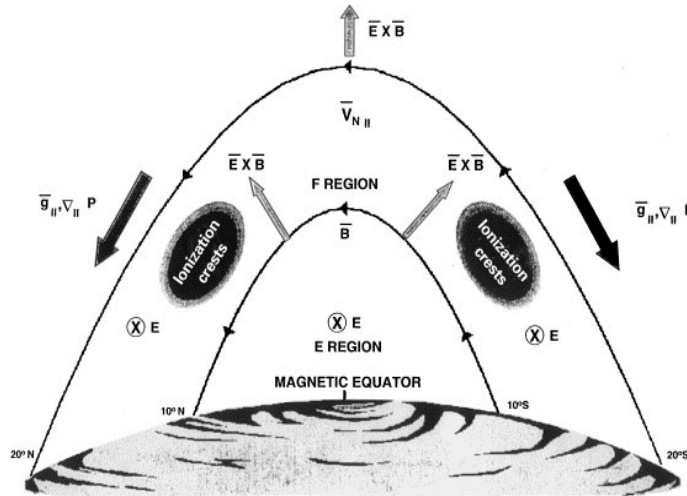


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THE EQUATORIAL ANOMALY



by Miles Mathis

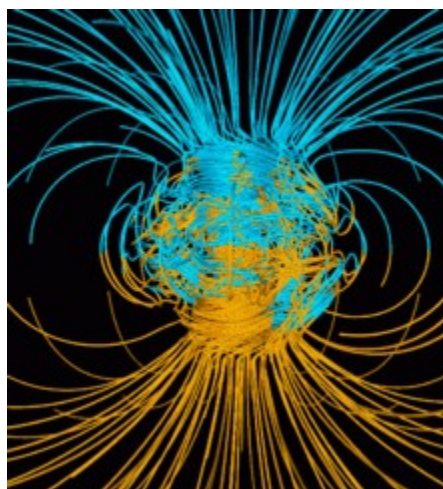
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[The equatorial anomaly](#) is an anomaly in the E/M field of the Earth, creating ionization crests about 17° north and south and a trough at the equator itself. For the state of current theory, I encourage you to visit the link above from PREASA, where we find this:

When upward drifting ionization loses its momentum it diffuses under gravity along the magnetic field lines to higher latitudes where it causes an increase in the ionization concentration defined as the equatorial anomaly.

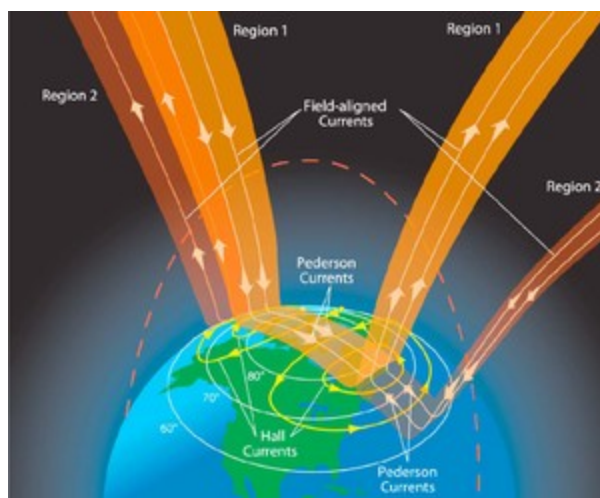
That is listed under “Known Equatorial Anomaly Characteristics.” Upward drifting ionization diffuses under gravity and goes higher? I think these guys need to revisit the definition of gravity. Things don't move higher under the influence of gravity. Also, gravity diminishes at higher altitudes, which is opposite to their needs here. Since ionization *increases* at higher altitudes, gravity would have to rise to trump rising ionization. It doesn't. And even if it did, we would need a cause of the initial upward drift of the ionization. We are told it is the $E \times B$ drift at the magnetic equator, but that again begs the question. Why is $E \times B$ moving up at the magnetic equator, and why is it carrying more ions at $\pm 17^\circ$? The provided diagrams simply show us the fields required to create the known numbers, but the theorists forget to tell us why the fields are like that.

As it turns out, these Equatorial Anomaly diagrams contradict geomagnetic field diagrams, in which all lines run north/south over the equator.



