

The 4th Domino (*Climate Change*)

By Michael Allen Gelman



What do we know about global warming today?

1. Earth's climate is getting hotter.
2. The sun has *not* recently gotten hotter.
3. There is nothing between the sun and Earth except for the vacuum of space and our own atmosphere.

Greenhouse gases would be the obvious cause if all of those statements are true . . . *but #3 is not.*

It's January of 2023, and virtually every reputable scientist in the world¹ believes that Earth's climate is getting hotter due to an increase in greenhouse gases in our atmosphere.² Many believe that the condition has progressed so far that any attempts we make now to fix this situation may be too little and too late.³ I disagree with both of those assessments, and I'll tell you why.

Rather than greenhouse gases, I believe that climate change results from a short chain reaction that I have likened to a group of 4 dominoes. The 1st domino falls all by itself, and the last one is climate change. Unlike actual dominoes, these dominoes slowly stand themselves back up again over time, and the cycle repeats.

I'm going to prove to you using credible references how the 1st "domino" knocks over the 2nd, and then the 3rd. That much is already established. Whether scientist or layperson, once you read this, you will ask yourself how climate change *would not be* the metaphorical 4th domino.

I made a decision a couple of years ago to not share my hypothesis with anyone in order to avoid discouraging efforts to reduce greenhouse gases. What has changed is that ***I now have suggestions to turn this situation around.***



the 1st domino: the normal changes inside of Earth's core

I believe the problem originates deep inside the planet. Earth's core generates a magnetic field called the magnetosphere⁴, and because of this, the planet has magnetic poles normally located at the extreme north and south sides, similarly to a bar magnet. This is the reason navigational compasses help us find our way.

Every so often, Earth's magnetic poles wander, sometimes even switching places.⁵ This is not something that happens frequently or quickly by human standards. It might occur every

¹ <https://climate.nasa.gov/scientific-consensus-7>

² <https://news.mit.edu/2017/explained-greenhouse-gases-0130>

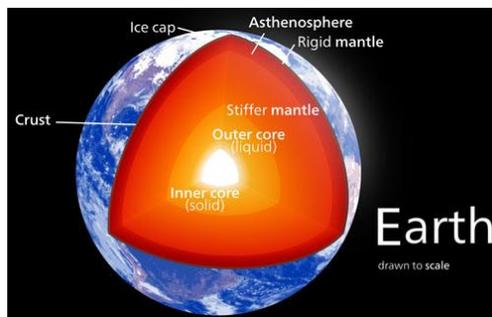
³ <https://climate.nasa.gov/faq/16/is-it-too-late-to-prevent-climate-change>

⁴ <https://www.merriam-webster.com/dictionary/magnetosphere>

⁵ <https://news.ucsc.edu/2018/12/magnetic-reversals.html>

100,000 years and take 1,000 each time, but it's random. We believe that the structure of Earth's core is what allows this to happen.

It is understood that Earth's core is a solid sphere inside a molten, outer core.⁶ Like a fetus inside its mother's womb, the inner core is free to rotate and flip, and the liquid outer core to slosh around.⁷



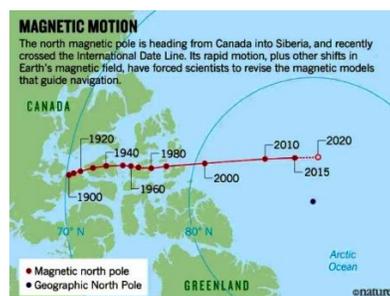
When the Earth's magnetic poles wander, it is called a *geomagnetic excursion*. When they switch places, we call that a *geomagnetic reversal*.⁸ For brevity, I will simply say "reversal" and "excursion" from now on.

It is believed that reversals occur approximately every 450,000 years and last approximately 1,000 years, but they are neither predictable nor periodic.⁹ The last one occurred about 770,000 years ago and lasted less than 100 years.

Reversals have occurred no less than 183 times over the last 83 million years, at random intervals, and with random durations. An excursion is when the magnetic poles begin to switch places, but then revert. Less is known regarding excursions, but both of these phenomena are normal and natural for planet Earth.

