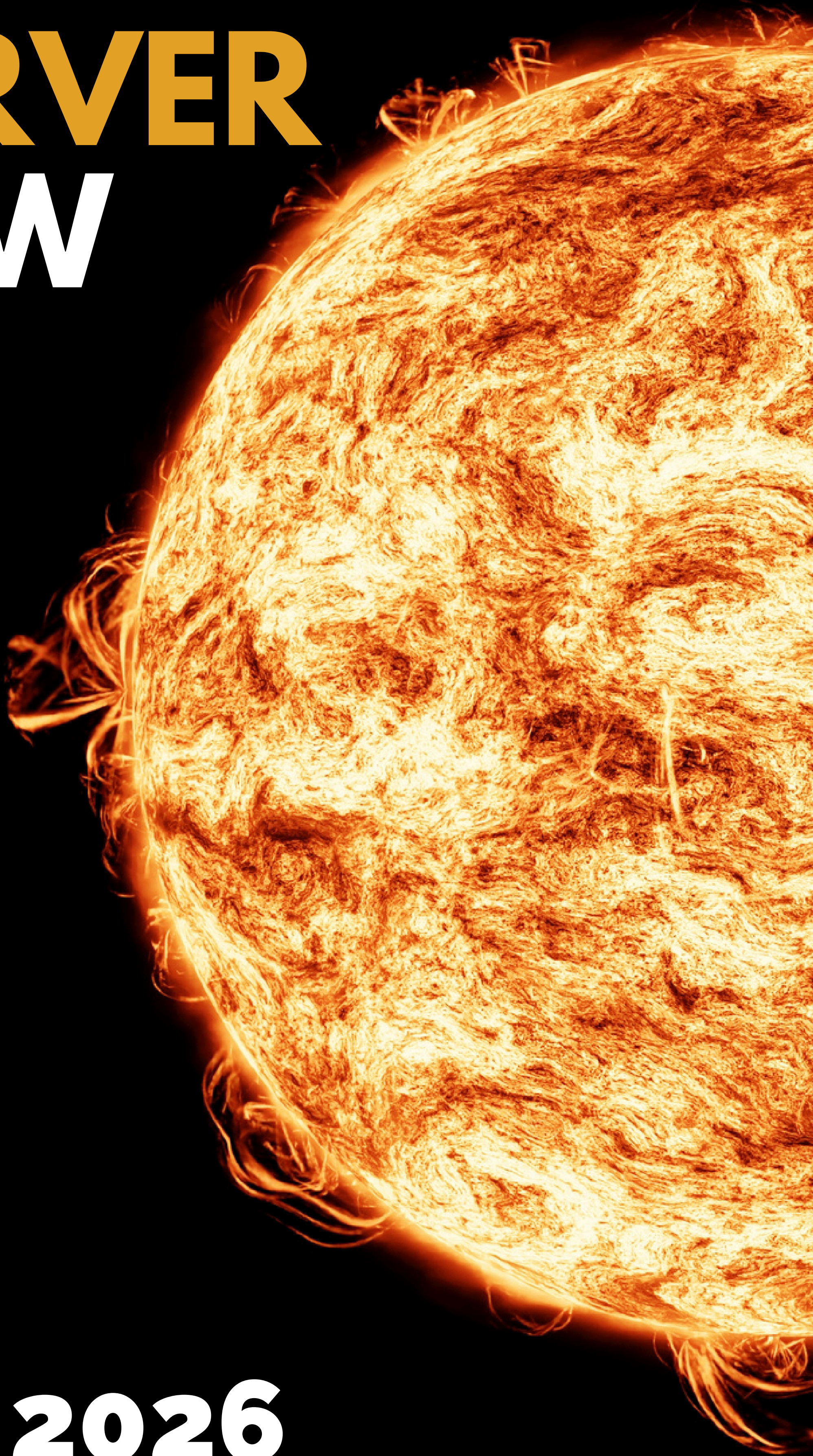
THE OBSERVER REVIEW



MARCH 2026

CONTENTS

MARCH

AND MORE!

MAJOR PLASMA INTRUSION
(POLE SHIFT EFFECT)

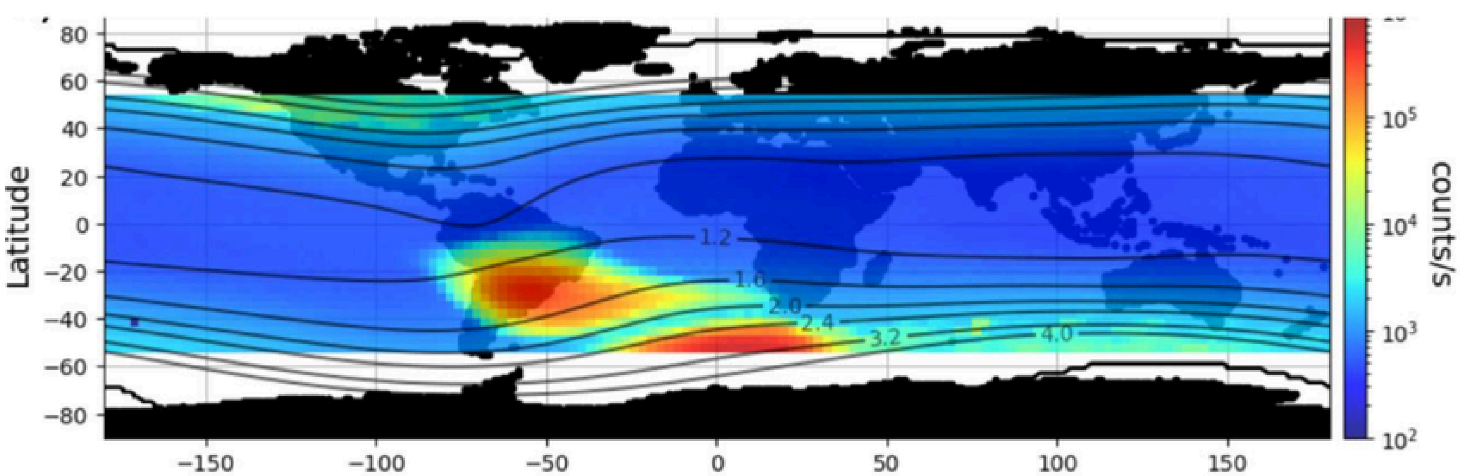
BY: BEN DAVIDSON

ARTICLE REFERENCED:
EFFECTS OF THE MAY 2024 SOLAR STORM ON THE EARTH'S RADIATION BELTS OBSERVED BY CALET ON THE INTERNATIONAL SPACE STATION

The May 2024 solar superstorm has been a point of great interest for nearly two years. Not only was it the largest solar storm in over 20 years, and broke several space weather records in terms of earth-impact, but the solar eruptions that caused the storm were far weaker than those triggering storms of similar magnitude.

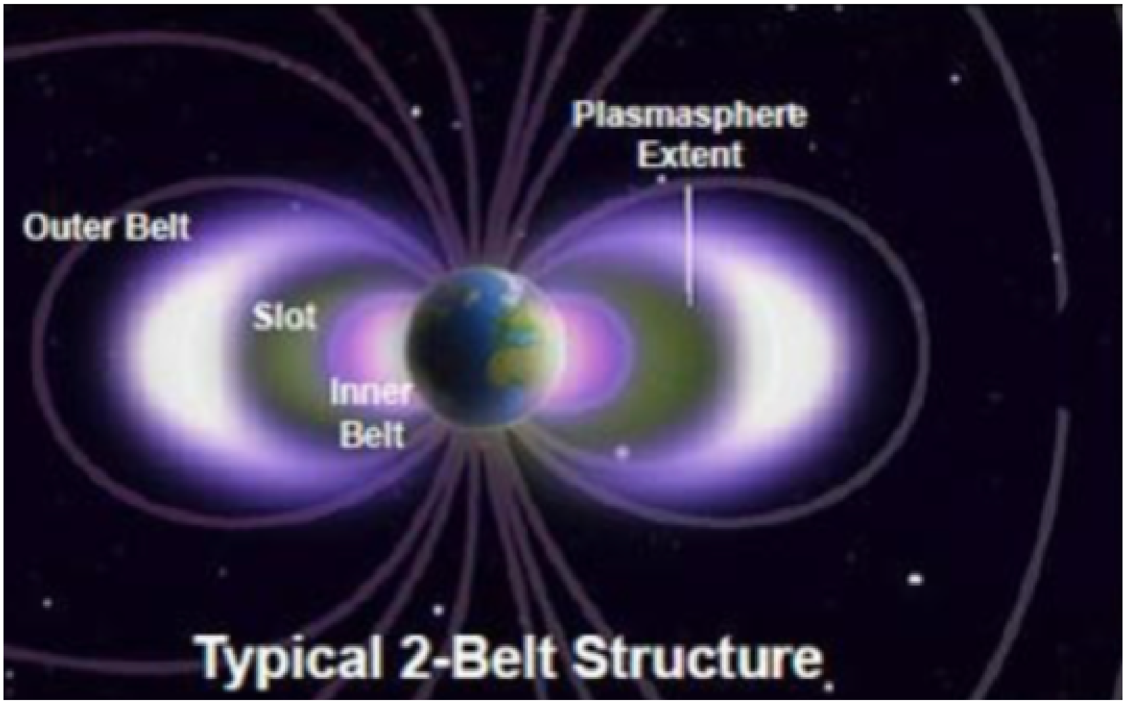
The image above shows the ionospheric excitement caused by space plasma/energy penetration into the atmosphere. The red/yellow area over South America is the “South Atlantic Anomaly”, the weakest point in earth’s magnetic field.

