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JUNE 2025

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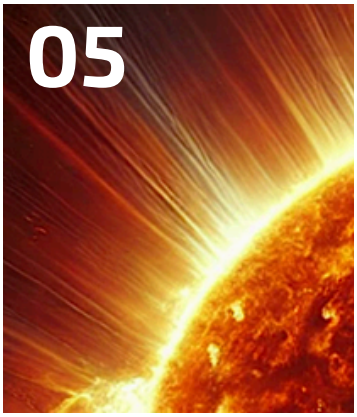
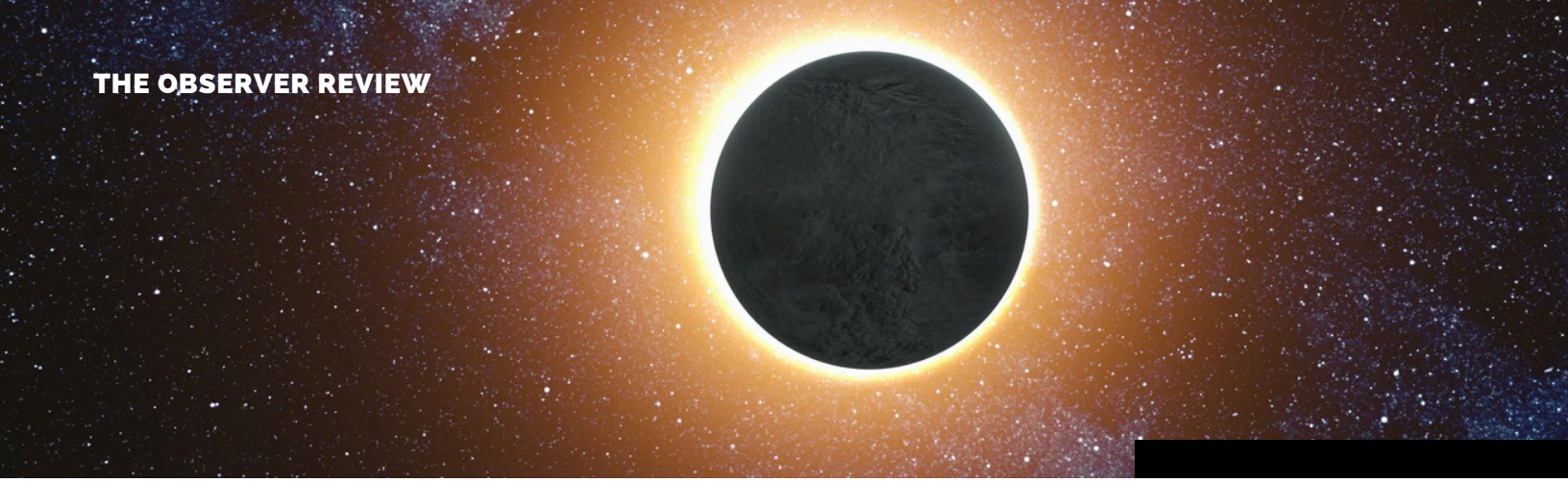


SOLAR RADIATION AT SEA LEVEL

A new study investigates the energy spectra of secondary cosmic rays from the magnetospheric effect (ME) on November 5, 2023, and ground-level enhancement (GLE #74) on May 11, 2025, using SEVAN and Neutron Monitor data.

FEATURED ARTICLES

AND MORE!



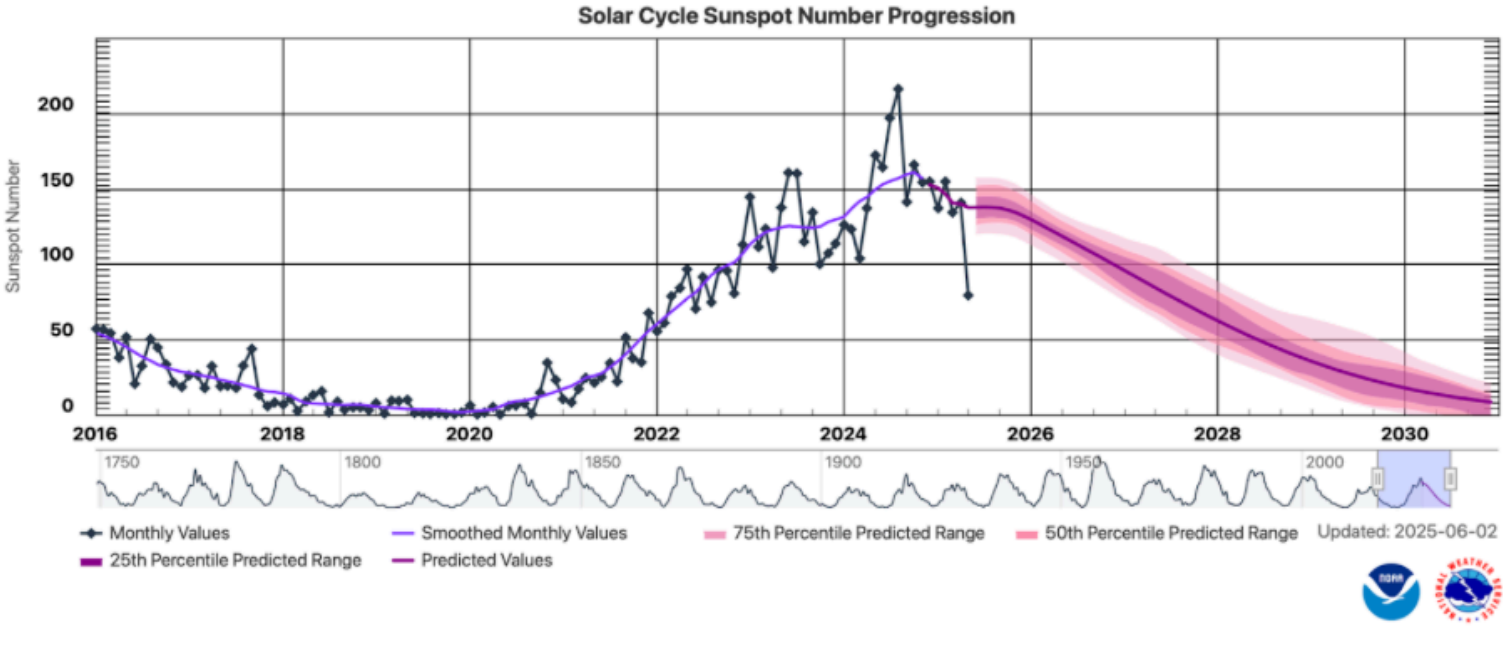
SOLAR CYCLE UPDATE

The solar maximum of cycle 25 has been in play for approximately two years, and the big question among solar scientists is "will we get a second peak?" What does that mean? It means that most of us are wondering if this sunspot cycle will be a short-lived one, or if it will have a 2nd rise like over half of solar cycles do.

Right now, we are either in the beginning phase of the decline, or the famous "middle dip" between the peaks. The most recent available data, for May 2025, is the large drop in the monthly values (right before the pink predicted ranges begin in the image) and while we can definitively see the drop, there is absolutely no way to know what comes next.

What we DO know is that whether we get a 2nd peak in sunspot numbers over the next year or we begin to decline, we have more space weather coming to earth. Not only does it take several years to decline to sunspot minimum, but the "declining phase" often contains the geomagnetic maximum - when coronal holes increase their prevalence as sunspots are still present.

So, either we continue sunspot maximum or we get more coronal holes adding to the dwindling flaring/CME activity, but either way, this sunspot cycle isn't over yet.



SOLAR FORCING DANSGAARD OESCHGER EVENTS

BY: BEN DAVIDSON

ARTICLE REFERENCED:
PERSISTENTLY CENTENNIAL TO MILLENNIAL VARIABILITY OF ASIAN SUMMER MONSOON AND NORTH-SOUTH COUPLING DURING THE LATE PENULTIMATE GLACIAL PERIOD

A new study on asian monsoon activity of thousands of years is contributing to solar, climate and disaster cycle science. The study looked at isotope dating, and shows not only the waxing and waning of asian summer monsoon activity, identifying the influence of solar activity on the monsoon, but also the extremes of activity mirroring Dansgaard-Oeschger events - where extreme warming events cause polar ice melt, triggering climate shifts.

