

Photons, stacked spins & the silver mean family

by Michael Howell

When doing stacked spins on photons (<http://milesmathis.com/elecpro.html>), Miles Mathis found the following relative masses: 1, 9, 65, 1025, and 16385. On a hunch, I ran a log-linear regression with my graphing calculator, and I got the following result:

$$y = ax - b$$

$$a = 2.414346644$$

$$b = 0.2270570273$$

The r value was ~ 0.997 —almost exactly unity. That means the line is an almost exact fit.* The slope is almost exactly the *silver ratio* (δ_s): $1 + \sqrt{2}$. This relationship has to be viewed in log-linear form to really appreciate the line-up; a normal exponential graph does not do justice.

With the silver-mean family, I have made striking connections not just with the natural base but also the number 2:

$$\begin{aligned} e^{(1+\sqrt{2})x} &\approx 11.181^x \\ &\approx 2^{(1+\sqrt{3}+\sqrt{10})x} \\ &\approx 2^{[2+(1+\sqrt{2})/\varphi]x} \end{aligned}$$

This is the math that converts 2^x into $e^{(1+\sqrt{2})x}$:

$$\begin{aligned} (1+\sqrt{2})/\ln 2 \\ &\approx 3.48297 \\ &\approx 1+\sqrt{3}+\sqrt{10} \\ &\approx 2+(1+\sqrt{2})/\varphi \end{aligned}$$

One of these radicals is the square root of the *sixth silver mean*— $\sqrt{6.162277660} \approx 2.4823935$. Since $\sqrt{40} = \sqrt{4}\sqrt{10} = 2\sqrt{10}$, the figure Wikipedia gives can be simplified to $3 + \sqrt{10}$. Also of note: the *silver ratio* divided by the *golden ratio* (φ , ~ 1.618) is nearly 1.492066. Adding 1 gets almost the same number as 2.48.

Miles Mathis has written about the golden ratio before (<http://milesmathis.com/phi.html>). The golden ratio is so prevalent in nature—not because the number has any real magic—but because the ambient charge field causes feedback mechanisms that make this number a stable ratio.

[I]f we look at the known densities of the Earth and Moon, we find the numbers 5.515 and 3.3464. The ratio there is 1.648, which an astute reader was kind enough to point out is very near the golden ratio. I noticed that several years ago when I wrote my paper called [The Moon Gives up a Secret](#)... Recently this reader, coming from that paper, kicked me under the table and encouraged me to quit ignoring it.

Silver means	
0: $\frac{1}{2} (0 + \sqrt{4})$	1
1: $\frac{1}{2} (1 + \sqrt{5})$	1.618033989
2: $\frac{1}{2} (2 + \sqrt{8})$	2.414213562
3: $\frac{1}{2} (3 + \sqrt{13})$	3.302775638
4: $\frac{1}{2} (4 + \sqrt{20})$	4.236067978
5: $\frac{1}{2} (5 + \sqrt{29})$	5.192582404
6: $\frac{1}{2} (6 + \sqrt{40})$	6.162277660
7: $\frac{1}{2} (7 + \sqrt{53})$	7.140054945
8: $\frac{1}{2} (8 + \sqrt{68})$	8.123105626
9: $\frac{1}{2} (9 + \sqrt{85})$	9.109772229
...	
n: $\frac{1}{2} (n + \sqrt{n^2 + 4})$	

(http://en.wikipedia.org/wiki/Silver_ratio)

I was that “astute reader.” When Mathis revamped Bode’s law to explain the orbits of the outer planets (<http://milesmathis.com/bode.html>), he noticed that the silver ratio plays a central role. He doesn’t come out and say “silver ratio,” but my newfound familiarity with silver means recently brought this finding to my attention.

Uranus has 3.544 times less charge than Saturn and is 3.2 times further away. Which gives us an extra variance of .00269. Neptune has 2.327 times less charge than Saturn and is 5.688 times further away. So an extra variance of .000411. Adding those to 1.593 gives us 1.596. Then, $3.855/1.596 = 2.4154$. Saturn has **2.4154** times the variance of Jupiter.