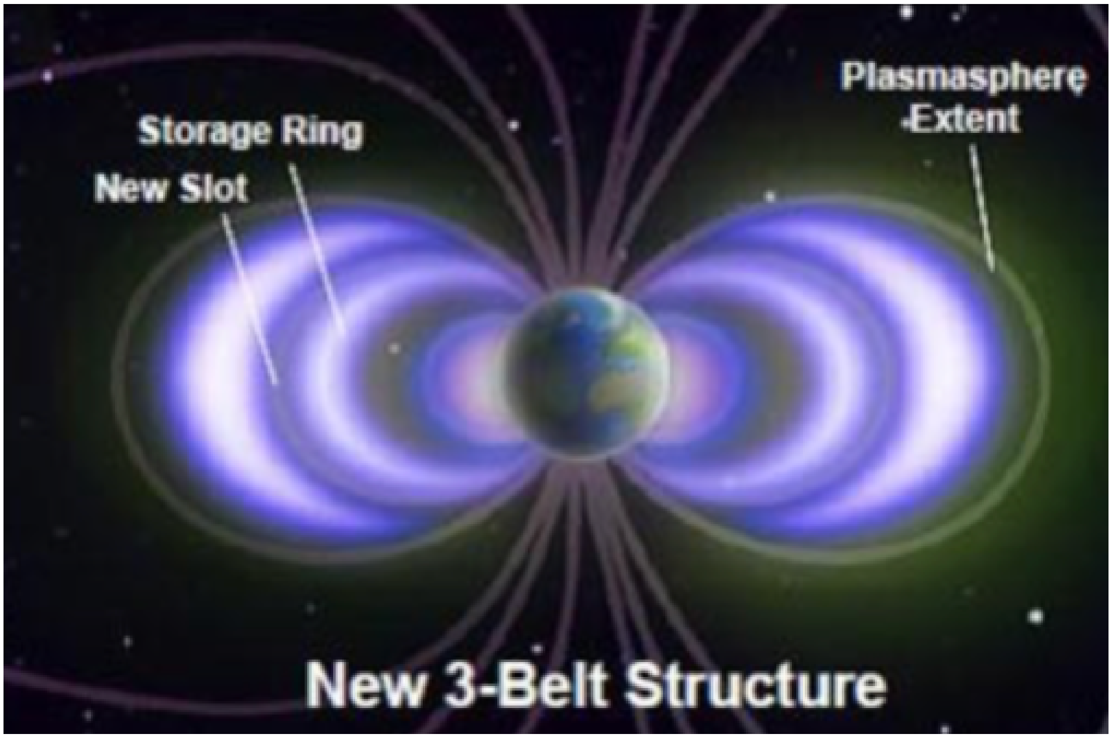
THE REST OF THE MAP IS SUPPOSED TO BE BLUE WITH A LIGHT TEAL/AQUA-GREEN FRINGE NEAR THE POLAR REGIONS. INSTEAD WE SEE A POWERFUL RED SIGNATURE IN THE FAR SOUTHERN ATLANTIC THAT BLEEDS OFF THE DATA RANGE INTO THE WHITE ZONE.



This was plasma penetration driven by the creation of a rare new electron belt above the atmosphere. This belt broke records of its own, but most important was the injection of that energy into the atmosphere.

This type of injection at larger scale would begin to impact air travel, satellites, and power grids, in addition to atmospheric circulation. As earth's magnetic field strength continues weakening in the ongoing geomagnetic excursion this type of event will be more common along with the exceeds-expectation auroral displays.





COMET MAPS WILL HIT THE SUN APRIL 4TH

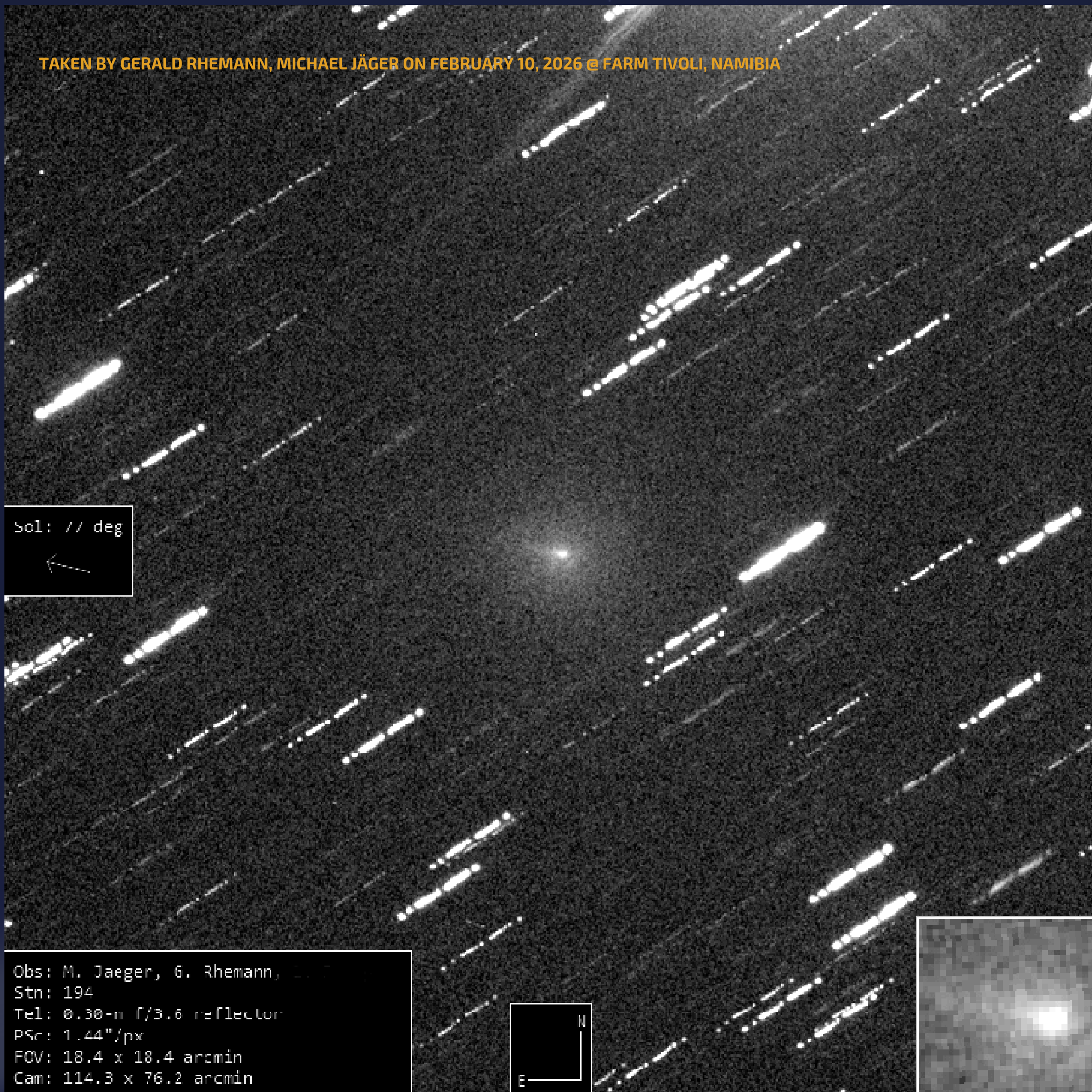
ARTICLE REFERENCED:
C/2026 A1 MAPS

A newly discovered comet is rapidly brightening as it heads toward a dramatic encounter with the Sun. Known as C/2026 A1 (MAPS), the object belongs to the famous Kreutz sungrazer group, a group of icy fragments that plunge extremely close to the Sun during their orbits.

What makes this comet particularly intriguing is how early it was discovered. Sungrazers are usually spotted only days before they reach the Sun, but MAPS was identified months ahead of its closest approach. That unusual early detection is giving astronomers a rare opportunity to track the comet's evolution long before it dives into the solar furnace on April 4, 2026.

Since the beginning of the year, the comet has already brightened dramatically, increasing in brightness by roughly four to five magnitudes. In astronomical terms, that corresponds to a roughly 40–100 fold increase in brightness.

TAKEN BY GERALD RHEMANN, MICHAEL JÄGER ON FEBRUARY 10, 2026 @ FARM TIVOLI, NAMIBIA



The comet has also begun developing the classic features that mark an active comet approaching the Sun. Observations now show a faint gas coma about six arcminutes wide, along with a thin jet-like tail roughly three arcminutes long. While these structures are still faint, their presence indicates that the comet is already releasing gas and dust as solar heating intensifies.

High-resolution images taken by the James Webb scope reveal the tail jet particularly clearly, suggesting that the comet's nucleus is already venting material from localized active regions. These jets form when sunlight heats pockets of volatile ice beneath the comet's surface, causing gas to erupt outward and drag dust into space.

The Kreutz sungrazers are thought to be fragments of a giant comet that broke apart centuries ago. Most of them are extremely small and only become visible when they are already very close to the Sun. Because of this, astronomers usually observe them only briefly before they disintegrate.

MAPS is different. Its early discovery allows scientists to monitor how a sungrazer develops over time: how quickly its coma grows, how its tail structures form, and whether the nucleus shows signs of fragmentation before reaching the Sun.

The comet has already provided interesting viewing opportunities. On February 10, it passed near the planetary nebula NGC 1360, allowing astrophotographers to capture striking images of the comet against the faint glow of the nebula.

As the comet continues to approach the Sun, astronomers are closely watching how quickly its brightness increases. Some members of the Kreutz group have become spectacular objects near perihelion, even visible in daylight.

One of the most famous examples is Comet Ikeya–Seki, which became one of the brightest comets of the twentieth century. Another was Comet Lovejoy, which remarkably survived its close solar passage and produced a dramatic tail afterward.

If MAPS continues brightening at its current pace and remains structurally intact, it could potentially become visible very close to the Sun in the sky around its perihelion on April 4. However, predicting the behavior of sungrazing comets is notoriously difficult.

At perihelion, MAPS will pass extremely close to the Sun, likely within just a few solar radii of the solar surface. At that distance, the comet will encounter intense solar radiation, powerful tidal forces, and temperatures high enough to rapidly vaporize ice and dust.