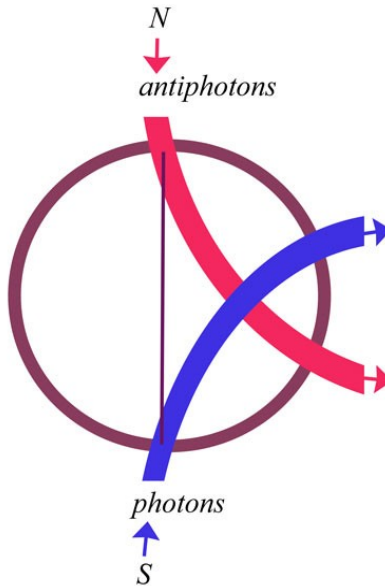
According to the geomagnetic field lines we are commonly shown—the ones that are caused by the dynamo in the Earth, you know—there shouldn't be any $E \times B$ vector pointing up at the equator, driving ions higher. As they admit, this requires a current E running to the east. The E vector is drawn east only to give them a Lorentz force up, but why should a current be running east? Where is the anode and cathode to this current? If we let rising charge drive the ions up, we don't need current moving east.

This $E \times B$ vector also contradicts what we are told about [Birkeland currents](#). At the poles, we are told that Birkeland currents follow the magnetic field lines.



Why would current follow the magnetic field lines at the poles but move east at the equator while the magnetic field lines are moving north? It looks like the theorists are just rigging the field vectors to match data, but forgetting to match one theory to the other. They don't tell us why current follows magnetic fields lines in one situation but not the other.

Rather than rig the E and B fields, we can explain the equatorial anomaly with nothing but the charge field, [which I have shown is just Maxwell's displacement field \$D\$](#) . Since I have shown that charge is moving up most heavily at the equator, this charge will drive ions up. So that part of the anomaly is explained. But what about the trough and the crests? I have already explained the trough previously, since I have published this diagram in many papers:



Since the red and blue lines cross under the equator—deep in the Earth—the trough is created at this point of crossing. It then rises to the surface where we see it. Because the trough is created low and rises, it would be expected to dissipate with altitude, due to nothing but the surface area equation. This matches data. But I want to be even more rigorous, explaining mechanically why these crossing charge channels create a trough. Clearly, we are getting a sort of field cancellation, and I don't have to explain that to you. It is clear just from the diagram. But what exactly is going on at the quantum level to explain it? Unlike the mainstream, I will not use this “going to the quantum level” to manufacture a fudge. I will go to the quantum level but remain mechanical at the same time.

Since charge is photons, and since photons have real spins, we could solve this without ions. But since we have ions to work with as well in the Earth's interior regions, we can use both the photons and the ions. They will cancel in the same way and for the same reasons. This is a spin cancellation, which means it is a magnetic or submagnetic effect. We either let spinning ions collide or we let spinning photons collide. In either case we will get the same spin cancellation. This is because photons and antiphotons are spinning opposite by definition. The “anti” part of antiphoton indicates the opposite spin and nothing else.

Close readers will say, “Wait, in your recent paper on Iron, you showed the same basic mechanism for spinning up photons. You let the blue and red vectors stay on the pole, not curving out at the equator. You said the charge was thereby spun up, increasing magnetism. Wouldn't we have the same increase in spin here? You have the vectors coming from opposite directions at the poles, so shouldn't they add? That won't work, because you need a subtraction here!”

Good point, but improper analysis. My rough diagram is not clear on exactly where the stream crossing takes place, but it turns out it takes place *after* the two streams achieve semi-parallel courses. Notice that they start out anti-parallel and then become parallel. The way I have drawn them, they seem to be right in between, at about a 90° angle. If we were tracking photons only—and not also ions—that would seem to indicate neither adding nor subtracting. So we know the crossing point must be beyond that, when the angle is less than 90°. In that situation, the streams are more parallel than not, giving us the required cancellation and thereby the trough.

You will say, “No, I have actually gotten out my protractors and done the math, and the crossing point

should be at 90°. So your analysis fails.” But you are failing to take the spin of the Earth into account. Your analysis would hold only if the Earth had no rotation. That math you did assumes a static sphere. Only in that case would we have a circular charge path. Once we give the Earth the high angular momentum it actually has, the centrifugal effect pushes all charge out from center. And the closer the charge is to the equator, the greater that effect. Therefore, that point of crossing is forced out some amount. Our charge circles become charge ellipses, and we have a flattening, as I have diagrammed it below. Any amount of flattening will give us an angle less than 90°, which will give us a spin cancellation. Remember, anytime photons and antiphotons are traveling parallel, they cancel.

