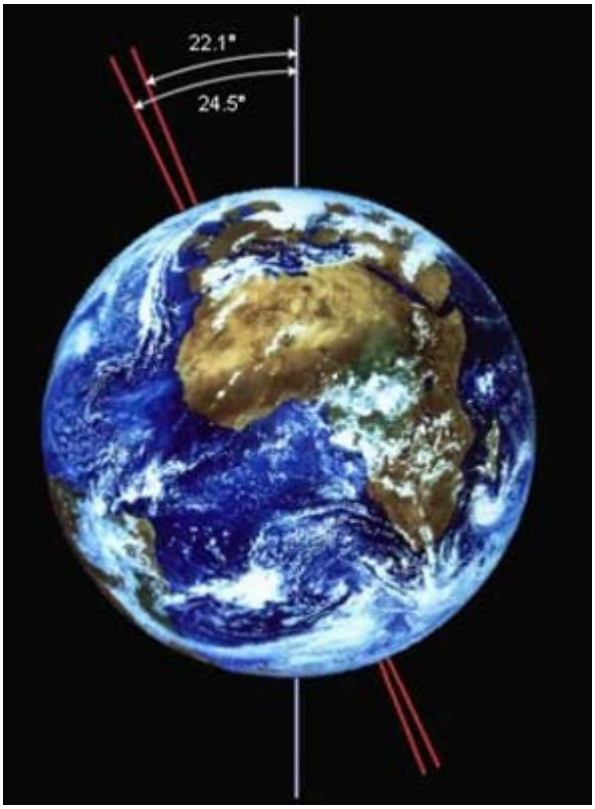
the general science journal

The Cause of Axial Tilt: Part 2

by Miles Mathis
milesmathis.com
email:mm@milesmathis.com



Abstract: In part 1 of this paper, I showed that axial tilt could be explained easily by charge field perturbations. In part 2, I will answer some unanswered questions of part 1 and extend my calculations to other bodies. I will also show that the charge field can show the variations in tilt, such as nutation.

I will start by answering the biggest question raised by part 1. That being, "How can your equations explain tilt by straight-line influence of the charge field, when the bodies are rarely lined up? If we take the perturbations of the Sun and Jupiter upon the Earth as an example, the perturbing bodies need to be on opposite sides of the Earth for the mechanics to work. But for large parts of their orbits, this is not the case. Jupiter is often on the other side of the Sun from the Earth. Your mechanics doesn't work!"

That is a good point, but it has a straightforward answer. The main part of the answer lies in the fact that the charge field is much less dense than the bodies it is perturbing. This creates a lag

time in the effect. In this way, this problem is much like the gravitational well problem in my ellipse paper http://milesmathis.com/ellip.html. A body can go into a "gravitational well", which is a well below the line of field balance, only because there is a time lag on the field effects. A field cannot move a large body immediately, because of what we call inertia. The large body has motions that the new forces must overcome, and the new forces cannot do this all at once, since the forces are mechanical forces of contact by discrete particles.

Also, the perturbation I calculated in part 1 was a perturbation relative to the Sun's charge field, not an instantaneous one relative to space or to the perturbed body. The method of my generalized math applied more to the charge fields themselves than to the bodies. My math achieved a rough summation directly, without using integrals.

You will say, "That makes sense, except for one thing. It means that the perturbation from Jupiter on the Earth should be half what you calculated, since summing over Jupiter's entire orbit would find the Earth in opposition half the time and in conjunction half the time. Your numbers can't be right."

That appears to be valid at first, but on closer analysis, it also falls apart. What this critic should have said, to make his critique as strong as possible, is that my analysis couldn't work at all, except when the planets were absolutely in line. Since I am claiming to be mechanical here, the bombardment could happen only in the line. Not only would perturbations fail in opposition, since the Earth is not receiving any charge photons from Jupiter when it is on the other side of the Sun, they would fail when the Earth and Jupiter were on the same side of the Sun, but unaligned. If the charge photons are channeled toward the Sun, as I claim in part 1, then the perturbation could only happen during a short period of alignment. Which means that Jupiter could not hope to balance any perturbation from the Sun. The Sun is perturbing all the time, and Jupiter is perturbing only about once every 13 months.

That looks fatal, I admit, but it collapses with the recognition that the Sun's "perturbation" only works to keep a planet's tilt at 0, as with Mercury. Remind yourself that if all the charge is from one side, the tilt is 0. The planet stands straight up. So in our Earth problem, the Sun is not trying to push the tilt in the opposite direction of the Jovians. The Sun is not really perturbing, it is simply supplying the ambient field. Zero tilt is not balance, zero tilt is *complete imbalance*. If the force's are balanced, the tilt is 90^{o}.

