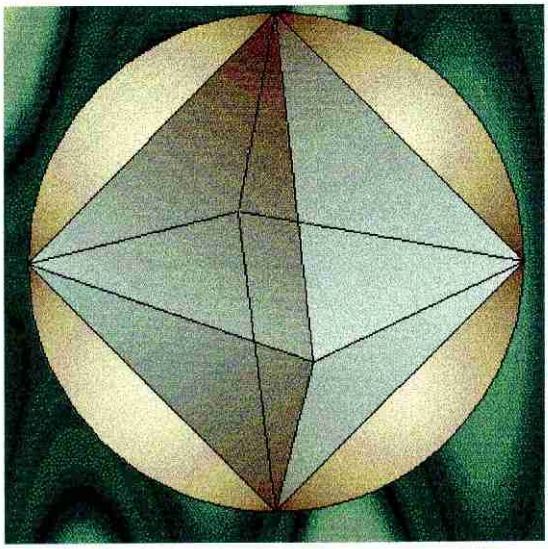
Note the use of 2 throughout this equation. If the radius becomes half of the value listed then the area of the cube is 36. The area of the sphere divided by 18 and multiplied by Pi becomes 4, this by all means is another reason to explore the magic square 4 numbers.

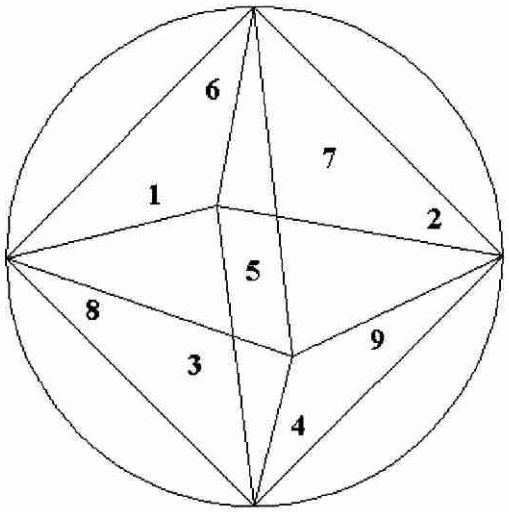
The reference to edge x the 6 value shows that the square dypyramid, the cylinder and the double cone are related, these forms are the most widely used in machinery. The construction of a magic square will shed more light into these solid forms.



The square dypyramid fits with a square 3, by each face being equal to a value in a magic square 3 and the 5 at the center plane which all the other numbers touch, just as in the square 3 form.

Volume = Sphere Volume / PI

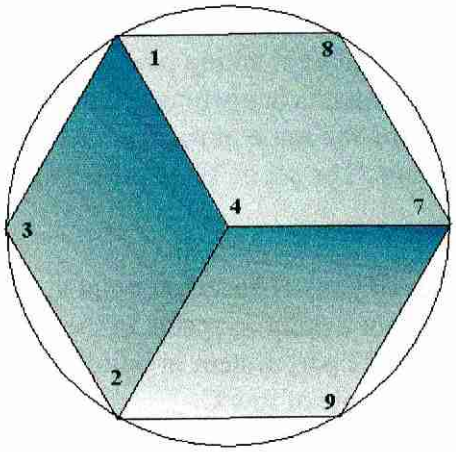




Faces = 8
Edges = 12
Points = 6

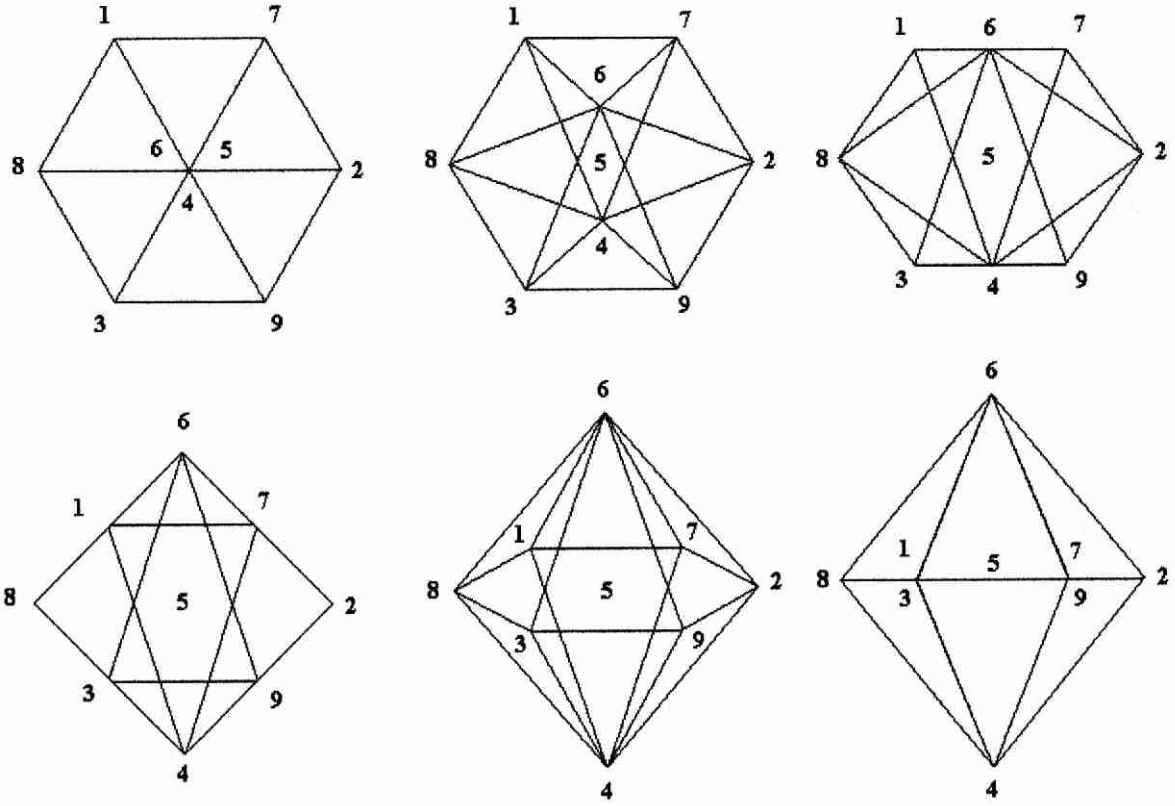
Area of Outside Surface = Radius of Sphere ^2 * Sqroot of 48

The Cube could also be a referencing system, if each corner becomes the outside 8, and the 5 is at the center, much like a body centered atomic construction (e.g., Fe).



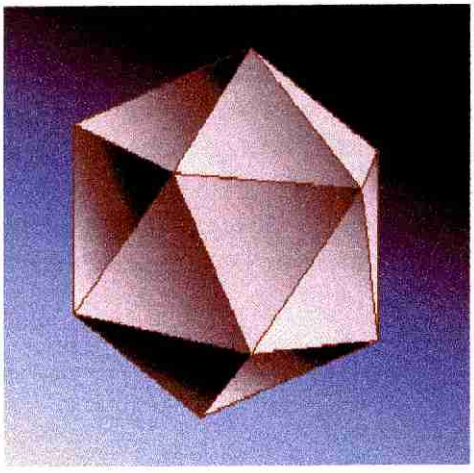
The treatment of a square pyramid, with its 8 edges as the numbers surrounding the center 5 of the magic sqr 3 is another approach that would surely extend this manuscript beyond its present form. The other possibility is looking at the crystal I chose earlier, the hexagonal dypyramid.

The crystal structure of Quartz is commonly a hexagonal dypyramid, and displays a 6-fold symmetry, usually found as high temperature or low temperature formations.



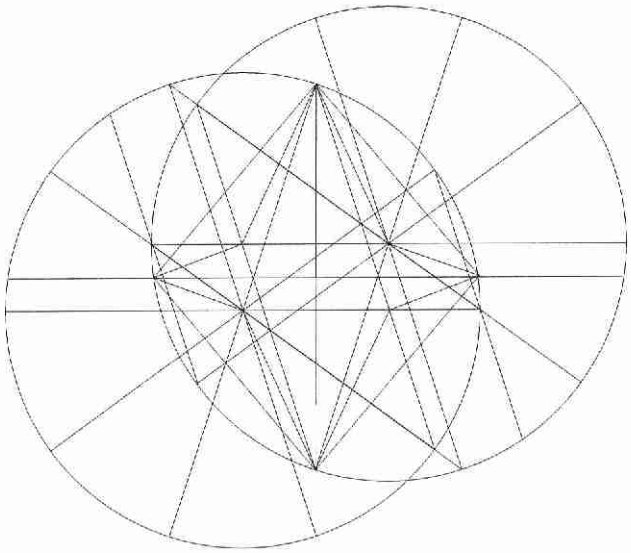
The suggestion of a prime action that is always taking place, call it etheric if you wish, can be seen in the action with its numbers. To see what is happening with the placement of these lines on the edges of the crystal form we must draw the same musical chords as shown in the 32 transformations on this set of diagrams. The set of 11 sequence also makes a dual 6,9 balance set of linear pictograms.