To see if this has filled our margin of error, we consult the earlier numbers. My error for Jupiter was 5.32%. My error for Saturn was 12.85%. That is a ratio of $12.85/5.32 = 2.4154$. If we compare the two bolded numbers, we find a perfect match.

The silver ratio also seems to connect moving electrons with electrons at rest. Mathis (<http://milesmathis.com/elecpro.html>) found that a moving electron has an x-spin in addition to its axial spin, making it $\frac{65}{9} \approx 7.22$ times as massive as an electron at rest.

$$\frac{65}{9} \approx 3 \cdot (1 + \sqrt{2}) \approx 7.24264$$

Mathis found that the ratio of the proton to the electron at rest is about 1821. He found a strangely close relationship between $1/1821^3$ and universal gravitational constant **G** (milesmathis.com/photon.html), which I replicate here:

$$\frac{1}{2.48 \times 1821^3} \approx 6.67757 \times 10^{-11}$$

This is almost exactly the established value of **G**: 6.674×10^{-11} . It seems that **2.48** corresponds to either $\sqrt{3 + \sqrt{10}}$ or δ_s/φ . In short, a value of G times the proton mass yields the following ratio:

$$\mathbf{G \times 16385 \approx 16385 / (1821^3 \times \sqrt{3 + \sqrt{10}})}$$

Miles Mathis proposes a photon of 37.7 THz, which he gets from the photon 1821^3 times less massive than the proton (<http://milesmathis.com/photon.html>). The resulting wavelength is about 8.06 micrometers. The ratio to the proton in mass is

$$16385/1821^3$$

Mathis replaces “messenger photon” with the term “*B*-photon.” Finally, the charge emitted by protons and electrons comes from real photons and not some brazen mathematical fudge. The “virtual particles” are finally eliminated. As he states (<http://milesmathis.com/photon2.html>):

[W]e know that the radius of the *B*-photon is G times less than the radius of the proton. This gives us a photon radius of 2.74×10^{-24} m. The *z*-spin is 8 times the radius, so we should find a basic wavelength of 2.2×10^{-23} m.

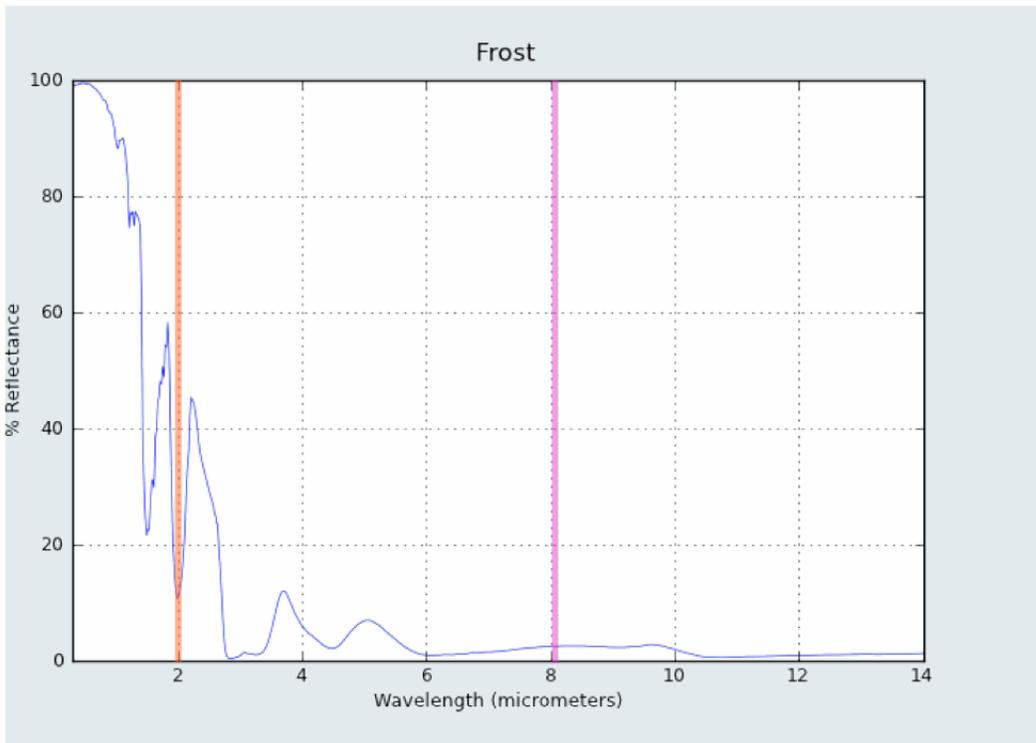
This wavelength must be stretched by a factor of c^2 in order to find what we actually measure. Mathis compares the 8-micron photon with the *B*-photon, and he gets more pleasing results:

