

Volume 7, February 2012

Science to Sage

International Magazine

An Electric Universe?

Explore...



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THE WISDOM OF OUR DESIGNER
UNIVERSE by Karen Elkins

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ages and cutting-edge science. The
mission is to make visible our
connection to all of life and our
universe. Each month is dedicated to
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with spirituality; it is a profound
source of spirituality." Carl Sagan

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An Electric Universe?

Inspired by the book *InsideOUT* -

As Above, So Within - Ancient Wisdom to Modern Science

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Special thanks to Kim Guilford, of the Thunderbolt Project, for coordinating many of these amazing articles.

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RECOMMENDATIONS

Banyen Books & Sound, Vancouver BC

Resources are from the Book "InsideOUT, by Karen Elkins - Links, YOU-Tube and books

From the Book - InsideOUT, As Above, So Below

The Masters Mind

*The Master Mind of this design
Is electric and magnetic
Full of possibilities
A creative spark
This is our divinity.*

*It's all entwined
Like a web
The internet
A perfect connect.*

*The Mind of God reveals
Its thundering thoughts
Lighting up the heavens
My mind and my thoughts.*

*Overwhelmed by its immensity
Its force
Its conductivity
It lights up the world
From the sun, forms the stars
So I can reflect back the light in
ME
That was given by Him/Her
As it nourishes me.*

*Celebrating you as kin
Your fragrant flowers
Your fruit so sweet
Your generosity.*

*Yet I can be reduced to a particle
Then a wave
From an Adam*

*To the dawn of Eve
A perfect union
My perfect mate
We dance by design
Like galaxies entwine
Angels' wings embraced.*

*Whirling intensity through space
The strength of this vortex
This coming together
Is fractal in expression
Of expanding dimension
Transcending time and space.*

*Our radio waves
Our frequencies
The channels we tune in
Creates our destinies.*

*I'm a master creator
Mixed in clay
Bonded by chemistry
My elements at play.*

*A vortex and then a shape
A geometric pattern*

*Our blueprint
Our DNA
Our past creation on display.*

*This essence emanates from me
A brilliant reflection
A complete spectrum
My aura, earth's borealis*

A techno color display.

*It's not by chance that
Mother Earth is the same as me
Crystal in form
Her battery
Her heart's pulse
Expresses like me.*

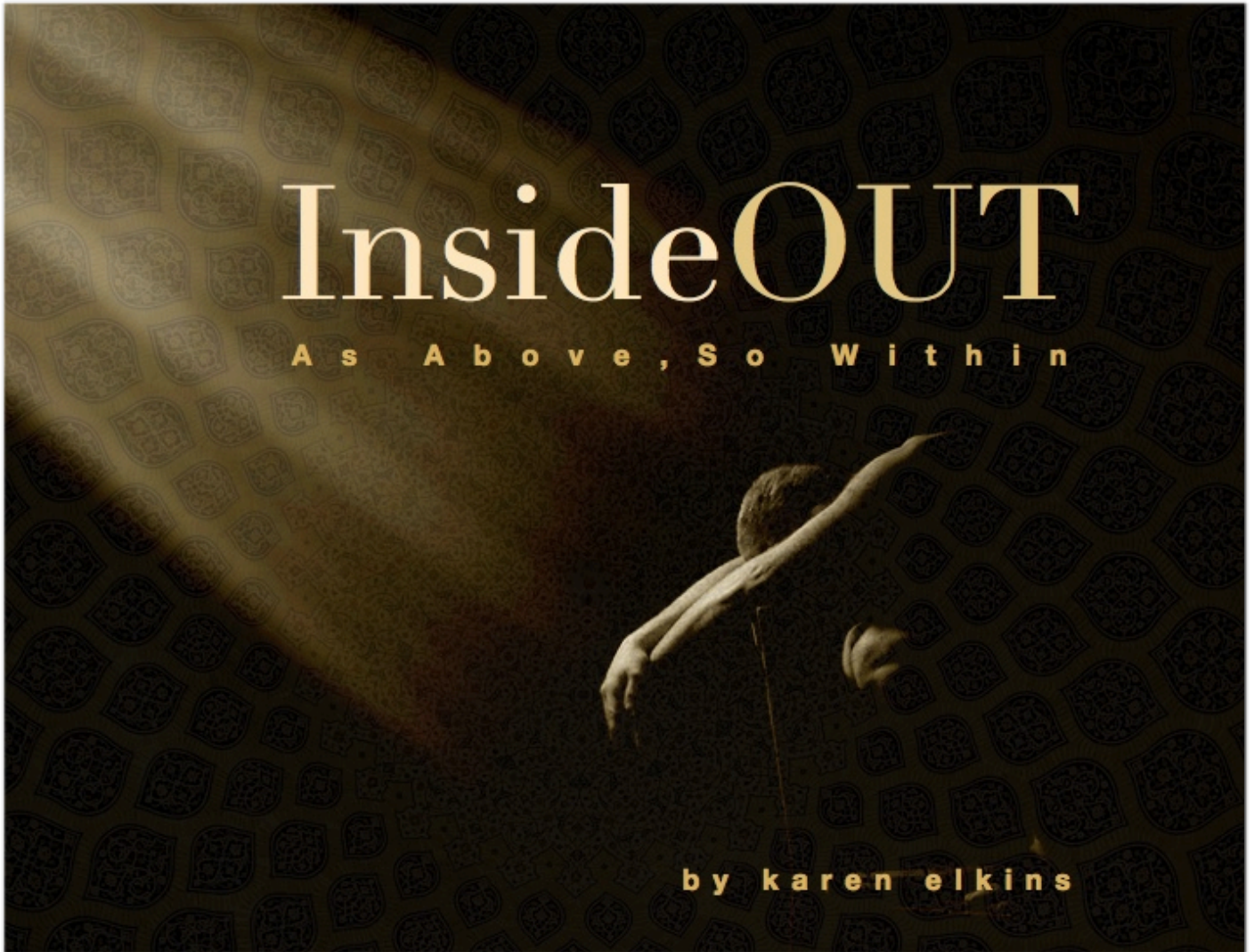
*This energetic display
Rotates and circulates
Around me, the earth
The sun and spins the moon.*

*Some ask what God is
Their charge is positive or
negative
Ying or Yang
The quantum equation
Says it's not by chance.*

*It's your mind at play
Conscious or not
The consequences are
observable.*

*What view do you take?
Heaven or hell?
The chose is up to you.
Both are on display.*

Karen Elkins



by karen elkins

Book Coming Soon

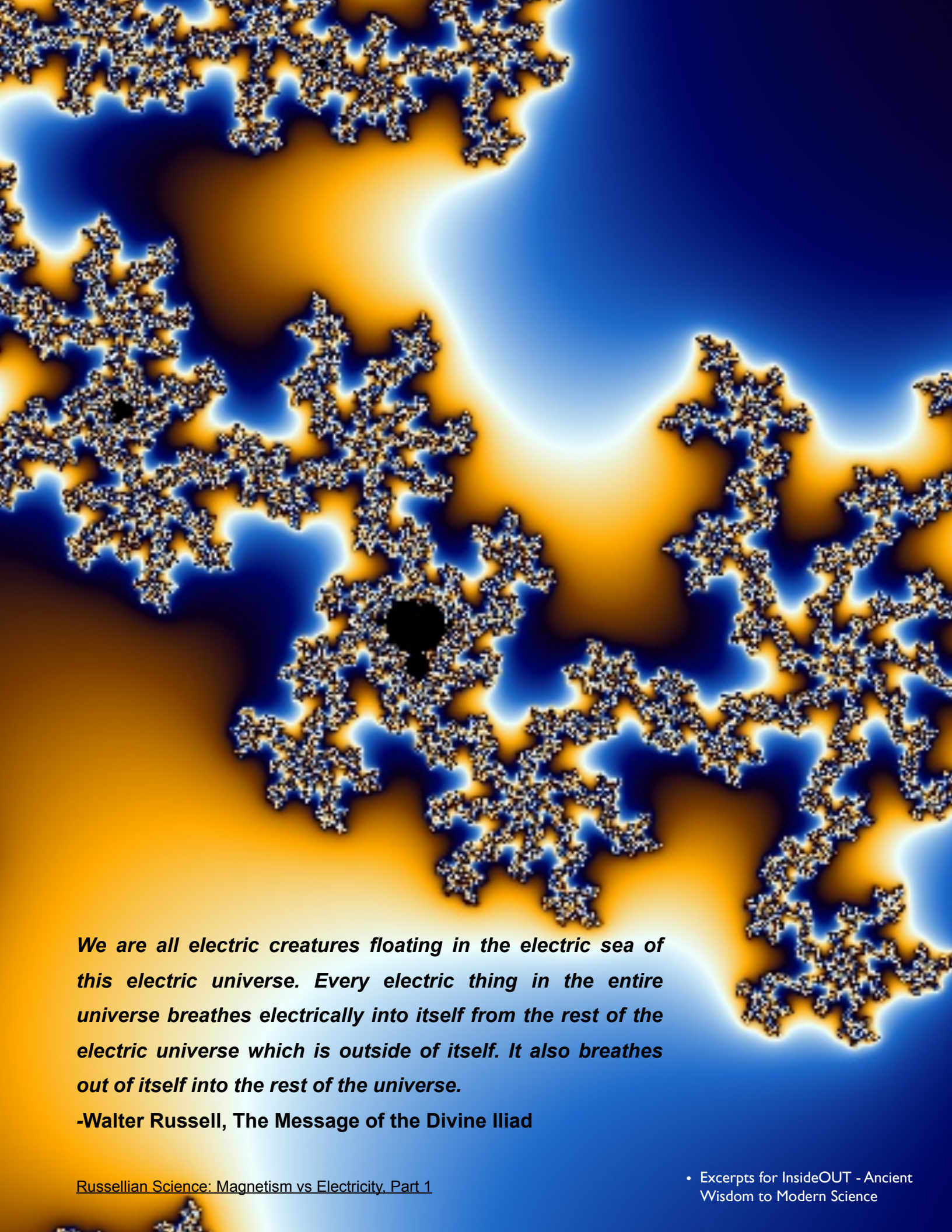
Ancient Wisdom & Modern Science

Be on the Edge of Science with Mystical Reflections

Science to Sage Magazine is inspired by this book.

By Karen Elkins

www.sciencetosage.com



We are all electric creatures floating in the electric sea of this electric universe. Every electric thing in the entire universe breathes electrically into itself from the rest of the electric universe which is outside of itself. It also breathes out of itself into the rest of the universe.

-Walter Russell, The Message of the Divine Iliad

Nikola Tesla

So astounding are the facts in this connection, that it would seem as though the Creator, himself had electrically designed this planet.

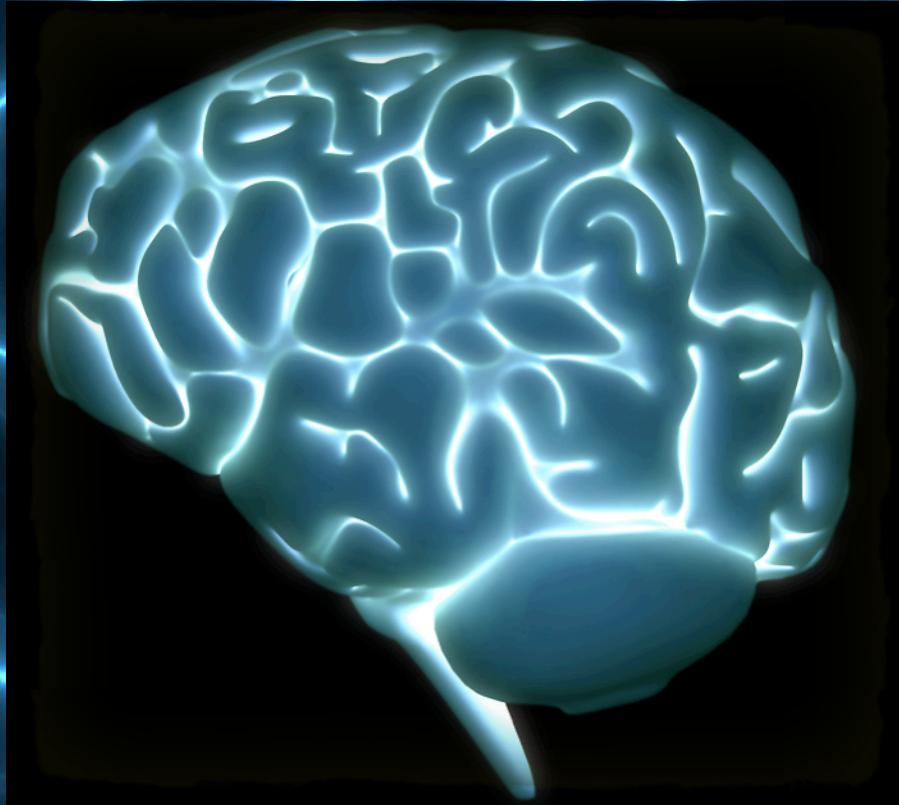
Nikola Tesla

Many healers and inventors, including Ben Franklin, Nikola Tesla, Albert Einstein, Thomas Edison and Walter Russell, have been struck by lightning either figuratively or metaphorically. Is there something about this 'energy field' that ignites genius?

*Clawson
SECRET
N.Y.*

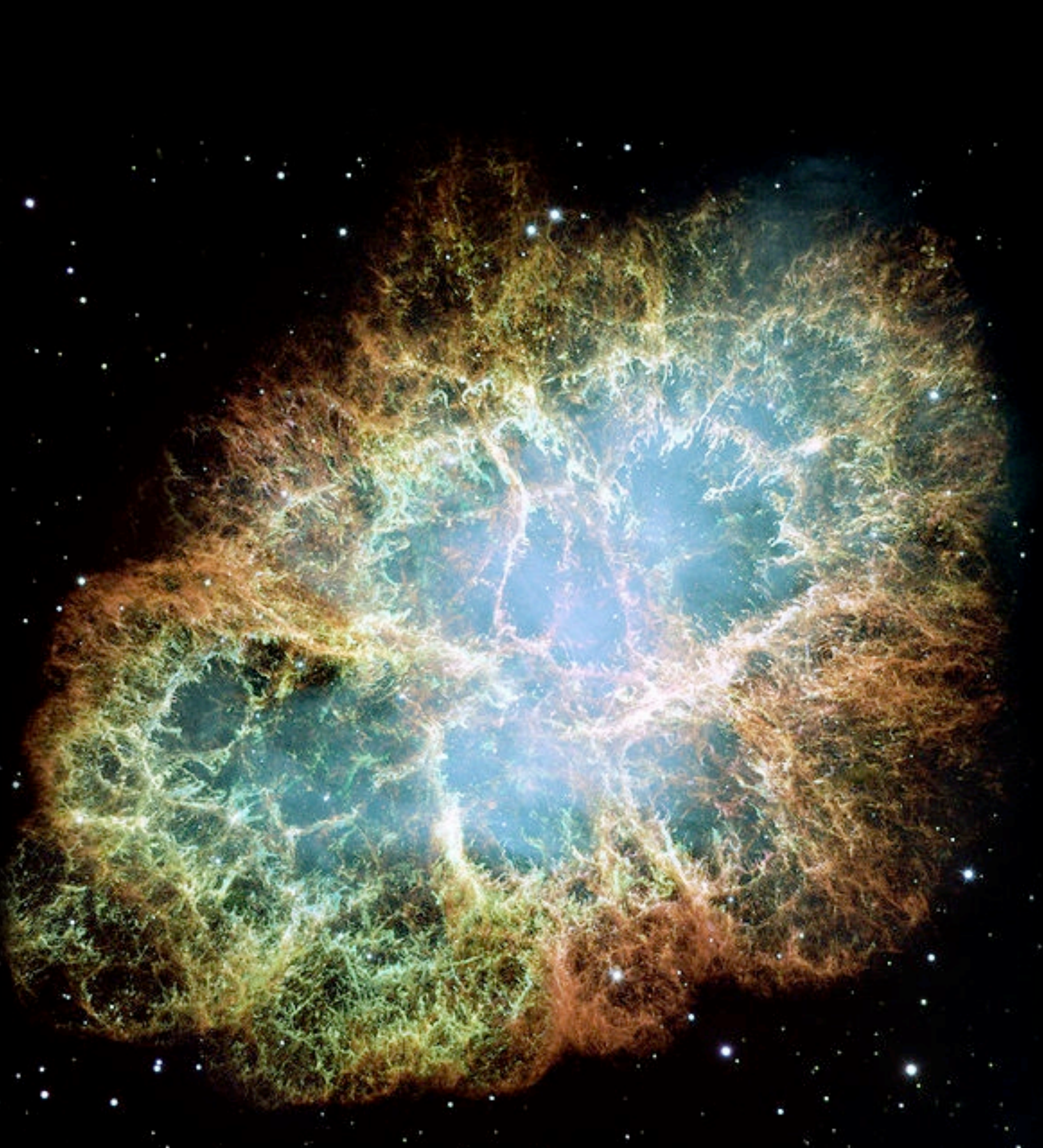
- Excerpts for InsideOUT - Ancient Wisdom to Modern Science

A Cosmic Mind Field



**From this sea of consciousness,
it's mind that makes things matter.**

Water of the heavens still is water, and it still is light waves. No change whatsoever has taken place between the waters of earth and those of the heavens except a change of its condition from positive to negative preponderance. This change is due solely to a change of its direction in respect to its center of gravity. - Walter Russell



We are Wired for Charge



WHAT IS PLASMA?



WHAT IS PLASMA?

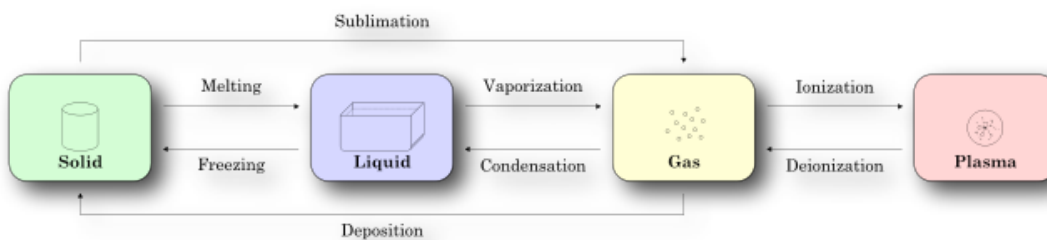
Plasma is the fourth state of matter. It differs from solids, liquids and gases in so far as it's atoms are divided into free-floating 'negative' electrons and 'positive' ions (an atom which has lost its electron/s). It is sometimes referred to as an ionized gas.

Students are generally taught about only three states of matter, and when Plasma does get a mention, little importance is

assigned. Not only should plasma be added to the list, but the order should be reversed to put it in first place.

The term Plasma was borrowed from blood plasma in order to describe its almost **life-like and self-organising properties**.

Plasma sometimes emits light when under the excitation of electrical and magnetic fields. Polar auroras bear witness to this fact.



WHERE IS IT?

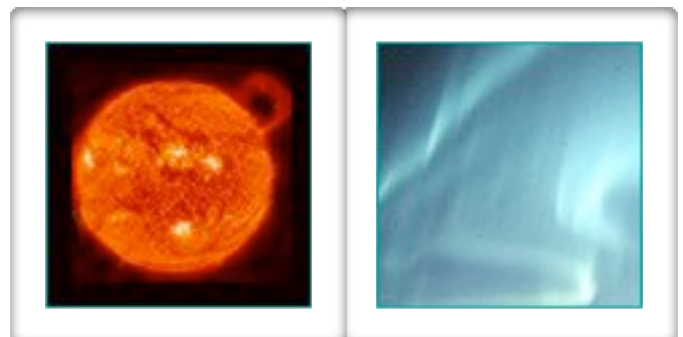
Plasma is almost everywhere. At least ninety-nine percent of the known universe is, in fact, matter in its plasma state! The surface of the sun is plasma; not hot gas, which is quite a different thing.

Plasma in space consists entirely of ions and electrons, and is thus very energetic or 'hot'. Only when cooled does it form the matter to which we are familiar here on Earth: solids, liquids, and gases.

Because plasma remains electrically charged in space, it is influenced more by electromagnetic forces than gravity. In

fact space, once considered mostly empty, has been found to be alive with plasma. Vast flows of charged particles have been discovered spanning hundreds-of-thousands of light years across interstellar space.

The most familiar examples of electrical plasmas here on earth are neon signs and lighting, television screens, and electrical arc welding machines. Fire and Lightning are also forms of Plasma.

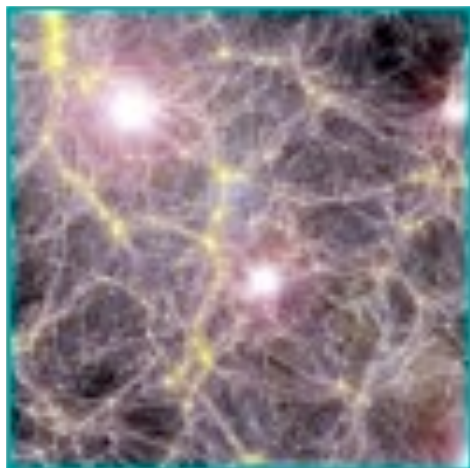




SOME BEHAVIOURS AND PROPERTIES OF PLASMA

Plasma is an excellent conductor of electricity. Because of its free-flowing electrons its conductive properties far surpass those of copper and gold.

Due to its interaction with electromagnetism, plasmas display a complexity in structure far exceeding that of matter in gaseous, liquid, or solid states. It has a tendency to form into cellular and filamentary structures.



These structures derive from the fact that a charged particle flow (or current) produces a ring of magnetic fields around itself,

'pinching' plasma into multi-filamentary strands, as can be seen on both cosmic and more localized scales. Pictured right is a novelty plasma-lamp typical of those available on the high street.

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M A I N S T R E A M M I S C O N C E P T I O N S

While conventional astronomy maps magnetism, electric currents are excluded on the mistaken basis that they are of no significance in space.

Working from the inertia of this prior belief, astrophysicists have a tendency to talk in euphemisms. 'Electron rains' and 'clouds of ionized gas' are just two examples. From a conservative perspective these terms might seem easier to grasp than the behaviour of more ethereal plasma, but they are, nonetheless, obfuscations. In reality we are talking about electrodynamic phenomena.

T H E R O L E O F P L A S M A I N T H E U N I V E R S E

Plasma cosmology has gone beyond hypothesis and analysis. There are problems with part three, of course, experimentation on universal scales, but the fact is that plasmas are highly scalable, and super-computing capabilities have enabled us to model plasma behaviours on galactic scales ... utilising only a few simple formulae.

These models are consistent with reality. Big Bang cosmology, by contrast, fails to adequately account for the 'clumpiness' and filamentary structures that we observe.

Plasma cosmology does NOT rely on abstract mathematical modelling or an increasing array of exotic hypotheticals like Dark Matter and Dark Energy!



The Thunderbolts Project



The Thunderbolts Project
PRESENTS

Electric Universe

2012 CONFERENCE **THE HUMAN STORY**

6 - 8 January 2012

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INSIGHTS

By Mel Acheson



www.davejenkins.com/GFLD

An artist paints in response to a vision that inspires him. That vision is personal, but because the artist lives in a community of other people who have particular cultural traits, the artist's vision reflects the world-view of the culture.

Because of this, the paintings in Altamira Cave and other Paleolithic caves

imply a worldview. So, too, do the petroglyphs on Newspaper Rock imply a worldview. The paintings and glyphs are quite different, and the world-views that they imply are therefore quite different.

The difference implies that a paradigm shift happened among cave men.

People don't change the way they think about the universe over morning coffee: the universe gives them a kick in the butt. The bucolic world of Paleolithic people came crashing down around their brushes and pigments. Images of cute horsies no longer made sense.

Circles and ladders and duck-headed stick figures made the new world go 'round—and go sideways and backward, too. Angry and capricious gods depopulated the world and resurfaced it. **That was perhaps the world's first urban renewal project, and it seems not to have gone well.**



The changes aren't so dramatic today. But the modern age has brought a world that's just as different as gods were to horse people. **What does it mean** to see the universe in x-ray and radio light? What does it mean to look up at our own planet from the Moon? What does it mean to collect dust from a comet? What does it mean to measure the density of invisible particles in space? What does it mean to think about electricity lighting the stars?

Public Domain/G. Bacon/NASA/ESA

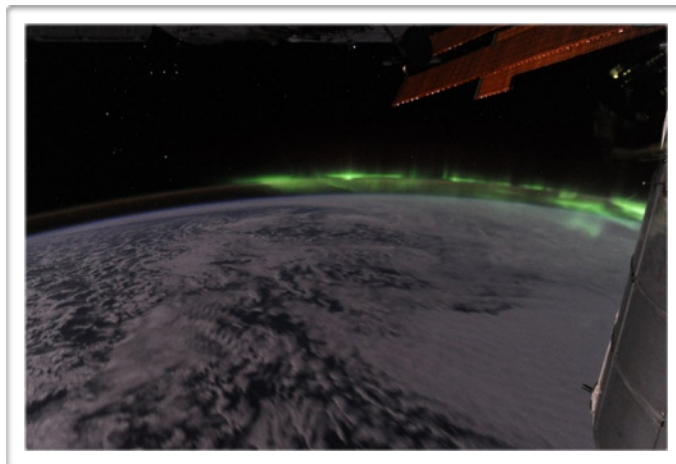


Today's world is not Newton's or Einstein's world.

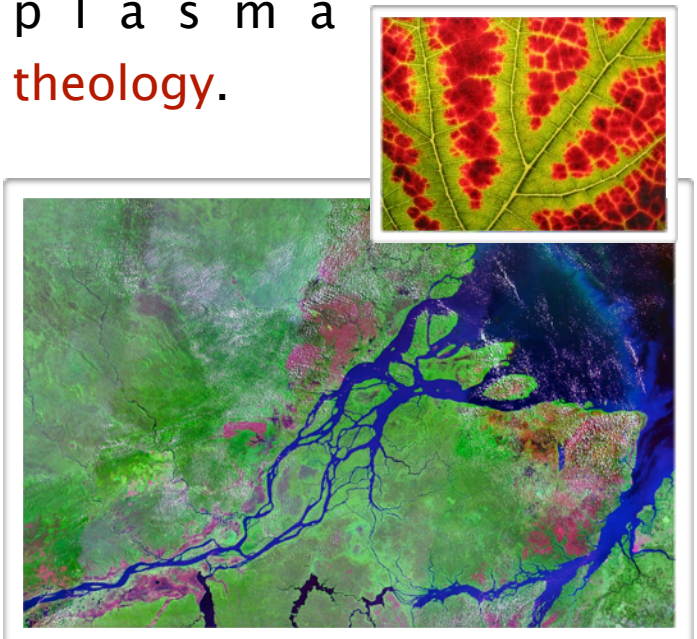
Like the cave men, we're not prepared for this. Our skills at drawing horses and explaining things with gravity and gas can't handle the strangeness. The universe is becoming populated with new objects: Planets are not isolated motes of mass but electrically connected cells of comet-like plasma sheaths. Stars are not specks of hot gas gravitating in immense darkness but arc lamps strung on circuits wrapped around the galaxy.

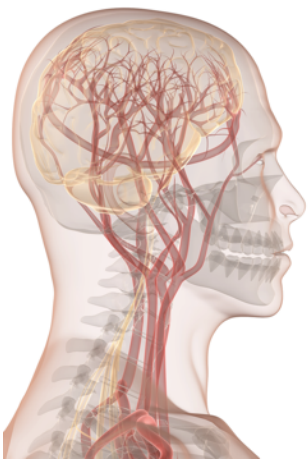
Plasma is upon us, and everything we know is in doubt. Our science libraries are becoming just fire hazards.

However, unlike that earlier shift, this is not a time to cower and to grieve. This is not so much a cataclysm of destruction, although theories may die en masse, as a flood of opportunity to create a new conceptual world and new sciences.

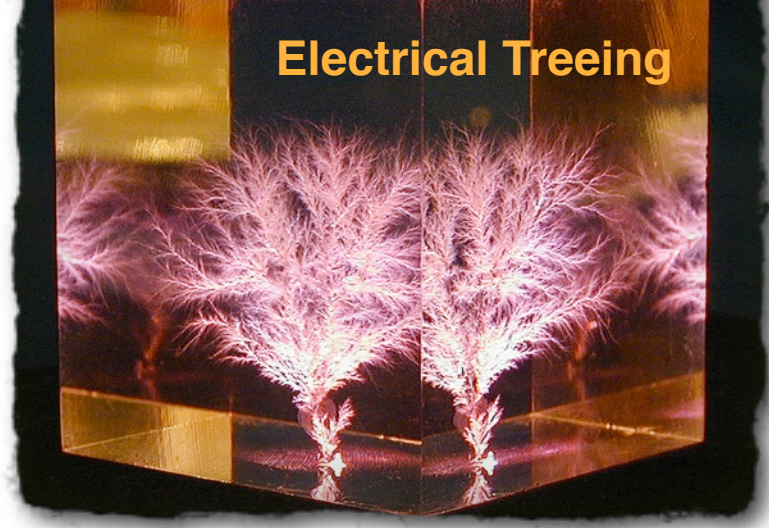


We see the beginnings of a **plasma cosmology** and a **plasma physics**. But the shift won't be confined to revising a few equations in physics. There must come a **plasma geology** and a **plasma biology**, a **plasma anthropology** and a **plasma psychology**. Beyond the sciences, there must come a **plasma history** and a **plasma politics** and a **plasma theology**.





Electric by its Nature



We will think thoughts that have never been thought before to match instrument-enhanced sensations that have never been sensed before. The change in worldview will have its full expression in our aesthetic sensibilities. Painting, sculpture, music, dance, theater, all the arts will give aesthetic features to the largely unconscious reorientation of our view of an Electric Universe. The art that's carved or painted on the rocks of the future may be as different as stick figures are from horses.

One thing that doesn't shift with the paradigms is humans making sense of nature's kicks—as in making a poem or making a theory. The kicks are undeniable, but non-human nature leaves it to human nature to figure out what they mean. We return to the human scale—the scale of caring about human experiences, of making sense of them.

Imagine the archetypal human peering into a telescope or into a microscope or just into the distance. This human is himself the measure of all the truth he can ever know. The content changes, but his seeking persists.

I end with a paraphrase of Camus at the end of *The Myth of Sisyphus*: I leave him, this human, amid the ruins of his latest knowledge. He is still peering ahead at new and ambiguous observations and at newly ambiguous old observations. **From these heaps of nonsense, he must build another world that makes sense.** He knows that it, too, someday will fall apart. But the struggle itself is enough to fill his heart. We must imagine him happy.





The Electric Universe

From the smallest particle to the largest galactic formation, a web of electrical circuitry connects and unifies all of nature, organizing galaxies, energizing stars, giving birth to planets and to our own world, controlling weather and animating islands in an electric universe.

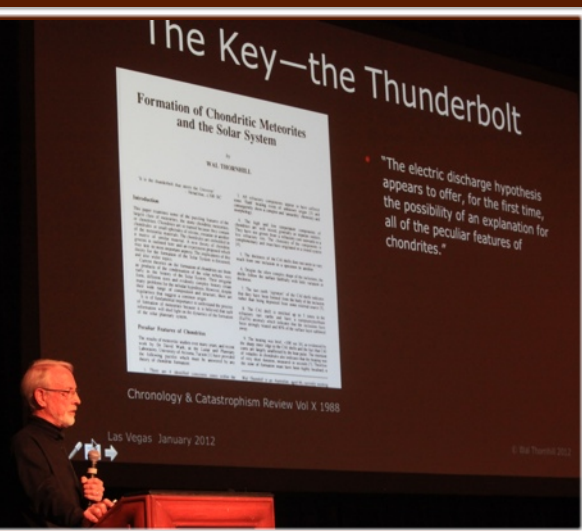
David Talbott and Wallace Thornhill



WAL THORNHILL

A COSMIC THINKER

Perhaps the most important human message from the Electric Universe paradigm is, as Velikovsky argued, that **our irrational behavior, our divisions and destructiveness toward each other and the planet, can be traced to a subconscious desire of a traumatized species to replay the global catastrophes of the past.** The danger today is that



we have enough ill-will and destructive weaponry to bring about a man-made doomsday. So our future on this blue

planet relies on us understanding our real history and ourselves. This real history is a “third story”, which will allow us to understand the first two—religion and science, which keep us shackled to the past by perpetuating myth and denying our real history.

Nothing in the arts and sciences will remain the same. The Electric Universe discards the belief in the big bang creation myth and accepts the overwhelming evidence for a static universe of unknown age and extent. It simplifies physics by showing that magnetism, gravity and the nuclear force are all manifestations of a single force—the electric force. It requires a universe connected in real time so that galaxies can spiral, planets can peacefully orbit, and the marvelous complexity of living creatures can function in their environment. We are an active participant in an awe-inspiring Electric Universe.

STARS IN AN ELECTRIC UNIVERSE

walt@holoscience.com

There is nothing more powerful than a paradigm. When viewed through the lens of the standard gravitational and magnetohydrodynamic paradigm the Sun blinds us with paradoxes. Meanwhile models based on the electrodynamic behavior of plasma are ignored. The Nobel prizewinning plasma physicist, Hannes Alfvén, was a pioneer in this new plasma cosmology. Two recent discoveries stand out in relation to Alfvén's predictions so that ultimately he cannot be ignored. The first concerns the birth of stars and the second the electric circuit of the Sun. The Electric Universe extends plasma cosmology and views all stars as an electric discharge phenomenon.

Wal Thornhill



INTRODUCTION

A real cosmology must be a broad and coherent natural philosophy. Therefore, it must be a truly interdisciplinary pursuit. Modern specialized science is a hostile environment for such a quest. For example, the world's largest professional body, the Institute for Electrical and Electronic Engineers (IEEE), recognizes plasma cosmology, but that discipline remains unheard of by students of astronomy. Plasma cosmology receives no publicity although it deals empirically with the electromagnetic behavior of plasma, which constitutes almost the entire visible universe. Unlike theoretical big bang cosmology, plasma cosmology can claim successful predictions without recourse to hypothetical matter, energies and forces.

However, despite its many successes, plasma cosmology cannot claim to be the final answer because it does not deal with unsolved problems in basic and stellar physics. The new Electric Universe cosmology addresses those fundamental problems, and in doing so offers a breakthrough in understanding of ourselves and our place in the universe. It provides practical insights for broad scientific progress and space exploration. The Electric Universe is a convergent, interdisciplinary cosmology that attempts, in the words of E. O. Wilson, "consilience," or "the unity of knowledge."

ELECTRIC STAR BIRTH



Fig 1. Star formation in a cloud of cold gas in the constellation of the Southern Cross. Image credit: ESA and the SPIRE & PACS consortia.

The European Space Agency's Herschel Space Observatory (formerly called Far Infrared and Sub-millimeter Telescope or FIRST) has been giving astronomers an unprecedented look inside molecular clouds to find that stars are formed in “an incredible network of filamentary structures, and features indicating a chain of near-simultaneous star-formation events, glittering like strings of pearls deep in our Galaxy.” [1] Although described as “incredible” by astronomers, the image in Figure 1 precisely matches the decades-old expectations of plasma cosmologists.

In another ESA report the high-resolution of the Herschel space observatory produced another surprise.

“The filaments are huge, stretching for tens of light years through space and Herschel has shown that newly-born stars are often found in the densest parts of them... Such filaments in interstellar clouds have been glimpsed before by other infrared satellites, but they have never been seen clearly enough to have their widths measured. Now, Herschel has shown that, regardless of the length or density of a filament, the width is always roughly the same.” [2]

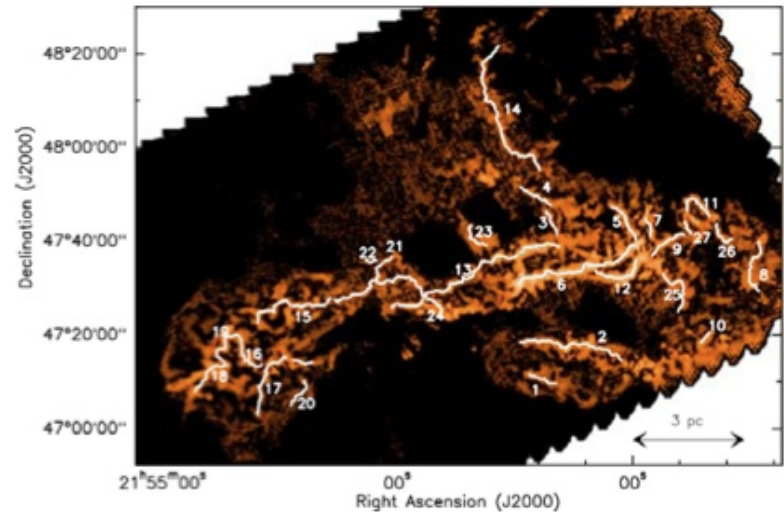


Fig. 2. A network of 27 star forming filaments derived from Her- schel observations of the IC 5146 molecular cloud. Credit: D. Ar- zoumanian et al.

Ninety filaments were analyzed and all were found to be about 0.3 light years across, or about 20,000 times the distance of Earth from the Sun. “This consistency of the widths demands an explanation.” [3]

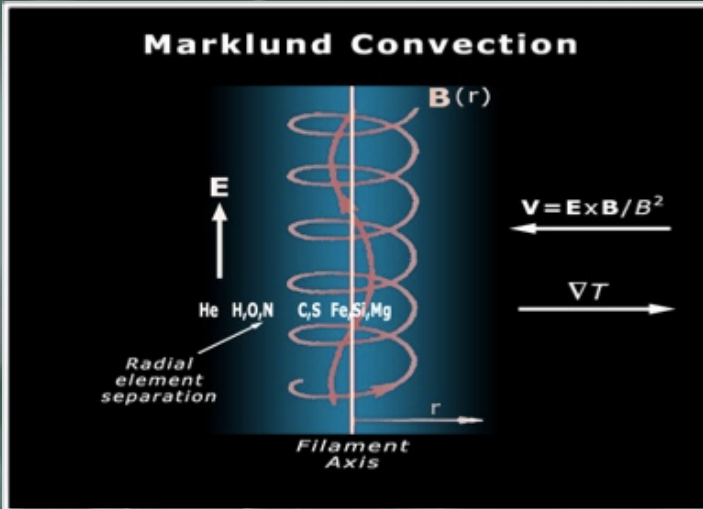


Fig. 3. Marklund convection schematic [6]



Fig. 4. The IceCube neutrino detectors buried at the South Pole. Image credit: NSF/B Gudbjartsson.

The favored conventional explanation for the glowing filaments is “sonic booms generated by exploding stars” and lit by starlight. [4] But where are the exploding stars? And, explosions should impose some degree of radial curvature on these filaments. But, what we see is more like the tortuous paths of cloud-to-cloud lightning bolts. For that is what they are, in fact, on a cosmic scale. And like lightning bolts, they are lit not by reflected light but by their own internal energy.

