

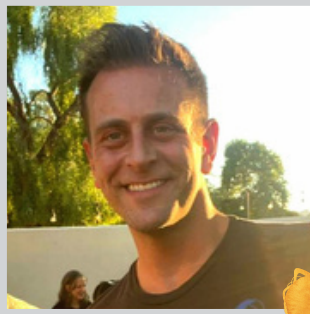


OBSERVER *REVIEW*

MARCH 2025

MEET THE CONTRIBUTORS

BEN



Ben Davidson, a researcher and author, founded the Suspicious Observers YouTube channel, specializing in Earth's space environment, the Sun, and the Cosmos. In 2014, Ben launched The Mobile Observatory Project via Kickstarter, with 800+ sponsors. Ben now focuses on Observer Ranch, an educational campground in central Colorado, aiming to share research on the Sun's impact on Earth and teach sustainable practices like gardening and homesteading.



BAILEY



Bailey enjoys astronomy and the wonders of the natural world! She has her Bachelor's and Masters in Science Journalism. Bailey is also the founder and operator of [Elara Creatives](#), a Digital Marketing Agency. She lives in Colorado and enjoys skiing, tennis, and astronomy!



ADRIAN



Adrian D'Amico is a political science major, JD/MBA, who has had a life-long interest in UFOs and obfuscated history. Adrian and Ben Davidson grew up as best friends in Pittsburgh, PA, where he still lives. He has presented at each of the Observing the Frontier conferences and is a key member of the Space Weather News team behind the scenes.



THE OBSERVER REVIEW

The Observer Review is a monthly publication that discusses the main scientific findings surrounding space weather. Do you want to have your article featured?

Email observerreview@observerranch.com

NEW ISSUES COME
OUT THE 15TH OF
EACH MONTH!

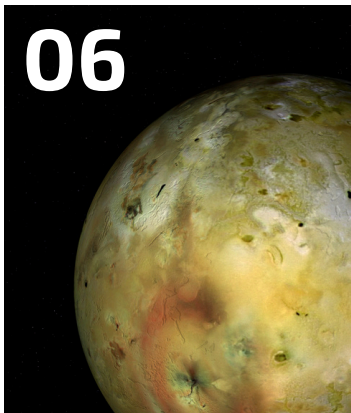
CONTENTS

MARCH



CRUST TEARING
FROM BELOW

04



06

EARTH'S CORE IS DEFORMING

Recent news made major headlines this month regarding the Earth's core.



08

SOLAR STORMS CAUSE SURFACE EM EFFECTS

As we know, solar storms, caused by eruptions on the Sun's surface, release massive amounts of charged particles that travel through space and interact with Earth's magnetosphere.

FEATURED ARTICLES

10 THE SUN AND HEART RATE

11 MAY 2024 SOLAR STORM STUDIES

14 FORGOTTEN SOLAR STORM

16 SOLAR FORCING

Think of this article as a look into solar forcing from these number of angles. The articles we looked at focus on the solar forcing of Monsoons, Monsoons and Hydroclimates, the solar forcing of wind, polar ice, and even unemployment and gold prices.

21 PRE-EARTHQUAKE SIGNALS

23 A NANO NOVA

A new stellar nova event has been observed. This was not a supernova, a classical nova, or even a micronova. While falling into the mechanistic class of dwarf novae, the luminosity puts this one in the "nano nova" category.

24 A CIRCUMSOLAR ERUPTION

25 OZONE-CLIMATE INTERACTIONS

Ozone plays a crucial role in regulating Earth's climate and atmospheric chemistry. The CMIP6 DECK experiments provide insight into how stratospheric ozone responds to changes in climate.

26 SOLAR IMPACT TO ATMOSPHERIC ELECTRICITY

27 MAJOR HYDROCLIMATE EVENT 6000 YEARS AGO

AND MORE!



CRUST TEARING FROM BELOW

ARTICLE REFERENCED:
PRESS RELEASE: OCEANIC PLATE BETWEEN ARABIAN AND EURASIAN
CONTINENTAL PLATES IS BREAKING AWAY

BY: BAILEY LAURISSA

A new study led by the University of Göttingen has revealed that the oceanic plate between the Arabian and Eurasian continental plates is breaking away, a phenomenon that could have far-reaching implications for our understanding of geological processes. This study highlights how deep-earth processes, including crust tearing from below, influence surface features such as mountain formation, sediment deposition, and even potential earthquake risks. What makes this discovery even more compelling is its potential connection to larger-scale planetary events, such as a magnetic pole shift, which could rapidly accelerate these geological transformations.

WHERE DID THE STUDY TAKE PLACE?

The Zagros Mountains stretch across western Iran and eastern Iraq, forming a dramatic and rugged landscape. As one of the oldest mountain ranges in the world, the Zagros have been a natural barrier and a cradle of early civilizations, influencing trade routes, empires, and human migration for thousands of years.



THE OBSERVER REVIEW

The study focused on the Kurdistan region of Iraq, where the immense forces exerted by the Zagros Mountains have been shaping the Earth's crust for millions of years. When two continental plates collide, the oceanic plate between them is gradually forced downward, a process known as subduction. Over time, this subducted oceanic plate can begin to break apart, a process termed "crust tearing from below." The researchers found that the Neotethys oceanic plate—which once lay between the Arabian and Eurasian continents—is currently breaking off horizontally, creating a progressive tear extending from southeastern Turkey to northwestern Iran.



WHAT ARE OCEANIC PLATES?

Oceanic plates are large sections of the Earth's lithosphere that lie beneath the ocean and interact at tectonic boundaries, causing geological phenomena such as mid-ocean ridges, subduction zones, and earthquakes

As the oceanic plate detaches, it exerts a pulling force on the crust above, causing the Earth's surface to bend downward. The study suggests that the downward pull of the sinking oceanic plate, rather than the mere weight of the Zagros Mountains, is responsible for the remarkable depth of this region.

During a magnetic pole shift, the Earth's magnetic field weakens temporarily, reducing its protective shield against cosmic radiation and solar winds. The weakening of the magnetic field can lead to increased movement in the Earth's mantle, altering the distribution of internal pressures and enhancing the forces driving crust tearing. This could lead to more rapid subduction, increased seismic activity, and even accelerated mountain formation.

This research also contributes to our understanding of earthquake risks. As the oceanic plate detaches, it alters the stress distribution in the surrounding crust, potentially triggering seismic activity. In regions like the Middle East, where major fault lines intersect, this knowledge is crucial for disaster preparedness and infrastructure planning. Identifying areas where crust tearing is actively occurring could help geologists pinpoint zones of heightened earthquake risk, ultimately aiding in the development of early-warning systems.

EARTH'S CORE IS DEFORMING

BY: BEN DAVIDSON

ARTICLE REFERENCED:

EARTH'S INNER CORE IS CHANGING IN SHAPE AS WELL AS IN ROTATION RATE

Recent news made major headlines this month regarding the Earth's core. Following recent reports describing a surprising slowdown in its rotation, scientists now believe they are also observing a deformation occurring within the inner core itself. This unexpected revelation has sparked widespread interest and further deepened the mystery surrounding Earth's internal dynamics.

BACKGROUND RESEARCH

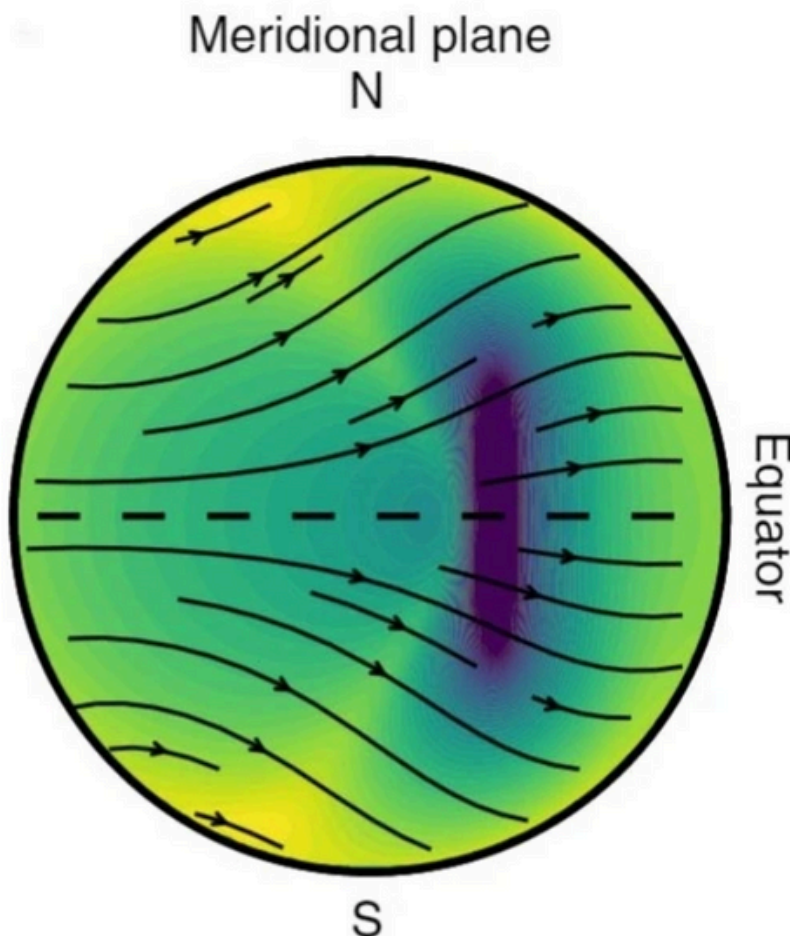
For years, we have been tracking the gradual changes in Earth's rotation speed—most notably, its recent acceleration, which has led to a measurable shortening of the length of a day. Additionally, a report from a few years ago already suggested that the inner core was somewhat lopsided. This latest discovery adds another intriguing layer to our understanding of the solid-Earth impacts associated with the planet's disaster cycle.



