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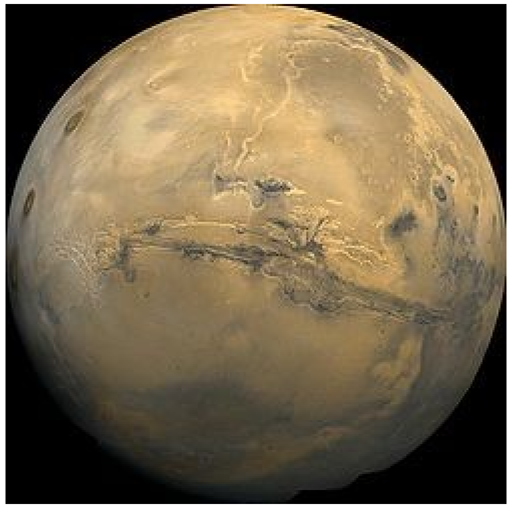
WHERE is the MAGNETISM of MARS?



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Since this question is still wide open, I don't have to step on any big toes here. The latest theory (2007) is that Mars' magnetism was blasted away by asteroids, but that is so desperate I won't even comment on it. And I won't offend many by not taking it seriously. Mainstream physics doesn't have a charge field at the macrolevel, so it simply can't answer questions like this in a reasonable manner. It is at its worst trying to answer these sorts of questions, and seems to recognize that, so it rarely even tries to. Only physicists desperate for attention publish theories like this asteroid theory, and these theories tend to have a shelf life of about six months. They are fodder for the covers of the science rags, since they lend themselves to glossy illustrations, and then they die.

But this is an interesting question for me, especially. I have already explained the lack of magnetism on Venus as due to the fact that it is upside down. When its magnetic field is emitted from the surface, this field hits the ambient field. Since one field is upside down to the other, they cancel as a matter of spin. Yes, I have shown that magnetism is a function of photon spin, and the photons coming out of Venus are upside down relative to the photons not coming out Venus. Compared to the Solar system field, Venus is emitting anti-photons. We have a spin cancellation. It is that simple.

With the Moon, we have a slightly different mechanism. As the mainstream tries to explain Venus' lack of magnetism by the slow rotation of Venus about its axis, they do the same with the Moon. But this can't be the cause, because both Venus and the Moon have strong electrical fields. Venus, especially, has a powerful ionosphere, one that blocks the Solar Wind much like our magnetosphere. If the lack of rotation damped the magnetic field, it would damp the electrical field as well, and we don't see this with Venus. So something else must be happening there, and on the Moon. Again, we have to study the direction of the spins of the photons being emitted out of the Moon, since it is these spins that cause the magnetism. The ambient field (the field around the Moon) isn't upside down relative to the Moon, but it is opposite in spin in another way. Since the Moon is so close to the Earth, the Moon's ambient field is determined more by the Earth than the Sun. This is not the case with Venus, obviously. So the field emitted by the Moon is always meeting the field emitted by the Earth head-on (at least on the nearside). Since the linear vectors are opposite, we again get a spin cancellation.

You will say, "But this means we should find more magnetism on the far side!" Well, in fact, we do. As just two examples, I point you to Mare Ingenii and the Gerasimovich crater. We have been informed by NASA and Russia of "magnetic anomalies" in such places, but NASA will not admit that these findings are not that anomalistic. What they mean by anomalistic is "it goes against our assumptions." But an anomaly is usually something that contradicts other *data*. And we don't have a lot of standing data indicating the farside of the Moon has or should have an absent magnetism. More cratering is often used as evidence of that, but that is evidence of nothing. The Moon has more cratering over there simply because it isn't protected by the Earth over there nearly as much, either the body of the Earth or the field of the Earth. The Moon's ass is out in the wind, if you like, and so of course it will show more cratering.

But my theory wouldn't predict that much more magnetism over there anyway. Why? Because the Earth's photons are blocked from the farside. It is Earth-dark over there. So the photons coming out of the Moon don't feel much spin boost from the Earth's photons (except those going through the Moon). The Earth's photons only set up a sort of wall, keeping the Sun's photons from defining the ambient field, and therefore providing the boost themselves. The Moon's photons on the farside are emitted into a flat field, as it were. Their spin comes only from the Moon's interior magnetism. So although they aren't damped, they aren't spun much either. They therefore have a low magnetism. Higher than the nearside, but still low.

Notice that this also explains local fluctuations on the Moon, such as at Gerasimovich crater. That is where the Earth's photons are going through the Moon. We are seeing the result of density variations and material variations inside the Moon. On certain trajectories through the Moon, more photons get through to the farside. When they come out over there, we see magnetic maxima.

But with Mars, I have neither of these answers to use, do I? Mars is not upside down, like Venus, and it is not spinning that slowly, and it is not in the shadow of some other very near body. Its day is about the same as the Earth's, and its radius is about half, so it seems at a glance that by my theory it would have about half the charge and therefore half the magnetism. But that "at a glance" is way off, since we have left Jupiter out of it. We can't do that, as I showed in both my axial tilt papers and my Bode series paper. Charge moving toward the Sun increases in charge density and therefore in charge power, which also increases the magnetic power. This is just to say that the photons get closer together, because they are moving into a smaller volume. Therefore, Mars IS is the shadow of another body. This despite the fact that Jupiter is so far away.