[I]f we divide 8×10^{-6} m by c^2 , we get 8.9×10^{-23} m, which is almost exactly 4 times our *B*-photon wavelength. We may assume that the infrared photon is about 4 times larger than our *B*-photon.

For the *B*-photon, we measure a wavelength of almost exactly 2 microns ($1.99 \mu\text{m}$), with a frequency of 153 THz. This is the ratio to the proton in mass:

$$65540/1821^3$$

If these really are fundamental photons we have encountered, then they should be quite prominent in absorption bands. Indeed, they are.



(graphs from http://speclib.jpl.nasa.gov/graphs/speclib_1324340479_2011_12_20_plt.png
& http://speclib.jpl.nasa.gov/graphs/speclib_1324340232_2011_12_20_plt.png)

According to earlier calculations, we can write both these photon masses in terms of G and the sixth silver mean:

$$\frac{G \times 65540 \sqrt{3 + \sqrt{10}}}{G \times 16385 \sqrt{3 + \sqrt{10}}}$$

Let's check that, just to be sure it's not too good to be true.

$$\frac{65540}{1821^3} \approx 1.085367 \times 10^{-5} \qquad \frac{16385}{1821^3} \approx 2.713417 \times 10^{-6}$$

$$\left(6.674 \times 10^{-11}\right) \times 65540 \times 2.48 \approx 1.084787 \times 10^{-5} \qquad \left(6.674 \times 10^{-11}\right) \times 16385 \times 2.48 \approx 2.711967 \times 10^{-6}$$

Now watch what happens when we make this conversion:

$$37 \times 1821^3 / 16385^2 \approx 832$$

We have turned our infrared frequency into an ultraviolet frequency. If that number doesn't ring a bell to you, then recall what Mathis wrote about primary photon frequencies (<http://milesmathis.com/rain2.html>):

To create a visible wavelength, you take a local wavelength and multiply by c^2 . So, if we take our spin quantum to be $10^{-24}m$, then our detectable wavelengths will be 9×10^{-8} , 1.8×10^{-7} , 3.6×10^{-7} , 7.2×10^{-7} , etc.

One of those wavelengths is 360 nm, which translates to 840 THz. **One of the primary colors of visible light (just off the visible spectrum) is simply the proton mass divided by the square.**

$$\frac{16385}{1821^3} \cdot \frac{1821^3}{16385^2} = \frac{1}{16385}$$

Check:

$$\frac{37 \times 1821^3}{16385^2} \approx 832.221 \qquad \frac{38 \times 1821^3}{16385^2} \approx 854.713$$

The primary color on the other end of the visible spectrum is red. Since all primary emissions occur in multiples of 2^x , the frequency of red is simply 420 THz. That is not the only significant way of getting this number. Check out this astounding relationship:

$$38 e^{(1+\sqrt{2})} \approx 425$$

Check:

$$37.7 \times 11.181 = 421.5237$$

For photons, Mathis' calculations indicate that **mass** simply equals $h/c\lambda$, where h is Planck's constant. Each stacked spin doubles the photon energy. When it comes to particles just beneath the size of the electron or larger, mass increases much faster with each stacked spin. The behavior of the sphere must be accounted for. When virtually all the energy of the particle is linear motion—as with the normal photon— $E = \frac{1}{2}mv^2$ simplifies to $E = mc^2$. The behavior of the sphere, then, becomes negligible.

