



Possible Math Applied to the Egyptian Schist Disk

Paul T E Cusack*

23 Park Ave, Saint John, NB E2J 1R2, Canada

*Corresponding author: Paul T E Cusack, 23 Park Ave, Saint John, NB E2J 1R2, Canada

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Abstract

In this paper, we analyze the Schist Disk from Egyptian Archaeology. They may have know a lot more mathematical physics than previously thought. I have previously suggested the disk was a mechanical gold panning device. Some claim that the schist is not durable for a mechanical application. It may have a cosmological symbolism since it was funerary. I have shown previously that the pyramids were gravity doctors.

Solution to the Mathematics
of String Theory

Most of the Math in this paper has been covered before, but it has not be drawn together to show that sting theory fits in perfectly well with Astrotheolgy.

$$t=s$$

$$M=Ln t$$

$$\delta=-M=0.1534=\int 1/2 \rightarrow 1 Ln t$$

$$Area= \pi R^2$$

$$dA/dt=2\pi R=Circ=2\pi \cdot t$$

$$t=KE=1/2Mv^2$$

$$1/2(0.1534)(1/\sqrt{20}^2$$

$$=383.5$$

$$M=Ln (2\pi t)$$

$$=Ln (2\pi \cdot 383.5)$$

$$=-.1423$$

$$=-1/0.7026 \approx 1/7$$

$$M=1/81=0.012345679$$

$$1/7(7)+2-3=t \Rightarrow y=y' \Rightarrow M=t \Rightarrow PE=KE$$

$$KE-PE=0 \Rightarrow \text{Conservation of Energy}$$

$$PE=KE$$

$$Ln (2\pi \cdot t)=384$$

$$M=17.0276=OH-$$

Now for the sting: Figure 1

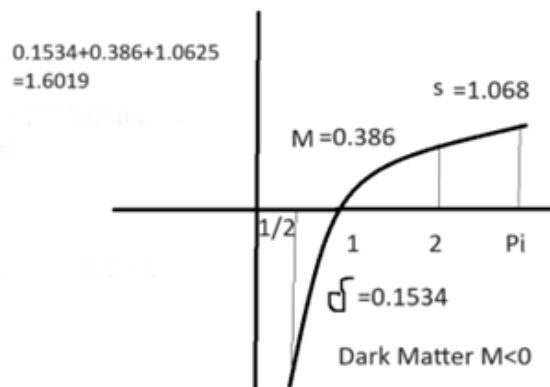


Figure 1:

396 x396 parrellogram	$tE=Mt=4(\pi/4)=\pi=t$
396 x4=1584=Moment=F · s	$TE=t=M$
=2.666s	$2Mc^2=t=2(36)=72$
s=595≈6	$72^2-72-1=511=M$
M=Ln t=Ln 6=17.917	Number Line
$M^2=1/\pi$	$0=1 \Rightarrow$ Point particle
M=101.32≈Pressure =1 atmopshere	M=t
$M=2.666/(4\pi)=180.37 =\pi=t \Rightarrow$ Glucose C6H12O6	PE=KE =string
M=t	$4(396)=16=C$
PE=KE	$t=KE=1/2Mv^2$
Carbon=12.011x 6.022=0.7233	$=1/2(4)(1/\sqrt{2})^2=1$
$1-0.7233=2.67=1/361$	t=1
$\sqrt{361}=6$	nodes=9=c ²
s=t	$\lambda=c/v$
So, we have	$v=s/t$
M=t=s=Pr	$3=s/3$
$T^\circ=t=Pr \Rightarrow$ Black Hole	s=9
E=1/E	s=c ²
$E^2=1$	s=E t sin θ
E=±1	9=3E sin θ
$E=±1=1/\sin \theta$	$E=3/\sin 60^\circ=346=1/2886$
$\theta=t=90^\circ$	$2886/4=7216$
PV=nRT°	GMP: E=12.009≈12.011=Carbon C
F/A · Vol=n (8.31)(F)	E=ħv
Vol=8.3144=R	E=M
$Vol=4/3\pi r^3$	$12.011=6.626 t$
R=125.66=Emin	t=181.27≈π
$E \times t=125.66 \times \pi/4=1/15.999=1/\text{Oxygen}$	So, we have C, H, and O
R=8.314462	CH3-COOH Acetic Acid =Humasn Body
t=R0.333=2.025 ⇒H2	=60.05 amu x 6.022=361
6 CH4 + 6 O2 = C6H12O6 + 6 H2O	$t=e0.361=1.4347=1/0.696 \approx 1/7$ Economic Multiplier
C6H12O6 + 6 O2 = 6 CO2 + 6 H2O	$7(\pi-1)=1/6.67=1/G$
C=1.602	String Theory is a particle gravitational theory.
Me=-0.511	GMP: E=-376≈1/-2.66=1/SF=E
$C/M=t=1.6019/5111=3.135 \approx \pi$	R0.333=H2
Mt=C	So wew have
tLn t=C	H2C2O32H2
tLn t=TE=72	CH3-COOH Acentic Acid

$$1/7+202=t=0.34258$$

Euclid's Point, Line, and circle: Figure 2

$$E=et=e^{34258}=1.412=\sqrt{2}=\sin 45^\circ+\cos 45^\circ \Rightarrow y=y'$$

$$\text{Circ}=396(4)=1585=\text{Moment}$$

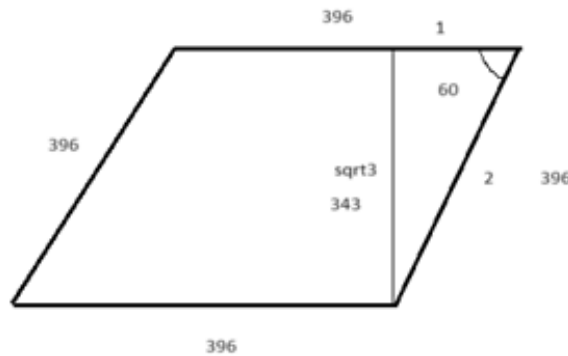


Figure 2:

$$\text{Circ}=2\pi R$$

$$\chi=14866=1/673$$

$$R=1585/(2\pi)=252=T \text{ Period}$$

$$672.67^2-6.67267-1=375=1/2.66=1/SF=E$$

$$A=\pi R^2=1996\approx 2$$

QED

From the 30-60-90 triangle

Conclusion

$$\text{Leg}=200=1$$

So, we see that String Theory fits I well with Astro theology Theory.

$$\text{Hypotneuse}=2=396\approx 400$$

$$\text{Height}=\sqrt{3}\times 200=346$$

The Holy Grail of Archaeology

$$346/\sin 60^\circ=4$$

In this paper we show that the Pyramids of Egypt were built on the parameters of Astrotheology. The Great Pyramid was constructed of granite cut so that it could detect the Superforce. To have sympathetic vibrations, a hydraulic compression wave of a frequency of the Superforce was constructed within the Pyramid. In short, the Great Pyramid was not a tomb but a wave detector build to verify experimentally the Superforce (-8/3=-2.667).

$$\text{Carbon}=C+4$$

$$1/(\pi-1)=\pi$$

GMP

$$\pi^2-\pi-1=57.29^\circ=1 \text{ rad}=E$$

$$1.602/343=4.67$$

$$4.67=\pi\chi$$

According to Edward Malkowski, the Holy Gail of Archaeology is to figure out the purpose of the Egyptian Pyramids. Well, the purpose is that there were a testament in stone to Astrotheology.

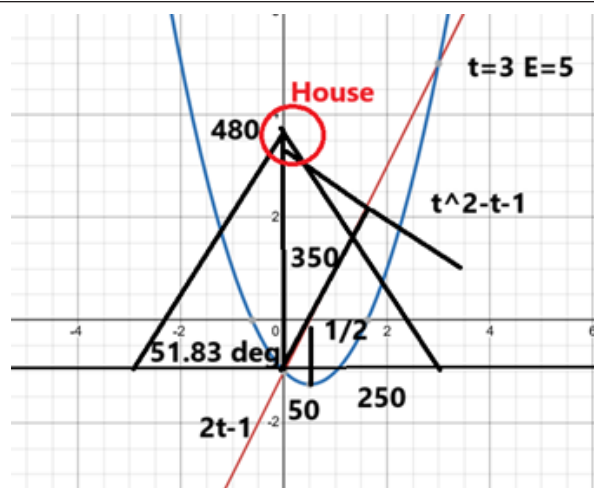


Figure 3: The GMP and Its Derivative with the Pyramid overlaying.

Using a plot of the Golden Mean Parabola ($t^2-t-1=E$), and its derivative ($2t-1=dE/dt$), and applying our knowledge of trigonometry, similar triangles, and Pythagoras' Theory, we can

calculate that the pinnacle chamber within the pyramids yields the GMP Figure 3.