The ‘father’ of plasma cosmology, Hannes Alfvén, wrote in 1986, “That parallel currents attract each other was known already at the times of Ampere. It is easy to understand that in a plasma, currents should have a tendency to collect to filaments. In 1934, it was explicitly stated by Bennett that this should lead to the formation of a pinch.

The problem which led him to the discovery was that the magnetic storm producing medium (solar wind with present terminology) was not flowing out uniformly from the Sun. Hence, it was a problem in cosmic physics which led to the introduction of the pinch effect...“However, to most astrophysicists it is an unknown phenomenon. Indeed, important fields of research, e.g., the treatment of the state in interstellar regions, including the formation of stars, are still based on a neglect of Bennett's discovery more than half a century ago...present-day students in astrophysics hear nothing about it.” [5] (Emphasis added).



Hannes Alfvén

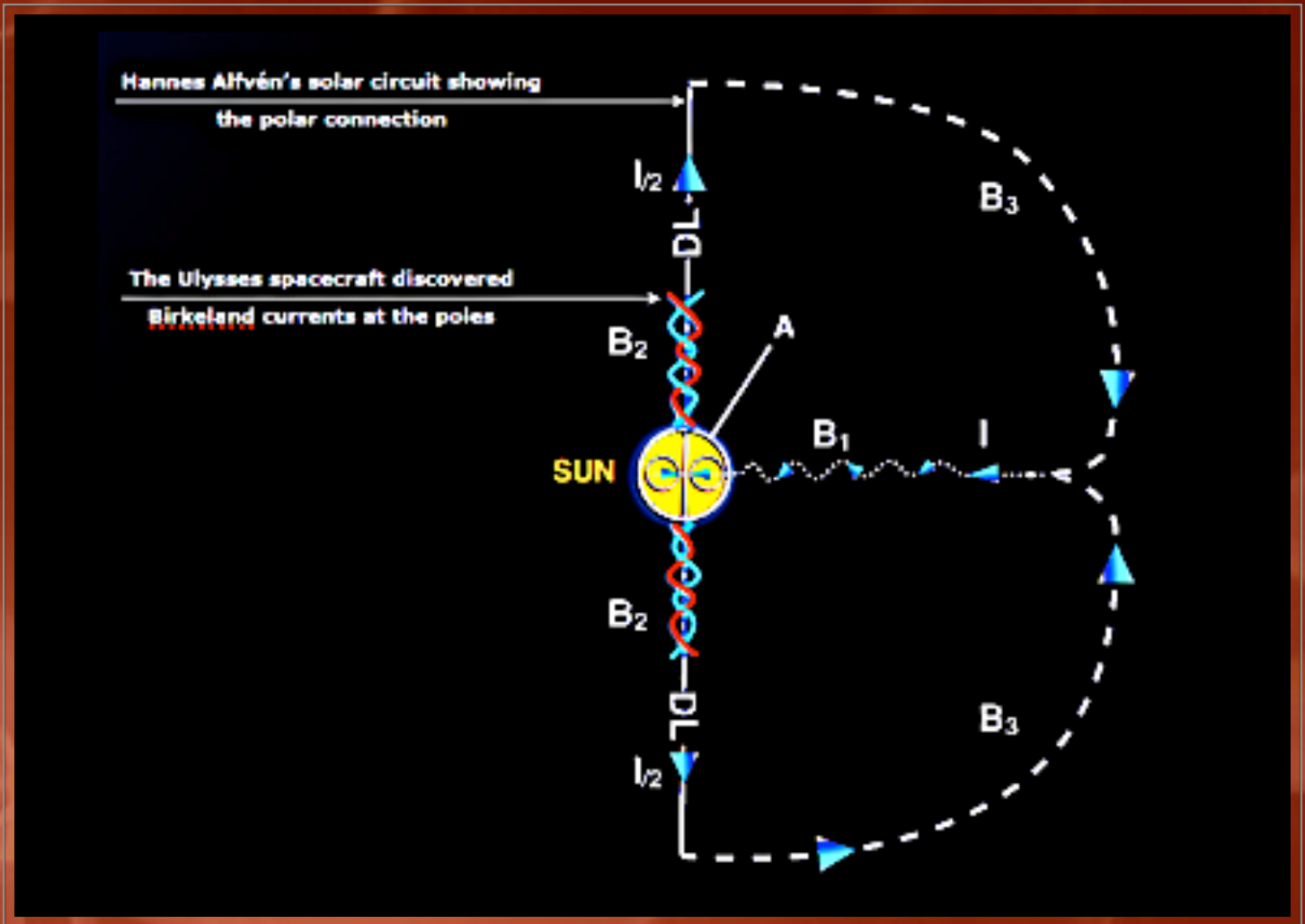


Fig. 5. Alfvén's Heliospheric Circuit. The Sun acts as a homopolar generator (A) producing a current which goes outward along both the axes (B2) and inward in the equatorial plane along the magnetic field lines (B1). The current must close at large distances (B3), either as a homogeneous current layer, or — more likely — as a pinched current. Analogous to the auroral circuit, there may be double layers (DLs) which should be located symmetrically on the Sun's axes. "Such double layers have not yet been discovered." Credit: Original diagram by H. Alfvén. [11]

Watch the Video of Wal

Einstein's theory "may be wrong"

The constant width over vast distances is due to the current flowing along the Birkeland filaments, each filament constituting a part of a larger electric circuit. In a circuit the current must be the same in the whole filament although the current density within the filament may vary due to the Bennett pinch effect. Therefore, the electromagnetic scavenging effect on matter from the molecular cloud, called Marklund convection, is constant along each current filament, which explains the consistency of widths of the filaments. The stars form as plasmoids in the Bennett pinches, also known in plasma labs on Earth as Z-pinches.

Figure 3 shows the true nature of the filaments inside the molecular cloud. The electric field vector (E) and helical magnetic field configuration (B) are shown. Inward Marklund convection of ions at velocity, V, across a temperature gradient ∇T is a mechanism for rapid filament formation and chemical separation in cosmic plasma. In consequence, the heavy elements (“metals” in astrophysics-speak) are concentrated on-axis and must therefore constitute the core matter of stars rather than hydrogen!

In May 2010 in a similar star-forming cloud, Herschel uncovered an

“...impossible star in the act of formation... This is because the fierce light emitted by such large stars should blast away their birth clouds before any more mass can accumulate. But, somehow they do form. Many of these ‘impossible’ stars are already known, some containing up to 150 solar masses, but now that Herschel has seen one near the beginning of its life, astronomers can use the data to investigate how it is defying their theories.” [7]

“Impossibilities” signal that standard astrophysical theories are unrealistic. The answer in an Electric Universe is simple. The electric currents that form stars do not dissipate after giving birth. The luminosity of a star is not related to its massiveness because no nuclear fusion is taking place in its heavy-element core. And, the massiveness of a star is not related to its size because the photosphere is not a surface in the usual sense. Rather, it is an electric discharge phenomenon some height above the surface of the star. There are no “impossible stars.” The light of a star comes from the available electrical energy coursing along the enveloping Birkeland filaments.

As for “sonic booms” caused by the pressure of light from the star, that force is negligible compared to the electromagnetic forces in the enveloping plasma. Any such collision would serve to further ionize the dust and gas and make it more susceptible to the electromagnetic force. However, if any reservation remains about the electrical environment of the Sun (and therefore all stars) then the following report should dispel that doubt.

ALFVÉN'S SOLAR CIRCUIT CONFIRMED

Cosmic rays over the South Pole appear to be coming from particular locations, rather than being distributed uniformly across the sky. Similar cosmic ray “hotspots” have been seen in the northern skies too, yet there is no known source close enough to produce this pattern.

IceCube detects muons produced by neutrinos striking ice, but it also detects muons created by cosmic rays hitting Earth's atmosphere. These cosmic ray muons can be used to figure out the direction of the original cosmic ray particle. Between May 2009 and May 2010, IceCube detected 32 billion cosmic-ray muons, with a median energy

of about 20 tera-electron volts (TeV). These muons revealed, with extremely high statistical significance, a southern sky with some regions of excess cosmic rays (“hotspots”) and others with a deficit of cosmic rays (“cold” spots) [8].

Over the past two years, a similar pattern has been seen over the northern skies by the Milagro observatory in Los Alamos, New Mexico, and the Tibet Air Shower array in Yangbajain. The hotspots are considered “a good mystery.” It's a mystery because the hotspots must be produced within about 0.03 light years (1900 Astronomical Units) of Earth. Further out, galactic magnetic fields should deflect the particles so much that the hotspots would be smeared out across the sky. But, no such sources are known to exist [9].

In the 1920s Irving Langmuir and Harold Mott-Smith showed that in a discharge tube the plasma sets up a thin boundary sheath which separates it from a wall or from a probe and shields the wall or probe from the electric field. The electric field in this sheath, or ‘double layer’ (DL) of separated charge, accelerates charged particles. In 1958 Alfvén suggested that this phenomenon might be important in space plasmas.

Alfvén predicted in 1986 particle accelerating DLs situated along the Sun's axes: "By analogy with the magnetospheric circuit we may expect the heliospheric circuit to have double layers. They should be located at the axis of symmetry, but only in those solar cycles when the axial current is directed away from the Sun.

"No one has yet tried to predict how far from the Sun they should be located. They should produce high-energy electrons directed toward the Sun, and synchrotron radiation from these should make them observable as radio sources. Further, they should produce noise. They may be observable from the ground, but so far no one has cared to look for such objects." [10] [Emphasis added].

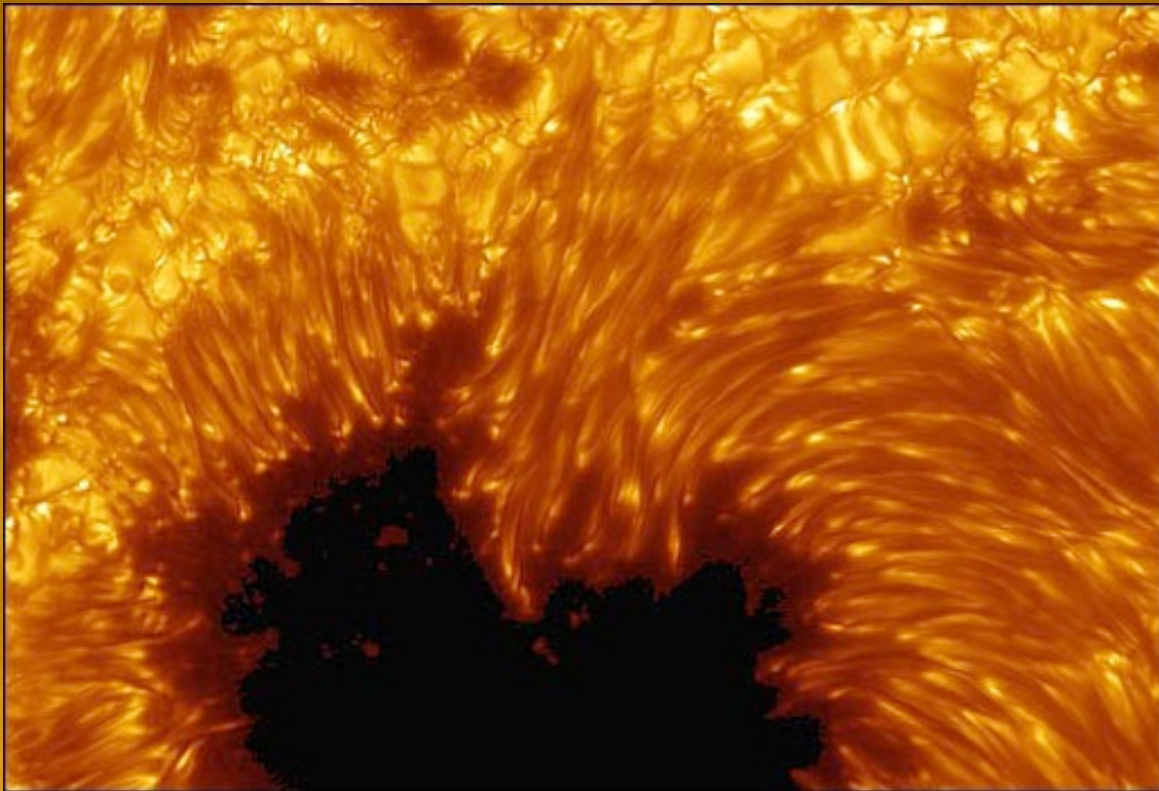


Fig. 6. This image shows remarkable and mysterious details near the dark central region of a planet-sized sunspot in one of the sharpest views ever of the surface of the Sun. Along with features described as hairs and canals are dark cores visible within the bright filaments that extend into the sunspot, representing previously unknown and unexplored solar phenomena. The filaments' newly revealed dark cores are seen to be thousands of kilometers long but only about 100 kilometers wide. Image Source: NASA. Courtesy: Göran B. Scharmer, and Boris V. Gudiksen, Swedish Institute for Solar Physics.

In the circuit model, it was noted that every circuit that contains an inductance is intrinsically explosive. This is true because a conductive circuit will tend to supply all of the inductive energy to any point of interruption of the circuit. Double layers are known to tend to interrupt current in a plasma. Hence, the entire energy of a circuit can be released at the point where a double layer forms regardless of the source of the energy of the circuit.

Because of their properties of generating cosmic rays, synchrotron radiation, and radio noise, as well as occasionally exploding, Alfvén proposed, “DL's may be considered as a new class of celestial objects... For example, the heliospheric current system must close at large distances (cf. Fig. 5), and it is possible — perhaps likely — that this is done by a network of filamentary currents. Many such filaments may produce DL's, and some of these may explode.” [12] To give an idea of their omnipresence in space, DLs are implicated in the planetary auroral regions, extragalactic jets, stellar jets, novae and supernovae, X-ray and gamma-ray bursts, X-ray pulsars, double radio sources, solar flares, and the source of cosmic ray acceleration. Now it seems that Alfvén's DLs have been detected in the form of “cosmic ray hotspots” generated in Birkeland current filaments “less than 0.03 light years” from the Sun. The

hotspots should be found to align with the local interstellar magnetic field. The median energy of the cosmic rays reported at 20 TeV is within the range expected from a cosmic DL.

THE ELECTRIC SUN

To have any confidence in our understanding of the Sun, and stars in general, we must first be able to explain simply the things we can see. Alfvén did not go so far as to consider the Sun an electrical discharge phenomenon. He assumed the solar heliospheric current was driven by the Sun's rotation. But the reverse seems to be true. The Sun's equator rotates fastest, as if it is being driven like a homopolar motor.

“Typically, the differential [solar] rotation shows speeds of rotation of about 2000 m/s near the Equator and about 1000 m/s near latitudes of 80 degrees. The differential rotation has undergone changes over surprisingly short periods of time. In short, the central latitudes have been somewhat constant, whereas the regions near the Equator and the poles have changed substantially in a semi-periodic fashion, which appears to be correlated with the solar magnetic cycle. [13] Also the energy of the axial DLs' cosmic rays implies a galactic source. A star therefore can be viewed as a pinpoint object at the center of a vast plasma sheath, or DL.

The plasma sheath forms the boundary of the electrical influence of the star, where it couples with the Birkeland currents of interstellar space. The Sun's plasma sheath, or 'heliosphere,' begins about 100 times more distant than the Earth is from the Sun. To give an idea of the immensity of the heliosphere, all of the stars in the Milky Way could fit inside a sphere encompassed by the orbit of Pluto. The Sun's heliosphere could accommodate the stars from 17 Milky Ways!

In the immense volume of the heliosphere, a small drift of electrons (superimposed on their thermal motion) toward the Sun and ions away from the Sun (the solar wind) can satisfy the electrical power required to light the Sun. The magnetic field of the solar wind is the signature of a drift current. It is only very close to the Sun that the current density and electric field become appreciable, the plasma discharge switches from 'dark mode,' and the effects become visible. The enigma of the Sun's millions-of-degrees corona above a relatively 'stone cold' photosphere is immediately solved when the Sun's power comes from the galaxy and not from the center of the Sun. It is clear from observation that the Sun is an anode phenomenon in a very low-pressure glow discharge. The red chromosphere is the counterpart to the glow above the anode surface in a discharge tube. When the current density

is too high for the anode surface to accommodate it, a bright secondary plasma forms within the primary plasma. It is termed "anode tufting." On the Sun, the tufts are packed together tightly so that their tops give the appearance of granulation. The granulation and the behavior of the 'granules' is not to be expected from chaotic convection.

SUNSPOTS

Sunspots are a phenomenon that is not expected in the thermonuclear model of stars. "The very existence of sunspots is intriguing. They should be heated quickly from the sides and disappear. They should never have formed — but they do form. Their behavior is so strange that there is still argument between scientists as to why they are there at all. The Sun is full of mysteries apart from sunspots. Rarely do we discover anything we would have expected." [14] If we do not understand sunspots, we do not understand stars!

Sunspot umbrae are much cooler (4000K) and darker than the photosphere (5770K), which is prima facie evidence that heat is not trying to escape from within the Sun. And, the Sun's corona is millions of degrees hotter than the photosphere. These simple observations point to the energy source of the Sun being external.

Add to this the dominant influence of magnetic fields on the Sun's external behavior and we arrive at the necessity for an electrical energy supply. Magnetic fields do not exist without electric currents.

Electric currents in plasma take a filamentary form. The penumbral filaments are observed to split near their 'footprints' in the dark umbra and to move around. It is typical behavior of plasma filaments and can be observed in novelty plasma balls. But, the greatest shock is that the penumbral filaments have dark cores! How could this be so if they are convecting gas? In that case, the filament center should be hottest and brightest.

An electric discharge offers a simple explanation. Because electrical phenomena are scalable over at least 14 orders of magnitude, we may look to electric discharge phenomena in our atmosphere to gain insights into what may be happening in the Sun's atmosphere. There is a temptation to simply equate the penumbral filaments with gargantuan lightning bolts, but the features do not match well.

A typical lightning flash lasts for 0.2 seconds and covers a distance of about 10 km. The penumbral filaments last for at least one hour and are of the order of 1000 km long. If we could scale a

lightning bolt 100 times we might have a flash that lasted between 20 and 200 seconds and was 1000 km long. The lifetime is too short. Also, measurements of scars on lightning conductors show that the lightning channel is only about 5 mm wide. Scaling that by 100 times would have solar lightning channels below the limit of telescopic resolution.

However, there is another familiar form of slow atmospheric electric discharge that does scale appropriately and could explain the mysterious dark cores of penumbral filaments. It is misleading to equate a simple mechanical fluid vortex with a tornado. A tornado is a slow electrical discharge constrained to spiral by powerful electromagnetic forces created by swiftly moving charge. Tornadoes last for minutes and can have a diameter of the order of one kilometer. Scale those figures up 100 times and we match penumbral filaments very well. And, if the circulating cylinder of plasma radiates heat and light, as we see on the Sun, then the solar 'tornado' will appear in profile to have a dark core.

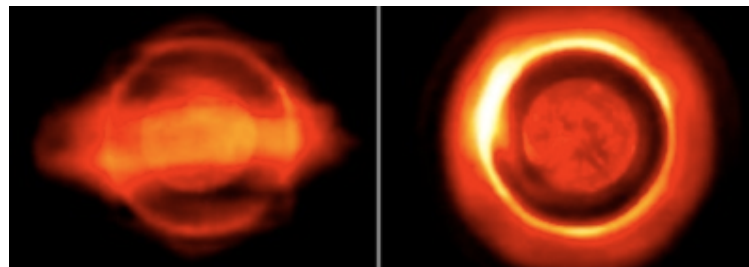


Fig. 7. The sun's plasma torus in UV light (equatorial view [left] & polar view [right]). Image courtesy of SOHO / NASA.

What causes a sunspot? In the electrical model, the Sun receives electrical energy from interstellar space in the form of a glow discharge. Birkeland's 'Terrella' experiments with a magnetized sphere show that electromagnetic energy is stored in an equatorial donut shaped 'plasmoid'.

The energy is released sporadically from the plasmoid by discharges to the mid-latitudes of the Sun. (Incidentally, plasmoid resonances may give rise to simultaneous flares on opposite sides of the central body, as recently reported on the Sun). The global tornadic storm of the photosphere is pushed aside by more powerful Birkeland currents that deliver electrical energy from the plasmoid to lower levels in the Sun's atmosphere. The resulting holes in the photosphere are what we call sunspots.

Instead of being a site where energy flow has been restricted, a sunspot is a site where it is enhanced. This is shown by the intense magnetic field of about 3,000 gauss (about 10,000 times the Earth's magnetic field). The latitudinal migration of sunspots has been duplicated in Terrella experiments by simply varying the power input. Sunspot umbrae are packed with 'umbral dots,' which are longer-lived (15-30 minutes) and even hotter (6200K) than the photosphere. These make sense in the electrical interpretation since the

current passing through the sunspot will filament and reduce in cross-section as it enters and heats the denser atmosphere, rather like lightning.

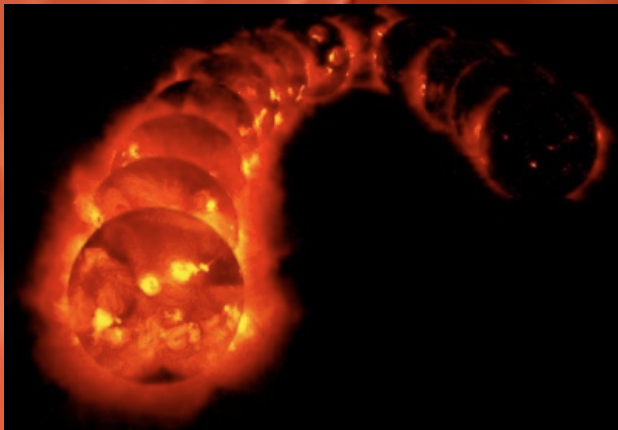
This model can explain why sunspots of the same magnetic polarity are strangely attracted toward each other instead of being repelled. The sunspots are receiving electric current flowing in parallel rotating streams, which results in their being mutually attracted over long distances and repelled at short distances. That, in turn, explains why sunspots often seem to maintain their identity even if they come close enough to merge. There is also other evidence that suggests the presence of electric currents aligned with the magnetic field in a sunspot.

THE VARIABLE SUN

Astrophysicists struggle to explain X-rays in terms of heating by the poorly understood solar magnetic field, which is also observed to undergo the solar activity cycle. The simple answer is that the two effects have a common electrical cause. Figure 8 shows the Sun has a variable power input since X-rays are emitted where an electric discharge is most concentrated. "The Sun is a variable X-ray star; it is fortunate for us that the variability is not reflected in the energy flux in the visible." [15]

Science Needs Natural Philosophers

Fig. 8. The X-ray Sun from solar minimum to maximum between 1991 and 1995 as imaged by the Yohkoh satellite. Credit: G.L. Slater and G.A. Linford; S.L. Freeland, The Yohkoh Project.



The variation in light and heat from the Sun is measured to be a fraction of one percent from year to year. So the electrical model must explain how the Sun can be a steady source of life-giving radiant energy if it has a variable power source? The answer, once more, seems to require electrical engineering. The tufted plasma sheath (photosphere) high above the stellar anode seems to be the circuit equivalent of a PNP transistor, a simple electronic device using small changes in voltage to control large changes in electrical power output. The photosphere itself regulates the solar discharge and provides stability of radiated heat and light output, while the power input to the Sun varies throughout the sunspot cycle. This regulation is not available to stars off the main sequence, without bright photospheres.

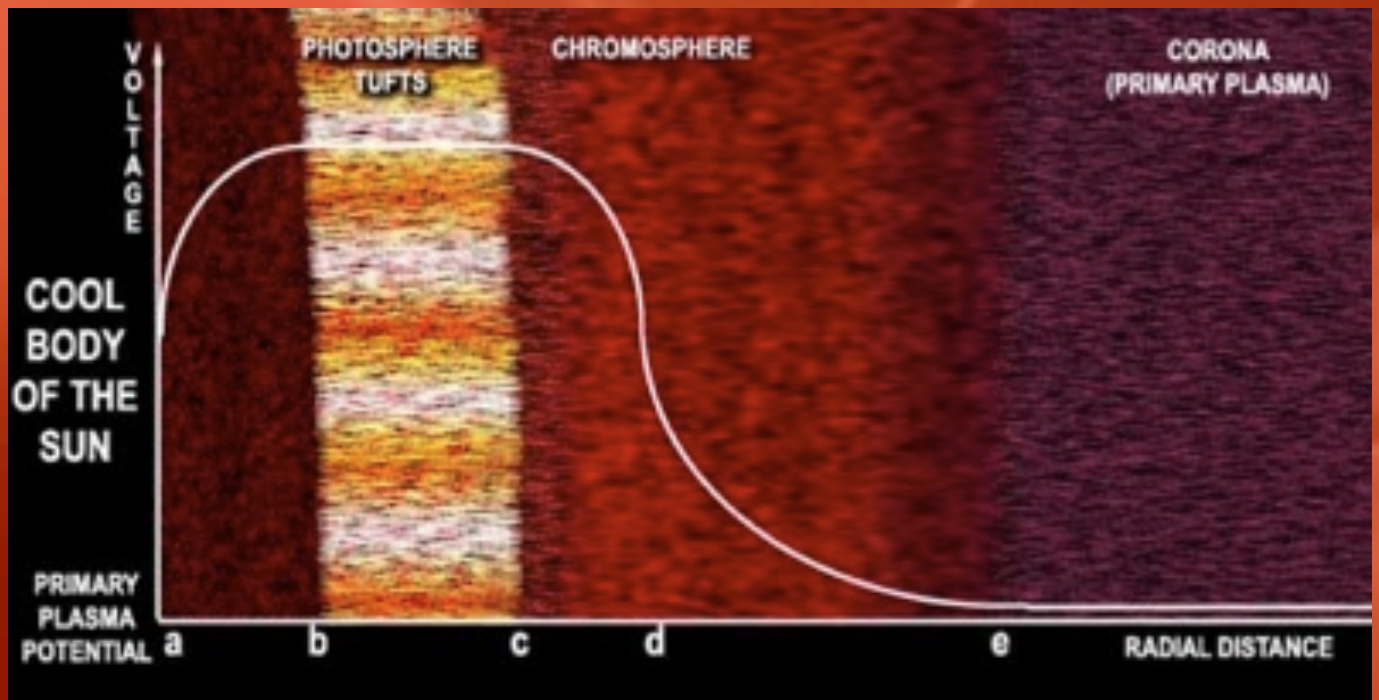


Fig. 9. Credit: W. Thornhill (after W. Allis & R. Juergens).

Positively charged protons will tend to “roll down the hills.” So the photospheric tuft plasma acts as a barrier to limit the Sun’s power output. The plateau between (b) and (c) and beyond (e) defines a normal quasi-neutral plasma. The chromosphere has a strong electric field, which flattens out but remains non-zero throughout the solar system. As protons accelerate down the chromospheric slope, heading to the right, they encounter turbulence at (e), which heats the solar corona to millions of degrees. The small, but relatively constant, accelerating voltage gradient beyond the corona is responsible for accelerating the solar wind away from the Sun [16].

This ability of the Sun’s plasma sheath to modulate the solar current was demonstrated dramatically in May 1999, when the solar wind stopped for two days. The bizarre event makes no sense if the solar wind is being ‘boiled off’ by the hot solar corona. But, in electrical terms, its regulating plasma sheath performed normally and there was no noticeable change in the Sun’s radiant output.

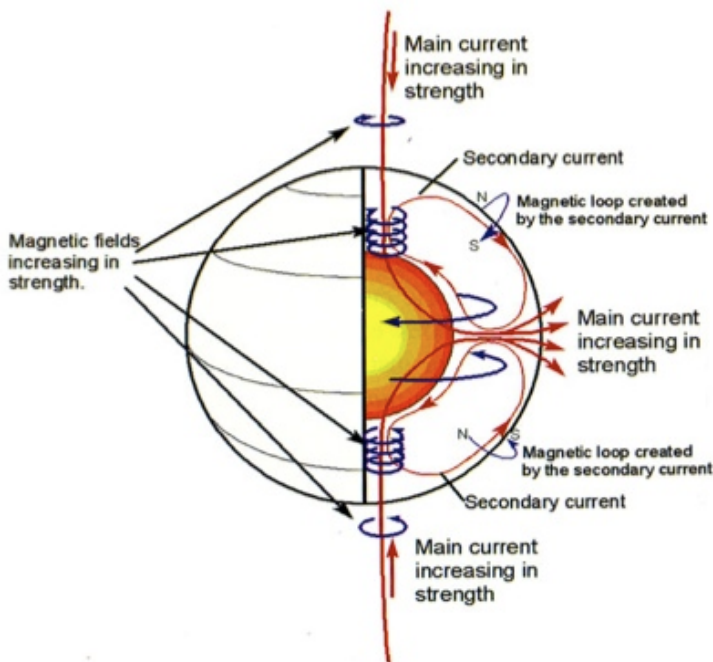
SOLAR MAGNETISM

One of the greatest mysteries of the Sun is the sunspot cycle. It is intimately associated with that other great puzzle — the Sun’s magnetic field. This puzzle is **that** it is extremely difficult to conjure a magnetic field from inside a hot ball of conducting plasma, particularly when the solar magnetic field shows amazing complexity and often rapid variability.

The Sun has a generally dipole magnetic field that switches polarity with the sunspot cycle. Unlike a dipole magnet, in which the field is twice as strong at the poles as at the equator, the Sun has very evenly distributed field strength. This oddity can be explained only if the Sun is the recipient of electric currents flowing radially into it. These magnetic field-aligned currents adjust the contours of the magnetic field by their natural tendency to space themselves evenly over an anode surface. An internal dynamo will not produce this magnetic field pattern.

The Sun’s interplanetary magnetic field increases in strength with sunspot number. Electrically, the relationship is essential, since the interplanetary magnetic field is generated by the current flow to and from the Sun. As the power increases, sunspot numbers rise (reflecting increasing current input) and the magnetic field strengthens.

The standard thermonuclear star theory has no coherent explanation for the approximately eleven-year sunspot cycle. In the electrical model the sunspot cycle is induced by fluctuations in the DC power supply from the local arm of our galaxy, the Milky Way, as the varying current density and magnetic fields of huge Birkeland current filaments slowly rotate past our solar system. The solar magnetic field reversals may be a result of simple ‘transformer’ action.



In contradistinction to Alfvén’s ‘homopolar generator’ model of the solar circuit, Scott offers the following explanation for solar magnetic field reversals in terms of an externally powered ‘homopolar motor’ and its associated magnetic induction effects: “If the main magnetic field that induces the surface currents is growing in

strength, the surface current will point in one direction. If the main magnetic field weakens, the secondary surface currents will reverse direction.” [17] This ‘transformer’ action does not require the solar heliospheric current to reverse direction as in Alfvén’s model—something that is not observed.

THE ELECTRICAL HERTZSPRUNG-RUSSELL DIAGRAM

Electric lights come in a wide variety. There are incandescent filament lamps with a filament lit internally by electric current. And, there are fluorescent lights, high-intensity gas discharge lamps, arc lights, neon lights and solid-state light emitting diodes (LEDs).

Stars fall into the categories of neon lights, gas discharge lamps and arc lights. They are not incandescent (bodies heated to a high temperature). The main differences between electric discharge lights are the energy density and location in the gas discharge path where most of the light originates. For example, in neon tubes the light comes from the extensive plasma column between the electrodes at each end of the tube. In an arc light, the light is concentrated at the electrode. As the power density of an arc light is increased, its color changes from yellow-white to white to blue-white.

Astronomers use the Hertzsprung–Russell (H–R) diagram to categorize stars. It is a plot of the absolute brightness of stars against their spectral class (temperature).

The data graphed by the H–R diagram are observed quantities, while assumptions drawn about the diagram’s meaning are not. Figure 11 shows how the H–R diagram should be plotted to make engineering sense, with current density, temperature and rotational energy increasing from left to right. Main sequence stars operate with bright photospheres, like the Sun.

The test for the electric star model [18] comes from the stragglers — the red giants, and the red and white dwarfs. The terms ‘giant’ and ‘dwarf,’ when applied to these stars are highly misleading since a star’s size is a plasma phenomenon. So the notions that a red giant is an old, bloated and dying star, and that a white dwarf is a collapsed remnant of an exploded star, have no validity. In an Electric Universe, stars do not evolve. The notion of stellar evolution and the age of stars is an invention of the standard thermonuclear model of stars. Eddington himself expressed his puzzlement about white dwarfs: “Strange objects, which persist in showing a type of spectrum entirely out of keeping with their luminosity,

may ultimately teach us more than a host which radiates according to rule.”[19]

He was correct. A white dwarf is a star that is under low electrical stress so that bright anode tufting is not required. The star appears extremely hot, white and under-luminous because it is equivalent to having the faint white corona discharge of the Sun reach down to the star’s atmosphere. As usual, a thin plasma sheath will be formed between the plasma of the star and the plasma of space. The electric field across the plasma sheath is capable of accelerating electrons to generate X-rays when they hit atoms in the atmosphere. And, the power dissipated is capable of raising the temperature of a thin plasma layer to tens of thousands of degrees.

White dwarfs are often found in multiple star systems (for example, Sirius A and B), which puzzles astronomers because it is not easy to understand how two stars of the same age could be so different. The answer is simple. The appearance of electrical stars has nothing to do with their age. In multiple star systems, the brighter primary star usurps most of the electrical power, dissipating the energy in optical wavelengths. The white dwarf converts its share of power most efficiently into X-rays.

On the other hand, red stars are those that cannot satisfy their need for electrons from the surrounding plasma. So the star expands the surface area over which it collects electrons by growing a large plasma sheath that becomes the effective anode in space. The growth process is self-limiting because, as the sheath expands, its electric field will grow stronger. Electrons caught up in the field are accelerated to ever-greater energies. Before long, they become energetic enough to excite neutral particles they chance to collide with, and the huge sheath takes on a uniform 'red anode glow.' It becomes a red giant star. The electric field driving this process will also give rise to a massive flow of positive ions away from the star—a prodigious stellar 'wind.' Indeed, such mass loss is a characteristic feature of red giants. Standard stellar theory is at a loss to explain this since the star is said to be too cold to 'boil off' a stellar wind.

It is noteworthy that red giants do not have the self-regulation mechanism of stars with bright tufted photospheres. They must respond to changing electrical in-put by altering their radius and ejecting matter. Over 15 years the red giant Betelgeuse (β Orionis) has decreased in size smoothly by 15 percent, but faster as time progressed. [20] It is to be expected that its radius

will reflect a roughly sinusoidal pattern over time.

Red giants are a scaled-up example of how a brown dwarf star might appear close-up. There are no "failed" stars in an Electric Universe. Stars have no thermonuclear "engine" to fail. All bodies in the galaxy receive external electrical energy from the galactic circuit. The apparent size and color of an electric star is an electrical phenomenon. For example, if Jupiter were an independent galactic body such that its plasma sheath lit up as a brown dwarf, then that star would appear from Earth the size of the Sun, although five times more distant. Jupiter's satellites would orbit within Jupiter's distended red anode glow and receive the same energy density over their entire surface. The Electric Universe model speculates that the environment on such satellites is the most widespread and hospitable in the universe for life to flourish.

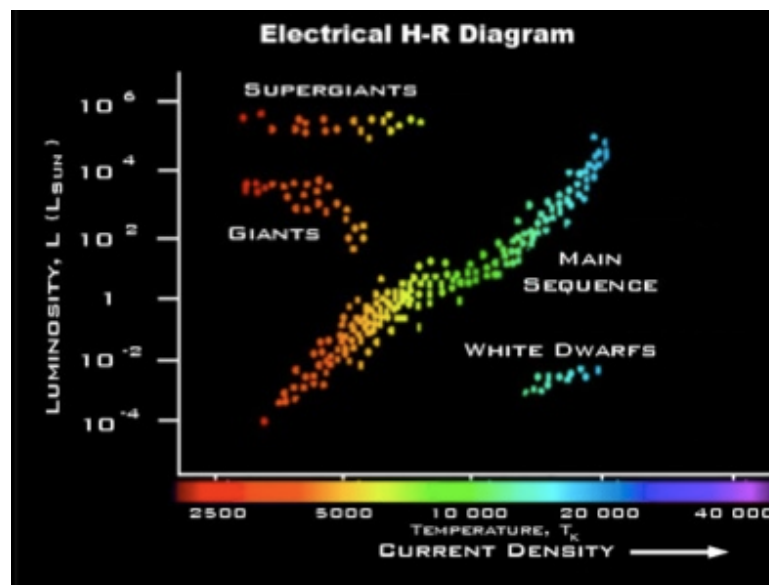


Fig. 11. The Electrical H-R plot

CONCLUSION

The renowned solar astrophysicist, Eugene N. Parker, wrote in his Special Historical Review:

“It is essential in these exuberant times to pay critical attention to both the observational constraints and to the basic mathematical laws, with a clear sense of what is solid theory and what is only unsupported speculation. This seeming platitude is offered here without jest...“...the pedestrian Sun exhibits a variety of phenomena that defy contemporary theoretical understanding. We need look no farther than the sunspot, or the intensely filamentary structure of the photospheric magnetic field, or the spicules, or the origin of the small magnetic bipoles that continually emerge in the super-granules, or the heat source that maintains the expanding gas in the coronal hole, or the effective magnetic diffusion that is so essential for understanding the solar dynamo, or the peculiar internal rotation inferred from helioseismology, or the variation of solar brightness with the level of solar activity, to name a few of the more obvious mysterious macro-physical phenomena exhibited by the Sun.” [21]

Such frank admissions should be a warning that scientists don't understand the Sun or stars at all. All of the problems can be ascribed to an invalid

stellar model that dates to the gaslight era. From the perspective of the Electric Universe, the thermo- nuclear model of stars was an unfortunate historical accident of timing. Plasma science and gas discharge theory were in their infancy when the unlocking of the energy of the atom in Eddington's time seemed to provide the answer to the baffling problem of the energy source of the Sun.

A final word from Alfvén, who took the unprecedented step of predicting in his December 11, 1970 Nobel prize acceptance speech [22] the eventual failure of astrophysics:

“In conclusion, it seems that astrophysics is too important to be left in the hands of theoretical astrophysicists who have gotten their education from the listed textbooks. The multibillion dollar space dash dash from astronomical telescopes should be treated by scientists who are familiar with laboratory and magnetospheric physics, circuit theory, and, of course, modern plasma physics. More than 99 per- cent of the Universe consists of plasma, and the ratio between electromagnetic and gravitational forces is 1039.” [23] If stars are electrically powered from a galactic circuit then the consequences of this fact alone for science and society are profound. We have been following a mirage of knowledge that leads into a desert of ignorance.

Our story of the Sun and the planets is a myth. The holy grail of nuclear fusion energy “like the Sun” is a false quest. In fact, our entire cosmology of the big bang, galaxy formation, the formation of the Sun and its family of planets, and the history of the Earth is fiction. It ignores the most powerful organizing electric force in favor of the feeblest force—gravity. Most of our ‘big’ science, like the costly fusion experiments and space missions, has been misdirected and wasteful. All sciences must be re-examined from a fresh interdisciplinary perspective based on an interconnected Electric Universe [24].