Many sungrazers do not survive this encounter. Some fragment before reaching perihelion, while others completely evaporate during their solar passage. A few, however, manage to survive the ordeal and emerge with long, luminous tails.

Whether MAPS will endure this solar encounter remains uncertain. Its ultimate fate depends on the size and structural strength of its nucleus, which is likely only tens to perhaps hundreds of meters across.

As April approaches, scientists and skywatchers alike will be watching closely to see whether this icy visitor becomes a brilliant daylight spectacle or quietly disappears into the solar atmosphere.

SPACE WEATHER AND VIOLENCE

ARTICLE REFERENCED:
HIGH-RESOLUTION PALEOCLIMATE RECORD FROM HAINAN ISLAND REVEALS SOLAR-FORCED HYDROCLIMATIC VARIABILITY IN TROPICAL CHINA DURING THE LATE HOLOCENE

A 2026 paleoclimate study led by Yao Wang and colleagues reconstructed hydroclimatic conditions from lake sediments on Hainan Island in tropical China. The research analyzed multiple geochemical and biological indicators preserved in sediments from the Shuangchiling volcanic crater lake.

Using high-resolution radiocarbon dating and environmental proxies such as iron mineral ratios, magnetic susceptibility, and biogenic silica levels, the researchers reconstructed rainfall variability over the past several thousand years. Their results revealed a striking pattern: precipitation in tropical Southeast China shows a measurable relationship with solar activity on centennial time scales.

Specifically, the study identified periodicities around roughly 130 years and 300 years where precipitation changes were negatively correlated with total solar irradiance. During intervals of stronger solar output, regional rainfall tended to decline, while weaker solar output corresponded with wetter conditions. The authors suggest that this relationship may operate through solar influences on the El Niño–Southern Oscillation, which then shifts the position of the Intertropical Convergence Zone and alters monsoon behavior and typhoon activity across East Asia.

Historical research shows that droughts, crop failures, and floods frequently coincide with episodes of famine, migration, and political unrest.

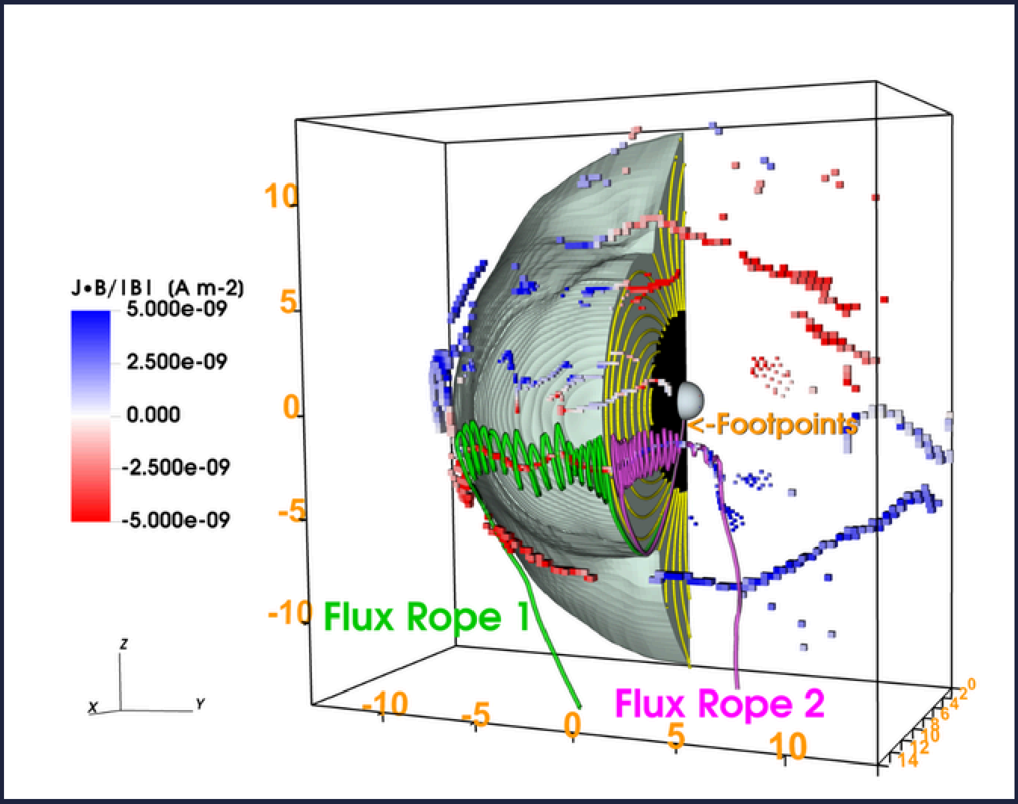
Examples include, severe droughts contributing to the collapse of ancient civilizations such as the Maya and the Akkadian Empire, crop failures during the Little Ice Age correlating with peasant revolts and political upheaval across Europe and Asia, and modern studies linking extreme heat and drought conditions to increased crime and conflict rates

Climate acts as a stress multiplier. When water supplies decline, agricultural productivity drops. Food prices rise, migration increases, and governments face mounting pressure. In many cases, these environmental stresses interact with existing political tensions, pushing societies toward instability.

GEOELECTRIC IMPACT BY SPACE WEATHER

ARTICLE REFERENCED:
GEOELECTRIC FIELD CAUSED BY FLUX TRANSFER EVENTS IN AN IONOSPHERE-COUPLED VLASIATOR SIMULATION

A new study explores how space weather events can influence electric fields on the ground. Researchers studied flux transfer events (FTEs), when magnetic fields from the sun's solar wind reconnect with Earth's magnetic field, forming twisted bundles of magnetic flux called flux ropes.



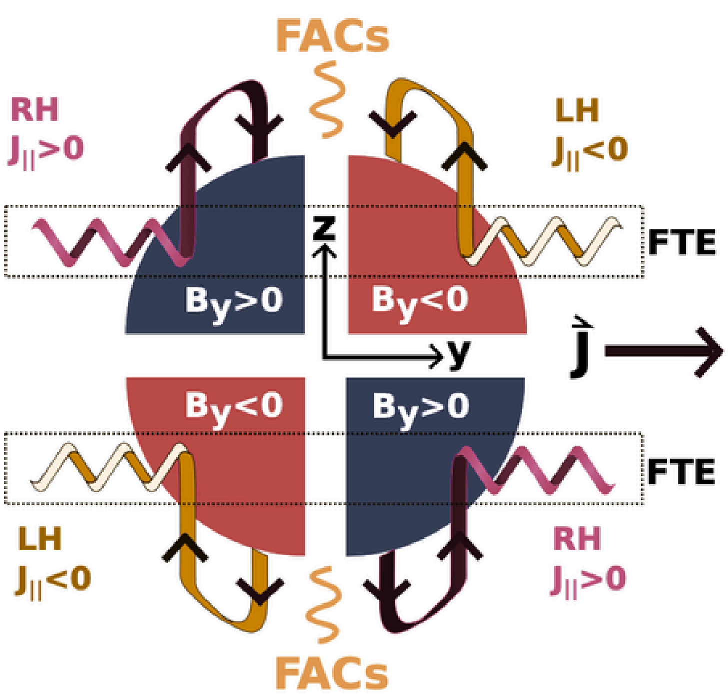
"THE FTES AT SIMULATION TIME T = 1165 S. THE CUTAWAY SHOWS THE Y < 0 HALF OF THE MAGNETOPAUSE, I.E. THE B⋆=0.5 ISOSURFACE (XU ET AL., 2016; HORAITES ET AL., 2023). YELLOW MAGNE- TOSPHERIC FIELD LINES ARE SHOWN ON THE MERIDIONAL PLANE FOR REFERENCE. VLASIATOR'S IONOSPHERE IS SHOWN BY A CENTRAL SPHERE, AND THE REGION RB < R < RM BETWEEN THE MAGNETOSPHERIC AND IONO- SPHERIC DOMAINS IS SHOWN IN BLACK. THE PARALLEL CURRENT J ∥ EVALUATED AT THE FTE O-LINES IS SHOWN IN A BLUE-RED SCALE. TWO FLUX ROPES, 1 AND 2, IN THE SAME FTE ARE TRACED FROM STARTING POSITIONS X1, X2 ON EITHER SIDE OF A 3D MAGNETIC NULL POINT (A BLUE-RED JUNCTION). BOTH MAGNETIC FIELD LINES ARE OPEN-CLOSED, WITH ONE END AT THE IONOSPHERIC FOOTPOINTS OF CUSP FIELD LINES. "

In the study, the FTEs generate bursts of electric currents along magnetic field lines, called field-aligned currents (FACs), which travel earthward (down) like waves at extreme speed. These currents reach the ionosphere near the noon side of Earth and create swirling patterns in the geoelectric field on the ground, with strengths around 0.1 to 0.2 volts per kilometer.