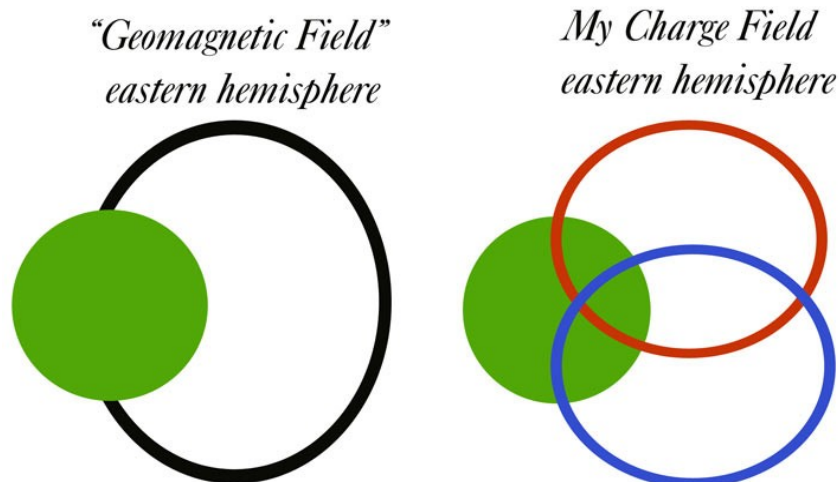
In fact, this is why the trough is so minor. Since our angle of cancellation is still close to 90°, only a small fraction of the total charge streams cancel. With greater angular momentum and thereby a greater curve flattening, we would expect more cancellation.

The same analysis must apply to any ions that are created or driven by the charge streams. These charge streams will create their own ionization, since that is what charge streams do, as we know. The spin will then spin up the ions. When these opposing ion streams cross, they also create spin cancellations and therefore ionization troughs.

So we have explained the trough pretty easily. What about the 17° crests? Shouldn't these crests be at 30°, according to my theory? Yes, they should be at 30° at the surface of the Earth, as I have diagrammed them above and in many previous papers. But the crests diagrammed by the mainstream aren't measured at the surface. They are measured at altitude. The PREASA link above even admits,

The equatorial anomaly phenomena cover a region from the magnetic equator to 30° geomagnetic latitude in each hemisphere.

So you see that my theory is confirmed by the mainstream. They admit that the equatorial anomaly exists in at the latitudes I have predicted. But where are the crests they have diagrammed? PREASA only tells us they are in the ionosphere. How high is the ionosphere? Quite high. It peaks at about 300km, which is an addition of more than 5% to the Earth's radius. But the Van Allen belts are higher still, and those are a sort of ionosphere as well. We will study this problem more below. Since my curved charge streams continue to curve above the Earth's surface, the degree of separation will fall as altitude rises. In fact, if we follow the curves high enough, we find that above one Earth radius out from the surface, the charge streams meet and cross again.



This not only causes a similarity between mainstream diagrams and mine, it explains how the mainstream missed the split at the equator. Since they have done most of their work on diagramming at high altitudes in the ionosphere and magnetosphere, they naturally see field lines moving north to south up there. Even in my diagrams, the field lines are moving north and south at the altitude of the magnetosphere. For this reason, I predict that the Van Allen probes will find another equatorial trough at high altitude, of lesser magnitude than the lower trough. It will be found to be caused by this stream crossing I have just diagrammed. In fact, they have already diagrammed it, sort of:

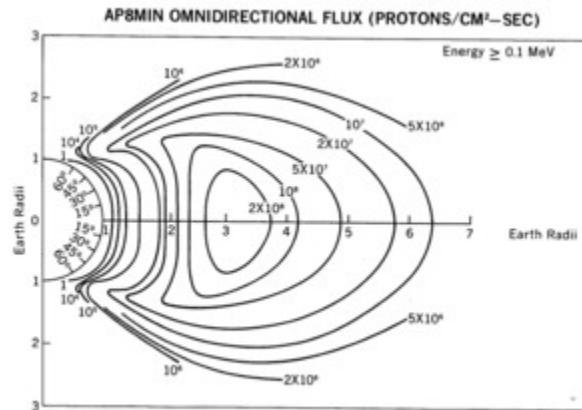
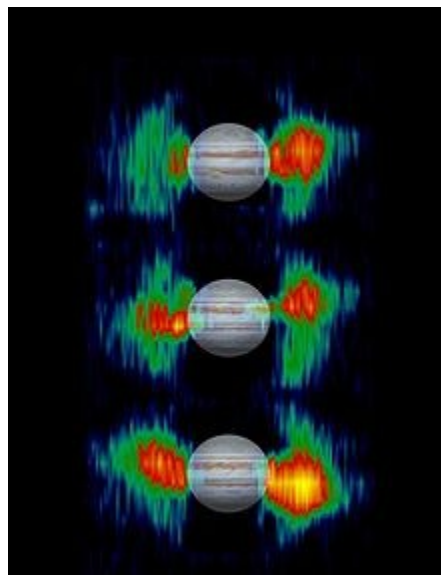