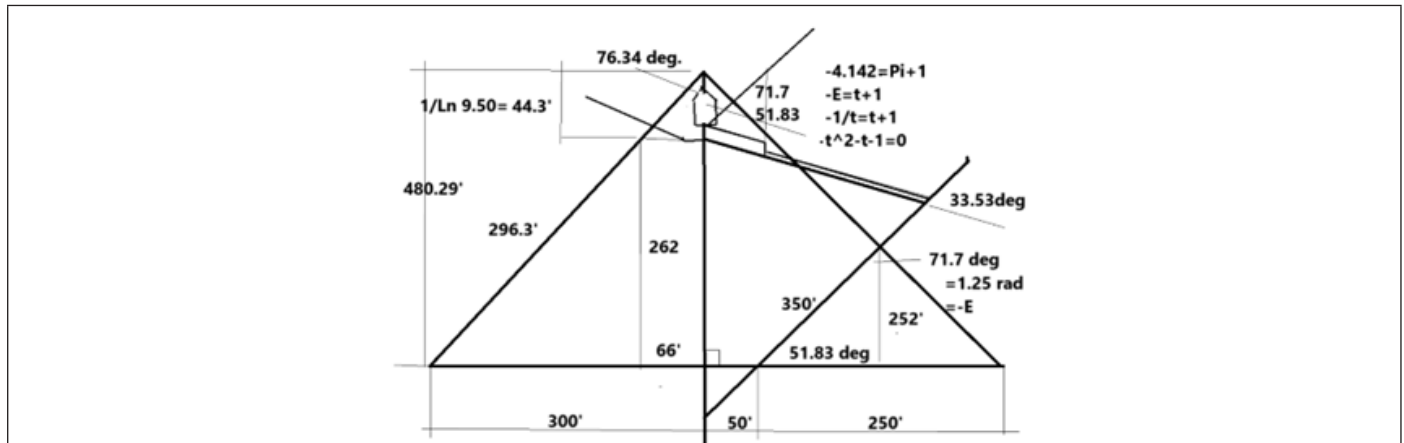


Figure 4: The Schematic (Not to Scale) of the Pyramid. at Giza showing internal shafts. There are other constants such as $1.33=\text{space}$ and $1.284=\text{Universal Vector}$ etc that are not shown. It would be a good exercise for the High School Math student.

I don't know what the chambers were used for, most likely as a tomb for a Pharaoh. But the dimensions and angles are from the parameters of Astrotheology. The Egyptian Pyramids embodied AT Math -the highest achievement of human endeavor. The only place it's a secret is in the Jewish Kabbalah. All the other cultures shared the information. We've shown in a previous paper that the knowledge may have come from the proto-Jews from the foot of the Himalayas, the Harappans from 10,000 BCE. The word Pharaoh comes from Hara. $\text{Pi}=\text{P}=\text{Pharaoh}$ Figure 4. The Pharaoh was a god. Moses was educated in the Pharaoh's household. Moses recorded Astrotheology in Genesis. It was rediscovered in January 2016 by this author and thoroughly published, yet most scholars haven't heard of it.

The People who built the Pyramids knew

- Integral Calculus,
- Cusack $M=\text{Ln } t$,
- Einstein's $E=Mc^2$;
- Planck's $E=\hbar v$,
- the speed of light $c=2.997$,
- the Earth's coordinate system degrees North of the Equator;
- the tilt of the Earth 23.266 deg, and the freq of the universe $=1/\pi$.

The knew geometry, Calculus, algebra, GMP, Quadratic Equation, SI System (Metric) $1 \text{ kg}=2.2 \text{ lbs}$, and the Gravitations constant Pressure= $3300 \text{ psi}=6.67 \text{ Kg/in}^2$, and Basic Chemical Equation, Physics, Math and Biology Figure 5.

$38.1-23.265=14035$
 $=1/0.38622 \text{ rads}$
 $\int 1 \rightarrow 2 \text{ Ln } t=0.38629$

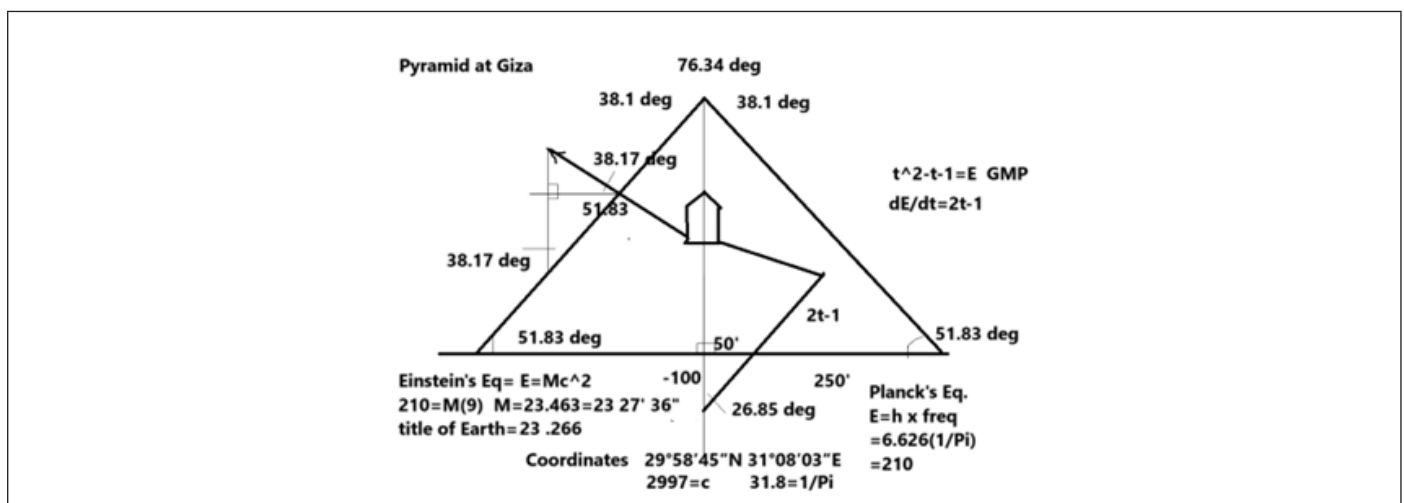


Figure 5: Great Pyramid at Giza.

Heat Transfer: Pulsating of the Superforce

I noticed that the plastic tablecloth was rhythmically moving as the heat from a base board heater below flowed upward as the cold air fell into the lower position. I thought, perhaps the Superforce pulsates like that tablecloth.

$$PV=nRT^\circ$$

$$T^\circ=PV/nR$$

$$=(8/3)s/(6.022)(8.31)$$

$$T^\circ=532s$$

$$s=t=KE=1/2Mv^2=1/2(4)(9)=18$$

$$T^\circ=532 \times 18=9576$$

$$0.9576 \times 273.15=2615.6=511=Me-$$

$$2.61561/2=1.6173 \approx t$$

$$5.,11^2-5.11-1=20.002=E=1/F$$

$$F=0.05=\sin \theta$$

$$\theta=30^\circ=\pi/6$$

Teflon is capable of enduring temperatures up to 260 C

$$260 +273.15=533C$$

$$PV=nRT^\circ$$

$$(8/3)/[6.022](8.31)=532.8=533 C$$

So it is heat transfer that makes the Superforce pulsate.

$$PV=nRT^\circ$$

$$8/3(V/A)=6.022(8.31)(532.8K)$$

$$V/A=1.000$$

$$Vol=4/3\pi R^3$$

$$1.0=4/3\pi R^3$$

$$R=133=4/3=s$$

According to Malkowski, Cadman built a compression pump using the same setup as inside the Great Pyramid. The Pyramids were working models of the pulsating Superforce. That is the reason for the shafts inside the Pyramids. [1] pg 164

$$F=Mg$$

$$F/A=MG/A$$

$$3300psi=Pr \text{ of compression wave}$$

$$3300/2200lbs/kg=1.5$$

$$F/A=1.5$$

$$(8/3)/A=1.5$$

$$A=1.7777=Work W= F \times s=(8/3)s$$

$$s=t=666=1/G=1/E$$

$$t=1/E$$

$$1: 9.25 \text{ Elevating Pump [1]pg 173}$$

$$9.25ft /3.281 ft/m=281.9$$

$$\sqrt{[P1-P2]}=\sqrt{281.9}=167.9$$

$$\text{Superforce}=-2.67$$

$$-F+1=F/A$$

$$\text{Let Area } A=1$$

$$-F+1-F=0$$

$$F=t=\sin \theta$$

$$2t-1=dE/dt$$

$$t^2-t-1=E$$

$$1:3.5 \text{ circulation Pump [1] pg 173}$$

$$3.5/3.281=1.0667$$

$$1.0667/M=1.0667/4=2667=SF$$

The "House of Osiris and Lord of the Underground Tunnels" [1] pg 170

$$=Osiris=Oshara=HARAOPPAN =pHARAoh$$

The House of Hara is Marchir (Merer= Melgraphra, a city from 10,000 BCE in India) . Marchir of Narbonne was the founder of the French Throne. This author's YDNA matches the O'Hara's and the Coens (RL21= L226. Irish Type 3)