Acknowledgements

I would like to acknowledge the original inspiration of the late Ralph Juergens in his detailed proposal for an electric discharge model of the Sun, and Dr. Earl Milton and Prof. Donald Scott for their valuable additional insights.

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WAL THORNHILL

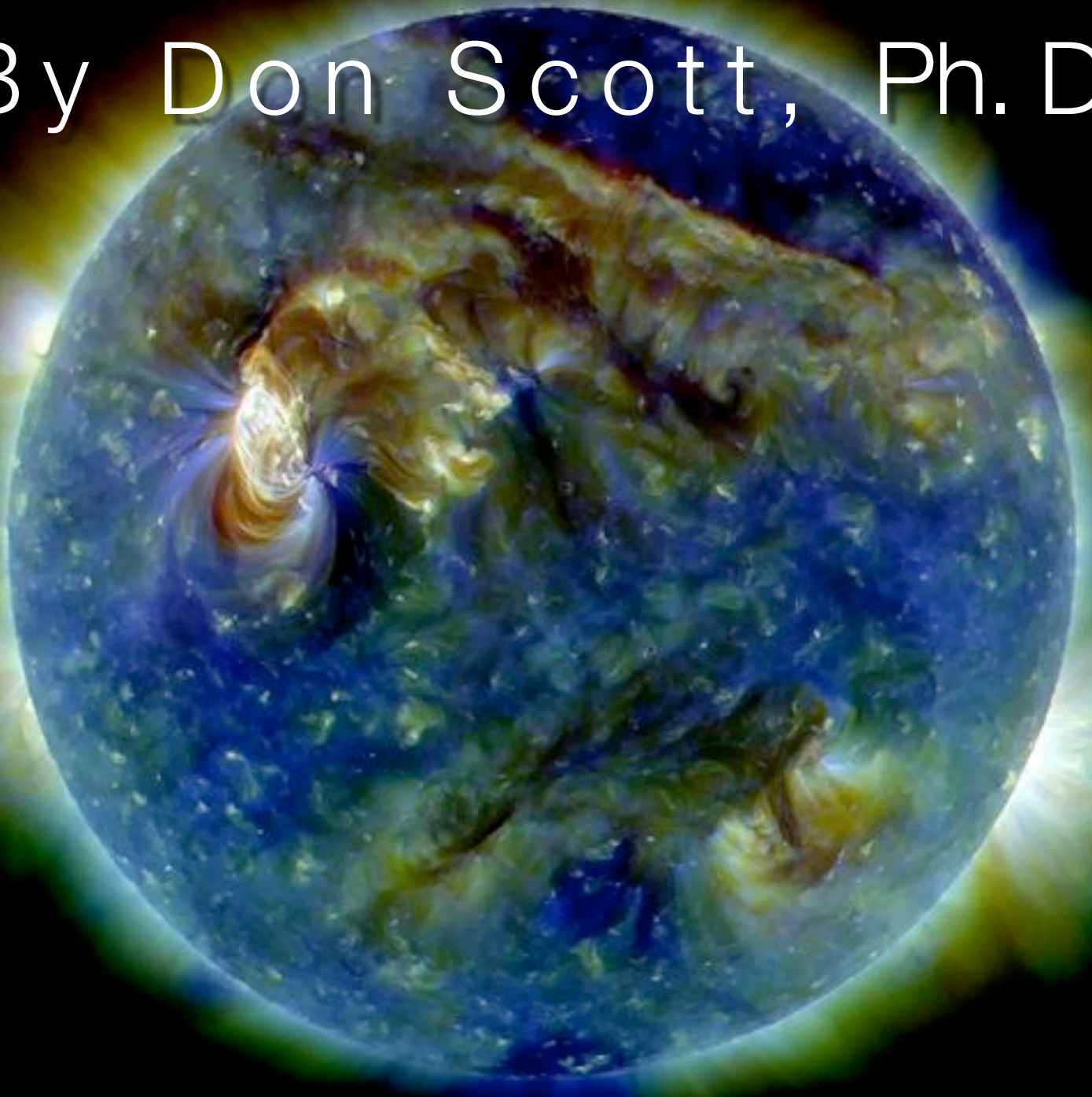
A physicist and natural philosopher, Mr. Thornhill has spent decades questioning popular ideas about the physical world. In the past 15 years, standing on the shoulders of his predecessors, he has laid an interdisciplinary foundation for the Electric Universe paradigm. Wal will address many questions including the meaning of the “thunderbolt of the gods” in relation to the amazing recent history of the Earth and humanity in the solar system. Interplanetary thunderbolts cast light on the depths of our ignorance about the electrical nature and origin of all celestial bodies including meteorites, comets, asteroids, planets, the Sun and all stars. Electric Universe paradigm is a sweeping revision of our understanding of our place in the universe.

Born: Melbourne, Australia, 2 May, 1942. Home: Canberra, Australia

Before entering university, Wal had been inspired by Immanuel Velikovsky through his controversial best-selling book, *Worlds in Collision*. Wal graduated in physics at Melbourne University in 1964 and began postgraduate studies with Prof. Victor Hopper’s upper atmosphere research group. Wal left to work for 11 years with IBM Australia. He was the technical support for the computing facilities in the Research Schools at the Australian National University, which gave him excellent access to libraries and scientists there. He later joined the Department of Foreign Affairs for the complex task of developing secure international communications, message switching and office automation. It provided opportunities to visit scholars internationally, including Velikovsky. The discussion with Velikovsky turned on the key question raised by his theory of recent planetary catastrophe – the true nature of gravity and its role in cosmology. That led Wal to a re-examination of Einstein’s legacy and the electrical nature of matter. He has since been devoted to the continuing study of astronomy and physics and regularly attends seminars at the ANU Research School of Astronomy and Astrophysics and the Research School of Earth Sciences.

In recent years, Wal has achieved a broad synthesis of ideas that he calls “THE ELECTRIC UNIVERSE.” It was first presented as such at a World Conference in Portland, Oregon, in January 1997. Wal has published several books with David Talbott (author of *The Saturn Myth*)—the first titled *Thunderbolts of the Gods* and the second, *The Electric Universe*, on the combined subjects of the recent history of the solar system and the Electric Universe. Two DVD’s of a series have been completed, titled *Symbols of an Alien Sky*, and *The Lightning-Scarred Planet Mars*. Wal has peer-reviewed papers on cosmology for the 21st century and the electrical nature of stars and supernovae. Wal was awarded a gold medal in 2010 by the European Telesio-Galilei Academy of Science for his work on the Electric Universe. He was invited to address the Bath Royal Literary and Scientific Institute on that subject in the same year. He gave the John Chappell Memorial Lecture at the 18th Natural Philosophy Alliance Conference held at the University of Maryland in July 2011, titled *Stars in an Electric Universe*.

By Don Scott, Ph.D.



ELECTRONIC SUN MODEL

Starting on May 10, 1999, the solar wind stopped for two days. More accurately, it dropped to 2% of its normal density and to half its normal speed. Although the solar wind varies a bit, this was the most drastic and longest-lasting decrease ever observed. NASA sat on the story for five months. When NASA finally released that information on Dec. 13 of that year, it was too old for newspapers to carry. See:

http://science.nasa.gov/science-news/science-at-nasa/1999/ast13dec99_1/

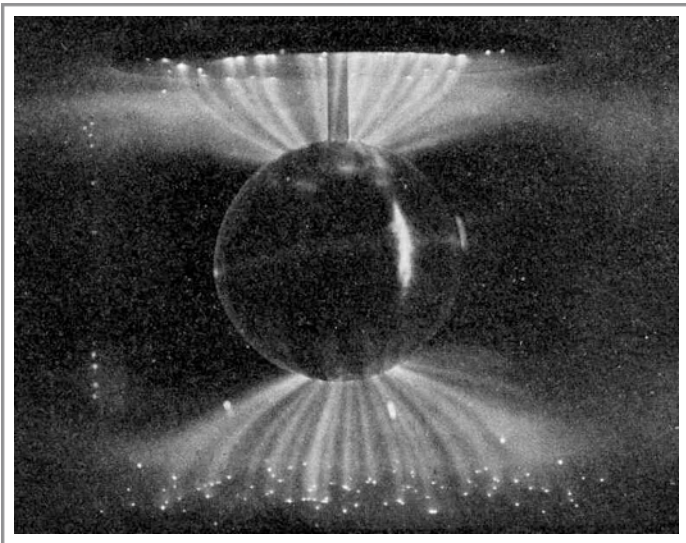
Concurrent with the event, Earth's magnetosphere swelled to five to six times its normal size. NASA's Wind, IMP-8, and Lunar Prospector spacecraft, the Russian INTERBALL satellite, and the Japanese Geotail satellite observed the most distant 'bow shock' ever recorded by satellites.

Reporting on five month old news makes newspapers appear rather slow. Even more startling is NASA's present complete lack of a theory or explanation for this solar wind disruption.



'bow shock'/NASA

An explanation now exists. It is a direct result of the Electric Universe hypothesis. It will be presented at this conference. It is called the **ELECTRONIC**

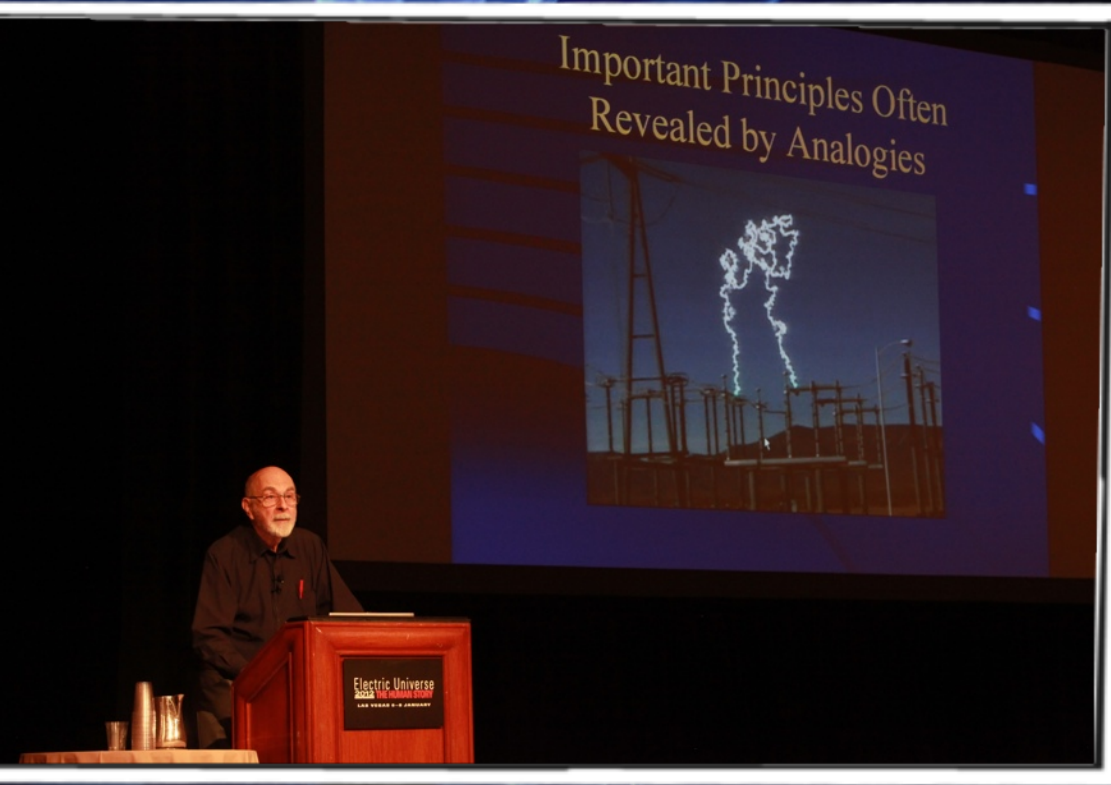


SUN MODEL will be described for the first time by Dr. Donald E. Scott.

The Electronic Sun Model Explains

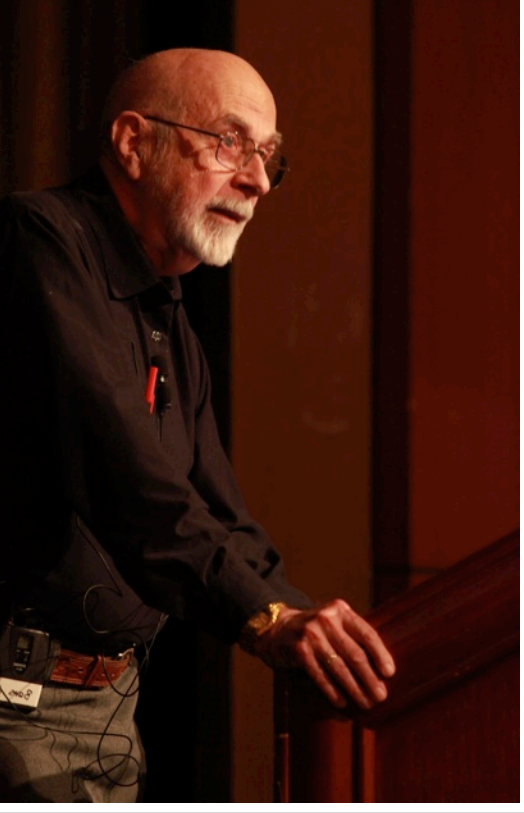
- Why coronal hotspots appear in the lower corona above sunspots.
- Why the corona changes shape from times of 'active' to 'quiet' Sun.
- How the solar wind's flow rate depends on the voltage (energy) rise from the Sun's interior up to the photospheric tufts.
- How the solar wind's velocity depends on the voltage drop between the photospheric tufts and the plasma in the lower corona.
- That a transistor-like action is capable of cutting off the solar wind flow.
- No other mechanism that can control, vary, or cut off the solar wind has yet been proposed.
- This announcement is quite possibly a significant breakthrough in solar research.

By Don Scott, Ph. D.



THE ELECTRIC SKY

There is a revolution just beginning in astronomy/cosmology that will rival the one set off by Copernicus and Galileo. This revolution is based on the growing realization that the cosmos is highly electrical in nature. It is becoming clear that 99% of the universe is made up not of "invisible matter", but rather, of matter in the plasma state. Electrodynamic forces in electric plasmas are much stronger than the gravitational force.



Mainstream astrophysicists are continually “surprised” by new data sent back by space probes and orbiting telescopes. That ought to be a clue that something is wrong. New information always sends theoretical astrophysicists “back to the drawing board”. In light of this, it is curious that they have such “cock-sure” attitudes about the infallibility of their present models. Those models seem to require major “patching up” every time a new space probe sends back data.

Astrophysicists and astronomers do not study experimental plasma dynamics in graduate school. They rarely take any courses in electrodynamic field theory, and thus they try to explain every new discovery via gravity, magnetism, and fluid dynamics which is all they understand. It is no wonder they cannot understand that **99% of all cosmic phenomena**

are due to plasma dynamics and not to gravity alone.

When confronted by observations that cast doubt on the validity of their theories, astrophysicists have circled their wagons and conjured up pseudo-scientific invisible entities such as neutron stars, weakly interacting massive particles, strange energy, and black holes. When confronted by solid evidence such as Halton Arp's photographs that contradict the Big Bang Theory, their response is to refuse him access to any major telescope in the U.S.

Instead of wasting time in a futile battle trying to convince entrenched mainstream astronomers to seriously investigate the Electric/Plasma Universe ideas, a growing band of plasma scientists and engineers are simply bypassing them.

A new electric plasma-based paradigm that does not find new discoveries to be “enigmatic and puzzling”, but rather to be predictable and consistent with an electrical point of view, is slowly but surely replacing the old paradigm wherein all electrical mechanisms are ignored.





The Electric Sky Assorted Papers

This web site

By Donald E. Scott, Ph.D. (Electrical Engineering)

This web site is dedicated to explaining the basis of this ongoing scientific shift. The left-hand column of links below contain descriptions of the contents of various chapters in The Electric Sky. These pages are designed to be read through in order, starting with the Introduction. If you do this, the background information needed for understanding any given page will have been presented in an earlier page. However, each of the topics below is discussed in a reasonably self-contained way for anyone who just wants to pick and choose. Enter the site by clicking on the Introduction in the left column below.

The right-hand column below contains links to papers and comments written by Dr. Scott and others. At the center of the bottom of this page there are links to some videos on this topic.

[Introduction](#)

[Electromagnetic Fields in Space \(IEEE paper\)](#)

[A Model of Interstellar Space](#)

[Solar Surface Transistor Action](#)

[Plasma - The Fundamental State of Matter](#)

[Magnetic Reconnection](#)

[Missing Matter](#)

[Bayes Theorem](#)

[Our Sun](#)

[Incorrect Assumptions I](#)

[Solar Neutrino Problem](#)

[Incorrect Assumptions II](#)

[Stars](#)

[Quantization of QSO Redshifts](#)

[Galaxies](#)

[On the Sun's Electric Field](#)

[Solar System](#)

[Scott's Reply to Tim Thompson](#)

[Red Shift](#)

[Scott's Reply to Tom Bridgman](#)

[Our Universe](#)

[Steve Crother's Reply to Tom Bridgman](#)

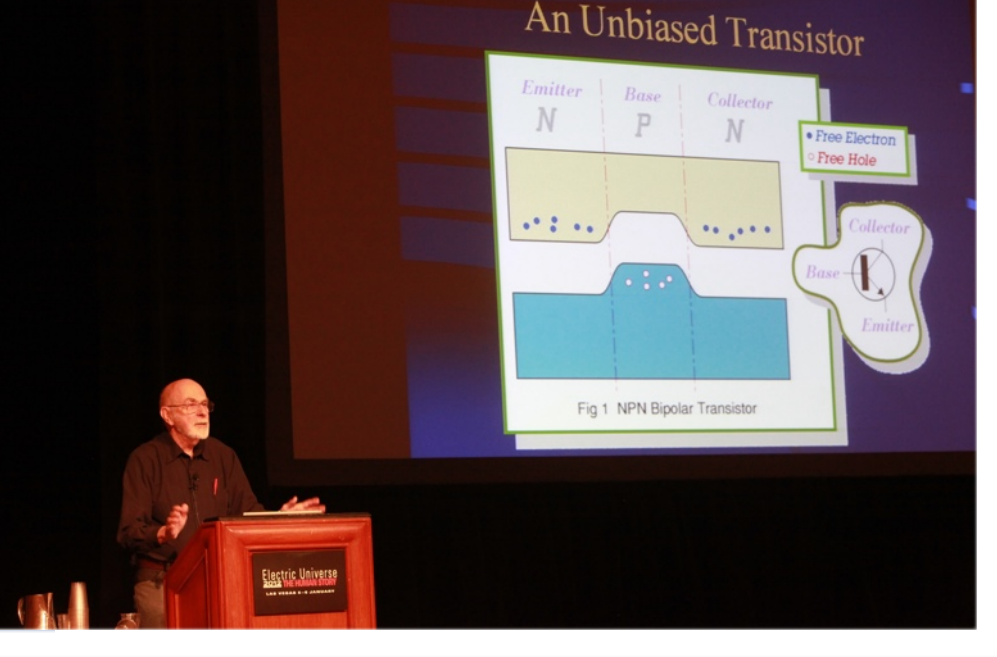
[Summary Electric Currents Key to Magnetic Phenomena](#)

Videos

[Presentation at Nasa's Goddard Space Center](#)

[Tutorial Overview of the Electric Universe](#)

[Debunking EU Misconceptions](#)



ABOUT DONALD SCOTT

Donald Scott earned his Bachelor's and Master's degrees in Electrical Engineering at the University of Connecticut in Storrs, CT. Following graduation he worked for General Electric in Schenectady, NY, and Pittsfield, MA. He earned a Doctorate in Electrical Engineering at the Worcester Polytechnic Institute, Worcester, Massachusetts, and was a member of the faculty of the Department of Electrical & Computer Engineering at the University of Massachusetts/Amherst from 1959 until his retirement in 1998.

During that time he was the recipient of several good-teaching awards. He was, at various times, Assistant Department Head, Director of the undergraduate program, Graduate admissions coordinator, and Director of the College of Engineering's Video Instructional Program.

In 1987, the McGraw-Hill Book Company published his 730-page textbook, *An Introduction To Circuit Analysis – A Systems Approach*. He has authored numerous scientific papers and chapters.

Scott became concerned about the direction astrophysics was going when he saw stories emerging about the “discovery” of black holes, neutron stars, cosmic strings, and such things as dark energy and invisible matter. What troubled Scott most was when astrophysicists began saying things about magnetic fields that any junior-year engineering students could show were completely incorrect. As an electrical engineer he could easily see these concepts were wrong, and began to have serious doubts about the entirety of their pronouncements.

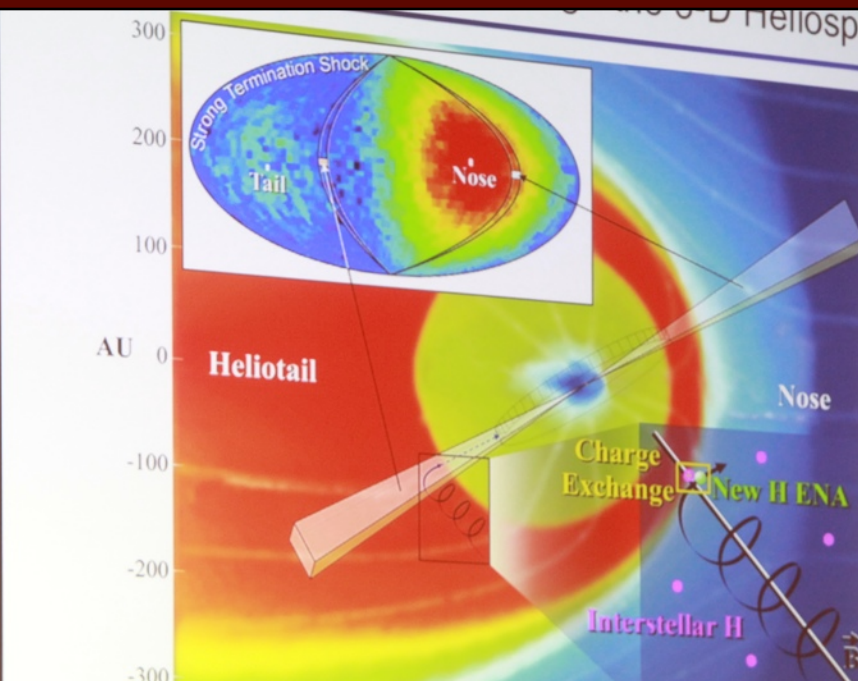
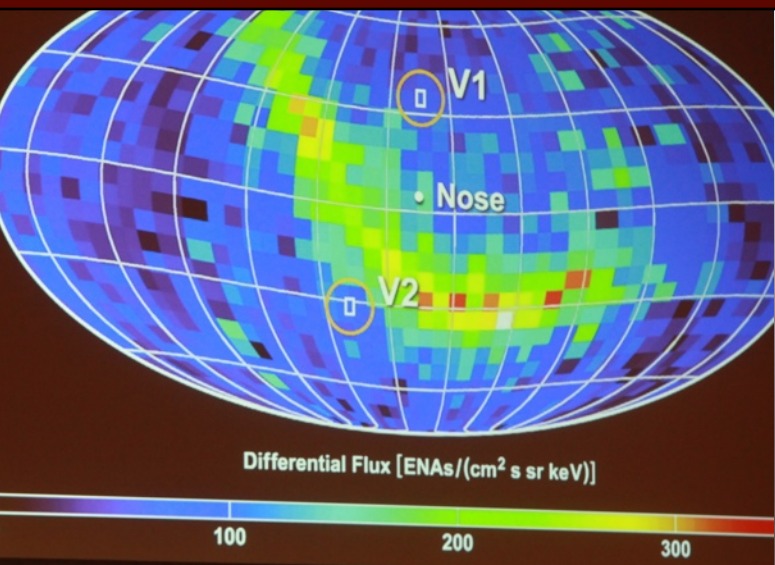
In an attempt to hack a path through the maze of unsupported hypotheses, contradictions, and alternative explanations, he realized that the simplest, most elegant and compelling explanations for cosmological phenomena were those that were emerging from electric plasma laboratories. Indeed, it was the *combination* of electrical engineering and plasma physics that provided the most logical explanations for what was being seen in space.

IBEX – The Surprising Results

James Ryder



IBEX'S SURPRISING RESULTS 2011



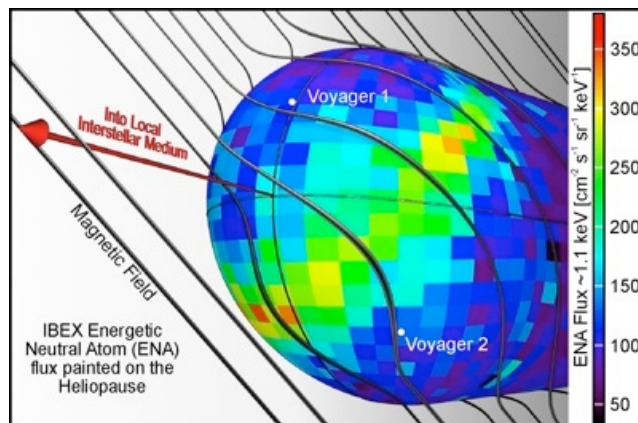
Three years ago (on October 18, 2008) the [Interstellar Boundary Explorer \(IBEX\)](#) was launched by NASA as part of the Small Explorer Mission program. IBEX was built to discover the nature of the interactions between the solar wind and the interstellar medium at the edge of our solar system. The solar wind streams out from the Sun as a plasma that sweeps by the Earth and our sister planets and on out towards the stars where it meets



Wal Thornhill

the incoming flow of matter and energy from our galaxy and the broader universe.

The IBEX science team, in their technical papers and presentations, has unveiled a surprising all-sky map showing a “ribbon” in the sky at the boundary of our solar system



causing scientists to rethink previous concepts. **The boundary sky map of neutral atoms appears to be organized by the interstellar magnetic field rather than by the outflow of the solar wind as previously theorized.**

Continued data collection over the last two years, also surprisingly, shows the ribbon varies in strength and location on time scales of months. The interaction between our Sun and the galaxy appears to be amazingly dynamic. The results from the IBEX mission are requiring reconsideration of our fundamental concepts of the interaction between the heliosphere and the interstellar medium.

They may also result in a rethinking of the nature of the interstellar medium and importance of magnetic and electrical fields.

By Dr. James T. Ryder

Vice President (retired)

Lockheed Martin Space Systems Company

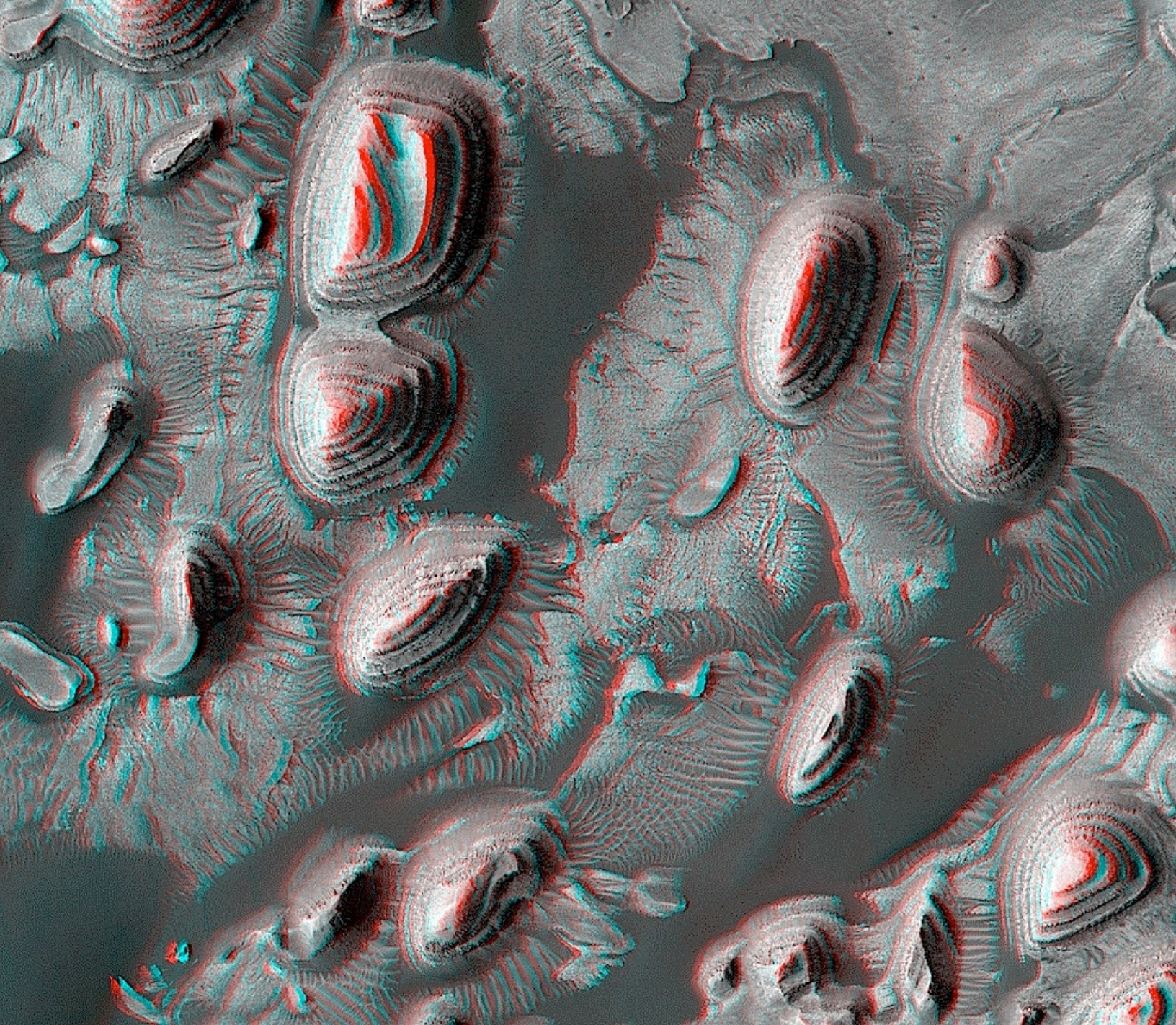
Advanced Technology Center

3D Mars

By Steve Smith

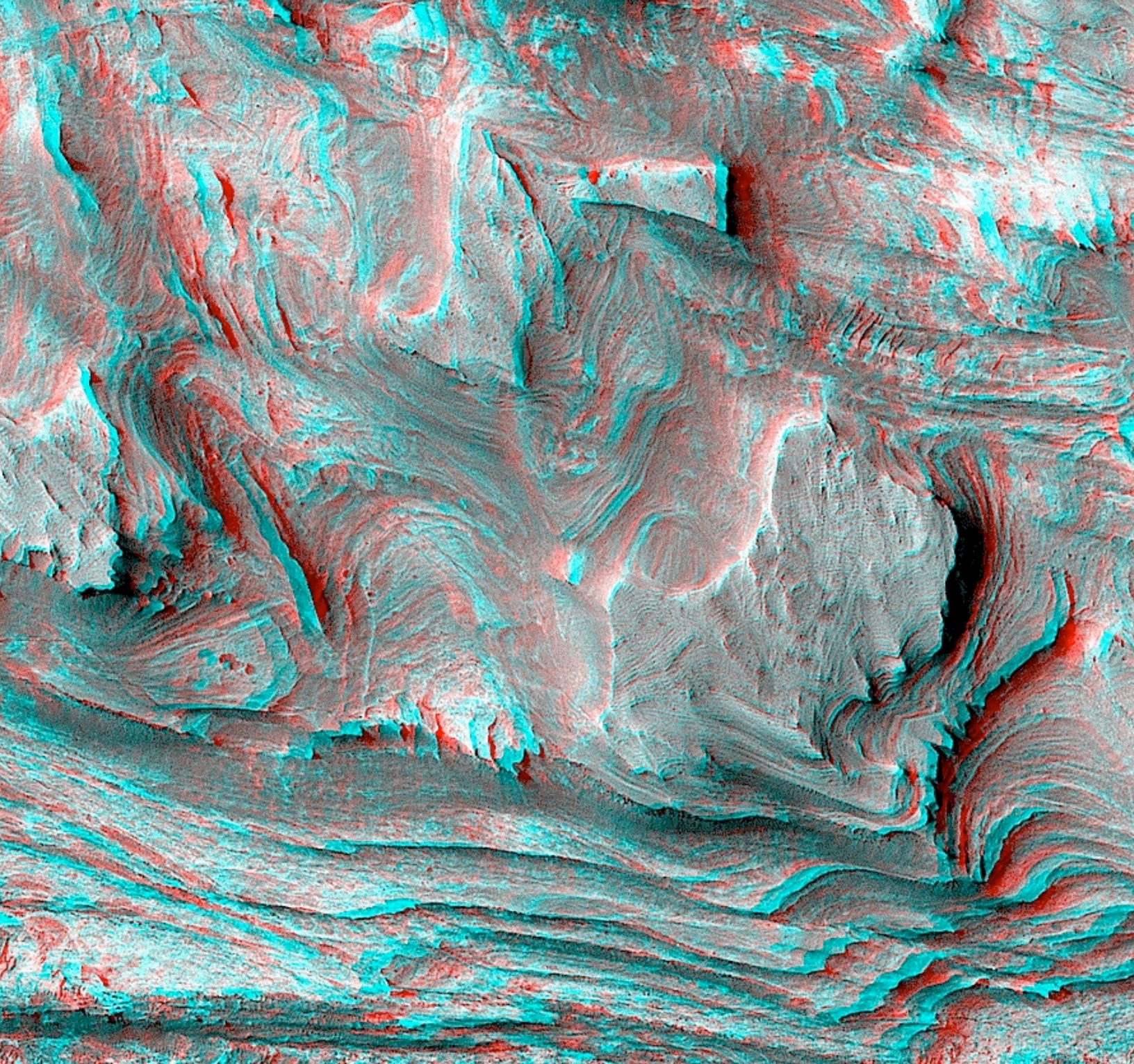


PUT ON YOUR 3D GLASSES NOW



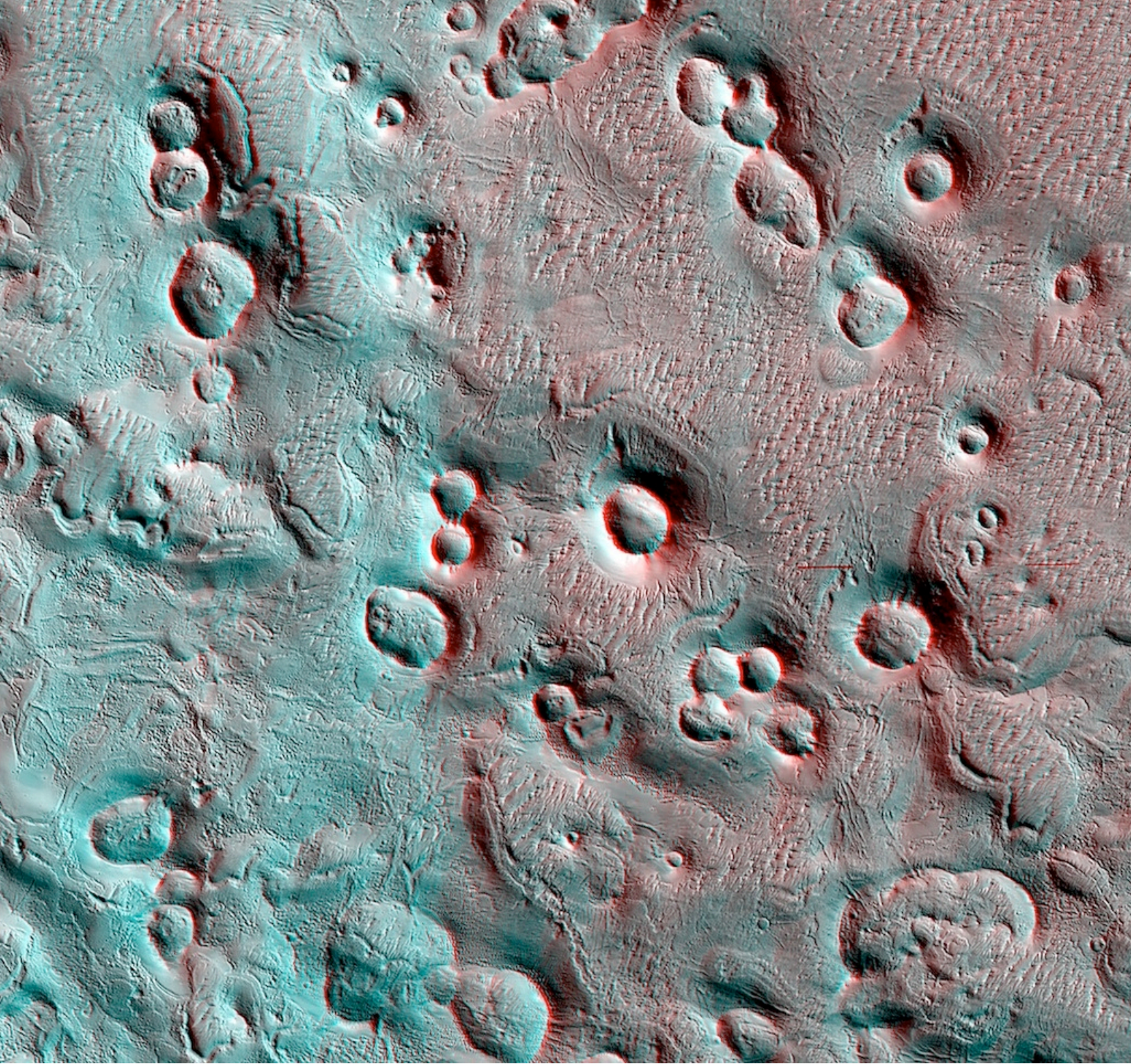
Cones and Mounds

Around the largest "volcano" in the Solar System is a network of deep fractures that radiate from the central mound for hundreds of kilometers. Among those sharp-edged, steep-walled chasms are several craters with nearly identical morphology, such as the one in this image. When electricity passes through a solid body, like as a planet, it either erodes the surface or deposits material at the strike points. The craters are usually circular because electric forces cause the arcs to impact at right angles. Since filaments of electricity rotate, rock and dust is drilled out, leaving steep sides and "rolled" rims of melted debris.



Arabia Terra

Crescent-shaped discharges appear to have carved the formations seen here. The highest points are embossed with the unmistakable sign of electricity acting on a conductive medium, Lichtenberg figures. The moats that are dug deeply into the surface also suggest electrical activity, as do the perpendicular ridges and granular landscape covering hundreds of square kilometers. The nubbins of solid stone that align themselves in crisscross patterns are reminiscent of corona discharges that can sometimes be seen at right angles to a primary arc.