The most direct evidence of a reversal or excursion is the recent movement of Earth's magnetic north pole. Magnetic north has moved south, and is currently picking up speed.¹⁰

An excursion or reversal might have already begun.¹¹ If so, it probably won't end during your lifetime.



The magnetic North Pole has moved nearly the same distance in 20 years as it had in the previous 100

⁶ <https://www.sciencedirect.com/topics/earth-and-planetary-sciences/earth-core>

⁷ <https://news.usc.edu/200185/earth-core-oscillates>

⁸ <https://academic.oup.com/gji/article/137/1/F1/701015>

⁹ <https://astronomy.com/news/2021/09/when-north-goes-south-is-earths-magnetic-field-flipping>

¹⁰ <https://earthsky.org/earth/magnetic-north-rapid-drift-blobs-flux>

¹¹ <https://www.pnas.org/doi/10.1073/pnas.1722110115>



the 2nd domino: Earth's magnetic field is weakened

Both reversals and excursions result in a temporarily weakened magnetic field,¹² that being further evidence of what is happening at the core. It's merely history repeating itself. 42,000 years ago, an excursion brought Earth's magnetic field down to a mere 6% of normal.¹³ According to the US Department of the Interior, the current average magnetic field at the Earth's surface is about 10% lower than it was in the 1830s¹⁴.

Reversals and excursions weaken the magnetosphere because some areas of the core that once shared the same magnetic orientation begin to work against each other. Although Earth normally behaves as a single magnet, it now behaves like a group of magnets, and they are not all magnetized in the same direction.¹⁵

Regions of Earth's core swirl and rotate, and the individual magnetic forces of these regions sometimes cancel the magnetic fields of neighboring regions. Thus Earth's net magnetic field is reduced in strength.¹⁶

Let's say you have two disc-shaped magnets stacked together, behaving as a single, strong magnet. Next you separate them, flip one of them around, and then re-stack them. The magnetic force from each magnet now partly cancels out the other, and two strong magnets now behave as a single, weak one.



¹² <https://www.sciencealert.com/earth-magnetic-field-not-flipping-any-time-soon>

¹³ <https://www.earthdate.org/episodes/polar-excursions>

¹⁴ <https://www.usgs.gov/faqs/are-we-about-have-magnetic-reversal>

¹⁵ <https://www.science.org/content/article/earths-waning-magnet>

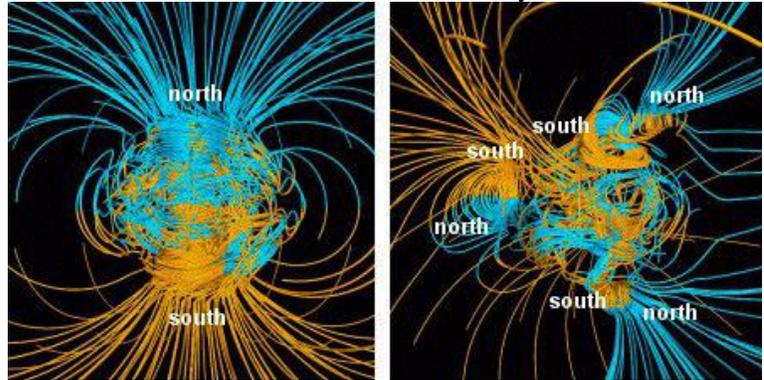
¹⁶ <https://climate.nasa.gov/news/3105/earths-magnetosphere-protecting-our-planet-from-harmful-space-energy>

If multiple people are rowing a boat, their combined efforts increase the boat's speed. If one of the oarsmen starts to row in the wrong direction, that will make the boat slower than if he had simply stopped rowing. Similarly, Earth's magnetic field is the strongest when the entire core is magnetically aligned. When not, there is some mutual cancellation of magnetic forces.

When this happens, Earth's magnetic field becomes chaotic and substantially weaker.