Let's use the math I used in those earlier papers to show this. The charge density of Jupiter is 1/986 that of the Sun, and Jupiter is 2.44 times further away from Mars than the Sun is. The fourth root of 986 is 5.6, so the relative strength of the Sun's field is 5.6. The relative strength from Jupiter is 2.44. So the total relative strength of the ambient magnetic field at Mars due to Sun and Jupiter combined is 5.6 – 2.44 = 3.16. But that is still disregarding the other big planets. Saturn is 1/7.28 relative to Jupiter, and 2.19 times further away, so its charge at Mars, as a fraction of Jupiter's, is .3. Which gives us .3 x 2.44=.734 as the input from Saturn. Uranus is 1/25.8 relative to Jupiter, and 4.81 times further away, so its charge at Mars is .186 x 2.44=.455. Neptune is 1/16.9 relative to Jupiter and 7.77 times further away, so its charge at Mars is .46 x 2.44=1.12. Add them all up, and we get 4.75. That means we have 5.6 from inside Mars and 4.75 from outside (disregarding the smaller planets). The difference is .85.

But what does that mean? Well, it is a relative number, not an absolute number, so we still have to compare it to the Earth by the same method. From those other papers, we know the total charge *density* from the outer planets is 5.66 times that from the Sun, at the Earth. So if the Sun's charge is 5.6, their total charge is 31.7. That would make the combined charge 31.7 – 5.6 = 26.1. And that is 30.7 times greater than .85. However, in that math we let the Sun's charge equal 5.6 in both positions, Earth and Mars. That can't be right. So we need a little bit more math. Letting the Sun's charge drop by the inverse quad—as I have done so many times—gives us 5.38 times less Solar charge at Mars (Mars semi-major axis is 1.523 times larger than the Earth's, so $1.523^4 = 5.38$). So we make the necessary change to the numbers above. Sun's charge at the Earth, 30.1. Outer planets, 170.5. Which makes our total ratio of Earth to Mars 30.7 x 5.38 = 165.2.*

So we multiply that effect by the other effect. I said the "at-a-glance" number was 2 above, but that is not correct either. It isn't just a matter of radius. We can see that just from the torque equation (T=Fr) or the angular momentum equation (L=mvr). In other words, we have to use a mass *and* a radius, not just a radius. Even according to current math, that would be true. But I have shown that charge follows both mass and density, not just mass, so again we find a charge density or mass density. Mars is .0763 that of the Earth, which we then multiply by the radius differential of .533, which equals .04. We then multiply that by the number we found above, 1/165.2, which gives us .00024. That would be my rough estimate for the magnetism of Mars: about four thousand times less than the Earth. That matches current estimates and data, which run from 10^{-3} to 10^{-4}.

For those who are having trouble following the math, I will boil down the mechanism for you. I have just shown you that Mars has a low magnetism because of his position in the Solar System. Because he is about midway between the Sun and the four big outer planets, as a matter of charge, the two influences offset, canceling a large part of the magnetism. Mars is receiving photons spinning one way from the Sun, and photons spinning the other way from the outer planets. When these two magnetic fields meet at the distance of Mars, they cancel down to .85. That is why I subtracted the main numbers above. I first weighted the charge numbers from the big bodies, then let them meet at Mars. We found they almost canceled. Then I applied the same math to the Earth. Since the Earth is closer to the Sun, he doesn't inhabit an orbit where the magnetic fields are near equal. Being closer to the Sun, the Earth encounters a denser field from the Sun, and therefore more total spin. But since charge coming in from the Jovians is also denser (due to field lines getting nearer as we near the Sun), the effect from them is even greater. So there is a far greater spin imbalance, and therefore more magnetism on the Earth.

Actually, I have only done part of the math, to show you where the main magnetic difference between Mars and the Earth is coming from in the field. The full math would require we also include the relative numbers of photons and antiphotons in the field at both distances, and I haven't wished to complicate the math any further. Remember, in other papers I have shown the ratio of photons to antiphotons on the Earth is 2 to 1, but that rises to 4 to 1 at Mercury and falls to about 1.25 to 1 at Uranus. This big differential at Mercury is one reason why Mercury's magnetism isn't determined by the Jovians to the extent we would expect. We also have to look at the ion content of the Solar Wind, which becomes substantial enough at the distance of Mercury to negate incoming Jovian influence. And of course Mercury's offset center of mass prevents it expressing its full magnetism, which I have already shown would be 9 times higher. I will look more closely at how these factors combine in a future paper.

One last thing to hit, before I finish. We know that although Mars has a low current magnetism, some of the rocks on Mars have a much higher residual magnetism. This has been taken to mean that Mars had more magnetism in the past. I think this is entirely possible, and that this reading is probably correct. But I do not think the magnetism was knocked off the planet by asteroids. No, this residual magnetism in the rocks on Mars is telling us something very important, not about Mars, but about the make-up of the Solar system in the past. It means that either Mars was not at its current orbital distance at that time, or the big outer planets were not. Something was vastly different. Given the asteroid belt and other glaring evidence, this is not hard to imagine.

From this we see that my theory of planetary magnetism will give us the tool to work backward in time, rebuilding previous Solar system relationships. These rocks, which we find on other planets and moons as well, are like tablets with numbers on them. They will be very useful in future.

*That can also be written as (170.5 – 30.1)/.85 = 165.2