What that means is that any perturbation, even one over a limited time, must create a tilt. I agree that the Earth feels a perturbation from Jupiter only about once a year, but it feels it every year, year in year out. It also feels it over an extended period, even if that period is only a few weeks. It isn't hit by a few photons in a passing wave, it is hit by an extended force. The Earth cannot just shrug off this force. If we add to that the perturbations from the other Jovians, we find that the Earth is almost always in the rebound stage from a perturbation from one of the four. Remember, Uranus' perturbation is larger than Jupiter's, and Neptune's is more than twice as big. Because the response to these perturbations is slow, and the rebound from each perturbation is slow, there is time for them to add.

Also remind yourself that I have shown that these four perturbations are made of charge densities that are very near the charge density of the Sun at the Earth. So while they can have only a delayed action on the Earth, due to the Earth's large density, they can have a profound effect on the ambient charge field. To give these perturbations a limited time effect, as my critic is claiming, the charge field of the Sun would have to push the Earth back to zero tilt very quickly. It cannot do that, because it has been nearly wiped out (or "nullified" is a better word). It must rebuild after the perturbation, then begin its own slow action on the Earth. To say it again, this tilt is caused by delayed effects of the charge field, over an extended time. For this reason, the Sun doesn't have time to counteract them. If they all ceased during the same year, yes, the Sun would bring the Earth back to zero tilt, but even then it would take many years to do so.

This explains why I didn't have to take half of any perturbation, when I did the math. I am not calculating an average perturbation over the orbit. I am calculating a perturbation as a percentage of the ambient charge field of the Solar System.

The next good question is, "In the example of the Earth, why did you not have to find Saturn's perturbation relative to Jupiter's, and so on? You just added up all the angles, as if all the perturbations had already been sized relative to one another."

Yes, that is because they had. I sized them all relative to the Sun.

"But the Sun's number is different in each perturbation. The Sun isn't even the same size in the various calculations."

No, that is a misreading of the numbers. The Sun isn't the same size relative to *each planet* in the calculations, but it is always the same size relative to itself. I never changed the absolute size of the Sun in the field. Since the Sun is constant, the planet's perturbations are already sized relative to one another. You can see this just by looking at the charge numbers of the four Jovians at the Earth. The numbers are all around 10. They have already been scaled to one another. If they hadn't, we would have found a large spread in those numbers. For this reason, I can just add them up at the end.

I welcome other questions, but for now let us move ahead and look at how my solution will also solve the problem of nutation. This is what Wikpedia has to say about nutation:

A mathematical description (set of equations) that represents nutation is called a "theory of nutation". In the theory, parameters are adjusted in a more or less ad hoc method to obtain the best fit to data. As can be seen from the IERS publication just cited, nowadays simple rigid-body mechanics do not give the best theory; one has to account for deformations of the solid Earth.*

Wiki admits that nutation is mainly *ad hoc* math, but "deformations of the solid Earth" are thought to be one cause. Can Wiki show us these deformations? No, of course not. This is just

the old isostasy dodge, like with the "reverse Himilayas" that are supposed to exist under the real ones (see my UFT paper http://milesmathis.com/uft.html). Other causes are given to "tidal forces of the Sun and Moon," but since I have already exploded that theory http://milesmathis.com/tide.html into tiny fragments, we can ignore that. Wiki also says,

Because the dynamics of the planets are so well known, nutation can be calculated within seconds of arc over periods of many decades. There is another disturbance of the Earth's rotation called polar motion that can be estimated only a few months ahead, because it is influenced by rapidly and unpredictably varying things such as ocean currents, wind systems, and motions in the Earth's core.

The first sentence is another misdirection. The real reason nutation can be calculated so well is that past nutation has been fed into a computer. We have good data. This has nothing to do with the dynamics of the planets, which, beyond the data and the math, we know very poorly. Data and math is not "dynamics." Then Wiki gives us passing mention of those old explain-all's like ocean currents and motions in the Earth's core. The "dynamos" in the Earth's core, like "solid Earth deformations", are starting to sound to me like "swamp gas." As scientific explanations, they have about the same standing. The Earth's core is safely tucked away out of sight and experiment, so there is no possible falsification of the dynamo theory or the deformation theory or the isostasy theory, unless we split the Earth open like a walnut.