Candor Chasma

If electric current discharges stick to a surface they tend to rotate around a point and leave a circular crater with a raised center area. If the discharge is narrow and intense like a lightning bolt, it will leave a deep, sharp cut in the substrate and the material will be accelerated away from the point of contact. Where the electric arc contacts and runs along or under the surface, Birkeland currents might create a rille, or canyon-shaped excavation. Often, this type of discharge forms a series of overlapping craters, imparting a sculpted effect to the canyon wall with periodic notches in the rim

David Talbot

Seeking the Third Story

By David Talbott, taken from
his keynote address

The Electric Universe 2012
Conference- The Human Story

Jan. 6th, 2012

There really is something wrong with our cultural and scientific environment today. There is a growing yearning for a deeper understanding, a more coherent and unified and non-contradictory and non-fragmented way of seeing the universe. Some may ask, why is the Electric Universe important to that clarification?

It may be that the first words used to express the meaning of the Electric Universe may seem rather remote, but if a person is intellectually alive the Electric Universe is going to meet that person at a level of very deep interest, and this comes clearly from the sense that the truth is somehow shining through, that there is something enduring, something lasting, something that could affect us very deeply, being revealed here.

How did human history begin?

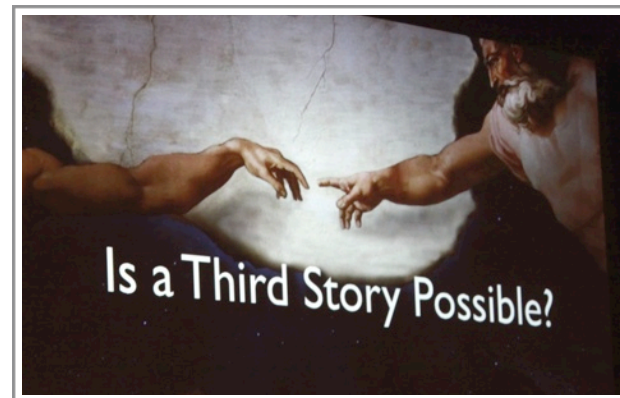
The evidence may seem too complex for generalization. But all of history can be stated as just two stories:

First came the story of mythology filled with cosmic dramas and celestial wonders. We lived in the presence of the gods. It was the gods that determined the fate of the world, demanding allegiance, even as they called humans to sacrifice. The gods were unpredictable, when angry they went to war, or they destroyed their own creation.

Over time however man's quest for deeper meaning in the myths ignited sparks of spiritual awakening. And it was from these sparks that the great religions. But all of the world's religions shared a tap-root in mythology. And not one freed itself entirely from the momentum of the First Story.

The Second Story arose from doubt, as philosophers, poets and naturalists began to lose faith in the myths. And, some stopped believing in the gods altogether. That was because direct experience under a familiar and highly predictable sky gave no support to the archaic myths. Skepticism inspired closer attention to nature, the essential requirement for the rise of Science and Technology that would change the world. Thus came the heroic completion of the Second Story, with rational science rising to vanquish myth and magic.

And so the full sweep of human history comes down to just two stories in competition, a cliché: science vs. myth and religion. Well into the 20th Century it seems we were forced to choose. But a few have wondered, could the myths harbor a truth that we have missed, something yet to be discovered? Is there a message for science, hidden in the myths and symbols of deepest antiquity?



The point that should be made here is that **seeking a Third Story** requires us to reinvestigate, reconsider two stories that dominated human imagination across the whole sweep of human history. It became my role to investigate the origins of myth, and to pursue that subject I had to come to grips with an unexplained mystery. What was the mythic age of gods and wonders remembered around the world?



Every culture said the same thing; the gods ruled for a time then they went away.



The age of gods and wonders was punctuated by disaster. And in the end in a kind of culminating event the gods departed. Was it just the power of human imagination that induced every culture to say the same thing, one culture after another looking back with this desperate yearning to hold on to this memory? Was this something that was merely an accidental evolution of consciousness, or was it in reality related to something that was actually experienced?

I have the benefit of having been inspired originally by Immanuel Velikovsky, and Velikovsky was an exceptionally controversial figure. Probably in 20th century science he was up toward the top in the controversial quality of his work. He registered a very broad hypothesis about human history, but it had certain key elements that are very relevant today.

The first is that the planetary system has been unstable within human memory. He said that in dynamic interactions between planets electric arcs flew between these bodies with disastrous consequences that affecting the surfaces of those planets, and he insisted that human memories count as evidence.

It was insistence on this idea of past planetary instability and the belief that human memories counted as evidence that disqualified him from consideration by the scientific community.

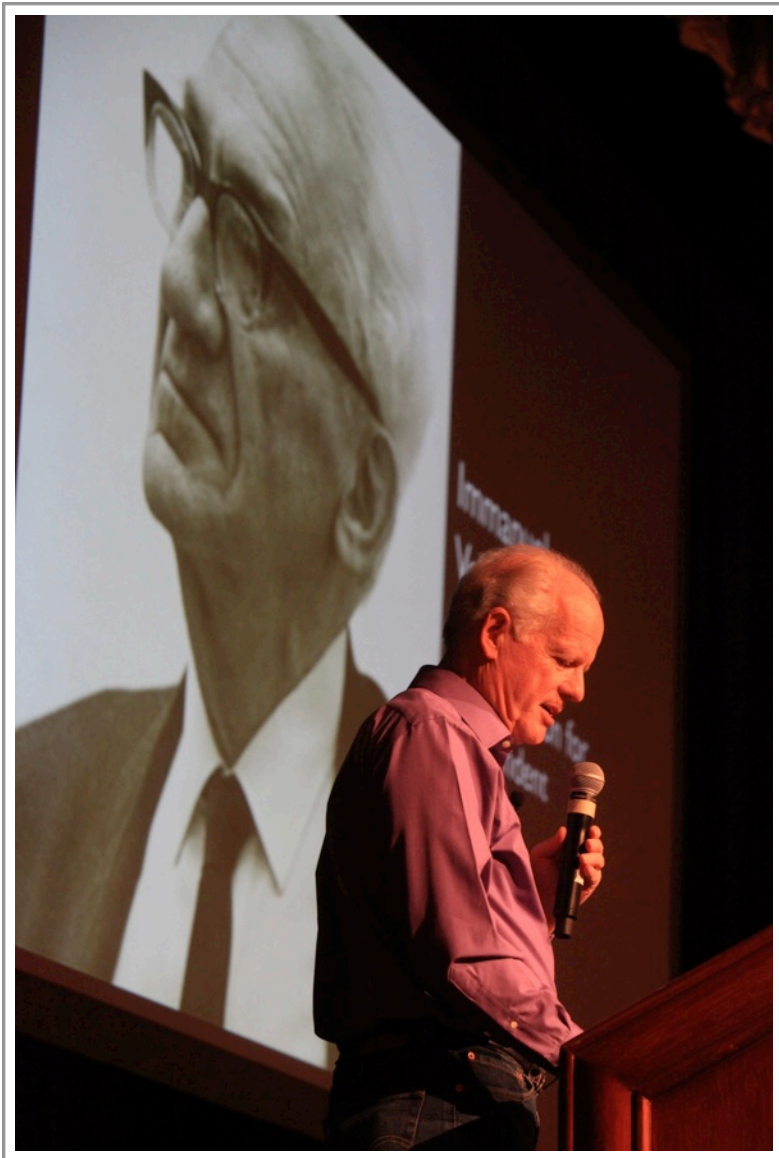
I happened to be publishing a student journal called "Pensee" at the time, in '72, and I had this sense from our conversations with Immanuel Velikovsky that this was actually an historic juncture, so as I was envisioning how we might treat the issue of Velikovsky we eventually came to the idea of putting out a special issue of our student journal distributed free on Oregon Campuses, and that this could kind of cut across the political divisions and so on that we were ourselves were fostering with the kind of material that we were putting out, and that was Immanuel Velikovsky Reconsidered.

And from that moment on my own world just changed completely.

One issue grew into ten, and this series had a remarkable impact around the world. It provoked this whole renewal of interest in Velikovsky in the light of new space-age data coming back in the 70's.

I followed this question then with an incredible enthusiasm, and for a few years, because of certain things that were arising from my own study, I was actually living off of adrenaline, realizing that an entirely different assessment of human history and of evidence is possible.

The research method based itself first and foremost on cross-cultural points of agreement--something that can not be ignored.



There is a power in diverse cultures insisting on the same thing at a level of very specific detail. The evidence was increasing that there was a primordial experience.

Attention had to be paid to the earliest sources, for whatever has been preserved to the point of cross-cultural agreement; you want to refer it back to the very first expressions of those themes, as there is a natural tendency towards evolution over time of the myths, to fragment, to distort, to localize the message.

There was a point at which I realized there were a 100 mythic archetypes or points of agreement and that they are all connected, and that after the myth-making epoch there is not a single new archetype. That was an incredible revelation that secured for me the possibility of a unified theory of myth. That there must have been something unique that was experienced around the world that gave rise to this unified complex of mythic archetypes.

In a sense all of the monumental construction of antiquity is a witness to something that is simply unknown in human conscience today. Why were they all looking back to critical junctures in the age of gods and wonders? Every monument that was ever constructed, every temple, every city, always involved a recreation of a primordial event, and that event did not point to anything that we can name in natural experience today.

Because Velikovsky had made this seemingly preposterous claim that the planet Venus appeared in the sky as a great comet, I kept my eye out for that particular question all the time, and I can only say that not only I but all who have seriously investigated this question with the kind of open mind that is required, have concluded exactly the same thing.



Velikovsky was simply and undeniably correct in saying that the planet Venus was a terrifying Great Comet, the parent of comets. In other words, all of the ideas about comets that humans later discussed or presented or responded to with fear, for example when they responded with fear to a wispy comet coming into view, everything that drove them was a result of that primordial experience with that Great Comet, that Mother of comets .

You can't pursue the mythic archetypes without beginning to notice that with the naming of planets in relationship to these mythic powers there is a consistency that has to have an explanation, and there will be no explanation possible unless the planets were gathered above humanity in a way that has no conceivable explanation in the sky that we observe today. So that was the heart of the new way of looking at human history and planetary history.

What was the age of gods and wonders?

Where did the gods live?

The answer to that question is undeniably based on the early sources: They lived in the sky.

Why did we stop believing in the gods? For the simple reason that in the course of time and with distance from that primordial experience there was nothing in the human experience of nature that would lend any support to the myths. All myths became increasingly preposterous.

To gain a sense of the coherence and universality of the myths it's good to start with some of the absolute fundamentals. To begin, the myth of primeval paradise, the golden age an age of peace and plenty on earth, harmony in the sky.

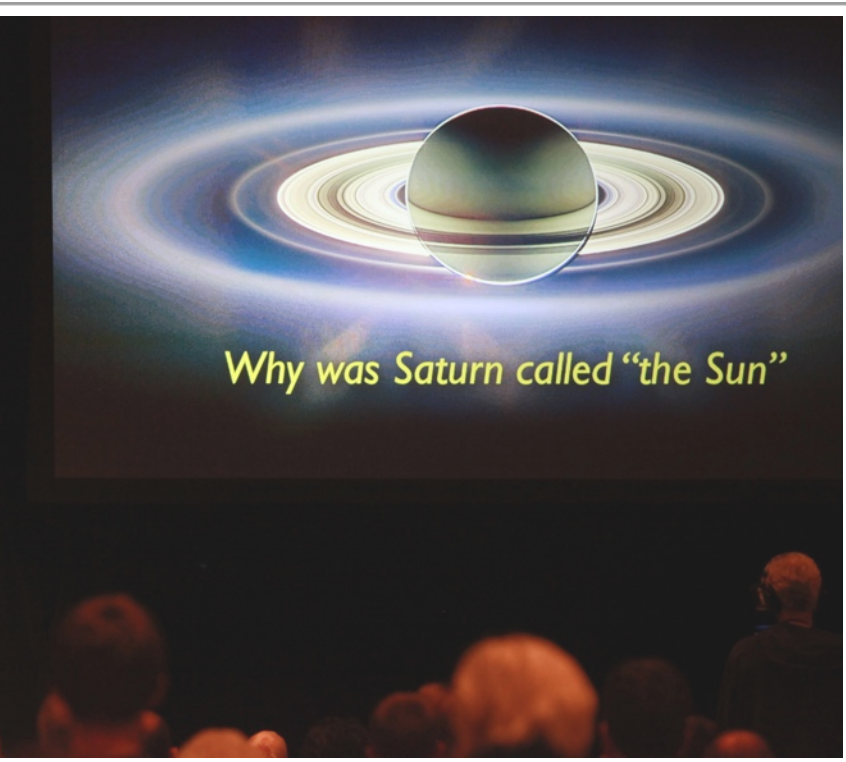
There probably is not a well-documented culture in an earlier time that failed to document that tradition. And then there was this catastrophic event that brought the age of the gods to its violent conclusion.

And what was the power that appeared in the sky in the intervening phase of history? It was a dragon-like form, the celestial dragon. What is most significant about this form is that when you investigate it under the rules of cross-cultural investigation, you find that every ancient hieroglyph or symbol relating to the dragon-form within the cultural traditions you're investigating, is a symbol of the comet. The long flowing hair, long flowing beard, long flowing feathers, serpentine form, fiery countenance, fiery breath, all are symbols of the comet. Don't believe this was an accident.

This is at the heart of our research method; convergence on extraordinary detail has to mean shared experience, even if we have not understood it.



I can thank Velikovsky and, quite frankly, a brief outline I saw from Bill Mullin way back in 1972. It was a page and a half outline of Velikovsky's ideas about the planet Saturn that not been included in *Worlds in Collision*. He had pulled it from *Worlds in Collision* in order to present a more complete hypothesis. What was so intriguing about it was the idea that Saturn had this extraordinary role in the earliest remembered time. And so I followed that. Saturn was directly tied to the Golden Age as you can see in this quote about life in the time of Kronos when he ruled in heaven, Kronos being the Greek name of Saturn



"First of all the deathless gods who dwell on Olympus made a golden race of mortal men who lived in the time of Kronos when he ruled in heaven" [Hesiod, *Theogony*]

Follow the threads and everything you encounter just expands the anomaly, expands the sense of something out of our familiar experience that was so much on the mind of the ancients. Today probably not one in a thousand people know that Helios, an early name for the sun, was in early time the name of the planet Saturn. Sol was also a name of the planet Saturn. Shamash, the Babylonian sun god, was explicitly identified with the planet Saturn. Scholars that investigate this never dispute it, but *why* that would be so is disputed.

On a similar theme, there is an idea of a Great Conjunction that has nothing to do with what we call a conjunction or even a great conjunction today. We see the planets gathering within a 30 degree arc of the sky and call that a great conjunction. No, the principle inherent and at the heart of the ancient myths is that the planets stood in one line, such that one line ran right through the heart of those gathered bodies. Here is the fulcrum of the reconstruction: the story of mythology is the story of what happened with these bodies, and there is no other story.

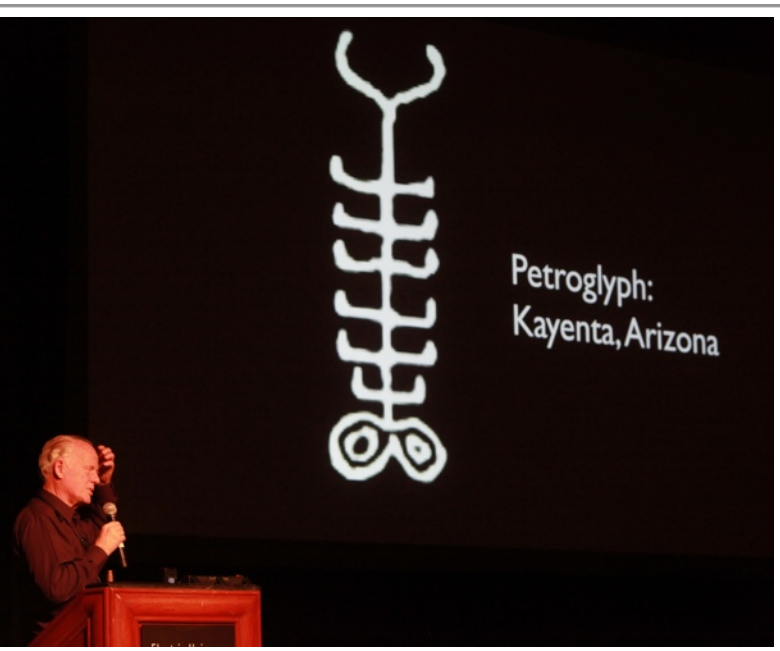


On yet another theme, every culture in antiquity tended to have a line of kings and the claim that they can trace that line back to a mythic first king. This is where you find the pre-eminence of the planet Saturn as he appears as the first father, the father of kings.

Why would that be and why would that memory have so preoccupied those who formulated the rights of kingship, declaring that the blood of that first ancestor still courses through the veins of our king?

And what was the connection of Saturn to the myth of heaven having been close to the earth? The entire idea as a universal theme, as a mythic archetype, makes no sense under any other scenario.

The evidence is overwhelming: there was this forgotten epoch when what people saw in the sky bore no resemblance to things we see now.



Humans on earth drew pictures of these forms. It was a dynamically evolving configuration in the sky, pressing in on the earth, obsessively preoccupying human beings. It's the ability to recognize patterns that makes it possible for us to reconstruct the ancient heavens, and in every instance you're looking for patterns that are archetypal, where every archetype is a defiance of nature as we experience it today.

There is a wheel-like character to this form. This configuration is at the center of the reconstruction, and is the culmination of an evolutionary phase that preceded it through which the "participants" were progressively clarified, and that included a clarification of the personalities of the male and female powers.

The female power was the great star in the center of the over-arching sphere. A smaller star, a small planet actually, much darker and redder, was the prototype of the warrior hero.

The starburst type was the prototype of the mother goddess, the great star, the great comet, before it was removed to become the angry goddess, and so forth.

The configuration evolved through dynamic and at times violent phases over many years and resulted in a plethora of forms that were individually incorporated into the myths, all considered to have been aspects of the various gods.

What makes the reconstruction of those ancient scenes possible are the drawings that people left on rock walls, the carving of pictures on stone. Today we have this incredible benefit that the pictures that are recorded on stone can actually be evaluated under laboratory examination of electric discharge in a plasma environment.

The cosmic thunderbolt in the antique world provides us with a bridge between myth and science. And every fact that you can bring forward relating to this cosmic thunderbolt is explicit and extraordinary and anomalous. The warrior god's weapon was not inspired by any practical function. And of course it never looks like lightning. Imagine a warrior launching an arrow with the configuration seen here, its shape would make the arrow effectively dysfunctional. But it is a familiar form to those who know electric discharge in plasma.

There were many variants. For instance, the tridents of early myth were forms of the cosmic thunderbolt, as were the smaller thunderbolts seen grasped in the hands of the gods. It is quite clear that whatever was being experienced it did go through an extraordinary evolution in the sky.

And now you know why we chose the image of the cosmic thunderbolt for this conference.



To learn more about the reconstruction of the ancient heavens and the role that the Electric Universe had to play in the evolution of human culture and consciousness, please visit:

Website and Forum:

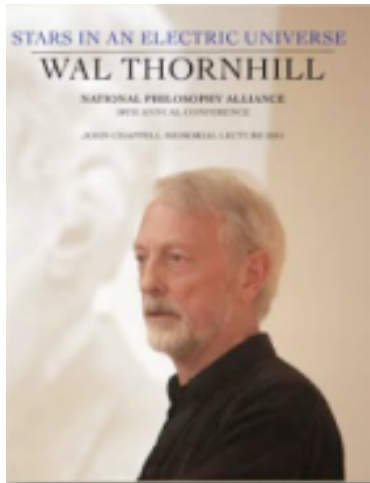
Thunderbolts.info

Youtube Channel: <http://www.youtube.com/user/ThunderboltsProject?blend=3&ob=0>

Remembering the End of the World -
1996 David Talbott documentary

“Today, nothing is more important to the future and credibility of science than liberation from the gravity-driven universe of prior theory. A mistaken supposition has not only prevented intelligent and sincere investigators from seeing what would otherwise be obvious, it has bred indifference to possibilities that could have inspired the sciences for decades.”

David Talbott and Wallace Thornhill



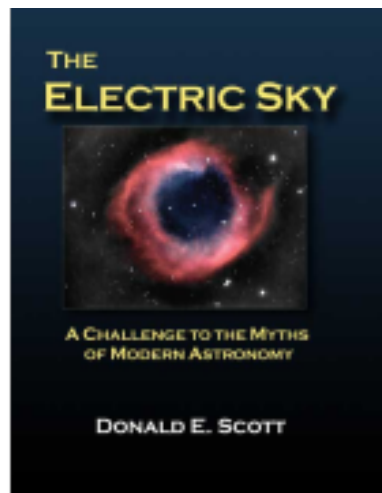
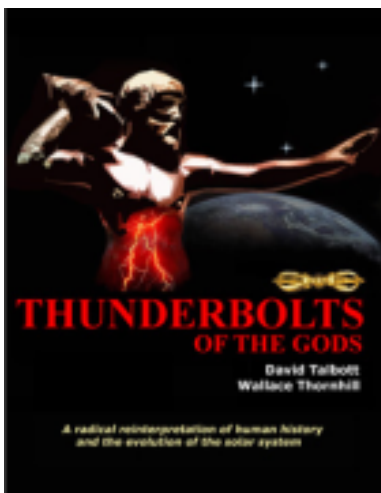
Stars in an Electric Universe DVD

synopsis

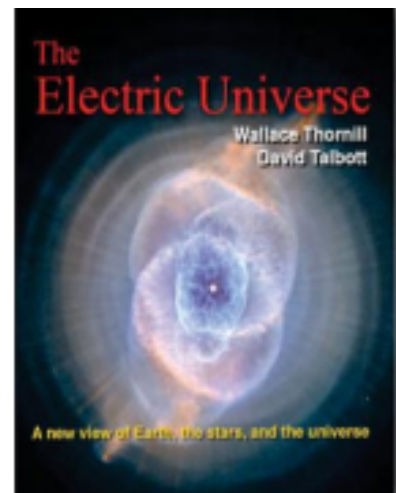
Resources



Symbols of an Alien Sky DVD



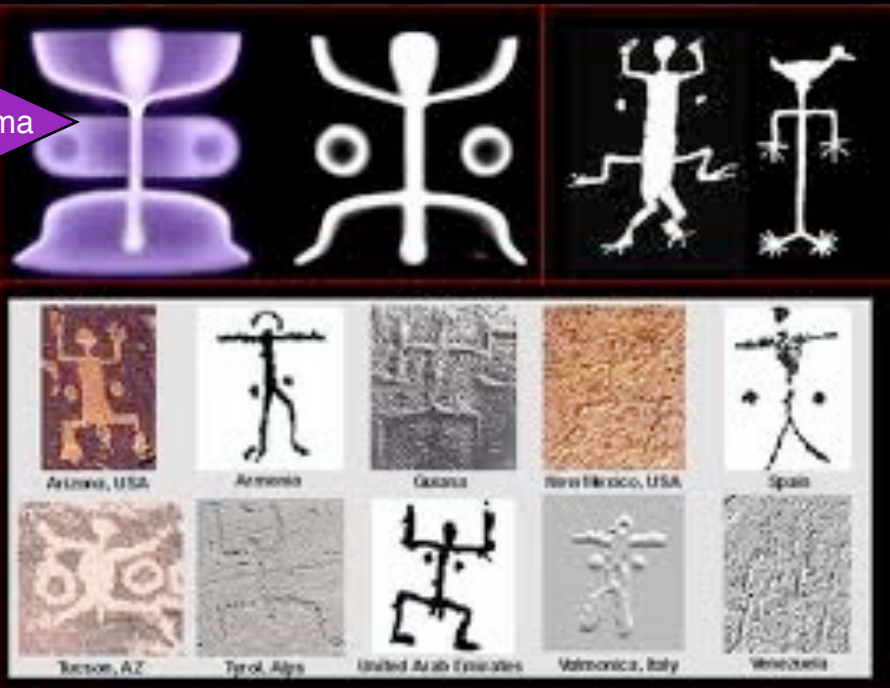
Books





gods of the
Thunderbolt
a Universal Theme

Plasma



THESE ANCIENT
ROCK CARVINGS
SUGGEST AN
UNDERSTANDING
OF AN ELECTRIC
UNIVERSE OR A
PLASMIC FIELD.

Thunder Was the Weapon They Wield!

It appears this concept, like many others stories,
is universal!

Ancient Thunderbolt to Star Wars Light Saber?

Ancient Near East

- Teshub (Hurrian mythology)
- Adad, Ishkur, Marduk (Babylonian-Assyrian mythology)
- Hadad (Levantine mythology)

Eurasia

- Tarhunt (Hittite/Luwian mythology)
- Zeus (Greek Mythology)
- Brontes (Greek mythology)
- Jupiter, Summanus (Roman mythology)
- Taranis (Pan-Celtic); Ambisagrus, Leucetios, (Gaulish mythology)
- Punraz (Germanic mythology; Anglo-Saxon *Punor*, German *Donar*, Norse *Pórr*)
- Thor (Norse mythology)
- Perun (Slavic mythology)
- Perkunas (Baltic mythology)
- Perendi (Albanian mythology)
- Gebeleizis (Dacian mythology)
- Zibelthiurdos (Thracian mythology)
- Ukko or Perkele (Finnish mythology)
- Horagalles (Sami mythology)
- Indra, Parjanya (Hindu mythology)
- Aplu (Etruscan mythology)
- Atämshkai (Moksha mythology)

East Asia

- Lei Gong (Chinese mythology)
- Ajisukitakahikone, Raijin (Raiden-sama, Kaminari-sama), Tenjin (kami) (Japanese mythology)
- Susanoo (Japanese mythology)

Americas

- Thunderbird (Native American mythology)
- Xolotl (Aztec and Toltec mythology)
- Chaac (Maya mythology)
- Apocatequil (Incan mythology)
- Cocijo (Mexican mythology)
- Aktzin (Mexican mythology)
- Jasso (Mexican mythology)
- Haokah (Lakota mythology)
- Tupã (Guaraní mythology, Brazil)
- Tunupã, Thunupã (Bolivian and Peruvian mythology)
- Salar (Aztec mythology)

Africa

- Set (Egyptian mythology)
- Shango (Yorùbá mythology)
- Oya (goddess of hurricanes, consort of Shango Yoruba mythology)
- Azaka-Tonnerre (West African Vodun/Haitian Vodou)
- Mulungu
- Xevioso (alternately: Xewioso, Heviosso. Thunder god of the So region)
- Sango (Nigerian mythology)

Oceania

Polynesian mythology

- Haikili (Polynesian mythology)
- Tāwhaki (Polynesian mythology)
- Kaha'i (Polynesian mythology)
- Te Uira (Polynesian mythology)

Micronesian mythology

- Nan Sapwe (Pohnpeian mythology)

Australia

- Namarrkun (Aboriginal mythology)

List from Wikipedia also see...
[Solar Deity](#)



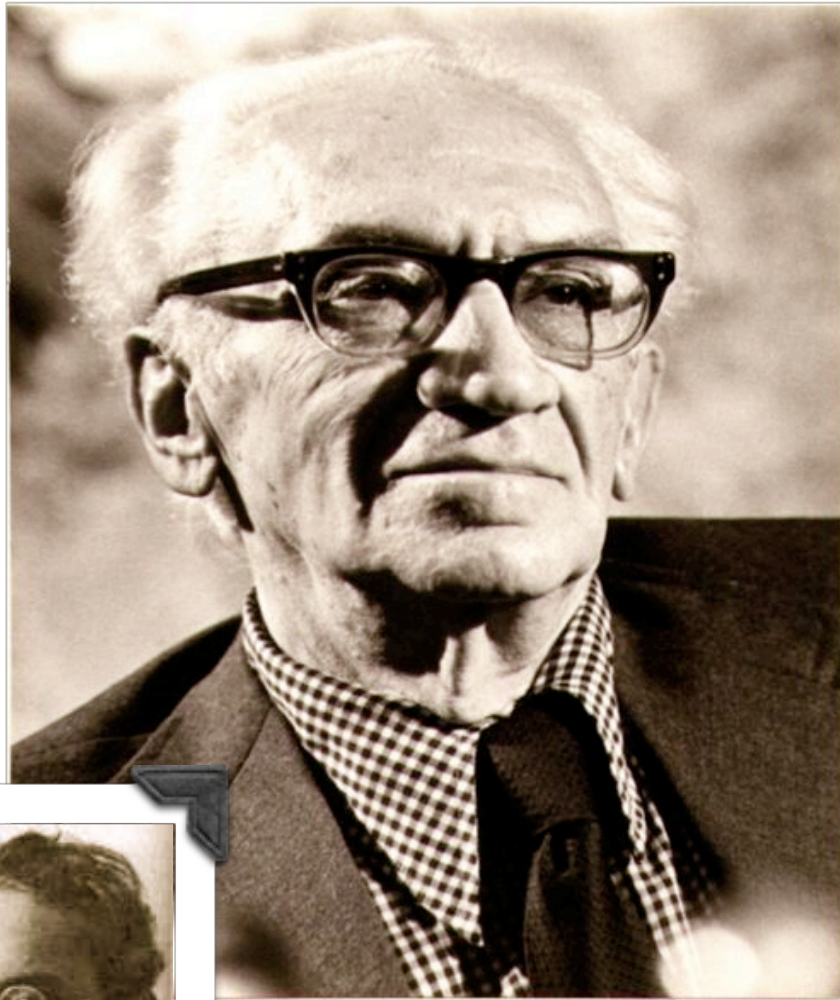
Celtic: Taranis Jupiter



Indra: King of gods - God of War, Storms and Rainfall



Jupiter and Roman



Им. Великовский

IMMANUEL VELIKOVSKY

[The Immanuel Velikovskly Archive](#)

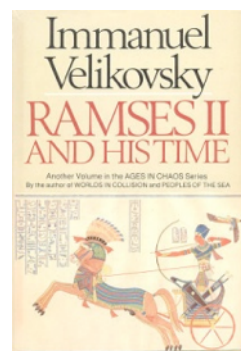
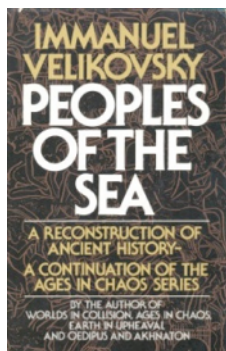
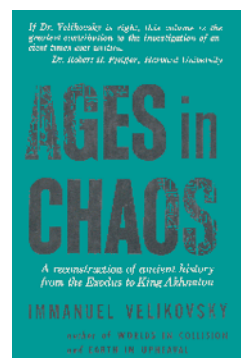
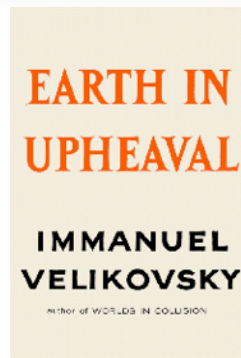
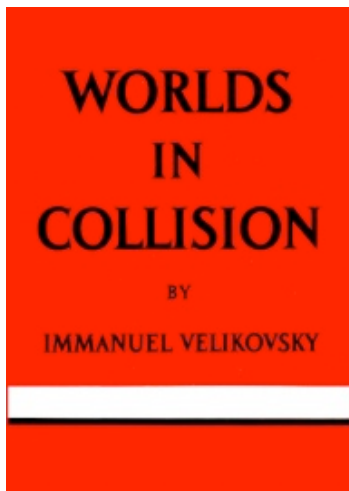
[Immanuel Velikovsky](#) (1895-1979) was a controversial author of several books suggesting a radical interpretation of history. In his best-selling book, [Worlds in Collision](#) (1950), he argues that the Earth and other planets, had been subject to cosmic [catastrophes](#) in historical times, that had been recorded in the oral traditions, myths and legends of the peoples of the world. His 1956 book [Earth in Upheaval](#) describes geological evidence that he says supports the idea of global catastrophes in prehistorical and historical times.

[Documentary on Velikovsky](#)

Im. Velikovsky

Velikovsky explains that:

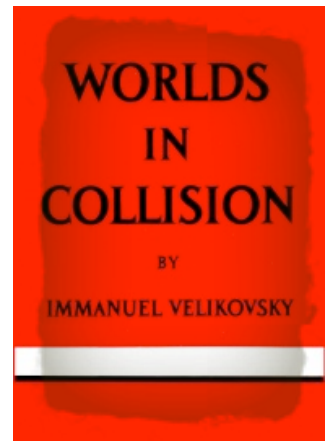
"I came upon the idea that traditions and legends and memories of generic origin can be treated in the same way in which we treat in psychoanalysis the early memories of a single individual. I spent ten years on this work. I found that the collective memory of mankind spoke of a series of global catastrophes that occurred in historical times. I believed that I could even identify the exact times and the very agents of the great upheavals of the more recent past. The conclusions at which I arrived compelled me to cross the frontiers into various fields of science, archaeology, geology, and astronomy".





The Velikovsky Encyclopedia

Worlds in Collision is a book of wars in the celestial sphere that took place in historical times. In these wars the planet earth participated too. [...] The historical-cosmological story of this book is based in the evidence of historical texts of many people around the globe, on classical literature, on epics of the northern races, on sacred books of the peoples of the Orient and Occident, on traditions and folklore of primitive peoples, on old astronomical inscriptions and charts, on archaeological finds, and also on geological and paleontological material.



Velikovsky proposes:

Im. Velikovsky

- "I have endeavoured to show that two series of cosmic catastrophes took place in historical times, thirty-four and twenty-six centuries ago, and thus only a short time ago not peace but war reigned in the solar system."
- "We maintain also that one planet -- Venus -- was formerly a comet..."
- "... that it joined the family of planets within the memory of mankind"
- "We conjectured that the comet Venus originated in the planet Jupiter"
- "From the fact that Venus was once a comet we learned that comets are not nearly immaterial bodies"
- "We claim that the earth's orbit changed more than once and with it the length of the year;"
- "... that the geographical position of the terrestrial axis and its astronomical direction changed repeatedly"
- "... the polar regions shifted, the polar ice became displaced into moderate latitudes, and other regions moved into the polar circles."
- "... electrical discharges took place between Venus, Mars, and the Earth when, in very close contacts, their atmospheres touched each other;"
- "... that the magnetic poles of the earth became reversed only a few thousand years ago"

- "... and that with the change in the moon's orbit, the length of the month changed too, and repeatedly so"
- "In the period of seven hundred years between the middle of the second millennium before the present era and the eighth century the year consisted of 360 days and the month of almost exactly thirty days, but earlier the day, month, and year were of different lengths."
- "We offered an explanation of the fact that the nocturnal side of Venus emits as much heat as the sunlit side"
- "... we explained the origin of the canals of Mars and the craters and seas of lava on the moon as brought about in stress and near collisions.
- "... excessive evaporation of water from the surface of the oceans and seas, a phenomenon that was postulated to explain the excessive precipitation and formation of ice covers, was caused by extraterrestrial agents."
- "We recognized that the religions of the peoples of the world have a common astral origin."
- "We learned why there are common ideas in the folklore of peoples separated by oceans"
- "The accounts given in this book about planets changing their orbits and the velocities of their rotation, about a comet that became a planet, about interplanetary contacts and discharges, indicate a need for a new approach to celestial mechanics."
- "The theory of cosmic catastrophism can, if required to do so, conform with the celestial mechanics of Newton."

The book proposed that around the 15th century [BCE](#), a [comet](#) or comet-like object (now called the planet [Venus](#)), having originally been ejected from [Jupiter](#), passed near [Earth](#) (an actual collision is not mentioned). The object changed Earth's orbit and axis, causing innumerable catastrophes which were mentioned in early [mythologies](#) and religions around the world. Fifty-two years later, it passed close by again, stopping the Earth's rotation for a while and causing more catastrophes. Then, in the 8th and 7th centuries BCE, [Mars](#) (itself displaced by Venus) made close approaches to the Earth; this incident caused a new round of disturbances and disasters. After that, the current "celestial order" was established. The courses of the planets stabilized over the centuries and Venus gradually became a "normal" planet.

Dr. Robert M. Schoch



PLASMA & EARTH'S LAST ICE AGE

Plasma, Solar Outbursts, and the End of the Last Ice Age

15,000 to 11,000 years ago Earth experienced a series of climatic fluctuations. It had been extremely cold, with continental glaciers extending much further than they do today, but the climate started to warm. However, temperatures suddenly reverted back and there was a short cold spell, known as the Younger Dryas, before the final warming and the official end of the last ice age.



Based on Greenland ice core data, the Younger Dryas began and ended very abruptly. Its start dates to 10,900 B.C., and its ending (the final warming) began circa 9700 B.C. and may have occurred within an incredible three years; given our inability to resolve the finest details of something that happened so long ago, **it may have literally happened overnight.**

How do we explain this pattern of abrupt climatic shifts?

I once hypothesized that comets were responsible. A comet hitting the land or a shallow ocean, or exploding above the land's surface, scattering dust and debris into the atmosphere, would cause global cooling. Although the initial strike would happen in a flash, it would take some years for the cooling to reach its full extent. This pattern fits well with the cooling at 10,900 B.C. and there is evidence of a cometary explosion over North America at this time.