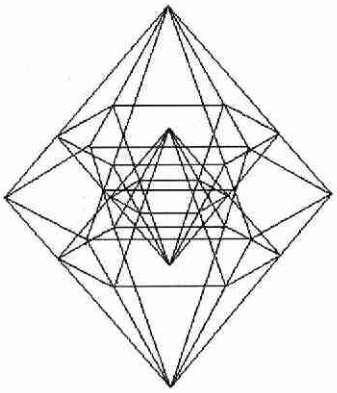
I should also mention the 32 classes of Crystal based on point symmetry, or in other words there is only 32 ways of arranging objects about a point in space. In the writings of the Vimanika Shastra, the flying Vimana aircraft employed a 32 part system in building the Ancient Flying Discs, the frequency of 32 Hz is also the musical note of low C.



The Magic Square of Three Crystal

Growth is what a crystal does most efficiently, when given the correct environment and a raw diet of generic compounds.





There are other geometry's that are involved in magic squares, take for example, the Unified Vector Geometry, which was used by Buckminster Fuller when he built his geodesic domes earlier this century.(1930's).

This Picture is the layout for one half of a Buckyball.

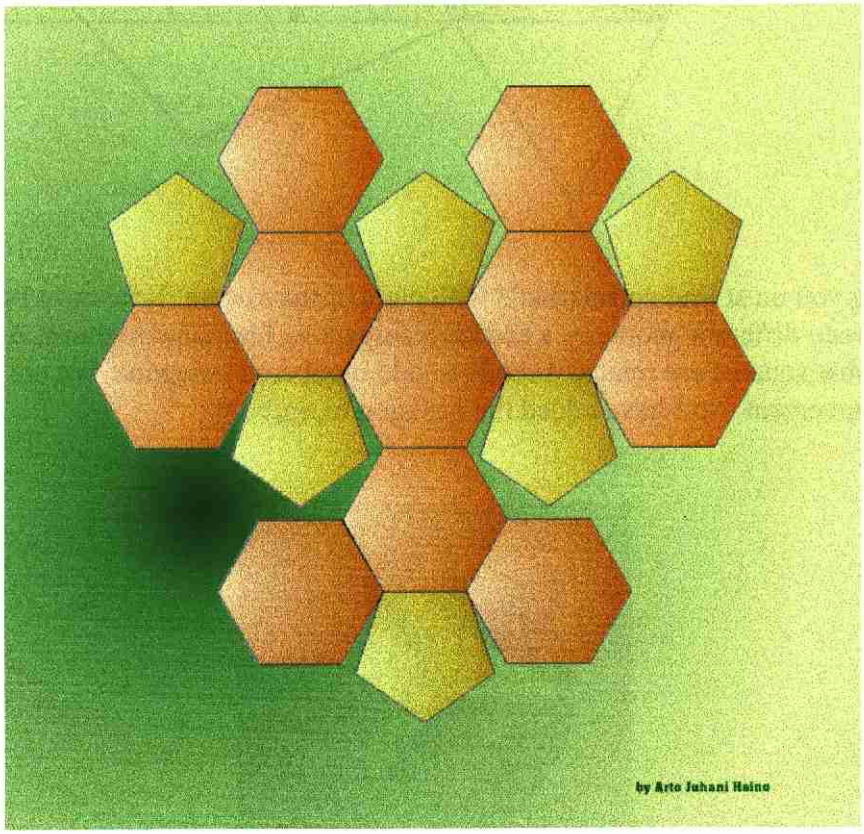
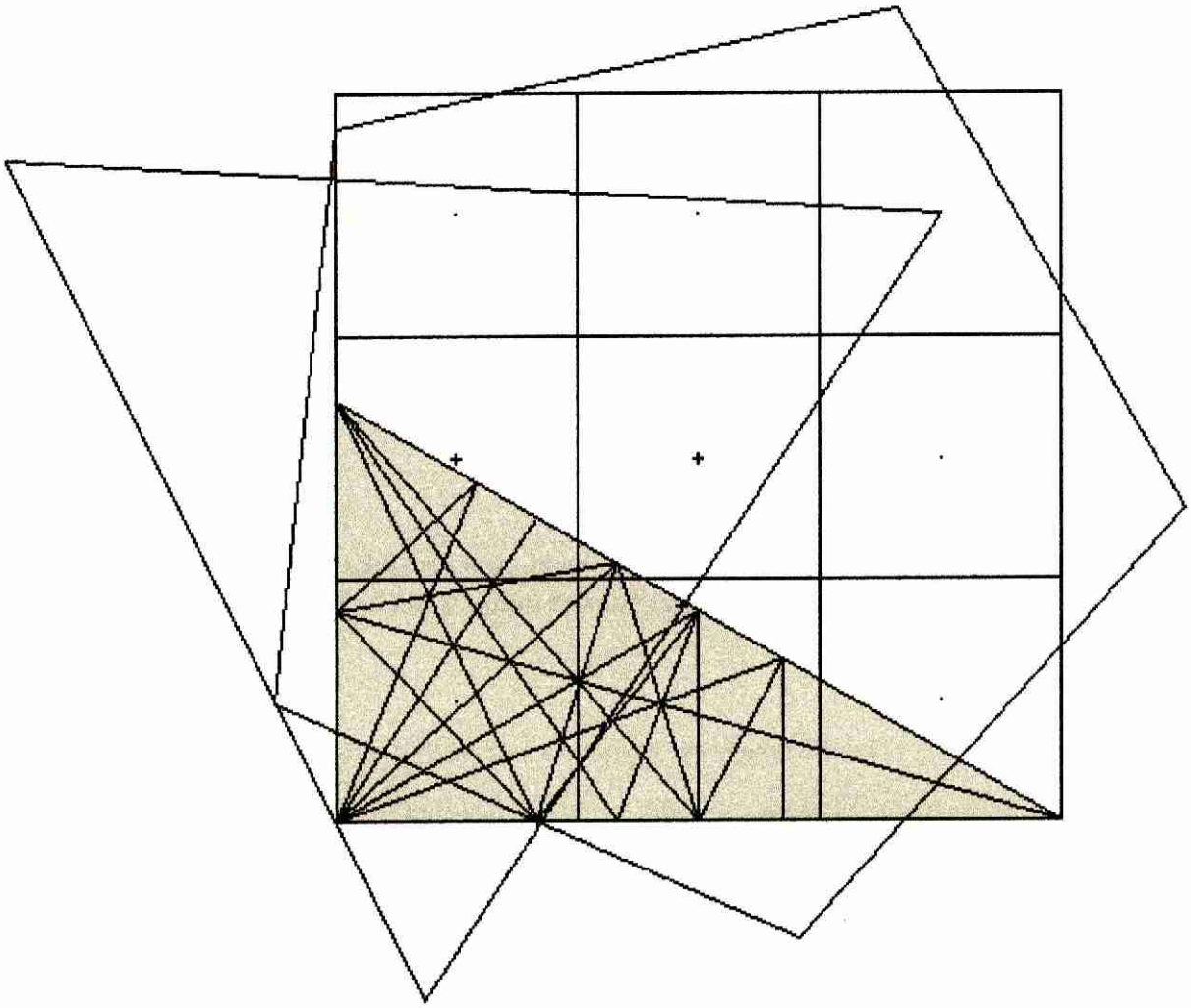


Figure x



When comparing you must find correlation's with parts of the system. Note must be taken on the interactions between different geometry's and their respective harmonic regimes. As we can see that the odd number squares are related directly to odd numbered polygons. We are still pursuing the 4 to 5 to 6 movement , so I have added the hexagon to *figure y*.