Mathis confirms that the mass increase does, in fact, snowball past a certain point (<http://milesmathis.com/photon2.html>):

The photon does not reach a size limit that causes slowing until it approaches the spin radius just beneath the electron. At that limit, the largest photons begin absorbing the smallest photons, and the mass increase snowballs. This turns the nearly massless photon into the small-mass electron.

Mathis notes, furthermore, that the kinetic-energy equation is simply $E = mc^2$ adapted for the momentum of matter (<http://milesmathis.com/kinetic.html>).

[W]hy [do] we have the term $\frac{1}{2}$ in the kinetic energy equation[?] The reason is simple: we are basically multiplying a wavelength transform by a mass, in order to calculate an energy. So we have to look at how the mass and the wavelength interact. I have shown that the wavelength is caused by stacking several spins (at least two spins), so what we have is a material particle spinning end-over-end. If we look at this spin over any extended time interval, we find that half the time the material particle is moving in the reverse direction of the linear motion.

In conclusion: When the behavior of the sphere is negligible, each stacked spin produces a simple doubling of energy. When the behavior of the sphere is important, each stacked spin increases the energy, on average, by $e^{1+\sqrt{2}} \approx 11.181$. When the behavior of the sphere becomes important, the mass increase snowballs, and Planck's relation for photons no longer applies.

As per Planck's relation (wavelength = h/cm), the highest possible frequency before the particle becomes "massive" seems to be just under...

$$\begin{aligned} &8.3 \times 10^{14} \times 16385 \\ &= 1.359955 \times 10^{19} \end{aligned}$$

$$\mathbf{1.36 \times 10^{19} \text{ Hz}}$$

Let's tweak the number a little more (since the margin of error is about ± 0.1) to see if we can get something more familiar.

$$\begin{aligned} &1.36 \times 84 / 83 \\ &\approx 1.37638554 \end{aligned}$$

$$1.618^{2/3} \approx 1.37822147$$

The upper bound of photon frequencies appears to be $\varphi^{2/3} \times 10^{19}$. This is roughly where gamma rays begin, according to Wikipedia (http://en.wikipedia.org/wiki/Gamma_rays):

Gamma rays typically have frequencies above 10 *exahertz* (or $>10^{19}$ Hz), and therefore have energies above 100 *keV* and wavelength less than 10 *picometers*, less than the diameter of an *atom*.

According to Wikipedia, the **proton** is said to have a mass of **938.272046(21) MeV/c²**. Wikipedia discusses this unit of mass:

It is common in [particle physics](#), where [mass](#) and energy are often interchanged, to use eV/c², where c is the [speed of light](#) in a vacuum (from $E = mc^2$). Even more common is to use a system of [natural units](#) with c set to 1 (hence, $E = m$), and simply use eV as a unit of mass.

This is what Wikipedia says about gamma-ray energies:

Gamma rays typically have frequencies above 10 *exahertz* (or $>10^{19}$ Hz), and therefore have energies **above 100 keV** and wavelength less than 10 *picometers*, less than the diameter of an *atom*. However, this is not a hard and fast definition but rather only a rule-of-thumb description for natural processes. **Gamma rays from radioactive decay commonly have energies of a few hundred keV, and almost always less than 10 MeV.** On the other side of the decay energy range, there is **effectively no lower limit to gamma energy derived from radioactive decay.** By contrast, **energies from astronomical sources can be much higher, ranging over 10 TeV (this is far too large to result from radioactive decay).**

The proton would have nearly 1 TeV of energy if it were acting like a photon. In retrospect, it seems absurd to think that a near-infinite set of high frequencies could be passed through without the photon ever condensing into matter.