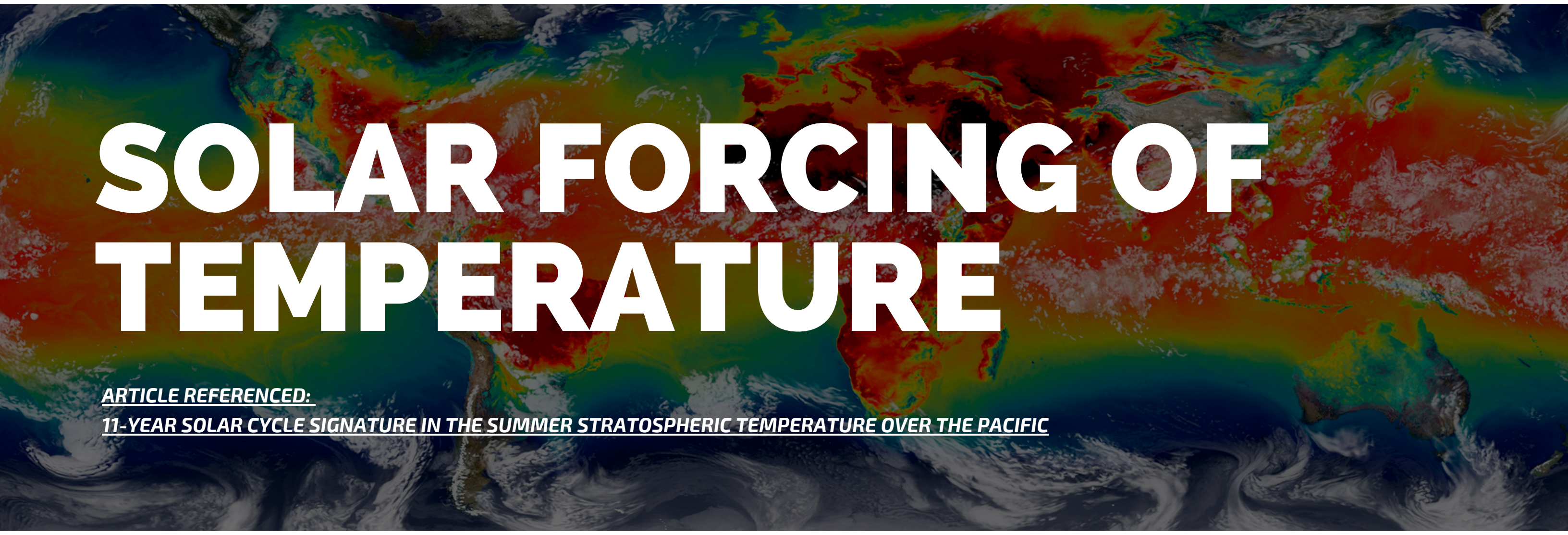
These rotational electric fields start near the midday meridian and spread around the auroral oval toward the night side, mimicking vortex-like motions in the atmosphere. The authors conclude that this process links space weather directly to potential disruptions on Earth, such as geomagnetically induced currents that could harm power grids, and calls for further studies under varying solar wind conditions.

This research sheds light on how space weather disturbs the global electric circuit (GEC). By showing how FTEs trigger pulsed FACs that induce dynamic geoelectric fields, the study reveals a pathway for solar wind energy to penetrate the magnetosphere-ionosphere system and alter ground-level electric potentials.

These induced fields could temporarily enhance or disrupt the GEC's balance, potentially amplifying thunderstorm activity or ionospheric conductivity changes, thus helping scientists predict and mitigate broader impacts like communication blackouts or infrastructure failures during solar storms.



SCHEMATIC DIAGRAM SHOWING THE MAGNETIC FIELD OF THE FTE FLUX ROPES, AS PROJECTED IN THE SIMULATION'S Y-Z PLANE. THE CURRENT HELICITY (RH OR LH) AND SIGN(J ⁄⁄) OF THE FLUX ROPES ARE CORRELATED WITH SIGN(BY) OF THE UNDERLYING DAYSIDE MAGNETOSPHERE. THESE QUANTITIES ARE THUS ORGANIZED INTO THE FOUR QUADRANTS OF THE Y-Z PLANE. THE FTE CURRENT J FLOWS IN THE +Ŷ DIREC- TION, IN AGREEMENT WITH THE MAGNETOPAUSE CURRENT. FACS FLOW TO EARTH'S IONOSPHERE, TO A REGION CONTAINING THE FOOTPOINTS OF THE DAYSIDE CUSP FIELD LINES.



SOLAR FORCING OF TEMPERATURE

ARTICLE REFERENCED:
11-YEAR SOLAR CYCLE SIGNATURE IN THE SUMMER STRATOSPHERIC TEMPERATURE OVER THE PACIFIC

A recent study examining Pacific stratospheric temperatures from 1980 to 2022 provides compelling evidence about how solar activity modulates atmospheric temperature patterns. By analyzing summer (June–August) temperature data at 50 hPa, roughly 20 kilometers above the surface, researchers identified a statistically significant temperature response linked to the 11-year solar cycle.

At the heart of the mechanism is the interaction between solar ultraviolet radiation and stratospheric ozone. During years of high solar activity, the Sun emits greater amounts of UV radiation. Ozone molecules strongly absorb UV light, converting that energy into heat. This process enhances radiative heating in the subtropical stratosphere over the Pacific.

The study found that this increased heating alters the large-scale temperature structure of the atmosphere. Rather than warming the entire region uniformly, the response forms a meridional tripolar pattern. Temperatures rise in the subtropics while the equatorial region experiences cooling. This pattern emerges because solar-driven heating disrupts the normal temperature gradient between the equator and subtropics.

As subtropical heating reduces the equator-to-pole temperature contrast, zonal winds weaken. This weakening allows planetary waves from the troposphere to propagate more effectively into the stratosphere.

The enhanced wave activity strengthens the Brewer-Dobson circulation, the large-scale atmospheric conveyor belt that transports air upward in the tropics and poleward and downward in the subtropics. As this circulation intensifies, it carries ozone-rich air away from the equatorial region toward the subtropics.

INCREASED SOLAR ACTIVITY RAISES ULTRAVIOLET RADIATION LEVELS

↓

UV RADIATION IS ABSORBED BY OZONE, PRODUCING LOCALIZED HEATING.

↓

HEATING ALTERS ATMOSPHERIC TEMPERATURE GRADIENTS.

↓

MODIFIED GRADIENTS CHANGE WIND PATTERNS AND PLANETARY WAVE PROPAGATION.

↓

CIRCULATION SHIFTS REDISTRIBUTE OZONE, AMPLIFYING TEMPERATURE CONTRASTS.

Overall, the stratosphere plays a critical role in shaping weather and climate patterns below it. Changes in stratospheric temperature and circulation can influence jet streams, storm tracks, and regional climate conditions.

SOLAR FORCING OF RAIN

ARTICLE REFERENCED:
HIGH-RESOLUTION PALEOCLIMATE RECORD FROM HAINAN ISLAND REVEALS SOLAR-FORCED HYDROCLIMATIC VARIABILITY IN TROPICAL CHINA DURING THE LATE HOLOCENE

To investigate long-term rainfall variability in Southeast China, researchers analyzed a sediment core taken from Shuangchiling maar lake on Hainan Island. The lake sediments act as a natural archive of past environmental conditions. Using high-resolution radiocarbon dating and multiple geochemical and biological proxies, including goethite-to-hematite ratios, magnetic susceptibility, elemental composition, biogenic silica, and carbon-to-nitrogen ratios, the study reconstructed regional hydroclimatic changes spanning thousands of years.

The sediment record reveals that the lake experienced a major interruption between roughly 6,500 and 2,000 years before present. During this period, peat decomposition and regional warming led to drying conditions that prevented normal lake sediment accumulation. Around 2,000 years ago, the lake system recovered, reflected in a sharp rise in biogenic silica and organic matter produced within the lake. These changes indicate a shift toward wetter conditions and greater effective moisture across the region.

The most striking result emerges from the reconstruction of rainfall patterns during the Common Era. The analysis shows a consistent negative correlation between regional precipitation and total solar irradiance on centennial timescales, particularly around periodicities of approximately 300 years and 130 years. In practical terms, this means that periods of stronger solar output tended to coincide with reduced rainfall in this tropical region of China.

Interestingly, the study also finds that this relationship reverses in nearby subtropical regions. While tropical Southeast China experienced drier conditions during high solar activity, subtropical regions recorded increased rainfall. This opposite response, known as an antiphase hydroclimatic pattern, suggests that solar forcing does not affect rainfall uniformly across geographic regions.

The mechanism involves large-scale atmospheric circulation changes. Variations in solar energy alter sea surface temperatures and atmospheric heating patterns, which influence major climate systems such as the El Niño–Southern Oscillation (ENSO). Changes in ENSO dynamics shift the position of the Intertropical Convergence Zone (ITCZ), the belt of intense tropical rainfall that migrates seasonally across the globe. When the ITCZ shifts north or south, rainfall zones move with it, redistributing precipitation across tropical and subtropical regions.

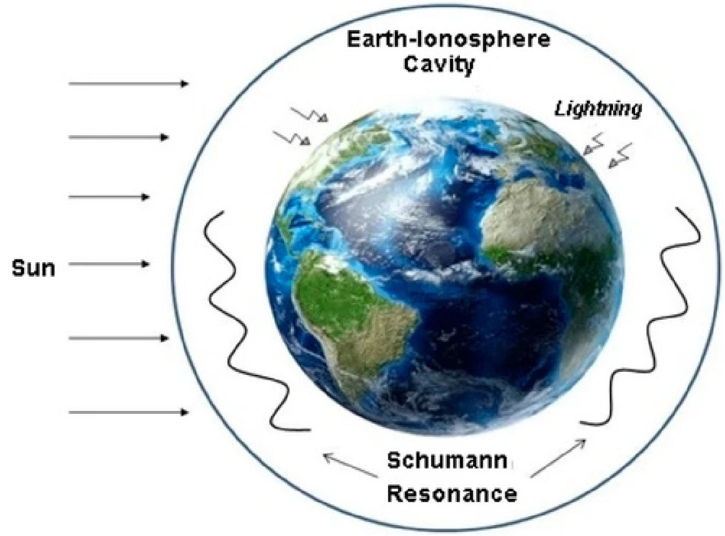
Typhoon activity also contributes to these solar-linked rainfall changes. In the western Pacific, typhoons are a major source of rainfall for Southeast China. Solar-driven changes in ocean temperature and atmospheric circulation alter typhoon frequency and track patterns, which in turn shifts regional precipitation.