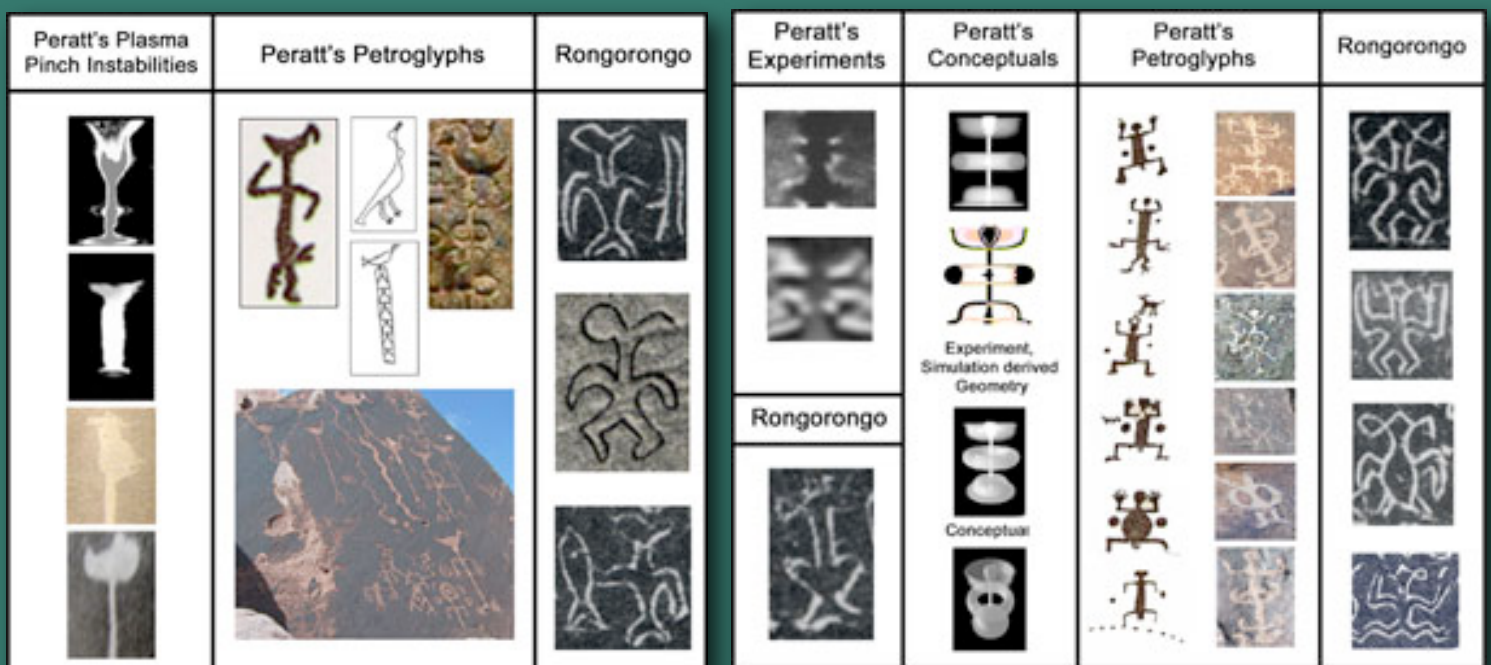
What about the warming event of circa 9700 B.C.? In years past I speculated that comets hitting deep oceans were responsible. A comet might break the thin oceanic crust, releasing heat from the hot magma beneath. Vaporized and displaced water would rain down on Earth, and tsunamis would wash across coastal areas, warming the planet. But even with a comet, or a series of comets, bombarding the oceans, could the warming happen as quickly as the Greenland ice cores indicate? I think not. But if not comets, what?

Oddly, the indigenous Easter Island rongorongo script may hold the answer. **But first we have to consider the concept of the fourth state of matter--plasma.** Plasma consists of electrically charged particles. Familiar plasma phenomena on Earth today include lightning and auroras, the northern and southern lights, and upper atmospheric phenomena known as sprites. In the past, much more powerful plasma events sometimes took place, due to solar outbursts to coronal mass ejections (CMEs) from the Sun, or possibly emissions from other celestial objects. Powerful plasma phenomena could cause strong electrical discharges to hit Earth, burning and incinerating materials on our planet's surface. Los Alamos plasma physicist Dr. Anthony L. Peratt and his associates have established that petroglyphs found worldwide record an intense plasma event (or events) in prehistory.

Dr. Peratt determined that powerful plasma phenomena observed in the skies would take on characteristic shapes resembling humanoid figures, humans with bird heads, sets of rings or donut shapes, and writhing snakes or serpents--shapes reflected in countless ancient petroglyphs. The Easter Island rongorongo script, recorded on antique wooden tablets, is composed of similar shapes as the petroglyphs. Studying them in detail (inspired by my wife, Catherine Ulisse, who first noticed the connection), I concluded that the Easter Island rongorongo tablets (the surviving tablets are copies of copies of copies) record a major plasma event in the skies thousands of years ago. This, I believe, was the event that brought a final close to the last ice age.

Plasma hitting the surface of Earth could heat and fuse rock, incinerate flammable materials, melt ice caps, vaporize shallow bodies of water creating an extended deluge of rain, and send the climate into a warming spell. The release of pressure that follows the melting of thousands-of-meters-thick ice sheets can induce earthquakes and even cause hot rock under pressure to melt and erupt to the surface as volcanoes. The world was in chaos, and this is the event recorded by petroglyphs and the rongorongo texts.

The plasma event of 9700 B.C. eradicated advanced civilizations and high cultures of the time, and the radiation emanating from the plasma may have affected mental and psychical abilities. This could be the basis for the nearly universal myth of a Golden Age, a time when beings on Earth had mental abilities far surpassing those of later times. The 9700 B.C. event may be the original basis for the Atlantis legends; the timeframe fits well with Plato's account.



Plasma and petroglyph illustrations courtesy of Dr. Anthony L. Peratt, used with permission. Source: Anthony L. Peratt, "Characteristics for the Occurrence of a High-Current, Z-Pinch Aurora as Recorded in Antiquity", IEEE [Institute of Electrical and Electronics Engineers] Transactions on Plasma Science, December 2003, vol. 31.

Plasma and electrical discharges hitting the surface of Earth may have been responsible for the vitrification (melting into crude glass) of ancient stone structures seen in some parts of the world, such as various hill forts in Scotland. People cowered for their lives; they sought shelter in caves, under cliffs, in dwellings built of thick stone or carved into mountainsides. Perhaps [Göbekli Tepe](#) was intentionally buried in an attempt to protect it from on-going plasma events. Humankind was thrown into a dark age for thousands of years, only to reemerge with vague and scattered memories of what had happened. Some of those memories took physical shape in the megalithic architecture found around the world -- what better way to attempt an escape from fierce skies than in a protective solid stone "fallout shelter"?

"Since February 2010 – I have been publicly speaking and writing about the new theories presented on this page. I currently (January 2012) have a forthcoming book covering these issues and much more, scheduled for publication by Inner Traditions later this year. When the book is available for purchase, I will announce it on my website (www.robertschoch.com). In the meantime, if you find these ideas interesting, you might want to take a look at three articles I wrote for the Australian magazine *New Dawn*."

["An Ancient Warning, A Global Message, From the End of the Last Ice Age"](#)

["The Mystery of Göbekli Tepe and Its Message to Us"](#)

["Glass Castles & Fire from the Sky: A New Theory of Vitrification"](#)

Dr. Robert M. Schoch, a full-time faculty member at the College of General Studies at Boston University since 1984, earned his Ph.D. (1983) in Geology and Geophysics at Yale University. He also holds an M.S. and M.Phil. in Geology and Geophysics from Yale, as well as degrees in Anthropology (B.A.) and Geology (B.S.) from George Washington University. Additionally, Dr. Schoch is a member of the Advisory Board, Ananda College of Living Wisdom.



Dr. Schoch has been quoted extensively in the media for his pioneering research recasting the date of the Great Sphinx of Egypt using geological analyses, as well as for his work on ancient cultures and monuments in such diverse countries as Egypt, Turkey, Bosnia, Romania, Wales, Scotland, Mexico, Peru, Chile (Easter Island), and Japan. Dr. Schoch's research has been instrumental in spurring renewed attention to the interrelationships between geological and astronomical phenomena, natural catastrophes, and the early history of civilization. Dr. Schoch has appeared on many radio and television shows and is featured in the Emmy-winning documentary *The Mystery of the Sphinx* which first aired on NBC. He has been a featured speaker at many national and international conferences.



Dr. Schoch is the author or coauthor of both technical and popular books, including the trilogy with R. A. McNally: *Voices of the Rocks: A Scientist Looks at Catastrophes and Ancient Civilizations* (1999), *Voyages of the Pyramid Builders: The True Origins of the Pyramids from Lost Egypt to Ancient America* (2003), and *Pyramid Quest: Secrets of the Great Pyramid and the Dawn of Civilization* (2005). A recent book publication by Dr. Schoch is *The Parapsychology Revolution: A Concise Anthology of Paranormal and Psychological Research* (compilation, and a hundred pages of commentary, by Robert M. Schoch and Logan Yonavjak; 2008). Dr. Schoch's works have been translated into numerous languages and distributed around the world. He is also the coauthor of an environmental science textbook used in universities across the United States,

and has contributed to numerous magazines, journals, and reviews on geology, parapsychology, and ancient civilizations.

...Paradise is, admittedly, what every living human being strives for, be it in the now or in the afterlife. As far as the temple-builders were concerned, there was no better time than the present, inasmuch as they engineered walled enclosures called temples that demarcate one world from the next. Could these temples be windows into paradise?

They may just be. Measurements of energy around the perimeter of temples in Britain and Egypt show that such places concentrate measurable levels of electromagnetism, particularly at the entrances which serve to direct this energy into the inner sanctum of the site, sometimes as much as twice the rate of the surrounding land. For lack of a better word, the entrance is the window into the walled enclosure.

Being electromagnetic by nature and composed of two-thirds water, the main beneficiary of this spiritual engineering is the human body, which is suitably entranced. When the pilgrim walks into a temple it is effectively walking into a highly charged version of itself. Additionally, every temple is also sited above or beside water, and when geomagnetism is rotated or spiraled it generates an electromagnetic charge in this fluid.

What the
ANCIENTS
were up to:

TEMPLES,
transformation,
and the location
of
PARADISE.

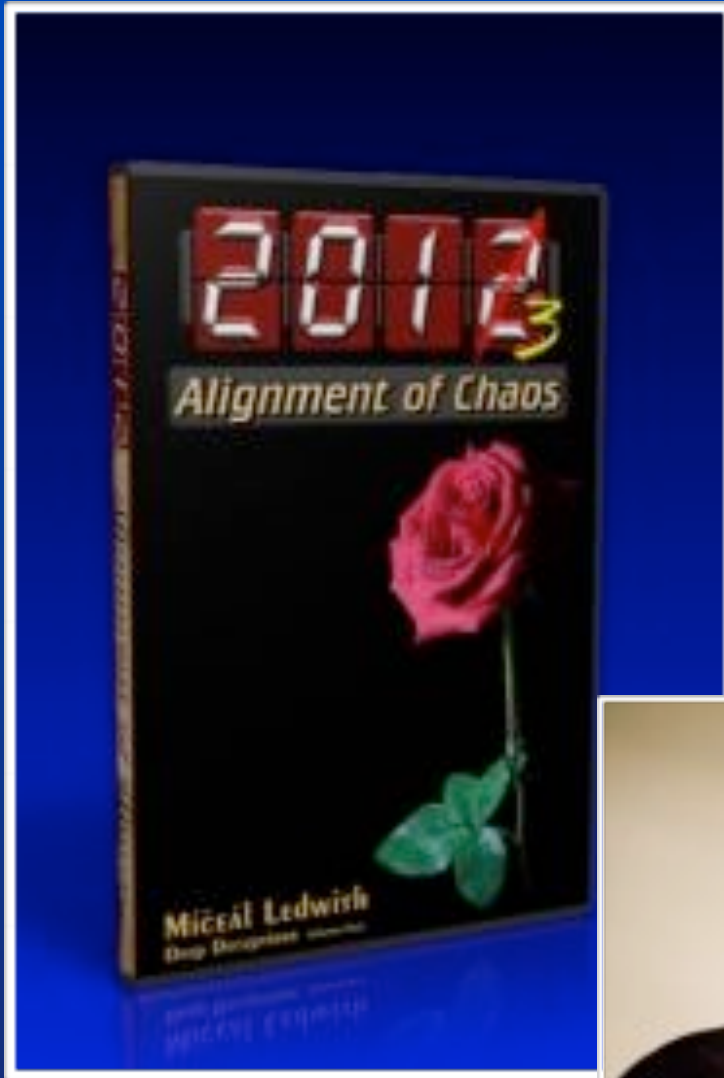
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Curious about the 2012 Phenomenon, take a scholarly perspective with Dr. Miceal Ledwith.

Only the Facts Please!



Discussion of the 2012 phenomenon has ranged over a vast amount of information, **catastrophes, space age technologies, astronomy, solar physics and global cultures**. Much of the material circulating in the media and over the internet is either disinformation or highly inaccurate and exaggerated.



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In this DVD Miceal Ledwith makes a dispassionate analysis of this mountain of material, ranging from 13 prophecies frequently cited to bolster up a world catastrophe in 2012, to a candid assessment of the real challenges we face and the opportunities they present.



ELECTRIC
Show



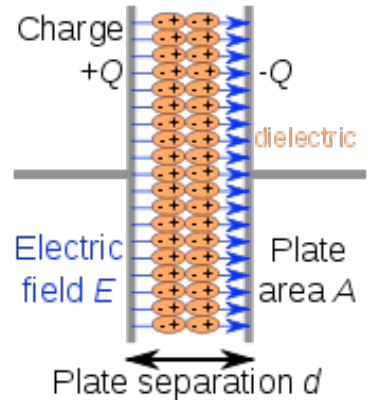
WEATHER: FAIR, FOUL OR ELECTRIC?

Because the Earth is a small **charged** body moving in a large cell of **plasma**, explanations of all physical phenomena in, on, and near the Earth must take the **electrical behavior** of plasma into account.

Earth's atmosphere is an **insulating medium** separating the **charge on the surface** from the charge in the **surrounding space plasma**. A complex of "double layers" distributes the potential difference between the surface and space much like a **series of capacitors**. We detect the **electrical field** of the bottom most layer in the fair weather surface field of around **100 volts per meter**.

This field beneath a **thunderstorm** may be 100 times stronger as the atmospheric **dielectric** is "**shorted out**" over many vertical kilometers by **thunderclouds**. As in a **capacitor**, when the **insulating medium** breaks down a **discharge** occurs between the **electrodes**. We can readily understand that **lightning** in a thunderstorm would be such a discharge. However there are other forms of discharge besides the **arc mode** of lightning--diffuse **glow discharges**, such as the sprites that occur above thunderstorms, and, especially, "**dark**" discharges. Although the latter may carry significant **current**, we are usually unaware of them because we can't see or otherwise sense them. But they may have visible secondary effects.

Close observation of laboratory arc discharges reveals that an **electrical "wind"** surrounds and often precedes the arc. The developing discharge sweeps the surrounding air along with the charge carriers of the current. This wind appears as inflows and updrafts as well as outflows and downdrafts. It can lift dust particles and erode surfaces.



Charge separation in a parallel-plate capacitor causes an internal electric field. A dielectric (orange) reduces the field and increases the capacitance.



By analogy, we must then question the accepted explanation of thunderstorms as being caused solely by convection of hot air: The storms may instead be the visible secondary effects of an invisible dielectric breakdown in the Earth's atmosphere.

The up- and down-drafts, the in- and out-flows, would be atmospheric responses to "dark discharge" electrical currents more than to temperature differences. Furthermore, the suspension of particles--charged dust and polar molecules (water)--would be largely a result of electrostatic forces sweeping both particles and air along in the electrical field of the discharge. This would explain the spherical shape of hailstones, for example, which do not show the distortion that would be expected if they were formed by being blown upward by strong wind friction forces.

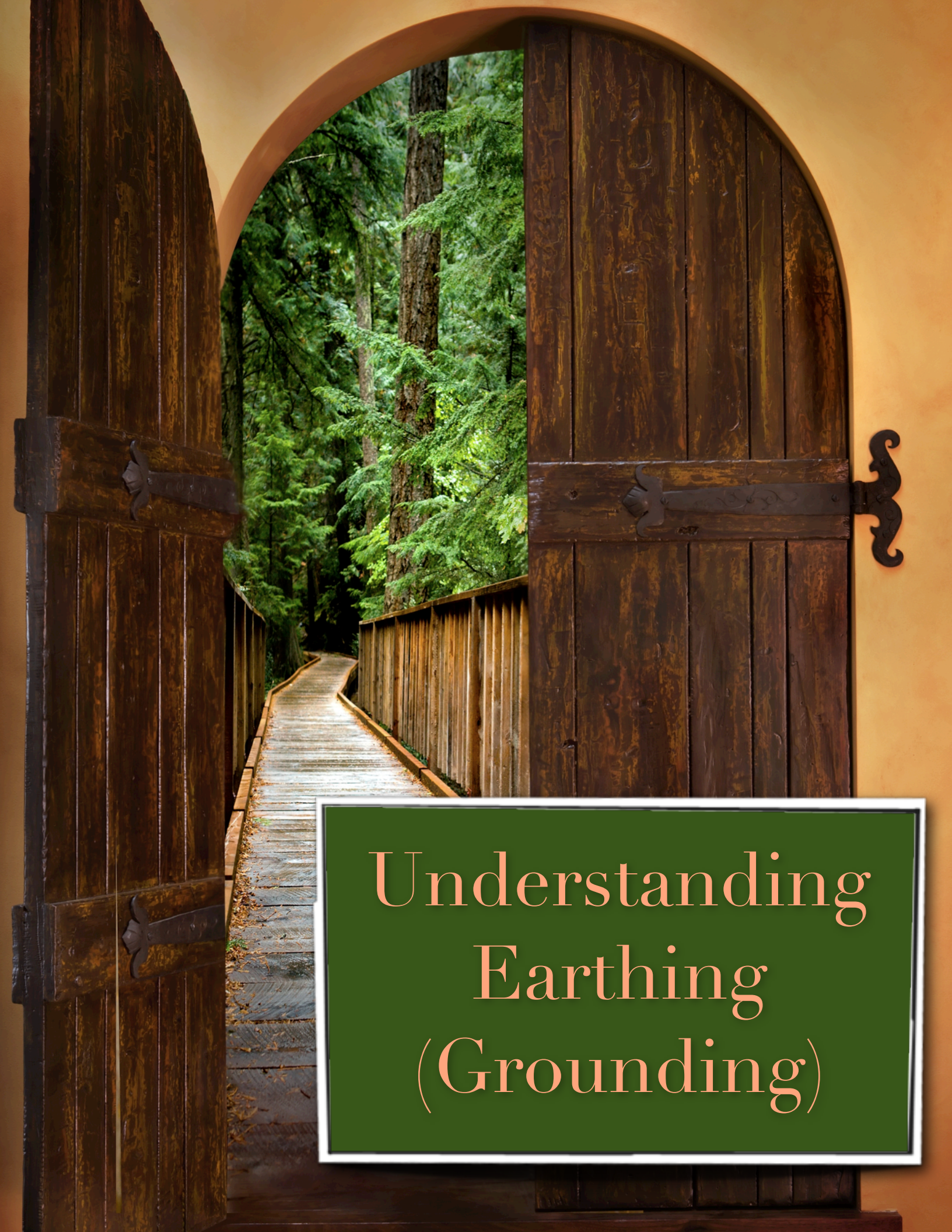
This leads to the more general idea that all weather may be caused, or at least influenced, by the electrical interactions between Earth and the surrounding plasma. Because this larger possibility has never been considered, critical tests have not been devised that would distinguish between the competing explanations. But there are tests that cast doubt on the prevailing theory.

Convection is well understood. The theory of gas behavior in a convecting system is developed with great exactitude. But the weather forecasts derived from convection theory are more than mere applications of theory: They are also tests of that theory, and a wrong forecast is a falsification of the theory. The significant fraction of erroneous forecasts by weathermen is an indication that the theory is missing something. The Electric Universe suggests that what's missing is a consideration of the electrical properties of plasma.

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Understanding
Earthing
(Grounding)

Gaetan Chevalier, Ph.D., James L. Oschman, Ph.D

Many people notice that they feel better when they walk barefoot on the Earth. A worldwide **Society for Barefoot Living** promotes the benefits of removing shoes and socks and walking naturally on the



Earth. More recent research has shown that the feeling of well-being that comes from walking

barefoot on the Earth is associated with important physiological benefits. **The**

Earth is a natural source of electrons and subtle electrical fields, which are essential for proper functioning of our immune systems, circulation, synchronization of biorhythms and other

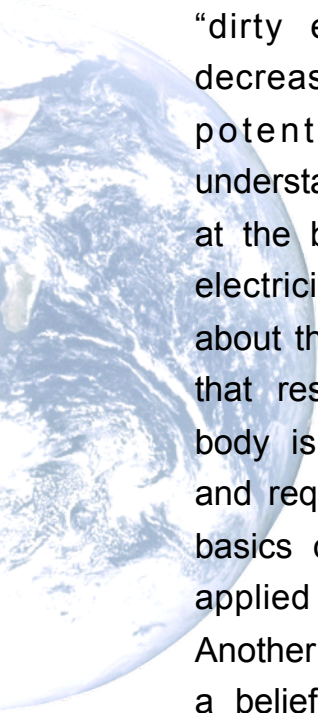
physiological processes. Of major importance is the fact that modern biomedical research has documented correlations between chronic inflammation and all of the chronic diseases, including the diseases of aging and the aging process itself. Inflammation is a condition that can be reduced or prevented by grounding our bodies to the Earth.

It has also been suggested that the modern epidemic of chronic and stress-related diseases began when the leather that was used to make the soles of shoes was replaced with rubber and plastics. When leather becomes moist, as a result of perspiration from the feet, a channel of conductivity for electron flow is created between the Earth and the feet. Rubber and plastics are electrical insulators and therefore block the beneficial flow of electrons from the Earth to our bodies.



The biological benefits of Earthing involve subtle electric currents and fields from the Earth. These subtle phenomena take place in the presence of a variety of fluctuating stronger and weaker fields produced by the wiring in homes and businesses and various electronic technologies such as cell phones.

Conductors and insulators



Some people are concerned that Earthing may increase one's exposure to so-called "electromagnetic pollution" or "dirty electricity." Earthing actually decreases one's exposure to these potentially disruptive fields. To understand why this is so, one must look at the basic physics and biophysics of electricity and magnetism. Confusion about this topic is due in part to the fact that research on Earthing the human body is opening up new perspectives, and requires a fresh examination of the basics of electricity and magnetism as applied to physiology and medicine. Another source of confusion arises from a belief that the unnatural frequencies referred to as electromagnetic pollution and dirty electricity flow through the wiring of homes and can be removed with filters. The reality is that these signals are present virtually everywhere in our environment as electromagnetic radiations, and cannot be completely

removed with filters in the wiring. Earthing actually decreases one's exposure to these potentially disruptive electromagnetic fields, but we again emphasize that this is not the most important effect of Earthing.

Materials such as metals are electrical conductors. They contain free or mobile electrons that can carry electrical energy from place to place. Turning on a light switch allows electrical energy to be conducted through wires to a bulb, which converts the electrical energy into light energy. Because we use alternating current (AC), electrical energy can be sent over long distances. The electrical energy flows extremely rapidly (close to the speed of light), but the electrons themselves actually move very little. They simply wiggle back and forth in the wires. The human body is somewhat conductive because it contains a large number of charged ions (called electrolytes) dissolved in water. Blood and other body fluids are therefore good conductors. Free or mobile electrons can also move about within the body.

Other materials, called insulators, have very few free or mobile electrons. Plastic and rubber are good insulators and are used to cover electrical wires to keep the conductors from touching each other and from touching your skin, which could otherwise give you a shock.

Different forms of electricity

There are three different forms of electricity: direct current (DC) electricity, alternating current (AC) electricity and static electricity. All of these forms of electricity are present in our environment and can affect the way we feel. With a little knowledge about these phenomena, it is easy for us to create a much healthier environment without major expense and without having to undergo a major change in lifestyle. Here we focus on DC and AC electricity, while recognizing that static electricity can also affect us and that static charges can also be eliminated by Earthing.

As an example of direct current, consider an ordinary flashlight with two type D batteries. When the light is switched on, a current created by chemical reactions in the batteries causes electrons to flow to the bulb, which converts the electrical energy into light. The electric field travels to the bulb virtually instantaneously, while the electrons move slowly – about 3 inches per hour.

Alternating current or AC is the type of electricity that is delivered to homes and businesses. Alternating current is produced by electric generators and is distributed throughout a community via wires that are overhead or buried under

the ground. In contrast to direct current electricity, the actual flow of electrons in an alternating current circuit is virtually zero, as the electrons mainly go back and forth (60 times per second in North America and 50 times in Europe) without actually progressing along the wire. Therefore, for an AC current in a typical lamp cord, the electrons do not actually "flow." Instead they vibrate back and forth by a distance of about a hundred-thousandth of an inch. This means that the electrons in your household wiring are probably the same ones present when your house was built. In contrast to direct current, the electrons excited by a generator do not flow to your home and then return to the generator after delivering energy to your lights or appliances. The electrical energy flows at about the speed of light; the electrons only vibrate back and forth. This point is important because of confusion about the subject from statements such as this: "Every time an electron leaves a power plant to create electricity for our homes, schools and offices it must return to create more electricity - fundamental law of physics." The statement is completely incorrect. There is absolutely no fundamental law of physics that requires the electron sent out from an alternating current generator to return to the generator to create more electricity.

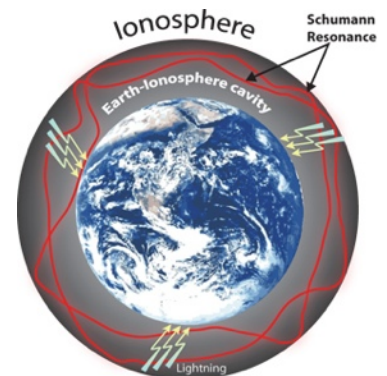
It has also been asserted that power companies have begun using the Earth as one part of the alternating current circuit to save on the expense of wire needed to meet increasing demands for electricity. Again, this statement is completely inaccurate and misleading. It is a statement that leads some to believe that walking barefoot or using grounding devices will connect people to the electrical distribution system and thereby electrify their bodies with alternating current electricity. In fact, the U.S. National Electrical Code does not permit connecting an electrical system directly to the earth. Instead, the Code requires an arrangement such that the current produced by a short circuit of any kind (called a *fault*) is conducted back to the source of the current, so that it can trip a circuit breaker or blow a fuse to prevent injury to people or damage appliances. The Electrical Code forbids the use of the Earth as a conductive pathway for this purpose. The Electrical Code does require that electrical systems have a ground connection to stabilize voltages in the presence of lightning, line surges, or accidental contact between regular power lines and high-voltage lines. The electrical Code is not a law, but it is followed closely because one can be successfully sued if they do not follow recommended practices. **In other words the Earth does not to carry a return current back to the generator. Instead electrical**

systems are grounded to protect against lightning and other extraordinary events.

The wiring in homes and buildings and the power distribution system acts as an antenna that can transmit and receive both natural and man-made electromagnetic fields. Many technologies add significantly to our electromagnetic environment: cell phone towers, Wi-Fi, wireless routers, satellite TV and cordless telephones. And a variety of devices introduces spikes or transients that distort the 60 cycle electric field in the wiring, particularly when appliances are

switched on or off. Here are some common examples:

- ballasts used in fluorescent lighting
- high-efficiency lighting such as CFL



By. L. Oliver Duffy

lighting such as CFL (Compact-Fluorescent) bulbs

- computer hard drives
- electric heaters
- electric hair dryers
- refrigerators and air conditioners
- vacuum cleaners

To illustrate this phenomenon, we will use the example of a neighbor's refrigerator or air conditioner switching on or off. This produces a sudden electrical "spike" that travels through the power lines to your household electrical system. A signal is also radiated into the atmosphere because the wiring acts as an antenna.

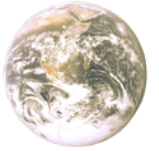
Taken together the various signals and distortions to the alternating current field create what some people refer to as “dirty electricity.” Attempts have been made to link these phenomena to a variety of health effects. There has been considerable debate about this issue. Some people appear to be very sensitive to electromagnetic fields and can become sick from exposure to them, whereas others are not sensitive.

Some have advocated the use of filters to remove what they refer to as dirty electricity flowing through home wiring. The problem is that alternating electric fields are present everywhere in the environment – they are radiated from wires, even when no current is flowing through them. It is therefore impossible for a filter to prevent exposure to electrical fields and the noise produced by appliances, as described above.

In a 2010 review, Frank De Vocht of the University of Manchester’s Centre for Occupational and Environmental Health in the UK identified seven published studies supporting the claim that dirty electricity is a biologically active component of standard electromagnetic pollution. Each study, De Vocht concluded, had significant methodological flaws in its experimental design, assessment of exposure, and statistical analysis that prevented a valid assessment of any causal links between exposure and adverse effects. Moreover,

several studies suggesting health benefits for using the filters were uncontrolled experiments involving only a few subjects.

Measuring body voltage



A simple voltmeter can determine how much AC electricity is being radiated from common ambient electromagnetic fields (EMFs) and how much is being induced on your body. You can also use the voltmeter to demonstrate how that charge is reduced by grounding. You can test yourself anywhere, such as while lying in bed or sitting in a chair surrounded by different appliances, computer, monitor, phones, etc. Or you can test yourself outside, first wearing shoes, and then barefoot.

A number of inexpensive meters (such as the one below) are available from Radio Shack and other sources. One of the leads of the meter is held between the thumb and forefinger. The other lead connects to a ground rod in the Earth or to ground in the electrical system.

The device shown below, called a circuit checker, can determine if the grounding terminal of an electrical outlet is properly grounded.

First test yourself ungrounded and then grounded. Keep in mind that the electrical cords going, for instance, to the lamp next to your bed radiates an AC electric field even when the lamp is turned off.



As an example of a setting for a test, we will use a bedroom. You first measure the ambient voltage on your body. We'll pick a number and say, just for the sake of discussion here, that it reads 3.082 volts AC. In your case, the reading could be more or it could be less. That's how much voltage is being induced on your body from the surrounding electrical fields.

Now make bare skin contact (your hand, finger, foot) with an Earthing product (a sheet or mat, for instance) that is connected to a grounded outlet or a ground rod outside. When you make contact, the reading on your voltmeter will instantly drop down into the very low mini-volt (mV) range, very close to zero. This same effect would occur with any Earthing product. It is absolutely essential that both the Earthing product and the ground

lead of the voltmeter be connected to the same ground reference, whether it is an electrical outlet or a ground rod outside. If not, your reading will be skewed.

The following bedroom example shows how you can further test the strength of individual emanations from different sources of EMF. In this case, the room had a table behind the bed with two small lamps, an alarm clock, a radio, and a large overhead lamp. Measurements were made of the body voltage on a person lying ungrounded in the bed as we systematically disconnected these appliances, one by one, to see what

effect it had. With the exception of the alarm clock, these appliances were turned off during the test.

The person's body voltage was 3.082 volts. We then unplugged the appliances, one at a time, and watched the body voltage decrease with each disconnection as follows:

- 3.082 volts with all appliances connected
- 2.770 volts with radio disconnected
- 1.650 volts with two lamps disconnected
- 1.290 volts with the other small lamp disconnected
- 0.880 volts with the alarm clock disconnected

Some German researchers have suggested that the method of measurement of body voltage summarized above is not an accurate way to assess exposure to 50/60 cycle electric fields. In their experiments they used sophisticated "potential-free, 3D E-field" probes, also referred to as "cube sensors," to measure the fields above and below a person using an Earthing pad. They found an increase in the field strength in the space above the person, which they interpreted to mean that Earthing is "contraindicated." A problem with their experiment was that they placed the Earthing pad beneath the mattress, so there was no direct conductive contact between the Earthing system and the skin of the subject.¹¹ Thus, the experiment and conclusions were not valid. The person on the bed was not, in fact, Earthed!

Research has shown that the sleeping area in many homes often has the highest electric field, from wiring in the walls, floors, and ceilings, and from cords to appliances. The possible biological effects of these electrical fields are very controversial. Some scientists are firmly convinced that both the magnetic and the electric fields found in home wiring can have health effects.

Others are just as firmly convinced that the evidence is not adequate to make such a statement. Until large - scale studies and mechanistic investigations are completed, many scientists and many electric utilities have suggested that those who use electrical appliances practice "prudent avoidance" meaning that they should minimize their exposure to sources of electric power until the scientific evidence is more definitive.

In the context of "prudent avoidance," some proponents of Earthing systems have emphasized the fact that Earthing greatly reduces one's exposure to fields from electrical wiring, using evidence provided by the body voltage meter as shown above. While this is probably correct, reducing exposure to power frequency fields (including dirty electromagnetic fields) is definitely not the most important consequence of Earthing. Far more significant for health is the ability of Earthing systems to

deliver antioxidant electrons that stabilize the operation of the immune system and other physiological processes in the body.

Finally, we want to address two safety issues that have been frequently raised. The first relates to the safety of an Earthed person touching a metal fixture that is electrically "hot" because of a broken protective system in the wiring. It is actually impossible to get an electrical shock in such a situation due to the inclusion of a 100,000 ohm resistor in the cords of all Earthing systems. This resistance will not allow an unsafe level of current to flow through any of the personal Earthing systems. Secondly, many people ask about the risk of being struck by lightning when a person is grounded. The fact is that Earthing does not affect the chance of being electrocuted by lightning.

Conclusions The most important health benefit of Earthing is providing the body with abundant electrons from the Earth. The scientific research and hypotheses related to Earthing point to a major impact on the inflammatory process as a result of this electron transfer.



The human body has evolved a means to kill bacteria using reactive oxygen species (ROS) that are delivered to a site of injury by white blood cells. Although very effective at this task, ROS are also highly reactive biochemically and can damage healthy tissues. ROS are usually positively charged molecules that need to be neutralized immediately to prevent them from diffusing into healthy tissues. For that purpose negative charges are needed. Nature has solved this problem by providing conductive systems within the human body that deliver electrons from the feet to all parts of the body. This has been the natural arrangement throughout most of human history. Negative charges have always been available, thanks to the Earth, to prevent the inflammatory process from damaging healthy tissues. All of this changed when we began to wear shoes with rubber and plastic soles, and no longer slept in contact with the earth.

A variety of measures of physiological stress show that the person who is grounded is less stressed and more relaxed. Earthing generates a shift from sympathetic to parasympathetic activation, reduction in muscle tension, and increased heart rate variability. Regardless of whether or not Earthing reduces exposure to environmental fields, these studies firmly demonstrate that Earthing does not stress the body; in fact, Earthing reduces every measure of stress we have used in our studies.

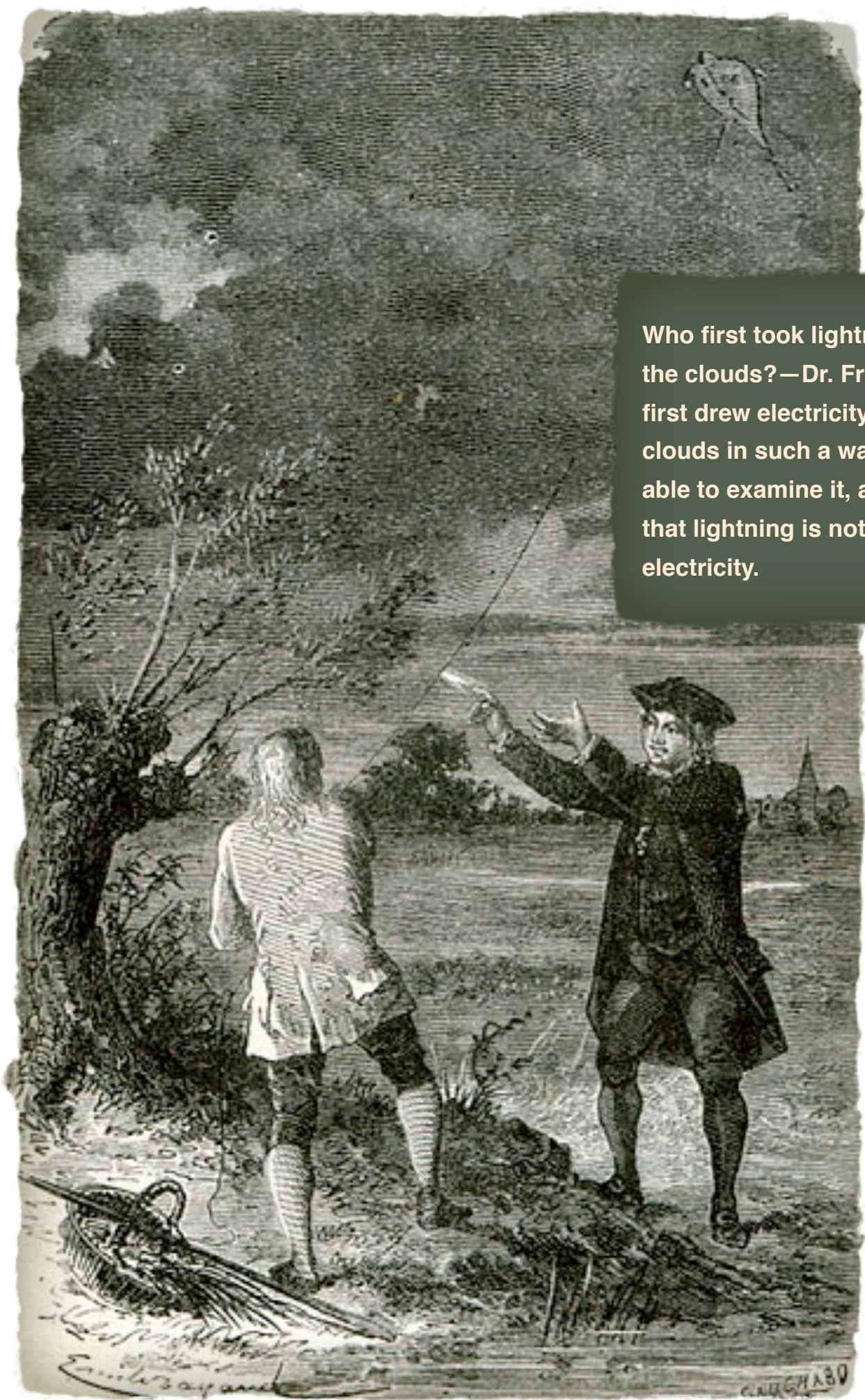
The Earthing book documents cases in which people who are hyper-sensitive to environmental energy fields have benefited from Earthing their bodies. 1 Observations over the years also include substantial relief from Earthing among many people who live in homes with very low levels of environmental fields and who developed crippling diseases such as rheumatoid arthritis.

Earthing is an overlooked factor in public health. We regard it as a missing link with broad and significant implications. When Earthing is restored, many people report major improvements in a wide range of ailments, including chronic fatigue. These changes often occur within 30 minutes. Individuals who reported that they had inflammatory issues have benefited from Earthing. This includes people with various severe autoimmune diseases.

We do not describe Earthing as a "treatment" or a "cure" for any disease or disorder. Instead, it can be said without any equivocation that the human body evolved in contact with the Earth and needs to maintain this natural contact in order to function properly.



Who first took lightning from the clouds?—Dr. Franklin first drew electricity from the clouds in such a way as to be able to examine it, and prove that lightning is nothing but electricity.



By Gerald Pollack



THE GEOMETRY OF LIFE

Water at interfaces is hexagonal and has the ability to support and protect the DNA from free radical oxidative damage, and allows the DNA to function and replicate without mutation. Thus, it insures the transfer of pure information in a harmonized manner. This hexagonal water is the transmission medium through which information is delivered from DNA to RNA via short bursts of photons (light). Others have termed this as bio-photon bursts, or bio-available photon interaction.

The very water we are conceived in and grow in within the womb is hexagonal in structure, both inside and outside of cells. Researchers are now pointing to the cause of disease as chronic dehydration. It is not that people don't drink water so much as it is the unavailability of hexagonal water in our normal water supplies. We age based on inability to protect our DNA and maintain intracellular hydration. The cosmetic industry is on to this as well, touting expensive sprays and lotions to maintain skin hydration, which reduces wrinkles. They actually call them anti-aging creams. We actually lose the capacity to hold water as we age, so locking in water in the skin gives this outward affect. This practice is symptom fixing, but only with real intracellular hydration will the skin actually be protected and show anti-aging characteristics.