Even with our knowledge of the changing rotation rate and the asymmetrical nature of the core, there was never a strong reason to assume that deformation would occur at such a scale or at a speed rapid enough to be detected before the larger planetary disaster unfolds. And when that catastrophe does arrive—who's looking?

CONCLUSION

AT THIS POINT, WE HAVE A FAIRLY SUBSTANTIAL AND GROWING LIST OF SOLID-EARTH CHANGES THAT CAN BE REALISTICALLY AND DIRECTLY LINKED TO THE ONGOING TRANSFORMATIONS HAPPENING ON THIS PLANET. THE DISASTER CYCLE CONTINUES ITS MARCH FORWARD, REVEALING MORE WITH EACH NEW DISCOVERY.



Is Earth's Core
Lopsided?

"Asymmetric growth and movement in from the Equator and towards the poles causing lateral and vertical advection of the strongest deformation. (Photo: Nature)"

SOLAR STORMS CAUSE SURFACE EM EFFECTS

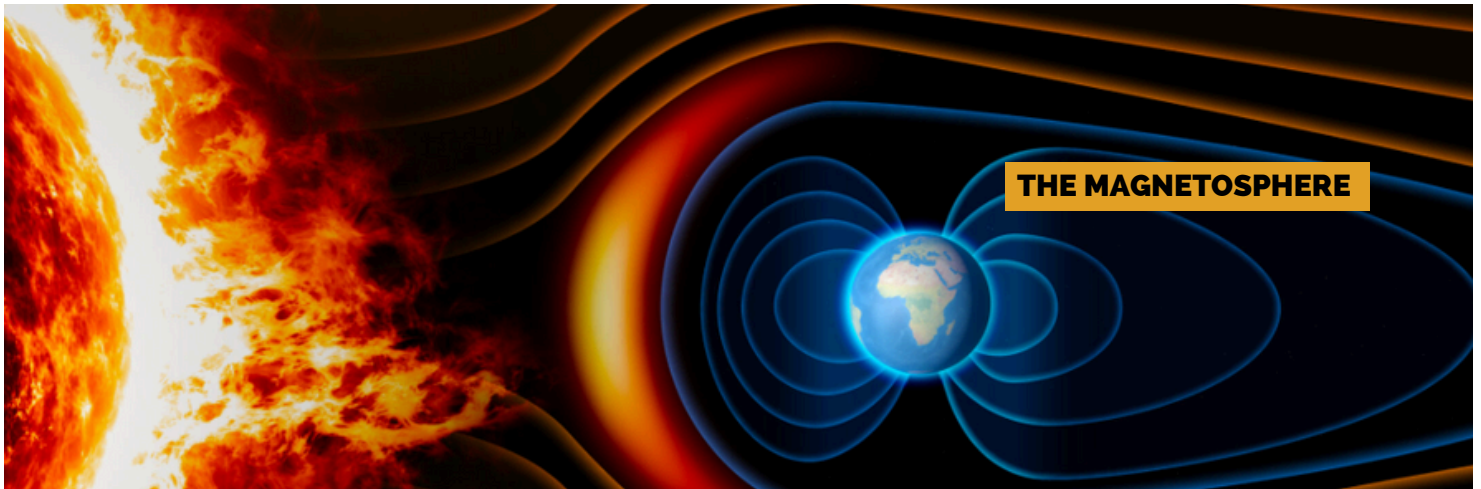
BY: BAILEY LAURISSA

ARTICLE REFERENCED:

CHAOTIC VARIABILITY OF THE MAGNETIC FIELD AT EARTH'S SURFACE DRIVEN BY IONOSPHERIC AND SPACE PLASMAS

As we know, solar storms, caused by eruptions on the Sun's surface, release massive amounts of charged particles that travel through space and interact with Earth's magnetosphere. This interaction can create geomagnetic storms, which in turn cause fluctuations in the magnetic field at Earth's surface. We discuss daily that these variations have real-world consequences, affecting power grids, GPS signals, and communication systems.

The Sun and its interaction with Earth's magnetosphere produce changes that occur on a scale of hours to years. This study confirms that external sources dominate magnetic field variations over shorter timeframes, particularly during solar storms.



To explain these fluctuations, researchers have used a concept called magnetic helicity, which describes how twisted and interwoven magnetic field lines become over time. Data collected from spacecraft such as the Solar Dynamics Observatory, the Wind spacecraft, and the Swarm satellite have allowed scientists to analyze how the Sun's activity influences Earth's magnetic environment.

A key finding is that the chaotic interactions between solar wind, Earth's magnetosphere, and the ionosphere follow a pattern described by the Kolmogorov-Iroshnikov turbulence model. This model explains how energy is transferred through different scales, leading to unpredictable yet structured fluctuations in the magnetic field.

WHAT IS THE KOLMOGOROV-IROSHNIKOV (KI) TURBULENCE MODEL?

The Kolmogorov-Iroshnikov (KI) turbulence model is a theoretical framework for describing magnetohydrodynamic (MHD) turbulence, particularly in plasmas and astrophysical flows. It extends Kolmogorov's classical turbulence theory to account for the effects of magnetic fields on turbulent energy cascades. This framework plays a significant role in understanding turbulence in astrophysical environments, such as the solar wind, interstellar medium, and fusion plasmas.

Observations from ground-based magnetometers confirm that the temporal patterns of these fluctuations match those found in space. The study highlights several key frequencies in magnetic variations, including:

DAILY VARIATIONS:

Caused by temperature-driven electric currents in the ionosphere on the sunlit side of Earth.

SEASONAL CYCLES:

Related to changes in solar heating throughout the year.

27-DAY PEAKS:

Corresponding to the Sun's rotation, influencing solar wind patterns that reach Earth.

By better understanding the chaotic but structured nature of magnetic field variations, we get one step closer to predicting these affects more accurately.



THE SUN AND HEART RATE

BY: BEN DAVIDSON

A NEW STUDY INVESTIGATES HOW GEOMAGNETIC FIELD VARIATIONS IN THE ULTRA-LOW FREQUENCY (ULF) RANGE (1–5 MHZ) MIGHT SYNCHRONIZE WITH HUMAN HEART RATE OSCILLATIONS, A PHENOMENON TERMED THE "BIOGEOSYNCHRONIZATION EFFECT."

Researchers analyzed 61 electrocardiogram recordings from two healthy female volunteers, collected during strong magnetic storms between September 2023 and October 2024, finding synchronization in 69% of cases, particularly during the storms' recovery phases.

Many dozens of studies have correlated large-scale cardiac statistics to solar activity. These have ranged from blood pressure to strokes and heart attacks, correlating with everything from sunspots to solar wind to geomagnetic storms. However, this study followed two individuals identified as susceptible, and didn't just study their reaction once, but repeated it to make sure it wasn't an anomaly.

The solar-heart connection is real, and growing stronger daily as we step further into this geomagnetic excursion, where more and more of that solar energy bypasses the weakening magnetosphere.

ARTICLE REFERENCED:
EFFECT OF SYNCHRONIZATION BETWEEN MILLIHERTZ GEOMAGNETIC FIELD VARIATIONS AND HUMAN HEART RATE OSCILLATIONS DURING STRONG MAGNETIC STORMS



DO YOU NOTICE ANY HEALTH CHANGES DURING INCREASED SOLAR ACTIVITY?

MAY 2024 SOLAR STORM STUDIES

BY: BAILEY LAURISSA

ARTICLE REFERENCED:
INVESTIGATION OF THE IONOSPHERIC RESPONSE ON MOTHER'S DAY
2024 GEOMAGNETIC SUPERSTORM OVER THE EUROPEAN SECTOR

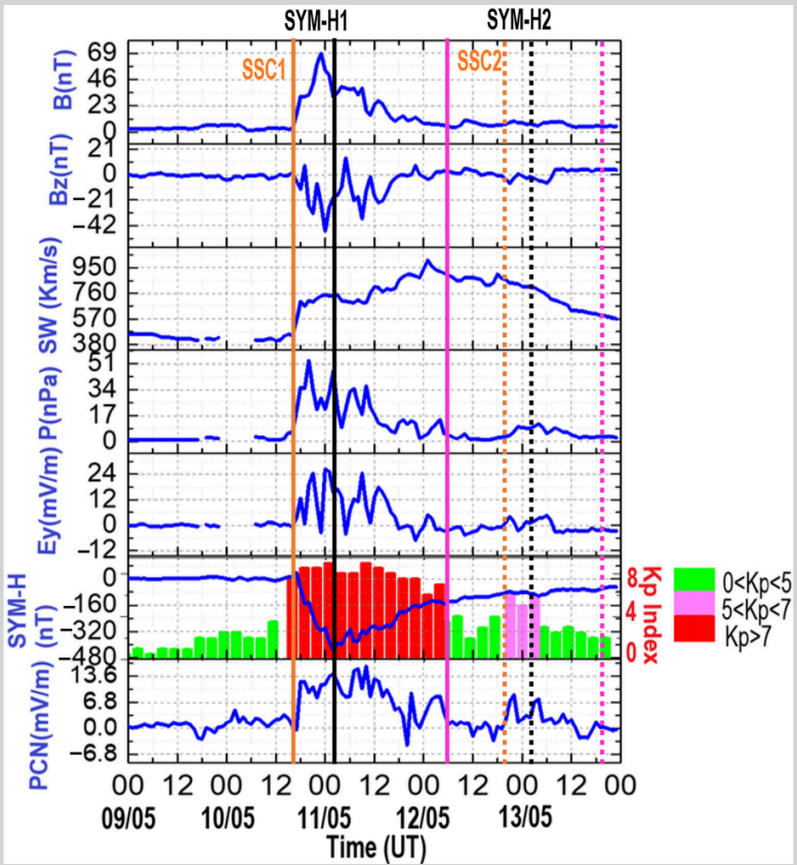
In May 2024, Earth experienced one of the most intense geomagnetic storms in recent history. Known as the Mother's Day Superstorm, this event, classified as a G5 geomagnetic storm, had widespread effects on the Earth's ionosphere, magnetosphere, and communication systems. We have since studied its impacts, uncovering remarkable insights into how the storm affected our planet's upper atmosphere and space weather conditions.