Figure 45. AP8MIN 8-3 Plot of Constant Intensity Flux Contours with an Energy of > 0.1 MeV

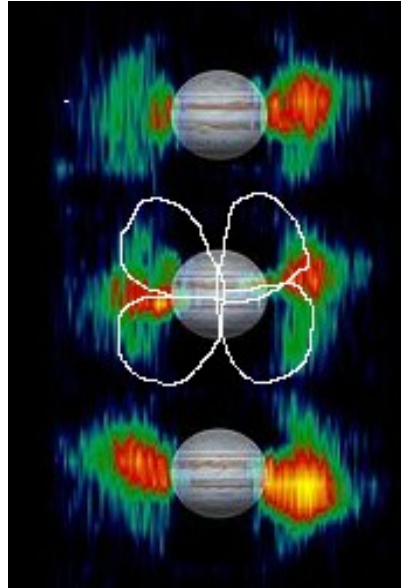
What you want to study there are the lines at and around 1.5 to 2 Earth radii. See how the lines flatten out at the equator? That is indication of a subtle trough, since given current theory, we would expect *maximum* curvature there. Instead we see minimum curvature there.

You may be interested to know that the maps from Jupiter are actually better than our own maps, as a matter of visual clues to the real field shapes. Notice that although the [Van Allen Belt](#) page at Wiki has many diagrams, the best diagrams of Van Allen type belts are of those on Jupiter:

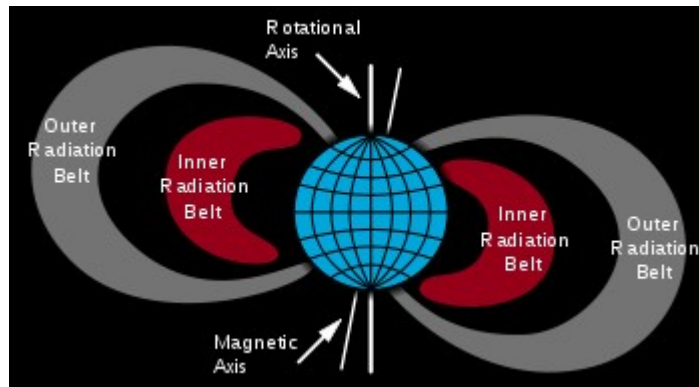


I encourage you to study those four-color diagrams closely, which I believe came from Voyager 2 data.

See anything interesting? You have a split at the equator, just as I have said. All three images have very obvious splits at the equator, and match my diagram above, not theirs.

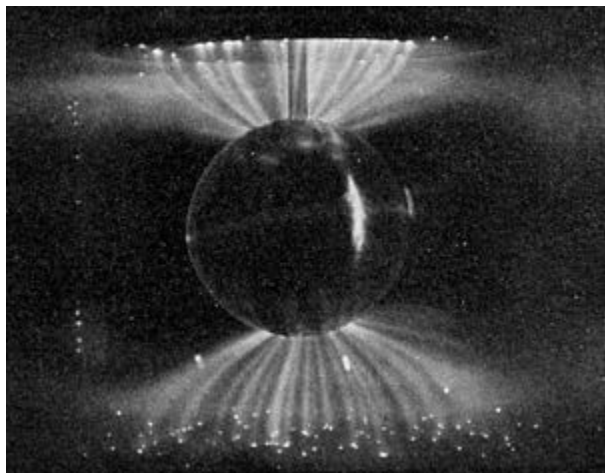


Anyone should be able to see that those diagrams show the equatorial split. Remember, there has to be a polar split as well, although we can't see that in these diagrams. Well, if you add the polar split to the equatorial split, you get the cloverleaf diagram as I have penciled in in the middle. Given that, you may ask yourself why the mainstream always hides that in diagrams of the Earth. Strange that we can see the equatorial split in their four-color diagrams of Jupiter, but in the diagrams of the Earth's magnetic field, we get simplified diagrams from decades ago where we can't:



That diagram goes back to the late 1950's, when the Explorer missions first confirmed the belts of radiation. It doesn't even show the grosser structures of new data, so why is it still used? Misdirection. They don't think you are smart enough to unwind the Jupiter diagrams, seeing the equatorial split; but because you would probably be able to see it from similar diagrams of the Earth, they don't give you those. You get the Jupiter belts in four colors, while the Earth's belts get one color each, hiding any variation. Curious.

