

# SuperNova Precession Period of Peace

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## **Abstract:**

The 24,925 year period  
beginning with the Shock Wave of the Geminga SuperNova 36,525 years ago  
and  
ending with the Vela Pulsar SuperNova 11,600 years ago  
corresponds roughly to one 26,000 year Earth Precession Period.

No written historical record has been found for that SuperNova Precession Period during which Humans had migrated out of Africa to populate much of the Earth continuing the African IFA divination system, producing Cave Art, developing Sanskrit and the Rig Veda and the Meru Prastara, and building the Great Pyramid complex at Giza.

Human Civilization during much of that SuperNova Precession Period seems to have been Peaceful, living in Harmony with Nature and with Each Other, so Manetho characterized it as the time of the Rule of Gods, Demigods and Spirits and I would call it the SuperNova Precession Period of Peace.

However, after the Vela Pulsar SuperNova 11,600 years ago Human Civilization entered the Present Precession Period, Manetho's time of the Rule of Mortal Humans characterized by (to paraphrase Terence McKenna) scarcity, preservation of privilege, and ever-more-sophisticated use of technology and ideology to control people.

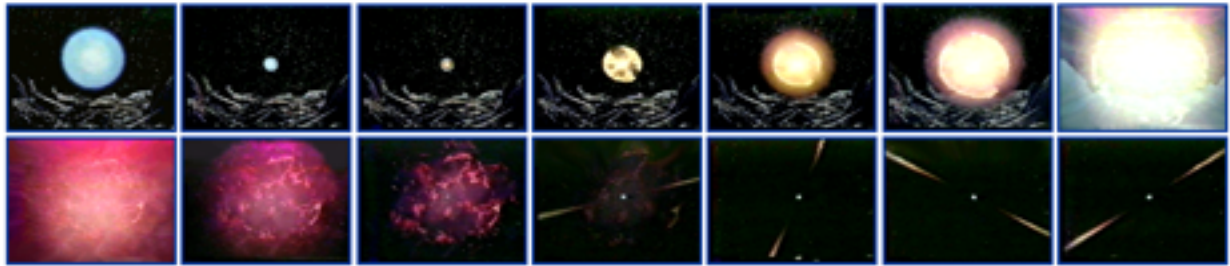
This paper is an attempt to describe the SuperNova Precession Period of Peace and to explore possible future paths of the Present Precession Period, including possible Global Nuclear War and possible Global Reconciliation and Peace.

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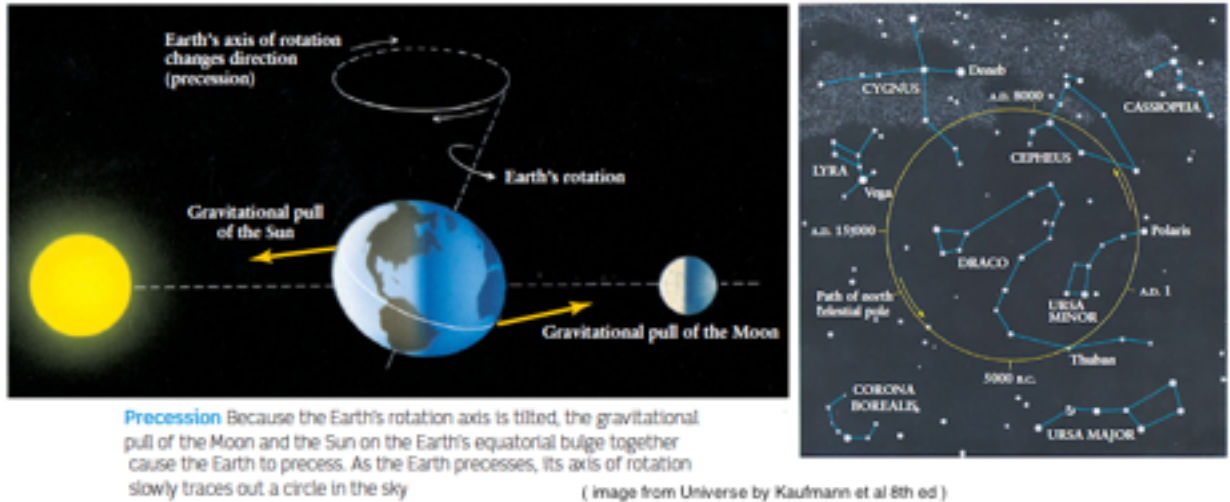
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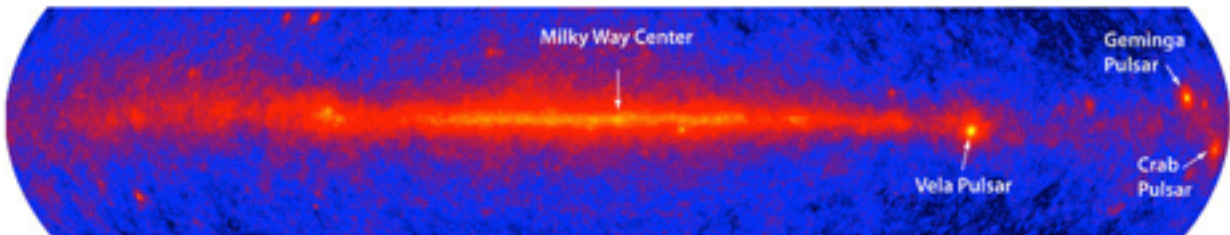
**Manetho** ( Egyptian historian ca. 343 BC ) wrote about **the SuperNova Precession Period**



( SuperNova image sequence from NASA Goddard )



from about **36,525 years ago - Geminga SuperNova Shock Wave** hit Earth (815 lyr)



( image from Wikipedia )

to about **11,600 years ago - Vela Pulsar SuperNova** seen at Earth (959 lyr) as bright as a Quarter Moon ( magnitude -10 )

Manetho characterizes the **SuperNova Precession Period** as  
**the Rule of Gods, Demigods and Spirits of the Dead.**

Developments then include **IFA,**  
**Rig Veda,**  
**Cave Art,**  
**Meru Prastara,**  
**and the Great Pyramid.**

As would befit Gods, Demigods, and Spirits, **ALL THESE WERE PEACEFUL.**

**After the SuperNova Precession Period Rule of Gods, Demigods and Spirits  
that is  
under what Manetho calls the Rule of Mortal Humans,**

we have seen a transition described by Terence McKenna (1993 OMNI interview ) as

“... From 75,000 to about 15,000 years ago,  
there was a kind of human paradise on Earth.  
...[ Then around 11,600 years ago, when the Vela Pulsar supernova was seen in Earth,  
a very sudden (50 years or so) warming event ended the Ice Age and marked the start  
of the Holocene Age of warm climate and glacial retreat.  
Rising sea levels flooded much productive land creating shortages of food  
and consequently competition for available food,  
and what Terence McKenna called "tooth-and-claw dominance" ]...  
For 10,000 years ... we've pursued an agenda of beasts and demons ...  
If history goes off endlessly into the future,  
it will be about scarcity, preservation of privilege, forced control of populations,  
the ever-more-sophisticated use of ideology to enchain and delude people.  
We are at the breakpoint.

It's like when a woman comes to term ...  
if the child is not severed from the mother and launched into its own separate existence,  
toxemia will set in and create a huge medical crisis.

...

[ But if we launch ourselves into the Birth of a New Period of Peace ]...  
What lies ahead is a dimension of such freedom and transcendence,  
that once in place, the idea of returning to the womb will be preposterous.  
We will ... expand infinitely into pleasure, caring, attention, and connectedness. ...".

Hoping that understanding the SuperNova Precession Period of Peace  
might be exemplary of what Mortal Humans need to do to better their condition,  
here on the following pages are some details about

**IFA, Rig Veda, Cave Art, Meru Prastara, and the Great Pyramid.**

( more details about that Period are in Appendix II )

After that, I describe some events of the Rule of Mortal Humans so far,  
and speculate about possible future events.

## IFA

**70,000 years ago** Mount Toba in Sumatra Erupted 800 cubic kilometers of ash into the air producing a bottleneck minimum of human population -  
a few thousand people huddled together in Africa.

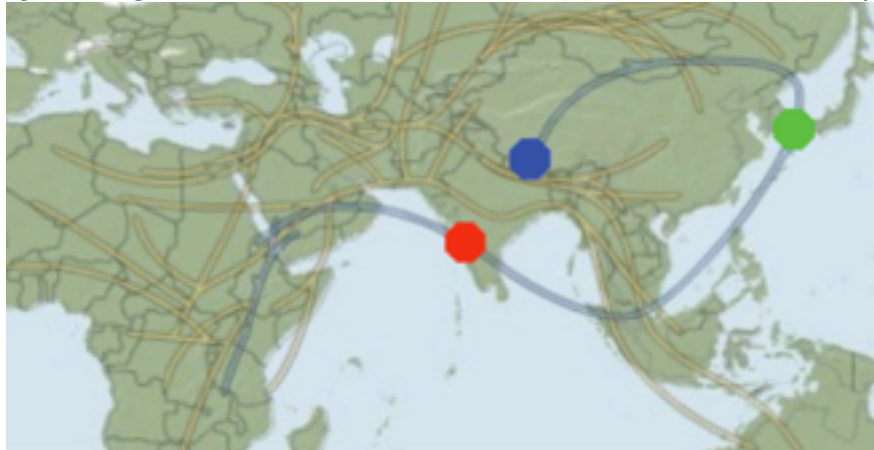
According to the National Geographic Genographic Project (the source of the following 3 map images) Y-chromosome DNA shows that humans were still living only in Africa as late as about **55,000 years ago**.

The wisdom of Ancient Africa was encoded in **the 256-element IFA divination system that is equivalent to the 256-dimensional  $Cl(8)$  Real Clifford Algebra** that, since  $Cl(8N) = Cl(8) \times \dots (N \text{ times tensor product}) \dots \times Cl(8)$  by Real Clifford 8-Periodicity, includes  $Cl(16)$  from which emerges E8 Physics Algebraic Quantum Field Theory.

(see viXra 1312.0036 and 1310.0182 and related papers for details of E8 Physics)

Since all humans lived in the same neighborhood knowledge was transmitted from generation to generation by Oral tradition with no need for Written texts or Art paintings for accurate preservation.

About **50,000 years ago** Y-chromosome DNA indicates that basic human physiology



had emerged from Africa to **India** then to **Japan** and on to **Tibet**.

## Rig Veda

**Indians** were separated from their African Homeland by the Arabian Sea which was close enough to Africa to maintain regular contact but far enough that they felt isolated from the very close contact needed to maintain the details of the oral traditions of IFA, so the Indian priests of IFA chose to put the IFA Information System into writing and to do so developed Sanskrit and wrote the Rig Veda.