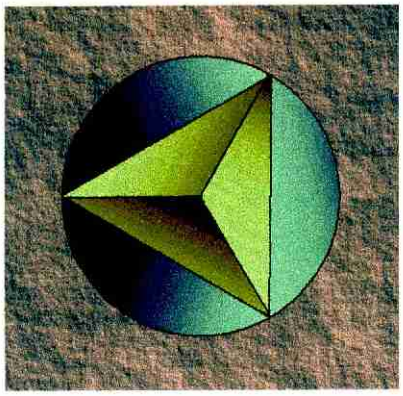
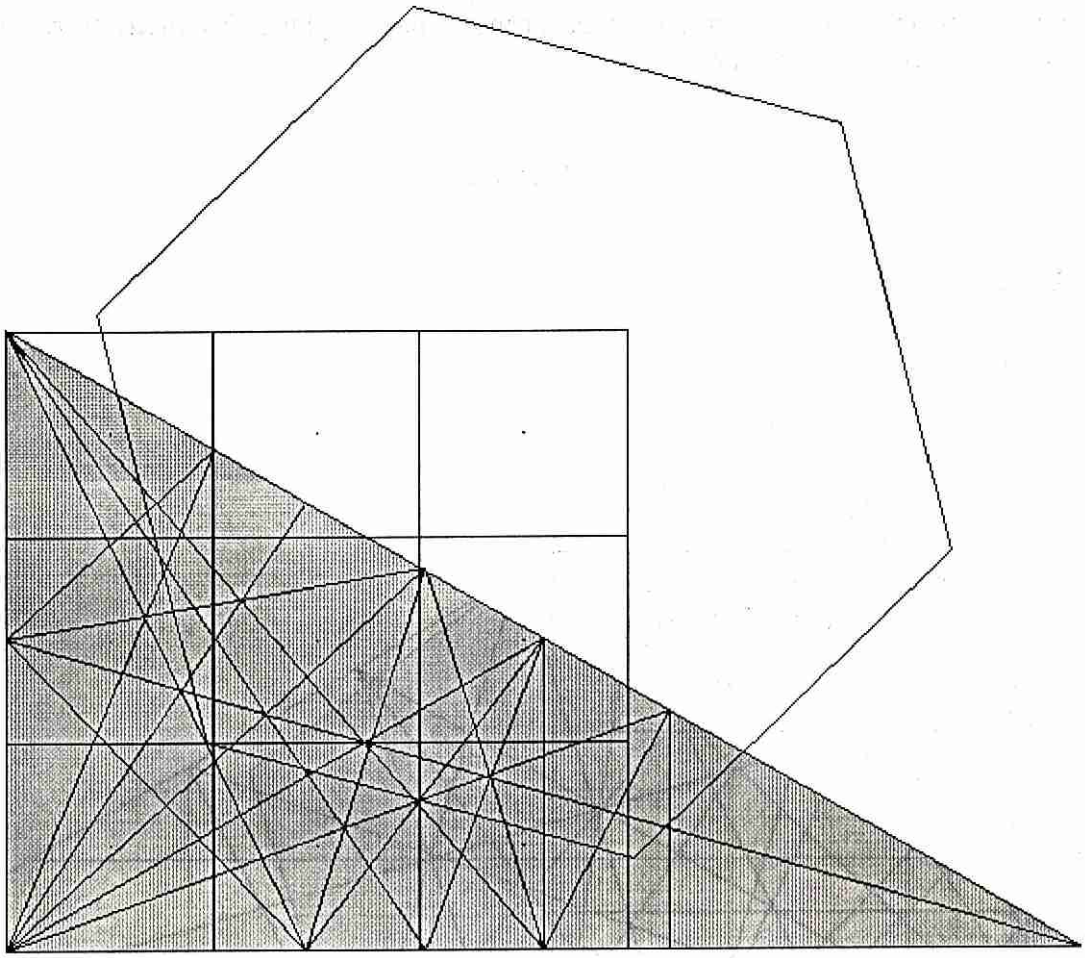


Figure y

The Magic Square of Three Crystal



Scaling becomes an important process of this type of geometry. The triangle that can contain the square of 3 has increased in ratio by $\pi/2$ from the previous triangle with the smaller side being equal to 3.

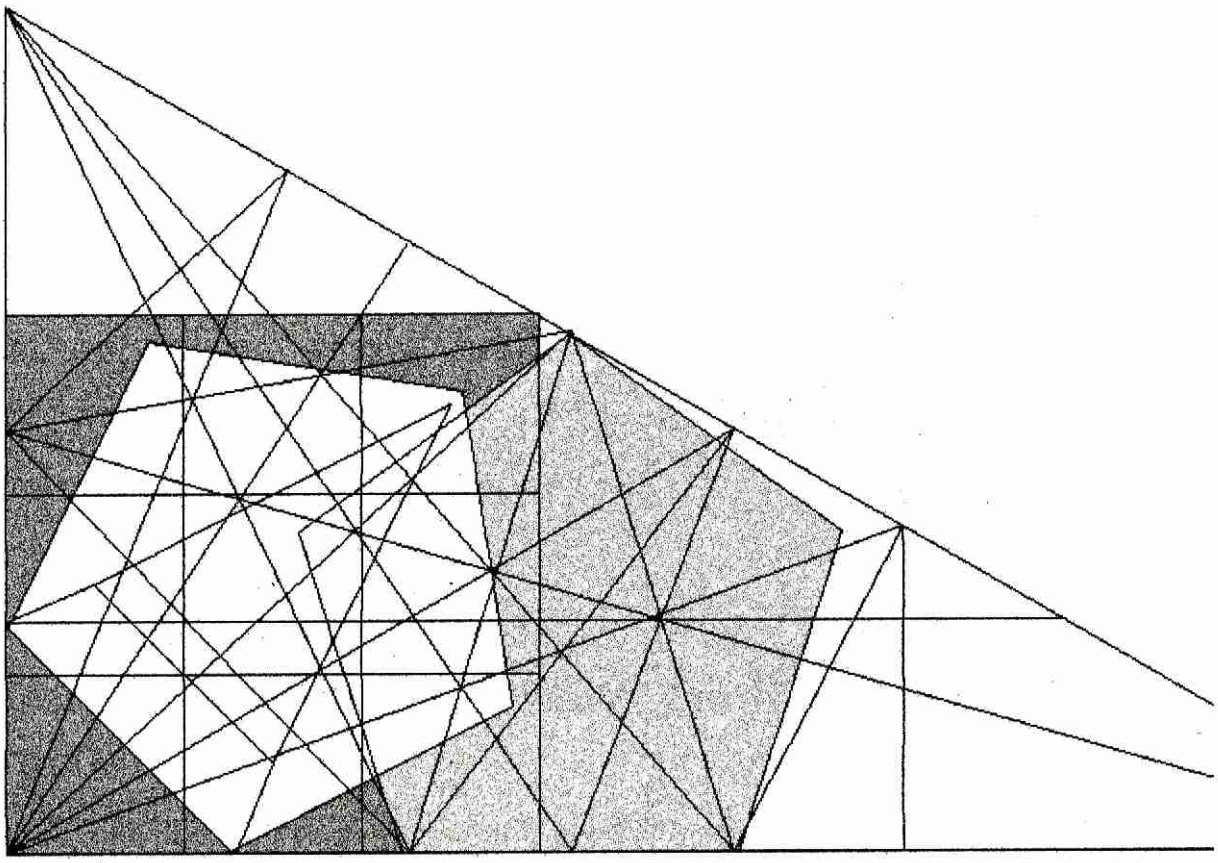
	Figure x		*Figure y*		*Figure z*
Side	**Length**	ratio multiple	**Length**	ratio multiple	**Length**
A	1.5	* 2	3	* 2 / π	4.5
B	3	* 2	6	* 2 / π	9
C	sqrt(12)	* 2	sqrt (45)	* 2 / π	sqrt(810/ 4) = 101.25

sqrt(4.6875 * 2.16 / 4)
sqrt(4.6875 * 0.54)

Well the number 101.25 is after all the product of 4.6875 and 21.6 / 4 with a ratio that includes PI , the latter being a harmonic number much investigated by Bruce Cathie. Here again we can see a numeric growth factor affecting a sexadecimal spherical number. As Bruce points out the volume of the Earth and atmosphere in nautical units is a 216 harmonic number.

The number 6 is at the base of this harmonic showing as 6^3 and becoming 6/4 = 1.5. The number101.25 also relates to the base number for molecular weights of Magnetic alloys as shown by the late Professor Harold Aspen.

Figure z



The triangle of 30, 60, 90 degree angles, is one of the most common triangles used when designing and working out problems regarding 3 phase circuits etc.