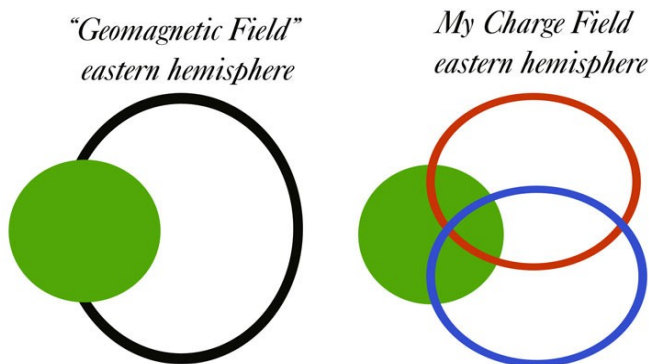
Also curious is that they won't show you any new data, but they will show you pictures of Birkeland's old terrellas from more than a century ago:



Why are they still trying to tie you to that old field, when it doesn't begin to match the known field? Notice how the polar streams curve up from the terrella, while field lines on the Earth (E, M, or charge) must curve down.

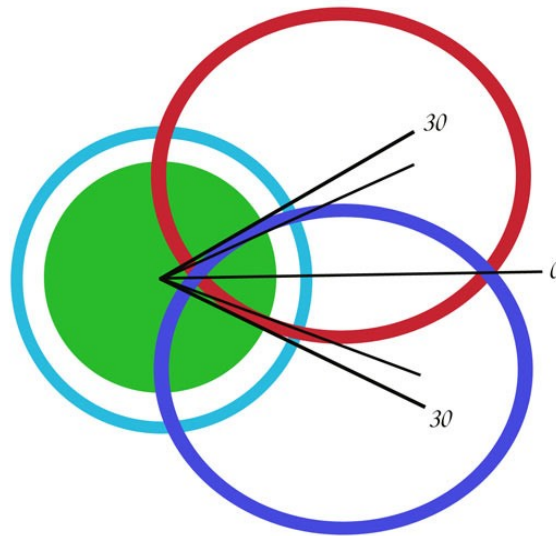
We also have to look at the sources of the various data. The field mapped from Jupiter by Cassini is radio waves emitted by electrons, telling us their local energy. This is a logical way to map the field, if you want to map any existing split at the equator. So why don't they show a similar map from the Earth? The newest maps that Wiki bothers to publish are omnidirectional proton flux maps. That only partially masks the equatorial data split for those who know what to look for, but still, such a map provides nothing like the clarity we can see from the four-color maps of Jupiter's field. It looks to me like they are hiding and pushing data, to protect their core theories and other dynamo theories.

But back to the 17° crests. Some will look at my analysis above and say, “Wait, aren't your lines still diverging at the ionosphere? Wouldn't they create crests above 30° instead of well below?” No. They aren't diverging at all. Study the channels more closely:



The channels are emerging from the surface at around perpendicular or 90°. But as you see, they immediately turn inside 90°, which means they immediately *converge*. They diverge only relative to

one another. But relative to the atmosphere, they converge. Remember, as we go to higher altitudes in the atmosphere, the radial lines themselves diverge, so 30° N and S are much further away from each other in the ionosphere than they were on the surface. The charge channels would have to diverge at that same rate to remain 60° apart. But they aren't. This diagram should help you see what I mean:



See how the ellipses are falling to lower angles as we rise in the atmosphere? The only question is, will that effect take us down to 17° by itself? At first glance, it doesn't look like it. I have drawn my atmosphere at about 1,850km here (by accident), and even there, we have found a curvature that would take us down to only about 26°. To get down to 17° on this diagram, we would have to go out to at least 8,000km.

To make this a bit more rigorous, I went to my protractors. I found that using circles only, we would have to go out to about 9,500km to hit 17° by this method. Obviously, that doesn't put us in the ionosphere, it puts us in the inner electron Van Allen belt.

So are the diagrammed crests under title in the ionosphere or in the Van Allen belts? According to this [Chinese paper at GRL](#), the crests imaged by FORMOSAT-3/COSMIC peak at about 450km. And as we see from more detailed diagrams, the crests aren't really at 17° N and S, except as an average. The North crest peaks at 30°N and the South crest peaks at 30°S, and those latitude peaks also happen to be density peaks.