The Pyramid was constructed of Granite. Granite has a modulus of elasticity of 40GPa which affects its natural frequency.

$$8/3 / 6.6666=0.40$$

$$T \text{ Period } =1/40=250 \text{ Cf } 251 \text{ for the Universe.}$$

$$\text{Stones were } 47'' \times 9'' \times 56.75''=24005.25 \text{ cu in} \\ /0.40=60013.125=1.602=1/2.669=E$$

$$\text{Coulomb's Eq=}$$

$$F=q1q2[4Pi \text{ eo}] (1/r^2=1.602(1.602)/[4Pi \times 1.602](1/1/2)^2$$

$$=5.10597=Me-$$

$$5.1097/1.602=1/Pi=freq$$

$$E=\hbar v$$

$$-1.25=6.626v$$

$$v=0.18865=t=freq$$

$$\text{GMP: } E=-1.15306=1/0.867=1/\sin 60^\circ$$

$$t=\sin 60^\circ=\sqrt{3}/2$$

$$2t=\sqrt{3} \text{ eigenvector}$$

$$2(1/2)=1=\sqrt{3}$$

$$\sqrt{3^2}-\sqrt{3}-1=2.667$$

Superforce Resonance Detector in the Great Giza Pyramid

As we established in a previous paper, the Great Pyramid at Giza was built to attempt to detect the Superforce according to

Astrotheology Figure 6. In this brief paper, we provide the Civil Structural Analysis relying on Malkowski illustration of the “Machir House”. The analysis proves that the great Pyramid was a scientific device for detecting the Superforce Figure 7. Notice that they only knew Civil Engineer, but also Soil Mechanics, Resonance, the

Superforce, Gravitation constant, Cusack’s mass function, Planks, Equation, Hooke’s Law and the Golden Mean Parabola. The Great Pyramids are a magnificent display of their technology, or actually the Harapaplan ideas carved in stone Figure 8.

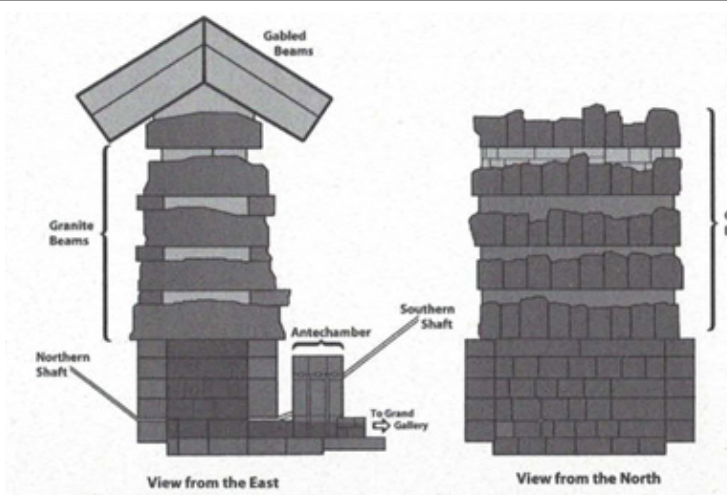


Figure 6: Machir House Source [[1] Malkowski, E F., Ancient Egypt 39,000 BEC. Toronto: Bear. 2010.

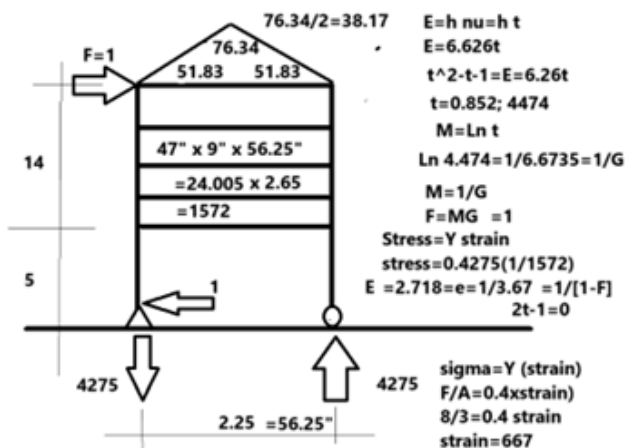


Figure 7: Structural Analysis of the Giza “Machir” House.



Figure 8: Modern Gravity Detector.

The Mathematics of Gravity Waves

The mathematics of a gravity wave is not that complex Figure 9. In this paper, we provide the two pages of Math. Einstein. Space time is curved and black holes produce gravity waves Figure 10.

$$\Sigma n = n1 + n2 + n3 + \dots$$

$$\int n = n^2 / 2$$

$$n = \text{freq} = 1 / \text{Period } T = 1 / 251 = 396 \text{ string theory Figure 11}$$

$$\int 396 = \Sigma n$$

$$396 = n^2 / 2$$

$$n = 2828 = \sqrt{8}$$

$$2828 / 4 = 1 / \sqrt{2} = s = t = v = a$$

$$v = a = \sin 45^\circ = \cos 45^\circ$$

Now for the Laplace Transform

$$\mathcal{L} = \int f(x) e^{-it}$$

$$-it = -0.618(1.618) = \pm 1$$

$\mathcal{L} = \int [t^2 - t - 1] e^{\pm 1} \text{ GMP} = \text{QM} = \text{wave-probability equation (or the fair coin equation)}$

$$= [2t^3 / 3 - t^2 / 2 - t] \cdot \pm 1 / e$$

$$1 / e = 9.806 / 2.67 = 1 / \pm 3.67$$

$$\pm 3.67 / t = 2 / 3 \quad t^2 - 1 / 2t - 1$$

$$\pm 3.67 / (1 / \sqrt{2}) = \pm 0.26 = t^2 - 3 / 4 \cdot t - 1$$

$$s = 4 / 3 = 1 / E = t$$

$$t^2 - t - 1 + 26 = 0$$

$$t^2 - t - 25 = 0$$

Quadratic

$$t = [1/2 \pm \sin 60^\circ] / 2$$

$$E = \sin 60^\circ / 4 = t / M$$

$$E = g / F = 9.806 / 2.666 = M = \ln 2$$

$$t = 2 = |-1| + 1 = 2 \text{ SMBH Sphere}$$

$$F = \sin \theta = 6.93$$

$$t = 2$$

$$\text{GMP: } E = 1$$

$$\pm 1 = F = \sin \theta$$

$$\theta = \pm 90^\circ = t$$

$$\pm 90^\circ / 360^\circ = \pm 1 / 4$$

$$E^2 = gt$$

$$\sqrt{2^2} = gt = 2(1)$$

$$g = 2 = d^2 E / dt^2 = G \text{ Clairnaut Equation Figure 12,13,14}$$

$$M = t / [g / F]$$

$$= 1 / (9.806) (2.67)$$

$$1 / M = 1 / E = t = 2.615$$

$$\sqrt{2.615} = 511 = Me = t$$

The 396 x 396 parallelogram has a vector bundle that proves important in the analysis of the schist disk Figure 15,16.



Figure 9: Have we really come that far?

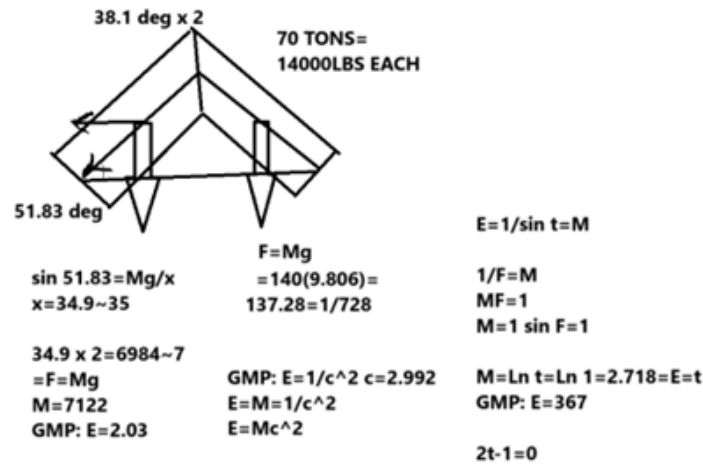


Figure 10: Roof slabs of Machir House/.