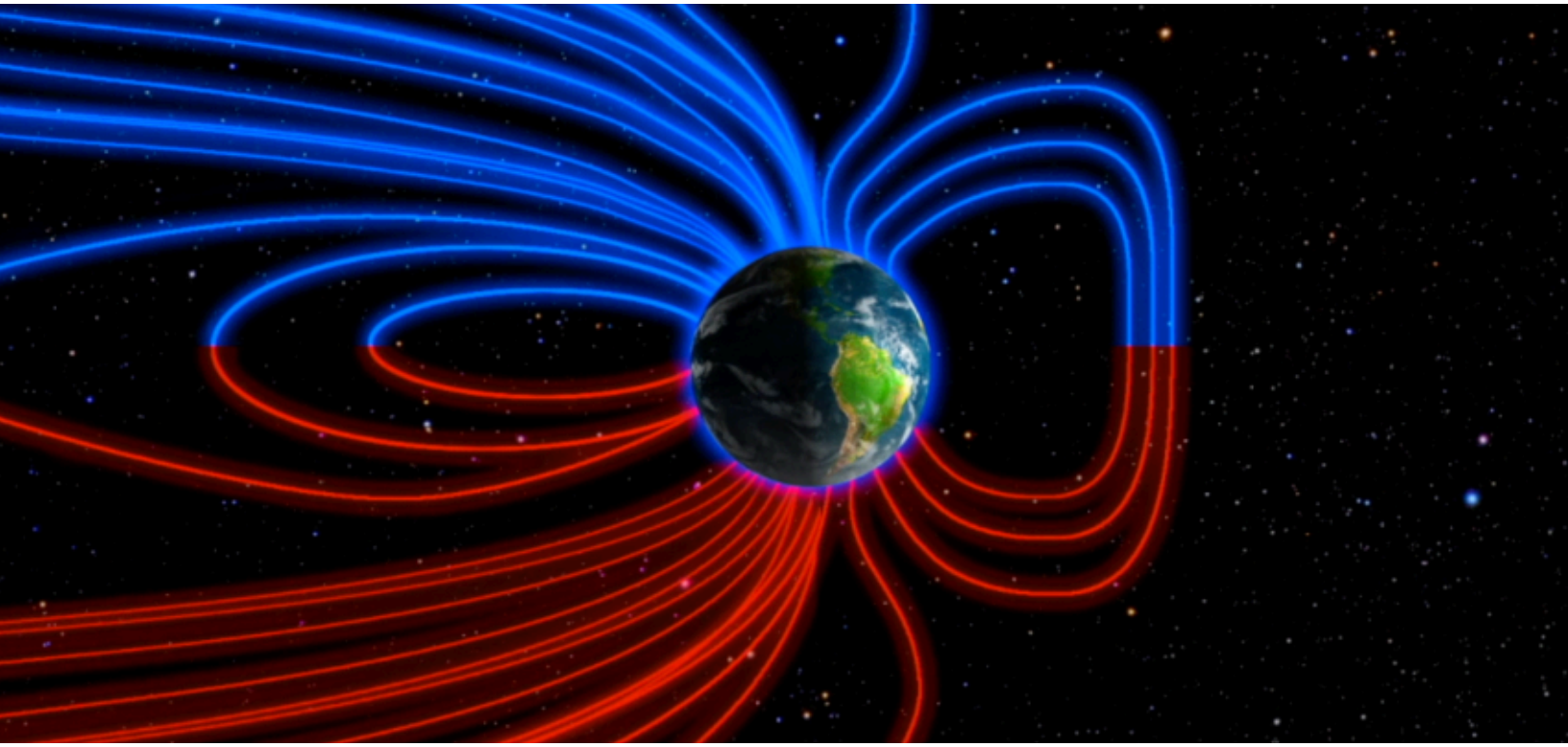
There are probably over 1000 studies at this point on the solar impact to monsoons, not just in Asia but India, the United States, and more, so the primary findings here are not surprising, but there are only a handful of studies (convincing as they may be) on solar forcing of the Dansgaard-Oeschger (D-O) events.

This study further fortifies the connection between the sun and the most extreme climate shifts, which also line-up with the even-larger Heinrich climate events and geomagnetic changes. This is what is happening right now, the ongoing geomagnetic excursion (magnetic pole shift) is allowing increased solar forcing of the earth system, and is on-track to trigger another D-O event, Heinrich event, and significant environmental shift.

SOLAR RADIATION AT SEA LEVEL

BY: BEN DAVIDSON

ARTICLE REFERENCED:
ENERGY SPECTRA OF SECONDARY PARTICLES INDUCED BY SOLAR ENERGETIC PROTON EVENTS AND MAGNETOSPHERIC EFFECTS



A new study investigates the energy spectra of secondary cosmic rays from the magnetospheric effect (ME) on November 5, 2023, and ground-level enhancement (GLE #74) on May 11, 2025, using SEVAN and Neutron Monitor data. It finds ME involves galactic protons causing flux enhancements at mountain altitudes during geomagnetic storms, while GLEs involve high-energy solar protons reaching sea level.

This was the first instance of such energetic particles reaching sea level in this way - it usually enhances neutron counts but little else. This data goes back into the 1940s, and we have had several more-significant solar storms than the May 2025 event. So why did this one allow for such penetration of the particles?

The answer is the same answer to the question of what caused record aurora and ionospheric impacts during that storm (despite it not being a record-breaking event): that the weakening of earth's magnetic field in the ongoing pole shift is leaving earth more vulnerable to energy from space. In 2021 we covered a story about increasing penetration of those particles, but it had not reached ground levels, and in 2022 we covered another study suggesting that eventually the particle radiation events could become deadly.

They are not yet at that scary level, but the 1st sign is increased penetration, the 2nd sign is spotting them at ground level; our future will bring the 3rd piece of the puzzle - deadly radiation at ground level.

SOLAR IMPACT TO ELECTRIC FIELDS AND SCHUMANN RESONANCE

ARTICLE REFERENCED:
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HTTPS://ARXIV.ORG/PDF/2505.16271
HTTPS://WWW.MDPI.COM/2073-4433/16/6/648

In recent years, three converging lines of scientific research have revealed how solar activity —through X-ray flares, coronal mass ejections, and solar cycles—modulates two of Earth's key electrical signatures: the Schumann resonances and the near-surface electric field.

In 1952, physicist Winfried Otto Schumann predicted that Earth, bounded below by its surface and above by the ionosphere, should behave like a spherical electromagnetic resonator. The result is the Schumann resonances, standing waves of extremely low frequency that encircle the planet, typically appearing at peaks around 7.8, 14.3, and 20 Hz.

These waves are generated by lightning strikes. Each discharge between cloud and ground releases electromagnetic energy, which reverberates in the Earth-ionosphere cavity. On any given day, between 50 and 100 lightning strikes per second globally provide a continuous energy source that keeps the resonance active.

However, this system is not fixed. Recent theoretical and observational studies have shown that solar flares, particularly those emitting soft X-rays, can shift these resonant frequencies. When solar X-rays reach the Earth, they ionize the lower ionosphere, increasing the density of free electrons and lowering the effective reflection height of ELF waves. This compression of the waveguide increases the resonant frequency.

In a model of an X6.9-class solar flare, researchers found that ionospheric conductivity rose significantly in the 60 to 90 km region. The result was a measurable increase in the Schumann frequencies, proportional to the X-ray intensity raised to a power of about 1.7. These changes, often just fractions of a Hertz, confirm that the global electric cavity is sensitive to solar events and can respond quickly. While the upper atmosphere vibrates with resonant energy, Earth's surface experiences its own electrical changes. The near-surface electric field (NSEF), which measures the vertical potential difference between the ground and the atmosphere, also responds to solar-induced changes, particularly during geomagnetic storms.
Two major mechanisms link solar activity to changes in the NSEF.

First, when a coronal mass ejection strikes Earth's magnetosphere, and the interplanetary magnetic field is oriented southward, energetic particles penetrate into the polar ionosphere.

This leads to a surge in ionization and conductivity, which lowers the resistance in the atmospheric column and typically decreases the electric field at the surface.
Second, geomagnetic storms often trigger a Forbush decrease—a short-term reduction in the intensity of galactic cosmic rays caused by interplanetary magnetic disturbances. Because cosmic rays are a major ionization source in the middle atmosphere, especially at mid-latitudes, a Forbush decrease reduces ion production, increases atmospheric resistance, and can enhance the NSEF.

At the Aragats Research Station in Armenia, scientists monitored these effects during multiple geomagnetic storms. During the events of June 2015 and September 2017, they recorded a clear positive enhancement in the NSEF, rising from 0.13 to 0.3 kilovolts per meter. These increases coincided with decreases in muon flux, which serve as proxies for cosmic ray intensity. The conditions were stable, with no storms, rain, or nearby lightning, which allowed researchers to confidently link the electric field changes to solar activity rather than local weather.

An interesting pattern was also noted: during daylight hours, the enhanced NSEF dipped slightly. This dip likely reflects the restoration of ionization in the atmosphere due to ultraviolet solar radiation, which counteracts the reduction caused by cosmic ray suppression.

In addition to short-term events like flares and CMEs, the Sun also influences Earth's electromagnetic environment over longer time scales. The 11-year solar cycle, tracked by solar radio flux (such as the I10.7 index), modulates the structure of the ionosphere and, consequently, the Schumann resonance frequencies.