continued below

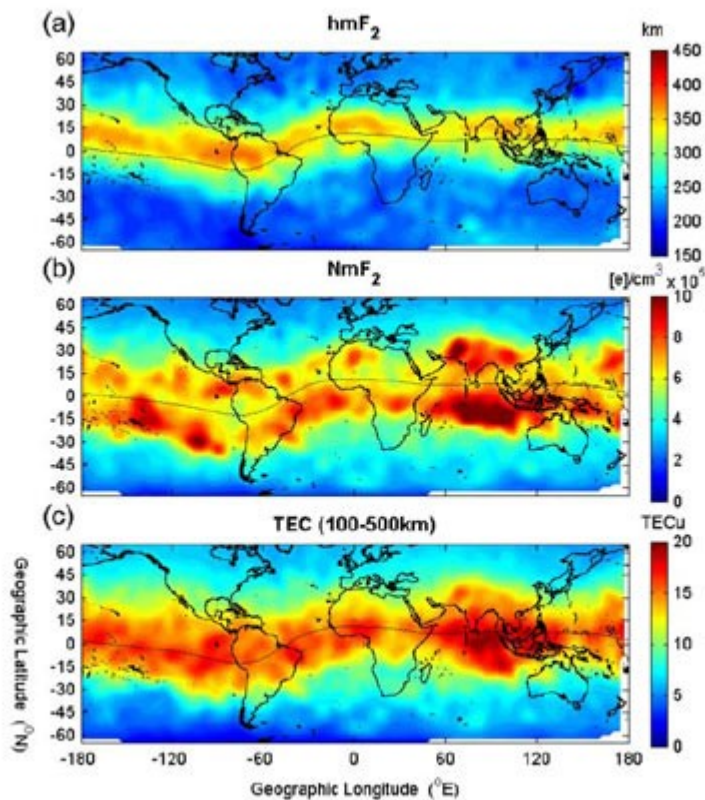


Figure 2. Ionospheric maps in (a) peak altitude (hmF_2), (b) peak density (NmF_2), and (c) total electron content (TEC) integrated between 100–500 km altitude range at global constant local time at 1200 LT.

Study the middle diagram, and notice the darkest red N is near Pakistan, at 30°N. The darkest red S is west of Chile, at 30°S. So 17° is just an average. We have a gap between crests that averages about 34°. This indicates that something is pinching the streams together other than my mechanism above. At 450km, we simply can't get the streams only 34° apart using curvature alone.

What is causing this extra pinch is a sort of atmospheric Z-pinch, where the lower molecular density at higher altitude allows an apparent attraction between the two charge streams. Since this entire effect is at root a charge field or photon effect—using opposite spinning photons—we have to track the photons to understand the mechanics. Well, since the linear motion of the photons is near-parallel in the mantle, crust, and atmosphere, and since this motion creates an ion current in the same line, we have to look at how varying densities will affect that current. And once we have current, we have to look at the magnetic effect as well. That magnetic effect will give us the extra pinch, in a similar way to the pinch in a plasma.

Since the two streams are parallel but spinning opposite, they will attract one another. This is already known, and Birkeland current theory uses the fact prominently, as we have seen recently [in another paper of mine](#). I have shown it is caused by field potentials determined by real spins, and by the motions of real particles, but the mainstream knows of this phenomenon and can write math for it even with no understanding of the mechanics. At any rate, given this phenomenon (which is already a sort of Z-pinch in the charge field), we can continue to explain the numbers in the Equatorial Anomaly problem.

Although the potentials that cause this attraction exist in the mantle and crust, the molecular field

densities at those levels act to prevent actual closure. In other words, while the charge streams are still deep down in the Earth, they are already acting like Birkeland currents, creating the potentials that could cause attraction. But the attraction must act inside the existing matter field, you see, and the density of that field resists the attraction. To say it another way: since the attraction is caused by spins, the attraction has to be mediated *through* the molecular structure. But since the molecular structure has inertia, the potential will dissipate. Since the potential is caused by photon spin, and since photon spin can be transmitted through matter better than other larger (ion) spins, it does not dissipate entirely, even in a solid. But since the charge streams are thousands of miles apart in dense matter, the potentials cannot persist.

However, once the charge streams clear the surface, they exist in a gas only, and this allows the potentials to work with much less molecular resistance. This means that the Birkeland attraction doesn't really kick in until the charge streams hit the atmosphere. The lower atmosphere is still dense enough to block part of the attraction, but as we rise into sparser concentrations, the attraction rises until it becomes quite strong. In the ionosphere, where ions help the attraction rather than impede it, the pinch becomes even stronger. This pinch effect combined with the curvature I showed above take the separation down to 34°.