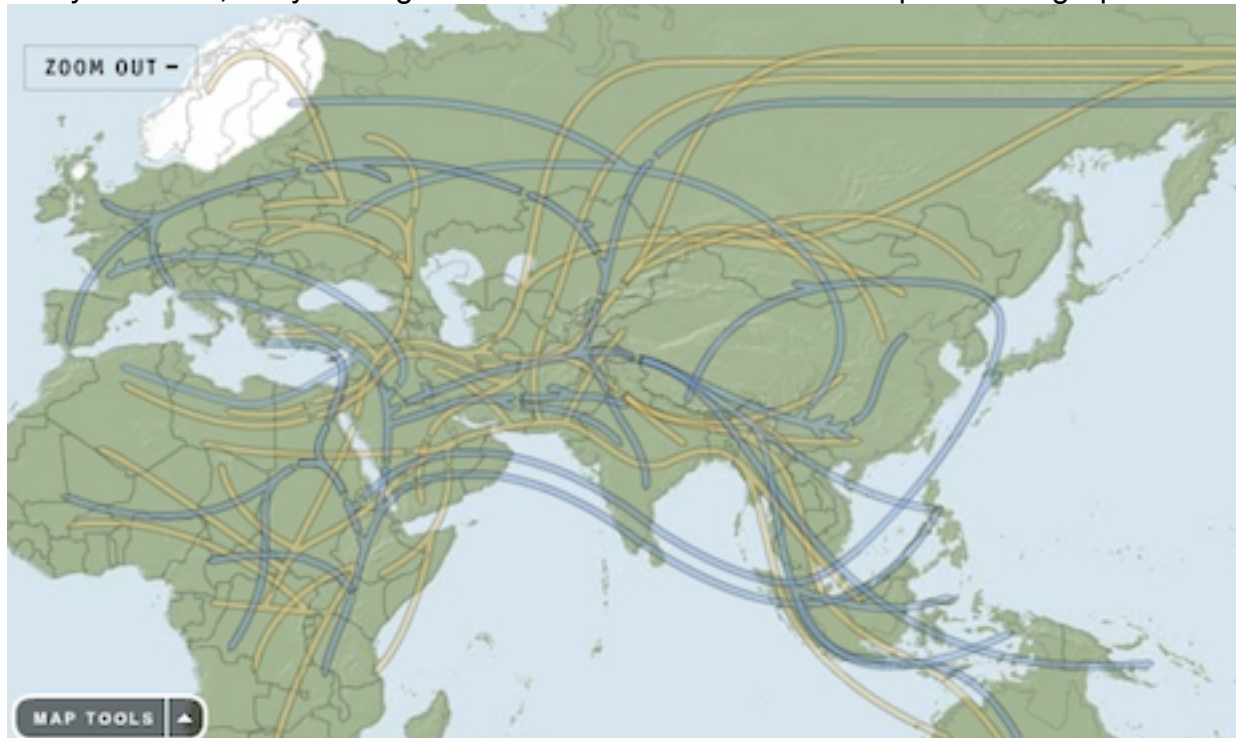
**Japanese** were even further isolated from Africa so they retained only 1/2 of the 256 IFA elements in their 128-element Shinto Futomani Divination system.

**Tibetans** were the most isolated of the first 3 groups migrating from Africa. They retained only 1/4 of the 256 IFA elements in their 64-element I Ching.

By about 40,000 years ago Humans had not yet reached Europe,



but by about 35,000 years ago Humans had reached all of Europe including Spain.



( Note that 35,000 years ago the Black and Mediterranean Seas were much smaller and there was a lot more land around Indonesia, New Guinea, and China. The present-day large Black and Mediterranean Seas and high Sea levels near Indonesia, New Guinea, China, and the rest of the Earth have only existed in the past 11,600 years or so. )

## Cave Art

Jonathan Amos, in BBCnews 15 June 2012, said:

"... Red dot becomes 'oldest cave art' ... The symbols on the walls at ... Spanish ... El Castillo ...[include]... a red disk ... older than 40,800 years ... The oldest dates ...



... coincide with the first known immigration into Europe of modern humans. ...".  
If you look closely at the red dots you see that they fall into two groups



Since  $16 \times 16 = 256$  is the fundamental number of elements of IFA divination it seems that the first thing done by the newly arrived migrants into Europe may have been to encode IFA divination on the Walls of their Caves.

(Note that Spain is close to Africa so that the New Europeans could verify directly with their African neighbors that  $16 \times 16 = 256$  does indeed encode IFA.)

That time period roughly coincides with the Geminga SuperNova Shock Wave arriving at Earth and with what Manetho Egyptian historian ca. 343 BC) described as **the beginning about 36,525 years ago of the Rule of Gods, Demigods and Spirits of the Dead that ended around 11,600 years ago** when the Vela Pulsar SuperNova was seen on Earth and the Younger Dryas Cold Snap was immediately followed by a very sudden (50 year or so) beginning of

**the Warm Interval in the Ice Age in which we Mortal Humans now live.**

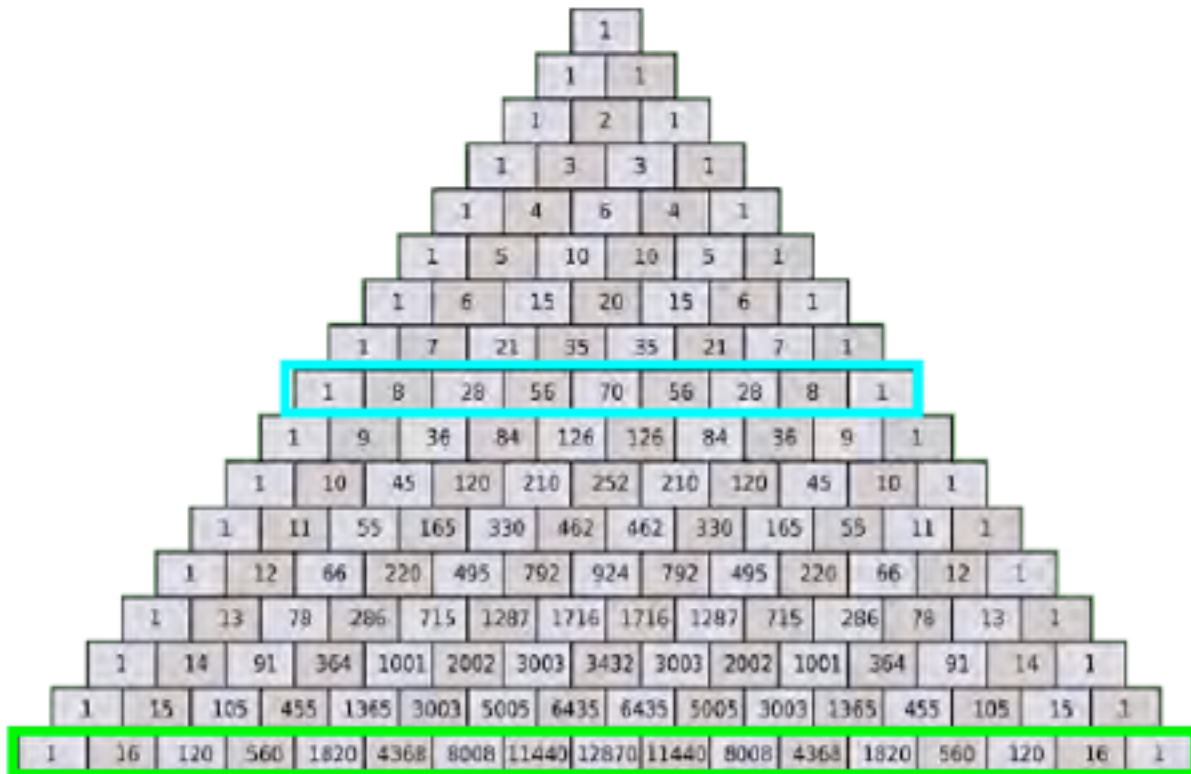
( It has high sea levels and large Black and Mediterranean Seas. Since we are in a Warm Interval of an Ice Age it is not clear what will come next: a Cold End of the Warm Interval or a Hot End of the Ice Age, and it is also not clear to what degree Humans can influence the outcome by controlling Industrial Activity - which should be done anyway for other reasons including but not limited to pollution control etc. )

## Meru Prastara

However,

during the period from 36,525 years ago to 11,600 years ago,  
 a period of 24,925 years roughly similar to Earth's 26,000 year Precession Period,  
 ( according to the Indian National Science Academy web site insaindia.org )

"... The Vedic Civilization ... evolved around ... the Vedas ... Vedic meters ...  
 permutations and combinations of long and short sounds ... led ... to discover[y of]  
 the Meru Prastara ...

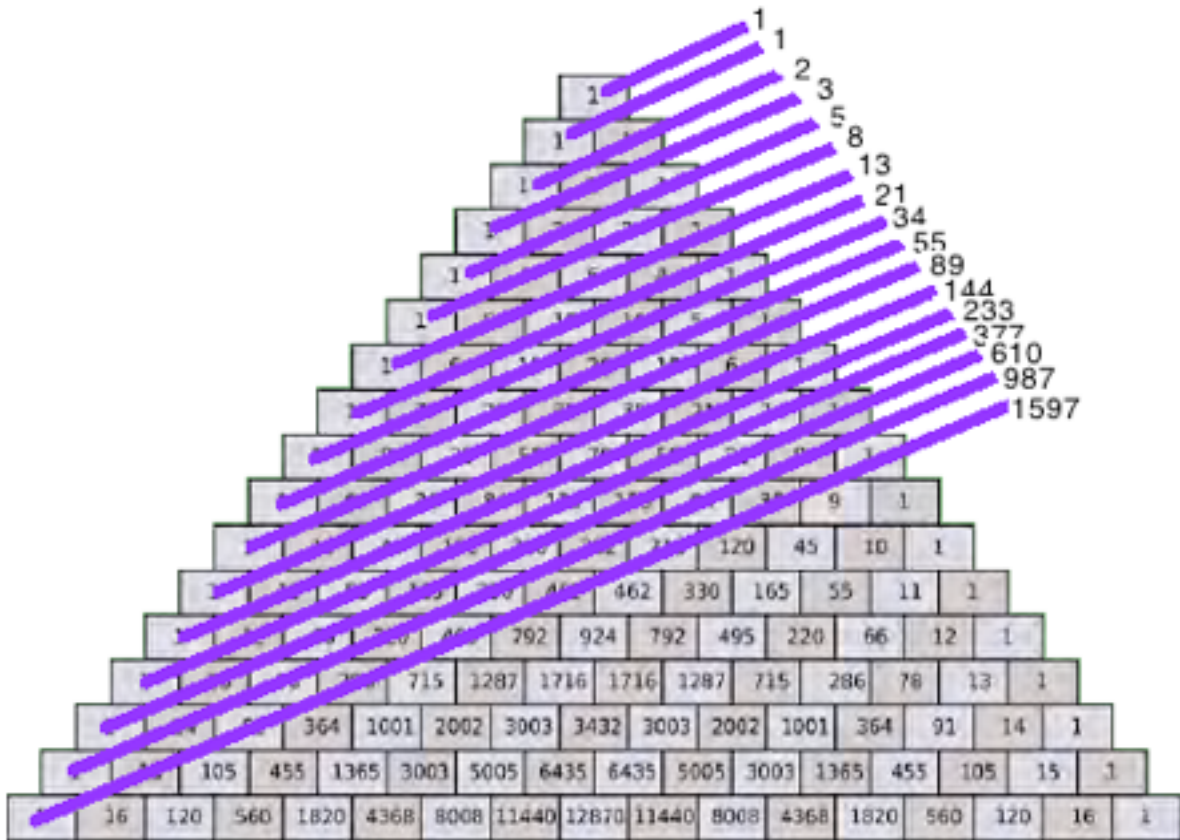


now known as Pascal's Triangle ...".