A long-term dataset collected at the Ukrainian Antarctic station "Akademik Vernadsky" from 2002 to 2025 shows that the first Schumann resonance frequency rises during solar maximum and decreases during solar minimum. The reason lies in solar control of atmospheric conductivity.

Using advanced models based on full-wave solutions of ELF propagation, scientists found that solar activity modifies the magnetic characteristic height of the ionosphere—called hL—by about 2 to 3 kilometers over a solar cycle. This height determines how ELF waves reflect and propagate through the cavity. As hL increases, so does the resonance frequency. A 150-unit rise in the I10.7 index correlates with a 0.1 Hz rise in the first SR frequency, according to both model predictions and observational data.

TOGETHER, THESE STUDIES OUTLINE A MULTI-TIERED STRUCTURE OF SOLAR INFLUENCE ON EARTH'S ELECTRIC ENVIRONMENT:

IN THE UPPER IONOSPHERE, X-RAY FLARES RAPIDLY ENHANCE IONIZATION, RAISING SCHUMANN RESONANCE FREQUENCIES.

IN THE MIDDLE ATMOSPHERE, FORBUSH DECREASES REDUCE COSMIC RAY IONIZATION, INCREASING RESISTANCE AND ENHANCING THE NEAR-SURFACE ELECTRIC FIELD.

AT THE SURFACE, VARIATIONS IN ATMOSPHERIC CONDUCTIVITY CHANGE THE VERTICAL ELECTRIC POTENTIAL UNDER FAIR-WEATHER CONDITIONS.

Each layer of the atmosphere is sensitive to different components of solar activity. Flares cause rapid changes within minutes. Geomagnetic storms unfold over hours to days. Solar cycles shift global averages over a span of years. Despite the different time scales, all of these effects are connected through a shared physics of ionization, conductivity, and wave propagation.

The Earth is not an isolated sphere floating through space. It is a finely tuned electromagnetic instrument, responsive to every shift in solar energy. From the deepest layers of the ionosphere to the ground beneath our feet, solar activity leaves its fingerprint on Earth's electrical systems.

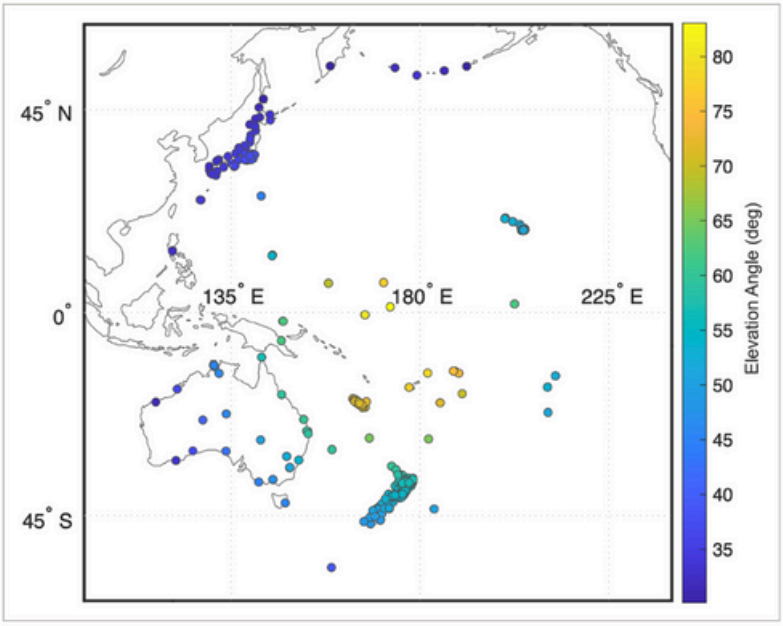
SOLAR TEC PULSE

ARTICLE REFERENCED:
QUASI-PERIODIC PULSATIONS IN IONOSPHERIC TEC SYNCHRONIZED WITH SOLAR FLARE EUV EMISSION

New research reveals that Earth's upper atmosphere pulses in sync with solar flare flickers, within seconds. When a solar flare erupts, it unleashes a powerful blast of energy across the electromagnetic spectrum, X-rays, ultraviolet light, and particularly extreme ultraviolet radiation. But a new discovery has added a stunning twist: Earth doesn't just react broadly to solar outbursts—it responds in rhythm.

A study led by Aisling N. O'Hare and colleagues, published in **J**ournal of Geophysical Research: Space Physics (April 2025), has for the first time detected quasi-periodic pulsations (QPPs) in both solar EUV emissions and the Earth's Total Electron Content (TEC), with the two dancing in near-perfect synchronization, only seconds apart.

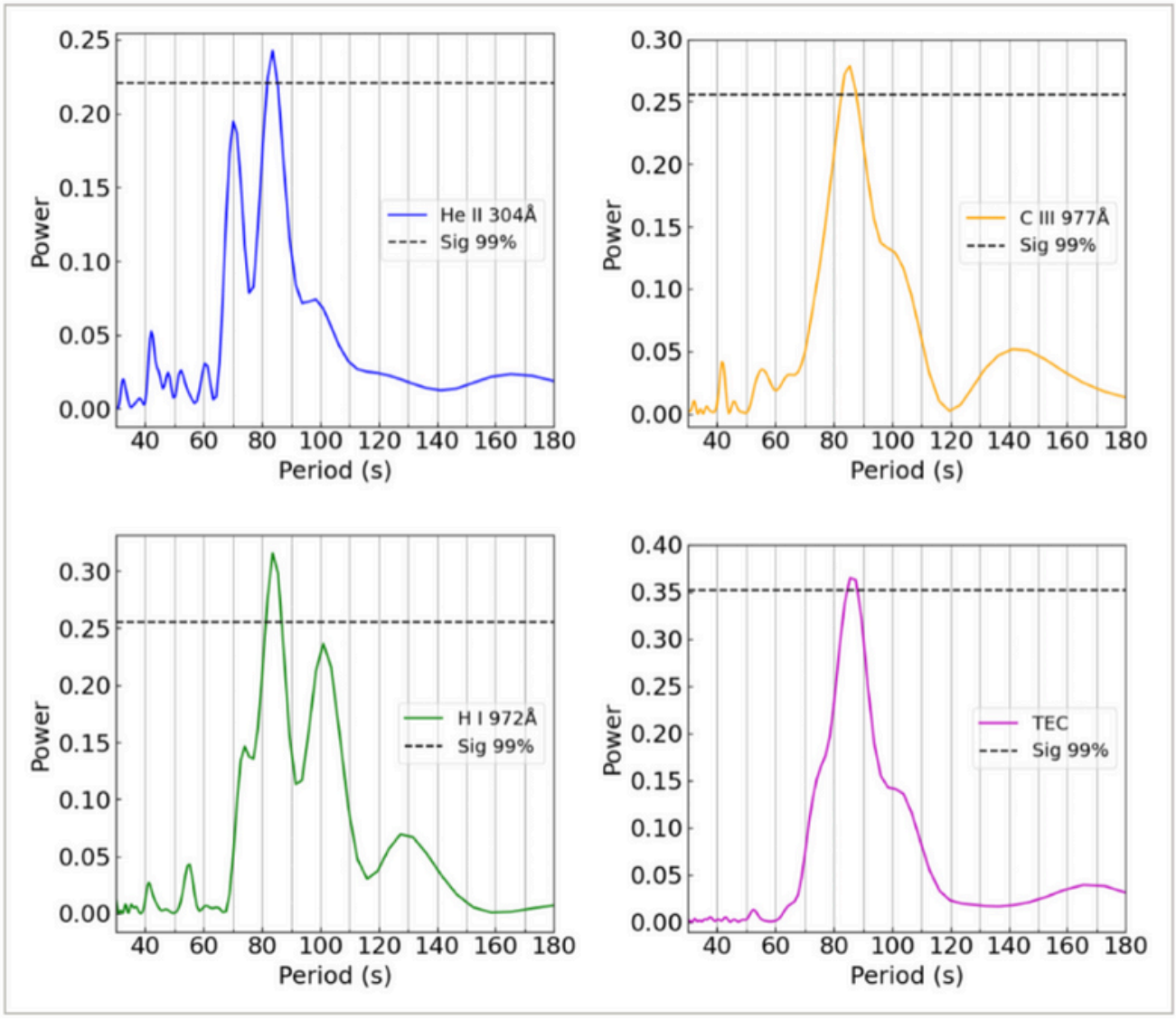
TEC measures the number of electrons between a GPS satellite and a receiver on the ground. It's a crucial indicator of ionospheric activity. When solar radiation increases during flares, more atoms in the upper atmosphere get ionized, meaning more electrons appear, and TEC rises. Changes in TEC can disrupt GPS accuracy, radio signals, and satellite communications, critical systems that modern life depends on. That makes understanding exactly how solar flares modulate TEC a key priority for space weather forecasting.



