# Orthogonal Megatrend Intersections: “Coils” of a Stellar Transformer

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## ABSTRACT

According to the plate tectonic hypothesis, fracture zones (FZs) are considered transform faults that lie perpendicular to mid-ocean ridge axes; that is, they show the direction of seafloor spreading. Bathymetric maps of the Pacific Ocean basin exhibit a multitude of latitudinally trending FZs as well as longitudinally trending FZs on the Pacific plate. By the early 1980s the FZs were found to be active features with magma leakage along trend, which shifted the conception that linear seamount chains must form as hot spot traces. With the inclusion of seamount chains into the FZ trends, coupled with near multi-beam total coverage bathymetry and 1st order Geodetic Earth Orbiting Satellite (GEOSAT) structural trends the concept of intersecting megatrends evolved. Analysis reveals that oceanic rises and plateaus generally sit atop the intersections of these FZs, exhibiting continental blocks, large igneous outpourings, and/or tectonic vortex structures at the intersections. Additionally, these megatrends are shown to continue into the continents, such as the Murray and Mendocino FZs in the northeastern Pacific, intersecting and crossing, the San Andreas Fault trend in California. The intersecting megatrends exhibit magnetic anomaly patterns related to magmatic intrusive/extrusive events not necessarily corresponding to seafloor foundation of Archean (original lithosphere) crust 4 – 2.5 billion years ago. Nor can the plate be spreading in several directions at the same time. Evidence of orthogonally intersecting megatrends coupled with a dubious interpretation of seafloor magnetic lineation age hypothesis leads investigators toward a more robust explanation of tectonic events. By understanding plasma tectonics is driven by space weather in which these orthogonal FZs act as “coils” of a stellar transformer, a new paradigm emerges linking solar induction and space weather as drivers of seismic and volcanic energies such as earthquakes and magma production.

**Keywords**: Fracture Zones, Megatrends, GEOSAT, Orthogonal Intersections, Bathymetry, Stellar Transformer, Solar Induction, Plasma Tectonics

## 1. INTRODUCTION - STATEMENT OF FACTS

By 1966 pundits had presented us with the plate tectonic hypothesis based on sketchy magnetic lineaments in the Gulf of Alaska coupled with a rudimentary outline of several fracture zones (FZs) in the North Pacific Ocean basin. The FZs were predicted to show the direction of seafloor spreading as they moved away from the influence of the ridge-crossing transform faults. This meant that they were locked and strong; in other words, dead. This was immediately called to question as the proposed FZs in the Pacific Basin (Fig.1 and 2) all converged in a fan-shaped pattern on the west of that basin [1].

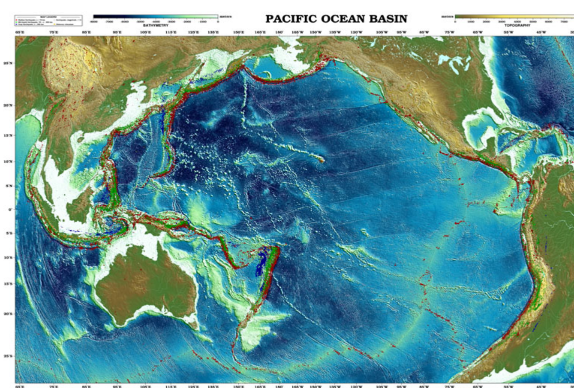


**Fig.1.** The National Geophysical Data Center (NGDC) produced a 1 arc-minute model of Earth’s surface, which includes topography and bathymetry in 2008. Called **ETOPO1** the Pacific Ocean basin orthogonal megatrend patterns become immediately apparent.