This article explores three key findings from these studies we highlighted:

THE BLANKING OUT OF THE FOF2 LAYER

THE SUDDEN DROP IN TOTAL ELECTRON CONTENT (TEC) OVER THE EQUATOR

THE EXTREME COMPRESSION OF EARTH'S MAGNETOSPHERE



“Geomagnetic conditions during the Mother’s Day Storm event. The orange vertical lines represent the sudden storm commencement times (SSC1 and SSC2), the black vertical lines denote the time of the 1st and 2nd SYM-H index minima during the two successive storms, and the pink vertical lines represent the completion of the recovery phase of the ionosphere on Mother’s Day Storm.”

THE OBSERVER REVIEW

One of the most striking discoveries was the disappearance of the critical frequency of the F2 layer (foF2) over Europe during the storm. The F2 layer, a key region of the Earth's ionosphere, is responsible for reflecting radio waves, making it crucial for communication and navigation systems.

During the May 10–13 storm, researchers observed a sharp depletion of electron density in the midlatitude ionosphere, likely caused by the equatorward movement of the Midlatitude Ionospheric Trough (MIT). Satellite data confirmed that the storm lifted the F layer to much higher altitudes—above 600 km in some cases—making it undetectable by ground-based instruments. Scientists believe this was due to strong meridional winds moving ionized plasma along magnetic field lines, essentially “erasing” the usual ionospheric structures. The coupling between the Equatorial Ionization Anomaly (EIA) and the auroral ionosphere was also a contributing factor.

These findings highlight how extreme space weather events can dramatically alter the ionosphere, disrupting radio signals and GPS accuracy. Similar effects were previously recorded during the famous Halloween Storm of 2003 and the St. Patrick's Day Storm of 2015, but the May 2024 event surpassed them in scale and intensity.

Another surprising effect of the May 2024 storm was an unusual drop in Total Electron Content (TEC) over Ecuador, specifically in the Galápagos region. TEC is a measure of the number of free electrons in the ionosphere, which is crucial for GPS and satellite communication.

Instead of the expected increase in ionization due to solar activity, we observed a sharp decrease in TEC at the storm's peak. This was likely caused by rapid recombination processes, where charged particles merged back into neutral atoms, depleting the ionosphere of free electrons. Plasma instabilities triggered by the storm may have also played a role.

Interestingly, once the storm subsided, TEC gradually returned to normal, showcasing the ionosphere's ability to recover from extreme disturbances. This event underscores the need for continuous monitoring of space weather effects, as sudden TEC variations can cause disruptions in satellite navigation and communications, affecting aviation, maritime operations, and even power grids.

RECORD SETTING STORM

The May 2024 storm also set records for its impact on Earth's magnetosphere. Data showed that the dayside magnetopause—the boundary where Earth's magnetic field meets the solar wind—was compressed below the geostationary orbit (6.6 Earth radii) for an astonishing six hours. In extreme cases, models suggested that the magnetopause was pushed as close as 3.3 Earth radii.

THE OBSERVER REVIEW

This extreme compression was caused by a combination of high solar wind dynamic pressure (SWDP) exceeding 15 nPa and an intense eastward interplanetary electric field (IEFY) exceeding 2.5 mV/m. These conditions were the result of a massive Interplanetary Coronal Mass Ejection (ICME) that struck Earth on May 10.

The impact led to severe electrodynamic disturbances, including a powerful ring current forming closer to Earth than usual, significantly intensifying geomagnetic activity.

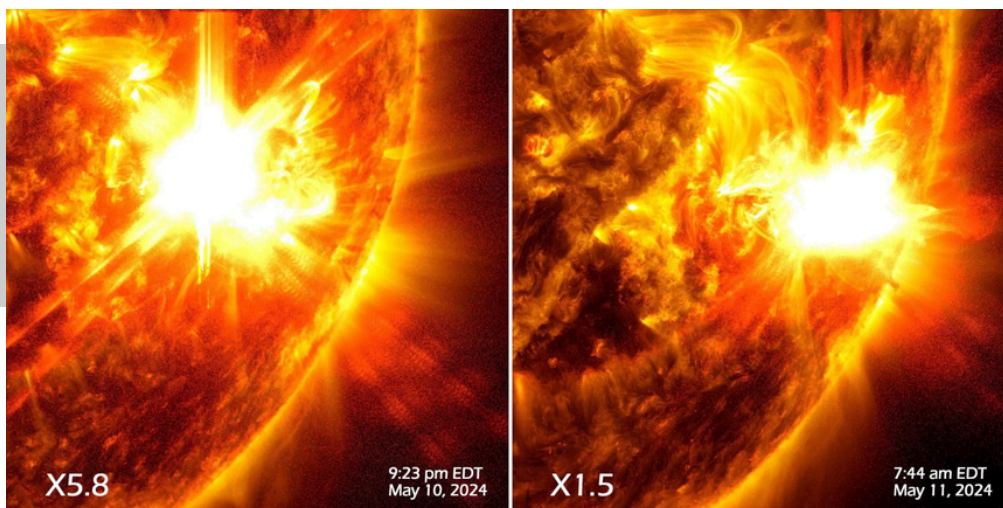
CONNECTION TO CARRINGTON EVENT

A particularly alarming aspect of this storm was its resemblance to the Carrington Event of 1859, one of the most powerful geomagnetic storms in recorded history. Scientists noted that the May 2024 storm reached an R1 radio blackout level, disrupting communication networks and GPS reliability. The compression of the magnetosphere allowed energetic solar particles to penetrate deeper into Earth's atmosphere, amplifying the storm's effects. If the storm had been slightly stronger, it could have approached Carrington-level intensities, potentially causing catastrophic disruptions to global infrastructure.

One major consequence of this was an increase in ionospheric disturbances, including a more than 100% increase in TEC on the dayside ionosphere. This surge disrupted GPS positioning, highlighting the need for improved space weather forecasting to mitigate future effects. Additionally, an X3.9 solar flare prior to the storm caused an HF radio blackout in the 2–12 MHz range, affecting long-distance communications in various regions, particularly over the Indian sector.

FINAL THOUGHTS

The May 2024 geomagnetic superstorm was one of the most intense space weather events of the past three decades. It caused widespread disturbances in Earth's ionosphere, leading to the disappearance of the F2 layer over Europe, a sudden TEC dropout over Ecuador, and extreme compression of Earth's magnetosphere.



A reminder on what these solar flares looked like for this record-breaking event.

FORGOTTEN SOLAR STORM: THE MARCH 2024 EVENT

BY: BEN DAVIDSON

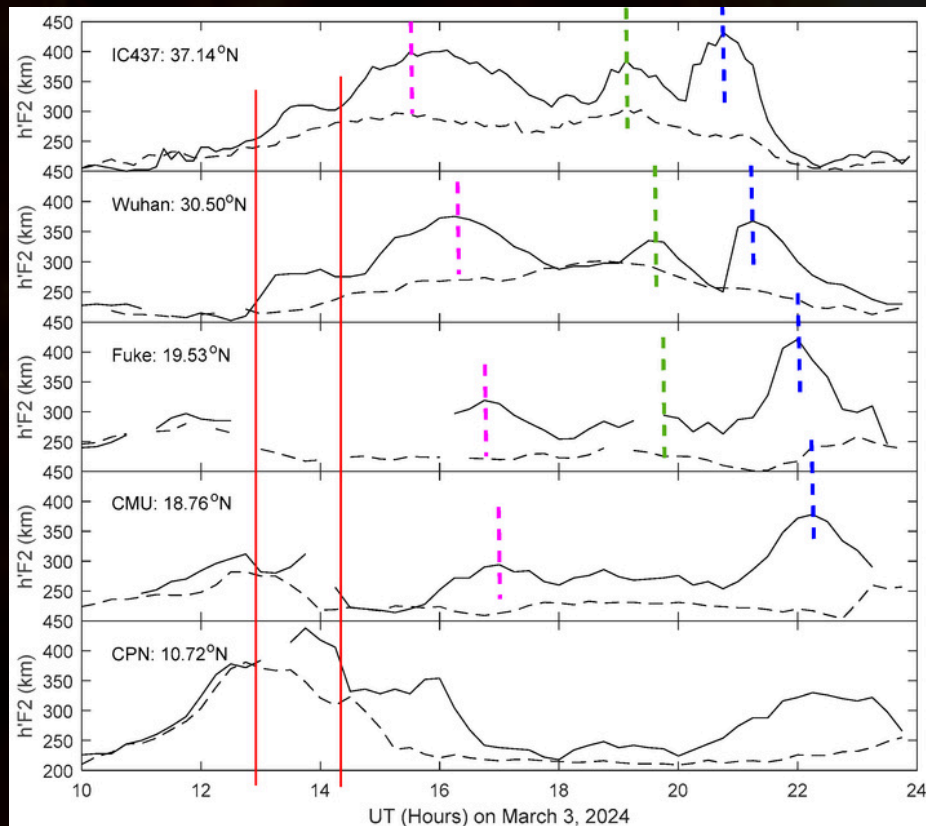
ARTICLE REFERENCED:

[THE CHARACTERISTICS AND POSSIBLE MECHANISMS OF THE STRONGEST IONOSPHERIC IRREGULARITIES IN MARCH 2024](#)

IN MARCH 2024, RESEARCHERS OBSERVED UNUSUALLY STRONG IONOSPHERIC IRREGULARITIES DURING A PERIOD OF WEAK GEOMAGNETIC ACTIVITY. THIS ANOMALY WAS ATTRIBUTED TO THE PRECONDITIONING EFFECT OF A PRECEDING MODERATE GEOMAGNETIC STORM, WHICH LEFT RESIDUAL DISTURBANCES IN THE IONOSPHERE. THESE LINGERING IRREGULARITIES WERE THEN AMPLIFIED BY SUBSEQUENT MINOR SOLAR WIND FLUCTUATIONS, LEADING TO SIGNIFICANT IONOSPHERIC DISTURBANCES DESPITE THE ABSENCE OF A STRONG TRIGGERING EVENT.