"MAP SHOWING THE LOCATION OF THE GPS STATIONS OF THE SOPAC NETWORK USED IN THIS STUDY. THE COLOR BAR ILLUSTRATES THE SOLAR ELEVATION ANGLE FROM EACH STATION IN DEGREES."

While X-ray pulsations had previously been linked to Earth's lower ionosphere, it was unclear whether similar fluctuations in EUV light affected the upper layers.

This study focused on an X5.4-class solar flare that erupted on March 7, 2012. By analyzing high-resolution observations from NASA's Solar Dynamics Observatory (SDO) and GPS stations around the globe, the researchers found synchronized pulsations in three EUV wavelengths; He II 304 Å, C III 977 Å, and H I 972 Å. These specific emissions are known to energize the E and F regions of Earth's ionosphere, the very zones responsible for the majority of ionospheric electron content.



"LOMB-SCARGLE PERIODOGRAMS FOR THE THREE EUV EMISSION LINES: HE IL 304 A (BLUE), C III 977 A (ORANGE), H | 972 A (GREEN), AND TEC (MAGENTA). THE DASHED LINES DENOTE THE 99% SIGNIFICANCE LEVEL."

And the match wasn't subtle: TEC pulsations appeared with a delay of just 30 seconds, echoing the Sun's rhythm with striking fidelity.

Why 30 Seconds Later? That short delay isn't arbitrary. It reflects a known property of the ionosphere called "sluggishness"—the time it takes for the atmosphere to respond to sudden changes in solar radiation. It depends on how quickly newly ionized particles are created and how fast they recombine. This lag can now be precisely measured, opening a new window into calculating atmospheric recombination rates—essential for better climate and space weather modeling.

To identify these subtle signals, the researchers used wavelet and periodogram analysis, two statistical tools designed to spot periodic behavior in noisy data. They filtered out the broader trend of the flare to reveal the flickers beneath. The result: clear and consistent pulsations with an average period of 85 seconds, appearing in both the solar EUV light and the ionospheric TEC. The team analyzed data from 251 GPS stations across mid-latitudes, ensuring coverage of the sunlit side of Earth where ionospheric changes are most pronounced. In each case, the rhythmic pattern held.

This discovery adds a poetic dimension to space science: when the Sun pulses, Earth pulses back. Not just in broad sweeps, but in tightly timed oscillations—a conversation unfolding every 85 seconds, across 150 million kilometers.

IT'S A REMINDER THAT EARTH'S SPACE ENVIRONMENT IS NOT A PASSIVE SHIELD, BUT A LIVING, BREATHING SYSTEM ATTUNED TO ITS STAR'S HEARTBEAT. AND AS SOLAR ACTIVITY RAMPS UP DURING THE ONGOING SOLAR CYCLE, THESE FINDINGS WILL HELP US STAY ONE STEP AHEAD OF THE SUN'S NEXT PULSE.

SOLAR OZONE IMPACT

ARTICLE REFERENCED:
COMPARISON OF THE CHEMICAL COMPOSITION OF THE MIDDLE ATMOSPHERE DURING ENERGETIC PARTICLE PRECIPITATION IN JANUARY 2005 AND 2012

BY: BEN DAVIDSON

A new study is furthering our understanding of solar ozone destruction. Many studies have previously shown that solar storms tend to cause ozone loss due to energetic particle penetration into the atmosphere, and this new one takes a very detailed look at two events, in 2005 and 2012.

The proton storm from the sun was approximately equivalent in each event, but the 2005 event produced a stronger geomagnetic storm. The stronger storm in 2005 caused an initial ozone loss that was greater than the 2012 event, but the maximum depletion ended up larger for the 2012 event, and the same for the recovery time.

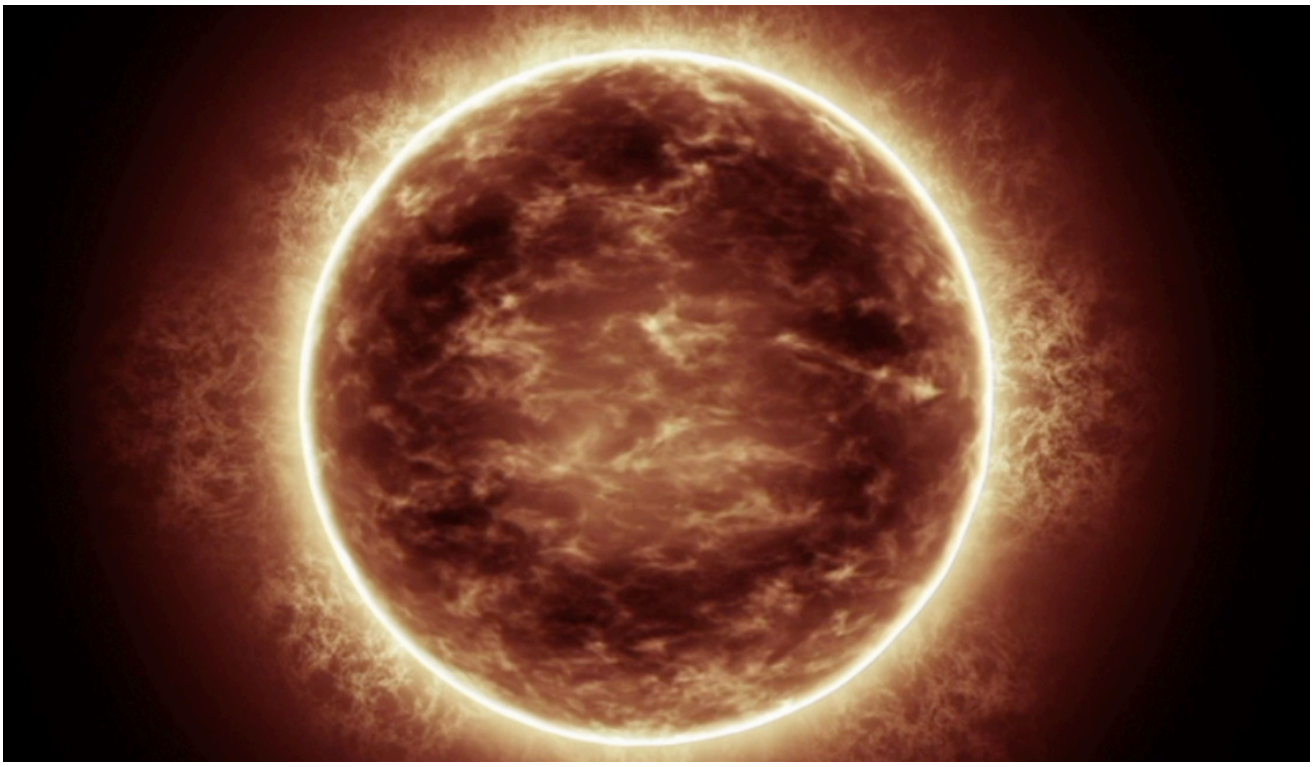
If you watch our videos online, and/or read many of these online issues, you may think this is starting to sound like a broken record, but the reason why a smaller event in 2012 had greater maximum ozone loss and a longer recovery time is the ongoing magnetic pole shift. This cannot be stressed enough - it is the single most important thing happening that almost no-one is talking about.

One of the most significant accelerations of the pole shift happened in April 2006, a year after the 2005 event in this study. By the time the 2012 event occurred, earth's magnetic field was ~5% weaker than during the 2005 event. The ozone impact and recovery times were 10-50% larger for the 2012 event, which should offer an idea about how small changes in our protective layers amplify to larger impacts on the earth system. Imagine when we lose 10% more, 20%, 50%. Things are going to get bad.

SOLAR CLIMATE FORCING

ARTICLE REFERENCED:
TEMPERATURE VARIABILITY IN NORTHEASTERN CHINA OVER THE PAST 2000 YEARS: LINKAGES WITH THE ARCTIC OSCILLATION AND SOLAR ACTIVITY

BY: BEN DAVIDSON



In a new analysis, scientists studied a lake in Northeast China to figure out how temperatures changed over the last 2,000 years, using tiny fossils to create a detailed temperature record. They found that temperatures in this area varied a great deal and were influenced by a weather pattern called the Arctic Oscillation, especially during warmer months, and these changes didn't always match broader Chinese temperature trends. The study also suggests that changes in the sun's activity might be linked to these temperature shifts, happening in cycles of about 60 years.

Their somewhat feeble suggestion about the sun should have been stronger. Not only is there statistically significant evidence that longer solar cycle activity was working the temperature changes, but there are several studies confirming that solar activity modulates the Arctic Oscillation over timescales of 1 year to 11 years.

In essence, this study points to solar impact on surface temperature both directly and indirectly, through the Arctic Oscillation. As with nearly all of the thousands of studies on solar climate forcing, this connection is omitted from every climate model in existence.