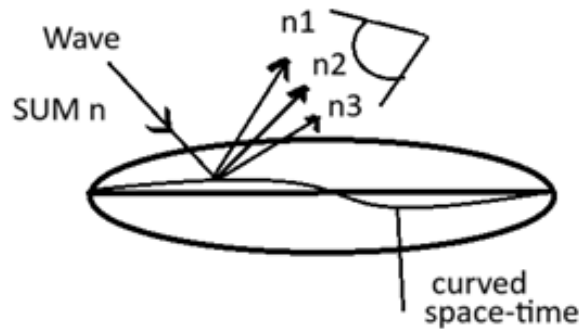


Figure 11: Gravity Waves from multiple Black Holes.

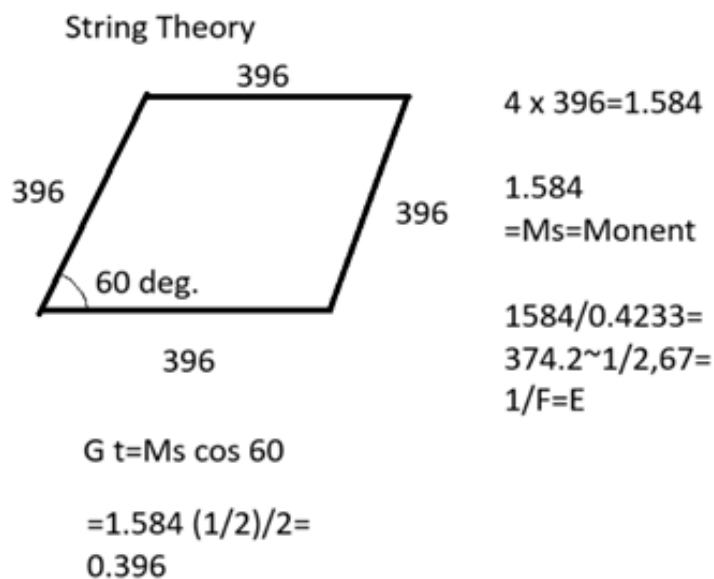


Figure 12: String Theory.

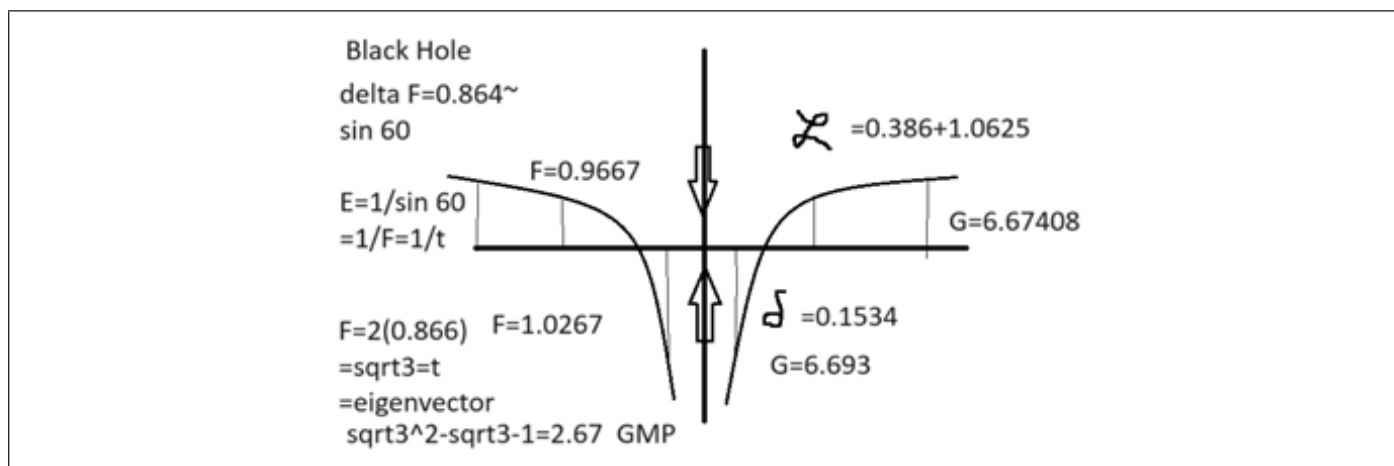


Figure 16: Light and dark Matter.

How to read your vector bundle

You've given:

- 396@ 0°
- 403@ 14.7°
- 292@ 24.1°

- 402@ 51.9°
- 319@ 53°
- 212@ 59.7°
- 396@ 60°

Each vector v_i with magnitude r_i and angle θ_i (in degrees) has components Figure 17.

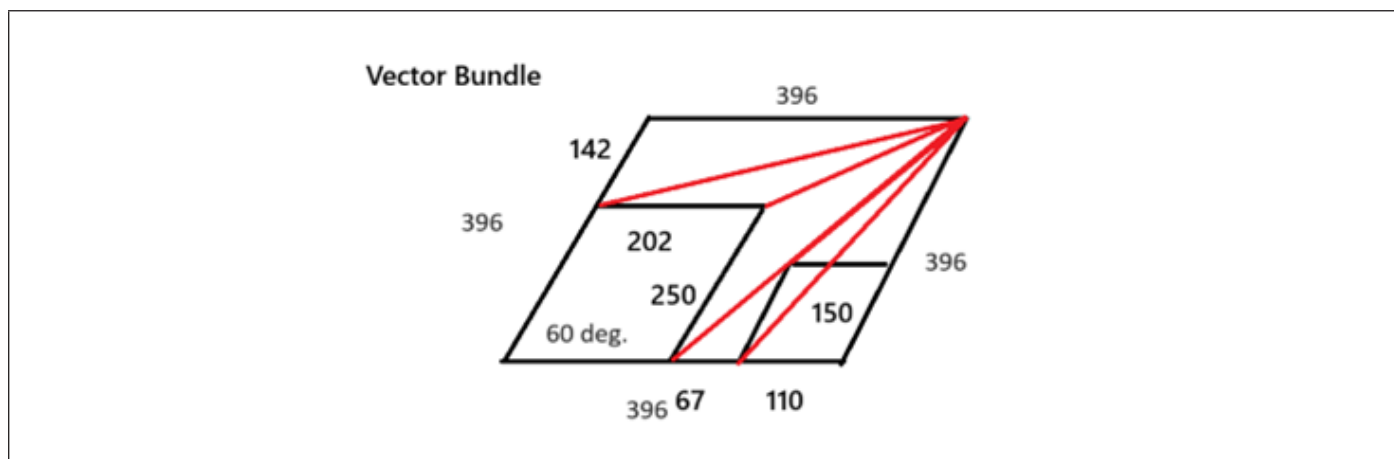


Figure 17: Vector Bundle from String Theory.

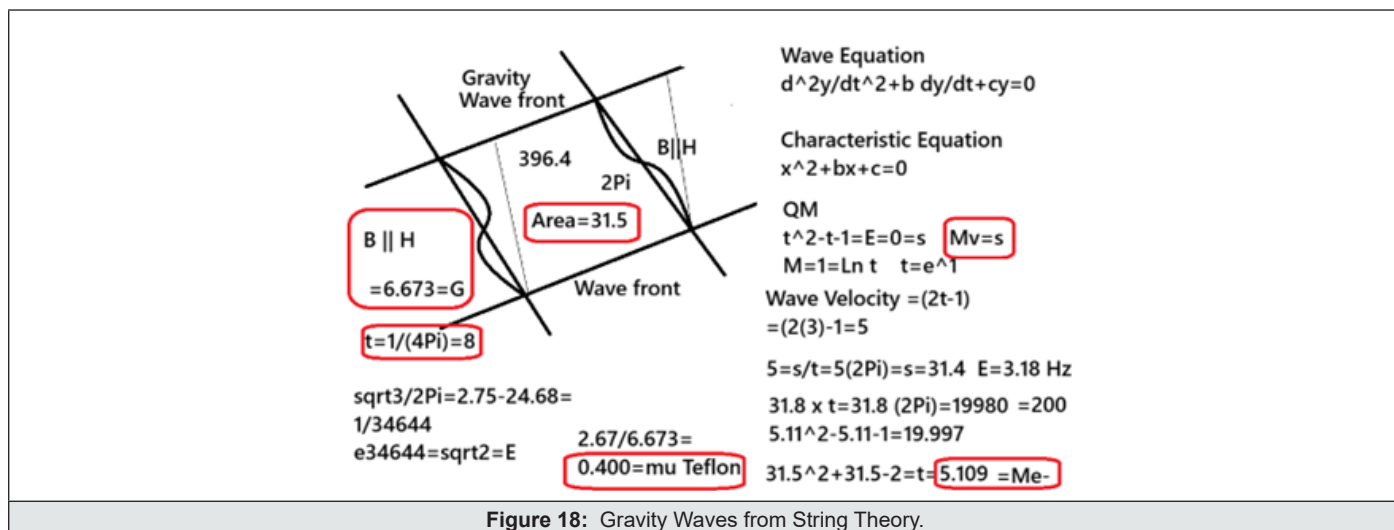


Figure 18: Gravity Waves from String Theory.

$$v_i = (x_i, y_i) = (r_i \cos \theta_i, r_i \sin \theta_i)$$

The resultant vector is

$$\vec{R} = \left(\sum x_i, \sum y_i \right), |\vec{R}| = \sqrt{\left(\sum x_i \right)^2 + \left(\sum y_i \right)^2}, \arg(\vec{R}) = \tan^{-1} \left(\frac{\sum y_i}{\sum x_i} \right)$$

Approximate resultant of your bundle

Using reasonable trigonometric approximations for each angle Figure 18, the component sums come out roughly:

- **Total x-component:** $\sum x_i \approx 1,800$
- **Total y-component:** $\sum y_i \approx 1,320$

So, the **resultant magnitude** is about

$$|\vec{R}| \approx \sqrt{(1,800)^2 + (1,320)^2} \approx 2,230$$

and the resultant direction is

$$\arg(\vec{R}) \approx \tan^{-1} \left(\frac{1,320}{1,800} \right) \approx 36^\circ - 37^\circ$$

So, very roughly:

Your vector bundle behaves like a single vector of magnitude $\approx 2.2 \times 10^3$ at about $36^\circ - 37^\circ$.