SOLAR FORCING OF SCHUMANN RESONANCE

ARTICLE REFERENCED:
MODULATION OF BASIC SCHUMANN RESONANCE FREQUENCY BY SOLAR ACTIVITY

The Earth is constantly resonating with extremely low frequency electromagnetic waves known as Schumann resonances. These signals form inside the natural cavity between the planet's surface and the lower ionosphere, where lightning discharges excite standing electromagnetic waves that circle the globe. The fundamental frequency of this system is typically around 7.8 Hz, with additional harmonics at higher frequencies. While thunderstorms provide the primary source of energy for the resonance, the electrical properties of the atmosphere that shape these frequencies are strongly influenced by the Sun. As solar activity changes, it alters the structure and conductivity of the ionosphere, which in turn can modify the behavior of Schumann resonances.

A long-term observational study from the Széchenyi István Geophysical Observatory (SZIGO) in Nagycenk, Hungary examined this relationship by analyzing 192 months of continuous measurements between 1994 and 2009. Researchers monitored the first Schumann resonance frequency using the vertical electric field component and analyzed how it varied across daily, seasonal, and interannual timescales. The results revealed a remarkably consistent pattern: each month displayed a characteristic daily structure that repeated year after year with only minor variations. This repeating pattern reflects the global rhythm of thunderstorms, which follow seasonal and geographic cycles across major storm centers in Africa, South America, and Southeast Asia.



However, beyond the thunderstorm-driven variability, the study found that longer-term fluctuations in the resonance frequency closely resemble changes in solar activity. Statistical analysis showed that interannual shifts in the fundamental resonance frequency corresponded with the level of solar activity during the same period.

To describe this behavior, the researchers developed a heuristic model that combined the typical seasonal–diurnal pattern of the resonance with additional corrections linked to solar variability. When solar activity data were included, the model successfully reproduced the observed changes in the resonance frequency.

The physical explanation lies in how solar radiation modifies the electrical conductivity of the lower ionosphere, which forms the upper boundary of the Earth–ionosphere cavity.

During periods of higher solar activity, increased ultraviolet and X-ray radiation ionizes the upper atmosphere more strongly.

This alters the height and conductivity of the ionospheric layer, effectively changing the dimensions and electromagnetic properties of the global resonant cavity.

Even subtle shifts in this boundary can influence how electromagnetic waves propagate around the planet, leading to measurable changes in Schumann resonance frequencies.

At the same time, the resonance system remains tied to global thunderstorm activity, which acts as the excitation source. Seasonal shifts in the position of major storm centers change the distribution of lightning activity around the world, producing the repeating annual pattern observed in the data.

In this way, Schumann resonance acts as a planetary-scale diagnostic of both atmospheric electricity and solar forcing. Thunderstorms supply the energy, while solar activity controls the electrical environment in which the resonance forms.

THE HUNGARIAN STUDY DEMONSTRATES THAT THESE TWO INFLUENCES OPERATE SIMULTANEOUSLY.

THE DAILY AND SEASONAL STRUCTURE OF THE RESONANCE IS GOVERNED LARGELY BY THE MOVEMENT OF GLOBAL THUNDERSTORM SYSTEMS, BUT THE INTERANNUAL VARIABILITY REFLECTS THE INFLUENCE OF SOLAR ACTIVITY ON THE IONOSPHERE.

BY COMBINING THESE EFFECTS, THE RESEARCHERS WERE ABLE TO REPRODUCE THE LONG-TERM BEHAVIOR OF THE RESONANCE FREQUENCY WITH HIGH ACCURACY.

SOLAR WEATHER FORECASTING

ARTICLE REFERENCED:
WEATHER PREDICTION AT EQUATORIAL REGIONS BASED ON DST INDEX AND SOLAR WIND USING A DEEP LEARNING

A recent study investigating weather prediction in equatorial Indonesia offers a glimpse into how solar wind and geomagnetic activity connects to forecasting atmospheric conditions. By applying deep learning techniques to space weather data, the research suggests that signals from the Sun contain predictive information about weather patterns near Earth's equator.

One widely used indicator of geomagnetic activity is the Disturbance Storm Time (DST) index. The DST index measures the strength of geomagnetic storms by monitoring variations in Earth's magnetic field recorded at ground observatories around the world. When strong solar wind disturbances compress Earth's magnetosphere, electrical currents intensify in the magnetosphere and ionosphere, causing the DST index to drop to negative values. The more negative the index, the stronger the geomagnetic storm.

Because the DST index condenses global magnetic observations into a single planetary value, it serves as a useful metric for identifying when Earth is experiencing significant space weather activity.

Researchers suggest that these upper-atmosphere disturbances could subtly modify atmospheric circulation patterns. In particular, equatorial regions, where atmospheric convection and large-scale circulation systems such as the Walker circulation are strongest, may be sensitive to small perturbations originating from above.

The researchers focused on seven locations along Indonesia's equatorial region, an area characterized by intense convection, heavy rainfall, and strong coupling between oceanic and atmospheric processes. Instead of relying solely on traditional meteorological variables, the study incorporated space weather parameters as predictive inputs.

Two key data sources were the DST index and Solar wind parameters, including plasma density and magnetic field strength. These variables were fed into a deep learning model known as BISECANN, a neural network approach designed to detect nonlinear relationships in complex datasets. Deep learning models are particularly useful when physical mechanisms are not fully understood but patterns may still exist within large datasets.

The results were notable. The model successfully predicted weather parameters across most of the study regions with R-squared values approaching 1, indicating strong predictive performance. Among the solar wind variables examined, solar wind density and magnetic field strength emerged as the most significant contributors, both with statistical significance levels below 0.05.

ISSUE MARCH 2026

PRE-EARTHQUAKE SIGNALS

ARTICLE REFERENCED:
HTTPS://WWW.SCIENCEDIRECT.COM/SCIENCE/ARTICLE/ABS/PII/S0273117726000955
HTTPS://WWW.SCIENCEDIRECT.COM/SCIENCE/ARTICLE/ABS/PII/S0273117726001547

Two recent studies examining the 2025 Mw 7.7 Myanmar earthquake and the 2025 Mw 6.2 Marmara Sea earthquake in Türkiye provide new insights into pre-earthquake signals that appear before major seismic events.

Although both studies focus on electromagnetic anomalies preceding earthquakes, they examine different layers of the Earth system. One investigates disturbances in the ionosphere, detected through satellite navigation signals, while the other analyzes changes in the Earth's magnetic field recorded by ground observatories. Together, they illustrate how earthquake preparation processes may extend far beyond the crust itself.

The first study examined ionospheric conditions prior to the Mw 7.7 Myanmar earthquake on March 28, 2025. Researchers analyzed Total Electron Content (TEC) derived from GPS signals recorded at seven GNSS stations across Thailand.

The results showed unusual TEC behavior beginning about 15 days before the earthquake, between March 13 and March 27.

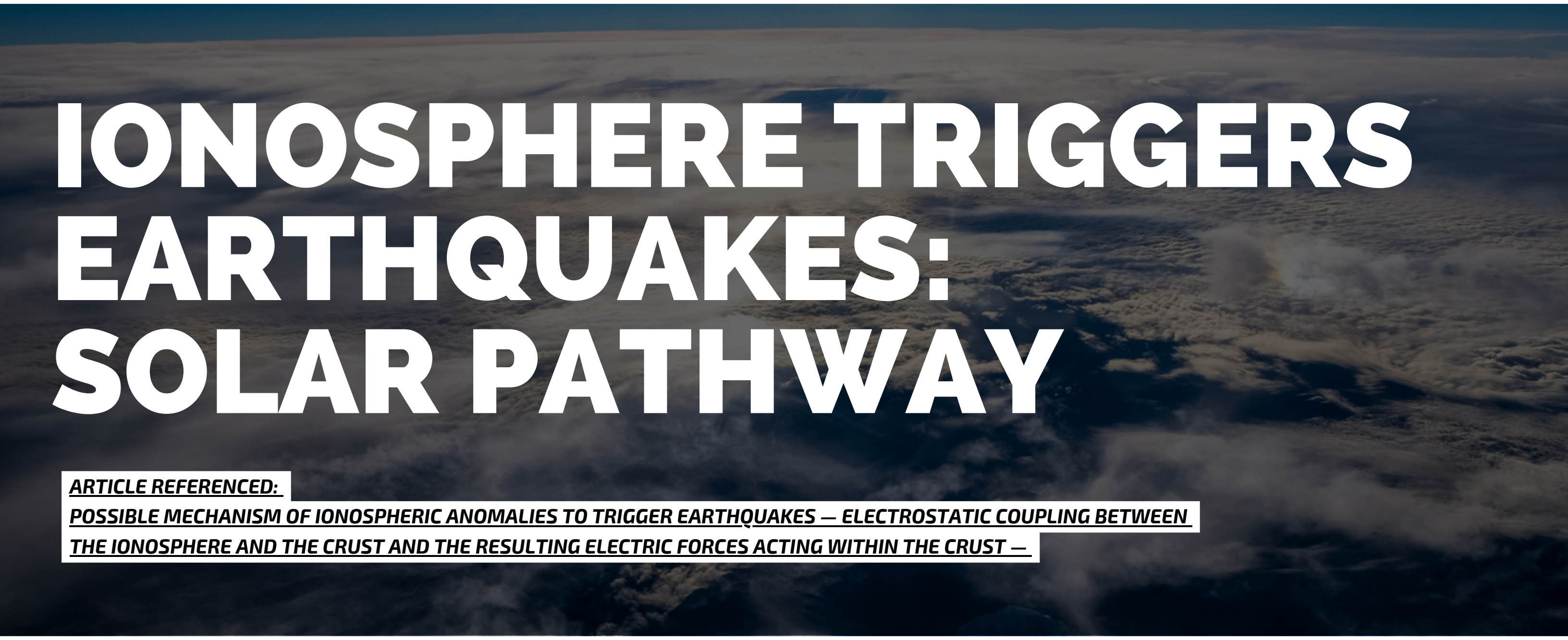
The second study examined electromagnetic anomalies associated with the Mw 6.2 earthquake that struck the Marmara Sea on April 23, 2025.