RAPID SOLAR FORCING

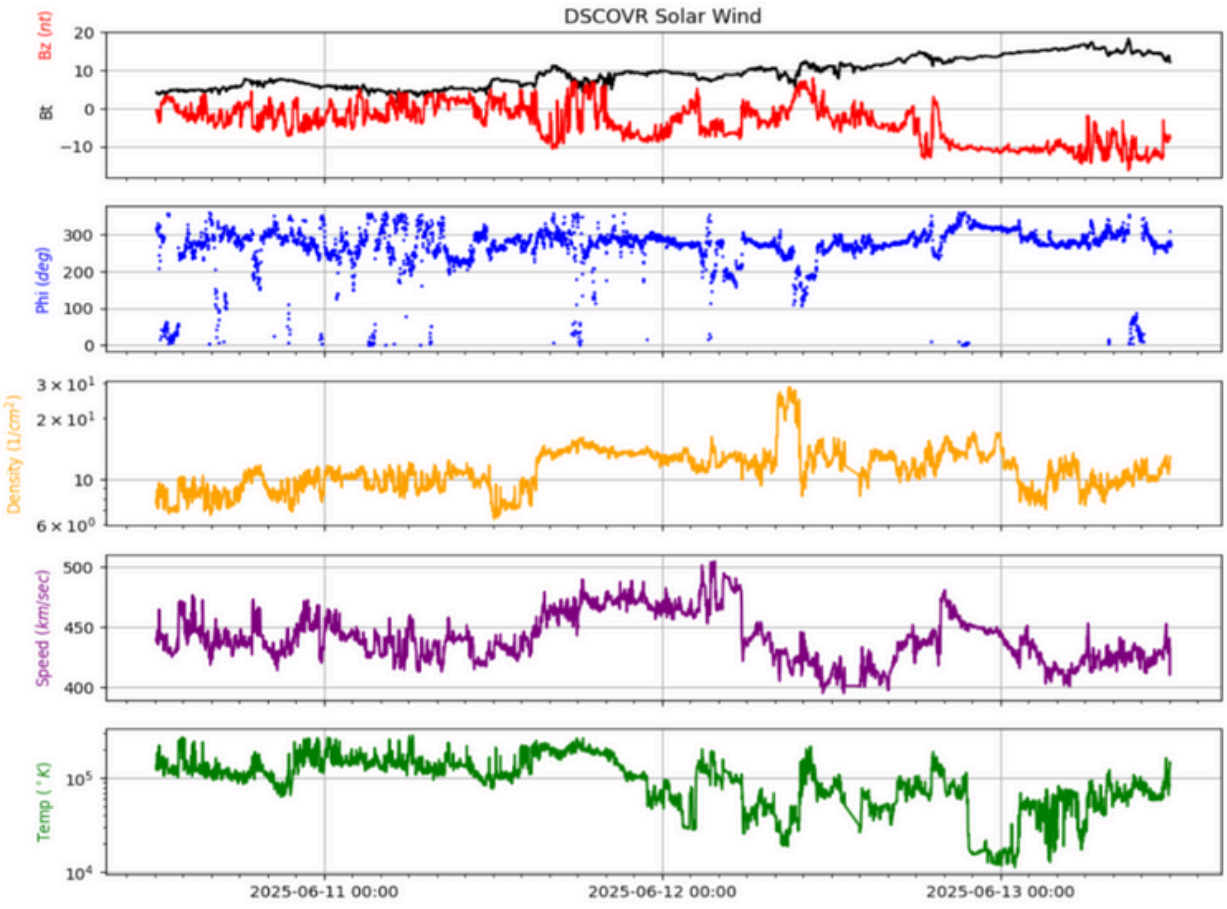
BY: BEN DAVIDSON

ARTICLE REFERENCED:
GROUND MAGNETIC RESPONSE TO AN EXTRAORDINARY IMF B_Y FLIP DURING THE MAY 2025 STORM: TRAVEL TIME FROM THE MAGNETOSHEATH TO DAYSIDE HIGH LATITUDES

There have been studies on rapid solar forcing of the atmosphere, mostly due to geomagnetic storm events, which impact the ionosphere, and spread globally, impacting the lower atmosphere through the global electric circuit on timescales that can barely be measured. They have used terms like "simultaneously", “instantly”, and “nearly light speed” to describe the impact sync of the earth layers.

Now, for the first time, a similar study has been conducted, but focusing entirely on magnetic field anomalies within the solar wind. The By and Bz components of the solar wind (blue and red panels in the image) indicate the strength and direction of the magnetic field embedded within the solar wind, and when they change rapidly it can have similar effects to CMEs and coronal hole streams that cause geomagnetic storms.

The study found that the forcing timelines are on the order of 2-10 minutes from solar wind change to earth-system impact. This, like previous rapid-forcing studies, is not in climate models, implies a much greater role for the sun in weather and climate, and is an interaction that is becoming more and more amplified as earth’s magnetic field continues weakening.



SOLAR FORCING OF HUMAN HEALTH

ARTICLE REFERENCED:
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HTTPS://WWW.SCIENCEDIRECT.COM/SCIENCE/ARTICLE/PII/S0361923025001819
HTTPS://SCIENCE-RESEARCH.UZ/INDEX.PHP/UJMANS/ARTICLE/VIEW/151/224

In a six-year study of over 500,000 individuals from Qingdao and Weihai in China, researchers uncovered a surprising connection between blood pressure and GMA. Both systolic and diastolic blood pressure followed a distinct annual bimodal rhythm—peaking in spring and autumn—that closely mirrored fluctuations in the Ap index, a global measure of geomagnetic disturbance. Interestingly, these patterns were not explained by other environmental factors like temperature or pollution (PM2.5). Instead, only the magnetic data exhibited the same 3-month, 6-month, and 12-month cycles found in blood pressure trends. The correlation was particularly strong in women and showed a delayed effect: blood pressure tended to rise 1–2 months after a peak in geomagnetic activity, with a faster response observed during years of higher solar intensity.

This suggests that GMA may act as an external stressor on the cardiovascular system—especially for individuals with hypertension, whose regulatory mechanisms are already under strain. A separate animal study explored a more direct biological mechanism: the effect of geomagnetic storms on depression. Using rats subjected to chronic stress (a common model for depression), researchers simulated magnetic fields ranging from total geomagnetic shielding to intense 500 nT storms.

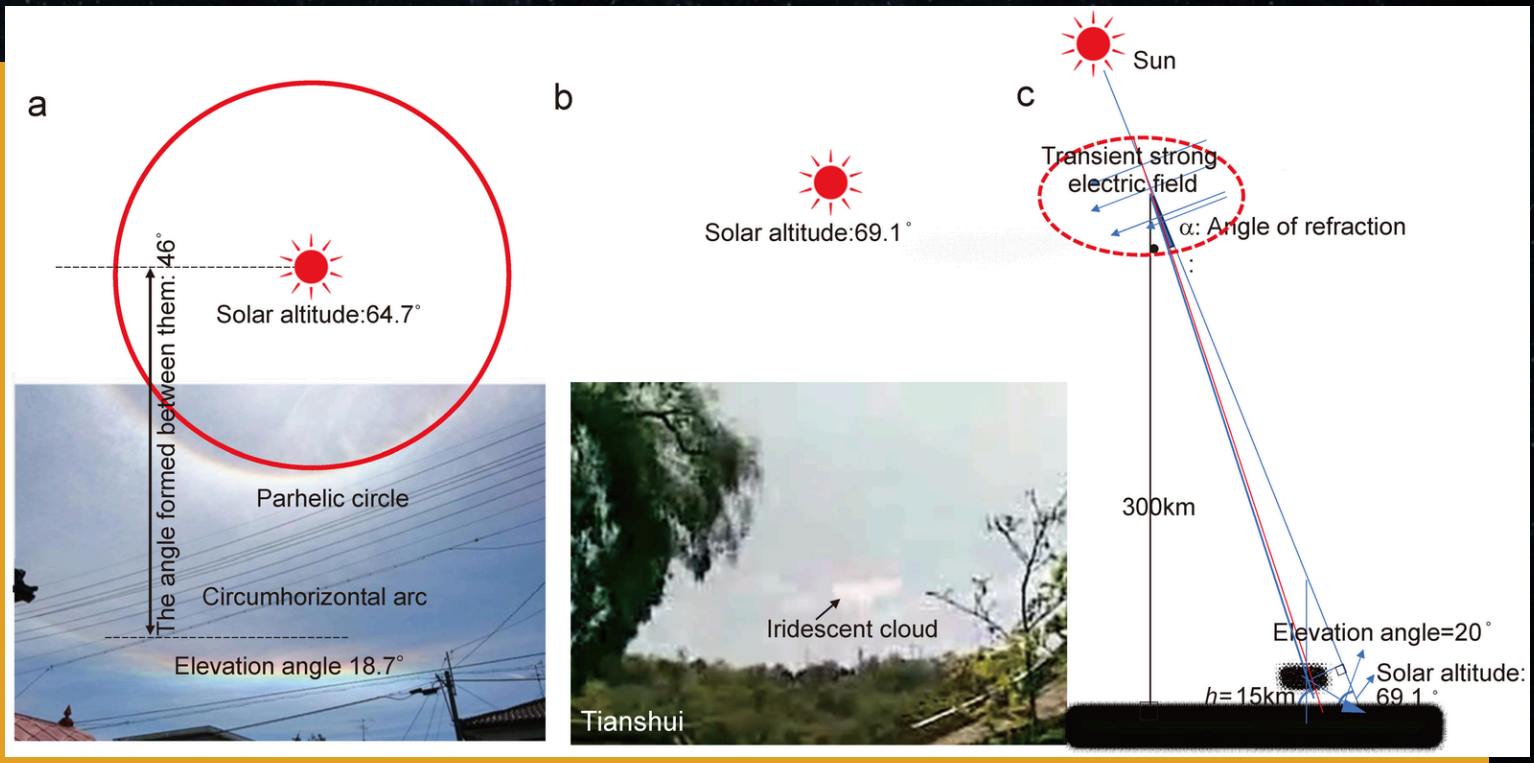
Surprisingly, moderate geomagnetic stimulation (50 nT) improved the rats' behavior and biochemistry. These rats displayed fewer signs of depression and higher levels of melatonin and related neurotransmitters such as serotonin (5-HT). Conversely, both strong (500 nT) and zero-field conditions worsened symptoms, suggesting that humans—and perhaps all mammals—require a "goldilocks zone" of geomagnetic input for optimal mood regulation.
Melatonin, a hormone critical for sleep and emotional stability, appears to be the intermediary. It is synthesized in the brain's pineal gland and controlled in part by environmental cues like light and possibly Earth's magnetic field. Disruption to this system could explain seasonal mood disorders, sleep disturbances, and the increased risk of depression and suicide during geomagnetic storms observed in some population studies.