The row I have outlined in cyan contains the  $1+8+28+56+70+56+28+8+1 = 256 = 16 \times 16$  elements of the  $Cl(8)$  Real Clifford Algebra of African IFA divination.

The other rows contain the  $2^N$  elements of  $Cl(N)$  where  $N$  is the second number from the left in each row, so that the Meru Prastara describes all Real Clifford Algebras  $Cl(N)$ , with the figure above showing  $Cl(0)$  through  $Cl(16)$  which I have outlined in green.

The Meru Prastara also encodes Fibonacci numbers and therefore related processes:



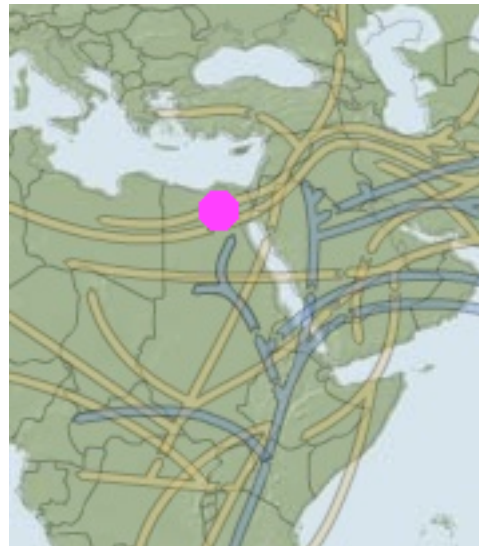
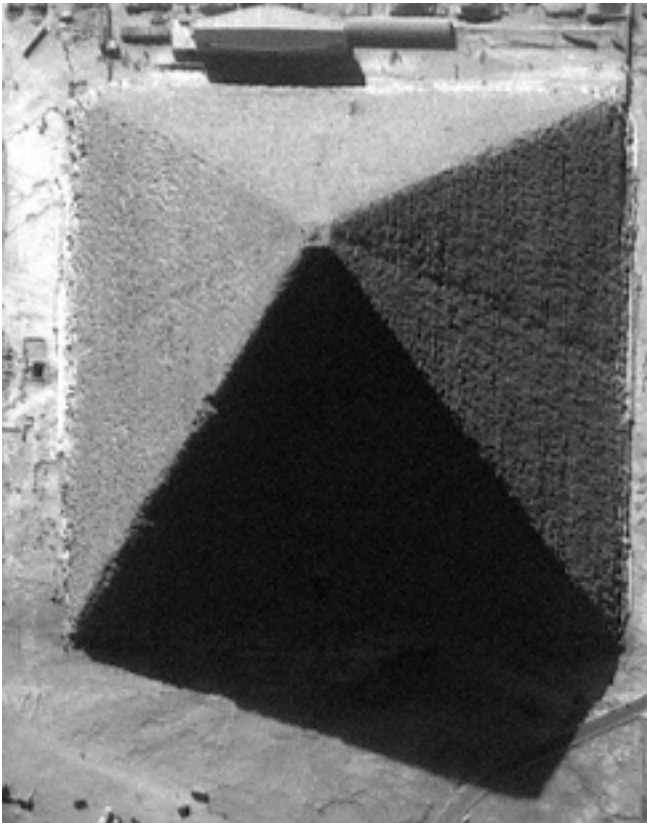
According to Wikipedia: The Fibonacci numbers occur as the ratio of successive convergents of the continued fraction for the Golden Ratio  $\phi$

$$\phi = 1 + \frac{1}{1 + \frac{1}{1 + \frac{1}{1 + \dots}}}$$



## the Great Pyramid

The Golden Ratio structure and pyramidal shape show that the representation of Ancient African IFA by the Meru Prastara of African Migrants to India 50,000 years ago corresponds to its representation by the Great Pyramid of Giza of African Nile Migrants In the same Earth Precession Period ( 36,525 years ago to 11,600 years ago ).



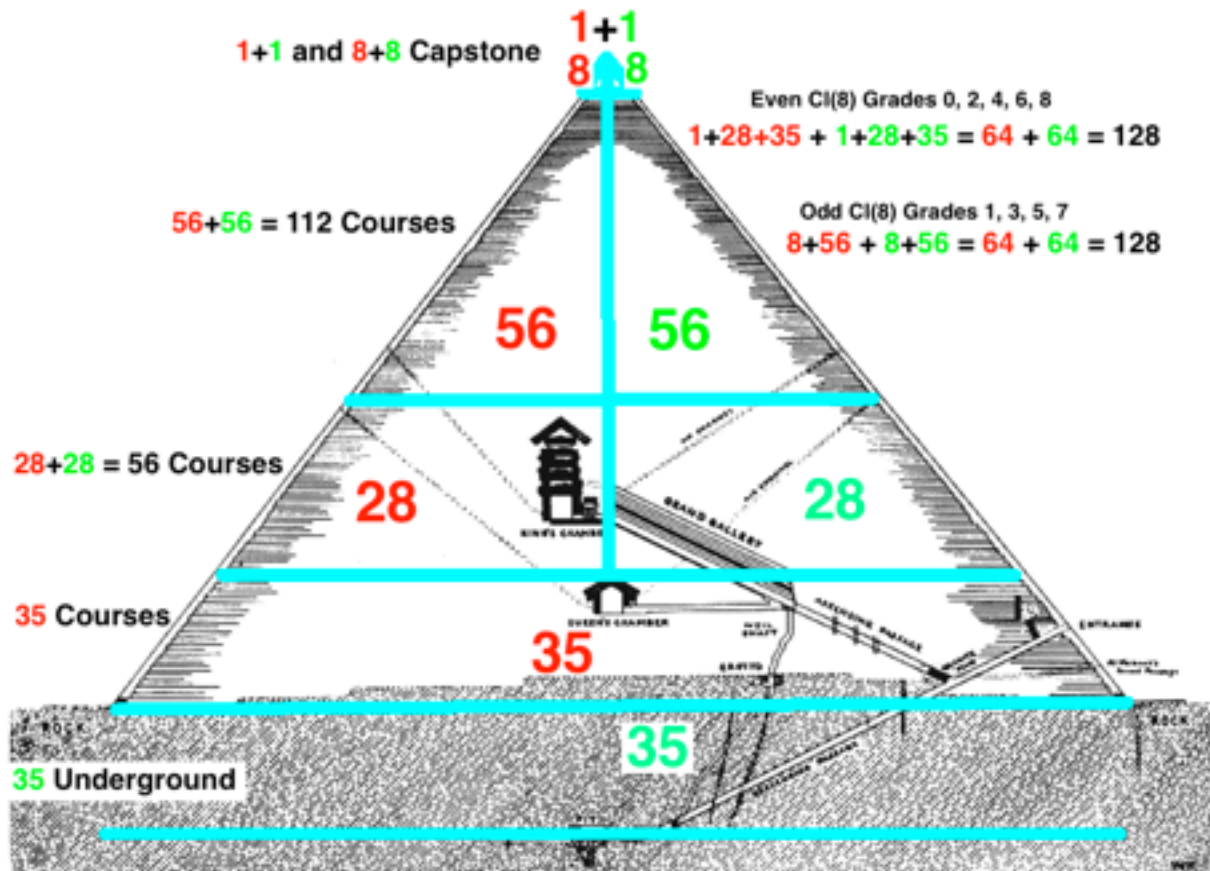
The Builders of the Great Pyramid who had migrated throughout the length of the Nile along which substantially contiguous settlements enabled them to maintain enough contact to maintain the details of the oral traditions of IFA so that when they built the earliest of the pyramids, the Great Pyramid, they did not deface it with any writing but instead encoded the IFA Clifford Algebra in the structure of the Pyramid itself:

The Great Pyramid is built of 203 layers (courses) plus a now-missing capstone for a total number of layers =  $204 = 64 + 49 + 36 + 25 + 16 + 9 + 4 + 1 = \text{SPN}(8)$  the Square Pyramidal Number of order 8.

The Subterranean Pit is as deep below ground level as Queen's Chamber is above it so

the Subterranean Pit depth equivalent to 35 courses is dual to the Queen's Chamber height of 35 courses just as the 70 mid-grade grade 4 elements of the CI(8) Clifford Algebra are (35+35) 35 elements plus 35 elements, dual to each other. (3+3) of (35+35) are the middle components of the 1+3+3+1 Higgs Primitive Idempotent whose 1+1 scalar+pseudoscalar components are the 1+1 of the Capstone so that

$$CI(8) = 1 + 8 + 28 + 56 + (35 + 35) + 56 + 28 + 8 + 1$$



$$1 + 8 + 28 + 56 + (35 + 35) + 56 + 28 + 8 + 1$$

( image adapted from David Davidson image -  
 for a larger version of this image go to [tony5m17h.net/GreatPyrCI8.png](http://tony5m17h.net/GreatPyrCI8.png)  
 or [valdostamuseum.com/hamsmith/GreatPyrCI8.png](http://valdostamuseum.com/hamsmith/GreatPyrCI8.png) )  
 ( for more details about the Great Pyramid Geometry correspondences see viXra 1305.0060 )

## Present Precession Period

The Present Precession Period after the Vela Pulsar SuperNova of 11,600 years ago is characterized by Manetho as a time of the Rule of Mortal Humans, during which emerged Human Organizations not directly related to ancient IFA and Vedism. Some examples, along with individuals associated with them, are:

Zoroastrianism - Zarathrustra  
Confucianism - Confucius  
HuangLao Daoism - Lao Tze  
Buddhism - Gautama Sakyamuni  
Judaism - Moses  
Christianity - Jesus  
Islam - Muhammad  
Industrial Capitalism - Socialist Materialism - Karl Marx  
Finance Capitalism - Rudolf Hilferding

Although there are common threads among all those Human Organizations they have evolved to be Competitive rather than Cooperative, thus Fueling the Flames of Strife and War.

Some historical examples:

3,000+ years ago Moses led the Exodus from African Egypt;  
2,200 years ago HuangLao Daoism was displaced by Confucianism in Han China;  
1,700 years ago Rome selectively adopted only parts of Jesus's Christianity;  
1,400 years ago Islam displaced Vedism in much of the Middle East;  
1,000 years ago Crusades and Wars were fought between Christianity and Islam;  
700 years ago Christianity expelled Judaism and Islam from Spain.

Also about 700 years ago Ramon Llull's Art showed how Geometry of IFA encodes a realistic E8 Physics Model ( see Appendix I ) and indicates a Unifying Harmony of Judaism, Christianity, and Islam.

It was not well received by the Paris Establishment, the Vatican, or Islamists.