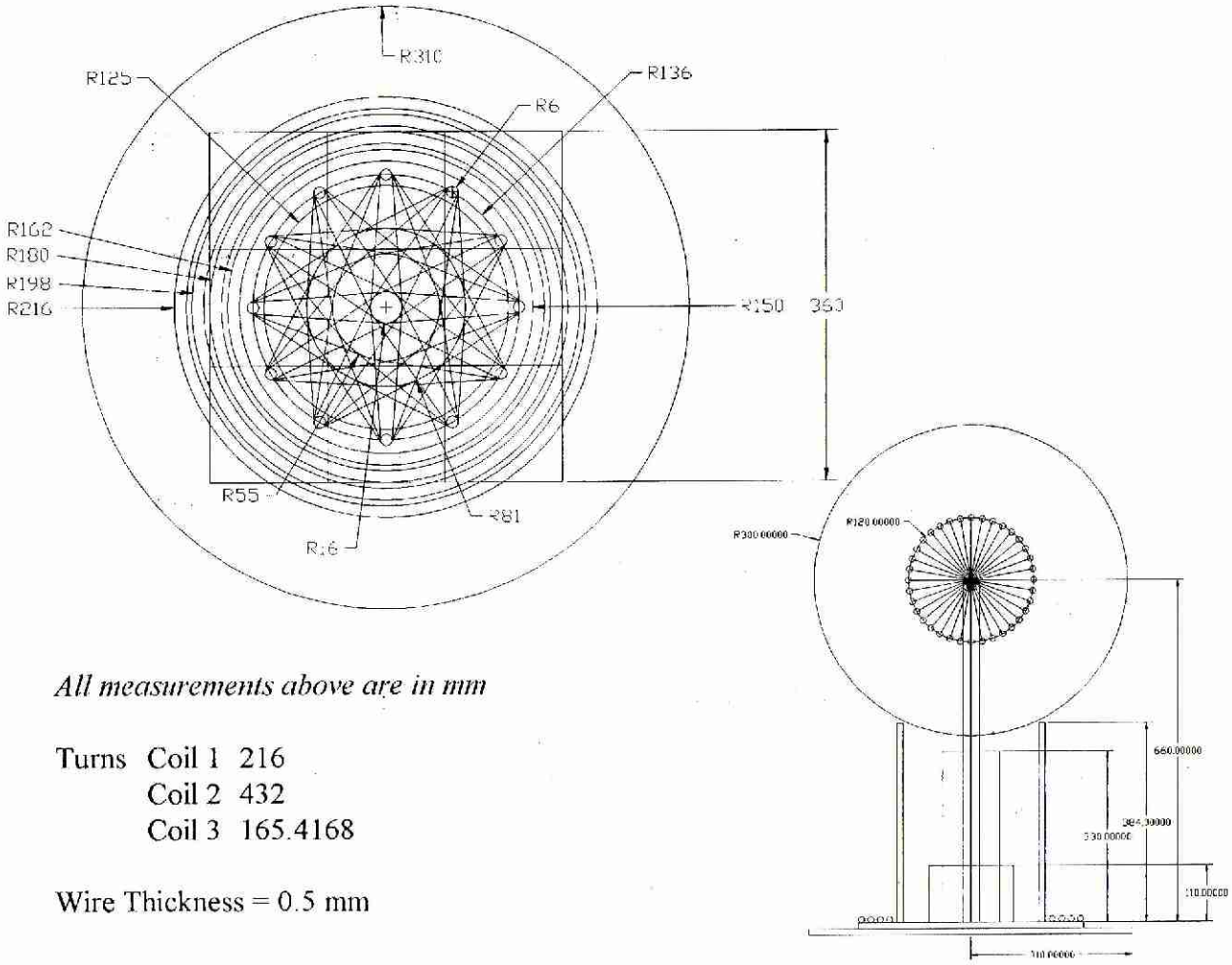
The **45** intersections and the 16 lines of this triangle can be mapped on a globe, to reveal 106 minor great circles, **15** major great circles, 62 grid points, 4800 minor points, 120 (30,60,90) triangles.

The total of 4862 points and **121** great circles houses all **5** platonic solids, this alone should reveal some interesting number correlation's as previous stated.

121	=	11 * 11		
4862	=	45 * 108.04444	= 6 * 810.33333	= 9 * 540.22222
	=	4.6875 * 8.1033333		
4862 / 11	=	442	= $1 + 21^2$	= 144 * 3.0694444

There's no doubt about these numbers having harmonic affinity with the magic square set.

The Mandela Coil



All measurements above are in mm

Turns Coil 1 216
Coil 2 432
Coil 3 165.4168

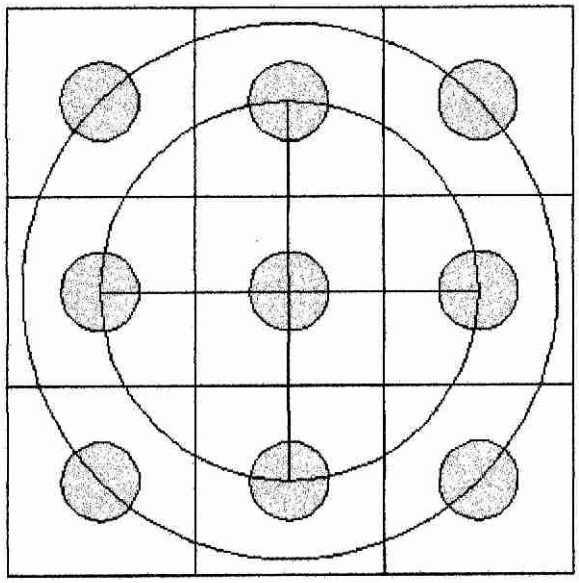
Wire Thickness = 0.5 mm

The application of ideas must include a variable direction so as to work into natures own etheric web. This in turn will accomplish a form of welding of concepts, forging a cycloidal path that replicates the fractal divisions of our labor.

This diagram is of a plan view of a set of Tesla coils which was designed to resonate harmonically with all its components in a particular measured set of units. The frequency I chose was 216000 Hz as the base unit with 648000 Hz being its orbitally paired set, being a 3rd harmonic. This arrangement as seen also included a 12 star wound coil, this helped increase the inductance to the correct harmonic value, with the harmonically wired 4 stage stepped resonant Tesla coil. The Voltage out put is also in the harmonic domain, 648000 volts. The coil wire length is 347.2222 mtrs , which is the reciprocal of 0.0288, a light harmonic factor, in grid measurement (nautical mile = 6000 units of grid foot) it becomes 1125 grid ft. The weight of copper in the coil is 0.618 kg which is the number of Phi.

144000 / 128 =1125
6000 / 128 =46.875
1125 / 46.875 =24 =144000 / 6000

The action taking place for balancing is an orbital motion, as parts are moving in different directions adjusting the balance, just as all the odd number magic squares do.



1	4	7
2	5	8
3	6	9

8	1	6
3	5	7
4	9	2

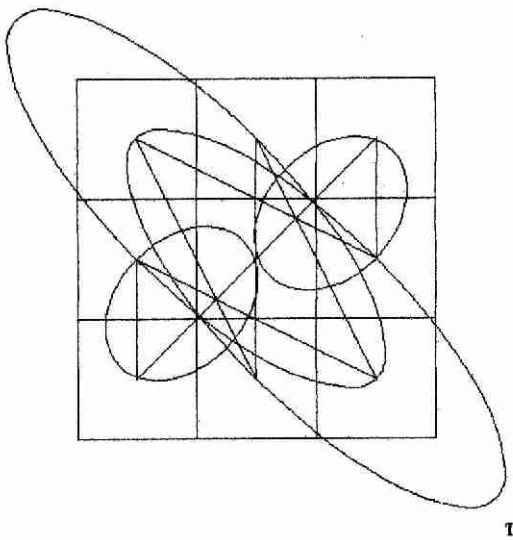
Odd number orbital to the Right one step

Even number orbital to the Left one step

All odd number squares exhibit this form of rotation, 3,5,7,9,11,13,15,17,19,21,23,25…..
An observable concurrence is the square of the center number 5 equals the 12th position of odd number squares. The action can be viewed as a rotor with the same polarity at each arm, this is much like Robert Adams magnetic rotor.

The 2 circles could also be viewed as simultaneous equations on a x/y grid:
$4x^2 + 4y^2 = 36$
$9x^2 + 9y^2 = 36$

Seeing the magic square of 3 as a calculating tool can be most rewarding. The placing of the orbitals now focus on the first 3 numbers then starting again at the 3rd another set of 3. You create the same as a inverse pair of operations starting at 9 and working back. The structure if extended can reveal some interesting ideas regarding cyclic operations in galaxy formation.



4 + 5 = 9

Addition pair

8	1	6
3	5	7
4	9	2

6 - 5 = 1

Subtraction pair

8	1	6
3	5	7
4	9	2

8	1	6
3	5	7
4	9	2

Multiplication triad

(3 + 1) *2 = 8

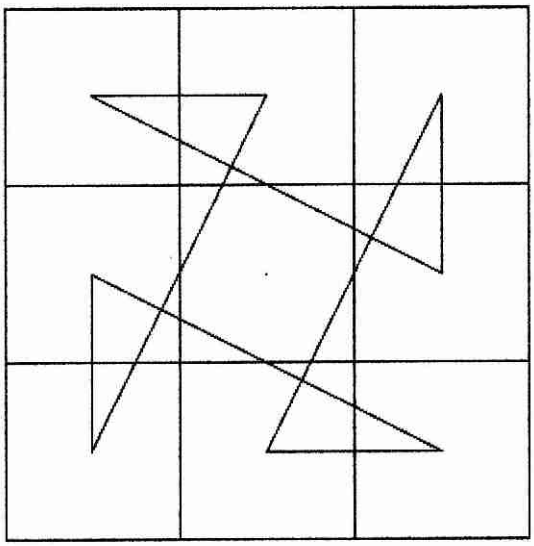
8	1	6
3	5	7
4	9	2

Division triad

(9 + 7) / 8 = 2

The result will be a multiple of this number if the square has larger values.

The Magic Square of Three Crystal



A1

1	4	7
2	5	8
3	6	9

B1

8	1	6
3	5	7
4	9	2

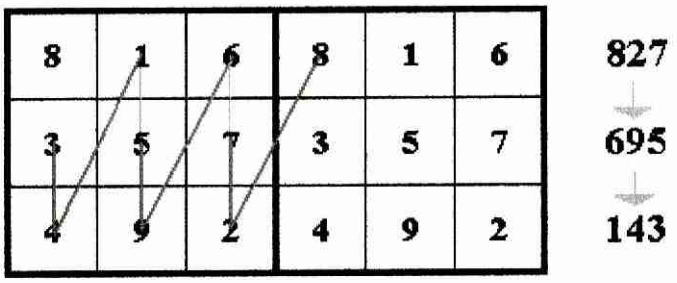
A2

1	4	7
2	5	8
3	6	9

B2

8	1	6
3	5	7
4	9	2

This form shows the rotary nature of a sqr 3 when switched, either as a balanced or unbalanced square. The sequence consists simply of A1,B1,A2,B2,A3,B3,...etc. have noted the length of the line traveled is sqrt(5)*4 + 4 .