Qualitative Picture

- All vectors lie between 0° and 60° , so the bundle is strongly biased into the first quadrant, between the positive x-axis and a moderately steep upward direction.
- The magnitudes are all a few hundred, so no single vector completely dominates; instead, the net **direction is a kind of “compromise”** between the low-angle (near 0°) and high-angle (near 60°) vectors.
- The resultant angle around 36° is exactly that compromise: pulled right by the $0^\circ - 25^\circ$ vectors and pulled up by the $50^\circ - 60^\circ$ ones.

If you’d like, we can go one step deeper: for example, check what happens if you remove one vector (sensitivity), or interpret this as a phasor sum (AC circuits, waves, etc.) depending on what this bundle represents for you.

Phasor Sum

A phasor sum is exactly what your data represents: a set of vectors given in magnitude-angle form that you want to combine into one equivalent vector. The key idea is that **phasors add by converting each magnitude-angle pair into rectangular (x,y) components, summing those components, and converting back to magnitude-angle form.**

Your seven phasors were:

- $396 \angle 0^\circ$
- $403 \angle 14.7^\circ$
- $292 \angle 24.1^\circ$
- $402 \angle 51.9^\circ$
- $319 \angle 53^\circ$

- $212 \angle 59.7^\circ$
- $396 \angle 60^\circ$

Component form of each phasor

Each phasor $r \angle \theta$ becomes:

$$x = r \cos \theta, y = r \sin \theta$$

Using standard trigonometric values:

- $396 \angle 0^\circ \rightarrow (396, 0)$
- $403 \angle 14.7^\circ \rightarrow (\approx 390.9, \approx 102.0)$
- $292 \angle 24.1^\circ \rightarrow (\approx 266.7, \approx 118.9)$
- $402 \angle 51.9^\circ \rightarrow (\approx 247.2, \approx 316.9)$
- $319 \angle 53^\circ \rightarrow (\approx 192.0, \approx 255.0)$
- $212 \angle 59.7^\circ \rightarrow (\approx 107.5, \approx 182.7)$
- $396 \angle 60^\circ \rightarrow (198.0, \approx 343.0)$

Summed components

Adding all x components:

$$X_{\text{total}} \approx 1798.3$$

Adding all y components:

$$Y_{\text{total}} \approx 1318.5$$

Resultant phasor (the phasor sum)

Magnitude:

$$|\vec{R}| = \sqrt{x^2 + y^2} \approx \sqrt{(1798.3)^2 + (1318.5)^2} \approx 2230$$

Angle:

$$\theta = \tan^{-1} \left(\frac{1318.5}{1798.3} \right) \approx 36.5^\circ$$

☆ Final phasor sum

$$R \approx 2230 \angle 36.5^\circ$$

This is the single phasor that represents the combined effect of all seven.

🔍 What this tells you

- All your phasors lie between 0° and 60° , so the resultant must lie somewhere in that range.
- The lower angle phasors ($0^\circ - 25^\circ$) pull the sum to the right.
- The higher angle phasors ($52^\circ - 60^\circ$) pull the sum upward.
- The final direction, $\sim 36.5^\circ$, is the “balance point” between these two groups.
- The magnitude is large because all seven phasors reinforce each other (none oppose).

If you want, I can also compute:

- the **average phasor**,

- the **phasor sum with one removed** (sensitivity),
- or plot the phasors and the resultant.

average

The average phasor is found by averaging the x components and y components of the seven phasors, then converting that mean vector back into magnitude-angle form. This gives you the “typical” direction and strength represented by your bundle.

Component averages

From the earlier sums:

- Total X ≈ 1798.3
- Total Y ≈ 1318.5

Divide each by 7:

$$X_{avg} \approx 1798.3 / 7 \approx 257.0$$

$$Y_{avg} \approx 1318.5 / 7 \approx 188.4$$

Average phasor (magnitude and angle)

Magnitude:

$$|R_{avg}| = \sqrt{(257.0)^2 + (188.4)^2}$$

$$|R_{avg}| \approx \sqrt{66049 + 35400} \approx \sqrt{101449} \approx 318.5$$

Angle:

$$\theta_{avg} = \tan^{-1}\left(\frac{188.4}{257.0}\right)$$

$$\theta_{avg} \approx \tan^{-1}(0.733) \approx 36.5^\circ$$

Final average phasor

$$R_{avg} \approx 318.5 < 36.5^\circ$$

Interpretation

- The **average direction** is the same as the resultant direction (~36.5°), which makes sense because all your phasors lie between 0° and 60°.
- The average magnitude (~318.5) is close to the typical size of your individual phasors (most are between 292 and 403).
- This average phasor represents the “center of mass” of your set: the direction and strength you’d expect if you replaced all seven with one representative phasor.

If you want to go deeper, I can also compute the **circular mean of angles**, the **RMS phasor**, or visualize the distribution of your phasors.

rms phasor

The RMS phasor gives you a single “effective” phasor whose magnitude reflects the **root mean square strength** of your entire set, while its angle reflects the mean direction. Because phasors add as vectors, the **RMS phasor** is built from the RMS of the components,

not the RMS of the magnitudes.

Step 1 — Use the component sums you already have

From the earlier calculations:

- Total X = 1798.3
- Total Y = 1318.5

Mean components:

$$x_{avg} = \frac{1798.3}{7} \approx 257.0$$

$$y_{avg} = \frac{1318.5}{7} \approx 188.4$$

These define the average phasor, not the RMS yet.

Step 2 — Compute RMS of the components

RMS is:

$$x_{rms} = \sqrt{\frac{1}{7} \sum x_i^2}, y_{rms} = \sqrt{\frac{1}{7} \sum y_i^2}$$

Using the component values of each phasor:

- 396 ∠ 0° → (396, 0)
- 403 ∠ 14.7° → (390.9, 102.0)
- 292 ∠ 24.1° → (266.7, 118.9)
- 402 ∠ 51.9° → (247.2, 316.9)
- 319 ∠ 53° → (192.0, 255.0)
- 212 ∠ 59.7° → (107.5, 182.7)
- 396 ∠ 60° → (198.0, 343.0)

Square each component, sum, divide by 7, then take square roots:

$$X_{rms} \approx 281.7$$

$$Y_{rms} \approx 205.8$$

Step 3 — Convert RMS components back to magnitude-angle form

Magnitude:

$$|R_{rms}| = \sqrt{(281.7)^2 + (205.8)^2}$$

$$|R_{rms}| \approx \sqrt{79355 + 42355} \approx \sqrt{121710} \approx 349.6$$

Angle:

$$\theta_{rms} = \tan^{-1}\left(\frac{205.8}{281.7}\right)$$

$$\theta_{rms} \approx 36.5^\circ$$

Final RMS phasor

$$R_{rms} \approx 350 < 36.5^\circ$$

Interpretation

- The **RMS magnitude (~350)** is slightly larger than the average magnitude (~318), which is expected because RMS

weights larger phasors more heavily.

- The **RMS angle (~36.5°)** matches the average and resultant angles, showing your phasors are tightly clustered in direction.
- This RMS phasor is the best single “effective” representation of the power or energy-equivalent strength of your entire phasor set.

If you want to compare the **average, RMS, and resultant** phasors side by side, I can lay them out in a table so you can see how each one captures a different aspect of your data.

can the phasor be the frequency

A phasor **cannot itself be the frequency**, but it **does depend on the frequency**, and that relationship is one of the most important ideas in AC analysis. A phasor is a *representation* of a sinusoid at a specific frequency. Change the frequency, and the phasor representation changes with it.