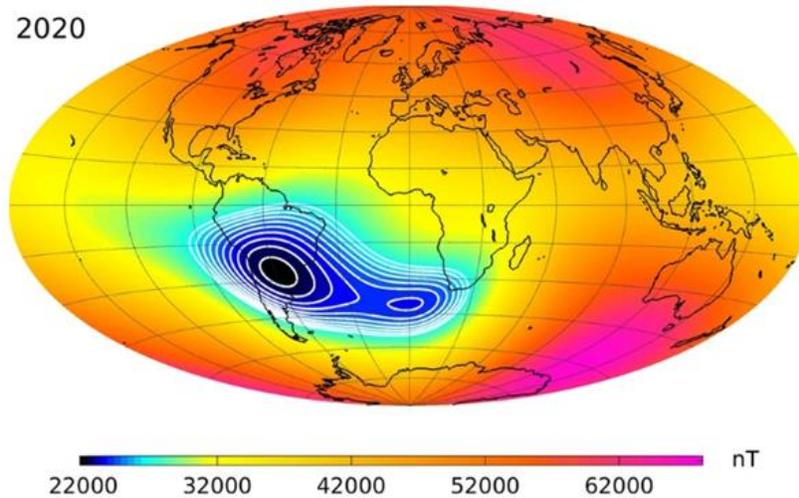
Earth's magnetic field has been much more chaotic than it is right now.

It will be again, but we don't know when.



Supercomputer models of Earth's magnetic field. On the left is a normal magnetic field, and on the right is what the magnetic field might look like during a reversal.

When the core starts to churn, voids in the magnetic field might turn up randomly. A large void, the South Atlantic Anomaly, has appeared over parts of South America and the Atlantic Ocean,¹⁷ and it's growing.¹⁸



The blue area is what Astronomy.com calls "The spacecraft-killing anomaly over the South Atlantic"

¹⁷ <https://www.frontiersin.org/articles/10.3389/feart.2016.00040/full>

¹⁸ <https://www.usatoday.com/story/news/world/2020/08/19/south-atlantic-anomaly-dent-earths-magnetic-field-growing/3398864001>

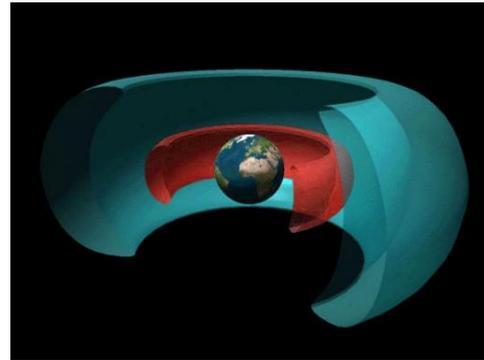


the 3rd domino: the Van Allen belts are weakened

In between the sun and Earth's atmosphere, besides the vacuum of space, there are naturally occurring radiation shields called the Van Allen belts.¹⁹

These belts are massive regions of energetic, charged particles.²⁰ They are invisible to the eye, so the image to the right is a simulation.

The existence of the belts was confirmed in 1958 by NASA, under the supervision of James Van Allen.²¹



These belts make possible life as we know it by preventing some of the sun's radiation from reaching us, possibly even causing Earth to lose its atmosphere.²² the Van Allen belts are in essence naturally occurring shields.

This is not science fiction, but if you are a fan of it then you probably already understand something about shields. At least for now, nobody is launching photon torpedoes at Earth, however, the sun sends a lot of energy our way. The Van Allen belts are precisely the type of shields we need.

An interaction between Earth's magnetic field and radiation from the sun is what forms and holds the belts in place. Planets and moons that do not have a magnetic field, such as Mercury, Venus, Mars, and Earth's moon, also lack Van Allen belts. Jupiter, the planet with the most powerful magnetic field in our solar system, also has the strongest Van Allen belts.²³

Los Alamos National Laboratories: “. . . A new study based on data from NASA's Van Allen Probes shows that all three regions - the inner belt, slot region, and outer belt - can appear differently depending on the energy of electrons considered and general conditions in the magnetosphere”²⁴

Thus there is a direct relationship between the strength of Earth's magnetic field and the strength of the Van Allen belts that it energizes.