Rather than studying the ionosphere, this research focused on variations in the Earth's magnetic field measured at three ground-based geomagnetic observatories.

TWO STRIKING MAGNETIC DISTURBANCES EMERGED IN THE DATA:
ONE ANOMALY OCCURRED ABOUT FIVE DAYS BEFORE THE EARTHQUAKE.
ANOTHER APPEARED APPROXIMATELY FIVE MINUTES BEFORE THE MAINSHOCK.

Both signals were detected only at the station closest to the epicenter, while the two reference stations recorded no comparable disturbances.

Together, they support the broader concept of electromagnetic earthquake precursors, which may manifest across multiple observational systems.



IONOSPHERE TRIGGERS EARTHQUAKES: SOLAR PATHWAY

ARTICLE REFERENCED:
POSSIBLE MECHANISM OF IONOSPHERIC ANOMALIES TO TRIGGER EARTHQUAKES — ELECTROSTATIC COUPLING BETWEEN THE IONOSPHERE AND THE CRUST AND THE RESULTING ELECTRIC FORCES ACTING WITHIN THE CRUST —

There is now a North Atlantic Anomaly (NAA) in addition to the well-known South Atlantic Anomaly (SAA). The NAA consists primarily of an ozone hole in the northern Atlantic region, opposite of the equator to where the SAA is found. A new paper is discussing a potential cause and forecast for the anomaly, and I fear it is dramatically incorrect.

The study suggests that spacecraft and satellite particles that have burned up could be reducing the ozone in these areas, with a rather flimsy explanation for how it would be so concentrated in just one area. These explanations of causation and atmospheric gymnastics are both unconvincing.

The SAA weak spot in earth's field, where extra space particles are already coming into the atmosphere, shows reduced ozone during enhanced flux events, and the same should be true in the northern hemisphere, only with the opposite charge particles. Both electrons and protons destroy ozone, but their penetration dynamics are different in the northern vs southern fields.

The correct answer is that this is a relatively expected next-sign in the sky of the spread and deepening of the SAA as part of the larger weakening magnetic field and the ongoing magnetic pole shift.

Solar flares are known to dramatically increase ionization in the upper atmosphere. When this happens, large numbers of electrons accumulate in the lower ionosphere, forming a negative space-charge layer. Through capacitive coupling with the crust, this layer can induce electrical fields inside crustal fracture networks. In other words, solar activity can amplify the electrical interaction between the ionosphere and tectonic faults. Solar flares can increase ionospheric electron density by 10 to 90 TECU (Total Electron Content Units). Even moderate increases can create significant electrostatic effects when coupled with charged fracture zones below.

One example highlighted in the study is the 2024 Noto Peninsula earthquake in Japan.

Prior to the event, satellite observations detected ionospheric disturbances, including a lowering of the ionosphere by approximately 20 kilometers in the affected region. Notably, a strong solar flare occurred in the hours before the earthquake, increasing ionospheric electron density. The researchers suggest that the flare-enhanced ionosphere may have generated additional electrostatic forces within crustal fractures. If the fault system was already critically stressed, this electrical pressure could have accelerated the collapse of void networks and triggered the final rupture.

F3 LAYER IS ACTIVATING

ARTICLE REFERENCED:
[WIND INDUCED F3 LAYER IN THE MIDDLE LATITUDE DURING THE MOTHER'S DAY GEOMAGNETIC DISTURBANCES OF 10–11 MAY 2024]

BY: BEN DAVIDSON

PERHAPS THE MOST INTRIGUING RARE PHENOMENON THAT HAPPENED DURING THE MAY 2024 SOLAR SUPERSTORM WAS THE ACTIVATION AND APPEARANCE OF THE F3 LAYER OF THE IONOSPHERE. NORMALLY THE IONOSPHERE HAS AN E AND F REGION.

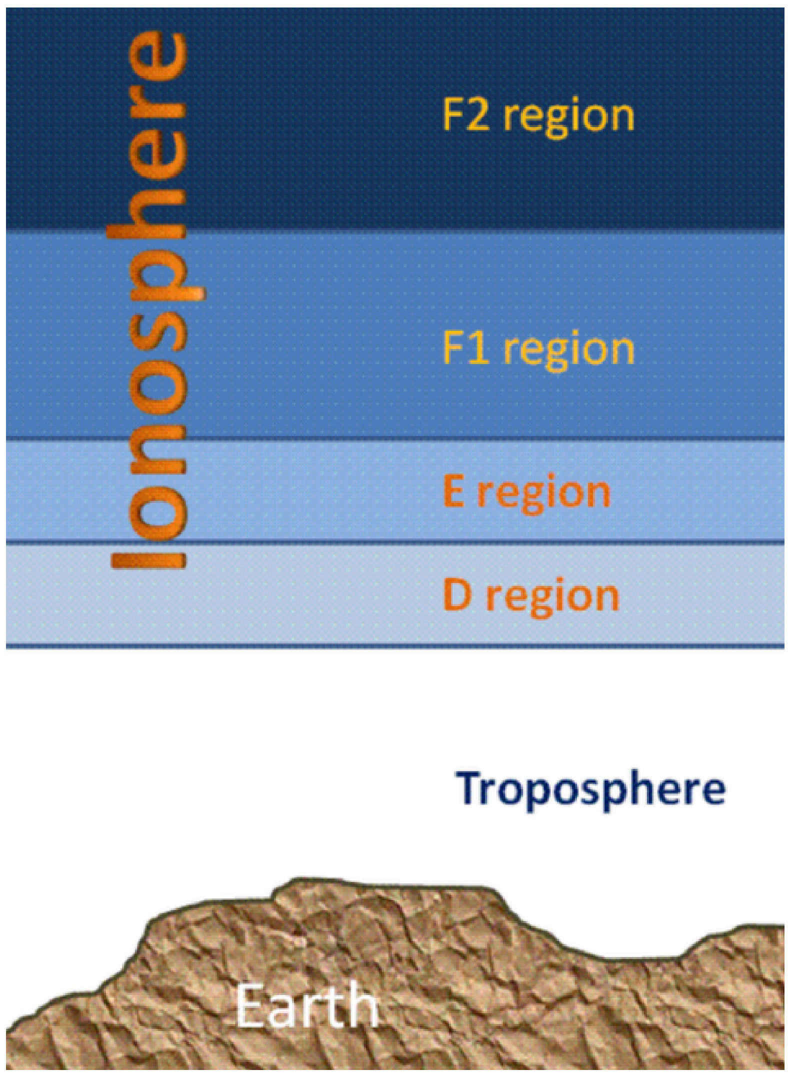
The D region and F2 region appear during the daytime and blend into the broader E and F1 layers at night.

There have been sparse previous reports of brief F3 layer observation over the equatorial region during tremendous solar storms, but not over mid-latitudes like happened in May 2024.

Even major solar storms in the past did not produce this level of effect, even with solar flares and solar wind events significant stronger than what occurred during that storm.

The cause, as with all the other extreme earth reactions to sub-extreme space weather, is the weakening of earth's magnetic field, the advancing vulnerability of our planet in the ongoing geomagnetic excursion.

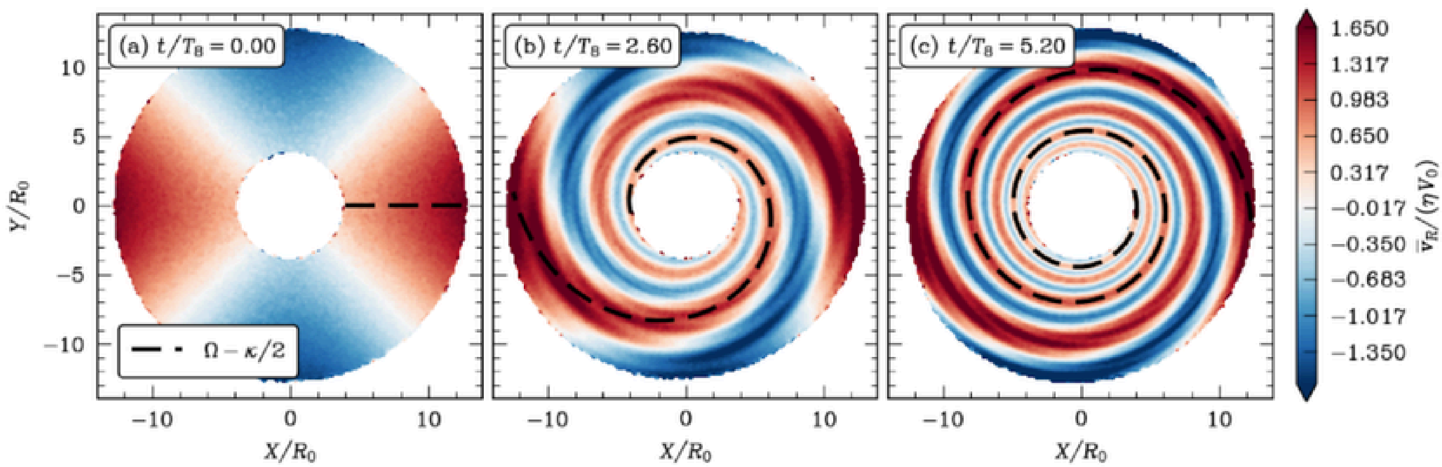
It was considered a once-in-a-lifetime reading when Arecibo data showed faint signatures of the F3 layer over Puerto Rico; this event appeared over China, India and Australia.