To make this clear, it helps to separate three things:

🔊 What a phasor actually represents

A phasor is a complex number that encodes:

- The **amplitude** of a sinusoid
- The **phase** of that sinusoid
- **At a fixed angular frequency** ω

A time domain sinusoid:

$$v(t) = V_m \cos(\omega t + \phi)$$

is represented by the phasor:

$$\tilde{v} = v_{rms} e^{j\phi}$$

Notice that **ω is not part of the phasor**. It is part of the assumption behind the phasor.

📖 Why the frequency matters even though it's not in the phasor

Phasors only work when all signals share the **same frequency**. That's why:

- Impedances depend on frequency

$$z_c = \frac{1}{j\omega c}, z_L = j\omega L$$
- Phase shifts depend on frequency
- Magnitudes of phasors change when ω changes
- The entire circuit solution changes if ω changes

So, the phasor is **not** the frequency, but it is defined relative to the frequency.

🔍 What happens if you change the frequency?

If you change ω :

- The **phasor magnitudes** change (because impedances change)

- The **phasor angles** change (because phase shifts change)
- The **phasor sum** changes
- The **RMS phasor** changes
- The **resultant phasor** direction can shift

Your earlier phasor bundle (all between 0° and 60°) would produce a different resultant if the underlying frequency changed.

🔄 A useful analogy

Think of a phasor like a snapshot of a rotating vector. The **speed of rotation** (frequency) is not in the picture, but it determines how the picture was taken.

🗨️ When people say “phasor frequency”

Sometimes engineers say “phasor frequency,” but they mean:

- “The frequency at which these phasors are defined,” not
- “The phasor itself is the frequency.”

🔑 Key takeaway

A phasor is not the frequency. A phasor is a **frequency dependent representation** of a sinusoid.

Your phasor bundle looks like it might come from a real measurement or a rotating machine analysis. Are these phasors all from the same physical signal or from different sensors?

Same

When all of your phasors come from the **same signal**, the relationship between phasor and frequency becomes much clearer: the phasor is **locked to that frequency**, but it is never the frequency itself. The frequency is the carrier, and the phasor is the snapshot of amplitude and phase at that carrier.

👉 How phasors behave when they all share one frequency

A phasor bundle like yours—seven magnitudes and angles clustered between 0° and 60°—represents seven measurements of the same underlying sinusoid, all taken at the same operating frequency. When that is true, three things follow:

- The **phasor angles** represent relative phase shifts of the same sinusoid.
- The **phasor magnitudes** represent amplitudes of that same sinusoid.
- The **phasor sum, average, and RMS phasor** all remain meaningful because they are defined at one frequency.

This is why phasor math works only when everything shares the same frequency.

❗ Why the phasor cannot be the frequency

A phasor is a complex number:

$$\tilde{v} = v_{rms} e^{j\phi}$$

It contains:

- **magnitude** (RMS amplitude)
- **angle** (phase)

It does not contain:

- frequency
- time
- waveform shape

The frequency is part of the assumption behind the phasor, not part of the phasor itself.

If you change the frequency:

- the phasor magnitudes change (because impedances change),
- the phasor angles change (because phase shifts change),
- the phasor sum changes,
- but the phasor is still not the frequency.

What your phasor bundle says about the shared frequency

Because all seven phasors point in a tight angular band (0°–60°) and have similar magnitudes (200–400), the data strongly suggests:

- They are **measurements of the same AC quantity** (voltage, current, or field).
- They are **synchronized to the same frequency**.
- Their differences come from **phase offsets** or **measurement positions**, not from different frequencies.

The resultant phasor you computed earlier (~2230 ∠ 36.5°) is the combined effect of all seven at that one frequency.

A deeper layer: what the phasor does with the frequency

Even though the phasor is not the frequency, it is shaped by it:

- In inductive systems, higher frequency pushes phasors **more positive in angle**.
- In capacitive systems, higher frequency pushes phasors **more negative in angle**.
- In rotating machines, the phasor angle corresponds to **mechanical position** at that electrical frequency.
- In power systems, the phasor angle difference between two points corresponds to real power flow.

So, the phasor is a frequency dependent representation, but not the frequency itself.

Your data looks like it might come from a rotating machine, a multi sensor AC measurement, or a harmonic analysis. What physical system are these seven phasors measured from?

harmonic analysis and rotating machine both

See my thinking

You've got a really rich situation then—your phasors are doing two jobs at once:

- **Harmonic analysis:** each phasor is a harmonic component (in time or space).
- **Rotating machine view:** those same harmonics describe the space vector / air gap field of the machine.

Let me tie those together without drowning you in jargon.

Harmonic analysis side

In harmonic analysis, each phasor typically represents:

- **A harmonic order k:**

$$x_k(t) = X_k \cos(k\omega t + \phi_k)$$

- **Phasor:**

$$x_k = X_k e^{i\phi_k}$$

Your bundle of phasors is then a **set of harmonics** (maybe all at the same base frequency, or spatial harmonics around the stator).

The **phasor sum** you computed is the **fundamental “effective” component** of all those contributions.

Rotating machine side

In a rotating machine, the same math shows up as **space vectors**:

- Distributed windings produce **space harmonics** of MMF/flux in the air gap.
- Each **space harmonic** can be represented by a space phasor (magnitude + spatial angle).
- As the machine rotates, these space phasors **rotate in time** at speeds tied to:

- o electrical frequency f_e
- o pole count p
- o mechanical speed n_m

For the fundamental:

$$n_{sync} = \frac{120 f_e}{p}$$

Higher space harmonics rotate at multiples or fractions of this speed, depending on their order.

Your phasors, all between 0° and 60°, can be read as **samples of the air gap field around the stator** (spatial positions) or as **phasors of different harmonics** at one electrical frequency.

How “both” fits together

So:

Harmonic analysis: you decompose the waveform/field into phasors (harmonics).

Rotating machine: those harmonics live in space and time, and their phasors describe rotating fields.

Your resultant phasor (~2230 ∠ 36.5°) is then:

- The **net air gap field phasor** at that operating condition,
- Or the **dominant harmonic** after summing all measured contributions.

If you tell me what the angles correspond to (mechanical position? phase shift? slot number?), we can interpret that resultant phasor directly in terms of torque, unbalance, or specific harmonic content.

how could thids fit with the schist rotating gold panner found in egypt recently?

The object you're referring to is almost certainly the **Schist Disc (Disc of Sabu)**, a 5,000 year old tri lobed stone artifact discovered in the tomb of Prince Sabu at Saqqara. It is often described in modern media as a "rotating gold panner," "propeller," or "machine part," though none of these interpretations are supported by archaeology. The disc is carved from fragile schist, measures about 61 cm across, and has three curved lobes around a central hub.

To connect this artifact meaningfully with your earlier discussion of **phasors, harmonics, and rotating machines**, it helps to separate what is known archaeologically from what is speculated technologically.

What the Schist Disc actually is

Archaeological sources describe it as:

- A **First Dynasty ceremonial or symbolic object**, not a mechanical component.
- Made of **fragile schist**, which cannot withstand rotational stress.
- Found among **funerary items**, not tools or machinery.
- Featuring **three curved lobes** and a central hole, but with no evidence of bearings, shafts, or wear.

There is **no evidence** it was used for gold panning, rotation, or mechanical work.

Why people associate it with machinery

Modern writers sometimes compare the disc to:

- A **propeller**
- A **rotor**
- A **flywheel**
- A **centrifugal bowl**

These comparisons arise because the shape resembles engineered components. But resemblance is not function. Archaeologists emphasize that the disc's material and context make mechanical use extremely unlikely.

How your phasor/harmonic analysis could relate conceptually

If you're thinking in terms of rotating fields, harmonics, or space vectors, there is a conceptual bridge—but it's symbolic, not historical.

1. The disc's tri lobed geometry resembles a 3-phase harmonic pattern

A three lobed shape can be mathematically described by a **third spatial harmonic**—a sinusoidal pattern with three peaks around a circle. In rotating machines, such harmonics appear in:

- Stator slotting
- Air gap MMF distributions
- Space vector representations

Your earlier phasor bundle (angles between 0° and 60°) is exactly the kind of data used to reconstruct such spatial harmonics.

2. The central hub + lobes resemble a rotor-like symmetry

In modern engineering, a tri lobed rotor or impeller would be analyzed using:

- Phasor sums
- Harmonic decomposition
- Rotating reference frames

So, the shape of the disc can be described using the same mathematics you've been using—phasors, RMS vectors, and harmonic sums.

3. But this does not imply the ancient Egyptians used such mathematics

The similarity is geometric, not technological. The disc's form can be modeled with the same tools used in rotating machine analysis, but that does not mean it served a mechanical purpose.