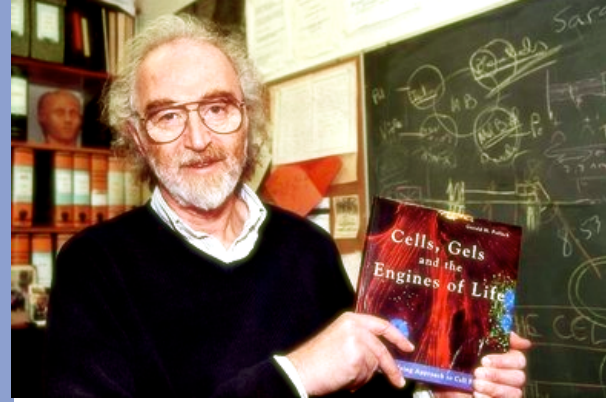
So, water is actually *part of the structure* of each cell. In addition to the fact that this water is interfacing and is ordered, it is also charged. And the water just beyond it is oppositely charged. **This acts like a battery.**

Dr. Pollack:

"In your cells are multiple batteries with plus and minus charges, separated... The question is, how are these batteries charged?"

The charge comes from incident radiant energy; light, heat, ultraviolet. All of these absorbed energies separate the charge. The energy that's coming in from outside builds this charge separation and order. This potential energy fills your cells. I think this energy is critical to an understanding of how your cells work."

In a nutshell, the water in each of your cells achieves its ordered structure from energy obtained from the environment, typically in the form of electromagnetic radiation, including sunlight and infrared heat.



The book, *Cells, Gels and the Engines of Life* (www.cellsandgels.com) builds on the central role of water for biology. It provides evidence that much of the water in the cell is very near to one or another hydrophilic surface and therefore ordered, and that cell behavior can be properly understood only if this feature is properly taken into account. It goes on to show that seemingly complex behaviors of the cell can be understood in simple terms once a proper understanding of water and surfaces is achieved.

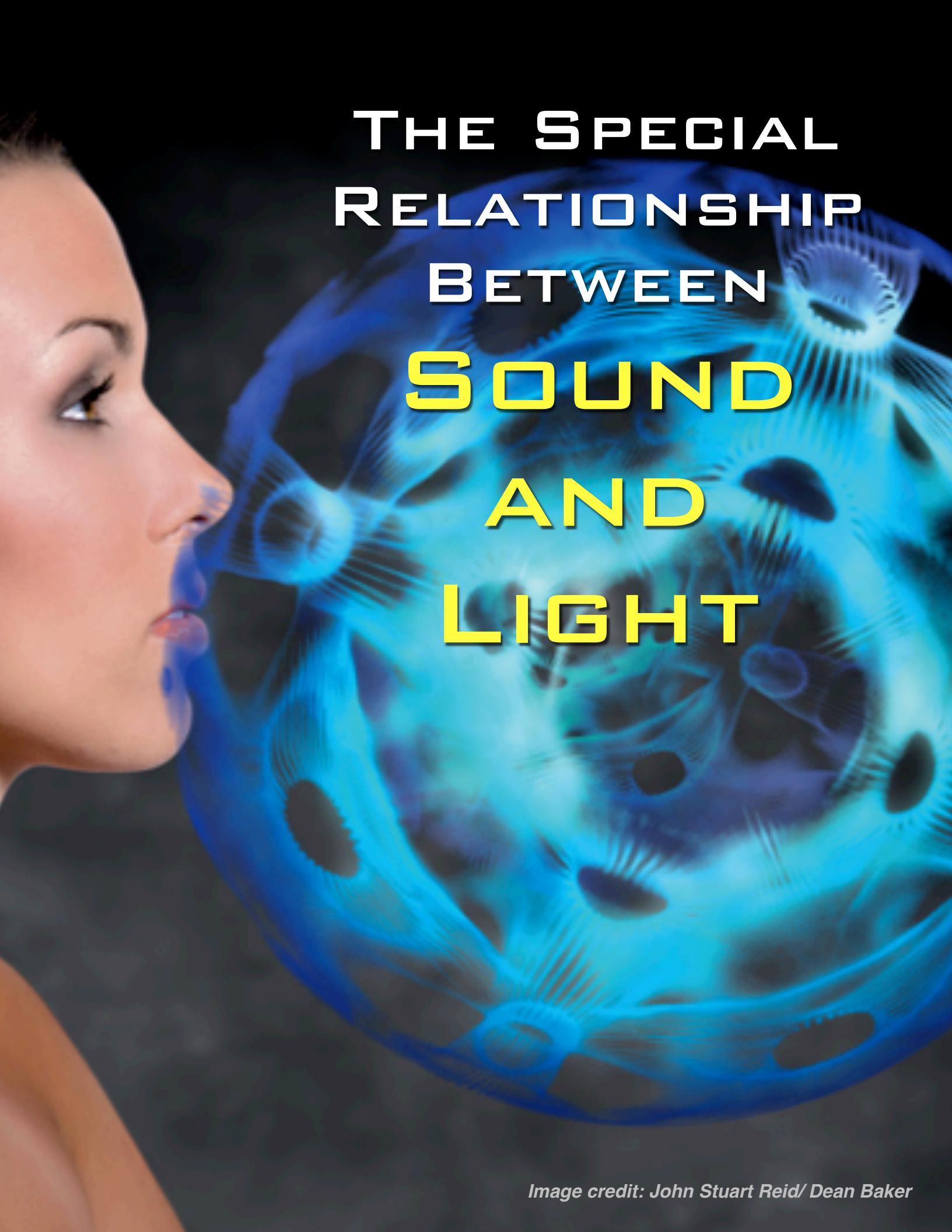
The book is an **award-winning best seller**, yet it has aroused debate because it questions some long-held basic features of cell function such as membrane channels and pumps. Many others have praised the insights obtained from building on a foundation of first principles (see book website above). One prominent reviewer from Harvard University opines that the book is "a 305 page preface to the future of cell biology."



Research Work of Dr
Gerald Pollack

More Video's and
Articles

**YOU-
Tube - Water,
Energy, and Life:
Fresh Views From
the Waters Edge**

A woman's profile is shown on the left, looking towards a large, glowing blue sphere on the right. The sphere has a complex, internal structure with various shapes and patterns, resembling a molecular model or a biological structure. The text is overlaid on the sphere.

**THE SPECIAL
RELATIONSHIP
BETWEEN
SOUND
AND
LIGHT**

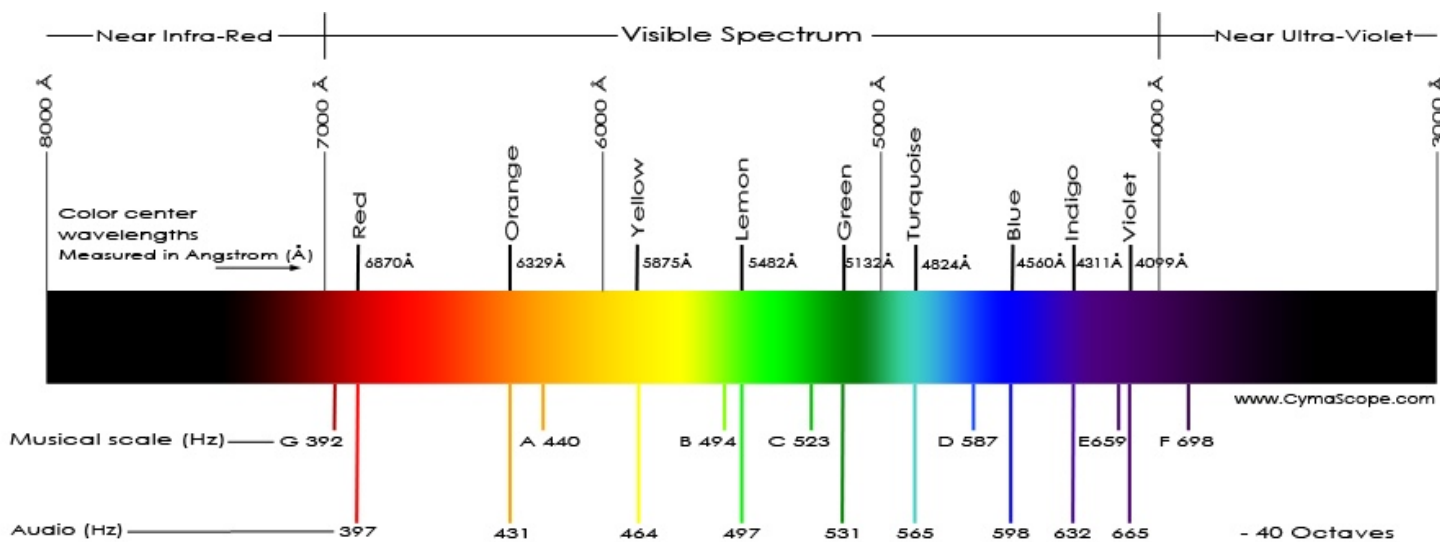
Image credit: John Stuart Reid/ Dean Baker

BY JOHN STUART REID

While scientists agree that sound and light are different phenomena, much confusion exists among the general public concerning the true relationship between these diverse forms of energy. For example, we often see online articles in which a particular sound frequency is multiplied by 40 octaves in an attempt to identify its equivalent light 'color.' A typical chart is shown below that gives frequencies of light in Angstroms versus frequencies of sound in Hertz. Look, for example, at 392 Hertz, a musical G, shown as a deep red color. At first glance this artistic interpretation appears valid until one realizes that sound and light are in fact totally different forms of energy. In reality this attempt at comparing light colors with sound frequencies is fundamentally flawed. However, the purpose of this article is to demonstrate that

THERE IS INDEED AN INTRIGUING, ALMOST MAGICAL, RELATIONSHIP

BETWEEN SOUND AND LIGHT, although not in the way that is commonly believed. Let us begin by defining sound.



THE SPECIAL RELATIONSHIP BETWEEN SOUND AND LIGHT



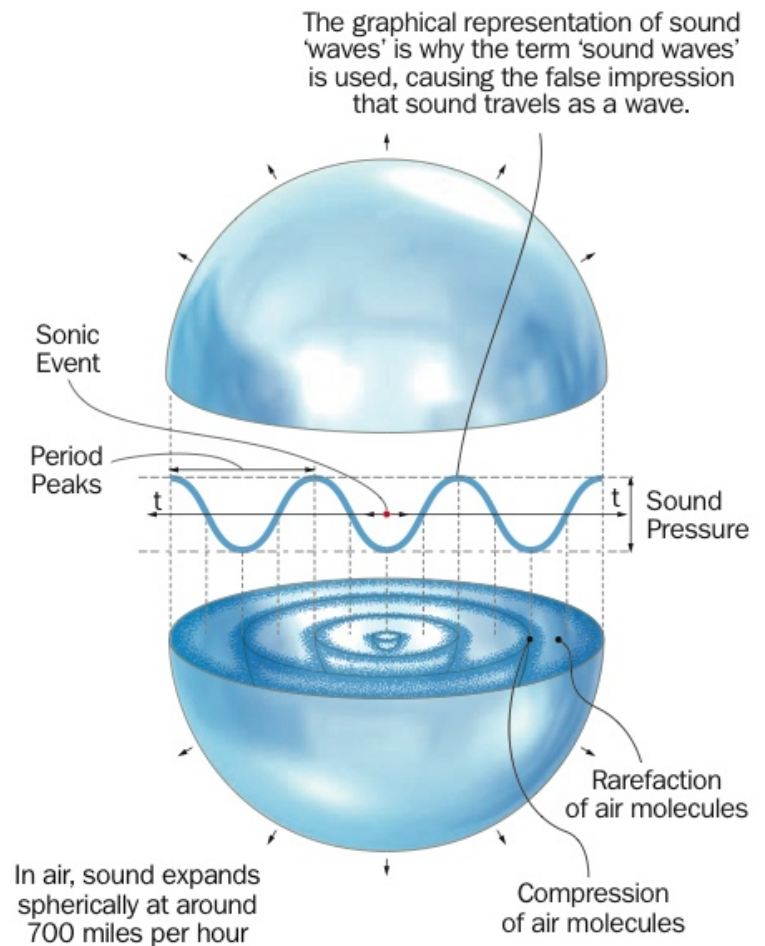
THE NATURE OF SOUND

Sound in air is the transfer of periodic vibrations between adjacent colliding atoms or molecules. That might sound rather grand but basically it means that when atomic particles bump into their neighbors they pass on their vibrations. (Remember that air is a mixture of gases in which oxygen and nitrogen consist of individual atoms while carbon dioxide consists of molecules.) This transfer of periodic data, between any two adjacent atoms or molecules, is known as 'sound.' The energy in an event, say a handclap, typically expands away from the site of the collisions—in this case the impact of skin molecules on skin molecules—equally in all directions, in other words as a bubble. This sound bubble expands, of course, at the speed of sound, around 700 miles an hour, and the outer surface of the bubble is in a state of radial (pulsating) oscillation. In the graphic we see a frozen moment of a handclap.



SOUND BUBBLE VERSUS SOUND WAVE

This handclap sound bubble pulsates with the same vibrations as the sound created when your two hands clapped together. The old model of 'sound waves' is incomplete and a misnomer to boot because it refers to the graphical representation of the mathematical law of sinusoidal energy, typically given as amplitude in the vertical axis versus time in the horizontal axis. While this is correct in terms of its graphical depiction, it is not how sound energy actually moves through space. The concept of sound as a wave is simply a label used to describe the fact that sound bubbles pulsate in and out in a rhythmic motion. It is this pulsation within the bubble that is typically shown as a wave-like graph. Put differently, when teachers and scientists describe sound as a wave they are referring to its rhythmic pulsation depicted graphically, not its actual shape in space. The result of this confusion is that most people incorrectly visualize sounds wiggling their way through air rather than visualizing shimmering sound bubbles.



MATHEMATICAL LAW OF GRAPH

$$x(t) = A \sin (2 \pi t / T + \phi)$$

Image credit: John Stuart Reid/ Dean Baker
www.cymascope.com

HOLOGRAPHIC SOUND



When sound travels through air, every atom or molecule lying in the path of propagation is involved in the process of passing on the sound data that originated from the sound source. The data takes the form of the vibrating motions of the atoms and molecules that are in contact with the sound source. For example, if a sound source produces a tone

of single frequency then the periodic motion of every atom and molecule in the sound bubble will be of that same single periodicity. On the other hand, if the sound source produces a complex sound, with a multiplicity of frequencies, the atoms and molecules will each carry this array of periodicities. The human voice is a good example of a complex sound, wherein each and every atom and molecule in the air transmits the multitude of vibrations that describe the uniqueness of the voice. As each atomic particle bumps into its nearest neighbors their many periodic motions, representing the sonic data of the voice, is passed on as each collision occurs. If we could see the sound as it is being vocalized it would appear as a bubble of sonic energy, emerging from our lips and nose (unless we have a cold!) the surface of which would shimmer due to every atom and molecule vibrating in unison.

THUS, SOUND CAN BE SAID TO BE HOLOGRAPHIC BECAUSE EVERY ATOMIC PARTICLE IN A SONIC BUBBLE CONTAINS ALL THE DATA OF THE SOUND SOURCE.

For the sake of clarity the graphic shows a single bubble but in reality this primary sound bubble would diffract backwards within a millisecond of its creation. Hence, sound bubbles would totally surround the woman's head. The surface pattern here depicts the harmonic content of the voice.

THE NATURE OF LIGHT

Visible light is electromagnetism of a particular frequency or, to be more accurate, a range of frequencies. Although the precise nature of electromagnetism is not known, it is, in essence, vibrating magnetism. It appears to be created as the result of the excitation of static magnetism, a form of energy inherent in the energy shells surrounding all atoms. When the magnetic force fields that surround atoms and molecules collide, there is a transfer of their periodic motions—which we have already defined as sound. If you've ever played with magnets you will know the kind of spongy feeling that occurs when trying to bring two like poles together. This is something like what two atoms experience when they bump into each other. When we talk about single collisions between atoms or molecules we call the resulting sound a phonon. One collision = one phonon. But something else, almost magical, happens at the moment of collision between any two atomic particles: Electromagnetism, otherwise known as light, is created. In fact, when collisions occur between atoms or molecules there must be a release of electromagnetic energy, generally known as 'light,' quantified in photons. One collision = one photon.

The frequency of electromagnetism resulting from atomic colliding particles is a function of both the inherent energy states of the atoms or molecules and the velocity of the collisions.

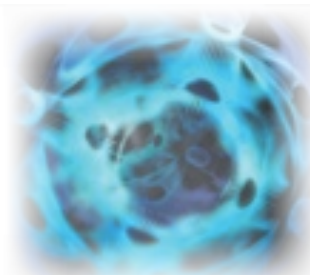
Light created by atomic collisions in which the energy states are too low to create visible light, will create infrared light and at even lower energy states, for instance with a gentle caress of the skin, microwave radio frequencies will be created. Light created by atomic collisions in which the energy states are extremely high will create X-ray and gamma ray electromagnetism.

Multiple collisions between atoms or molecules results in spherical electromagnetism. The reason for this sphericity is similar to that which we discussed for sound, where each and every collision has a dispersing effect (diffraction) on nearby atoms or molecules.

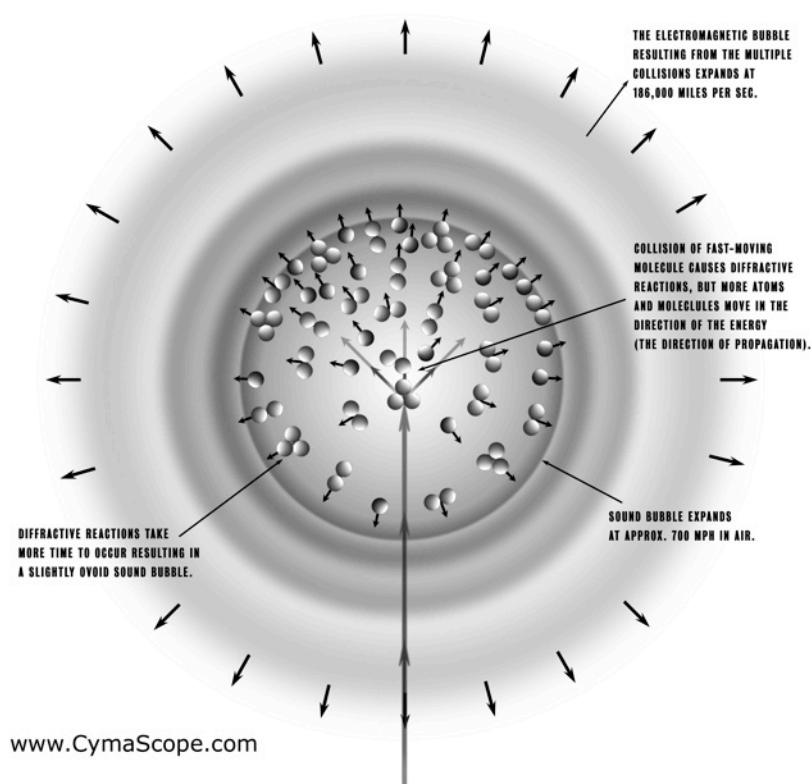
In the case of electromagnetism, some collisions are reactions to the main direction of propagation, causing electromagnetism to travel in the opposite direction. In summary, spherical electromagnetism is the result of diffractive and reactive effects of atomic collisions.

SOUND CREATES LIGHT

The frequency of light is determined by the energy levels of the sonic collisions

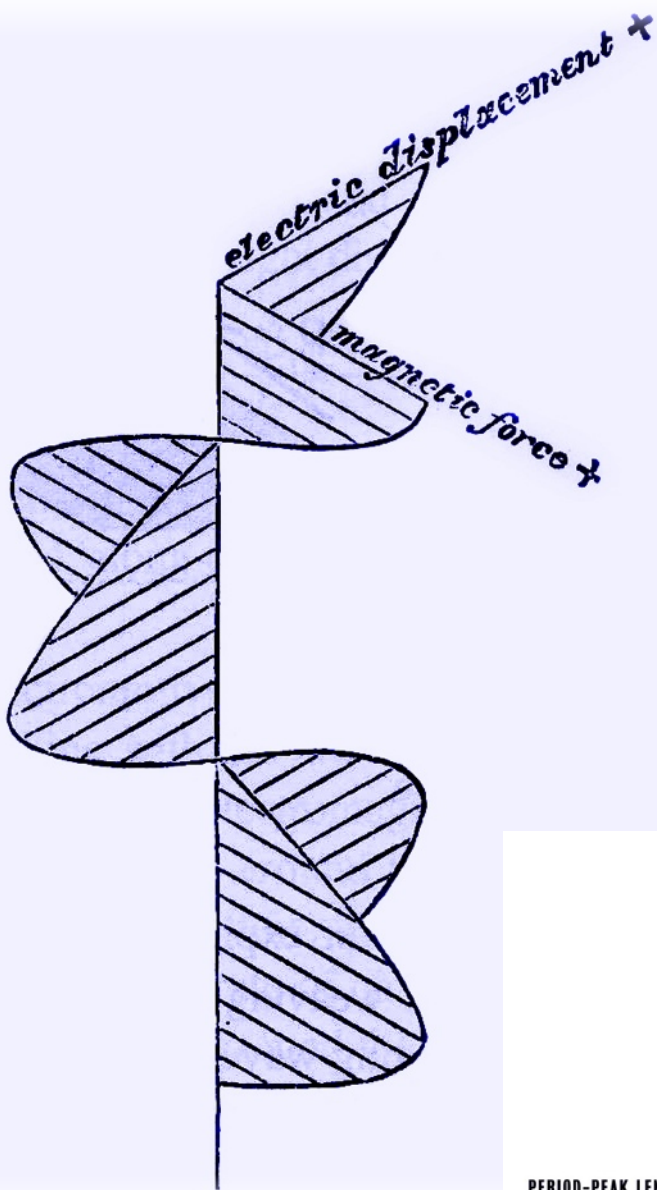


*Image credit: John Stuart Reid/
Freddy Silva*



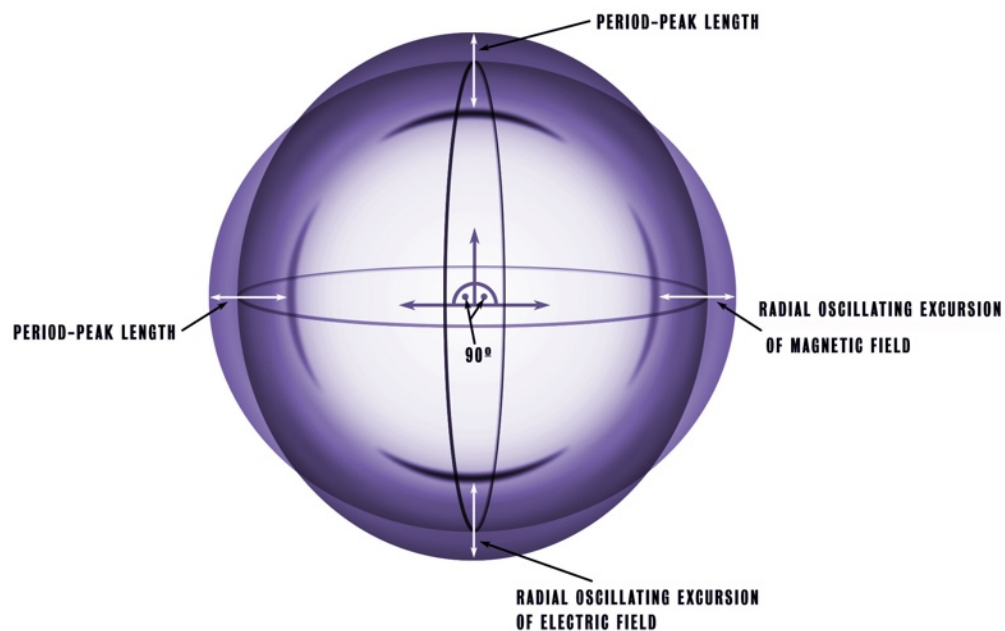
UPDATING MAXWELL'S MODEL OF LIGHT

In the mid 19th century the brilliant Scottish physicist, James Clerk Maxwell, developed his famous theory of electromagnetism. Without going into the complexities of his theory it contains a model that describes light as having two components: An electric field and a corresponding magnetic field that are orthogonal to each other, in other words at right angles to each other. He drew what became a famous graph to depict this relationship.

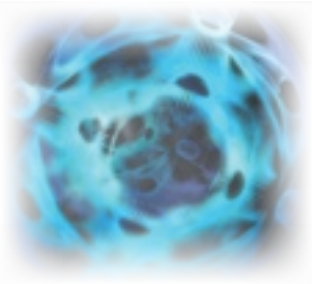


Maxwell's famous drawing depicting the orthogonal relationship between the electric and magnetic field components of light

The problem with this drawing is that it continues to fuel the old paradigm of light as a wave, wiggling its way through space, when in fact light in common with sound is a bubble-shaped phenomenon. Some physics papers do refer to the spherical nature of electromagnetism yet even then it is still described a spherical wave! The space-form of electromagnetism is, as we have discussed, a sphere and the commonly depicted wave description refers only to the fact that the outer edge of the sphere is rhythmically pulsating in and out. Returning to Maxwell's famous drawing, how then should we depict light if not in his graphic wave-like form?



The following drawing is my own attempt to show the orthogonal relationship between the electric and magnetic components of light as bubbles, oscillating one inside the other. This, I believe, is how we would see light if we could freeze the action as the energy expands away from us. Now we can move on to the main topic of this article, the special relationship between sound and light.



SONIC PROPAGATION OF ELECTROMAGNETIC ENERGY COMPONENTS (SPEEC)

As we have seen, sonic bubbles expand at approximately 700 miles an hour. Each collision within the sound bubble creates heat, which is infrared electromagnetism, otherwise known as light. Try this simple experiment. Rub your hands vigorously together and then place them over your closed eyes. You will feel warmth. The molecules that form the skin of your left hand bumped into the molecules that form the skin of your right hand. The result is light. A similar phenomenon occurs every time you speak: Trillions of atomic collisions carry your words away through the air, and each collision transcribes your words into modulated infrared light. This bubble in a hurry rushes away at the amazing speed of 186,000 miles per second. The frequencies of electromagnetism (light) created by your voice are, in fact, in the infrared spectrum. However, sounds of sufficiently high intensity can generate visible light.

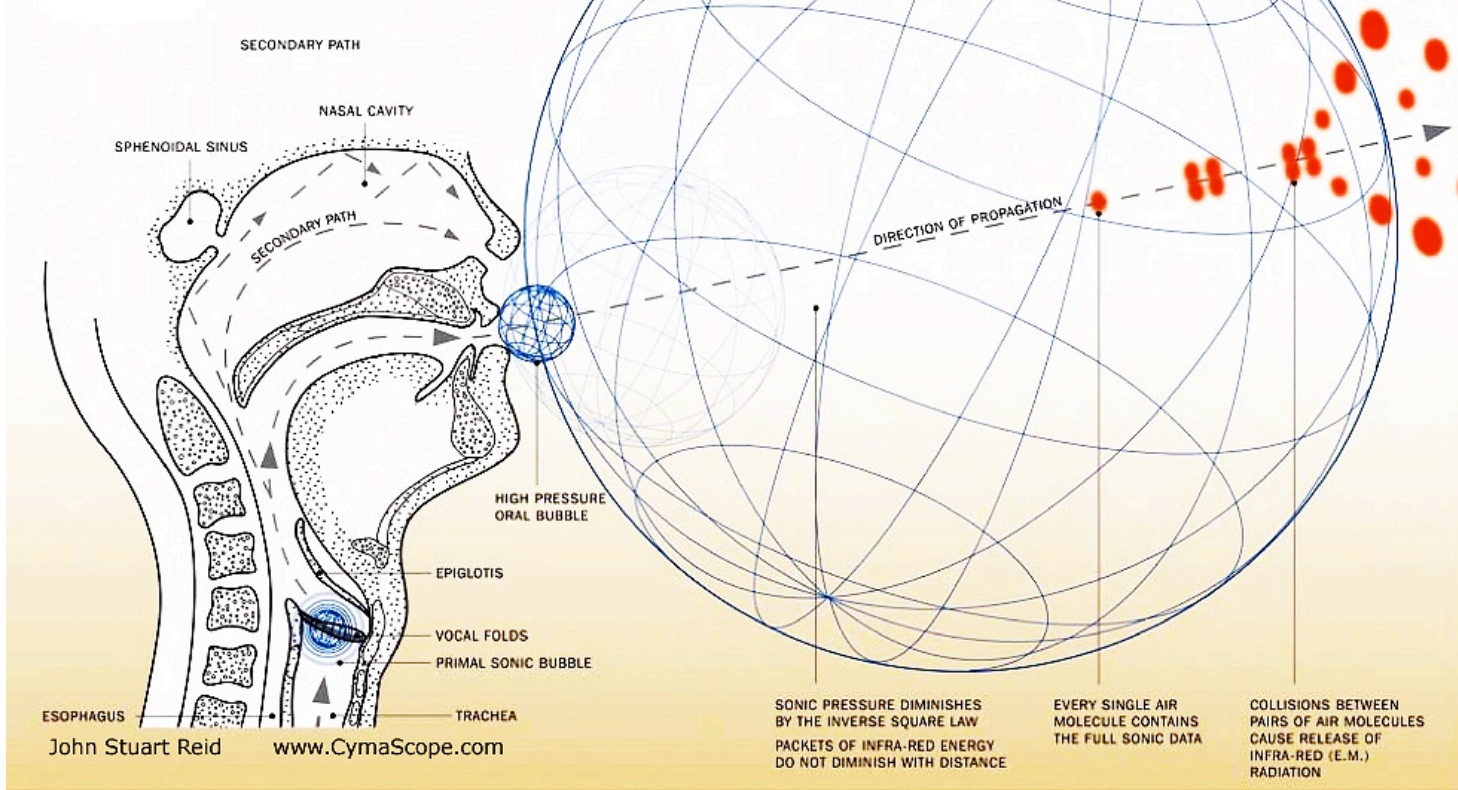
Staying with the model of your voice, the energy in the sonic bubble falls off rapidly with distance, so after about one mile there is virtually no way of retrieving the data of your voice, it has been lost in background noise. However, this is not the case when referring to the infrared sphere. This form of energy is not significantly attenuated by air, thus, the infrared sphere travels relatively unimpeded out through the atmosphere to outer space where theory tells us it will travel forever, unless it meets dense matter that will absorb it, transmitting your words to the stars.

Hypothetically, there are two component frequencies of oscillation in the sound-generated electromagnetic sphere. The first is the frequency of light created by the collisions. This oscillation is modulated by the inherent sound periodicities of the colliding atoms or molecules. The effect is similar to amplitude-modulated radio transmissions, although SPEEC theory (Sonic Propagation of Electromagnetic Energy Components) uses a far higher carrier frequency, the frequency of light.

SPEEC predicts that sound always has an electromagnetic (light) component. Accordingly, the frequencies of these components are either in the microwave radio band or in the infrared spectrum, except

where the sound pressure levels are extremely high, in which case visible light can be created. This is the true and special relationship between sound and light.

Sonic Propagation of Electromagnetic Energy Components (SPEEC)



IN SUMMARY, sound actually does relate to light, not, as we have seen, by multiplying octaves of sound, but by the very nature of sound that creates friction in the air molecules, resulting in the electromagnetic energy we call 'light.' It is a kind of magic that's happening around us every day yet we remain blissfully unaware that our words, and music, are rushing out into space in the form of modulated infrared that may, one day, be demodulated and heard by non-human ears.



ENERGY IN AN ELECTRIC UNIVERSE

By Jeroen van Valkenburg/CC 2.0

Dr. Kontantin Korotkov



Let me invite you to the world of mysterious
and attractive "living" glows -

WORLD OF

ELECTROPHOTONICS.

When we observe the play of light around the human body, drops of water or crystals, we understand that everything in the world has interrelationship and any object - biological or inorganic - has its own inner energy.

Understanding the fact that our life is not only a material body and a material existence but, first of all, it is energy, and therefore - Spirit, makes us have new attitude towards our everyday reality.

When on real time, we observe change in the human biological field under influence of therapy, meditation, prayer, love, it makes us see the world round us with different eyes.

These page has several tasks. **First of all**, it is "first hand" information about **Electrophotonics** and what it studies.



WHAT IS ENERGY?

Energy (from the Greek *énérgēia* – action, activity), is a general quantitative measure of any type of movement, activity and the interaction of all types of matter. **Energy in nature does not come from nothing and does not disappear; it can only be transferred from one form to another. The concept of energy binds together all natural phenomena.**

Just as there are different forms of the movement of matter, there are different forms of energy: kinetic and potential, mechanic, electromagnetic, nuclear and so on. These divisions are generally well-known. So chemical energy is made up of the kinetic energy of the movement of electrons and the electrical energy of the interaction of electrons amongst themselves and with atomic nuclei. Internal energy is equal to the sum of the kinetic energy of molecular movement around the centre of body mass and the potential energies of the interaction of molecules amongst themselves.

The theory of relativity shows that the energy E of **the body is inextricably linked to its mass m as in the equation $E = mc^2$, where c is the velocity of light in a vacuum.** This means that in any amount of mass we have huge energy potential. The best prove is an atomic or nuclear bomb where from little mass we directly extract energy.

Any body possesses energy, and this energy can change from one type to another. Human body has tremendous resource of energy, which may be used for physical, emotional or mental activity. **We accept this energy from food, water**

and light. These are the main resources of life.

According to classical physics, the energy of any system is constantly changing and can assume any value. According to the quantum theory, the energy of micro particles, whose movement occurs in a limited area in space (for example, electrons in atoms), adopts a discrete series of values. **Atoms radiate electromagnetic energy in the form of discrete portions – light quanta, or photons.**

From a biophysical standpoint, the energy of systems and organs is determined by the level of mitochondria ensured by free electrons, i.e. by the character of electron transport. The capacity of mitochondria to produce ATP determines the possibility of accomplishing the work for the processes of physiological activity. But the possibility of accomplishing work is also called energy.

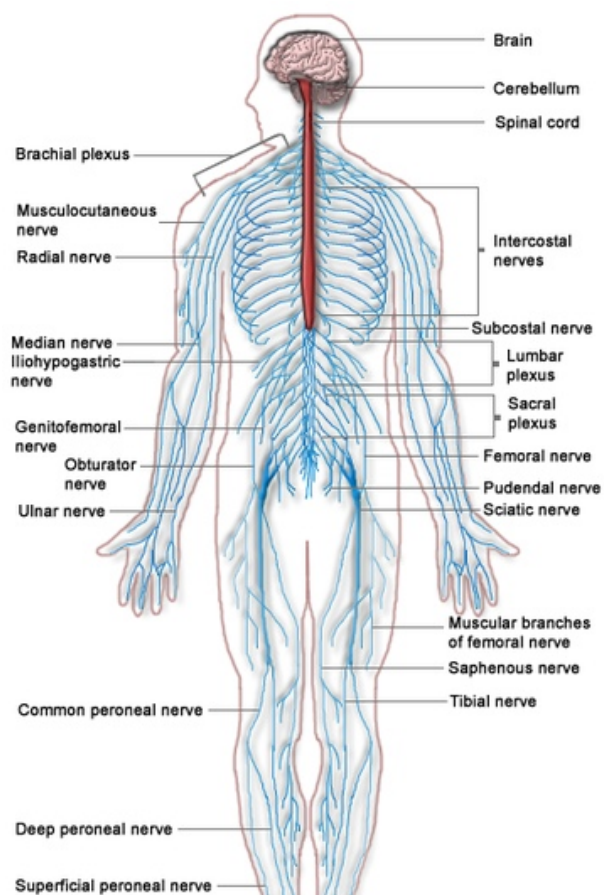


Photo by Lenka Love



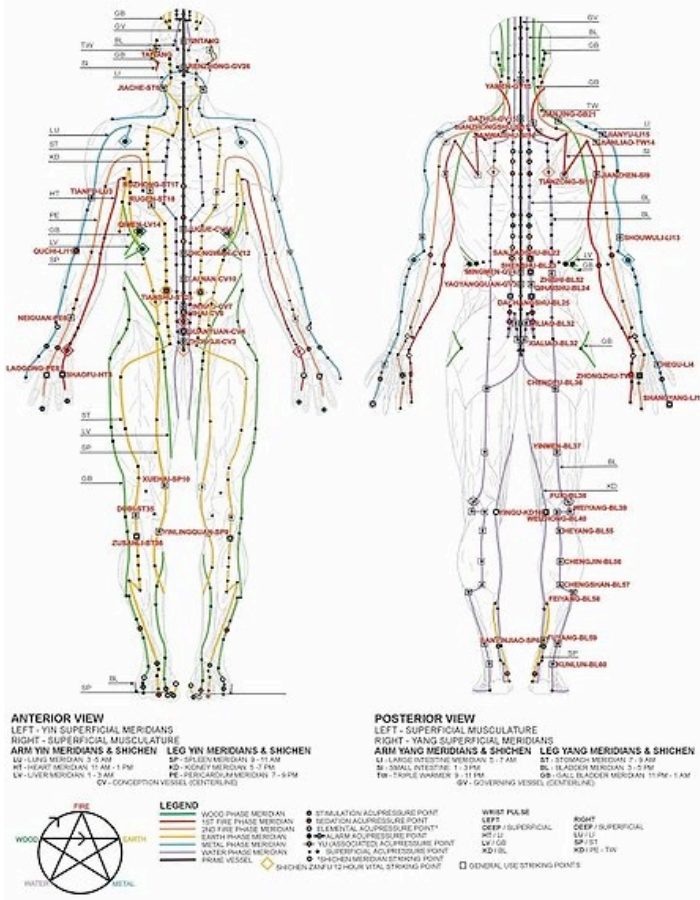
The EPI method measures electron densities in human systems and organs, as well as the character of the stimulated electron currents. These electron densities are the fundamental basis of the physiological energy, so we can say with confidence that the EPI method makes it possible to measure the body's potential energy reserve.

NERVOUS SYSTEM DIAGRAM



CHINESE MERIDIANS

Human body meridians



Public Domain/ Persian Poet GAI

WHAT IS BIOLOGICAL ENERGY?

The main reservoir of free energy in biological processes is electron-excited states of complex molecular systems.

Communities of delocalized excited π -electrons in protein macromolecules are the basis of this energy reservoir. Specific structural-protein complexes within the mass of the skin provide channels of heightened electron conductivity, measured at acupuncture points on the surface. These excited states are continuously supported at the expense of electron circulation in the biosphere. The main "working substance" is water and the energy source is the sun. A part of these electron excited states is expended for the support of current energy resources in the organism. A part can also be reserved for the future, as it happens in lasers after the absorption of the pump pulse.