600 years ago Confucian China terminated Ocean Voyages by Daoist Zheng He.  
500 years ago Pope Alexander VI divided the New World between Spain and Portugal.  
400 years ago Protestant England defeated Catholic Spain.  
200 years ago USA became independent of Britain.  
100 years ago USA and UK won World War I and USSR was born.  
70 years ago USA (Finance Capitalism) and USSR (Socialist Materialism) won WWII.  
30 years ago China (Industrial Capitalism + Confucianism) becomes dominant Factory.  
20 years ago USSR dissolved  
leaving Russia (Moscow Christianity + Nuclear Military)

Now we have:

USA (Finance Capitalism) unstable \$\$Hundreds-Trillions Ponzi with Fed Money Printing  
China (Industrial Capitalism + Confucianism) dominating Manufacturing.  
Russia (Moscow Christianity + Nuclear Military) with First-Use-Nuke Doctrine.

**With the USA trying to maintain Hegemony opposed by Russia+China,  
how will this play out ?**

USA Finance Capitalism cannot use USA Military Dominant Conventional Forces  
because  
Russia Military has First-Use-Nuke Doctrine if attacked by Conventional Forces.

USA Finance Capitalism cannot set prices of Manufactured Goods  
because  
China (Industrial Capitalism + Confucianism) controls the Factories.

Through Mercantile Trade of Manufactured Goods China's Finance Banks  
have Real Assets comparable to USA Finance Banks

USA Big Five Banks have \$ 303 Trillion of Real Assets + Ponzi Scheme Claims  
but

\$ 295 Trillion of their Total Wealth is in really worthless Ponzi Scheme Claims  
leaving

the Big Five USA Banks with only their Real Asset Wealth of \$ 8 Trillion

The Top 5 Banks of China have Real Asset Wealth of \$ 10 Trillion

so

China's Finance Capitalism Sector is a Realistic Alternative  
to USA Finance Capitalism Hegemony.

**Two Possible Scenarios: Nuclear War or Return to Peace**

**Nuclear War:**

USA Finance Capitalists refuse to recognize \$300 Trillion Ponzi Scheme Loss  
and use Conventional Military to impose the cost on the Rest of the World.

Russia Nukes USA in response.

USA and Russia go to Global Nuclear War.

Earth fragments into many small countries trying to rebuild.

**Return to Peace a la Supernova Precession Period of Peace:**

USA Finance Capitalists recognize \$300 Trillion Ponzi Scheme Loss  
forcing USA to revert to Industrial Capitalism and sale of Resources

China Finance and Remnant of USA Finance merge on equal terms  
Finance Capitalism activity subject to Veto Power of China or Russia or USA

Lullian Art gives Unified Natural Philosophy of both Science and Religion.

# Appendix I: Ramon Llull's Art and E8 Physics

Ramon Llull described the Structure of E8 Physics

( for details see viXra 1305.0060 )

( images in this section from "The Art and Logic of Ramon Llull" (2007) by Anthony Bonner  
and for Universal Figure from quiseatlullus.narpan.net )

## Correspondences of the initial Quarternary Phase of Llull's Art with E8 Physics:

Figures Y and Z



are a Binary Pair - the basis of **Real Clifford Algebras**.

Real Clifford Algebras have 8-Periodicity so that

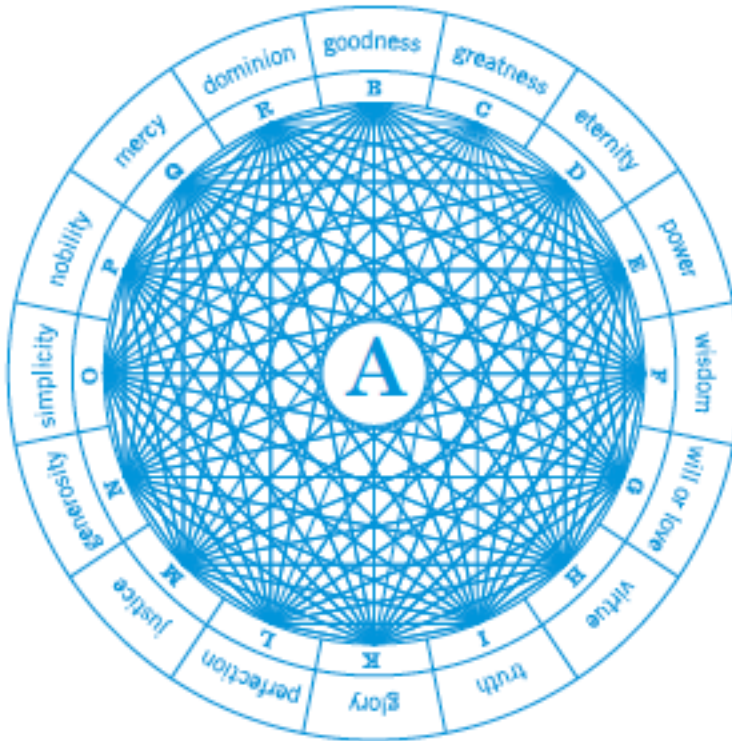
$$Cl(8N) = Cl(8) \times \dots (N \text{ times tensor product}) \dots \times Cl(8)$$

and

$$Cl(8) \times Cl(8) = Cl(16)$$

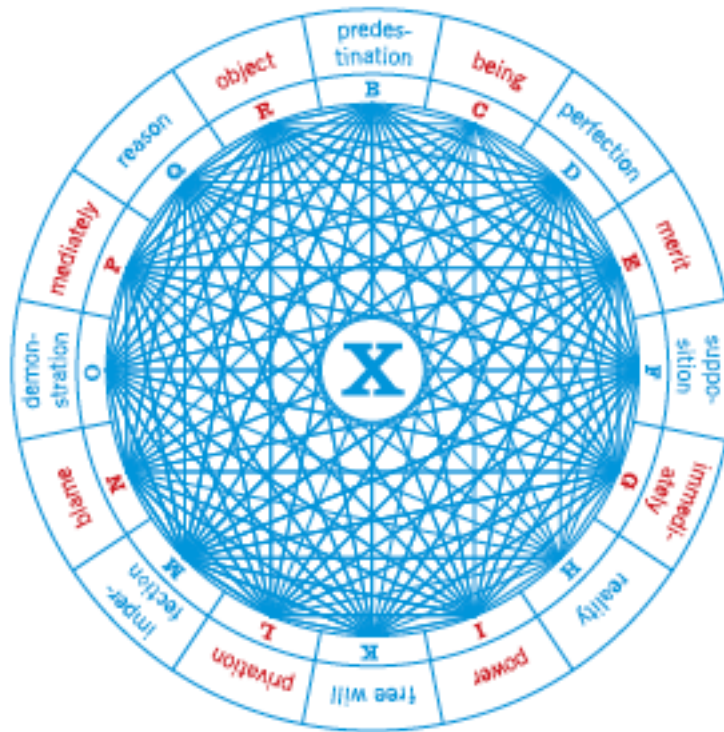
$$\mathbf{248\text{-dim E8} = 120\text{-dim D8 Bivectors of Cl(16) + 128\text{-dim D8 Half-Spinors of Cl(16)}$$

Figure A



has 16 vertices and 120 connecting lines  
corresponding to Cl(16) and its 120 D8 BiVectors.

Figure X



divides the 16 vertices into two groups of 8 vertices  
thus dividing the 120 connecting lines into 3 sets:

- 28 that connect vertices of one group of 8 with each other
- 28 that connect vertices of the other group of 8 with each other
- 64 that connect vertices of one group of 8 with vertices of the other group of 8

## Elemental Figure

The Figure of Fire (heat)

fire	air	water	earth
air	fire	earth	water
water	earth	fire	air
earth	water	air	fire

The Figure of Air (moisture)

air	fire	water	earth
fire	air	earth	water
water	earth	air	fire
earth	water	fire	air

The Figure of Water (cold)

water	earth	air	fire
earth	water	fire	air
air	fire	water	earth
fire	air	earth	water

The Figure of Earth (dryness)

earth	water	air	fire
water	earth	fire	air
air	fire	earth	water
fire	air	water	earth

## Elemental Figure

has  $4 \times 4 \times 4 = 64$  elements corresponding to 64-dim  $D_8 / D_4 \times D_4$  that is contained in the 120-dim  $D_8$  BiVectors

and to

the 64 Figure X lines that connect vertices of one group of 8 with vertices of the other physically representing 8-dim SpaceTime Position x Momentum

and therefore by Triality also to

64-dim +half of 128-dim  $D_8$  Half-Spinors of  $Cl(16)$

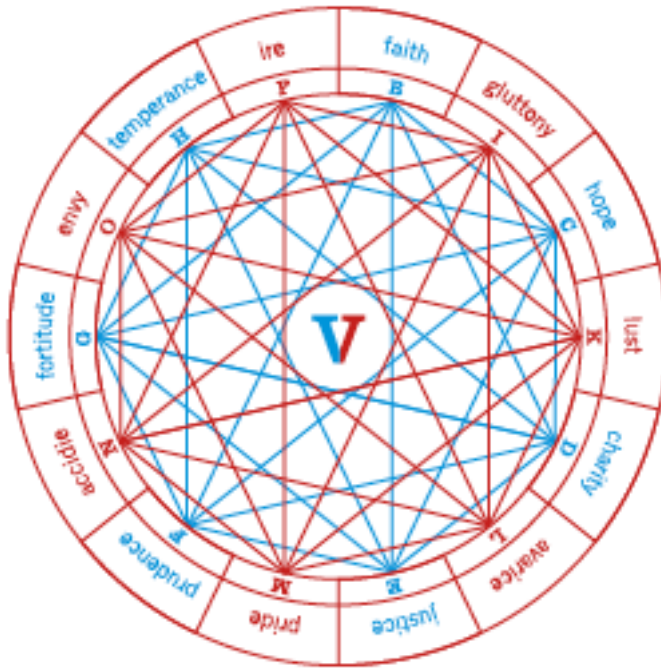
physically representing 8 components of 8 First-Generation Fermion Particles

and to

64-dim -half of 128-dim  $D_8$  Half-Spinors of  $Cl(16)$

physically representing 8 components of 8 First-Generation Fermion AntiParticles.

Figure V describes the two 28-dim D4 of the 120-dim D8 of 248-dim E8 by which 64-dim D8 / D4xD4 is formed. Figure V has 14 vertices divided into two groups of 7 vertices



each with 21 lines connecting vertices of one group of 7 with each other.

Each set of 7 vertices + 21 lines corresponds to one of the 28-dim D4.

Mathematically, each set of 7 vertices represents 7 Imaginary Octonions = 7-sphere S7. The Non-Associativity of Octonions prevents the 7-sphere S7 from forming a Lie Group. If you try to make a Lie Algebra out of the 7 generators of S7 you find that the products do NOT form a closed 7-dim Lie Algebra but they generate: a 14-dim G2 Lie Algebra of the Automorphisms of the Octonions and a second 7-sphere S7 so if you combine the initial 7 with the newly generated 14 + 7 you get a 28-dim D4 Lie Algebra.