The problem with this analysis is that ionospheric and magnetospheric activity had already calmed to near-ambient-quiet levels. The subsequent solar wind pressure amplification was exceedingly weak, with only short-lived south-pointing magnetic fields. While the March and April 2023 solar storms get a lot of attention, and the May and October 2024 solar storms received even more attention, this March 2024 event is one of about a dozen others that is also on a list of outside impacts from small space weather events.



“The height variation of the ionosphere during the night-time on 3 March 2024. The solid black lines are h'F on 3 March 2024. In comparison, the dashed gray lines serve as references, indicating the mean heights on 1 and 2 March. The vertical lines in four different colors represent four uplifts of the F layer.”

THE EARTH'S WEAKENING MAGNETIC FIELD HAS ALLOWED SUCH AMPLIFICATIONS NEARLY 2 DOZEN TIMES SINCE THE MAJOR MARCH 2023 MAGNETIC ANOMALY REPORTED BY DR. SIMONENKO IN APRIL OF 2024. EXPECT THIS TO CONTINUE.

SOLAR FORCING OVERVIEW

ARTICLE REFERENCED:

[HTTPS://PAPERS.SSRN.COM/SOL3/PAPERS.CFM?ABSTRACT_ID=5144353](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5144353)

[HTTPS://WWW.SCIENCEDIRECT.COM/SCIENCE/ARTICLE/ABS/PII/S0031018225000811](https://www.sciencedirect.com/science/article/abs/pii/S0031018225000811)

[HTTPS://LINK.SPRINGER.COM/ARTICLE/10.3103/S0884591325010052](https://link.springer.com/article/10.3103/S0884591325010052)

[HTTPS://RMETS.ONLINELIBRARY.WILEY.COM/DOI/ABS/10.1002/JOC.8766](https://rmetsonline.wiley.com/doi/abs/10.1002/joc.8766)

[HTTPS://PAPERS.SSRN.COM/SOL3/PAPERS.CFM?ABSTRACT_ID=5109846](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5109846)

[HTTPS://PAPERS.SSRN.COM/SOL3/PAPERS.CFM?ABSTRACT_ID=5146143](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5146143)

BY: BAILEY LAURISSA

One of the most interesting topics that we like to look into is Solar Forcing. Solar forcing can be analyzed across a number of axis, from weather patterns to human actions and sociology. Think of this article as a look into solar forcing from these number of angles. The articles we looked at focus on the solar forcing of Monsoons, Monsoons and Hydroclimates, the solar forcing of wind, polar ice, and even unemployment and gold prices. So, put your mind into the solar forcing world, and let's dive into it!

Research into the mid-Holocene period has revealed that monsoon precipitation variability in Asia was significantly influenced by solar activity. A high-resolution stalagmite record from Xiaoshanyan Cave in Southwest China shows a correlation between weak monsoon intervals (WMIs) and ~200-year solar cycles. These variations align with El Niño-like conditions, suggesting that the strength of the Asian Summer Monsoon (ASM) was modulated by solar-induced changes in sea surface temperatures.

This study underscores the importance of low-latitude air-sea interactions in shaping monsoon dynamics over centuries.

Hydroclimatic patterns in Eastern China re closely tied to broader oceanic and atmospheric interactions. New research suggests that solar activity modulates these hydroclimatic patterns, particularly through interactions with the Pacific Decadal Oscillation (PDO) and the Atlantic Multidecadal Oscillation (AMO).

The PDO is a long-term fluctuation in sea surface temperatures in the North Pacific Ocean, typically lasting 20 to 30 years per phase. It alternates between warm (positive) and cool (negative) phases, which impact global climate patterns.

The AMO is a climate cycle of sea surface temperature variations in the North Atlantic Ocean, with phases lasting 40 to 60 years. Like the PDO, it has warm and cool phases.

Under strong solar activity, meridional dipole patterns emerge, with increased precipitation in the southern Yangtze River and drier conditions in the north. Conversely, weak solar activity reverses these trends, leading to wetter conditions in the north and drier conditions in the south.

These findings have significant implications for agricultural planning, water resource management, and climate adaptation in China. As hydroclimatic patterns shift due to global warming, understanding their natural solar-driven variability will help policymakers develop more effective mitigation strategies. This research enhances predictive models for future hydroclimate changes, aiding climate adaptation strategies in East Asia. Furthermore, as extreme weather events become more frequent, the ability to anticipate shifts in hydroclimatic patterns will be critical for disaster preparedness and infrastructure resilience.

A study on tropospheric and lower stratospheric wind fluctuations found that 27-day solar cycles influence zonal wind speeds. Data from the Northern Hemisphere during the decline of the 23rd solar cycle (2002–2004) indicate that wind fluctuations with amplitudes of ~8 m/s can shift jet streams by over 1° latitude.

These variations occur due to the dynamic interaction between the stratosphere and troposphere, affecting global atmospheric circulation. The maximum wind changes occur in the southern part of the polar atmospheric cell and the northern part of the Ferrell cell (50°–70° N), gradually decreasing in magnitude to the south and north. Wind changes are many times smaller in the tropical troposphere. The impact is realized through two-way dynamic stratospheric-tropospheric interaction, primarily in the area of the polar night jet and polar front jet stream.

WHAT IS THE POLAR NIGHT JET COMPARED TO THE FRONT JET STREAM?

The Polar Night Jet and the Polar Front Jet Stream are both high-altitude atmospheric jets associated with polar regions, but they have distinct characteristics and roles in global circulation. The Polar Night Jet is found in the stratosphere (around 30-50 km altitude) over the winter pole, forming due to strong temperature gradients between the dark, cold winter pole and the surrounding warmer air. It is a seasonal jet, present only in winter, and is primarily driven by the temperature contrasts caused by the lack of sunlight at high latitudes.

This jet encircles the pole and is closely associated with the polar vortex, influencing stratospheric circulation and sometimes impacting weather patterns in the troposphere when it weakens or strengthens. In contrast, the Polar Front Jet Stream is located in the troposphere (about 7-12 km altitude) and forms along the boundary between cold polar air and warmer mid-latitude air, known as the polar front.

It is a year-round feature, though it shifts in latitude and intensity with the seasons, becoming stronger in winter when temperature gradients are more pronounced.

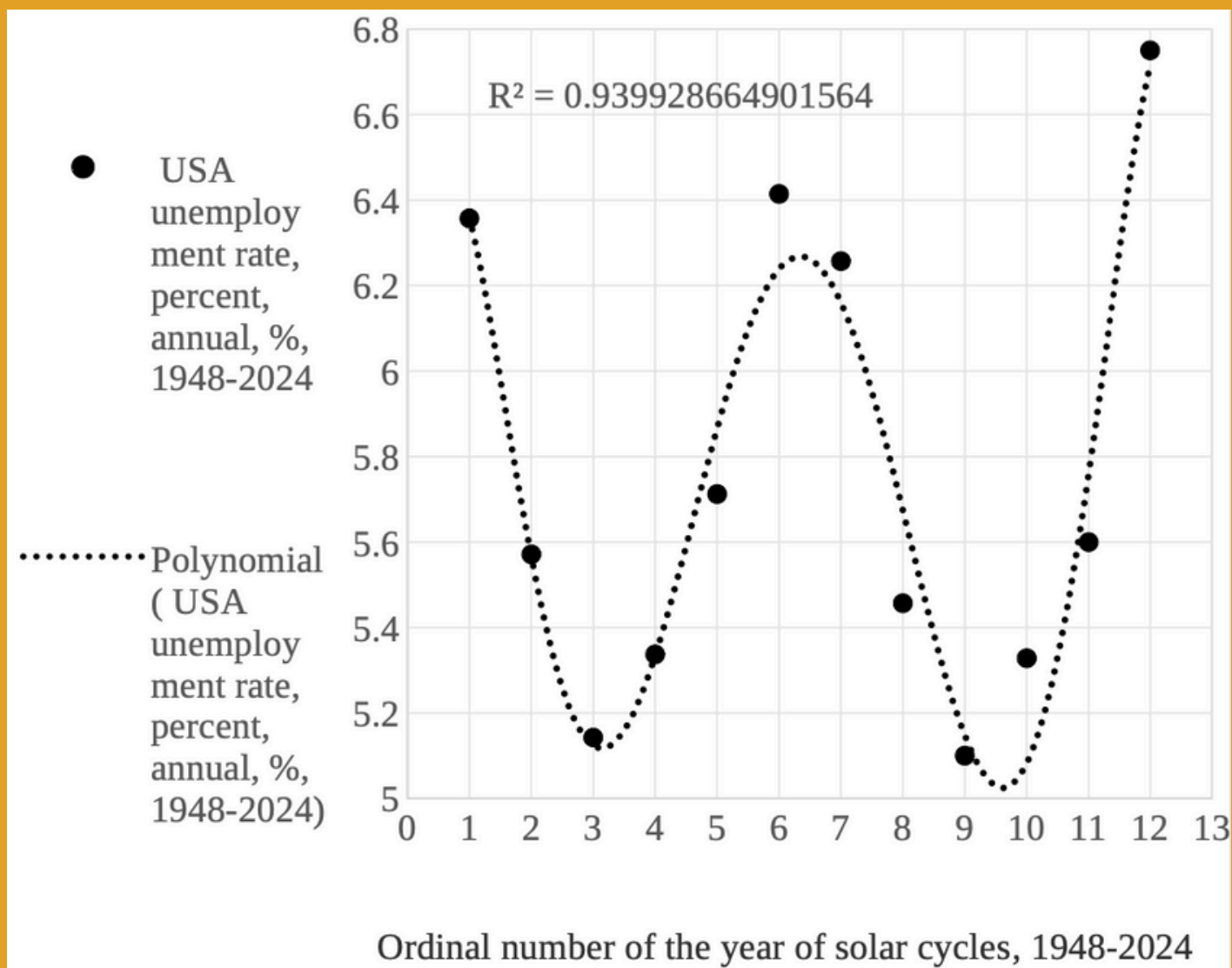
Decadal-scale variability in sea ice in the Okhotsk and Bering Seas exhibits an inverse relationship with the 11-year solar cycle.