Here is what Wikipedia says about *hyperons*:

There are three Sigma hyperons, Σ^+ , Σ^0 and Σ^- . They have [rest energies](#) of $\sim 1,190$ MeV and lifetimes of $\sim 1 \times 10^{-10}$ s with the exception of Σ^0 whose lifetime is shorter than 1×10^{-19} s.

There is one Lambda hyperon, Λ^0 . It has a rest energy of 1,115 MeV with a lifetime of 2.6×10^{-10} s.

There are two Xi hyperons, Ξ^0 and Ξ^- . They have rest energies of 1,315 MeV and 1,320 MeV and lifetimes of 2.9×10^{-10} s and 1.6×10^{-10} s.

There is one Omega hyperon, the last discovered, Ω^- , with a mass of 1,670 MeV and a lifetime of 8.2×10^{-11} s.

Here are the Lambda baryons:

Particle name	Symbol	Quark content	Rest mass (MeV/c ²)	I	J ^P	Q (e)	S	C	B'	T	Mean lifetime (s)	Commonly decays to
Lambda ^[3]	Λ^0	uds	1115.683 \pm 0.006	0	$\frac{1}{2}^+$	0	-1	0	0	0	$2.631 \pm 0.020 \times 10^{-10}$	$p^+ + \pi^-$ or $n^0 + \pi^0$
charmed Lambda ^[7]	Λ_c^+	udc	2286.46 \pm 0.14	0	$\frac{1}{2}^+$	+1	0	+1	0	0	$2.00 \pm 0.06 \times 10^{-13}$	See Λ_c^+ decay modes [8]
bottom Lambda ^[9]	Λ_b^0	udb	5620.2 \pm 1.6	0	$\frac{1}{2}^+$	0	0	0	-1	0	$1.409^{+0.055}_{-0.054} \times 10^{-12}$	See Λ_b^0 decay modes [10]

Here are some omega baryons (the ones with calculated mass):

Particle	Symbol	Quark content	Rest mass MeV/c ²	J ^P	Q	S	C	B	Mean lifetime s	Decays to
Omega ^[6]	Ω^-	sss	1672.45±0.29	$\frac{3}{2}^+$	-1	-3	0	0	$8.21 \pm 0.11 \times 10^{-11}$	$\Lambda^0 + K^-$ or $\Xi^0 + \pi^-$ or $\Xi^- + \pi^0$
Charmed Omega ^[7]	Ω_c^0	ssc	2697.5±2.6	$\frac{1}{2}^+$	0	-2	+1	0	$6.9 \pm 1.2 \times 10^{-14}$	See Ω_c^0 Decay Modes ^[8]
Bottom Omega ^[9]	Ω	ssb	6054.4±6.8	$\frac{1}{2}^+$	-1	-2	0	-1	$1.13 \pm 0.53 \times 10^{-12}$	$\Omega^- + J/\psi$ (seen)

These are sigma baryons:

Particle name	Symbol	Quark content	Rest mass (MeV/c ²)	I	J ^P	Q (e)	S	C	B'	T	Mean lifetime (s)	Commonly decays to
Sigma ^[4]	Σ^+	uus	1,189.37 ± 0.07	1	$\frac{1}{2}^+$	+1	-1	0	0	0	$8.018 \pm 0.026 \times 10^{-11}$	$p^+ + \pi^0$ or $n^0 + \pi^+$
Sigma ^[5]	Σ^0	uds	1,192.642 ± 0.024	1	$\frac{1}{2}^+$	0	-1	0	0	0	$7.4 \pm 0.7 \times 10^{-20}$	$\Lambda^0 + \gamma$
Sigma ^[4]	Σ^-	dds	1,197.449 ± 0.030	1	$\frac{1}{2}^+$	-1	-1	0	0	0	$1.479 \pm 0.011 \times 10^{-10}$	$n^0 + \pi^-$
charmed Sigma ^[6]	Σ_c^{++} (2455)	uuc	2,454.02 ± 0.18	1	$\frac{1}{2}^+$	+2	0	+1	0	0	$3.0 \pm 0.4 \times 10^{-22}$ [a]	$\Lambda_c^+ + \pi^+$
charmed Sigma ^[6]	$\Sigma_c^+(2455)$	udc	2,452.9 ± 0.4	1	$\frac{1}{2}^+$	+1	0	+1	0	0	$>1.4 \times 10^{-22}$ [a]	$\Lambda_c^+ + \pi^0$
charmed Sigma ^[6]	$\Sigma_c^0(2455)$	ddc	2,453.76 ± 0.18	1	$\frac{1}{2}^+$	0	0	+1	0	0	$3.0 \pm 0.5 \times 10^{-22}$ [a]	$\Lambda_c^+ + \pi^-$
bottom Sigma ^[7]	$\Sigma_b^+(?[b])$	uub	5,807.8	1	$\frac{1}{2}^+$	+1	0	0	-1	0	Unknown	$\Lambda_b^0 + \pi^+$ (seen)
bottom Sigma†	$\Sigma_b^0(?[b])$	udb	Unknown	1	$\frac{1}{2}^+$	0	0	0	-1	0	Unknown	Unknown
bottom Sigma ^[7]	$\Sigma(?[b])$	ddb	5,815.2 ± 2.7	1	$\frac{1}{2}^+$	-1	0	0	-1	0	Unknown	$\Lambda_b^0 + \pi^-$ (seen)

The mass of an **electron** is **0.510998928(11) MeV/c²**. This would be over 500 keV as a photon—still a gamma ray.

In an earlier paper (<http://milesmathis.com/brem.pdf>), Mathis discussed Bremsstrahlung radiation—how it was really the electron losing spins as it gained linear energy. He also talked about how it is no wonder neutrinos penetrate so well—because they are not particles but rather waves in the photon field. In other words, **photons can carry “sound” much like air**. This is what he had to say about the genesis of neutrinos (<http://milesmathis.com/neut2.pdf>):

The new electron is emitting a lot of charge photons, and all these photons interact with the ambient field. All of these charge photons bump other charge photons, transferring energy via spins, just like the free photon did. But since we are tracking the field now, instead of the individual photon, we don't see the same sort of damping.

If we track the spin on one photon, then that spin will diminish as we travel through the field. At the end, we sum all those free photons, to find the total diminishment. But if we track the field wave, we are still tracking individual collisions, yes, but we are switching particles after each collision. In other words, we have a collision, and the first photon transfers energy to the second.

My theory is that, in the case of cosmic rays, the energies are often so great that they can create a “super-neutrino” field whereby the transferred momentum makes particle after particle temporarily a baryon or hyperon. In the case of gamma decay, I suspect electrons, muons, and even protons are being generated by some local spike in the ambient charge field.

Such a spike in the charge field would cause some of the surrounding photons to gain a number of spins. Miles Mathis proposes that this is what explains the formation of W and Z bosons (<http://milesmathis.com/weak2.html>):

Since [I have shown that a simple meson equation](#) can predict levels based on nothing but stacked spins, and since these spins can easily produce very large, very unstable particles of the required sizes, it is not necessary to believe that the W and Z are borrowed from the vacuum in some mysterious process, in order to break a manufactured mathematical symmetry. As you can see, my meson equation can be used to predict other even larger particles at higher energies, and these larger particles are related to smaller ones by factors of two, in the first instance.

I believe sound waves in the field of photons can explain why both neutrinos and gamma rays penetrate so easily through ordinary matter. It is hard to imagine particles having so little to stop them, but it is easy to envision this with a field wave. As for the frequencies assigned to gamma rays, I believe that has turned out to be unwarranted extrapolation.

* This website (<http://www.microbiologybytes.com/maths/regression.html>) explains the significance of the r -value:

R Square (r^2): The most important regression statistic - equivalent to the r value from a correlation test, shows how closely X and Y are related... [V]alues of r^2 ... fall between 0 (no correlation) and 1 (perfect correlation). The r^2 value tells you how much your ability to predict is improved by using the regression line, compared with not using it.