Unlike dynamos in the Earth, we know about the E/M field. In part 1 I showed that the charge field http://milesmathis.com/g.html, which causes the E/M field, is easily capable of causing large effects on the Earth. We already knew that from the magnetosphere, the aurora, solar disturbances, and so on; and those who have read my tidal papers know that tides have been added that list. Since nutation is a variance in tilt, we must give it to my mechanism in part 1. This is fabulously easy to do, since I have already shown the mechanical and mathematical cause of the variance there. The variations in the perturbations from the Jovian planets must cause the bulk of the variation in the effect, since they cause the effect itself. The perturbation from Saturn causes the minimum, and the perturbation from Neptune causes the maximum. Other minima may be calculated from the largest time gaps between the perturbations.

This is not to say that the Moon does not affect the nutation. I have no problem accepting that the Moon plays some role in the total nutation cycle, via *its charge field http://milesmathis.com/moon.html, not its gravity field*. But the tilt itself, and at least one main cycle of variation, must be given to the Jovian planets. In a future paper I will prove this by tying the Jovian periods of Earth alignment to the nutation cycle. For now I will let it stand as a hypothesis, heavily weighted already by my findings in part 1.

Let us finish off this paper by doing the math for another planet. Jupiter, for good measure. Jupiter has a tilt of 3 degrees, which looks pretty promising. According to my theory, that tilt tells us that most of the charge field must be coming from one side, and Jupiter has Mars on one side of it and the three Jovians on the other side. Broad confirmation at a glance. This is why I could build the theory only by looking at my first table in part 1. A simple statistical glance told me the numbers couldn't be caused by accident or collision.

As with the Earth, the planets on the inside of Jupiter don't factor in the balance here. Not only because they are small, but because they are on the same side of the equation as the Sun. They are lost in the much greater charge field of the Sun, and can add nothing of importance to it. The inner planets will mainly balance with Pluto and the Kuiper belt, so we can ignore them in the first estimate. We only need to look at the three Jovians, finding each perturbation separately.

Saturn has a charge density of 1/7,210 that of the Sun and a distance from Jupiter that is 1.19 times smaller. So if the Sun's charge density at Jupiter is 9.2, Saturn's is .84. That's a variance of 82.8%, or an angle of 74.5^{o}.

Uranus has a charge density of 1/25,600 that of the Sun and a distance from Jupiter that is 3.4 times larger. So if the Sun's charge density at Jupiter is 12.65, Uranus' is 3.4. That's a variance of 57.6%, or an angle of 51.9^{o}.

Neptune has a charge density of 1/16,800 that of the Sun and a distance from Jupiter that is 5.63 times larger. So if the Sun's charge density at Jupiter is 11.38, Neptune's is 5.63. That's a variance of 33.8%, or an angle of 30.44^{o}.

Those angles sum to over 90^{o}, so we have a new problem. How do we express the summed variance of three perturbations in a situation like this? The three perturbations are from one side, so they should all push the tilt strongly toward zero. They can't push it all the way to zero, since the charge on the other side is nowhere near zero. And they can't push it past zero because the field doesn't allow it. Complete imbalance is defined as zero tilt, so we can't have negative tilt. So we need a more subtle math. As we did with the Earth, we simply express the second tilt as a fraction of the first. In other words, we find that Uranus's variance is 57.6% of the remaining angle, rather than 57.6% of 90^{o}. That would make Uranus' contribution 57.6% of 15.5^{o}, which is 8.93^{o}. That leaves us 6.57^{o} for the remaining angle, and we apply Neptune's variance to that. 33.8% of 6.57^{o} is 2.22^{o}. Subtract 2.22^{o} from 6.57^{o}, gives us 4.35^{o}.

We have estimated Jupiter's angle of tilt to be 4.35^{o}, with very simple math. The number from data is 3^{o}. It must be that Pluto and the Kuiper belt have more effect than the inner planets, and this is easy to accept since we have been finding greater effects in than out. Inner planets decrease by the inverse quad as they perturb outwards, and outer planets increase with the distance, as they perturb inwards.

You will say, “But you are balancing these perturbations against the Sun's field, and then claiming there is a great imbalance. The Sun's field is denser in every equation, above. How can you claim a great imbalance?”

I am not *balancing* the Jovian perturbations against the Sun's perturbation, I am *measuring* the

field against the Sun's field: totally different concept. The Sun doesn't even have a perturbation, *per se*. It just defines the ambient charge field, against which the other perturbations are measured. Even these aren't perturbations, in the classical sense. They are charge density fluctuations. And I am measuring them against the ambient field to determine their sizes and to scale them to one another.

*http://en.wikipedia.org/wiki/Nutation