During solar maximum years, sea ice increases in the Okhotsk Sea while decreasing in the Bering Sea. This phenomenon is linked to stratospheric ozone variations, which alter atmospheric circulation patterns and the Pacific Meridional Mode (PMM).

The persistence of sea surface temperature anomalies into spring further influences ice distribution. These findings highlight the role of solar forcing in shaping Arctic and sub-Arctic ice trends.

Beyond climate, solar cycles may also influence economic activity, including unemployment rates. A statistical analysis from 1948–2024 demonstrates a strong correlation between U.S. unemployment rates and solar cycle phases. For instance, periods of solar minima and maxima coincide with economic downturns, possibly due to biological and psychological effects of geomagnetic activity on human behavior.

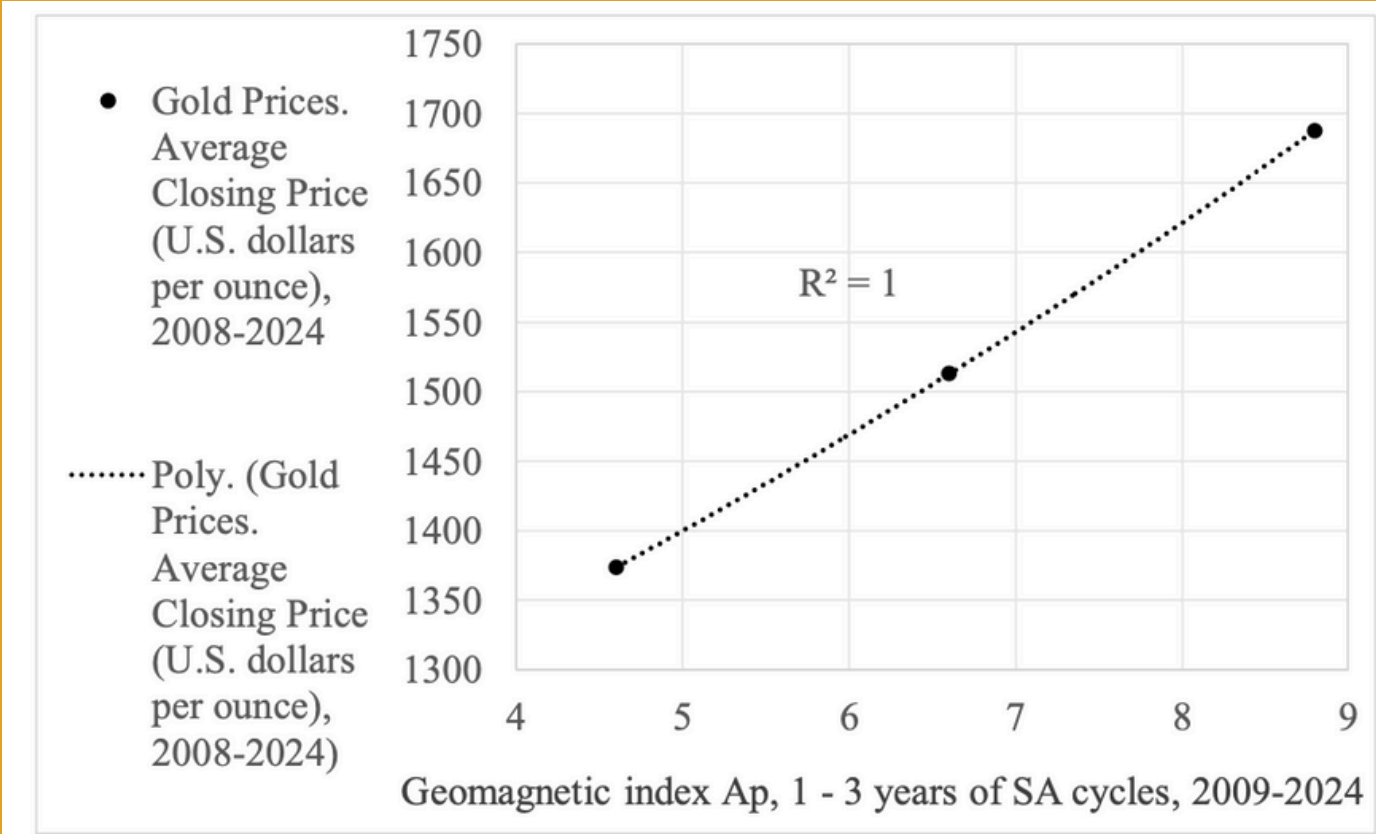


"Unemployment rate in the USA and ordinal numbers of years of the average solar cycle for 1948 - 2024, 77 years of observations"

REDUCED CAPILLARY BLOOD FLOW AND ALTERED MENTAL STATES DURING GEOMAGNETIC EXTREMES MAY CONTRIBUTE TO REDUCED BUSINESS CONFIDENCE, LEADING TO ECONOMIC SLOWDOWNS.

THE PREDICTED U.S. UNEMPLOYMENT RATE FOR 2025, BASED ON THIS MODEL, IS 4.49%. THIS SUGGESTS THAT HUMAN PRODUCTIVITY AND DECISION-MAKING IS SUBTLY INFLUENCED BY SPACE WEATHER.

Furthermore, let's continue to focus on economic cycles, including gold price fluctuations, in relation to solar activity. A study analyzing the relationship between the geomagnetic index (Ap) and gold prices from 2009–2024 found an exceptionally high correlation, with coefficients nearing ± 1.0 at different phases of the solar cycle. This suggests that market behaviors, investor sentiment, and commodity prices may be indirectly influenced by solar-induced geomagnetic changes.



"Gold price as a function of the geomagnetic index Ap, 1 - 3 years of cycles for 2009 - 2024. "

Historical research on solar-commercial cycles supports this connection. Theories dating back to the 19th century proposed that solar activity influences agricultural yields, which in turn affect economic cycles. More recent research suggests that fluctuations in Earth's magnetic field may impact investor confidence and risk-taking behavior.

If these findings hold, they could provide a novel approach to financial forecasting and risk assessment.

PRE-EARTHQUAKE SIGNALS

BY: BAILEY LAURISSA

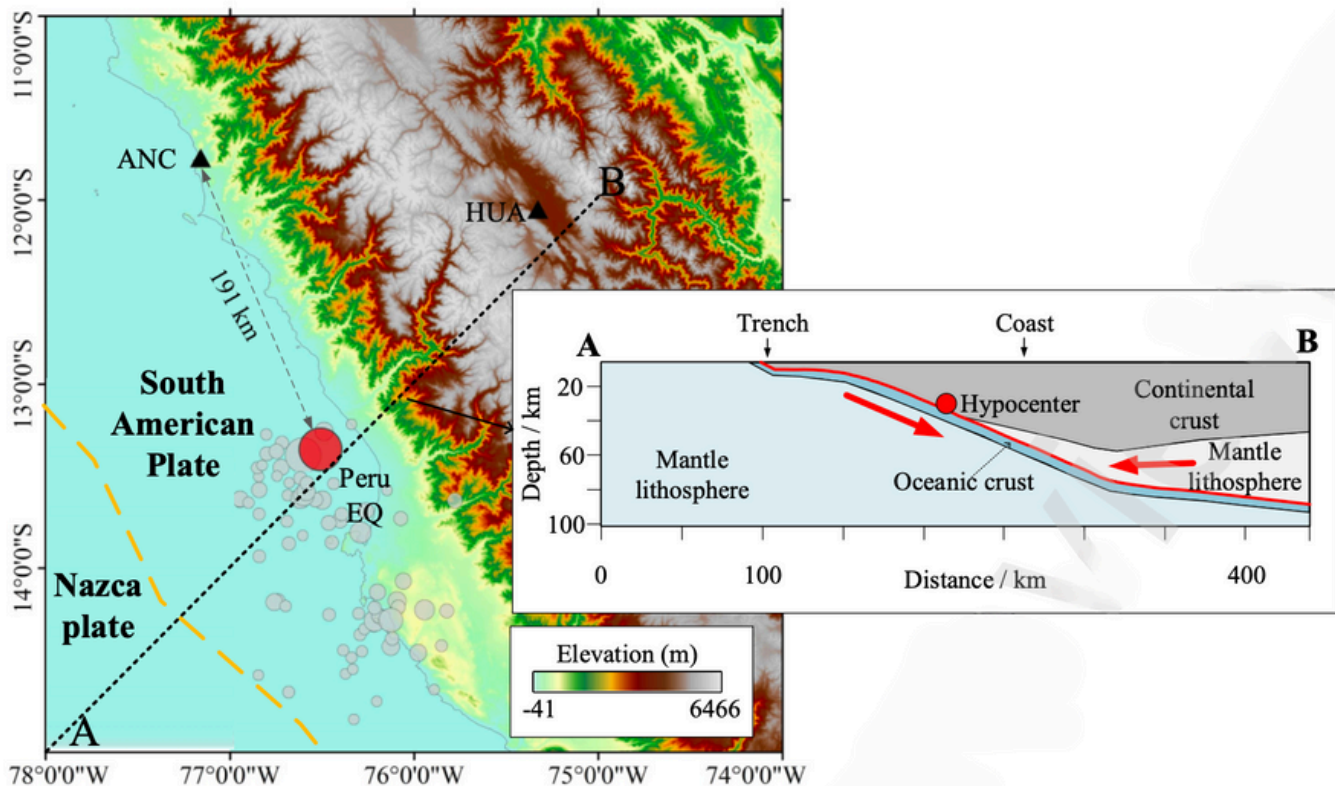
ARTICLE REFERENCED:

[HTTPS://PAPERS.SSRN.COM/SOL3/PAPERS.CFM?ABSTRACT_ID=5135468](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5135468)

[HTTPS://LINK.SPRINGER.COM/ARTICLE/10.1134/S001679322460070X](https://link.springer.com/article/10.1134/S001679322460070X)

[HTTPS://LINK.SPRINGER.COM/ARTICLE/10.1007/S11770-025-1172-5](https://link.springer.com/article/10.1007/S11770-025-1172-5)

This article explores solar forcing, pre-earthquake geomagnetic signals, and the findings of recent research in this field. The idea is that stress accumulation in tectonic plates can produce electromagnetic signals detectable in ultra-low frequency (ULF) and extremely low frequency (ELF) bands, which are influenced or exacerbated by solar activity. Let's discuss three new studies that showcase how pre-earthquake geomagnetic signals played a role in these events.