The flow of impulse electrical current in non-conducting biological tissues might be provided by intermolecular transfer of excited electrons, using the mechanism of quantum tunnel effects, with the activated jump of electrons between macromolecules in the contact area. Thus, it can be assumed that the formation of specific structural-protein complexes within the mass of epidermis and dermis of the **skin provides channels of heightened electron conductivity**, which are experimentally measured as



electrical conductance at acupuncture points on the surface of epidermis. Such channels can be theoretically present within the mass of connective tissue, which can be associated with "energy" meridians. ***In other words, the notion of "energy" transfer, characteristic of the ideas of Eastern medicine and alien to most people with a European education, might be associated with the transport of electron-excited states through molecular protein complexes.*** When physical or mental work is done in certain systems of the organism, electrons distributed in protein structures are transported within their given place and provide the process of oxidative phosphorylation, i.e. the energy supply for functioning of a local system. Thus, the organism forms an electron "energy depot," supporting the current functioning and being the basis for work, at some moments requiring great resources or rapid flowing under conditions of extra-high loads -- typical, for example, of professional sport.

Stimulated impulse emission is also developed mainly by the transport of delocalized π -electrons, realized in electrically non-conducting tissue by way of the quantum electron tunnel mechanism. This proposition allows an assumption that the EPI technique provides indirect judgment about the level of energy resources at the molecular level of functioning in structural-protein complexes.

(see Korotkov K., Williams B., Wisneski L. Biophysical Energy Transfer Mechanisms in Living Systems: The Basis of Life Processes. J of Alternative and Complementary Medicine, 2004, 10,

ELECTRO- PHOTOSPHERES AND ENERGOGRAPHY

*Allah is the Light of heavens and the earth
Koran*

"Electro photospheres and energography as a proof of existence of the physiological polar energy". This was the name of a small book by a doctor from St. Petersburg, Messira Pogorelsky, where he described his experiments in bioelectrography. Book, published in 1893. Many photographs of the glow of fingers and toes, ears and nose show how the pattern of fluorescence varies when the psychic state of a person changes. However, this work was far from being the first one.

In the 1770's many researchers made experiments with electricity. There was no practical benefit from this: more than 100 years still remained till the invention of the electrical bulb by Tomas Edison; life passed with candle lights, European monarchies seemed to be eternal, and science studies were mainly the lot of an aristocracy.

In 1777 a German physicist George Lichtenberg touched a metal electrode covered with glass and connected to voltage with his finger while experimenting with the electrical machine. And suddenly a burst of sparkles flew all around. This was magically beautiful, although a little bit frightening. Lichtenberg jerked back the finger and then repeated the experiment. The finger placed

on the electrode was shining with bright blue light and treelike sparkles dispersed from it.

Lichtenberg, being a real academic scientist, investigated the behavior of this fluorescence in detail, although he substituted a grounded wire for a finger. **The effect was the same, which later suggested an idea that some special energy exists in the body, and first electrical then torsion properties were attributed to it.**

Articles by Lichtenberg, masterfully done in German, are still cited in books on gas discharge. Further research demonstrated that electrical fluorescence was rather common in nature...

We were climbing the summit with a group of rated sportsmen in the Dombay region of the Caucasian mountains. Early in the morning, before daybreak, we climbed the glacier with perilously beetling ice lumps, and with the first light of day we were on the rocks. Every hour we climbed higher and higher, driving in the titan pitons, hanging up ropes, and the ice glacier lumps gradually turned into small black points below. By the middle of the day the sky was covered with clouds, hanging low overhead ready to rain down. Our climb was planned for a day: we intended to reach the summit by 4 - 5 p.m. and then come down before darkness. Thus we could go with light packs having taken only equipment and some provisions. Indeed, we climbed the ridge by 5 p.m. That was a narrow stone spine, breaking with steep walls on both sides. Half an hour accurately balancing on the ridge - and we were at the top. The lads cheered up and started discussing the menu of the evening dinner in the camp. I anxiously looked at the impending clouds. Suddenly we heard a thin clinking sound, like a violin string.

ELECTRICAL TREEING



http://de.wikipedia.org/wiki/Bild:Lichtenberg_Denkmal_Goettingen

Modern "3D Lichtenberg Figures" or "Electrical treeing" in a block of clear acrylic. The fractal discharge pattern is believed to extend down to the molecular level.



LICHTENBERG

Articles by Lichtenberg, masterfully done in German, are still cited in books on gas discharge. Further research demonstrated that electrical fluorescence was rather common in nature...

We were climbing the summit with a group of rated sportsmen in the Dombay region of the Caucasian mountains. Early in the morning, before daybreak, we climbed the glacier with perilously beetling ice lumps, and with the first light of day we were on the rocks. Every hour we climbed higher and higher, driving in the titan pitons, hanging up ropes, and the ice glacier lumps gradually turned into small black points below. By the middle of the day the sky was covered with clouds, hanging low overhead ready to rain down. Our climb was planned for a day: we intended to reach the summit by 4 - 5 p.m. and then come down before darkness. Thus we could go with light packs having taken only equipment and some provisions. Indeed, we climbed the ridge by 5 p.m. That was a narrow stone spine, breaking with steep walls on both sides. Half an hour accurately balancing on the ridge - and we were at the top. The lads cheered up and started discussing the menu of the evening dinner in the camp. I anxiously looked at the impending clouds. Suddenly we heard a thin clinking sound, like a violin string.

"Look, guys, my ice-axe is shining!" exclaimed one of the mountaineers. The end of his ice-axe turned to our side blazing with a bluish glow.

"Throw the ice-axe right now", I cried. "Guys, put all iron equipment down and pile up. Now! This is very dangerous!"

We started putting off the carbines, climbing irons, hammers, and soon it was a large iron pile on the ridge site. The iron pile droned and shined with bluish light.

One of the alpinists, Sasha Strelnikov, stepped up to the pile and wanted to put his ice-axe together with other equipment. Suddenly a dry crackle rang out; he awkwardly stretched his hands and rolled down the mountainside.

"Hold him," I shouted wildly, and together with a few guys jumped to the rope slipping away into the precipice snakelike. Fortunately, all of us were bound to one another with the ropes, and after a strong jerk, everybody fell down, all our group froze in the very odd poses having clutched at the nearby stones. We carefully pulled Sasha out and back to the ridge: he was in his senses, but couldn't move either a hand or leg.

"What was that?" he asked in a weak voice.

"Atmospheric electricity. Something like St. Elmo's Fire. The sharp beak of the Ice-axe created a disturbance in the atmosphere and provoked a lightning discharge. You were lucky that this discharge was not very strong."

"What will be with me?" plaintively asked Sasha.

"Lightning is Jupiter's tool. Now you have his mark. So we will have to carry you down as a special person with value to humanity. Maybe you will start to read thoughts or predict the future. We will check you with our instrument when we come down."

In half an hour, having drunk hot tea, Sanya could walk on his own, but all his movements were slow, uncertain, and the three alpinists had to look after his every step using the ropes. The night caught us at the rocks. We spent it sitting on narrow shelves, our teeth chattering and telling political anecdotes. We reached the base camp only in the middle of the next day, where the longed for roasted chicken was waiting for us.

I don't know if Sasha showed extrasensory capabilities, although this often happens after a lightning strike. But it was found long ago that in the pre-storm environment, when the air is filled with electricity, many sharp subjects and often the human body start glowing. Is it the reason for nimbuses and aureoles of saints?

In the Nineteenth century enigmas of electricity were opening to people. One of the great inventors was Nicola Tesla, from whom we now have lamps and television sets. He invented the generator of alternating current. However, if it had not been him, somebody else would have done it. Inventions come to life when a social need for them appears. Then different people simultaneously and independently start arriving at the same ideas. This is connected with the fact that the ideas have their logic of development, and the developers shall only intuitively feel this logic.

After raising good money with his patents, Nicola Tesla began the mysterious experiments on energy transfer without wires. He did not finish his developments and died in destitution, but up to now enthusiasts have been trying to investigate his ideas. We get used to our technical progress and reap its fruits with pleasure, but is it the only possible way of development?

At the peak of his career Tesla liked to give public lectures and impress the audience with the following experience. The light was turned off in the room, Tesla turned on the generator of his own design, stood on the platform-electrode, and his body got wrapped in the glow. The hair stood on end, glowing rays of light radiated in the space. The experiment



was very effective, though not all those who wished managed to repeat it: as a matter of fact, their glow was much less and for some people even missing. Not in vain it was said that Nicola Tesla had special energy state.

Further research did not go much beyond investigations of the glow of fingers, sometimes ears, nose and other prominent parts of the body. Is it possible to reproduce Tesla's experiments and make all the body glow? Yes, it is. But is it necessary? Powerful equipment, which is not safe if not handled properly, is required for such an experiment. Moreover, the stronger electrical glow, the more ozone is generated in the air. A high concentration of ozone is far from being healthy.

So where is the similarity in the experiments of Lichtenberg, Tesla and the glow of the ice-axe? In all those cases the gas discharge appears near the earth rod. High field intensity is formed near its sharp end when placed into an electrical field. Electrons, which always exist in the air or are emitted by the bodies, start speeding up in this field and, having picked up necessary speed, ionize air molecules. Those, in their turn, emit photons, mostly in the blue and ultraviolet spectral regions. Here the glow appears.

What is more, from the viewpoint of physics both a nail, an ice-axe, a human finger, and a person can be the rod. Everything depends on the scale.

"But this is certainly dangerous", exclaims the **Skeptic** appearing from nowhere.

"You said yourself how your climber was conked, and now suggest everybody should tread in his steps! Should there be natural selection to survive after the electric chair?"

"My friend, several laws of physics and physiology work to our benefit. Not electric voltage, but electric current is dangerous for the human. Current, which can flow through the body, depends on the power of its source, frequency and skin resistance. For example, power in an electrical socket is limited only with a safety-lock, it usually amounts to 5-10 kw. Skin resistance of different people changes from thousands of Ohms to dozens of millions of Ohms. So, it turns out that putting fingers into a socket with the mains voltage 110V, one can get current rush from hundreds of milli-Amperes to tens of micro-Amperes. In one case it is practically lethal, in the other -the person will not feel anything."

I have known an electrician who cleaned the wires alive with his teeth. His skin was as the skin of a hippopotamus. Wet skin has much less resistance, as shown by examples of electrical

devices thrown into the baths with villains in American thrillers.

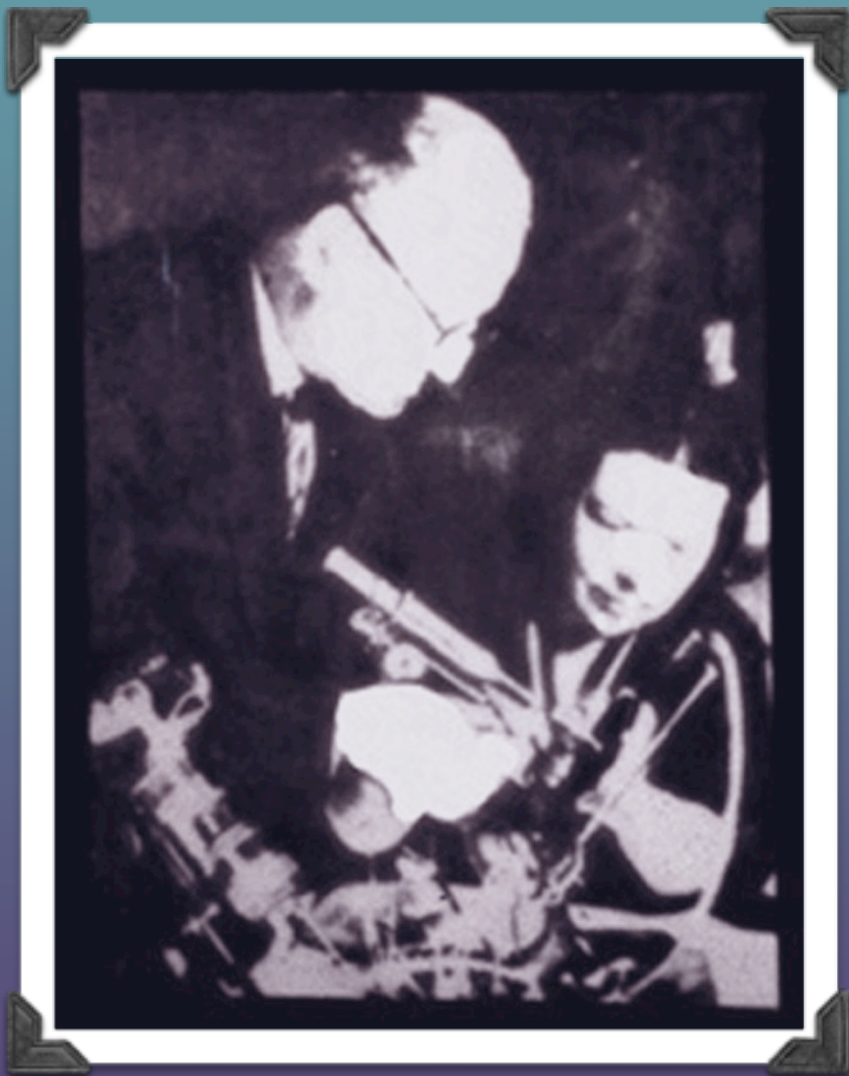
Generators used in Bioelectrography have very small power. It means that they cannot give high current, even if you lick the electrode with your tongue. In addition, these generators make use of high frequency voltages and short impulses, and by the laws of physiology such current cannot penetrate into the organism, as it slides on the skin surface.

And, between you and me and a lamppost, electricity is a dangerous force, which should be treated very carefully. For example, microwave ovens.

"Well, that's a bit too thick! They are used worldwide and nothing happens", says the Skeptic with offense and not having said goodbye, disappears.

Dr. Kontantin Korotkov





THE KIRLIAN'S

I have been developing lines of research connected with the Kirlian effect for several years already. Therefore, I would like to say a few words about these wonderful people.



“Each human thought, each mood and feeling immediately affect the emissions. These emissions are expressed in the light, colors and fires, obviously visible for sublime vision. Human auras shine and play the shades of every possible paints and coloring. Pure, fine thoughts and feelings cause corresponding colorings; dark, low desires, experiences and passions cause dark, smoky, muddy, ugly forms of low fires. In his aura man brings health, pleasure and light for people that surround him, or illnesses, grief, suffering and darkness”.

The Aspects of Agni Yoga, 1969.

In 1978 we got an invitation to participate in a conference dedicated to the 80-year anniversary of Semyon D. Kirlian. The conference was held in Krasnodar city, in the inventor's home land. It was organized under the aegis of "Quant" - a big research and production center, which was working on all questions connected with the sources of supply in the USSR: from clock accumulators to solar batteries. When the big international interest in the work of the married couple Kirlian's was noticed at center "Quant" and benevolence of the academic authorities was shown, Semyon Kirlian was provided with a small room in the institute and several colleagues for assistance. The colleagues determined that the effects observed were real and reported about that to Moscow. And the authorities decided to make their name in the Kirlian effect. A scientific topic was opened, a popular science film was made, and a conference was organized. Owing to that work several colleagues obtained apartments in Moscow. However, in a couple of years it turned out that the first cream had already been skimmed off the milk, and in order to get more serious implementation long and laborious work was required. And that was the task of the academic organizations and higher education institutions, technological organizations, even the big ones, were not adapted for such work. Therefore, the topic was closed, the colleagues were reoriented, and the Krasnodar laboratory had existed on the enthusiasm of a few colleagues for many years after Semyon Kirlian's death, and finally became part of a medical center.

Of course, our main impression in 1978 was the meeting with Kirlian. He was alone that time - his wife Valentina had passed away in 1971. It was an elderly man, modest and not tall by appearance. His behavior showed that the walls of the home laboratory were more customary for him than the honorable chair at the scientific meeting. But apart from that it was understood that he knew his place and took such an impressive meeting confined to his anniversary as a matter of course. Deep intelligence and interest in everything which took place was felt in his slightly prominent lively eyes. He didn't take part in the scientific meetings apart from a short welcoming speech, it seemed that all those academic discussions were strange for him, but when we came to his home, a small apartment in a five storied gloomy-looking building, he bucked up and showed us around his home laboratory with pleasure. It was obvious that he got used to a flow of most eminent visitors and all that fuss wasn't creating a big impression upon him. All his appearance was like saying: "I have done my part, now it's your turn!"

Semyon Kirlian spent most part of his life with his wife Valentina in a poor two-room apartment at the corner of Gorky and Kirov streets in Krasnodar. The wooden two-story house where they had started their family life was swept away by progress - a building program turned the small provincial town on the banks of the Kuban River into an industrial center. Now Gorky street is covered with brick five story brick structures, one of which has a memorial plaque in commemoration of the married couple Kirlian's. He was an electrician, she - a school teacher. He had the practical mind of

an inborn inventor, which brought him the honorary title "Honored Inventor of the USSR" and world fame afterwards. She was an intellectual, a university graduate, and his apprentice.

She was giving literature classes at school during the day, but the rest of Valentina's time belonged to him. She was his Love, his Passion, and his apprentice. She helped him in making experiments, which took the whole evenings, and often whole nights, all weekends, and all holidays. They were deeply carried away with the experiments with auras of live subjects, and since 1939 they had worked hard. The only rest they could afford was walking hand in hand under the trees and along blossoming fields so typical of the South Russian cities.

The main property of the Kirlian's was their laboratory. Their small bedroom was filled with equipment. Every evening in order to go to bed they had to put away the photographic plates, developing dishes, and induction coils from their bed. The black monster in the corner was the high voltage Tesla generator assembled by their own hands. At night they put cloths on it. And in that room Valentina passed away in December 1971.

Semyon cut the gravestone himself and set it on the grave with his friends. Within a month after Valentina's death he turned into a spiritual man. He had never been religious, but his experiments gave him belief in the life after death. As he explained, he realized that watching the last flashes of glow of the dying leaf. He believed that "bio-energy, which produces the vibrating fluorescence of biological subjects, will never deplete, even when it leaves the dying body in the last flash of fire - it goes away into space". Consequently, the soul is eternal. And he engraved a bunch of lilies with the aura around

them on her gravestone - not just for himself, but for us, in order to remind about her and him, when his time would come.

Friendship with V. Krivorotov, a talented sensitive healer, strengthened his belief in that even more. They had spent many hours together, photographing fingers' glow in the process of healing.

When everything started half a century ago, Kirlian was a local master with skillful fingers, bringing to life everything he touched. Having only four classes of education, he could repair practically any electrical appliance, from burnt electric stone to telephone. He came with the tool case and a hank of wires at first requirement in order to repair wiring, regulate a junction box or electric generator. After a number of years he learned to repair photo cameras and microscopes. He invented what he didn't know. He drew his own schemes, and spent nights reading books. He loved electricity and all machines connected with it.

These were lean and violent years, when the USSR was in chaos and turmoil. Ekaterinodar city had been founded by Kuban Cossacks in 1794, who had named it in honor of the great Empress; the Bolsheviks had renamed it Krasnodar. When the new hospital was built and electrical equipment turned out to be non-functioning, Kirlian made it work. He could handle any equipment, from electro-massage to an Xray unit. When his skills became well known, he started to be invited to all medical institutions of the city. In time a small two-room apartment was given to him and Valentina, where they had spent 40 years. However, at that time everyone in the USSR lived like that, and a separate apartment was considered to be a very good variant.

came through his hands, but he didn't feel pain. On the contrary, he saw a very beautiful flash which was worth capturing. The idea inspired him. But how to take a picture of such phenomenon? At that time glass photographic plates were used and the captured subject needed to be pressed to the plate.

Well, and what about the subject? Of course, he needed to photograph himself. Which part? Why not a hand? So, everything started like that. He planned to use an isolating table and place the photographic plate wrapped into black paper on the surface of an electrode. The second electrode was gripped in hand, a finger was placed onto the plate, a click of a switch- and ready! He was standing on a rubber rug for isolation.

According to all responses, the original Kirlian equipment was primitively simple. He created it from the parts taken home from hospitals. Their main resources were spent for technical literature, which he bought and brought home. Valentine, being enamored of photography, developed and printed.

This is how the Kirlian's described the discovery of the most interesting property of glow - dependence on psycho-physiological state:

"Perhaps, there has been no other device which would be as erratic as our handmade discharge-optical equipment. Moreover, it required triple precise tooling-optical, discharge and voltage tooling. The success of a demonstration fully depended on the experience and skills. It was impossible to keep calm. As a rule, transparent cover and optics combined in one device was checked beforehand. The equipment was always demonstrated by one of the authors, observing his hand.

The demonstration starts. Putting the hand under the transparent electrode and looking into the ocular, the author turns on the generator with his foot. From the very first second the transparent electrode starts playing up, the background is not clear, and the channels have no brightness. The author asks the guest to excuse him. The electrode is quickly disassembled, everything is cleaned again, tooled, the generator is turned on - but the same unfocused picture in the ocular. The guest, tired of waiting, wishes to look through the ocular. And, how odd: he is as if pleased with the picture. As the guest gets interested with what he has seen, the author calms down, and meanwhile cries of astonishment are heard: apparently, the guest finds something exceptional.

Recalling that the working time is already over the author finishes the demonstration, looking into the ocular himself beforehand. He is more surprised than the guest: the visibility is excellent.

This unexpected case has become a whole revelation for us. Isn't it strange: five transparent electrodes suddenly and at the same time stopped working well with one particular object, or rather, subject, and suddenly unexpectedly worked properly with another one.

It was impossible to stand such an intriguing situation indifferently. The diseased author got up from his bed and we began checking the work of five devices together on one another. There were no doubts: electrical pictures of the diseased were chaotic, pictures of the healthy represented clear play of magical discharge flow.

This is where every cloud truly has a silver lining! This is what we found through quite an unhappy

brought about disorder in the observed picture of electrical state."

A question arises: how independent were the Kirlian's in their work, didn't they take the very idea and the main techniques from their predecessors?

The reply is very simple. Even living in St. Petersburg it hasn't been easy to find information on the experiments of the Nineteenth century, and it is not clear how that could be accomplished in the provincial Krasnodar at all! But, even if we assume that the magazine "Niva" from the beginning of the century, where photos of the glow were published, somehow fell into the hands of the Kirlian's; in order to reproduce such photos it was necessary to pass the whole way from the beginning! Therefore, the Kirlian's could be accused of various sins: lack of knowledge of English, lack of skill to dance rock'n'roll, but certainly not of plagiarism!

The value of the recording method of the human body glow was noted by many Spiritual Teachers. The works of E. Blavatskaya, E. Roerich and Saint-Germain mark the importance of research methods of human field for the science of XX and XXI centuries.

"Each human thought, each mood and feeling immediately affect the emissions. These emissions are expressed in the light, colors and fires, obviously visible for sublime vision. Human auras shine and play the shades of every possible paints and coloring. Pure, fine thoughts and feelings cause corresponding colorings; dark, low desires,

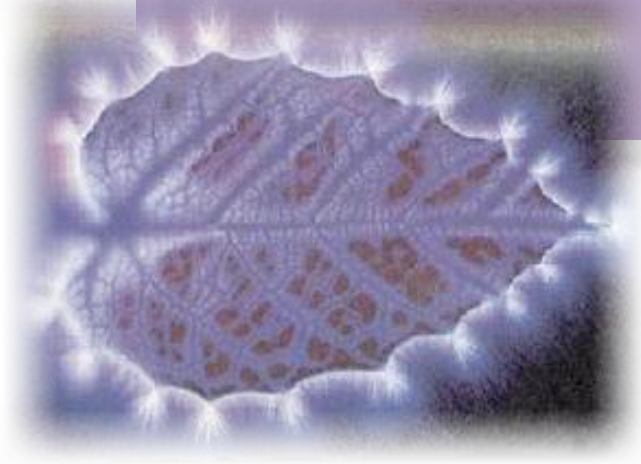
experiences and passions cause dark, smoky, muddy, ugly forms of low fires. In his aura man brings health, pleasure and light for people that surround him, or illnesses, grief, suffering and darkness".

The Aspects of Agni Yoga, 1969.

At the same time the complexity of the used equipment for obtaining electro-graphic pictures and its objective danger laid obstacles to wide circulation of this method.

Some more factors were added. The epoch of the great revolution in physics began. Radio-activity and X-rays and "the tiniest particle of substance", electron, had been just discovered; heated disputes concerning the theory of Maxwell electromagnetic fields were still in full swing, not far off there was Einstein's revolution in physics. At the same time, these years were noted by the growing interest to abnormal manifestations of human nature. Calling the spirits of the dead was practiced all over the world; E. Blavatskaya created theosophy; mystics and occultists of different kinds attracted wide attention. Therefore the new method that enabled to record the changes of mental energy caused wide interest in their environment, which led to a loss of interest of and tearing away from the academic circles. Thus, the basic advantage of the method played with it a malicious joke: the end of XIX century was an obviously adverse environment for it. Some publications, such as the book by Messira Pogorelsky "Electro-photosphens and energography as a proof of existence of physiological polar energy", 1899, only aggravated the situation. After Ya. O. Narkevich-Jodko's death in 1905 and new revolutionary situations in physics and the

Dr. Kontantin Korotkov



society, the works of the founders of bio-electrography were for a long time forgotten, and we consider them now as the historical predecessors of the Kirlian's.

Several dozens years the Kirlian's were engaged in development and improvement of their creation, investigating the glow characteristics of more and more different materials. They received more than 30 certificates on inventions, and in 1974 Simeon Davydovich was given the deserved title of the "Honorary Inventor of the USSR". And it is not so important that later in old journals similar photos made in the end of the last century were found; the name "Kirlian Effect" had been already recognized worldwide. Further there were attempts to give this phenomenon other names: each researcher who obtained more or less interesting results with the use of any updating of the Kirlian effect immediately declared his study a new phenomenon and gave it his name, however studies of physical processes of image formation showed that with all the variety of electrodes and voltages the essence of the proceeding processes remains the same.

Again the same situation repeats in history: a phenomenon is given the name of the one who most vividly and in proper time informed the world about it. America was discovered by Vikings, Columbus cleared a road to it, but it was named after Amerigo Vespucci. Therefore it is reasonable to introduce various terms for scientific use, differently to designate various updates, but the common name of the method should remain without changes, the KIRLIAN EFFECT.

In the majority of books about the effect, it was related to abnormal phenomena of human mentality, and from the very beginning the issue had a certain touch of mysticism. It was possible to find the explanations that were, on the one hand, rather far from the scientific paradigm, such as manifestation of cosmic energy, or emanation of energy of the Deity on human fingers. On the other hand, there were articles showing that the named effect is nothing more than changes in perspiration. As it often happens, the Truth was somewhere in the middle.



[Check
out this video
from Natural .tv](#)



Ph.D., Professor Konstantin Korotkov

holds the following positions:

- Deputy Director of Saint-Petersburg Federal Research Institute of Physical Culture.
- Professor of Computer Science and Biophysics at Saint-Petersburg Federal University of Informational Technologies, Mechanics and Optics.
- Professor of Research in Saint Petersburg Academy of Physical Culture.
- President of the International Union for Medical and Applied Bioelectrography.
- Consultant for Aveda Co (USA).
- Member of the Editorial Board: «Journal of Alternative and Complementary Medicine», “Journal of Science of Healing Outcomes”.

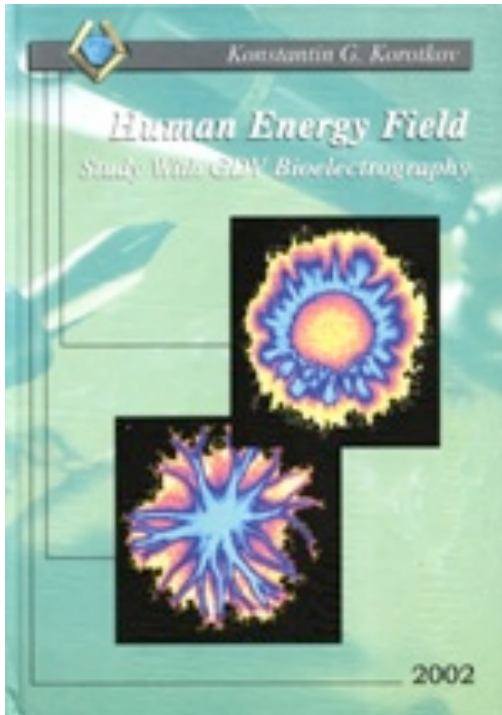
He has published over 200 papers in leading journals on physics and biology, and he holds 17 patents on biophysics inventions. **Prof. Korotkov** has led a research career for over 30 years, combining rigorous scientific method with an insatiable curiosity about things of the spirit and the soul with deep respect for all life. He is also a scholar in philosophy and a serious mountaineer of 25 years experience. He has given lectures, seminars and training sessions in 43 countries, presenting papers and workshops at more than 100 national and international conferences.

He is the author of 9 books; Most of them are translated to English, French, German, Italian and Spanish, including *Light After Life: Experiments and Ideas on After-Death Changes of Kirlian Pictures*, USA 1998. *Aura and Consciousness – New Stage of Scientific Understanding*, Russian Ministry of Culture, 1998. *Human Energy Fields: Study with GDV Bioelectrography*, USA 2002. *Spiral Traverse, (USA?)* 2006. An editor of the book: *Measuring Energy Fields: State of the Art*. GDV Bioelectrography series, USA 2004.

At the V Congress of the International Union of Medical and Applied Bioelectrography (IUMAB) in Curitiba, Brasil, (Brazil, in USA) in 2001, Dr. Korotkov was elected as President of the IUMAB by the world's most prominent researchers. He was re-elected as a President in 2005 and 2010. He is a Member of the Federal University Scientific Board on new medical technologies, Member of the Scientific Board of the European Society of Predictive Medicine (France) and of the Editorial Board of the «Journal of Alternative and Complementary Medicine» (USA).

His scientific line, known as the Electrophotonics, is based on Gas Discharge Visualization technique (GDV), is a breakthrough beyond Kirlian photography for direct, real-time viewing of the human energy fields. This new technology allows one to capture by a special camera the physical, emotional, mental and spiritual energy emanating to and from an individual, plants, liquids, powders, inanimate objects and translate this into a computerized model. This allows researcher and client to see imbalances that may be influencing an individual's well-being greatly facilitating the diagnosis of the CAUSE of any existing imbalances showing the area of the body and the organ systems involved. One of the greatest benefits to date is the ability to do “real-time” measurements of a variety of treatments for such conditions as cancer to determine which is the most appropriate for the client. The incredible implications for the diagnosis and treatment of physical, emotional, mental and spiritual conditions with applications in medicine, psychology, sound therapy, biophysics, genetics, forensic science, agriculture, ecology etc. have only just begun.

The **EPC/GDV technique** is accepted by Russian Ministry of Health as a Medical technology and certified in Europe. More than 1000 doctors, practitioners and researchers benefit from using this technology worldwide. More than 150 papers are published on GDV in (how many) different countries.



“Human Energy Field: study with GDV bioelectrography”

Author: K. Korotkov.

This book is dedicated to the presentation of the scientific foundations and practical applications of the Gas Discharge Visualization (GDV) technique. This technique represents a revolutionary new method for the study of biological subjects, namely biological energy fields. This research extends scientific tradition, developed in Russia in the twentieth century. The Human Energy Field carries information on physical, mental and spiritual states of a human being, and the GDV Bioelectrography technique is the first method in the world which gives an opportunity to study this information. Utilizing the latest advances in technology, such as microelectronics, computer imaging, and data mining, scientists have been able to create an entirely new class of scientific instruments that allow the practitioner to view, measure and analyze biological subjects in a manner that has never been possible before. The GDV technique has been found to have numerous highly important applications in medicine, sports, consciousness studies, material testing and other areas, discussed in this book...

Measuring Energy Fields: State of the Science.

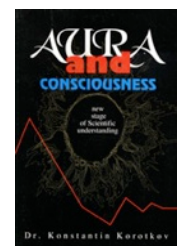
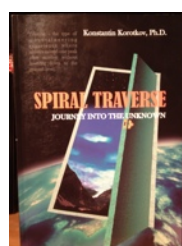
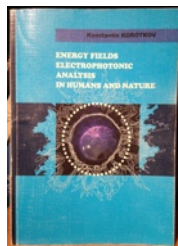
Author: K. Korotkov.

Volume I in the GDV Bioelectrography series presents recent studies and applications of the Gas Discharge Visualisation (GDV) technique. Our previous books were created by a small group of associates. This volume presents a wide range of articles by authors from different countries. After seven years of development, the GDV techniques entered a new stage of “catalytic growth” with innovative methods emerging from various laboratory and clinical settings. Research by independent groups around the world demonstrates that the GDV technique provides methods for recording subtle dynamics in the energy fields of objects with various natures.

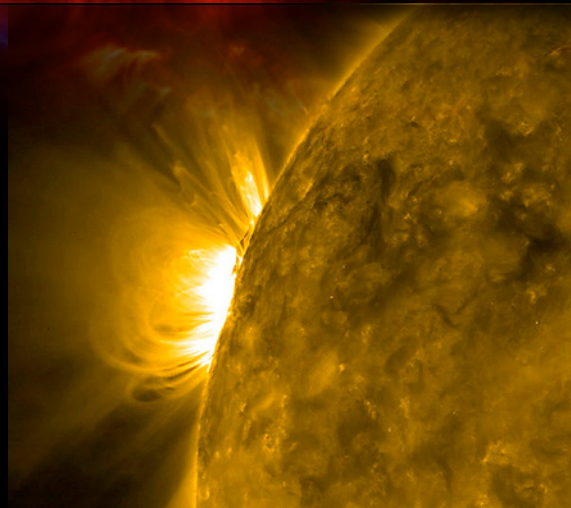
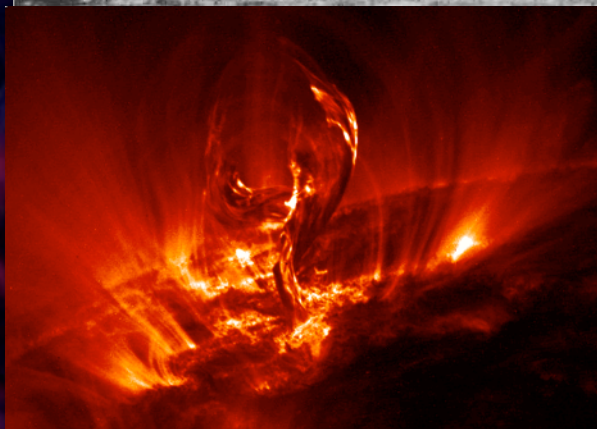
GDV assessment methods are demonstrated to have a wide range of important applications in medicine, sports performance, materials testing, as well as analytic studies of human consciousness and spiritual healing.

Spiral traverse will also soon be available in www.krishnaprana.com

Books available at <http://www.backbonepublishing.com/books/other-books>



The Force is with YOU?



ALL bodies have a force, its part of our magnetic and electric field. The force within you is the measure of your bodies vitality and personal dynamics. Master of the ages are know to manipulate this field with their power of intention.

The Chinese refer to as chi, and when this energy/chi is constricted within the body's meridians, it causes discomfort and is a signal for you to be mindful of what needs to be mended. Consider this your wake up call to get in the flow.

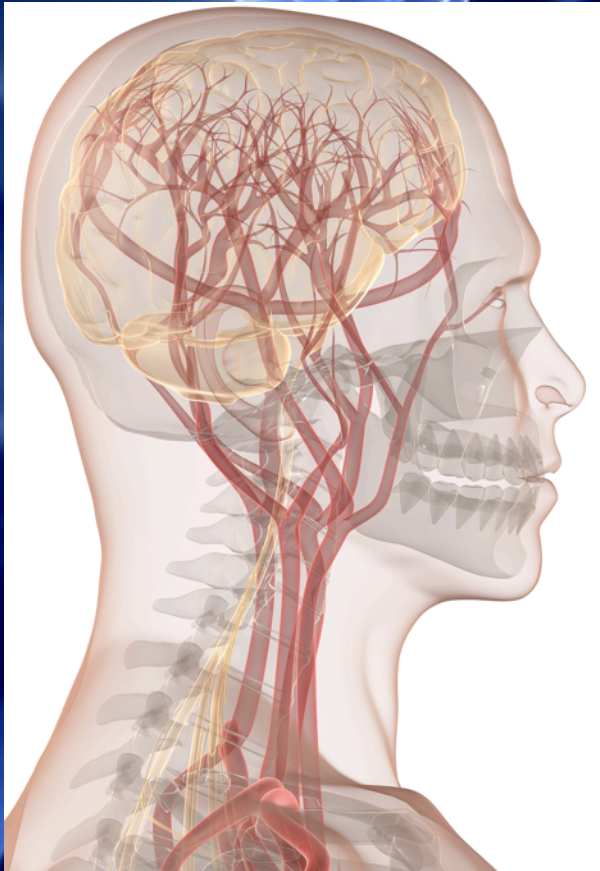
Gregg Braden



The Field Exists

**GREGG BRADEN - ON CURING CANCER
USING OUR OWN TECHNOLOGY OF
EMOTION - TAP INTO THE ELECTRIC
MAGNETIC FIELD**

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Your wireless network

You are wired to fire, light up and make connections. As Dr. Bruce Lipton asks, is our DNA an antenna and a receptor for the signals of our MIND?

Because an antenna is a transducer and a receiver of electromagnetic waves, have we placed a mental ceiling on our understanding as to where our antenna can roam?

We employ this technology into the air waves, outer space and underwater—its all ether.

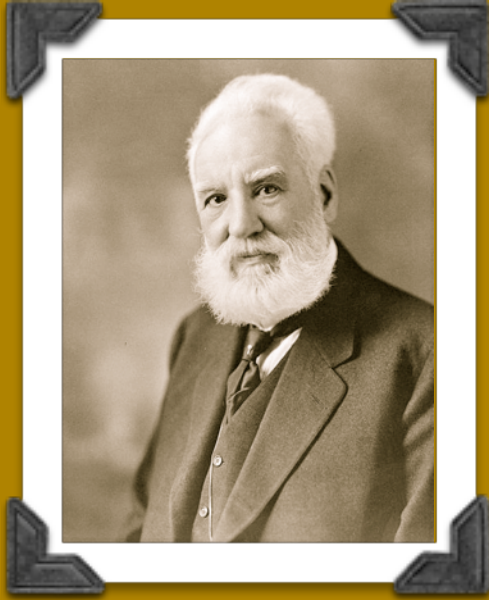
Telepathic

At the level of radio frequencies, making contact with the 'field' might be an option when you are in-tune to that channel.

The idea of remote control came to the great innovator Nikola Tesla when he was in communication with his mother, who had just recently passed. Connecting through the ethers was now not a foreign idea.

This phenomena is not uncommon. There are many who pierce this veil. Many people speak of seeing or sensing loved ones that have passed on. Some even know who is calling before the phone rings.

How wide is your bandwidth and are you open to receive?



Dr. Alexander Graham Bell

If you place an iron rod in a dark room and cause it to vibrate at first you'll only be able to tell it is vibrating by touching it.

Increasing the vibration to 32Hz will produce a loud and shrill sound and vibration can now be detected by both touch and hearing. Increase that vibration to 40Hz and you can no longer detect the vibration by touch or sound.