GALACTIC WAVE DEVELOPMENT: PHYSICAL INEVITABILITY

ARTICLE REFERENCED:
HIGH-RESOLUTION PALEOCLIMATE RECORD FROM HAINAN ISLAND REVEALS SOLAR-FORCED HYDROCLIMATIC VARIABILITY IN TROPICAL CHINA DURING THE LATE HOLOCENE

BY: BEN DAVIDSON



QUICK RESEARCH NOTE:

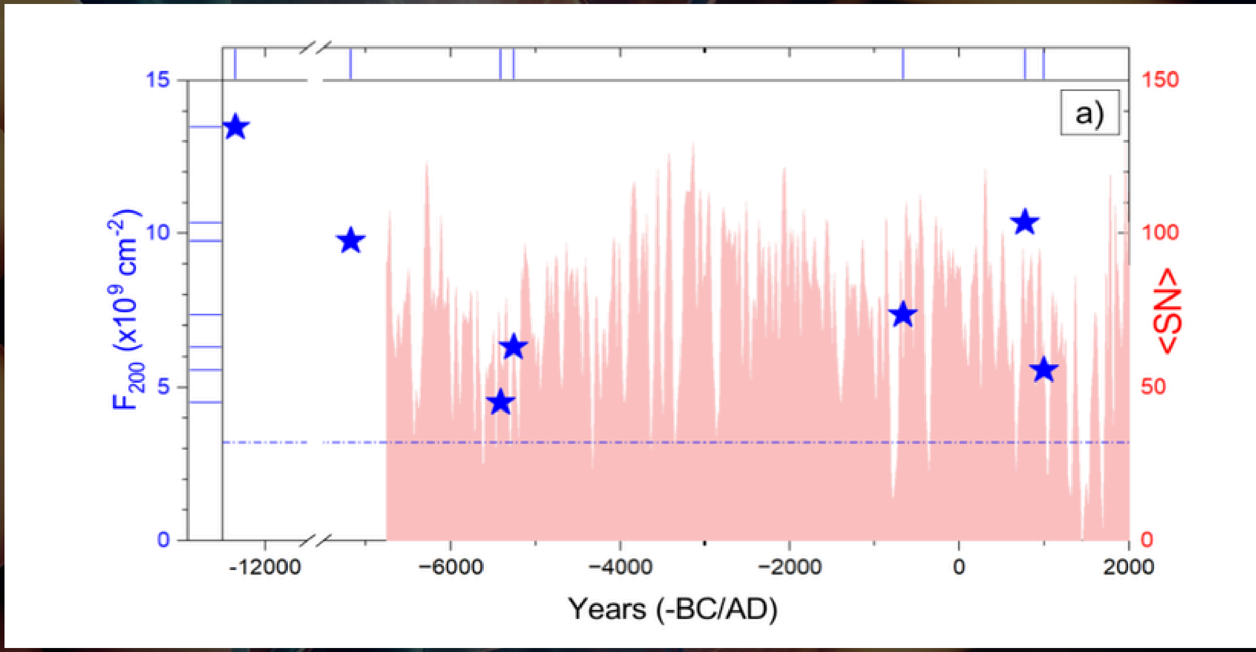
A new study is taking the galactic current sheet back to genesis; now that there are enough observations to know that the original theory regarding the parker instability of the galactic plane magnetic field (the galactic current sheet) is correct, we can go back and refine the math based on observation.

New mathematical refinement demonstrates how this evolution of this field structure is inevitable, even though its final form may depend of initial conditions and subsequent dynamics. Bottom line: the math that told us to look for the current sheet has now been "cleaned-up". We are not unlucky to have this phenomenon in the milky way, it is fundamental.

1000 YEARS OF PROTONS, MICRONOVA ENERGY: THE PEAK SUN

ARTICLE REFERENCED:
LINKING SOLAR MAGNETISM, EXTREME SOLAR PARTICLE EVENTS AND STELLAR SUPERFLARES

BY: BEN DAVIDSON



QUICK RESEARCH NOTE:

A new study demonstrates that major solar superflares and associated proton storms are even bigger than scientists had previously realized. Previous estimates suggested that major solar storms could deliver an entire year or two worth of proton energy in a single event, which is already a tremendous among of energy.

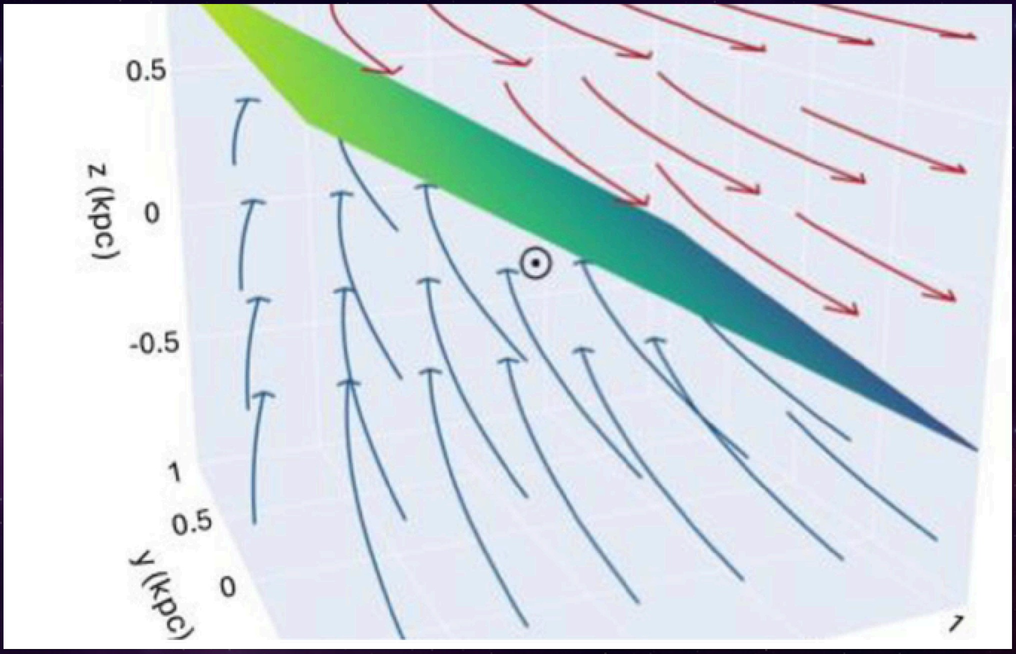
The chart shown here is from the study, and the blue stars show magnitude of known proton storms. The dotted blue line shows ONE THOUSAND years of proton energy, and we see that enormous sum exceeded several times, including the peak event over 12,000 years ago at over 4000 years worth of proton energy in one event.

A THREE-DIMENSIONAL MODEL FOR THE REVERSAL IN THE LOCAL LARGE-SCALE INTERSTELLAR MAGNETIC FIELD

ARTICLE REFERENCED:
A THREE-DIMENSIONAL MODEL FOR THE REVERSAL IN THE LOCAL LARGE-SCALE INTERSTELLAR MAGNETIC FIELD

BY: BEN DAVIDSON

We model the earth disaster cycle as actually being a full solar system shift, driven by a cyclical galactic magnetic reversal coming with the electric current sheet. After theory became fact through observation after observation, the position of that galactic magnetic reversal point has gotten closer and closer to us. In just the last 4 years, we have seen the distance to reversal cut cut 94% in three separate papers.



The most recent one models us as being about to go through the current sheet and magnetic reversal. In truth, all the evidence suggests its thick, we are already inside of it, and that its just the central magnetic null and reversal point we’re waiting for, but when mainstream science is a fraction of a millimeter away on that graphic, we really cant complain about the trajectory.

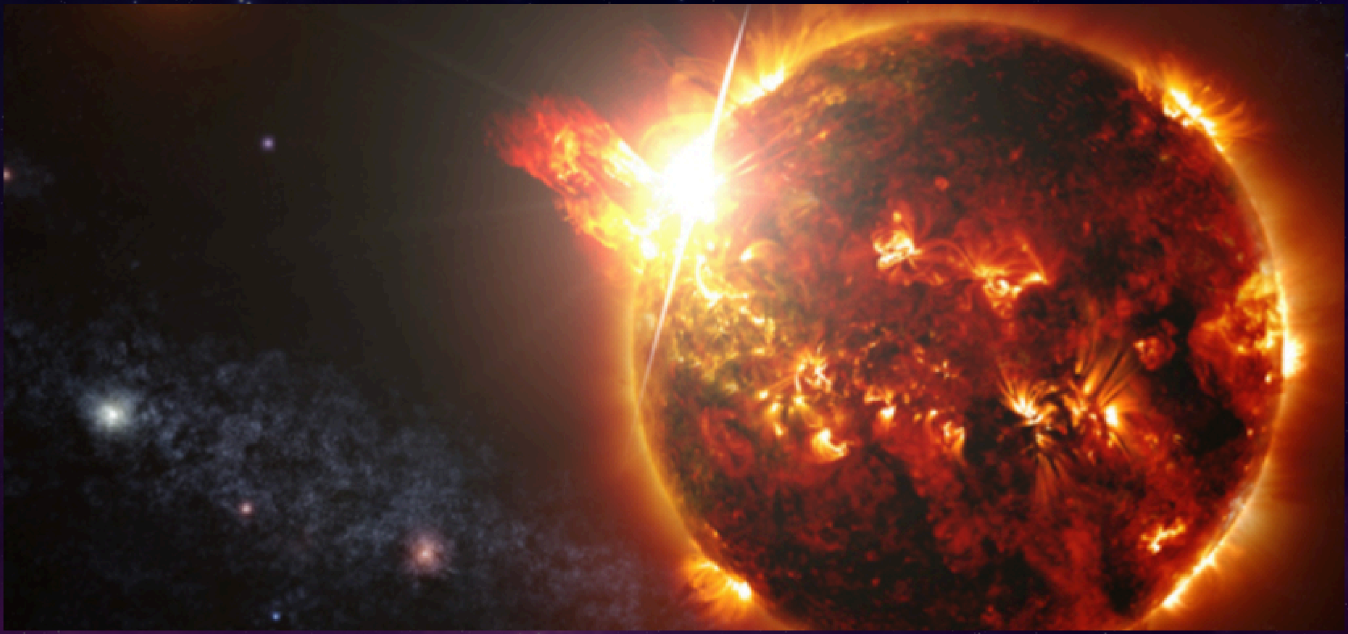
Most here reading this article are well-versed enough to comprehend the gravity and imminence of this scenario, but appreciating the source and the implications of THAT are not immediately obvious. The world is waking up and it appears to be starting with the scientists. We are seeing this same type of frontier thinking in space weather, climate, astrophysics, paleomagnetism, and many more serious disciplines.