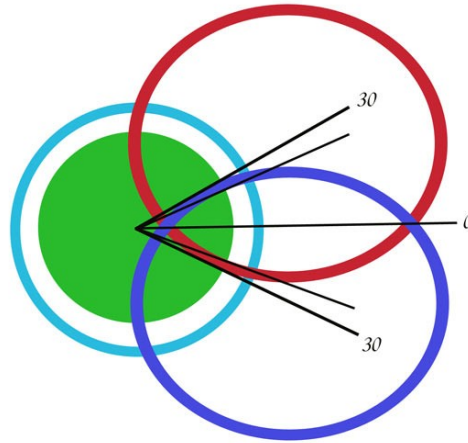
Amazingly, the mainstream diagrams above confirm this analysis, because we see a wider gap at lower altitudes. I encourage you to return to the middle diagram (b) above, and notice that the dark red areas are bordered by orange and yellow, both N and S. If you combine that information with the information from the (a) image, you realize that we are seeing the spreading at lower altitudes. See how in (a) the yellow band is wider than the red band? That is straight confirmation that although the crests are weaker at lower altitudes, the gap between crests is wider, confirming my analysis. We get more pinch as we rise.

So why don't we see a continuation of this pinch, with the streams coming together at even higher altitude? We may, but we can't tell from the mainstream data. Because ion concentrations fall off above 400km, we won't see what the streams are doing above that. Once we are above the altitude of peak density, any lighter red or orange we see can't be differentiated from lower red or oranges.

The same thing explains why the ionization crests are higher than the average ionization peaks in the ionosphere. Overall, the ionosphere peaks at closer to 300km, but the equatorial anomaly crests are at least 100km higher. Why? Simply because the charge streams have pushed them up there locally.

The mainstream calls my charge streams “the equatorial fountain,” and attempts to explain it by an eastward electric current during the day (and a westward at night). But this is not the mechanism. The mechanism is charge channeling through the Earth. Twice-daily reversing surface electrical currents strong enough to cause the equatorial anomaly have never been found. Any surface current at the equator should be explained as a by-product of Birkeland current attraction, and should be connected to the Pederson current at the poles. Although we know the so-called equatorial fountain does lose some strength at night, this can be explained much more easily as the loss of radiation coming down. Sunlight is also photonic, remember. It can and does contain antiphotons. And since it is coming down while charge is coming up, we get spin augmentations instead of cancellations*. The field coming down spins up the field rising, and as with through charge in Iron, we get an addition to the fountain. At night, the fountain falls back to charge-only levels.

I have shown the mechanisms, but can I do the math? I will only outline it here, since I am already into page 11 of this pdf. We saw from my earlier diagram that curvature explained only about 4 degrees of the pinch at 1,800km.



Turns out the real number is closer to 1.98 degrees at 450km, and the Birkeland effect causes another 1.98 degrees. Since both effects occur simultaneously in a unified field, we integrate the fields, multiplying the 6.58% change by the 6.58% change to get a 43.3% total field change. [$1.98/30 = .0658$ and 56.7% of 60° is then 34°].

At 450km, we have increased R by 7%, so we would get about a 7% change in angle due to curvature, *if* our charge streams were strictly circular. Because the streams are elliptical—for the reasons I enumerated above—we find a fraction less curvature at the altitude in question, dropping us from 7% to 6.58%. This indicates the curves are about 6% elliptical (which helps us find the crossing point deep in the Earth).

The Birkeland effect would seem to be a bit more difficult to calculate. I showed we would have a rising pinch, so the attraction is not constant. It would go from near-zero effect at zero altitude to maximum effect at 400km. To calculate straight from old E/M field equations, we would have to know the strength of the currents—and we don't—which is why no one has come close to a solution here. But we can estimate a solution using shortcuts. As you can see, the field is working so that one effect is the same as the other. Both effects create the same change, which we then square. That should seem curious, and you may think I pulled it out of the air; but I actually came to that answer by studying the numbers and curves closely. Once I got my head in the unified field here, I could see why we are getting that squared effect. In short, it is the same reason we have to integrate the fields instead of add them. By the old rules of field equations, we would add; but in dozens of papers on both unification and calculus, I have shown that we have to integrate fields like this. To understand it, you have to understand how I corrected the old $v_t = v_0 + at$ equation, and I recommend you reread [that paper](#), as well as the [muon papers](#) that spawned it. In short, when we are tracking velocities, accelerations, or forces in a unified field of any kind, we have to integrate motions rather than add them. That old *voat* equation no longer applies, and we have to write it as what I call a cubed acceleration. Our t is then to the power of 3, you see. That solves this equation because we can then import the math I did there. Go down and find where I say this:

If the time is very small and the initial velocity very large, as in our muon problem, we can ignore the acceleration and estimate the final distance with this equation:

$$s = v_0^2 t^2$$

That is precisely what we are finding here, with the charge field acting like it is *inside* the gravity field, as a matter of integration. We can then find a unified field effect with just a square.