Each of the 7-vertex 21-line systems is related to the 168-element group  $PSL(2,7) = SL(2,3)$  and to the 480 Octonion Multiplications.



Figure S contains 4 squares



The 4 vertices of the central square correspond to the 4-dim Quaternionic subspaces that emerge below the Planck energy to break Octonionic 8-dim Spacetime into (4+4)-dim Kaluza-Klein spacetime with 4-dim Minkowski Physical Spacetime plus 4-dim Internal Symmetry Space  $CP^2 = SU(3) / SU(2) \times U(1)$

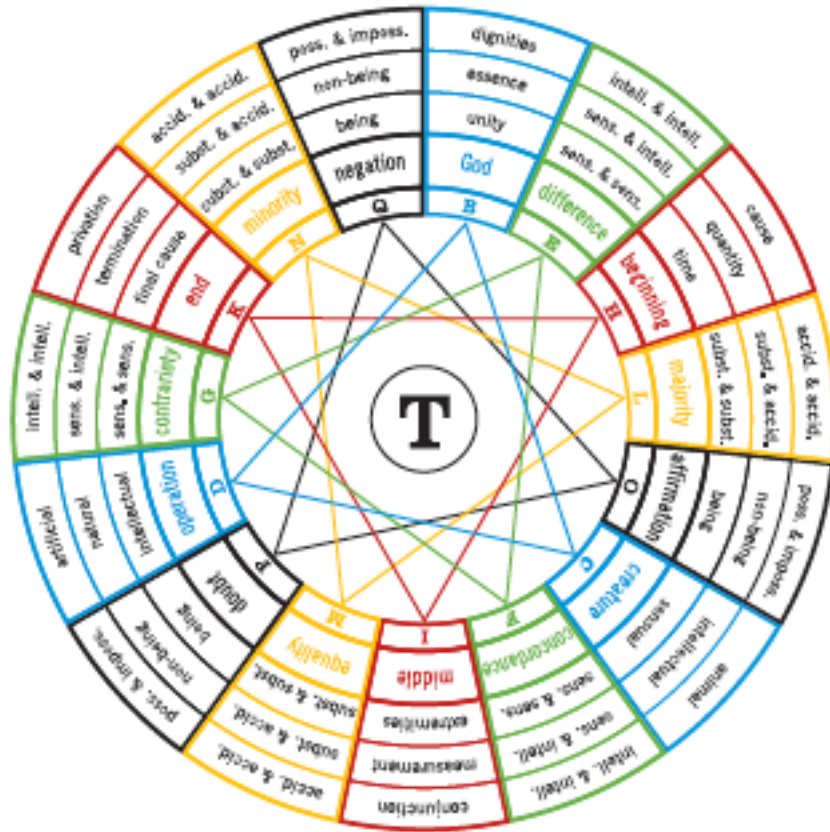
The remaining  $3 \times 4 = 12$  vertices correspond to 12 of the 28 Figure X lines that connect vertices of one group of 8 with each other and represent the 12 Standard Model gauge group generators of  $SU(3) \times SU(2) \times U(1)$

Two of the remaining 3 squares of Lull's S-wheel form the vertices of a cube



Looking at the cube along a diagonal axis and projecting all 8 vertices onto a perpendicular plane shows the Root Vector Diagram of  $SU(3)$  and its 8 Gluons. Since each Gluon links 4-dim Physical SpaceTime to color Internal Symmetry Space the gauge group  $SU(3)$  acts globally on Internal Symmetry Space  $C^2 = SU(3) / U(2)$ . The third of the remaining squares, that is the final square, corresponds to the 3  $SU(2)$  weak bosons and the  $U(1)$  electromagnetic photon. Since  $SU(2) \times U(1) = U(2)$ , and since  $CP^2 = SU(3) / U(2)$ , they act locally on  $CP^2$  Internal Symmetry Space.

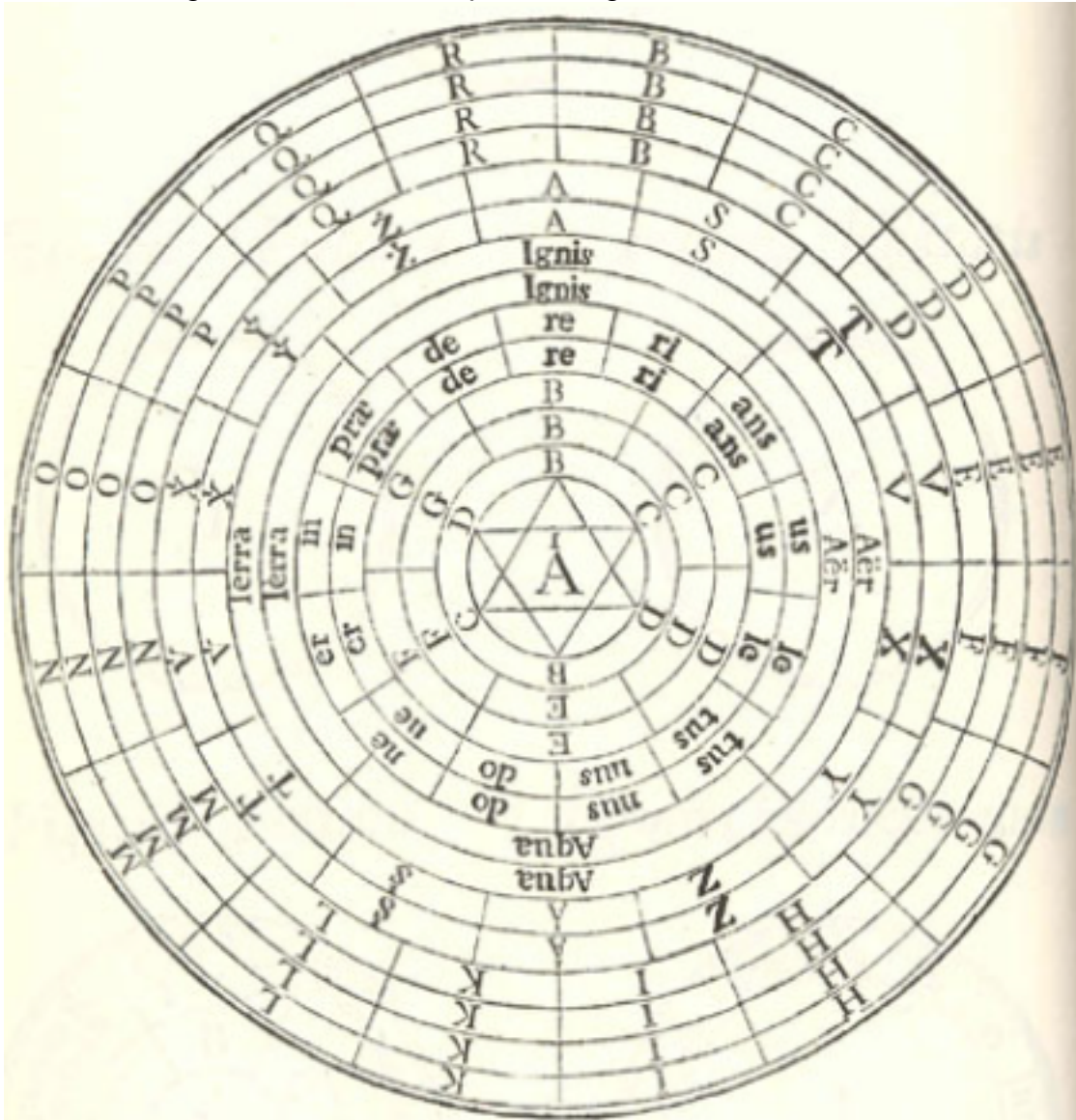
Figure T contains 5 triangles



The  $5 \times 3 = 15$  vertices correspond to 15 of the 28 Figure X lines that connect vertices of the other group of 8 with each other and represent the 15-dimensional Conformal Group  $SU(2,2) = Spin(2,4)$  that describes Gravity and Dark Energy and lives in 16-dimensional  $U(2,2)$  as  $U(2,2) = U(1) \times SU(2,2)$ .

The  $U(1)$  of  $U(2,2)$  corresponds to the 16th of the 28 Figure X lines and represents the Complex Phase of Propagators.

Lull's Universal Figure shows how the parts fit together



The outer 4 rings of 16 elements represent 64-Element-Things. There are 3 of these, related by Triality: 8 Position x 8 Momentum, 64 components of Fermion Particles, and 64 components of Fermion Antiparticles,

The next (going in toward the center) 2 rings of 14 elements each represent 28-dim D4 and its Lie subalgebras. There are two of these D4, producing Gauge Groups of Gravity and the Standard Model, respectively.

The next 2 rings of 4 elements each represent the 4+4 = 8 dimensions of Spacetime.

The next 2 rings of 13 elements each represent the 26-dimensional String Theory with Strings seen as World-Lines of Fermions, producing a Bohm-type Quantum Theory. At the center are 3 rings of 6 elements each surrounding a 6-vertex Star of David whose  $3 \times 6 + 6 = 24$  elements correspond to the 24-dim Leech Lattice whose Monster Group symmetry defines the size (about  $10^{(-24)}$  cm of Physical Particles as ( viXra 1311.0088 ) Schwinger Source Kerr-Newman Black Hole clouds of virtual particle-antiparticle pairs.

## Appendix II: Gods, Demigods, Spirits

Frank Dodd (Tony) Smith, Jr.

Nicholas Wade, in a 7 December 1999 article in the New York Times, said:  
"... Dr. Richard G. Klein of Stanford University and others believe that

some major genetically based neurological change,  
like the development of language, occurred about 50,000 years ago.

... A ... genetic survey... drawing on DNA data from 50 ethnic groups around the world, concludes that the ancestral population from which the first emigrants came may have numbered as few as 2,000 people. ... Another new genetic study, by Dr. Marcus Feldman of Stanford University and others ... looked at segments of the Y chromosome ... they concluded that the most recent common ancestor of all these Y's was carried by a man who lived only 40,000 years or so ago. ... The 40,000-year date, which has a large range of uncertainty, is much more recent than others, in part because the earlier estimates were forced to assume, quite unrealistically, that the size of the human population remained constant throughout prehistory. Dr. Feldman assumed an exponentially expanding population, which yields a more recent date of origin....".

About 36,000 years ago the Geringa shock wave hit Earth;  
the Late Wisconsin Glaciation of Earth began; and,  
according to the Human History Chronology of Manetho (Egyptian historian ca. 343 BC):

about 36,525 years ago - Gods on Earth began to rule Earth,  
ruling until

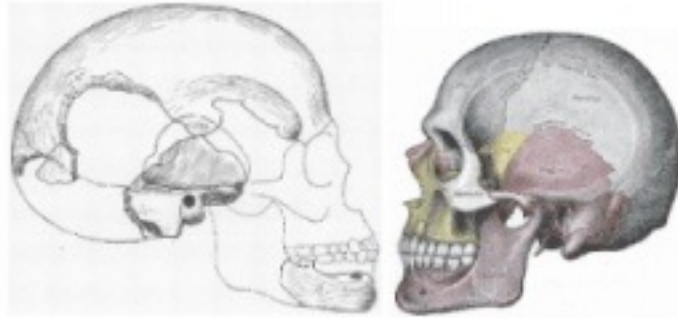
about 22,625 years ago - Demigods and Spirits of the Dead (followers of Horus)  
succeeded them, ruling until

about 11,600 years ago - Mortal Humans began to rule Earth,  
ruling up to the present day.