This form shows the harmonic numbers moving in a wave pattern. Line length = sqrt(5) * 3 + 5

827 = $(14.378804 * 2)^2$
695 = 1 / 0.0014388489
143 = Center of light harmonic (Cathie)

Here is another way to form a square 3, thus

C + B	**C - A - B**	**C + A**
C + A - B	**C**	**C - A + B**
C - A	**C + A + B**	**C - B**

The values to use to make a base 1 sqr 3 are:

A = 1
B = 3
C = 5

Different values can bring surprising results

1,6,10

16	3	11	3,4,5	9,10,11	15,16,17	Grouping of 3 sets
5	10	15				
9	17	4	line = 30		total = 90	

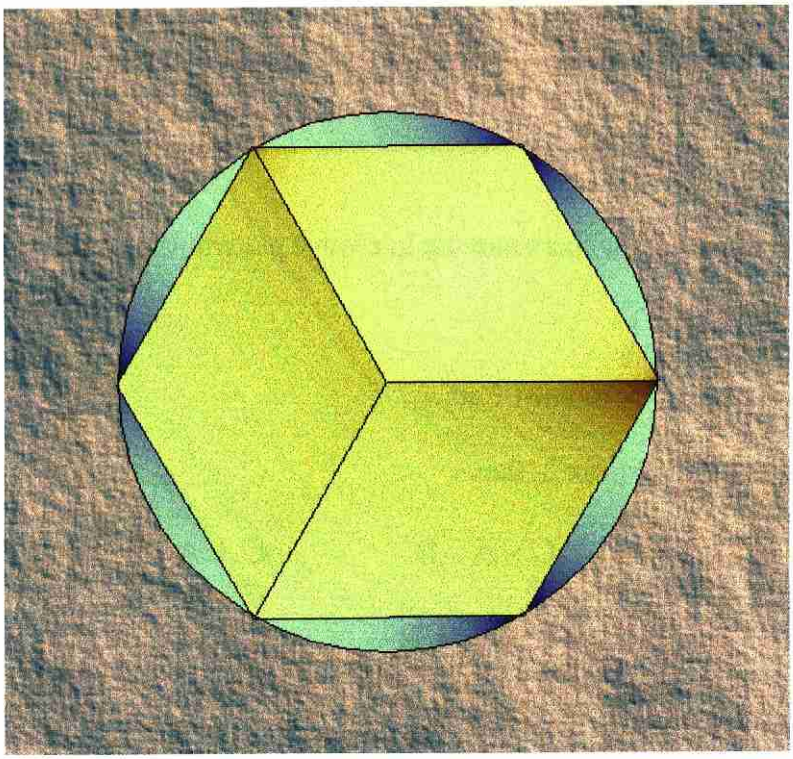
2,6,10

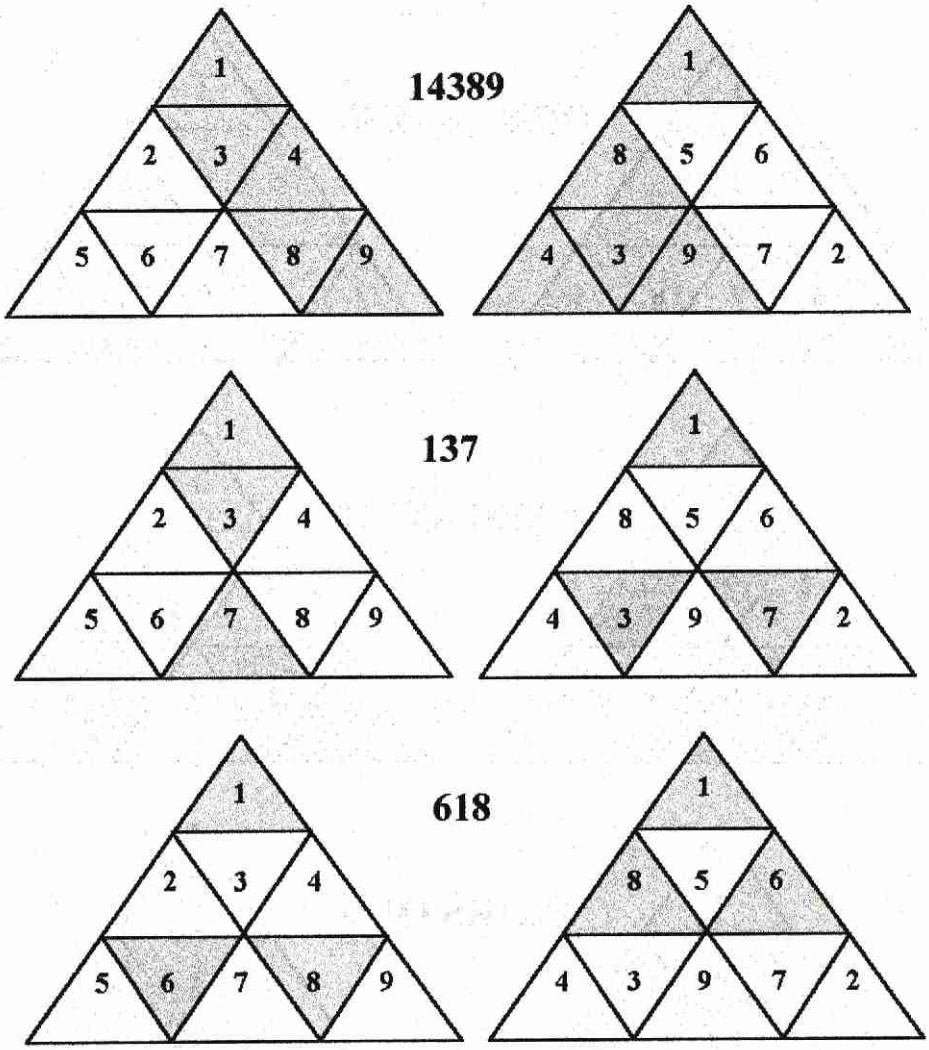
16	2	12	2,4,6,8,10,12,14,16,18			Even number set
6	10	14				
8	18	4	line = 30		total = 90	

3,6,12

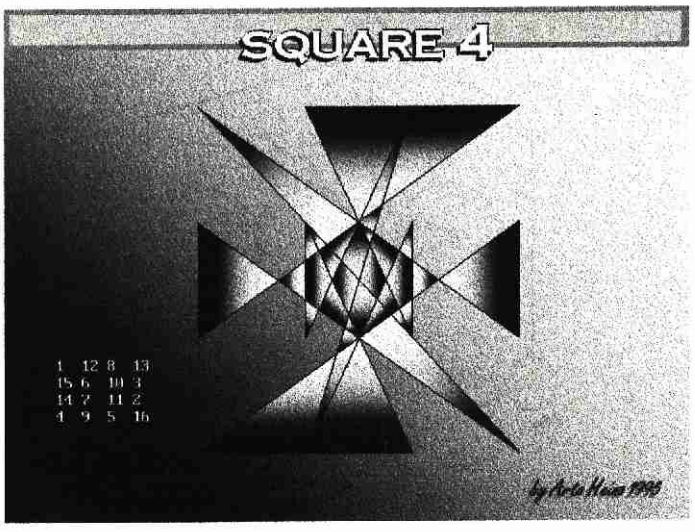
18	3	15	3,6,9	9,12,15	15,18,21	Groupings of 3 set
9	12	15				
9	21	6	line = 36		total = 108	

This last set is a linking amongst the paired sets, notice how all the columns has a reduced number pattern 9,3,6. The total is certainly a Phi related degree number.