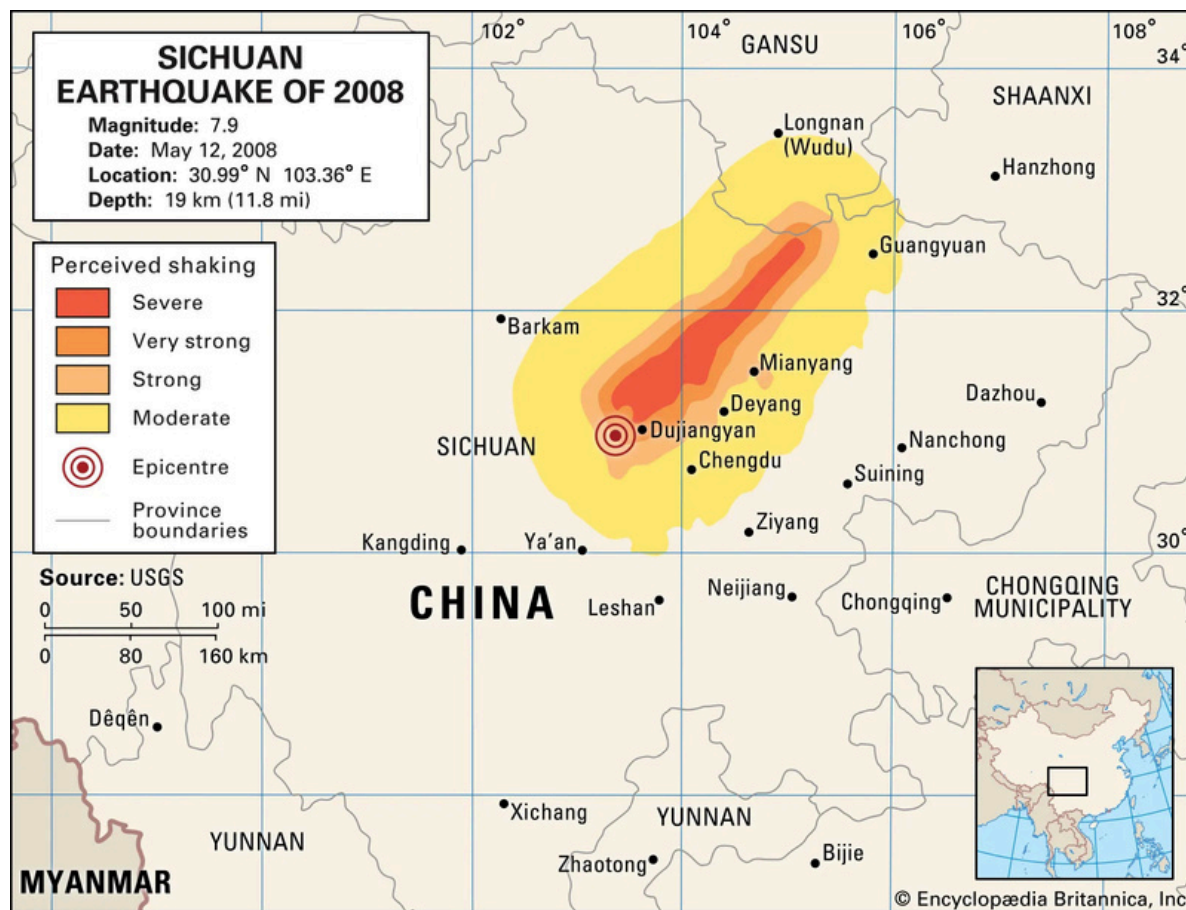
"Location map shows the EQ epicenter, the ANC and HUA stations, and the vertical profile (AB) shows the relative movement of Nazca plate and South American Plate."

A study on the August 15, 2007, Mw 8.0 Peru earthquake identified multi-type geomagnetic anomalies occurring before the event. Researchers proposed the PSRC mechanism, where rock stress generates electrical currents, leading to measurable electromagnetic disturbances. The study utilized ultra-low frequency (ULF) emissions and magnetic vector deflection analysis, finding anomalies linked to microcrack formation and crack interconnection phases. The development of the Forward Intersection of Magnetic Disturbance Vector (FIMDV) algorithm helped estimate the seismogenic zone, offering potential applications for earthquake prediction.

THE OBSERVER REVIEW

Research on earthquakes around the Indian subcontinent analyzed total electron content (TEC) in the ionosphere alongside ULF and very low frequency (VLF) measurements. The study found significant electromagnetic changes occurring 2 to 15 days before major earthquakes, supporting the lithosphere-atmosphere-ionosphere coupling (LAIC) hypothesis. This suggests that stress-induced electrical anomalies in the lithosphere can propagate through the atmosphere and affect the ionosphere, providing a multi-layered approach to earthquake monitoring.

The DEMETER satellite detected ELF anomalies six days before the Wenchuan Ms8.0 earthquake. The Wenchuan Earthquake, also known as the Great Sichuan Earthquake, struck China's Sichuan province on May 12, 2008, with a magnitude of 8.0. The epicenter was in Wenchuan County, about 80 kilometers northwest of Chengdu, the provincial capital.



Notably, an Ez component anomaly appeared three days before the event. While similar anomalies were observed over aseismic regions, the study reinforced the notion that electromagnetic disturbances could be correlated with seismic activity, though additional factors like ionospheric variations need further examination.

Continued exploration of PSRC, LAIC, and ELF anomalies will be crucial in bridging the understanding between predictive models and earthquake events.

A NANO-NOVA

BY: BEN DAVIDSON

ARTICLE REFERENCED:

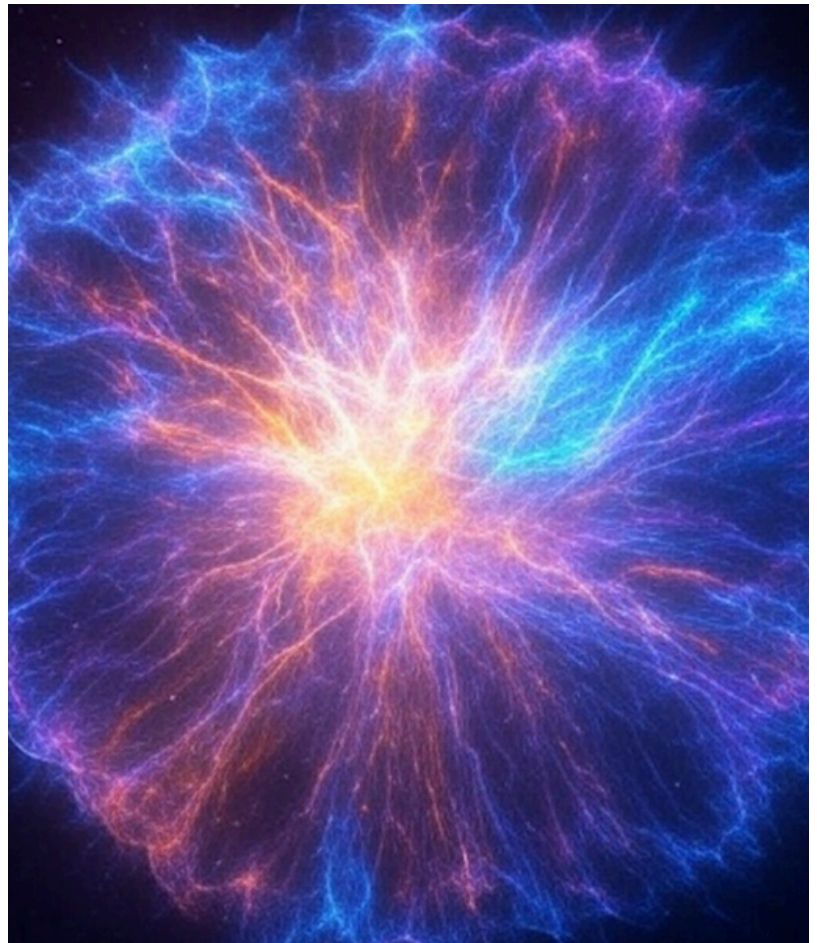
GAIA 19CWM – AN ECLIPSING DWARF NOVA OF WZ SGE TYPE WITH A MAGNETIC WHITE DWARF

A new stellar nova event has been observed. This was not a supernova, a classical nova, or even a micronova. While falling into the mechanistic class of dwarf novae, the luminosity puts this one in the “nano nova” category.

The X-ray blast of the nova reached 1.6×10^{31} ergs of energy - which is equivalent to about an X1.6 solar flare. That's not nothing, but when the sun is theorized to be capable of X1000 super flares, and we have direct evidence X500s, this frames this newly-discovered nova into a very tiny category, perhaps one all its own among known events.