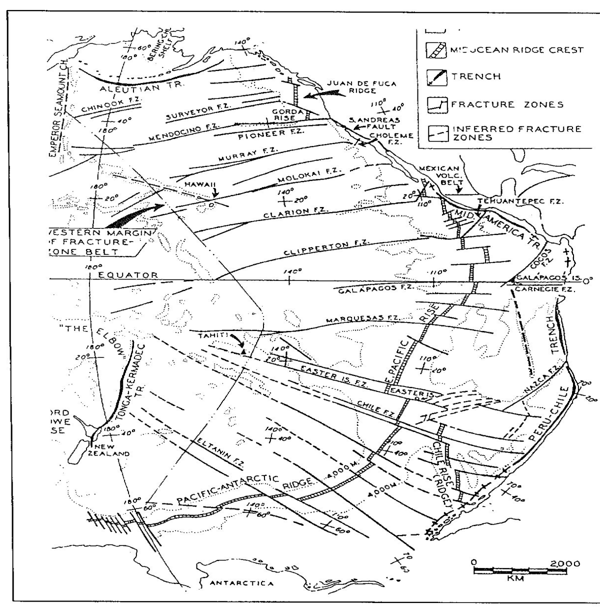


**Fig. 2.** 1972 interpretation of the fracture pattern for the Pacific Ocean basin. The Meyerhoffs, father and son [1], were completely ignored when they questioned the utility of explaining the direction of seafloor spreading. They realized that the Pacific “plate” could not be spreading in multiple directions.

Obviously, for the hypothesis to fit FZs must be parallel on the same plate as the seafloor could not be spreading in more than one direction at any given time for that particular plate by definition. Of interest here, too, is the huge region in the western Pacific of the Jurassic and Cretaceous Magnetic Quiet Zones in which no anomalies were found at this early date [2]. Neither had any reliable rock ages been found from the scarce material that had already been sampled (any DSDP or ODP volumes). Additionally, no spreading ridge occurred between the northern end of the East Pacific Rise and the Juan de Fuca Ridge. This region was home to the major FZs such as the Chinook, Surveyor, Mendocino, Pioneer, Murray, Molokai, Clarion, Clipperton, and Galapagos FZs, all trending ENE-WSW, stopping at the mythical Darwin Rise, and all north of the equator [3, 4, 5]. Those in the southern hemisphere include the Easter, Chile, Eltanin, and Udintsev FZs, the paucity of which may be a factor of little or no bathymetry. They generally trend ESE-WNW.

## 2. MEGATREND CONSTRUCTION HISTORY

Ocean floor mapping of the northern Gulf of Alaska by the USS PIONEER and multi-beam sonar mapping of the northern and western Pacific basin by the USNS MICHELSON and the USNS DUTTON in the 1970s introduced the NNW-SSE trending FZs into the data base of the already well-known San Andreas and Queen Charlotte transform faults on the same axis (Fig. 3). Those included the Kashima FZ (originally named Heffner's Fault; [6], the Mamua, Krusenstern, Stalemate/Emperor [7], Rat Island, Amlia, and Adak FZs. Non-parallel hotspot trails of linear seamount chains had also been delineated, such as the Emperor Seamounts, Hawaiian Islands, Ratak and Ralik parallel seamount/island chains, The Louisville Ridge, Line Islands, Liliuokalani Ridge, Tuamotu and Tubuai chains, etc. All were explained as the difference between relative and absolute plate motion over the proposed hotspots with a change in direction at 43 Ma.

Surveys in 1982/83 found seamounts/volcanoes being formed along the Murray and Mendocino FZs, thus belying the idea of locked and strong features [8]. Several exercises, such as using the guyot heights across the NW basin and combining the linear seamount chains lying in a direct line with the FZs, eventually produced the idea that the E-W FZs crossed the entire basin and intersected the N-S trending FZs in Fig. 3, [9, 10, 11, 12, 13, 14]. This combination of in-line features was named "megatrends".

Constructing updated structural diagrams of the basin progressed from the use of the Digital Bathymetric Data Base 5-minute grid through the high-pass filtered Geodetic Earth Orbiting Satellite (GEOSAT) data (Fig. 4) and onto enough multi-beam data to update the General Bathymetric Chart of the Oceans (GEBCO) charts allowed for a re-interpretation of tectonic events for the Pacific basin [15, 16, 17]. This has since been updated to the ETOPO-1 database (Fig. 1). With very little accurate bathymetry in the southern Pacific basin, the structural trends, which have been verified by comparing those in the North Atlantic to the total coverage bathymetry, are valuable tools in making any kind of determination in relation to the regional tectonics. Be aware that, highly heated, or very active ridge systems such as the East Pacific Rise, features are not well delineated in the GEOSAT data set, since the a lower density reduces the gravity signal (Fig. 4).