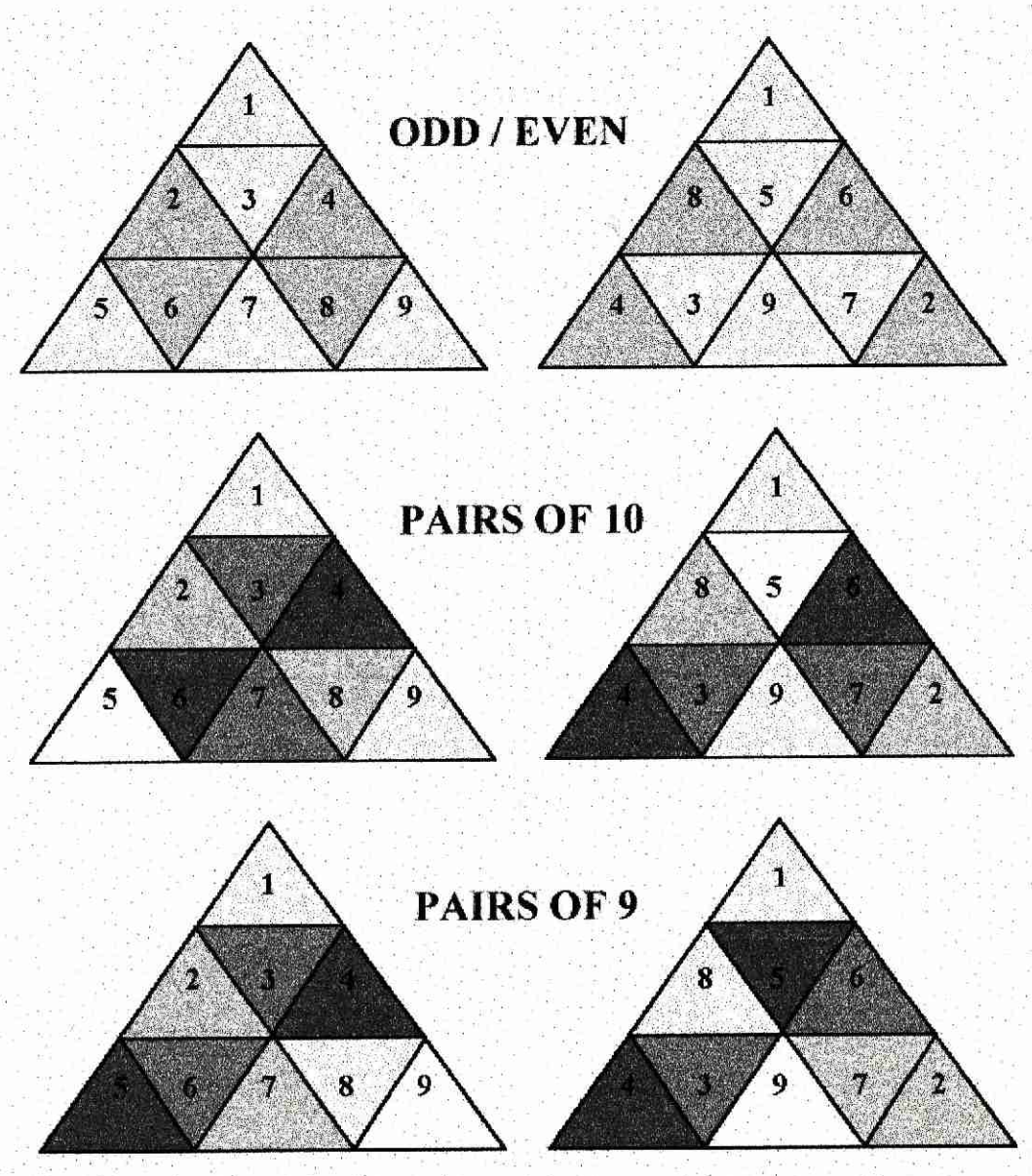




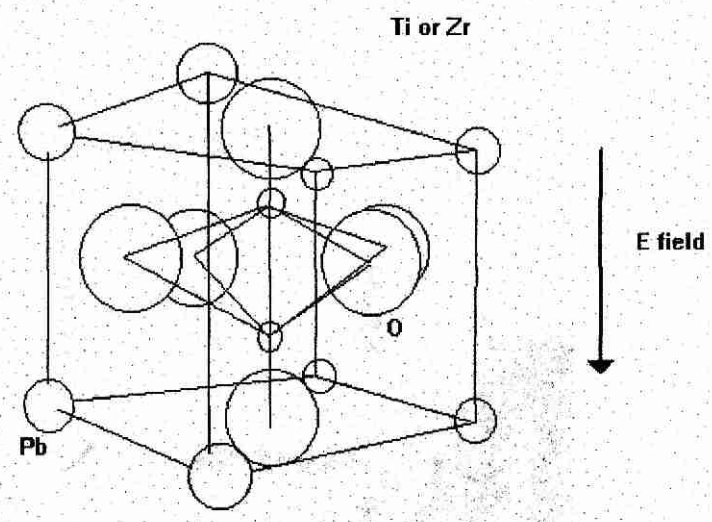
This set of triangles, again show some of the numbers we met along the way, note the balanced forms. 137 also can refer to the fine structure constant. As you can see these numbers are not just random occurrences but show up consistently through out these equations.



The Magic Square of Three Crystal



The amazing way how only 9 numbers can be organized, and still reveal new patterns and numeric harmony, is surely an indication of Natures economy.



The Magic Square of Three Crystal

Velocity of Sound in a Medium

Material	Velocity m/s	Density kg/m^3	Bulk Modulus(Pa)
Air (25 deg)	346.00	1.2000	1.40E+05
Air (20 deg)	344.00	1.2050	1.40E+05
Air (0 deg)	331.30	1.2930	1.42E+05
Aluminium	5100.00	2700.0000	7.00E+10
Antimony	3433.80	6615.0000	7.80E+10
Bismuth	2746.70	9411.0000	7.10E+10
Brass	3461.70	8595.0000	1.03E+11
Bronze	3513.00	8913.0000	1.10E+11
Cobalt	4865.50	8913.0000	2.11E+11
Constantin	4375.40	8880.0000	1.70E+11
Copper	3619.60	8930.0000	1.17E+11
Earth	3896.00	5523.0000	8.38E+10
Ether (light medium	299792540.00	2.137E-24	1.92E-07
Glass	4700.00	2600.0000	5.80E+10
Gold	2023.50	19293.0000	7.90E+10
Helium	972.00	0.1790	1.69E+05
Hydrogen	1267.00	0.0890	1.43E+05
Iridium	4834.30	22421.0000	5.24E+11
Iron cast	4453.70	7058.0000	1.40E+11
Iron pure	5061.70	7806.0000	2.00E+11
Iron wrought	4990.30	7750.0000	1.93E+11
Lead	1230.00	11300.0000	1.70E+10
Magnesium	5022.80	1744.0000	4.40E+10
Mercury	1452.00	13540.0000	2.83E+10
Nickle	4815.00	8885.0000	2.06E+11
Nobium	3470.20	8553.0000	1.03E+11
Phosphor Bronze	3399.40	8913.0000	1.03E+11
Platinium	2663.60	21424.0000	1.52E+11
Silver	2688.00	10518.0000	7.60E+10
Steel	5130.00	7800.0000	2.00E+11
Tantalum	3346.60	16607.0000	1.86E+11
Tin	2386.80	7197.0000	4.10E+10
Titanium	4937.50	4512.0000	1.10E+11
Tungsten	4240.90	19182.0000	3.45E+11
Vanadium	4520.50	6117.0000	1.25E+11
Water	1450.00	1000.0000	2.10E+10
Zinc	3652.20	7197.0000	9.60E+10
Zirconium	3809.50	6477.0000	9.40E+10

I	= sound intensity	W / m^2
A	= amplitude of sound pressure	N / m^2
d	= density of medium	kg / m^3
v	= velocity of sound	m / s
U	= bulk modulus	GN/m^2
I	= A^2 / (2 * d * v)	W / m^2
V	= sqr(U / d)	m / s

The need to work out your material lengths harmonically is to first match your materials with their acoustic wavelengths, so a natural sense of order is achieved without cost. The frequency matching can be of harmonic proportions so different materials can be used together. The atomic scale matching can now be a little easier without the need to consider the variable lengths that constitute a general approach to design.

The choice depends on the need to incorporate a particular action within the device, to make matters simpler I will start with the most basic materials.

	Copper	**Iron**	**Nickel**
Density	8930	7806	8885
Velocity	3619.16	5061.7	4815
Bulk Modulus	1.17E+11	2.00E+11	2.06E+11

F1 = Velocity / Wavelength
= 97340.385 Hz = 8192 * 11.88237121582

11.87 is a natural Electrical frequency of the Earth
8192 = 256 * 32

Find a pivotal relationship between all three values, use Phi to find if they are aligned:

V1 = 3619.16 3620.3856=2560 * sqrt(2) 3620 = 572 * 0.618034 * 10.24
V2 = 4815
V3 = 5061.7 5062.9343= 8192 * 0.618034

V3 / V2 = 1.051235721703
V2 / V1 = 1.330419213298
V3 / V1 = 1.398584201859

Wave length = V3/F1 = w1 =0.052 mtrs = 0.026
V2/F1 = w2 =0.0495 mtrs = 0.0247
V1/F1 = w3 =0.0372 mtrs = 0.0186

The wave length becomes half due to the way acoustic waves internally reflect at the mid point of the Energy cycle, being longitudinal they will exhibit a bi polar pair balance when in a standing wave structure. This means that the compression wave and the expansion wave are at a zero node at either end, refer to the magic squares to see the same action occurring . Once accomplished the average change in displacement becomes zero, this is a preferred state of nature as less effort is needed to sustain resonance.

w2 / w3 = 1.051235721703 = 69.3815576324 / 66 ≅ 143 / 136
w2 / w1 = 1.330419213298 = 143.6852750362 / 108
w3 / w1 = 1.398584201859 ≅ 1 / 0.715 ≅ 2 / 1.43