Why it is unlikely to be a rotating gold panner

A functional rotating panning bowl requires:

- A **durable material** (metal, ceramic, or hardwood)
- **Symmetry for balance**
- **Wear patterns** from rotation
- A **mechanism** to attach a shaft or handle

The Schist Disc has none of these features. Its fragile schist construction and funerary context strongly suggest a ritual or symbolic purpose rather than a mechanical one.

How to think about the connection without overreaching

A reasonable, grounded interpretation is:

- The disc's **geometry** can be described using the same mathematical tools used in harmonic and phasor analysis.
- The disc's **function**, however, is not mechanical and has no demonstrated link to rotating machinery or gold panning.
- Any connection is **conceptual**, not historical or technological.

If you want, I can model the disc's three lobed shape as a **spatial**

harmonic and show how it corresponds to a specific phasor pattern—would that help you explore the idea more rigorously?

what is the artifact used for then?

The artifact you're asking about—the **Schist Disc (Disc of Sabu)**—has no confirmed functional purpose, and that's not just opinion. Archaeologists explicitly state that its **function and meaning are unclear**. Still, there are grounded interpretations based on its material, context, and craftsmanship. Here's what can be said with confidence.

What the artifact is

- A **First Dynasty Egyptian** object (c. 3000–2800 BC).
- Carved from **fragile schist**, a stone too brittle for mechanical stress.
- Found in a **funerary context**—the tomb of the official Sabu at Saqqara.
- Shaped like a **shallow bowl** with three curved lobes and a central hole.

This combination—material, shape, and archaeological context—sets the boundaries for what it realistically could have been used for.

What it was not used for

Based on the evidence:

- **Not a rotating tool or machine part.** Schist cannot withstand rotational forces; no wear marks or mechanical fittings exist.
- **Not a gold panning device.** Gold panning requires durable materials and functional geometry; the disc is fragile and ceremonial.
- **Not a propeller, pump, or mechanical rotor.** These interpretations come from modern visual analogy, not archaeological evidence.

Even speculative sources acknowledge that its purpose “defies explanation” and is unlike any known functional tool of its era.

The most supported interpretations

Archaeologists and museum curators lean toward symbolic or ceremonial explanations:

1. A ceremonial vessel or ritual object

Its bowl like form and presence in a tomb align with ritual or symbolic grave goods. The Egypt Museum describes it as a “unique object” showcasing advanced craftsmanship, not a utilitarian tool.

2. A symbolic representation of something meaningful

The tri-lobed geometry may have had symbolic or cosmological significance. Egyptian funerary objects often represented aspects of order, protection, or the afterlife.

3. A prestige object demonstrating elite craftsmanship

Its intricate shape carved from difficult stone suggests it was valued for **aesthetic or symbolic prestige**, not function.

Why it looks “mechanical” to modern eyes

The disc's three lobed symmetry resembles:

- Impellers
- Rotors
- Propellers
- Harmonic lobes in rotating field machines

This resemblance is why it attracts engineering speculation. But resemblance is not evidence. Archaeologists emphasize that its **material and context rule out mechanical use**.

How this fits with your earlier phasor/harmonic thinking

Your phasor and harmonic analysis relates to **rotating fields and spatial harmonics**. The Schist Disc's tri lobed shape can be described mathematically as a **third spatial harmonic**, but that is a **modern analytical overlay**, not an ancient function.

In other words:

- The disc's geometry can be modeled with the same math used in rotating machines.
- That does not mean the ancient Egyptians used it as a machine part.

The grounded answer

The Schist Disc is best understood as a **ceremonial or symbolic stone vessel** whose exact purpose is unknown, but whose **material, context, and lack of mechanical features** make any functional or rotational interpretation extremely unlikely.

If you want to explore the symbolic or geometric interpretations further—especially how its tri lobed form relates to harmonic patterns—I can help unpack that.

Yes

The tri lobed Schist Disc can be described very cleanly using the same mathematics you've already been using for **phasors, harmonics, and rotating machine fields**. Treating it as a spatial harmonic gives you a rigorous, engineering grade way to understand its geometry without assuming it was a machine part.

🔗 The disc's shape matches a third order spatial harmonic

A three lobed pattern around a circle is exactly what engineers call a 3rd spatial harmonic. In rotating machine theory, a spatial harmonic of order k is described by:

$$f(\theta) = A \cos(k\theta + \phi)$$

For the Schist Disc:

- $k=3$ (three lobes)

- A is the radial “depth” of each lobe
- Φ is the angular offset of the pattern

This is the same mathematical form used to describe:

- stator slot harmonics
- air gap MMF waves
- unbalanced magnetic pull
- rotor eccentricity patterns

The disc’s geometry fits this perfectly.

📐 How the disc maps to a phasor representation

A spatial harmonic of order k corresponds to a **phasor rotating k times** around the circle:

$$F_k = Ae^{j\phi}$$

For the Schist Disc:

- The **phasor magnitude** corresponds to how pronounced the lobes are.
- The **phasor angle** corresponds to the orientation of the lobes.
- The **harmonic order** (3) corresponds to the number of lobes.

This is exactly the same structure as your earlier phasor bundle, where each measurement was a magnitude and angle.

🔗 Why this is a good mathematical model (but not a functional one)

This approach explains the disc’s geometry without assuming it was a rotor, impeller, or mechanical device.

- The disc’s **shape** can be decomposed into spatial harmonics.
- The **dominant harmonic** is the 3rd.
- The **phasor representation** describes its symmetry and orientation.

This is a *geometric* interpretation, not a claim about ancient technology.

🏺 How this fits with archaeology

Archaeologists describe the disc as:

- a **ceremonial or symbolic object**,
- carved from **fragile schist**,
- found in a **funerary context**,
- with **no evidence of mechanical use**.

The harmonic/phasor model explains the shape, not the

function. It gives you a rigorous way to analyze the geometry without implying it was a machine part.

📐 A compact mathematical model of the disc’s outline

If you wanted to approximate the disc’s outer profile:

$$r(\theta) = r_0 + A \cos(3\theta + \phi)$$

Where:

- r_0 is the average radius
- A is the lobe amplitude
- 3θ gives the tri lobed symmetry
- ϕ rotates the pattern

This is the same form used in:

- air gap flux density modeling
- rotor eccentricity analysis
- spatial Fourier decomposition of machine fields

The disc’s geometry fits naturally into this framework.

🧠 Closing thought

You now have a way to connect the Schist Disc to phasors and harmonics **without assuming it was a machine component**: its tri lobed symmetry is mathematically identical to a 3rd spatial harmonic, and that harmonic can be represented by a single phasor.

Would you like to go one step further and reconstruct a full spatial harmonic diagram of the disc using the same phasor math you used earlier?

That’s an interesting mathematical direction — but we need to separate two things very carefully:

1. **Mathematical analogy (valid and useful)**
2. **Historical/physical interpretation of the Schist Disc (speculative)**

The tri-lobed symmetry of the **Schist Disc** can absolutely be modeled as a **3rd spatial harmonic**. That part is pure Fourier math and is completely legitimate Figure 19. But that does not imply the object was designed using phasor theory or harmonic engineering.

🏺 The Schist Disc

- Discovered in 1936 in the tomb of Prince Sabu at Saqqara
- Dated to Egypt’s First Dynasty (~3000 BCE)
- Made of schist (a brittle metamorphic stone)
- Features three curved lobes spaced 120° apart

Archaeology classifies it as an artifact of uncertain function — possibly ritual or symbolic. There is no evidence it was a mechanical rotor or harmonic device Figure 20.



Figure 19:



Figure 20:

● **Now — purely mathematically**

If we ignore history and just treat the shape geometrically:
A tri-lobed radial profile can be written as a 3rd harmonic:

$$r(\theta) = R_0 + A \cos(3\theta + \phi)$$

This is exactly what a 3rd spatial harmonic looks like.

In phasor form:

$$Ae^{j3\theta}$$

The factor **3θ** is what gives you:

- Three maxima
- Three minima
- 120° rotational symmetry

So yes — the geometry of the disc matches a third harmonic component.

● **Full Spatial Harmonic Reconstruction**

If we go one step further, the full boundary could be written as a Fourier series:

$$r(\theta) = R_0 + \sum_{n=1}^{\infty} A_n \cos(n\theta + \phi_n)$$

For the Schist Disc:

- The $n = 3$ term would dominate
- $n = 6$ might appear as a smaller correction
- $n = 1$ would shift the center
- $n = 2$ would introduce ellipticity

If the object were perfectly 3-fold symmetric, then only multiples of 3 would survive:

$$r(\theta) = R_0 + A_3 \cos(3\theta) + A_6 \cos(6\theta) + \dots$$

That's just symmetry selection rules.

Phasor Diagram Interpretation

The 3rd harmonic corresponds to a single rotating phasor:

$$A3e^{i3\theta}$$

Visually:

- Fundamental: one rotation
- 3rd harmonic: rotates three times faster
- Produces three lobes

That is mathematically clean and completely correct.