When we proposed the solar micronova hypothesis in 2018, in addition to many ad hoc insults and appeals to authority, it was said that micronova couldn't possible exist, that nova could never be that small, and that you need a binary star to have a nova event. Since then, they discovered micronovae, and now nano-novae, while also discovering stars that went nova from simple accretion of material by non-binary source (such as a dense dust/gas cloud in space).

The earth-evidence says the sun has a nova level event. The physics is catching up



A CIRCUMSOLAR ERUPTION

BY: BEN DAVIDSON

A new study analyzing a major solar energetic particle event in 2013 has concluded that it amounted to a circumsolar impact of extreme radiation. Normally, solar flares trigger coronal mass ejections from the sun out into one direction of the solar system. Bigger blasts can expand to cover nearly 50% of the direction space, but still, the opposite side of the solar system is left untouched.

Solar energetic particles are a little different, they can curve along the magnetic fields connecting the sun and planets, but they are usually also pretty directionally confined along that curve. A full 360 radiation impact of high energy protons isn't supposed to be possible, and certainly isn't normal. UCAR/NCAR actually modeled such a full-equatorial blast many years ago for the government, but no real follow-up research has taken place.

The identification of this event is a reminder that not everything in solar physics is understood, and that the capability for our sun to impact the entire solar system at once - via protons or a micronova - shouldn't be ruled out by even the strongest skeptics.

ARTICLE REFERENCED:
ON THE REASON FOR THE WIDESPREAD ENERGETIC
STORM PARTICLE EVENT OF 13 MARCH 2023



OZONE-CLIMATE INTERACTIONS

BY: BAILEY LAURISSA

ARTICLE REFERENCED:
EXPLORING OZONE-CLIMATE INTERACTIONS IN
IDEALIZED CMIP6 DECK EXPERIMENTS

Ozone plays a crucial role in regulating Earth's climate and atmospheric chemistry. The CMIP6 DECK experiments provide insight into how stratospheric ozone responds to changes in climate. This article explores the mechanisms of ozone-climate feedback in the context of CMIP6 experiments and as they can be related then to large-scale disruptions caused by variations in Earth's magnetic field and solar activity. Stratospheric ozone is highly sensitive to temperature and circulation changes. Under the study's "increased" CO₂ forcing, ozone experiences responses, including Tropopause Expansion and Ozone Transport, the Acceleration of Brewer-Dobson Circulation, Stratospheric Cooling, and Tropical Upwelling. In this Co2 lens, Surface warming leads to an expansion of the tropopause, replacing ozone-rich stratospheric air with ozone-poor tropospheric air, resulting in ozone depletion near the tropopause. Rising tropical tropospheric temperatures enhance subtropical jet speeds, increasing upwelling and poleward transport of ozone. This redistributes ozone, increasing its presence in the extratropical lower stratosphere but decreasing it in the tropical lower stratosphere. In the upper stratosphere, ozone increases due to reduced photochemical destruction, while the lower stratosphere sees competing effects from transport and chemistry. These models indicate stronger tropical upwelling with warming, correlating with a depletion of lower-stratospheric tropical ozone.

Now, if we take a look at Earth's catastrophe cycle—characterized as we know by shifts in the magnetic field, solar superflares, and cosmic ray influx—has significant implications for ozone dynamics. Some of these key mechanisms include Magnetic Field Weakening and Cosmic Ray Penetration, Solar Proton Events and Ozone Loss, and Formation of New Ozone Holes.

A declining magnetic field allows increased solar and cosmic rays to reach the atmosphere, leading to intensified ozone depletion. This phenomenon is exacerbated during geomagnetic reversals or significant pole shifts.

During moderate solar proton events, ozone loss can range between 33-47%, while extreme events may result in 73-85% depletion. These figures align with historical records of solar-induced atmospheric disturbances.

Observations indicate new ozone-depleted regions, such as those found in the tropics, are emerging due to changes in the Earth's energy balance and atmospheric dynamics. These patterns echo past catastrophic events in Earth's climate history. Solar flares and magnetic field shifts can lead to abrupt and severe ozone depletion.

SOLAR IMPACT TO ATMOSPHERIC ELECTRICITY

BY: BEN DAVIDSON

ARTICLE REFERENCED:
IMAGE SATELLITE AND GROUND-BASED MAGNETOMETER
OBSERVATIONS OF LARGE GEOMAGNETIC DISTURBANCES AND
RAPID VARIATIONS IN IONOSPHERIC AND VERTICAL CURRENTS

A new investigation explores how solar activity drives geomagnetic disturbances and subsequently impacts the global electric circuit (GEC), with a particular focus on vertical currents. The GEC is a continuous electrical system linking the ionosphere to the Earth's surface, sustained by vertical currents flowing downward in fair-weather regions, upwards in high pressure.

Solar storms increase ionospheric conductivity and alter the potential gradient between the ionosphere and the ground, leading to measurable fluctuations in the GEC's vertical currents. During intense geomagnetic events, these currents can intensify or weaken.

The impact of these solar-driven changes extends to atmospheric electricity, notably influencing the fair-weather electric field and thunderstorm dynamics.

By integrating data and theoretical analysis, the study concludes that solar activity acts as a significant external modulator of the GEC and atmospheric electricity, with vertical currents serving as a key conduit for these effects.

This is how the sun directly impacts clouds, wind, storms, and temperatures, and its impact will continue to grow as the weakening magnetic field allows more energy into the earth system.



MAJOR HYDROCLIMATE EVENT 6000 YEARS AGO

BY: BEN DAVIDSON

ARTICLE REFERENCED:
[ABRUPT CONTRACTION OF THE INDO-EAST ASIAN
MONSOONS ENDED THE HOLOCENE HUMID PERIOD](#)

A new paper documents a dramatic and abrupt contraction of the Indo-East Asian monsoon systems around 6000 years ago, which terminated the Holocene Humid Period (HHP) of elevated moisture across northern China and the monsoon margins, which began about 12,000 years ago.

The study shows that these lakes—previously swollen with water during the early to mid-Holocene—shrank significantly within just a few decades. This event's severity is striking: lake surface areas dropped dramatically and never recovered to their pre-6 ka extents

The shift described here is the same hydroclimate shift that caused the greenest of the green-Saharan periods. This caused the cataclysmic flooding of eastern Europe, the Middle East and northeast Africa. This was the Tianchi geomagnetic excursion, aligning with the Noah event. As time marches forwards, we only get more and more evidence of the severity of these past cyclic events.



JUPITER'S FIELD IS SHRINKING

BY: BEN DAVIDSON

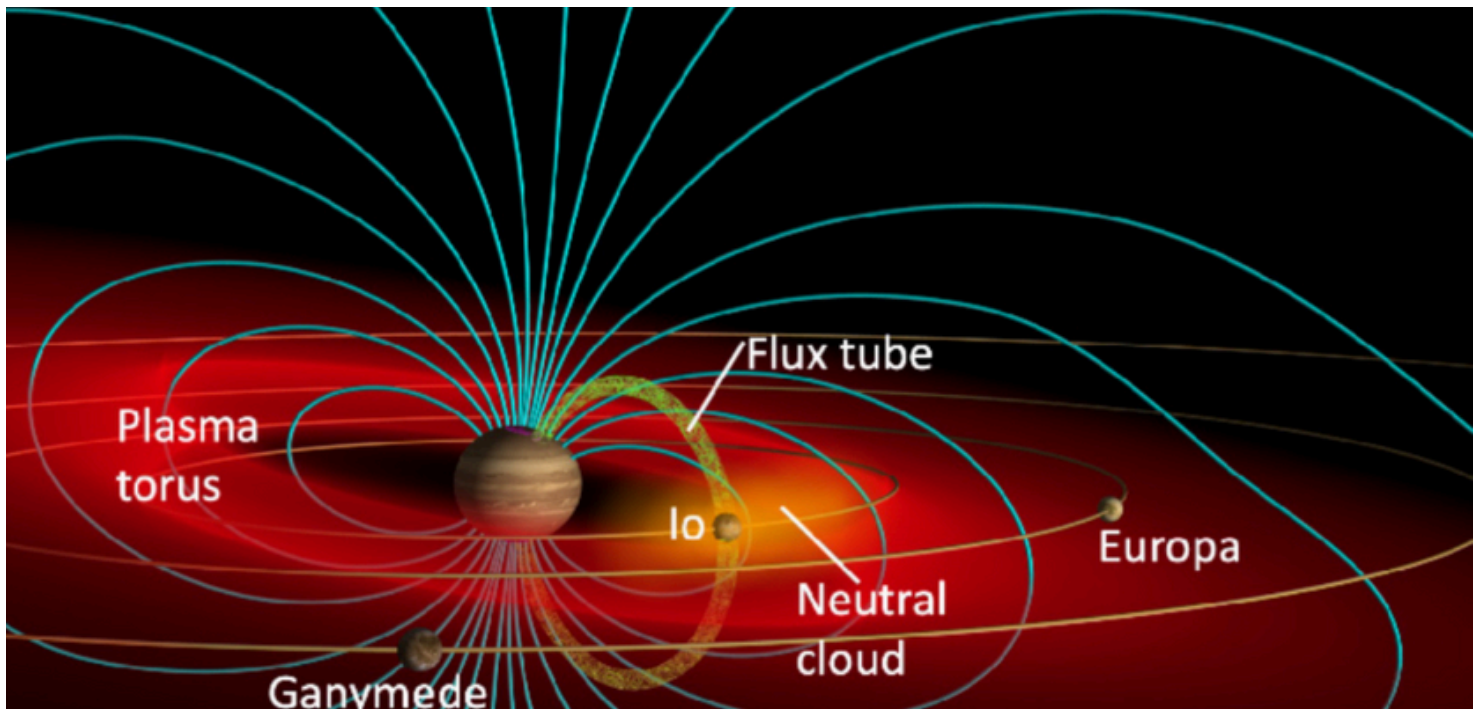
ARTICLE REFERENCED:
NEW MODELS OF JUPITER'S MAGNETOPAUSE AND BOW SHOCK
THROUGH THE JUNO PRIME MISSION: PROBABILISTIC
LOCATION, SHAPE, AND INTERNALLY-DRIVEN VARIATION

A new study reveals that Jupiter's magnetic field, as probed by the Juno spacecraft, is smaller and more irregularly structured than it used to be.