Look at this close reference

13 * 1.3986014 = 18.181818

D1 = 7809
D2 = 8885
D3 = 8930

D3 / D2 = 1.0050647 D3-D2 = 45
D2 / D1 = 1.1377897 D2-D1 = 1076
D3 / D1 = 1.1435523 D3-D1 = 1121

Pa1 = 1.17E+11
Pa2 = 2.00E+11
Pa3 = 2.06E+11

Pa3 / Pa2 = 1.03 Pa3 - Pa2 = 0.06
Pa2 / Pa1 = 1.7094017 Pa2 - Pa1 = 0.83
Pa3 / Pa1 = 1.7606838 Pa3 - Pa1 = 0.89

So if the ratio of the lengths and velocities between Iron and Nickel is a ratio of 1: 1.051, then wouldn't we try to bring this ratio a little closer to 1 : **1.05946**, which is the ratio that spawns our chromatic musical scale. Once accomplished you can increase the length by this same ratio so either piece of material can be longer or shorter. The use of this ratio can bring these materials in concord to each others Harmonies, just as the Xylophone when struck with 3 sticks

Now there is another way of tackling the answer, make all the pieces the same length.(0.026 * 2 mtrs)

F1 = V1/w1 = 69599.231 Hz C#
F2 = V2/w1 = 92596.154 Hz F#
F3 = V3/w1 = 97340.385 Hz G

F2 / F1 = 1.3304192 ratio of a 3rd
F3 / F2 = 1.0512357 ratio of a 1st
F3 / F1 = 1.38985842 ratio of sharp 4th

The key of D Major looks a possibility

D	E	F#	G	A	B	C# (actual octave lower)
		*	*			*

It looks like Copper needs to be realigned if we are going to use it as part of the sequencing vibrations.
Concentrating on the Iron, Nickel combination we can safely place a lower frequency instigator.

D = 72466.555 Hz

If we change the copper length now to match this lower frequency, then we will have a form of harmonic mass frequency exchange.

w1 = 0.049942487

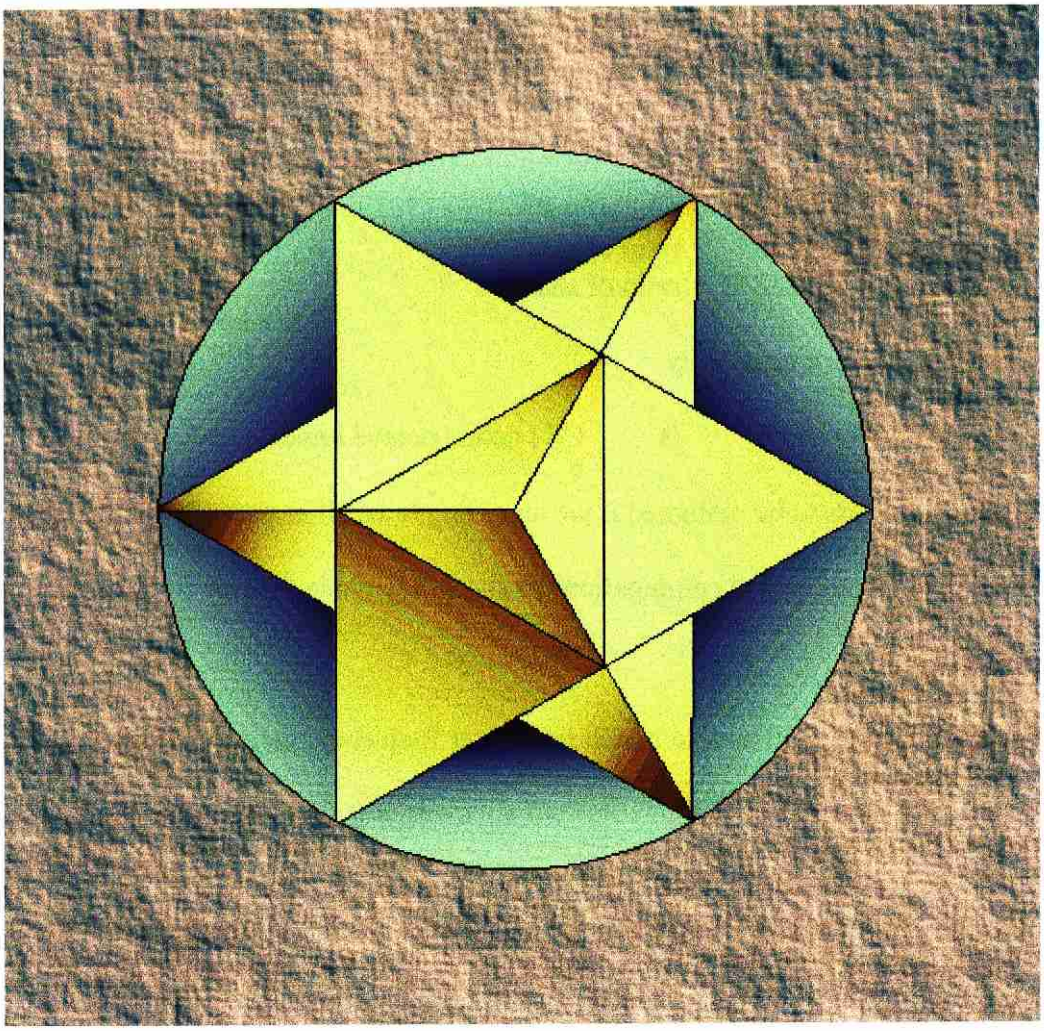
As these notes do not constitute a single harmonious chord, I would suggest a series arrangement with the copper being the center sandwich, thus separating the two single interval gaps.

The only dimension that I have mentioned has been the Length, the other 2 can be the same or a musical ratio difference. So any small changes in any of these ratios will affect all subsequent operations. The idea is to use the tables to recognize harmonic relationships, and to define your numeric parameters of your materials before you cut any lengths.

The use of resonant equations is of prior commitment while working on any harmonic system

f_e	$= 1 / (2 * \pi * \text{sqrt}(L * C))$	Electrical
f_m	$= 1 / (2 * \pi * \text{sqrt}(k / m))$	Mass
f_a	$= 1 / (2 * \pi * \text{sqrt}(Ma * Ca))$	Acoustic

The volumetric approach can now take form, with the problem of mass density being resolved. The simple equations presented here can be a beginning to a long list of investigations.



The Ether

The description of the ether as a gaseous medium, is by all accounts the same as the one Nicola Tesla describes many times in his writings and actually gives some formal understanding to the reader. To quote Tesla "*The Ether would weigh 1/20th of a pound if the volume is the same as the Earth's.*"

Tesla also describes in another statement the velocity and density as compared to sound. "*If light travels 900000 times faster than sound, then the density must be that of the Ether itself.*"

Lets look at the mathematics of this description:

Constants to use:

One kilogram	= 2.205 lb.		
One pound	= 0.45351474 kg		
Gravity acceleration	= g		= 9.81 mtrs / sec^2
Earth radius	= 6378000 mtrs		
Earth volume	= VL = 4 * π * r^3 / 3		= 1.0826975E+21 cubic mtrs
1/20 lb.	= 0.022675737 kg weight		
Mass 1/20lb	= m	= kg wt / g	= 2.31385E-3 kg
Velocity of sound	= v1	= 344 mtrs per sec @ 20 deg c = 346 @25 deg c	
Velocity of light	= C	= 299792500 mtrs per second	
Density of air	= d1	= 1.205	= kg / mtr^3
Pressure of air 1 atmosphere	= pa1	= 101320	= Pascals
Permittivity of Vacuum	= e0	= 8.854e-12	= farad / mtr
Relative permitivity of vac	= er	= 1	= farad / mtr
Permeability of a vacuum	= u0	= 4E-7 * π	= 1.25663708E-6 henry / mtrs
Relative perm of vacuum	= ur	= 1	= henry / mtrs
Time	= t		= seconds
Distance	= d		= mtrs
Frequency	= 1 / t	= f	= hertz
Inductance	= L		= henrys
Capacity	= c		= farads
Inductive Reactance	= XL	= 2 * π * f * L	
Capactive Reactance	= XC	= 1 / (2 * π * f * c)	

E = energy in joules
EL = Elasticity for solids
K = Bulk modulus of medium , measure of how hard it is to compress the substance
K = change in pressure / volumetric strain
Pa = Pressure in Pascals for gases
EL = K = Pa
k = Laplace constant, ratio of specific heats , constant pressure to constant volume
T = Temperature, Kelvin
Change in volume / original volume = change in pressure / bulk modulus

Velocity of the medium can be determined by a few equations

C	= frequency * wavelength	= f * L
C	= impedance / density	= Z0 / D
C	= sqr(Pa / D)	for ideal gas (ether)
C	= sqr((k * Pa) / D)	for gases
C	= sqr(k * Pa * T)	for gases
C	= 1 / sqr(u0 * ur * e0 * er)	Maxwell
C	= sqr(E / m)	Einstein