If you increase the vibration to 1.5MHz you cannot feel or hear the vibration but you can detect the vibration through the rise in temperature in the iron first warm and then the iron rod will glow red hot and can be detected by sight.

At 3MHz the rod is now producing violet light; increasing the vibration more will produce ultra-violet rays and other invisible radiations that can only be detected by special instruments.

There are so many "vibrations" flowing all around us that are invisible to our 5 senses who can tell how they affect us. Uranium emits and invisible radiation that will kill you. You cannot see it but it is there and kills. Who is to say how the other radiation affects the body and mind.

Isn't it possible that the mind radiates its own wireless transmissions that are received by other minds but we just are unaware of that as of yet. There is no scientific proof for or against this theory, yet so many people will just to the conclusion that it cannot exist. There are among the same people that would have disbelieved radio existed before it was proven that it does exist.

You **MUST** keep an open mind and use these methods as those successful have already used them to achieve success. Who are you willing to believe, those who have not succeeded or those who have?

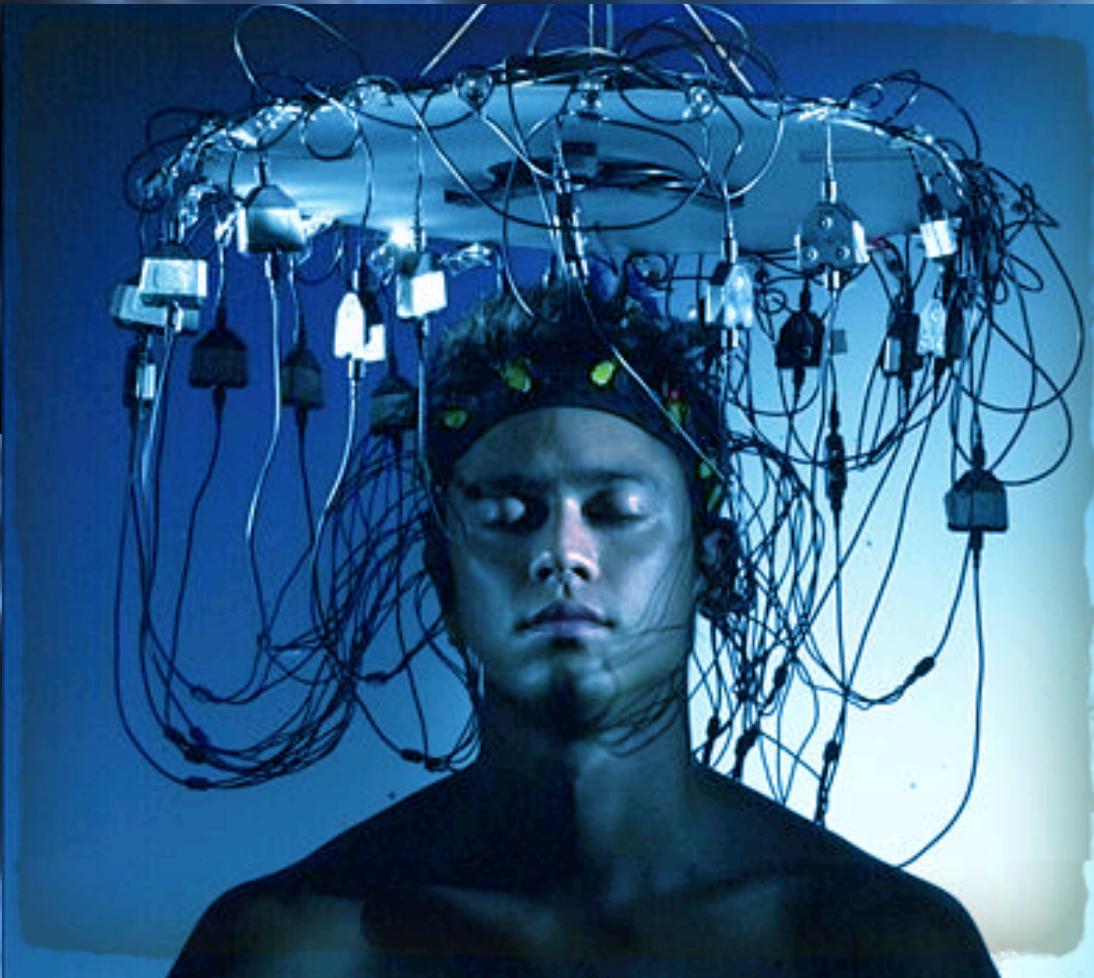


Dr. Joe Dispenza

THE WAVES OF THE FUTURE

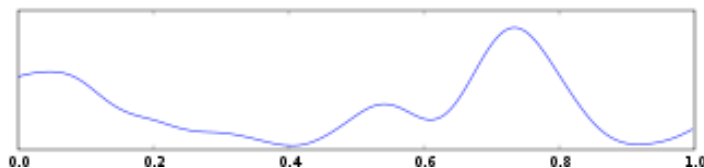
Most of us already know that the brain is electro-chemical in nature. When nerve cells fire, they exchange charged elements that then produce electromagnetic fields. In fact, we generate more electrical impulses between our ears in one day, than do the total number of cell phones on the planet during that same amount of time. Because the brain's diverse electrical activity can be measured and calibrated, these effects can provide us with important information about what we're thinking, feeling, learning, dreaming, and creating, as well as how we are behaving or processing information. The way scientists record the brain's changing electrical activity is by utilizing an electroencephalograph (EEG).

ELECTROENCEPHALOGRAPH



Research over the years has displayed a wide scope of brain wave frequencies ranging from very low brain activity found in deep sleep called Delta waves, to high thinking brain waves called Beta waves. By understanding the different patterns of brain wave activity in human development, we can better influence how children learn, experience, and act. Let's look at the progression of developmental brain wave stages found in growing children.

Between birth and two years old, the human brain functions primarily in the lowest brain wave activity, which is from 0.5 to 4 cycles per second. This range of electromagnetic activity **is known as Delta waves**. In other words, a young baby is typically asleep with their eyes open. This phenomenon explains why a new born usually cannot remain awake for more than a few minutes at a time. The trance state that infants exhibit suggests that newborns have very little analytical faculties. Information from the outside world enters their mind and brain without any analysis, judgement, editing, or critical thinking. In fact, sensory information that an infant processes is encoded directly into their

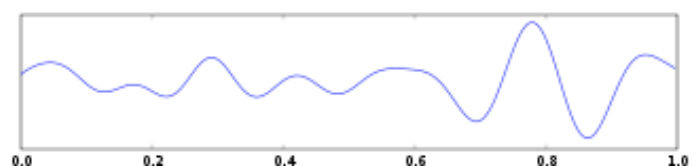


DELTA WAVES

From about 2 years to 5 or 6 years of age, a child begins to demonstrate slightly higher EEG patterns. These brain waves are **called Theta waves** and they can be measured between 4 to 8 cycles per second. Theta waves are the twilight state in which some people find themselves half awake and half asleep. This state is evident in adults when the conscious mind is awake and the body is somewhat asleep. This is also the hypnotic state where there is access to the subconscious mind. **In Theta, we are more programmable because there is a thin veil between the conscious mind and the subconscious mind.**



Steve Ford Elliott. CC 2.0



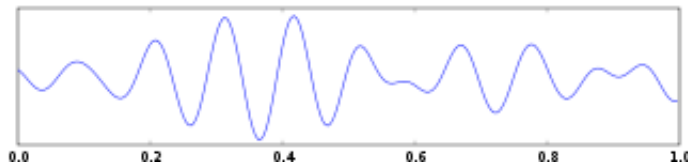
THETA WAVES

Let's examine what is meant by the subconscious mind. Because of the research done in brain wave frequencies, we now know that when we are born, we are totally subconscious mind. The developing human learns from positive and negative identifications and associations that give rise to habits and behaviors. A good example of a positive identification is when an infant is hungry or uncomfortable and cries out.

As the child makes an effort to communicate in order get its mother's attention and as the nurturing parent responds by feeding the child or by changing her diaper, the infant makes an important connection with the outside world. It only takes a few repetitions before the infant learns to associate crying out with being fed or becoming comfortable. It becomes a behavior.

A good example of a negative association is when a two year old child puts his finger on the hot stove. He learns very quickly to identify the object he sees, the stove, with the pain he is feeling and, after a few tries he learns a valuable lesson. In these examples, we could say that it is the **sensory stimuli from the outside world that produces an internal chemical change in the body**. And in time, when the developing mind pays attention to whatever it was in the environment that created the internal change, be it pleasure or pain, that process is an event in and of itself. It's called a memory. This type of associative memory requires little conscious awareness.

ALPHA WAVES



Somewhere between the ages of 5 and 8, our brain waves change again to an Alpha wave pattern. In **Alpha, the brain is in a light meditative state**. When we

close our eyes and eliminate all of the sensory information from the environment, alpha waves are produced in the brain. We tend to think less because there is little information being integrated from the external environment. We relax. It is at this point in child development that the analytical mind begins to form. The child is genetically changing and along with the sum total of the environmental cues he has experienced, both will influence the growing nervous system. As a result of this type of brain wave activity, children begin to interpret and draw conclusions about the laws of external life. This is just about when children figure out that there is no Santa Claus. As the analytical mind forms at this age, it acts as a barrier to separate the conscious mind from the subconscious mind.

Most psychology texts tell us that the subconscious mind makes up about 90% of who we are. The conscious mind is therefore 10% of the total mind. While the subconscious mind is made up of those positive and negative identifications and associations that give rise to habits and behaviors, the conscious mind is primarily made of logic and reasoning which contribute to our will. It is at this point in development that we function more of the time from our rational thinking as well as conscious decision making abilities. We begin to form the ego. Resultantly, this type of thinking creates Beta wave patterns on EEG machines.



Young children therefore, have the ability to absorb vital information directly into their subconscious minds because of the way the brain develops.

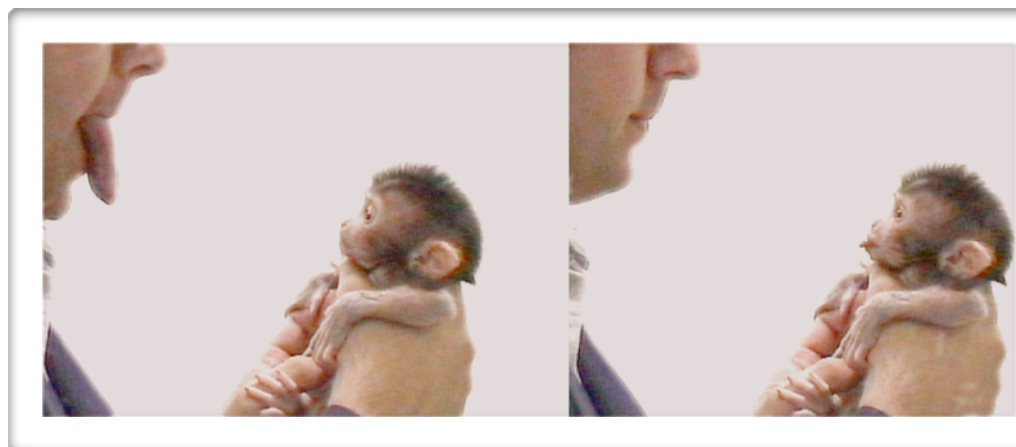
We are highly adaptive during our early years of life so that we can organize cultural beliefs and societal behaviors into our nervous systems. The opportunities we provide for our offspring will directly dictate the experiences they will embrace in their own personal reality at some future time. And their actions will then influence the next generation the

same way. **The brains plasticity, combined with the multitude of mirror neurons**

it contains, afford the young mind the natural innate ability to imitate whatever that mind embraces in the

environment. By providing the proper models early enough in a contemporary educational system, in a family setting, or in society, we may subconsciously teach our children the proper rules of this game called of life.

Category:Images from PLoS journals.



New Book

<http://www.drjoedispenza.com/>



Joe Dispenza, D.C., the author of *Evolve Your Brain*, studied biochemistry at Rutgers University. He also holds a Bachelor of Science degree with an emphasis in neuroscience, and earned his Doctor of Chiropractic from Life University in Atlanta, Georgia. He has received postgraduate training and continuing education in neurology, neuroscience, brain function and chemistry, cellular biology, memory formation, and aging and longevity.

One of the scientists, researchers, and teachers featured in the award-winning film *What the BLEEP Do We Know!?*, Dr. Joe has lectured on six continents, educating people about the functions of the human brain. He has taught thousands how to reprogram their thinking, on a personal and professional level, through scientifically proven neurophysiological principles.

Breaking the Habit of Being Yourself

How to Lose Your Mind and Create a New One



Dr. Joe Dispenza

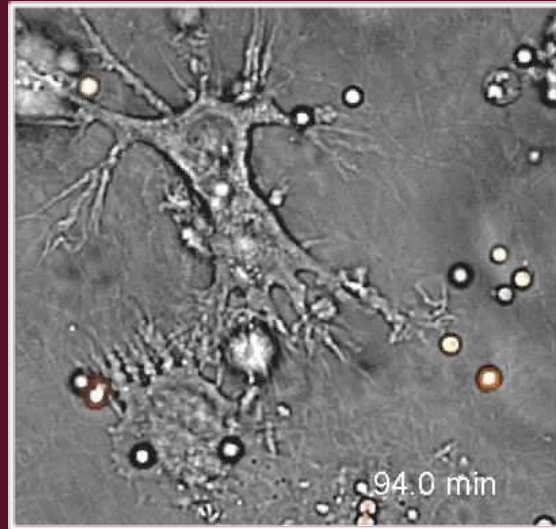
The best-selling author of *Evolve Your Brain*

- **Why Change is so DIFFICULT!**
- **How to Break Unwanted Emotional Patterns**
- **10 Steps to Reinvent Yourself—a Neuroscientists perspective**
- **Helping organizations teach employees how to change**
- **Kidnapped by Technology—Kids and videogaming/texting/computers—The effects of technology on our brain.**

**Breaking
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Do Mind!

The field responds to the charge.



Charged Memories!

Current Issues!

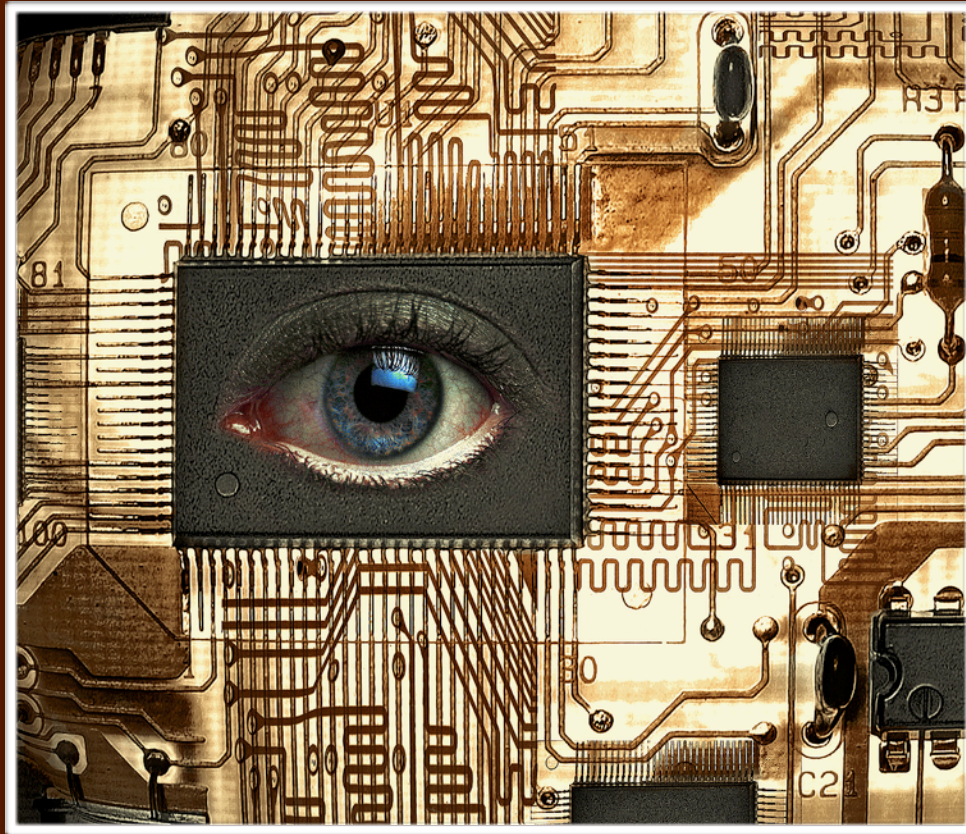
What current issue do you feel rushing through your body when examining your life's charge? Is your current sphere of influence, love or judgment? What message are you sending through to your family, your work environment and your other networks?

Consider whatever charge you manifest, be it good or bad, is what you 'will' and magnetize into your life. This is the of Law of Attraction in action.

Remember that your every word is an e-motion and an e-ticket ride, which creates your reality

- Excerpts for InsideOUT - Ancient Wisdom to Modern Science

MINDS CIRCUITRY



Our mind's circuitry mimics a computer. Both are programmed to be a 'meaning making machine'. It seeks and downloads files of information in predictable and known pathways.

From city cells, to family members, we are all linked by liquid crystals (transducers) which give the signals for the gate to open or to close, receptive or not receptive to an idea. This is the same method of how a computer chip works with key and keyboard, yet know you have to key in the data—it's not random.

The cell nucleus also acts like the hard drive that contains the software, body and mind. If you remove the floppy disk and install a new program, the computer still works, although it might need some downtime to adjust as it reloads! This also controls the central nervous system which is connected to our sensors - vision, hearing, taste, smell, pain, temperature and tactile sensations.

This reminds me of "Hal" from the movie "2001 the Odyssey".

WHAT IS AN AMBIGRAM?

An **ambigram** is a typographical design or art form that may be read as one or more words not only in its form as presented, but also from another viewpoint, direction, or orientation.



C L A Y T O N
M A B E Y

I remember very well my first two ambigram attempts. It was September 3rd, 2003. I drew them both on the same night (as I couldn't sleep). The first was a "Mabey" to "Mabey" design (rotational) and the second was a "Clayton" to "Clayton" design (also rotational). Earlier that day, my dad introduced me to Dan Brown's "Angels & Demons" novel. He was offering it up as a great read. Well obviously, I couldn't make it past the front cover. I had never seen an ambigram before, and John Langdon's design blew me away. I think I still suffer from an elbow injury caused by turning the book over and over and over all day long. I was completely dumbfounded. I was hooked.

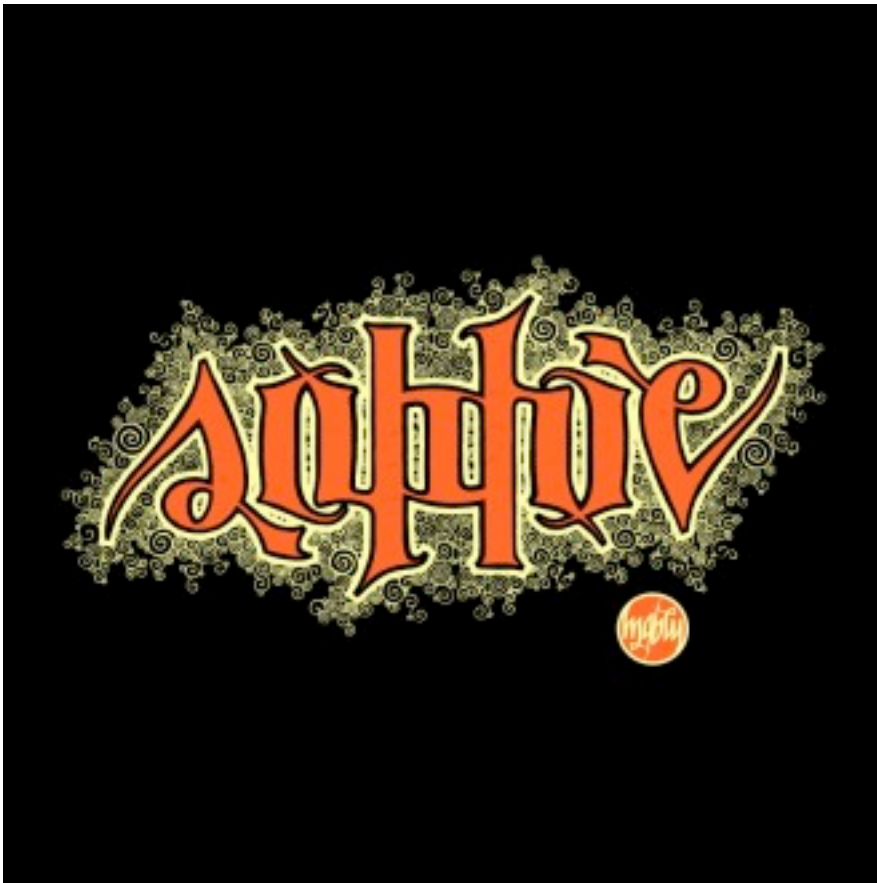


I have always enjoyed drawing. I remember going through a period in my teenage years where I would draw pictures with letters. I would write the letters in such a way that they would represent simple shapes and together would become faces or other objects. I also took a part time job in high school as a calligrapher. I would number the inside flaps (XX of XX) of limited edition leather-bound books. Then, life got busy. There was a period of about 8 years where I almost completely neglected my right brain. I attended and graduated from the University of Utah in Electrical Engineering, managed a branch office for a consulting engineering firm and also taught electrical apprenticeship & mathematics part time at a local college. Doesn't quite sound like the typical life of an "artist". Here's the wonderful thing...I am fortunate to love my "real" job and my career choice in Electrical Engineering, I have simply decided to no longer neglect the other half of my brain – I was born to doodle.

I have now created hundreds of ambigrams. Most are hand drawn sketches, many of which have been converted to a digital format using AutoCAD. **Ambigrams draw me because of their complexity, the mystery of resolving uncommon letter combinations, and the fun of making intricate artistic creations for others.**

Custom ambigram are available <http://customambigrams.com/uncategorized/ambigrams-for-sale>





Here is the original drawing prior to the edit and effects...



[http://
customambigrams.com/
uncategorized/post-
about-clayton-mabey](http://customambigrams.com/uncategorized/post-about-clayton-mabey)





Through the Lens of Karl Herrmann



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March 6, 6pm - Joshua Shapiro
March 27, 6pm - James L Oschman Ph.D.
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The Science of Living in the Matrix & Energy Medicine

James L. Oschman Ph.D.

Teacher of Teachers
Hands-on Workshop

March 31st

Matrix Medicine
Body Scanning and Regeneration
The Energetics of Trauma & Resoution

The workshop will focus in part on “spontaneous healing” and the treatment of trauma and traumatic memories. The latest development in quantum physics and quantum healing will also be discussed. He has also become involved in the development of cutting-edge medical devices and other applications of the emerging concepts of energy medicine.

Cost \$69. Saturday Workshop 9-4:30

Explore Energy Healing Modalities 4:30-5:30

Cacao Ceremony, 6-10pm \$45 per person /combo \$99

At the UBC Gardens, Pavilion Room

Free Parking

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Jim Oschman Ph.D is a research **scientist** who has written many books on energy medicine. He travels the world, lecturing and learning about the new science and new therapies that are making medicine friendlier and more effective for patients and physicians and entire national economies alike, and even solving health problems that were previously considered virtually impossible to treat.

March 30, 7pm

Free Intro Lecture

Banyen Books & Sound

March 31, 9-4:30

Workshop - \$69, 9-4:30pm

Cacao Ceremony \$45

6-10pm

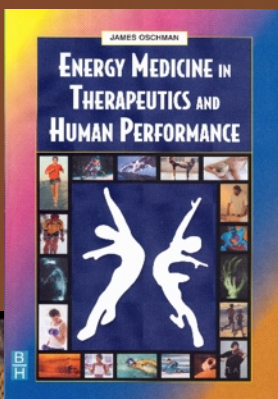
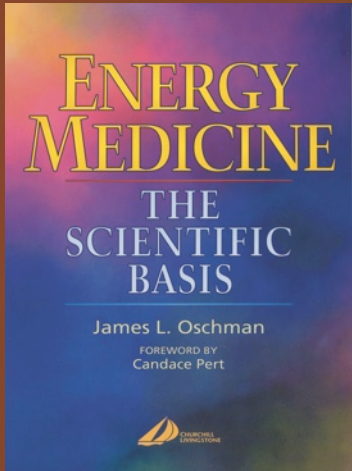
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Banyen Books

James L. Oschman Ph. D.



James Oschman is a pioneer in the field of energy medicine, and the originator of the *living matrix* concept. The living matrix is the material substrate of the organs, tissues, cells, and subcellular elements in the human body. It is the part of the body that is traumatized or injured and is the focus of virtually all therapeutic modalities. An understanding of the structure and properties of the living matrix is invaluable for all schools of therapy.

In this workshop, Dr. Oschman will introduce you to exciting research and experiential methods that are leading to a picture of human structure and function that is congruent with the practices of a broad range of hands-on, movement and energetic therapists. In the process, we will discover powerful new ways of envisioning our work and of explaining it to others.

The conventional focus on biochemistry/pharmacology is being supplanted with a paradigm that is far more encompassing. In the new model, drugs, with their limited capacity to stimulate the healing process, take their place as one of many possible interventions.

The holistic model is moving forward because it has a far richer and diverse and interesting scientific basis; it is successful in promoting and restoring wellness; the health care consumer resonates with the whole-system perspective and likes the personal attention of its practitioners; and holistic approaches are capable of resolving health issues that conventional medicine cannot cope with at all. Moreover, conventional medicine usually focuses on the symptoms rather than the causes of disease and failure to heal.

Morning Session 9-12

Healing through the energy field

Focus on the human energy fields and their roles in healing. Particular emphasis will be placed on the fields generated by the heart, as these are the strongest fields in the body and are projected into the spaces around us. Moreover, their energy spectrum contains frequencies known to stimulate healing in particular tissues. Practical material will related to sensing the energy field of another person and the mechanism and meaning of the felt energies. One practice will involve dynamic strain vector release developed by Osteopathic physicians.

Matrix medicine

Living matrix concept and its role in conducting energy from place to place within the body. We will discuss in detail the scientific basis for conduction of charges through the matrix and recent work from Germany on the conduction of light through acupuncture meridians. This leads to a discussion of the ways cells sense and respond to light and the significance of light in the healing process. We will also explore the role of the matrix in traumatic memory, and energetic approaches to trauma resolution. Practicals will explore the role of the living matrix in sensation and perception.

Afternoon Session 1:30=4:30

Body scanning and regeneration

Advanced energy therapy techniques enable practitioners to scan the body to locate sites of injury or trauma. The science behind this remarkable phenomenon strengthens the experience. This leads to consideration of the mechanisms of rapid tissue regeneration based on the long tide of the cranial/sacral rhythm. The discussion will include the properties of scalar waves, the quantum plenum and the mechanisms involved in prayer and distant healing. Practicals will focus on body scanning, production of scalar waves from the hands and tissue regeneration.

Energetics of trauma and trauma resolution

Explore the mechanisms by which the body responds to traumas of all kinds, whether physical or emotional. The matrix is the place that is injured, and it is a reservoir of traumatic memories.

Saturday Evening

March 31

6-10pm

UBC Gardens

**Cost of \$45/person, \$80/
couple – this includes your
mug of Cacao, a 3-hour
Ceremony/Meditation and
delicious, raw snacks
afterwards.**

Combo rate

**James Oschman Full Day
Workshop & Cacao
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Pre-registration

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Awaken Your

Heart



3 Hour Cacao Ceremony & Meditation

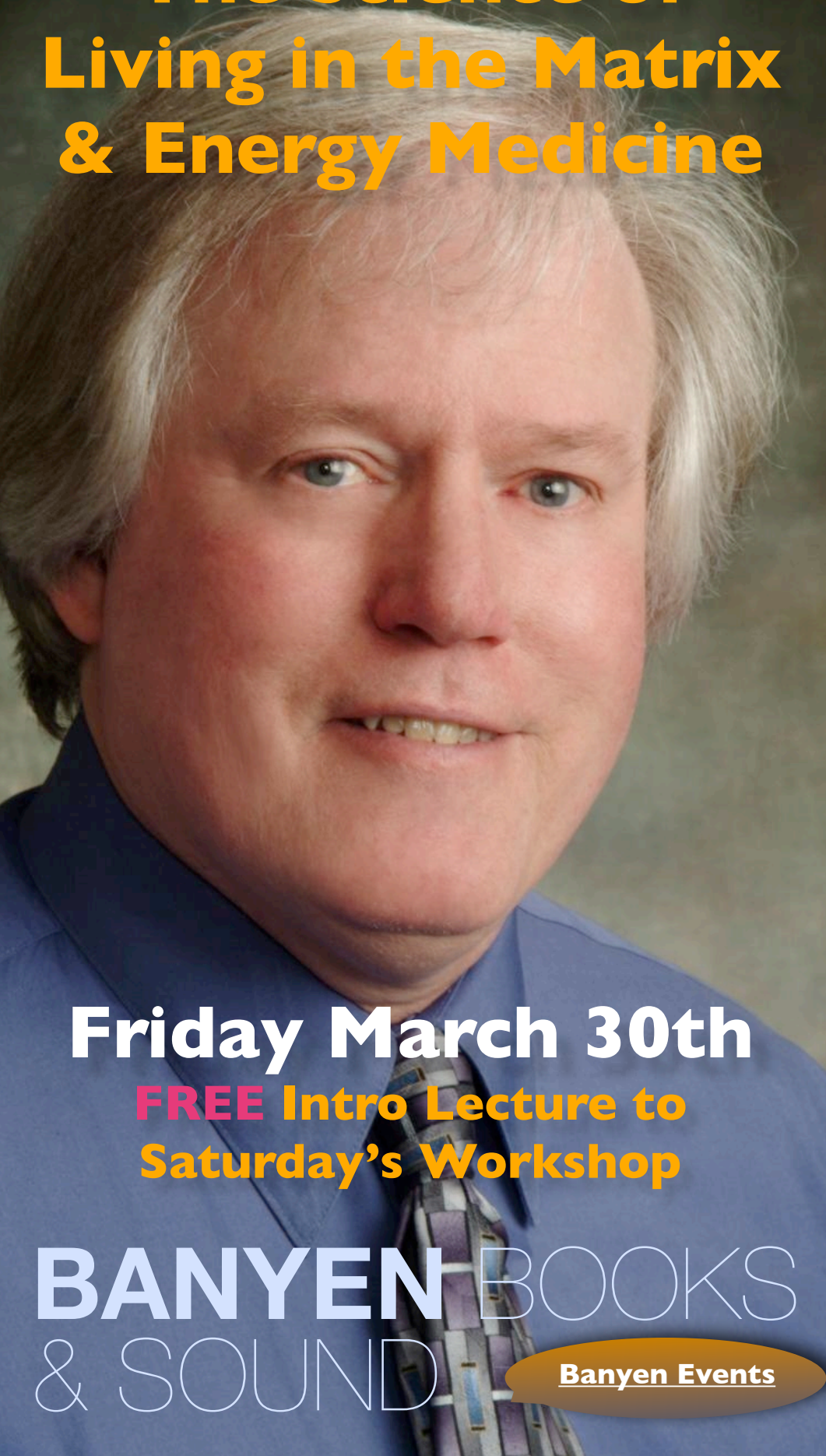
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Cacao “food for the Shift”, in combination with an Awakened Heart Meditation, and the Chakra Ascension Breathing **guided by Paul and Kathie Scott** can be a powerful catalyst for personal transformation. Luxuriate in the Spirit of Cacao, in the earthy essence of the sacred food for the shift! You’ll be amazed – it really is “just chocolate”! Raw cacao actually does everything you’ve ever heard chocolate can do but haven’t ever found in a bar or a box – it is a natural, potent, anti-oxidant, heart-opening super food! Prepared as close to the traditional Mayan way as we know with purified water and a dash of cayenne pepper.

*A “Mother Medicine”
that takes you on a
journey, not a “trip”,*

James L Oschman

The Science of Living in the Matrix & Energy Medicine



Friday March 30th

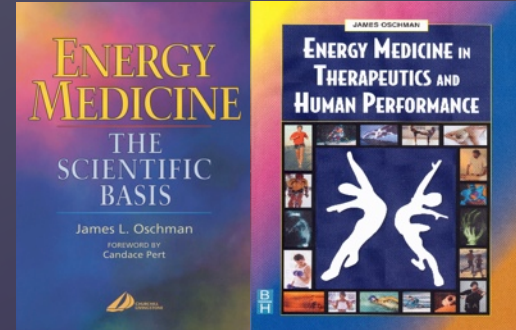
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HEALING FROM WITHIN

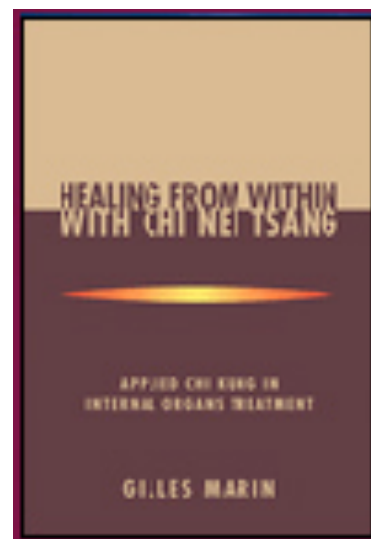


This book comprehensively covers the practice of Chi Nei Tsang, from specific and well illustrated portions on the actual massage practice of the internal organs, to its physical and emotional ramifications for both the practitioner and recipient. Steeped in the Healing Tao system, the book discusses internal dysfunctions and energy blocks and uses the breathing exercises of chi-king, therapeutic manipulations, and meditation. Readers will learn how to recycle negative energy, recognize personal patterns of tension, and use simple manipulations to restore vitality to parts of the body. Chapters describe how to raise Chi with meditation and chi-kung breathing exercises, and the influence of breath on awareness, movement, feelings, and sexuality. Gilles' book delivers specific instructions on methodology as well as observations on general health and well being.

Gilles Marin

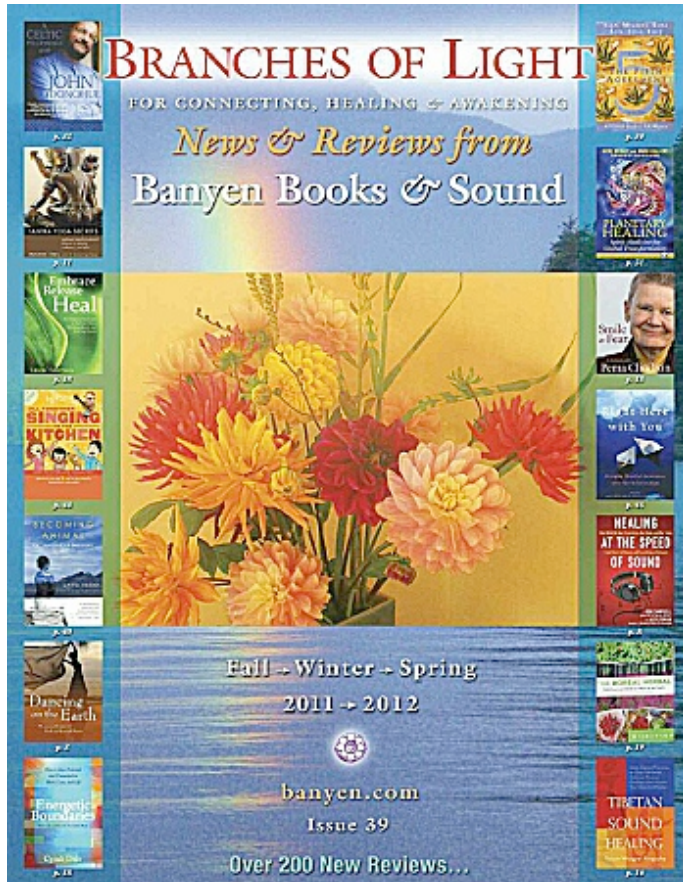
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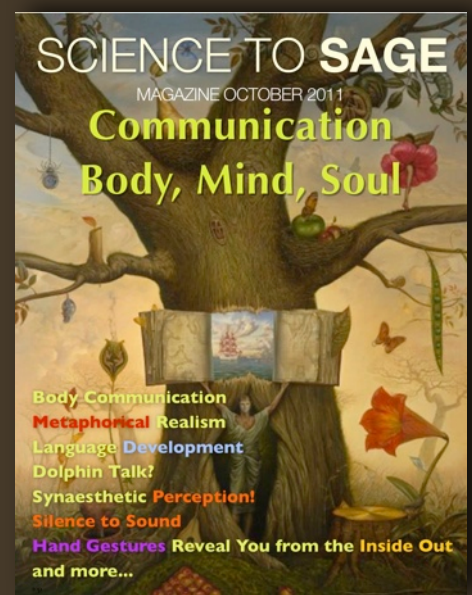
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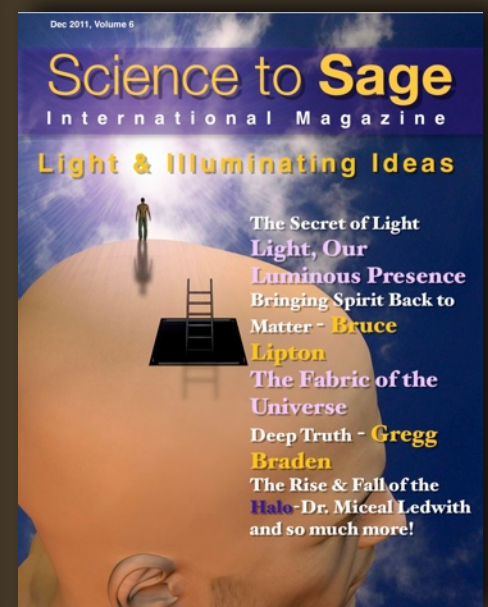
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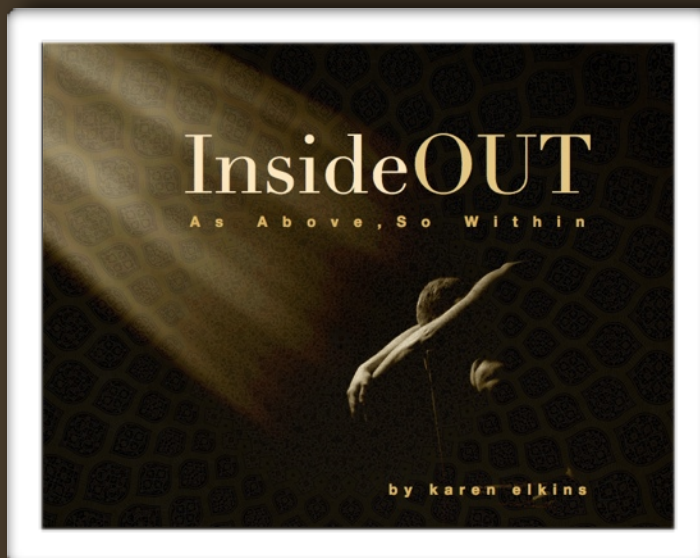
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