You can see the same integration effect in my paper on the [Pound-Rebka experiment](#), where I show a similar derivation. Skip down to the last part, where I show this:

$$\begin{aligned}v_f &= c + 2c^2t \\v_{av} &= (v_f - c) / 2 \\v_{av} &= c^2t \\h &= c^2t^2 \\s &= ct \\h &= s^2\end{aligned}$$

This just means that the light didn't have to go as far as we think it did. While the light was moving toward the Earth, the Earth was moving toward the light. So the light doesn't really have to travel h . It travels \sqrt{h} and the acceleration does the rest.

$$\sqrt{h} = \sqrt{(c^2t^2)} = ct$$

In both papers, I showed that when we have a particle or field going c , we can go to a limit, allowing us to take terms to zero, in turn allowing us to express the unified field as square. Since we have precisely that in this equatorial anomaly problem, we can borrow this field shortcut in the math. We have the charge field moving c through the gravity field, so the unified field effect will just be the square of either individual effect. Go back up and study my two effects in the equatorial anomaly problem: one is caused by R , which is a gravity effect. The other is caused by a Birkeland pinch, which is caused by spins on photons, which are going c . So one effect is *inside* the other effect, creating a *unified* field.

Remember, my unified field is not unified simply because it brings the charge field together with the gravity field: it is unified because it physically integrates the two fields, putting one inside the other, both mechanically and mathematically. This forces us to integrate the two effects instead of add them, and at the same time it allows us to calculate the total effect by simply squaring either individual effect. As you have seen, the total angle change is 43.3%, and the change due to curvature is the square root of that, or 6.58%. Using this simple field shortcut, we can calculate unified field forces without even knowing current strengths.

Since I talked about the Van Allen belts above, I would like to close this paper with a short diversion. Wikipedia admits that mainstream scientists have proposed destroying the ion belts, to facilitate satellite orbits and communication. Although their plan for doing this would be unsuccessful, the plan nonetheless is perfect indication of the *hubris* of modern science. It shows the crushing ignorance of professional geophysicists in two major ways, the second way being much more important than the first. The first way it shows their ignorance is in their belief that the ion belts could be drained by using a HiVOLT tether. Their belief that this could work just points to the fact that they understand nothing about the source of the Earth's E/M field. As I have shown in many previous papers, this field is

recycled through the Earth, which means it is constantly replenished by the Sun's field. So even if the tether drained a part of the Van Allen belts, they would immediately refill. These fools would have to “drain” the Earth of all ionization, and then the entire Solar System—including the Sun. And even if they did that, the galactic core would re-ionize the entire field. They would need a pretty large tether to drain the entire galaxy of ionization.

Which is not to say these bastards aren't capable of some short-term damage. They say at Wiki that the Van Allen belts “are dangerous for human beings,” but the opposite is true. The belts actually keep the bulk of the ionization at a safe distance in the far upper atmosphere. If they drained the belts, they would have to rebuild themselves from below, and the new ionization would have to travel up through the surface and lower atmosphere, where we reside. This would be catastrophic, not only for modern communication but for the health of plants and animals.

This plan reminds me of Edward Teller's and Carl Sagan's plan to bomb the Moon in order to impress the Soviets. This plan was actually nixed by politicians and the Air Force, who were *less* crazy than the physicists. Note that: mainstream scientists commonly display even less wisdom and restraint than politicians and the military, and politicians and the military are of course not known for either trait. These modern physicists that have been sold to you as geniuses are actually the most dangerous psychopaths on the planet, and it is thanks to them that [dangerous chemicals are already being sprayed in the lower atmosphere, supposedly to counteract global warming \[see minute 7:40 in this link\]](#). If it were up to them, we would have already bombed the Moon, drained the ion belts, and created a black hole in the lab. We *have* bombed the Earth heavily with large nukes, destroying entire islands and large swaths of ocean and spreading fallout everywhere. We have filled the oceans, land and air with toxic chemicals and radionuclides, leaving the surface littered with gigantic pits of ruination. The only thing left for these guys to propose is destroying the Sun, as a way to combat sunburn.

I will have more to say about the equatorial anomaly in a later paper, where I will closely analyze mainstream papers on the subject. But I have hit twelve pages here, and this will serve as a part 1 to my larger analysis of this question.

*See my papers on [magnetic reconnection](#), [comets](#), and [Enceladus](#) for more on this spin mechanism.