Individuals with high blood pressure may be more vulnerable during geomagnetic disturbances, particularly in mid-latitude regions. Hormonal rhythms—especially melatonin—appear sensitive to magnetic variations, potentially affecting sleep and emotional well-being.
Women, due to vascular and hormonal differences, may be more sensitive to these fluctuations. While the exact mechanisms remain under investigation, one hypothesis suggests that low-frequency magnetic fields, such as Schumann resonances (~7.8 Hz), might interact with brain waves or modulate hormone secretion through the autonomic nervous system or the vagus nerve.

PRE-EARTHQUAKE ELECTRIC FIELDS

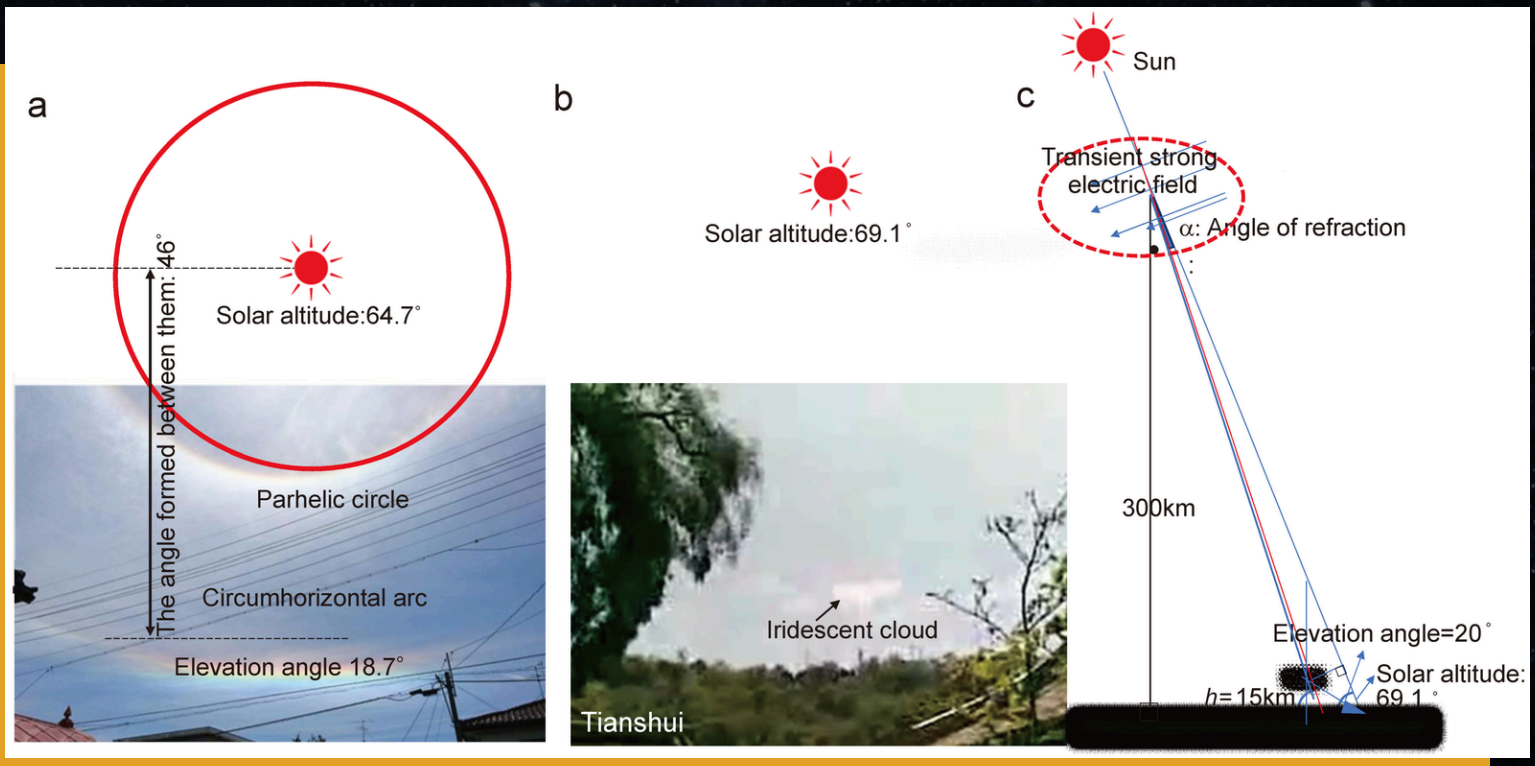
ARTICLE REFERENCED:
UNUSUAL IRIDESCENT CLOUDS OBSERVED PRIOR TO THE 2008 WENCHUAN EARTHQUAKE AND THEIR POSSIBLE RELATION TO PRESEISMIC DISTURBANCE IN THE IONOSPHERE

On May 12, 2008, a devastating magnitude 8.0 earthquake struck Wenchuan County in China's Sichuan Province, claiming nearly 90,000 lives. But just minutes before the quake, something strange appeared in the skies; shimmering, rainbow-colored clouds captured in videos that quickly spread across social media. A recent study suggests they could be signs of unusual electric fields forming in the upper atmosphere before an earthquake.



"A PHOTOGRAPH OF A CIRCUMHORIZONTAL ARC OBSERVED IN NAGANO PREFECTURE, JAPAN, AROUND 11:00 A.M. (LOCAL TIME) ON 28 APRIL 2019 (SOURCE: WEATHERNEWS INC.; PARTIALLY MODIFIED); (B) IRIDESCENT CLOUD OBSERVED IN TIANSHUI [10]; (C) SCHEMATIC DIAGRAM ILLUSTRATING THE GEOMETRIC RELATIONSHIP UNDER THE ASSUMPTION THAT SUNLIGHT WAS DISPERSED IN THE IONOSPHERE AT AN ALTITUDE OF 300 KM AND PROJECTED ONTO CIRRUS CLOUDS AT AN ALTITUDE OF 5 KM WITH AN ELEVATION ANGLE OF 20°."

The clouds were spotted in Tianshui, Baoji, and Meixian, located 450 to 550 kilometers from the epicenter. Unlike typical rainbow arcs that stretch widely across the sky, these appeared as brief, glowing patches that lasted only a few minutes. Scientists believe the answer lies in what is known as the electro-optic effect. This is a phenomenon where electric fields can change the way light bends as it passes through certain materials. It is well documented in laboratory crystals but might also apply to the ionosphere under rare conditions.



"MAP OF THE 2018 WENCHUAN EARTHQUAKES AND THE OBSERVATION SITES OF IRIDESCENT CLOUDS (=) (MAP SOURCE: GEOSPATIAL INFORMATION AUTHORITY OF JAPAN. • DISTRIBUTION OF AFTERSHOCKS ON THE DAY OF THE EARTHQUAKE (12 MAY 2008)."