Earlier reports, like those from the Voyager missions, suggested a vast magnetosphere extending up to 100 Jupiter radii (R_J) at its boundary, driven by a robust internal dynamo and solar wind interaction. However, Juno's observations during polar cyclones and thundercloud events show the magnetopause—the boundary where the magnetic field meets the solar wind—closer to the planet, at times as near as 50–70 R_J , with a patchier, less uniform field than the anticipated smooth, dipole-dominated structure.

The surprise came from the energetic electron fluxes (>100 keV) and X-ray aurorae tied to atmospheric storms rather than a stable magnetospheric configuration, indicating a dynamic, weather-influenced field that doesn't buffer the solar wind as effectively as thought.

The Jovian contribution to the solar system shift is pretty robust. This marks the 2nd direct piece of magnetic-change evidence at Jupiter (the other being the radio emission changes) to be the icing on dozens of atmospheric anomalies already documented.



THE TRUTH COMES OUT: RFK JR. AND THE VACCINE RECKONING

BY: ADRIAN DAMICO

The tides are turning. After years of relentless censorship, gaslighting, and corporate-controlled “science,” the truth about the COVID vaccine is finally breaking through the cracks of the mainstream narrative. For those who were skeptical from the beginning—who questioned the rushed approval, the coercion, and the blatant suppression of dissenting voices—this moment is vindication.

Leading the charge against the fraud, corruption, and outright deception surrounding the COVID vaccine is Robert F. Kennedy Jr. and his Make America Healthy Again (MAHA) movement. As more disclosures emerge about the vaccine’s dangers, its lack of proper testing, and the systemic cover-up of severe side effects, RFK Jr. is rallying Americans to demand accountability, medical freedom, and an end to the Big Pharma stranglehold on public health. **The Great COVID Deception: What We Now Know**

For nearly four years, Americans have been subjected to one of the greatest coordinated propaganda campaigns in modern history. Anyone who dared to question the rushed development of the vaccine was labeled a “conspiracy theorist,” “anti-science,” or even a threat to public health. Governments around the world, backed by unelected health bureaucracies and corporate media, pushed an experimental mRNA injection as the only path forward—all while actively suppressing alternative treatments, natural immunity discussions, and any scientific inquiry that questioned the official narrative.

But now, the cracks in the dam are undeniable. Whistleblowers, leaked documents, and new studies are confirming what many of us already suspected:

- The vaccine was never properly tested for long-term safety. Emergency Use Authorization (EUA) was granted under conditions that ignored standard vaccine development protocols, bypassing critical animal trials and longitudinal human studies.
- Side effects were deliberately downplayed and hidden. Myocarditis, pericarditis, neurological disorders, immune dysfunction, fertility concerns, and even sudden deaths were dismissed or explained away as “rare” despite overwhelming evidence to the contrary.
- Pfizer and Moderna knew about potential risks—and still pushed forward. Internal documents now confirm that these pharmaceutical giants were aware of adverse reactions but colluded with government agencies to suppress data.
- VAERS reports were ignored and downplayed. The Vaccine Adverse Event Reporting System (VAERS) saw an explosion of reports after the COVID vaccine rollout, far surpassing any other vaccine in history. Yet, the medical establishment refused to investigate the alarming trends.
- The vaccine did not “stop the spread.” The entire premise of mandates—forcing people to get jabbed to “protect others”—was built on a lie. Even top health officials admitted that transmission was never properly studied before rolling out mandates.

RFK Jr. and MAHA: A Movement for Truth and Medical Freedom

While politicians and health officials scramble to rewrite history, one man has consistently called out the corruption from the beginning: Robert F. Kennedy Jr.

As a long-time critic of Big Pharma's unchecked power, vaccine safety violations, and the weaponization of public health, RFK Jr. has been at the forefront of exposing the COVID vaccine fraud. Through his Make America Healthy Again (MAHA) movement, he is mobilizing millions of Americans to fight back against the medical tyranny that was unleashed on the world.

The MAHA movement is about more than just vaccines. It's about:

- Ending corporate control over health policy. No more CDC officials sitting on pharmaceutical boards. No more government agencies acting as marketing firms for drug companies.
- Restoring medical freedom. The right to choose what goes into your body without coercion, threats, or mandates.
- Holding Big Pharma and corrupt officials accountable. Criminal investigations into those who knowingly misled the public, covered up vaccine dangers, and profited off human suffering.
- Demanding full transparency and independent oversight. Americans deserve to see the real data, not cherry-picked studies funded by the same companies selling the drugs.
- Protecting children from experimental injections. No more rushed vaccines with no liability for harm.

The Potential Ban on the COVID Vaccine: Is It Possible?

With new lawsuits, congressional inquiries, and growing public outrage, the possibility of a COVID vaccine ban is no longer a fringe idea. Countries like Denmark and Sweden have already limited the shots for younger populations, acknowledging the risks of myocarditis and other life-altering side effects. The question is: When will the U.S. follow suit?

RFK Jr. and others are advocating for an immediate suspension of the COVID vaccine program, pending a full investigation into its safety and approval process. This includes:

- A complete moratorium on all COVID shots until independent, long-term studies can be conducted.
- Stripping liability protections from vaccine manufacturers. If these shots are "safe and effective," why do pharmaceutical companies need immunity from lawsuits?
- Defunding government programs that promote experimental vaccines. No more taxpayer dollars for deceptive marketing campaigns.
- Compensation for those harmed. Vaccine injury victims have been silenced for too long—it's time for justice and reparations.

The Battle Ahead: What Can We Do?

The fight for medical freedom is far from over. The same forces that pushed mandates, censorship, and mass compliance are now trying to rewrite history, gaslight the public, and shift blame. The “we didn’t know” defense is already being rolled out by officials who once claimed to “follow the science.”

But we know the truth. And now, we must act.

Here’s how we can support RFK Jr. and the MAHA movement:

- Spread awareness. Share the real data, testimonies, and legal battles happening right now.
- Hold lawmakers accountable. Demand investigations, hearings, and legislative action to ban dangerous mandates and protect medical freedom.
- Support independent journalism and whistleblowers. Mainstream media won’t report on this—we have to build alternative channels for truth.
- Resist future mandates and coercion. We will not comply with another wave of experimental injections, lockdowns, or medical authoritarianism.
- Join the MAHA movement. Stand with RFK Jr. in demanding an end to the vaccine-industrial complex.

Conclusion: A Defining Moment in History

The COVID vaccine rollout was not just a medical event—it was a test of human rights, government overreach, and mass deception. Those who spoke out were demonized, censored, and even fired from their jobs. But the truth has a way of coming out.

RFK Jr. and the MAHA movement represent a reckoning—a call for justice, a demand for transparency, and a movement to reclaim our health and autonomy.

The question now is: Will we hold those responsible accountable? Will we ban this vaccine and ensure this never happens again?

Or will we let history repeat itself?

The choice is ours. And the fight is just beginning.

A FELLOW OBSERVER HAS CREATED THE SOLAR KILLSHOT NETWORK

The Solar Killshot Network is the only worldwide, member-led, collaborative organization on a mission to connect members locally so they can find or form micronova survival groups.

The Network is nurtured by Sol Survivors for Sol Survivors, so you'll get resources, training, and support from people who understand your unique survival goals, and in a format that makes it easy for you to stay focused and take action

SOLAR KILLSHOT ACTION NETWORK

Learn the secrets of successful survival groups; ones you can trust to care for you and your family if—for whatever reason—you can't.

Discover the essential survival skills to focus on first, rather than waste time, money, and energy researching rabbit holes on your own. Coming Soon

Customize our community-built micronova action planner to fit your unique needs, budget, lifestyle, and location.

[CLICK TO LEARN MORE](#)



**Solar Killshot Action Network |
Micronova Survival Groups**

The Solar Killshot Action Network is a professional survivalist association that connects members...

solarkillshot.org

[OBSERVER] [RANCH]

Campground for Today, Education for Tomorrow

CAMP, LEARN AND PLAY WITH US!



Learning Center & Library

Our campground has a Learning Center with classes and workshops, and the Little Spark Library holds 350+ books with resources on space, nature, homesteading, self-sufficiency and more!



Campfire under the Stars

Use our telescopes to enjoy the night sky! With beautiful mountain views, and attractions like hot springs, hiking, fishing, Jeep tours, skydiving, whitewater rafting...the list of adventures will be one to remember! During the day, assemble and launch a model rocket from our friends at Estes Rockets!



Spacious RV Sites

Our sites have plenty of room to spread out, each with a campfire ring, POLYWOOD adirondack and table set for your enjoyment.



CONTACT US

719-203-2436

www.ObserverRanch.com

BY THE NUMBERS

SPACE WEATHER NEWS STATISTICS:

LAST MONTH:

790,658 SUBSCRIBERS

267,928,692 LIFETIME VIEWS

THIS MONTH

790,989 SUBSCRIBERS

269,303,346 LIFETIME VIEWS

WATCH OUR DAILY YOUTUBE VIDEOS

**We've been providing daily updates since 2011 on our YouTube channel:
Suspiciousobservers:**



**SCAN TO ACCESS THE
YOUTUBE CHANNEL!**

THANK YOU!

**WE HOPE YOU ENJOYED OUR MARCH ISSUE!
WE APPRECIATE YOUR QUEST AND LOVE FOR KNOWLEDGE
ABOUT SPACE AND OUR GREATER COSMOS.**

HAVE A TOPIC/DISCUSSION YOU WANT FEATURED?
Email observerreview@observerranch.com with a topic
that you'd love to see an article written on!