The time that the Earth was ruled by Gods, Demigods and Spirits of the Dead,  
about  $36,525 - 11,600 = 24,925$  years, is roughly the time of one Earth precession period,  
which is also roughly the travel time of a light beam from the center of our Galaxy to our Sun.

Who were the Gods - Demigods who ruled Earth during the 24,925 years from 36,525 years ago to the beginning of the Holocene about 11,600 years ago ?

Gary Lynch and Richard Granger, in their book *Big Brain* (Macmillan 2008), said: the Boskop "... walked the plains of southern Africa ... 30,000 ... to ... 10,000 years ago ... they were about our size ... but their brains were far larger than our own. ...".



**Comparison of Restoration of Boskop skull next to a Modern Human Skull.**

(image is from a 29 April 2008 ebcak.com post by adminbcak)

Richard Poe, in his book *"Black Spark, White Fire"* (Prima 1997), quoted Diodorus of Sicily as saying:

"Now the Ethiopians ... were the first of all men. ... the Egyptians are colonists sent out by the Ethiopians, Osiris having been the leader of the colony ... Osiris ... gathered together a great army, with the intention of visiting all the inhabited earth and teaching the race of men how to cultivate ... for he supposed that if he made men give up their savagery and adopt a gentle manner of life he would receive immortal honors. ...".

Greek Hermes and Arabic Idris and Sufi Khidr = Khizar (compare Khazar), and the teaching aspects of the IFA Orisha Ogun and Egyptian Thoth and Osiris, have been identified with Enoch.

1 Enoch (Ethiopic Enoch) Chapters 1, 28, 33, 41, 43, 44, 65:

"... Enoch ... saw the vision of the Holy One in heaven ... and understood ...

Enoch ... saw a wilderness ... full of trees and plants. And water ...

and ... large beasts ... and birds ... and ... the stars of heaven ...

Enoch ... saw all the secrets of the heavens ... the secrets of the lightning and of the thunder

... of the winds ... of the clouds and dew ... the sun and moon ... the stars ...

some of the stars arise and become lightning ...

how silver is produced from the dust of the earth, and how soft metal originates in the earth ...".

How could the mind of Boskop Enoch have comprehended the Secrets of Heaven ?

Endogenous DMT enhanced perception might have given Enoch/Boskops mental/spiritual abilities described by Terence McKenna in his May 1993 OMNI magazine interview:

"... MCKENNA: ... From 75,000 to about 15,000 years ago, there was a kind of human paradise on Earth. ...

Nobody went more than three or four weeks before they were redissolved into pure feeling and boundary dissolution. ... DMT drops you into a place where the stress is on a transcending language. ... You burst into a space. ...

The world is not a single, one-dimensional, forward-moving, causal, connected thing, but some kind of interdimensional nexus. ... entities are there ... They are teaching something.

There is a higher dimensional language that condenses as a visible syntax. ... they ... offer you something ... so beautiful, so intricately wrought, so something else that cannot be said in English, that just gazing on this thing, you realize such an object is impossible. ... The object generates other objects, and it's all happening in a scene of wild merriment and confusion. ... [compare El Aleph, written in 1945 by Jorge Luis Borges]

Something in an unseen dimension is acting as an attractor for our forward movement in understanding. ... It's a point in the future that affects us in the present. ...

Our model that everything is pushed by the past into the future, by the necessity of causality, is wrong.

There are actual attractors ahead of us in time -- like the gravitational field of a planet. Once you fall under an attractor's influence, your trajectory is diverted. ...

I think [that the attractor has a kind of intelligence]...".

Around 11,600 years ago, about when the Vela Pulsar supernova was seen in Earth, a very sudden (50 years or so) warming event ended the Ice Age and marked the start of the Holocene Age of warm climate and glacial retreat, and rising sea levels flooded much productive land creating shortages of food and consequently competition for available food, and what Terence McKenna called "tooth-and-claw dominance". As Gary Lynch and Richard Granger said in their 28 December 2009 Discover Magazine article: "... human history has often been a history of savagery. ... Perhaps the preternaturally civilized Boskops had no chance against our barbarous ancestors ...".

Not only might the "preternaturally civilized" Boskops have been at a physical disadvantage in fighting smaller-brain humans, but the social organizations useful in forming successful armies to seize resources might tend to create evolutionary pressure in favor of humans with less creativity and more blind-faith obedience to authority. Further, as John Hawks said on his weblog on 30 March 2008, "... brains are [energetically] expensive ... brains take a long time to mature ... brains require high protein and fat consumption ... there has been a reduction in the average brain size in South Africa during the last 10,000 years, and there have been parallel reductions in Europe and China -- pretty much everywhere we have decent samples of skeletons, it looks like brains have been shrinking ...".

All this is consistent with the Vedic view (see [nersp.nerdc.ufl.edu/~ghi/vcchap.html](http://nersp.nerdc.ufl.edu/~ghi/vcchap.html)) of what happened after about 11,600 years ago, into the Bronze and Iron Ages and on through the present Industrial Age:  
"... prior to the beginning of Kali-yuga ... all living beings were on a higher average level than they are at present, and advanced beings such as demigods and great sages regularly visited the earth. ... Once the Kali-yuga began, demigods and higher beings greatly curtailed communications with people on the earth, and the general sensory level of human beings also declined. ... due to the lack of feedback from higher sources and the natural cheating propensity of human beings, the traditions ... became more and more garbled ... the present stage of civilization was reached, in which old traditions are widely viewed as useless mythology, and people seek knowledge entirely through the use of their current, limited senses."

It is also consistent with 1 Enoch (Ethiopic Enoch) Chapters 106, 107, 100:  
"... after that (flood) there shall be more unrighteousness ... generation after generation shall transgress, until a generation of righteousness arises ... wise men will seek the truth and ... will understand ... and transgression is destroyed ... and all manner of good comes on ... the earth ...".

## What were the unrighteous transgressions ?

Note - the English term "giants" in books of Enoch and in the Torah is a mistranslation of the Hebrew word "Nephilim" which, in my opinion, should be translated as "those who kill and ruin", or, for a short equivalent singular term, "Army" (compare USA Marines whose goal is to kill people and break things), so I will use the term "Army" in Enochian quotations herein. Also, the "size" of Nephilim = Army means the numbers/firepower of the Army, not the physical size of the individual soldiers, and I will modify quotations accordingly as may be necessary or convenient for clear understanding.

1 Enoch (Ethiopic Enoch) Chapters 6, 7, 10, 12:

"... two hundred ... angels ... the Watchers ... descended ... and bound themselves by mutual curses ... And ... took wives ... and ... taught ... charms and spells ...

And the women ... bare large Armies ...

The Armies consumed all the work and toil of men ... when the men could no longer sustain them, the Armies turned against them and devoured mankind ...

And they began to sin against birds, and beasts, and reptiles, and fish ... and one another...

Then the earth laid accusation against the lawless ones. ...

Then said ... the Great and Holy One ... "Go to Noah and tell him in my name

"Hide yourself!" and reveal to him the end that is approaching:

that ... a flood is about to come on the whole earth ..." ...

Then Enoch disappeared and no children of men knew where he was hidden ...".

3 Enoch (Hebrew Book of Enoch) Chapters 4, 6, 10, 15, 17, 19, 21, 33:

"... Metatron ... said ... I am Enoch ... When the generation of the of the flood sinned and twisted and contorted in their deeds, saying unto God:

"Department from us! We do not want the knowledge of your ways,"

... then the Holy One ... removed me from their midst ...

he lifted me up to heavens together with the Shekina ...

and the announcement went forth ... "This is Metatron ...

Metatron['s] ... flesh was changed into flames ... muscles into flaming fire ...

bones into coals of juniper wood ... light of ... eye-lids into hot flames ...

all ... limbs into wings of burning fire ... body into flowing fire ...

the Holy One ... caused 72 wings to grow on ... Metatron ... and attached to Metatron 365 eyes ...

the Holy One ... took ... Metatron ... to attend the Throne of Glory and the Wheels ... of the

Merkaba ... and the service of Shekina ...

the wheels of Merkaba ... are ... Eight, two in each direction ...

the feet of the ... Four Chayoth ... are resting on the wheels ...

Each Chaya ... has four faces ... The size of the faces is 248 faces ...

Each one has four wings ... the size of the wings is 365 wings ...

seven ... princes ... are assigned over the seven heavens ...

each one of them is accompanied by 496 thousand groups of ten-thousand ... angels ...



Metatron ... said ... At the time that the Holy One ... is sitting on the Throne of Judgment ...  
 The Holy Chayoth carry the Throne of Glory ...  
 And underneath the feet of the Chayoth there are seven rivers of fire running and flowing.  
 And the distance across is 365 thousand parasangs  
 and its depth is 248 thousand times ten-thousand parasangs. ...  
 And each river turns around in a bow in the four directions of Araboth ... of Raquia ...  
 and from there it falls down to Maon ... to Zebul ... to Shechaqim ... to Raquia ... to Shamayim ...  
 from Shamayim it flows on the head of the wicked who are in Gehenna ...".

7 = Imaginary Octonions = Number of E8 Lattices

72 = root vectors of 78-dimensional E6 Lie algebra

78 = Tarot cards

365 = central number of 9x9x9 Magic Cube and 27x27 Magic Square

(compare days/year and degrees/circle and 27-dim Jordan algebra J3(O))

8 = 4+4 = dimension of Kaluza-Klein spacetime

248 = dimension of E8 Lie algebra = dimension of SL(8)xH92 Quantum Algebra

(each of which is contained in Clifford Algebra Cl(8))

(SL(8)xH92 = contraction of E8)

496 = 248 + 248 = E8 + SL(8)xH92 contained in Clifford Algebra Cl(16) = Cl(8)xCl(8)

(4 Chaya x 4 faces) x (4 Chaya x 4 wings) = 16x16 = 256-dim Cl(8) and IFA

E8 has 240 root vectors (Fermionic from D8 half-spinor; Bosonic from D8 adjoint):

Fermionic Anticommutators: 64 = 8x8 particle components; 64 = 8x8 antiparticle components;

Bosonic Commutators: 64 spacetime (8 position x 8 momentum); 24 + 24 of two D4

E6 has 72 root vectors (Fermionic from D5 spinor; Bosonic from D5 adjoint):

Fermionic Anticommutators: 16 = 8x2 particles (complex); 16 = 8x2 antiparticles (8 complex);

Bosonic Commutators: 16 = 8x2 spacetime (8 complex position); 24 of one D4

E8 - E6 has 48 = 8x6 particle components; 48 = 8x6 antiparticle components (Fermionic);

48 = 8x6 spacetime; 24 of another D4 (Bosonic)

for a total of  $24 \times 7 = 168$  root vectors.