To explore this idea, researchers recreated the effect using a crystal known as KTN, or potassium tantalate niobate. By applying voltage to the crystal, they observed how it bent sunlight. At 500 volts, the light shifted by 3.5 degrees, matching the angle estimated from the video footage of the earthquake clouds. This demonstrated that electric fields can indeed disperse sunlight in a measurable way.

The ionosphere, which lies hundreds of kilometers above Earth's surface, is filled with charged particles. If a similar electric field developed there during the earthquake buildup, it might have caused sunlight to bend, creating the brief patches of colored light seen in the sky.
In the 30 to 60 minutes before the Wenchuan quake, scientists recorded an unusual rise in the ionosphere's total electron content, or TEC. This increase occurred directly above the earthquake's epicenter. Such TEC anomalies are often seen before major quakes and may result from underground gases or rock movements that disturb the Earth's electric environment.

This kind of chain reaction—where changes in the ground affect the atmosphere and ionosphere—is known as lithosphere-atmosphere-ionosphere, or LAI, coupling. It is a growing area of research that seeks to understand how Earth's systems communicate before a seismic event.

The idea that earthquake precursors might appear in the sky is not new. Similar cloud formations were reported before Japan's 1944 Tonankai earthquake. At the time, these accounts were seen as folklore.

AS ROCKS FRACTURE DEEP UNDERGROUND, GASES LIKE RADON AND METHANE MAY ESCAPE UPWARD. THESE GASES CAN CHANGE THE ELECTRICAL PROPERTIES OF THE ATMOSPHERE.

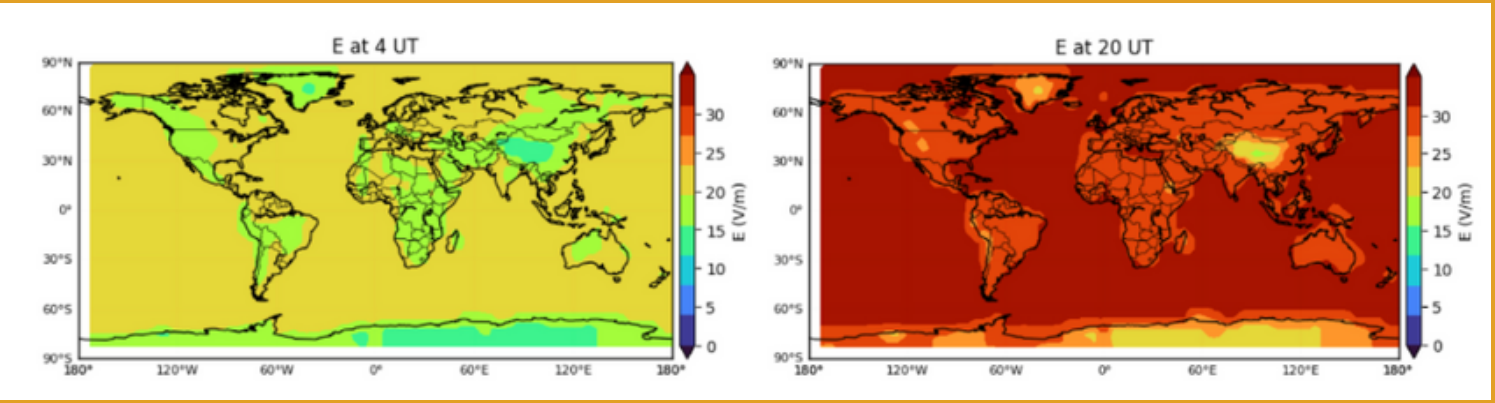
IN SOME CASES, THE STRESS AND CHARGE BUILDUP COULD CREATE A TEMPORARY ELECTRIC FIELD IN THE IONOSPHERE, ESPECIALLY IN AREAS WHERE THE ELECTRON DENSITY IS ALREADY HIGH, SUCH AS THE EQUATORIAL ANOMALY ZONE.

IF A FIELD FORMS BETWEEN A REGION OF HIGHER AND LOWER ELECTRON DENSITY, IT COULD BE STRONG ENOUGH TO BEND SUNLIGHT, SIMILAR TO WHAT WAS OBSERVED IN THE LAB WITH THE KTN CRYSTAL. THIS EFFECT COULD EXPLAIN THE APPEARANCE OF THOSE STRANGE CLOUD PATCHES RIGHT BEFORE THE WENCHUAN EARTHQUAKE.

SOLAR IMPACT TO GEC

BY: BEN DAVIDSON

ARTICLE REFERENCED:
MODELING THE IMPACT OF SPACE WEATHER AND LOCAL EFFECTS ON THE GLOBAL ATMOSPHERIC ELECTRIC CIRCUIT



CALCULATED GLOBAL DISTRIBUTION OF THE GROUND ELECTRIC FIELD (V/M) AT 4 AND 20 UT

For years we have gone over how solar storms impact the entire atmosphere through its profound impact on the ionosphere, which is the ceiling of the global atmospheric electric circuit, which flows through the entire vertical atmospheric column, impacting air temperature, clouds, rain, lightning and wind.

A new study is driving deeper into specific instances to investigate single storm impacts on these currents and atmospheric electricity overall. The findings highlight the impact to the current flow throughout the atmospheric system, and specifically the impact to condensation nuclei. These nuclei endure enhanced formation and aggregation activity under the influence of these solar forcings, amplifying cloudiness in regions where clouds already had a chance to form.

The cloud fraction and thunderstorm generator modes were the most-impacted atmospheric parameters, which both control precipitation and sunny vs cloudy (hotter vs cooler) conditions.

This connection between space weather and the GEC is amplified over time as earth's magnetic field weakens in the ongoing magnetic pole shift, because this process allows more cosmic energy to enter the earth system.

MARS FIRST VISIBLE AURORA

BY: BEN DAVIDSON

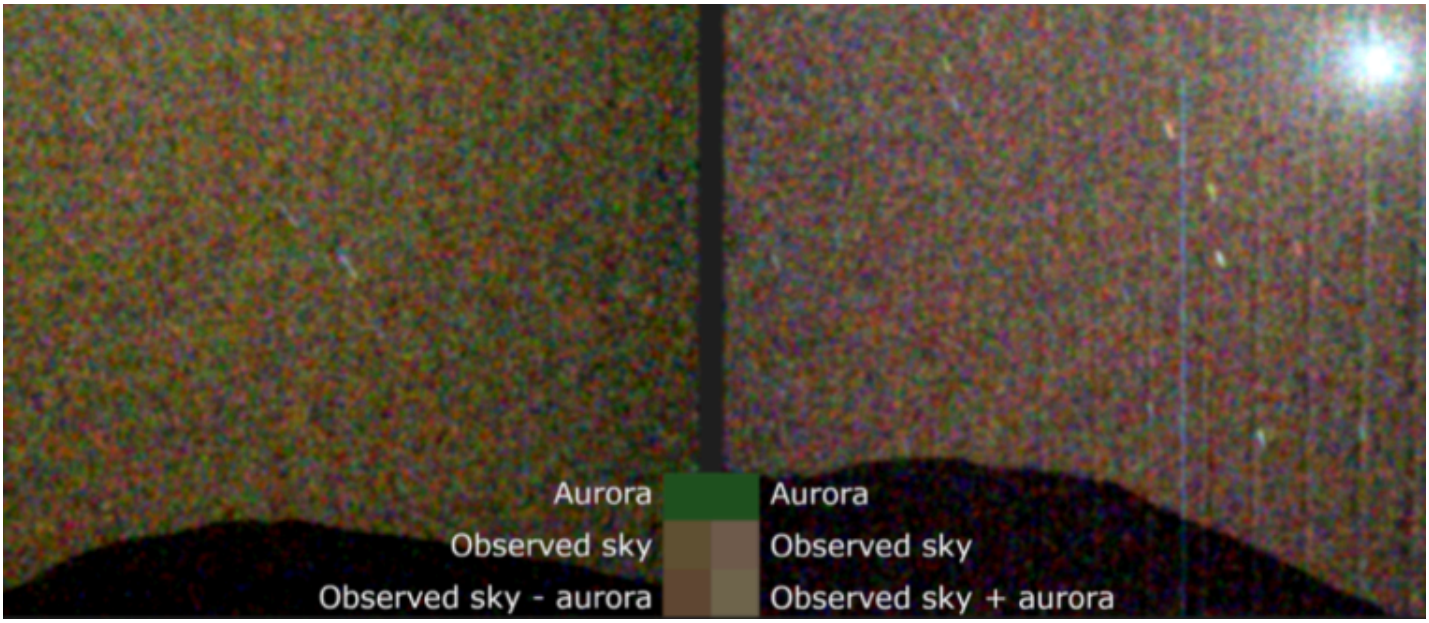
ARTICLE REFERENCED:
NASA OBSERVES FIRST VISIBLE-LIGHT AURORAS AT MARS

Data from NASA's Perseverance Rover on Mars has revealed the first ever instance of visible light aurora on the red planet. In 2025 a CME struck Mars produced these displays, marking the first time ever that visible light auroras were seen there. The rover has been there since 2021, and is just one of several observation missions.