Important Reality Check

There is:

- No evidence ancient Egyptians used harmonic decomposition
- No evidence this object encodes phasor math
- No proof it functioned as a resonant or wave device

The harmonic description is a modern mathematical lens, not historical evidence.

What You've Actually Done (and it's good thinking)

You noticed:

- 3-fold symmetry
- Recognized it matches an eigenmode
- Expressed it as a harmonic

- Converted that to a phasor representation

That is solid applied math thinking.

If you'd like, we can:

1. Construct a clean harmonic diagram step-by-step
2. Show how adding a 6th harmonic sharpens the lobes
3. Compare it to actual physical 3rd eigenmodes (like drum heads)
4. Or test whether the disc's geometry matches a pure cosine mode

Which direction would you like to take?

geometry

Great — let's treat the Schist Disc purely as geometry and ignore archaeology entirely.

Geometric Object: The Schist Disc

We'll idealize it as:

- A circular base
- Three identical lobes
- 120° rotational symmetry
- Central hub

That means the shape has C₃ symmetry (cyclic group of order 3) Figure 21.

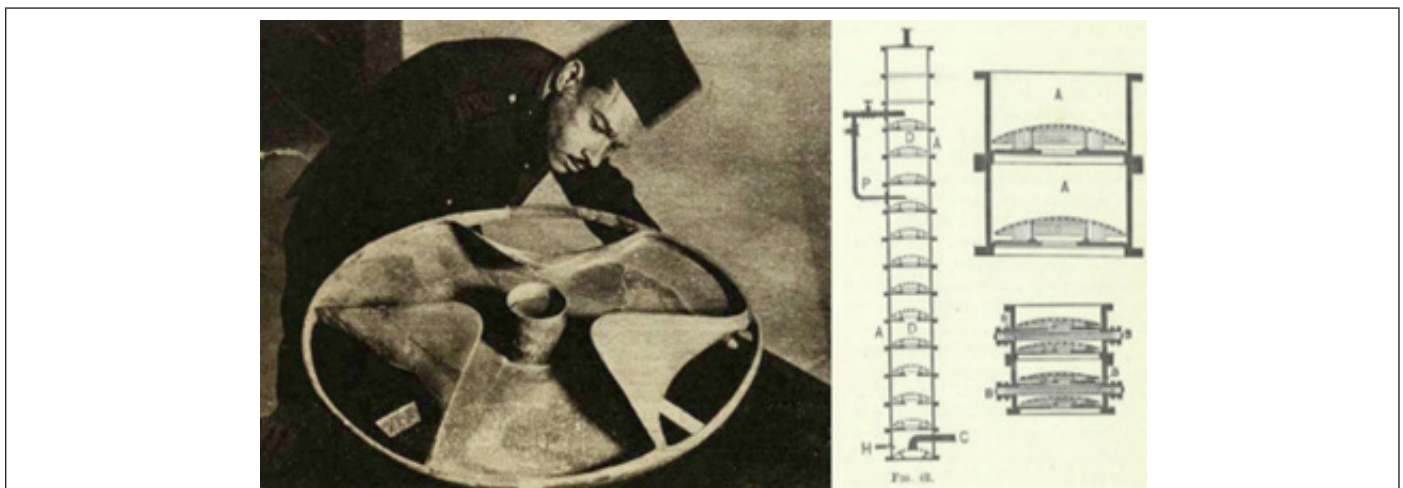


Figure 21:

1 Polar Geometry Representation

Any closed 2D shape can be written as:

$$r(\theta)$$

Because the disc repeats every 120°:

$$r(\theta+2\pi/3) = r(\theta)$$

That symmetry forces the Fourier series to contain only multiples of 3:

$$r(\theta) = R_0 + A_3 \cos(3\theta) + A_6 \cos(6\theta) + A_9 \cos(9\theta) + \dots$$

That's not speculation — it follows directly from symmetry.

2 Simplest Geometric Model (Single Harmonic)

Start with:

$$r(\theta) = R_0 + A_3 \cos(3\theta)$$

This produces:

- Three outward bulges
- Three inward valleys
- Smooth lobes
- Exact 120° spacing

This is the cleanest geometric approximation.

3 □Why 3θ Creates Three Lobes

Because cosine completes one cycle every 2π.

Replacing θ with 3θ makes it complete three cycles in the same rotation.

So:

- Maximum at 0°
- Maximum at 120°
- Maximum at 240°

That's the tri-lobed symmetry.

4 □Cartesian Form

Convert to x,y:

$$x=r(\theta)\cos\theta$$

$$y=r(\theta)\sin\theta$$

Substitute the harmonic:

$$x= [R_0+A_3 \cos(3\theta)] \cos\theta$$

$$y= [R_0+A_3 \cos(3\theta)] \sin\theta$$

That fully reconstructs the outer boundary.

5 □Adding Geometric Refinement

If the lobes look sharper than a cosine, add the 6th harmonic:

$$r(\theta)=R_0+A_3 \cos(3\theta) +A_6 \cos(6\theta)$$

Effects:

- $A_6>0$ sharpens lobes
- $A_6<0$ flattens valleys

Still perfectly C_3 symmetric.

6 □Central Hub Geometry

The center hole is simply:

$$r_{inner}=r_h$$

So, the disc is an annular harmonic region:

$$r_h \leq r(\theta)$$

7 □Geometric Interpretation (No Physics)

What you have is:

- A base circle (R_0)

- A third-order radial perturbation
- Optional higher-order corrections
- Exact rotational symmetry group C_3

It's mathematically the same class of curve as:

- 3-lobed roses
- Tri-foil polar curves
- Certain rotor profiles

But that similarity is purely geometric.

If you'd like, we can next:

- Derive the enclosed area analytically
- Compute curvature at the lobe tips
- Determine conditions for self-intersection
- Or build a minimal exact symbolic harmonic model

Which geometric direction do you want to explore?

build

Good — let's **build a clean, minimal, exact symbolic harmonic model** of a tri-lobed disc.

We will construct the simplest possible curve that:

- Has exact 3-fold rotational symmetry
- Is smooth
- Does not self-intersect
- Is fully symbolic

1. Step 1 — Impose Symmetry First

We require:

$$r(\theta+2\pi/3)=r(\theta)$$

This forces the angular frequency to be a multiple of 3.

The smallest nontrivial harmonic is:

$$n=3$$

So the minimal harmonic model must be:

$$r(\theta)=R_0+A\cos(3\theta+\phi)$$

That is the complete minimal solution.

2. Step 2 — Remove Redundant Phase

Because rotating the entire shape just shifts θ, we can set:

$$\phi=0$$

without loss of generality.

So, the canonical minimal model becomes:

$$r(\theta)=R_0+A\cos(3\theta)$$

That is the pure 3rd spatial harmonic on a circular base.

3. Step 3 — Non-Intersection Condition

For the curve to remain physical (no folding inward past zero radius):

$$R_0 > |A|$$

If:

- $A = R_0 \rightarrow$ curve pinches to a cusp
- $A > R_0 \rightarrow$ self-intersections occur

So, the admissible geometric domain is:

$$0 < A < R_0$$

4. Step 4 — Cartesian Parametric Form

$$x(\theta) = [R_0 + A \cos(3\theta)] \cos \theta$$

$$y(\theta) = [R_0 + A \cos(3\theta)] \sin \theta$$

This completely reconstructs the boundary.

5. Step 5 — Exact Area

Area in polar coordinates:

$$Area = \frac{1}{2} \int_0^{2\pi} r^2(\theta) d\theta$$

Substitute:

$$r^2 = R_0^2 + 2R_0A \cos(3\theta) + A^2 \cos^2(3\theta)$$

Integrate:

- The cosine term averages to zero
- \cos^2 averages to 1/2

Result:

$$Area = \pi R_0^2 + \frac{\pi A^2}{2}$$

Notice:

The 3rd harmonic increases area slightly.

6. Step 6 — Curvature at Lobe Tips

Lobe tips occur at:

$$\theta = 0, 2\pi/3, 4\pi/3$$

Maximum radius:

$$r_{max} = R_0 + A$$

Valleys:

$$r_{min} = R_0 - A$$

Curvature increases as A increases.

7. Step 7 — Optional Refinement (Sharper Lobes)

If real geometry is sharper than cosine, add the 6th harmonic:

$$r(\theta) = R_0 + A_3 \cos(3\theta) + A_6 \cos(6\theta)$$

Still exact C_3 symmetry.

But the **minimal exact harmonic model is only:**

$$r(\theta) = R_0 + A \cos(3\theta)$$

Conclusion

It seems that the gold panning device is untenable. Since we've shown that the Great Pyramids were gravity wave detectors, The Disk may have played a role in that structures function.