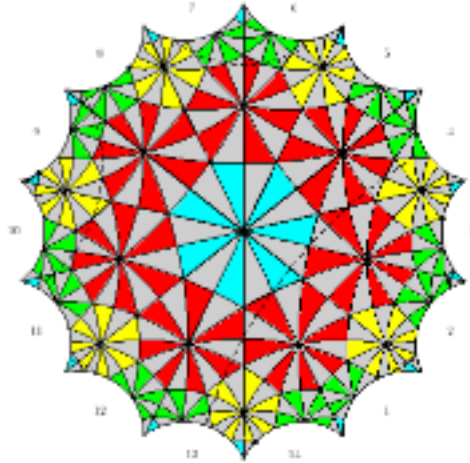
$168 = 2^3 \times 3 \times 7$  is the order of  $PSL(2,7) = SL(3,2)$  which is a simple group of Lie type and can be thought of as the group of linear fractional transformations of the vertices of a heptagon or the 7 imaginary Octonions or the 7 independent E8 lattices.

The book *The Eightfold Way: The Beauty of Klein's Quartic Curve*, edited by Silvio Levy (MSRI Publications -- Volume 35, Cambridge University Press, Cambridge, 1999) describes the roots of the Klein Quartic Equation

$$x^3 y + y^3 z + z^3 x = 0$$

which has the symmetry group  $PSL(2,7)$ .

To represent the roots, Felix Klein constructed the Klein Configuration:



$$Cl(8N) = Cl(8) \times \dots (N \text{ times tensor product}) \dots \times Cl(8)$$

$$Cl(16) = C(8) \times Cl(8)$$

$$Cl(8) = 2^8 = 256 = 16 \times 16$$

$$E8 = 248 = 120 + 128$$

$$D8 = 120 \text{ with spinor } 128+128$$

$$E7 = 66 + 64 + 3$$

$$B7 = 105 \text{ with spinor } 128$$

$$D7 = 91 \text{ with spinor } 64+64$$

$$E6 = 78 = 45 + 32 + 1$$

$$B6 = 78 \text{ with spinor } 64$$

$$D6 = 66 \text{ with spinor } 32+32$$

$$B5 = 55 \text{ with spinor } 32$$

$$D5 = 45 \text{ with spinor } 16+16$$

$$F4 = 36 + 16$$

$$B4 = 36 \text{ with spinor } 16$$

$$D4 = 28 \text{ with spinor } 8+8$$

$$B3 = 21 \text{ with spinor } 8$$

$$D3 = 15 \text{ with spinor } 4+4 = A3$$

$$G2 = 14 = A2 + S6$$

As Terence McKenna said in his May 1993 OMNI magazine interview:

"... For 10,000 years ... we've pursued an agenda of beasts and demons ...

If history goes off endlessly into the future,

it will be about scarcity, preservation of privilege, forced control of populations,

the ever-more-sophisticated use of ideology to enchain and delude people.

We are at the breakpoint.

It's like when a woman comes to term ...

if the child is not severed from the mother and launched into its own separate existence,

toxemia will set in and create a huge medical crisis.

The mushrooms said clearly,

"When a species prepares to depart for the stars, the planet will be shaken to its core."

All evolution has pushed for this moment, and there is no going back.

What lies ahead is a dimension of such freedom and transcendence,

that once in place, the idea of returning to the womb will be preposterous.

We will ... expand infinitely into pleasure, caring, attention, and connectedness. ...".

**50,000 years ago - Africa Emigration/Trade to Japan and Tibet**

**36,000 to 12,000 years ago - Boskop/Enoch emerged,  
built Giza Pyramids, went away**



**12,000 years ago -**

1 Enoch (Ethiopic Enoch) Chapter 21 v. 2-3:

"... I saw neither a heaven above nor a firmly founded earth,  
but a place chaotic and horrible ... seven stars of heaven  
bound together in it, like great mountains and burning with fire ...".

Comet Encke (parent of the Taurid meteors) may have been  
about the size of Comets Hale-Bopp and Sarabat (about 100 km).

Its initial breakup may have been about 12,000 years ago,  
roughly coincident with the Vela Pulsar Supernova and the end of the Ice Age.  
Observers on Earth see the Taurids as appearing to come from a radiant point  
in Taurus near the seven stars bound together in the Pleiades.

**- Noah (normal descendant of Enoch) and the Flood**

**12,000 years ago - Flood takes Noah to Africa**  
**Nile takes Moses from Abraham to Giza**  
**Moses from Giza to Sinai**  
**Solomon builds Temple**  
**Temple lost to Babylon**



**After Babylon:**  
**Return to Temple or Expand to Radhanite/Khazar**  
( [www.valdostamuseum.com/hamsmith/QintoNow.html](http://www.valdostamuseum.com/hamsmith/QintoNow.html) )

**After Hitler:**  
**Return to Temple or Expand to New York**

**Giambattista Vico (1668-1744) wrote of New Science  
and saw  
the Ages of Gods, Demigods, Spirits as Theocratic, Heroic, Human**

Samuel Beckett in "Dante - Bruno - Vico - Joyce" said:

"... **Giordano Bruno's** treatment of identified contraries ...

There is no difference, says Bruno

between the smallest possible chord and the smallest possible arc,

no difference between the infinite circle and the straight line.

The maxima and minima of particular contraries are one and indifferent.

Minimal heat equals minimal cold.

Consequently transmutations are circular. Therefore ...

the minima ... coincide ... with the maxima in the succession of transmutations.

... And all things are ultimately identified with God, the universal monad

...

From these considerations ... **Giambattista Vico** ...

evolved a Science and Philosophy of History ...

the passage from Scipio to Caesar is as inevitable

as the passage from Caesar to Tiberius,

since the flowers of corruption in Scipio and Caesar

are the seeds of vitality in Caesar and Tiberius.

Thus ... human progression ... depends for its movement on individuals,

and ... at the same time is independent of individuals

in virtue of what appears to be a preordained cyclicism. ...

It follows that History ... is not the result of Fate or Chance ...

but the result of a ... force he called Divine Providence

...

His division of the development of human society into three ages:

Theocratic,

Heroic,

Human (civilized)

with a corresponding classification of language:

Hieroglyphic (sacred)

Metaphorical (poetic),

Philosophical (capable of abstraction and generalisation),

was by no means new, although it must have appeared so to his contemporaries.

He derived this convenient classification from the Egyptians, via Herodotus. ...".

( see viXra 1404.0057 )

Donald Phillip Verene in "Knowledge of Things Human and Divine: **Vico's New Science** ..." said:

"... **Fas [ compare IFA ] is divine law**, as opposed to ius or human law ...

natural law ...[was]... communicated by God to Adam and by Adam to Noah.

Noah ... passed these down to his descendants ...

from their common creator the nations are the same in their form of origin ...

law is present in language from the beginning ...  
 all nations originally think in terms of poetic characters ...  
 from this type of unreflective thought, governed by fantasia,  
 there develops reflective thought and the human society that is based on it ...  
 there was a time when  
 life was a mute yet communal affair of feelings, sensings, and expressions.  
 This mute language is ... the ... basis of all human community and communication ...  
 Vico speaks of an “eternal point of the perfect state of the nations”.  
 This state of perfection would come about when all the sciences, disciplines, and arts  
 have been fully directed toward the perfection of man’s nature  
 and have reached ... acme ...  
 when all the sciences, disciplines, and arts have grasped their own natures  
 as developed from the religions and laws of humanity  
 and have ... come to serve them ...  
**The state of perfection of the nations** is not the heroic age  
 but the recapturing of a ...  
 heroic moment of the **integration of human and divine things in the third age**  
 ...  
**James Joyce** ... made ... **Vico** ... the central figure of ... **Finnegans Wake** ...”.

Bill Cole Cliett in his 2011 book “Riverrun to Livvy” said:

“... **the last piece of the Wake’s puzzle will fall into place**  
 on the same day  
**physicists find the formula that unifies all the forces of nature ...”.**

Since the  
**CI(16) - E8 Lagrangian - AQFT model “unifies all the forces of nature”**  
 ( see viXra 1405.0030 )

**here is a pattern of pieces of the Wake’s puzzle:**

“Finnegans Wake” contains ( **my comments in red** ):

Book I of 8 Episodes  
**8 of E8**

Books II and III of 4 + 4 Episodes  
**8 + 4 + 4 = 16 of CI(16)**

Book IV of a Final Episode 0

**0 =  = Ouroboros Recursive Periodicity AQFT**

# Finnegans Wake

Finnegan = Fin + Again = End + ReWaken

I = 8

I.1

“... riverrun, past Eve and Adam’s, from swerve of shore to bend of bay,  
brings us by a commodius vicus of recirculation ...  
nor had topsawyer’s rocks by the stream Oconee exaggerated themselfe  
to Laurens County’s gorgios while they went doublin their number all the time ...”

Genesis River Oconee = Ocho = 8 = Octonions of E8  
doublin = Powers of 2 = Clifford Algebra Cl(8) =  $2^8$  and Cl(16) = Cl(8)xCl(8)

I.6

“... the choicest and the cheapest from Atlanta to Oconee ...  
what would that fargazer seem to seemself to seem seeming of, dimm it all?  
Answer: A collideorscape! ...”

collideorscape = Fermilab + LHC = Truth Quark + Higgs

I.8

“... El Negro ... La Plate ... neuphraties ... Neva ... Mersey ...Waal ... chattahoochee ...  
wabbash ...jordan ... niester ... Saint Lawrence ... Laagen ... Niger ... O’Delawarr ...  
Susquehanna ... hudson ... marne ... chinook’s ... Floss ... Alt-muehler ... Hoangho ...  
Shannons ... Orbe ... Oronoko ... limpopo ... Scamander ... Seints ... Kishtna ... Indes ...

Many Rivers represent Many Possible Quantum Worlds

... Hadn’t he seven dams to wive him?  
And every dam had her seven crutches.  
And every crutch its seven hues. ...”

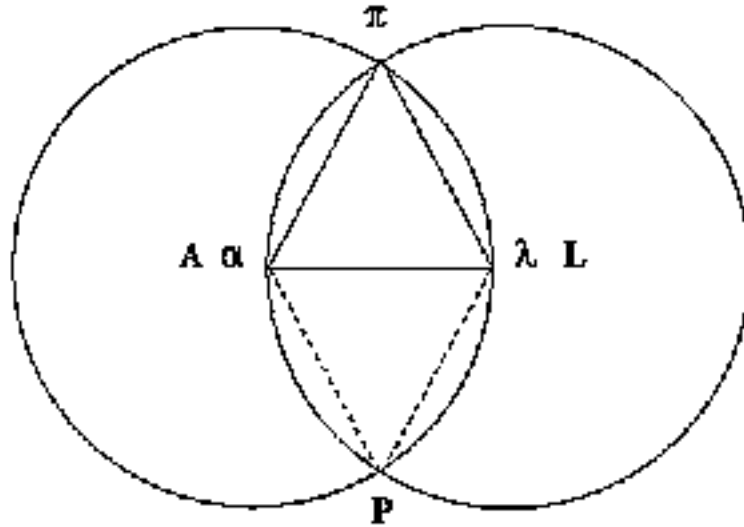
7 dams = 7-Sphere of Vector of Cl(8) = SpaceTime  
7 crutches = 7-Spheres of +half-spinor of Cl(8) = Fermion Particles  
7 hues = 7-Sphere of -half-spinor of Cl(8) = Fermion AntiParticles  
7 = 7 = 7 Related by Triality

$$\mathbb{I} = 4$$

II.2

“... Sunday King. His sevenscoloured's soot ( Ocho! Ochon! ) ... Heptagrammaton ...  
 Ocho = 8 Octonions    Hepta = 7 Imaginary Octonions = 7-Sphere

... construct an aquilittoral dryankle ... Concoct an equo-angular trillitter ...