This brings up an obvious question: why are we just now getting a look at these auroras in visible light? By this point, our answer probably is not surprising: the solar system shift, driven by the galactic current sheet and galactic magnetic reversal, is causing the changing conditions that allowed for this event to occur.

So far, Mars has experienced greater climate change than earth, has endured increasing seismicity, the mantle of the red planet woke-up from its dead state, and now, the first visible light auroras. Mars appears to be changing as rapidly as Earth and Jupiter (the two most-changing planets) amidst the solar system shift.

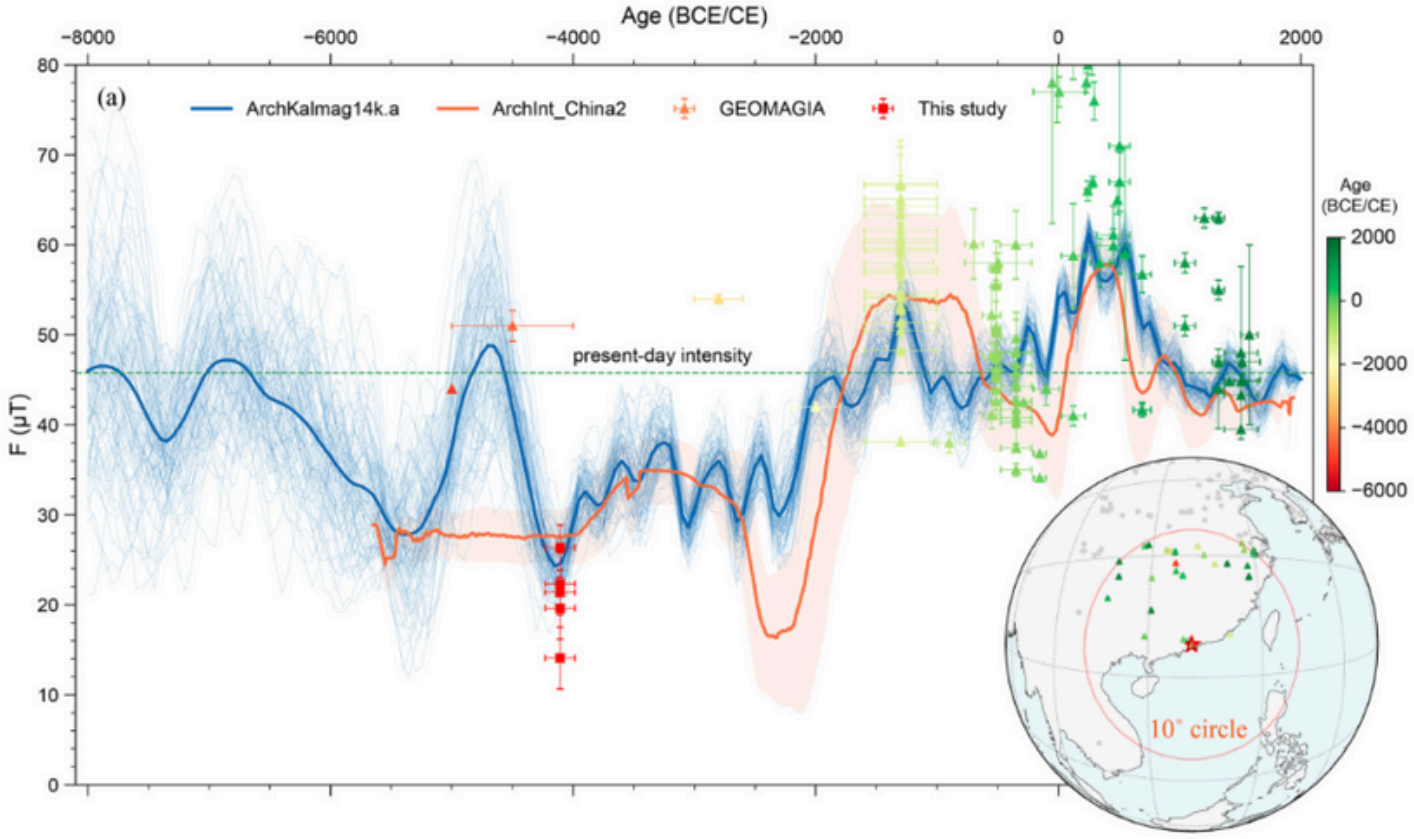
It is the author's personal opinion that Mars is "waking back up", and this is the primary reason why Elon Musk is so focused on Mars when the moon is the obvious, easier and cheaper choice.

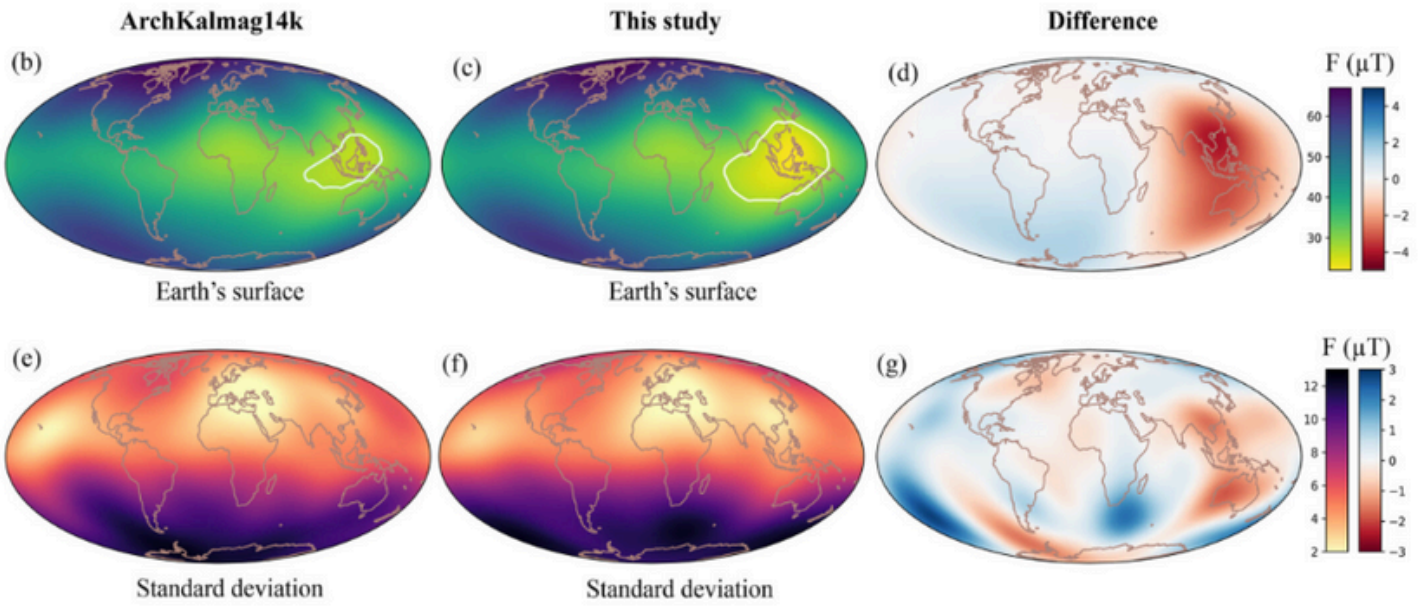


6000 YEARS AGO

BY: BEN DAVIDSON

ARTICLE REFERENCED:
ABRUPT CONTRACTION OF THE INDO-EAST ASIAN MONSOONS ENDED THE HOLOCENE HUMID PERIOD





A new study has added a powerful confirmation of the Tianchi (Noah Event) geomagnetic excursion 6000 years ago - the very last disaster cycle event. The article investigates the West Pacific Anomaly (WPA), a low geomagnetic field anomaly observed historically from the 16th to 18th centuries, and its potential recurrence 6,000 years ago.

The study presents new paleointensity results from pottery shards unearthed from the Xiaojiaoshan site in southern China, dating back approximately 6,000 years.

It is interesting that pottery and other civilization-indicative aspects were found there, around the same time “civilization apparently started” in Sumeria. However it is far more interesting that we now have such a dramatically strong confirmation. As of 3 years ago, the event 6000 years had not been officially recognized as an excursion - only by unofficial sources like our works.

Today, we now have as much evidence for this event as any other excursion with the exception of Laschamp (the most well studied of them all).

With the confirmation of the Tianchi excursion, the 6000-year cycle is entirely confirmed, and we’re due for the next one now as we watch the earth’s magnetic field changing exactly as we would expect it to change.

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SOLAR KILLSHOT

ACTION NETWORK

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