Density	= mass / volume	= m / VL	= **2.137E-24** kg mtr3	= D
	= impedance / velocity	= Z1 / C		= D
	= impedance / velocity	= Z0 / C	= 1.2566E-6	= u0
Impedance	= velocity * density	= C / D	= **6.4E-16** kg mtr3 m/s	= Z1
	= pressure / velocity	= Pa / C		= Z1
	= sqr(R^2 * $(XL - XC)^2$)	=		= Z0
	= sqr((uo * ur) / (eo * er))	=	= 376.74	= Z0
		= u0 / C		= Z0
Pressure	= density * velocity ^{2}	= D * C^2	= **1.92E-7** pascals	= Pa
	= impedance * velocity	= Z1 * C		= Pa
	= impedance * velocity	= Z0 * C	= 1.1294E+11	= Pa2
		= 1 / e0		= Pa2

therefore if

1 / sqr(u0 * ur * e0 * er)	= sqr(Pa / D)

also

C	= Z1 / D
1	= Pa / (D * u0 * ur * e0 * er)
D	= Pa / (u0 * ur * e0 * er)
D / Pa	= 1 / (u0 * ur * e0 * er)

if ur =1 and er = 1 as for a vacuum state

D / Pa	= 1 / (u0 * e0)

if

D / Pa	= 2.137E-24 / 1.92E-7	= 8.9845E+16

and if

1 / (u0 *e0)	= 8.9845E+16

also

C / v1	= 871489.8255	= ratio of sound to the Ether

So we now have the hydraulic equivalent of the Ether.

This form of the Ether can now be plugged into many different problems and provide answers to many unusual effects that have proliferated in the sciences for nearly a hundred years. Hans Alfven, has basically verified all of Tesla's understandings of the origins of cosmic particles and the function of resonant plasmoids in space.

Critical velocity of a plasma	= Max velocity of electron / 1836	= C / 1836
Vion	= 163289.76 mtrs sec	= velocity of ions (He+)
Vion2	= 161803.4	= 297071042.4 / 1836
1836	= Proton mass / Electron mass	= mp / me
Vion * 6	= 980000	= Resonant velocity in a plasmoids

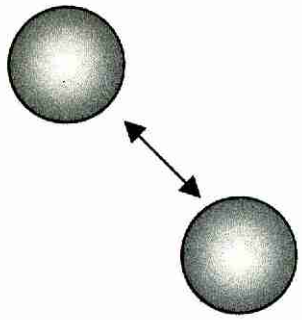
Einstein's equations tried to deny the existence of the Ether and we still arrived at the nuclear bomb, via some great men like Enrico Fermi, but the problems were mathematically complex and difficult to grasp. Tesla's original single element disintegration bulb was the first step in the design link to a thermo-nuclear detonation device. As nature can reveal its hidden secrets, it can also lead men to false analogies about what they experience. Some analogies will function others never seem to fit but the overall conclusion seems to be that nature is inherently simple in all its workings. Is the mathematics of nature different to the equations that we use to try to describe it, in some cases the mathematics are very accurate but the way the equations are described can only be understood by a mathematician not by anything else in nature. The numbers might be correct, the sums may add up but the true nature is never revealed, could the real reason be that we use a set of rules with numbers and another set that deals with its representation.

Just adding to finalize this work I have some equations that relate to the polarization of the dielectric medium, what is needed is a full working out, with your parameters and a suggestion to know why does a capacitor stay charged when in a vacuum, while the currently held view is that electronic polarization is because of the displacement of the atomic nuclei. My thoughts are that a vortex of Ether is created between the plates, the Ether trying to balance the charged elements, and this exchange can in the right conditions increase its energy flow. One condition is the external stimuli is a radiant energy source in the correct frequency range (Gap distance).

Dielectric Polarization

Utilizing Clausius-Mosotti Law you can determine the:
molecular polarization (P)
of a substance whose molecular weight is (M)
and whose density is (D)
and dielectric constant (er)
is given by this law:

$$P = ((er - 1) / (er + 2)) * M / D$$



Lets look at the Dielectric Constant in terms of the
force (F)
between two electric charges (e)
separated by a distance (r)
in a vacuum is given by:

$$F = e^2 / r^2$$

In any other medium this relationship becomes:

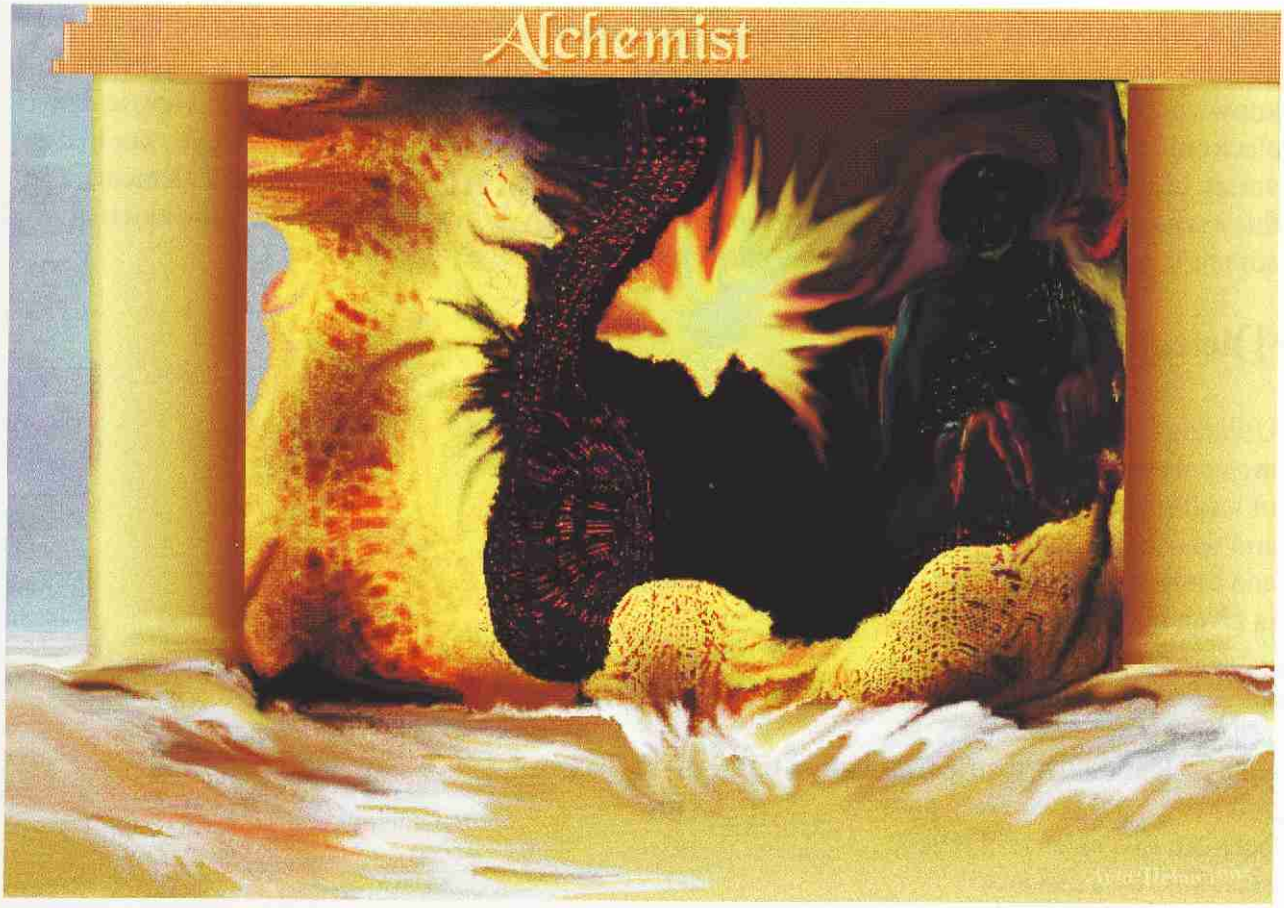
$F = e^2 / (er * r^2)$
$F = m * a$
$F = D * VL * ((f * d) / t)$
$F * er * r^2 = e^2$
$er = e^2 / (F * r^2)$
$= e^2 / (m * a * r^2)$
$= e^2 / (D * VL * ((f * d) / t) * r^2)$
$n = sqr(er)$ = refractive index for most dielectrics

therefore

$n = sqr (e^2 / (D * VL * ((f * d) / t) * r^2))$
$e^2 = m * a * er * r^2$
$= D * VL * a * er * r^2$
$e = sqr (D * VL * ((f * d) / t) * er * r^2)$ = each electric charge

Where (er) is the dielectric constant of the medium. The dielectric constant is a measure of the polarity of the medium. With this last statement I add that the medium firstly would be the Ether and all matter that exists would have polarity because of it.

I hope you have enjoyed this journey as much as I have in writing it.



End

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Numeric Forms

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Thank you for your support in buying this Manuscript, as this may allow me to further these studies and make practical of all that hides in natures patterned domain ....Arto

The Magic Square of Three Crystal


by Arto Heino 1997