...”

Two Circles =  $M_4 \times CP^2$  of  $4 + 4$   
 Two Triangles  $ALP + \alpha \lambda \pi =$   
 = 3 Imaginary Quaternions of  $M_4 + 3$  Imaginary Quaternions of  $CP^2$

II.4

“... - Three quarks for Muster Mark! ...

Quarks =  $CP^2$  of  $M_4 \times CP^2 = 4 + 4$



# III = 4

## III.1

“... mailman ...

Messages communicate across SpaceTime = M4 of M4 x CP2 = 4 + 4

Letter, carried ... hundredlettered name ... last word of perfect lan-guage

Language = Quantum Information = Clifford Algebra

=

... seven senses ... threestar monothong ...”

7 = Imaginary Octonions      3star + 1 mono = M4 Space + Time

## III.4

“... Tiers, tiers and tiers. Rounds.”

Tiers of E8 Lattices      Rounds = Quantum Superpositions

$$IV = \bigcirc$$

IV.0

“.. A way a lone a last a loved a long the”



( image from Wikipedia )

I.1

“... riverrun, past Eve and Adam’s, from swerve of shore to bend of bay,  
brings us by a commodius vicus of recirculation ...”

## Appendix III: Geminga and Toba

The SuperNova Precession Period of Peace began 36,525 years ago when the Shock Wave of the Geminga SuperNova arrived at Earth.

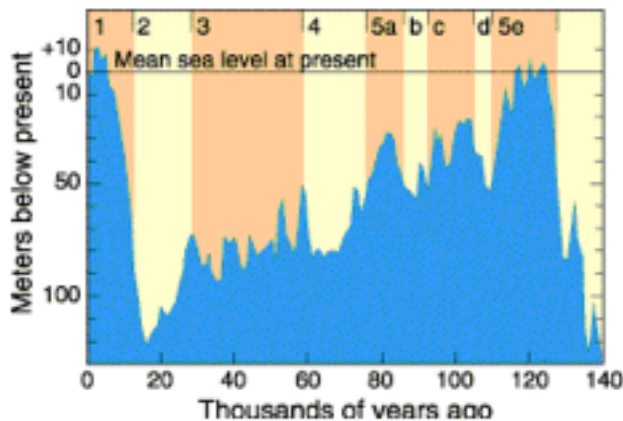
“... Geminga ... exploded as a supernova about 300,000 years ago. This nearby ... 815 lyr ... explosion may be responsible for the low density of the interstellar medium in the immediate vicinity of the Solar System. This low-density area is known as the Local Bubble. ...” ( Wikipedia ).

Geminga Explosion Cosmic Rays of 300,000 years ago could have caused Mutations in Earth Life producing the first Modern Human *Homo sapiens* in Africa, leading to Ethiopian fossil remains. According to National Geographic Genographic: “... Our species is an African one: Africa is where we first evolved, and where we have spent the majority of our time on Earth. The earliest fossils of recognizably modern *Homo sapiens* appear in the fossil record at Omo Kibish in Ethiopia, around 200,000 years ago. Although earlier fossils may be found over the coming years, this is our best understanding of when and approximately where we originated. ...”.

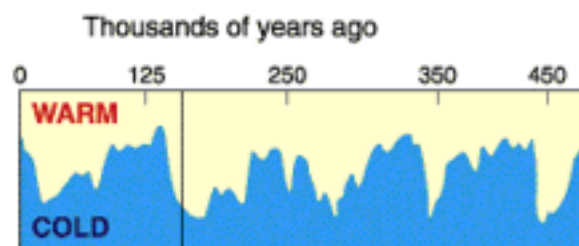
Walter et al, in [Nature](#) 405 (4 May 2000) 65-69, said:

“... the 'out of Africa' hypothesis contends that modern humans evolved in Africa between 200 and 100 kyr ago, migrating to Eurasia at some later time ... the discovery of early Middle Stone Age artefacts in an emerged reef terrace on the Red Sea coast of Eritrea, which we date to the last interglacial (about 125 kyr ago) ... this is the earliest well-dated evidence for human adaptation to a coastal marine environment ...”.

This was the last time that the Sea Level was as high as it is now ( image from Wikipedia ):



**Late Quaternary sea-level history**



**Global climate history**

Mellars, Gori, Carr, Soares, and Richards in pnas.1306043110 said:  
 "... initial dispersal of anatomically modern humans from Africa ...[prior to]...  
 the volcanic "supereruption" of the Mount Toba volcano ... (the largest volcanic  
 eruption of the past 2 million y) at ~74,000 y before present (B.P.) .. is in serious conflict  
 with both the most recent genetic evidence from both Africa and Asia and the  
 archaeological evidence from South Asian sites. ... a combination of genetic analyses  
 and recent archaeological evidence from South Asia and Africa ... support a coastally  
 oriented dispersal of modern humans from eastern Africa to southern Asia ~60–50  
 thousand years ago (ka). ...



**Fig. 2.** Map of sites referred to in the main text. The zone of "high marine productivity" is inferred from Google Earth satellite images of chlorophyll concentrations in coastal waters. Graphic by Dora Kemp.

... This was associated with distinctively African microlithic and "backed-segment" technologies analogous to the African "Howiesons Poort" and related technologies, together with a range of distinctively "modern" cultural and symbolic features (highly shaped bone tools, personal ornaments, abstract artistic motifs, microblade technology, etc.), similar to those that accompanied the replacement of "archaic" Neanderthal by anatomically modern human populations in other regions of western Eurasia at a broadly similar date ...".

According to Wikipedia articles:

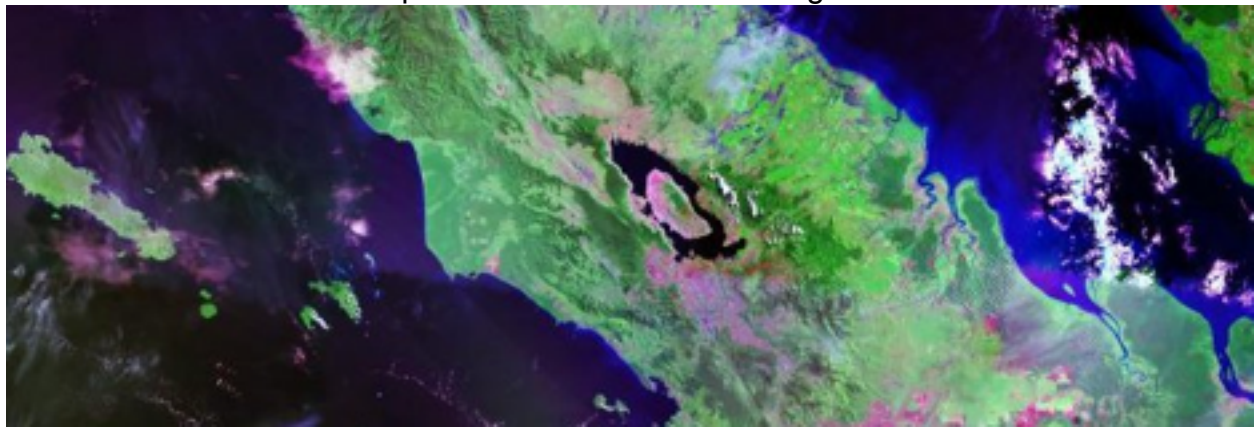
"... The Toba eruption (the Toba event) occurred at what is now Lake Toba about 67,500 to 75,500 years ago. It was the last in a series of at least three caldera-forming eruptions at this location, with earlier calderas having formed around 700,000 and 840,000 years ago. This last eruption ...[was]... possibly the largest explosive volcanic eruption within the last 25 million years. ... the total amount of material released in the eruption was about 2,800 km<sup>3</sup> (670 cu mi) -

about 2,000 km<sup>3</sup> (480 cu mi) of ignimbrite that flowed over the ground, and approximately 800 km<sup>3</sup> (190 cu mi) that fell as ash mostly to the west. The pyroclastic flows of the eruption destroyed an area of 20,000 km<sup>2</sup> (7,722 sq mi), with ash deposits as thick as 600 m (1,969 ft) by the main vent.

The eruption was large enough to have deposited an ash layer approximately 15 cm (5.9 in) thick over all of South Asia; at one site in central India, the Toba ash layer today is up to 6 m (20 ft) thick[13] and parts of Malaysia were covered with 9 m (30 ft) of ash fall. In addition it has been variously calculated that 10,000 million tonnes (1.1×10<sup>10</sup> short tons) of sulfurous acid or 6,000 million tonnes (6.6×10<sup>9</sup> short tons) of sulfur dioxide were ejected into the atmosphere by the event.

The subsequent collapse formed a caldera that, after filling with water, created Lake Toba. The island in the center of the lake is formed by a resurgent dome.

... Landsat photo of Sumatra surrounding Lake Toba ...



The exact year of the eruption is unknown, but the pattern of ash deposits suggests that it occurred during the northern summer because only the summer monsoon could have deposited Toba ashfall in the South China Sea. The eruption lasted perhaps two weeks, and the ensuing "volcanic winter" resulted in a decrease in average global temperatures by 3.0 to 3.5 °C (5 to 6 °F) for several years. Greenland ice cores record a pulse of starkly reduced levels of organic carbon sequestration. Very few plants or animals in southeast Asia would have survived, and it is possible that the eruption caused a planet-wide die-off. ... evidence from pollen analysis has suggested prolonged deforestation in South Asia ... The Toba eruption has been linked to a genetic bottleneck in human evolution about 50,000 years ago ... between 50,000 and 100,000 years ago, human populations sharply decreased to 3,000–10,000 surviving individuals. It is supported by genetic evidence suggesting that today's humans are descended from a very small population of between 1,000 to 10,000 breeding pairs that existed about 70,000 years ago. ... The theory is based on ... coalescence of some genes (including mitochondrial DNA, Y-chromosome and some nuclear genes) as well as the relatively low level of genetic variation among present-day humans. ... human mitochondrial DNA (which is maternally inherited) and Y chromosome DNA (paternally inherited) coalesce at around 140,000 and 60,000 years ago, respectively. This suggests that the female line ancestry of all present-day humans traces back to a single female (Mitochondrial Eve) at around 140,000 years ago, and the male line to a single male (Y-chromosomal Adam) at 60,000 ... years ago. ...”.