By the time EVERYONE knows, it will probably be too late to do much for yourself - please start now.

AD LEO MAGNETIC KICK

ARTICLE REFERENCED:
THE ATTEMPTED POLARITY REVERSAL AND EVOLVING MAGNETIC ENVIRONMENT OF AD LEO

BY: BEN DAVIDSON



When news of a superflare at AD Leo a few years ago framed the sun being "next in line" to be impacted by the galactic current sheet, after Proxima Centauri and Barnard's Star erupted in sequence, it was another indication of the local stellar environment being impacted by the galactic current sheet.

It is important to note that with AD Leo sitting north of us in the galaxy, that would mean that the current sheet is right in front us in the direction of the galactic center, going from south of us in the direction of the galactic center to north of us as it passes "over our heads" to have already hit AD Leo up there; we are in the southern galactic fields, heading into the north, which is precisely what the previous article's graphic and study indicates.

A new study dives deeper into the data and finds that two other critically important properties to that event are now known. First, there was a failed magnetic reversal on the star at the time of the superflare. This is expected on the smaller dwarf stars - where they superflare before the nova event - and this is triggered by the galactic magnetic reversal passage.

Second, the magnetic field of the star had been weakening up until 2020, and appears to now be strengthening since the event, which is another expectation for our sun after the micronova, and it is noteworthy that the sun's field has been weakening in general for 70 years.

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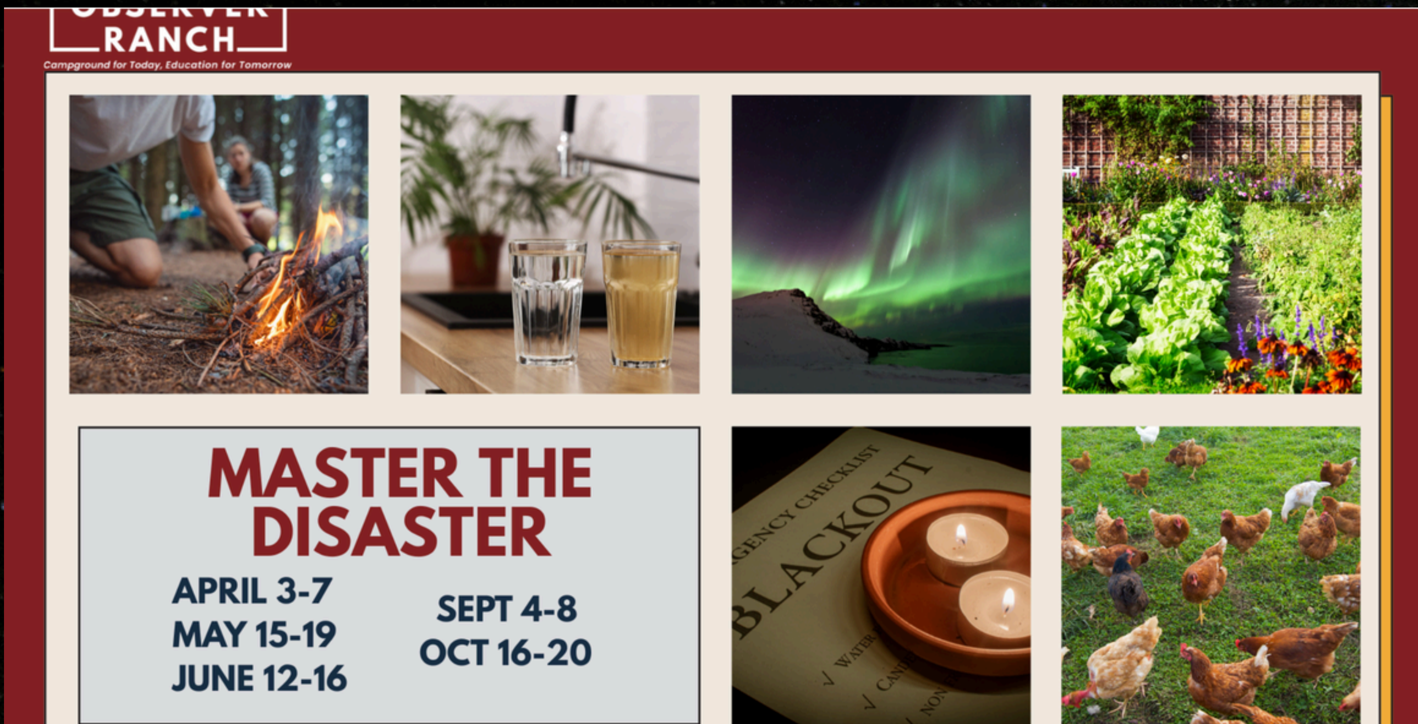

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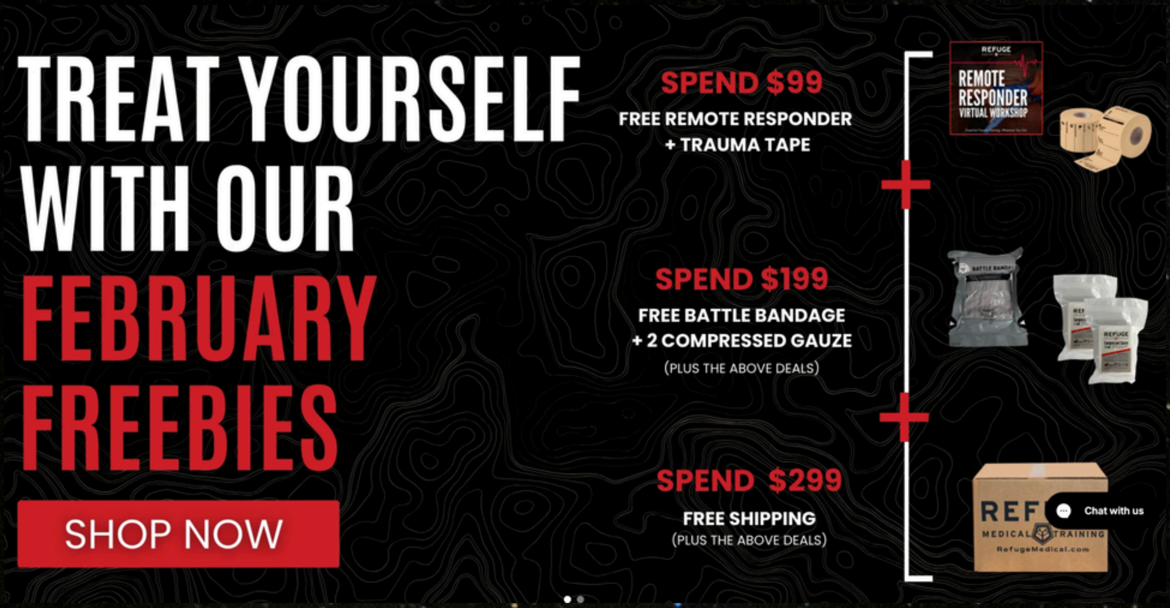

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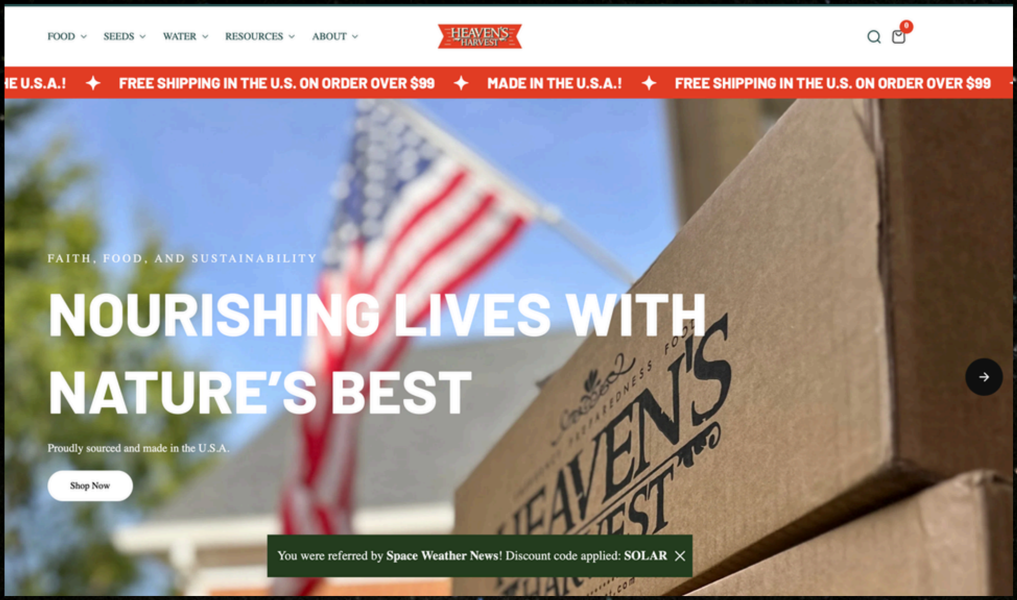

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WE HOPE YOU ENJOYED OUR MARCH ISSUE!
WE APPRECIATE YOUR QUEST AND LOVE FOR KNOWLEDGE ABOUT SPACE AND OUR GREATER COSMOS.

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Email observerreview@observerranch.com with a topic that you'd love to see an article written on!