¹⁹ <http://www.astronoo.com/en/articles/van-allen-belt.html>

²⁰ <https://spacecenter.org/what-are-the-van-allen-radiation-belts>

²¹ <https://physicstoday.scitation.org/doi/10.1063/PT.3.3791>

²² <https://crev.info/2018/06/van-allen-belts-protect-earth-solar-wind>

²³ <https://anstd.ans.org/space-radiation-interplanetary-radiation-belts>

²⁴ <https://www.lanl.gov/museum/news/newsletter/2016-03/science-van-allen-belts.php>



the 4th domino: more radiation is received by Earth

We know that Earth's climate is getting hotter while at the same time the magnetic field and the Van Allen belts are getting weaker, but that alone does not establish a cause and effect relationship.

Nevertheless, a causal relationship between a decrease in the effectiveness of Earth's natural radiation shield and an increase in climate temperature seems logical and intuitive. Is it not roughly analogous to someone with holes in their raincoat getting wet? It would seem that the poor condition of the raincoat is responsible for water passing through it.

In the absence of evidence to the contrary, it seems there are 2 other possibilities:

- Although diminished in strength, the Van Allen belts function normally and *do not* allow more radiation to pass.
- Although more radiation passes through them and reaches Earth, this does not increase Earth's temperature.

(*Radiation* referring to any and all energy that could potentially contribute heat to our planet.)

I'm simply acknowledging that these may be possible, but honestly, I don't see how either of them could be. Do you?

recap

I have based the first 3 "dominoes" on scientific facts, then merely connected the proverbial dots.

What I am hypothesizing is that the 4th domino is climate change. Along with my hypothesis, I also provide some suggestions for mankind for the immediate future, and they might solve the problem we face, at least for the time being.

my solution to reverse climate change

While we continue to reduce atmospheric carbon, I have a couple of additional suggestions. These are my **DOs** and **DON'Ts**, and they pertain to the Van Allen belts, rather than the air.

To begin with, we need to get our heads straight.

We've got some astrophysicists with the same mentality as a fish that wants to jump out of the fish tank onto the living room carpet. I have been reading what educated people have to say regarding the Van Allen belts, and I find some of it disturbing.

Some point out that the belts make life possible on Earth by preventing the sun from pushing our atmosphere off into space. That makes sense.

Others want to “drain” the Van Allen belts to protect spacecraft. You see, although the Van Allen belts protect us from radiation, they are in fact radioactive and potentially dangerous for spacecraft. Thus eliminating the radiation belts might make spaceflight safer for Major Tom, but Ground Control might not be able to answer his calls without an atmosphere to breathe.

This article is behind a paywall²⁵. This one is not²⁶. (The last paragraph on this page talks about the HiVOLT system proposed in 2002, “a clever way to remove the radiation belts.”

This type of thinking is suicidal on a planetary scale, and so I call it “apocalyptic.” Therefore, the first step that I recommend is that mankind stops considering the Van Allen belts as expendable. Let’s all get on the same page, so to speak. Those radiation belts are our planet’s lifeline, and wiping out life on earth is counterproductive.

Since we can’t straighten out Earth’s core, let’s strengthen the Van Allen belts by regularly infusing them with energy. If that sounds far-fetched, I want to point out that *we have already done it once, way back in 1962*. I am proposing that we do it *regularly now*.

Long before either Star Wars or Amazon.com existed, there was *Starfish Prime*.²⁷ Amidst the insanity that characterized the Cold War, the US tested an atomic anti-satellite weapon in space. Not knowing what would actually happen, our physicists boldly and irresponsibly proceeded. *They might have also considered draining the Van Allen belts*.

One effect of the experiment was that it bolstered the strength of the Van Allen belts, even creating a temporary, new one²⁸, and the effect lasted for several years.

Physics Today: “The manmade explosions also confirmed the idea that the injection of fresh particles inside Earth’s magnetic field can create stable trapped fluxes of particles around the planet.”²⁹

I’m not suggesting we nuke space again, although I’m not sure I hate the idea, if that was the only way we could cool the earth and save ourselves. Imagine weapons of mass destruction *saving* the world. A great way to repurpose them and a 21st century version of “they shall beat their swords into plowshares.”³⁰

I propose we do something similar, but with a different goal and approach. I’m sure that the higher minds already know precisely how to inject the correct energy particles into each of the Van Allen belts to bolster them, and do it with minimal risk.

It might even be possible to transmit some particular form of energy directly from Earth’s surface into the belts, and that would certainly be worth investigation.

²⁵ <https://spectrum.ieee.org/hacking-the-van-allen-belts>

²⁶ <https://web.archive.org/web/20130613193849/http://radbelts.gsfc.nasa.gov/outreach/RadNews.html>

²⁷ <https://www.npr.org/sections/krulwich/2010/07/01/128170775/a-very-scary-light-show-exploding-h-bombs-in-space>

²⁸ <https://www.theatlantic.com/international/archive/2013/01/give-peace-a-chance-in-space/267223>

²⁹ <https://physicstoday.scitation.org/doi/10.1063/PT.3.3791>

³⁰ <https://www.biblegateway.com/passage/?search=Isaiah%202:3-5&version=KJV>

While mankind primarily concerns himself with greenhouse gas emissions, no one is concerned about radio emissions, some of which have been found to damage the Van Allen belts. For example, very low frequency (VLF) radio transmissions are believed to “clear out” the particles that make up the belts³¹. I highly recommend that we determine exactly what damage, if any, is being done by any and all terrestrial radio transmissions.

- DO:** Determine which radio transmissions damage the Van Allen belts
- DO:** Periodically bolster the Van Allen belts with energy particle infusions
- DON'T:** Think of the Van Allen belts as expendable
- DON'T:** Transmit radio frequency harmful to the Van Allen belts
- DON'T:** Drain the Van Allen belts

Those are all of one man's suggestions at this time.

for balance, here's an opposing viewpoint

My hypothesis is so new and radical that no one has yet had the opportunity to oppose it. Alan Buis of NASA's Jet Propulsion Laboratory explains why variations in Earth's magnetic field are not causing today's climate change.³² His article is not about my hypothesis or the Van Allen belts.

In another article that I cited (*endnote 16*), Buis explains how the Van Allen belts protect us from particular types of solar radiation. Even so, he fails to acknowledge the possible relationship that may exist between the magnetic field, the Van Allen belts, and climate change. Instead, he points out that air is not magnetic because it is not ferrous, and also that ferrous refers to iron, and not Ferris Bueller. I find it a little ironic that I am the only one who suspects a causal relationship between Earth's magnetic field and climate change, and that's because of the irony, and that has nothing to do with iron.

Buis goes on to say that “plant and animal fossils from the period of the last major pole reversal don't show any big changes.”

In the last 800,000 years, there have been 8 cycles of ice ages and warmer periods,³³ and so climate changes occur more frequently than reversals. Climate changes do not always lead to “doomsday events or major extinctions.” I feel as though the absence of fossil evidence of “big changes” does not rule out either reversals or excursions as climate change triggers.

³¹ <https://www.newscientist.com/article/dn14089-radio-waves-from-earth-clear-out-space-radiation-belt>

³² <https://climate.nasa.gov/ask-nasa-climate/3104/flip-flop-why-variations-in-earths-magnetic-field-arent-causing-todays-climate-change>

³³ <https://climate.nasa.gov/evidence>

my affiliations and ethical considerations

I have no agenda except to share my thoughts with the world. I'm not a political person, my only income is from my business, and I have no ownership or financial interest in any organization. I am just a free thinking man who loves life and also democracy.

Another thing that I love is to see the people of the world cooperate in an effort to solve a common problem. It makes me feel as though perhaps there is hope for the human race. Let's work together to reduce greenhouse emissions, too, and also plant a lot of trees.



As the mystical and invisible radiation belts in space, I feel lonesome as I write down thoughts and ideas that no one shares with me. If I am mistaken, then forgive me because my heart was in the right place. If I am correct, I hope that others will join me out here in the magnetosphere.

I may be reached via email: michael@michaelgelman.com

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Earth's core ~ Kelvinsong
Migration of magnetic north ~ nature.com
Supercomputer model of Earth's magnetic field ~ NASA
South Atlantic Anomaly ~ astronomy.com
Rendering of Van Allen radiation belts ~ NASA
Dominoes & disc magnets ~ Michael Allen Gelman