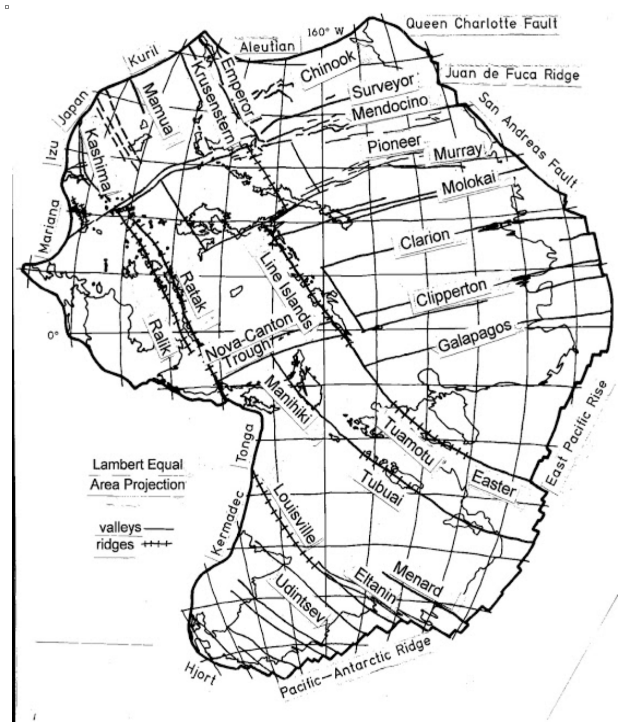


**Fig. 3. 1988 Pacific Megatrend Pattern** utilizing multi-beam and single-beam sonar data, even though southern ocean data coverage were sparse to non-existent. The 43 Ma bend in the Hawaiian Emperor seamount chains were extensions and parts of fracture zones indicating basin-wide lineaments now intersected others [18].

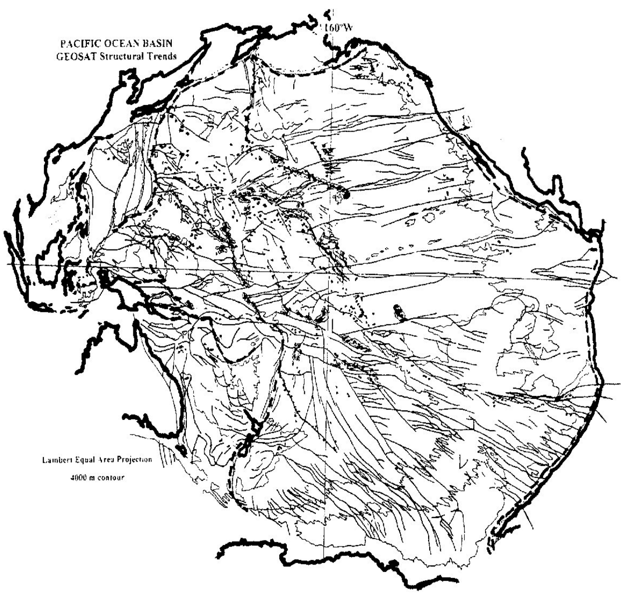


**Fig. 4. 1995 High-Pass Filtered GEOSAT Structure** diagram of Pacific Basin. Most of the trends directionally splay from the trenches on the west to North and South American continents to the east, splaying at the distal ends. The morass of the seamount clusters in the NW basin is now brought more clearly into focus. Other ocean basins appear to be different ages than the Pacific basin, which has been declared to be at least 650 Ma. Fracture patterns in the Antarctic, Indian, and Atlantic basins also appear different implying the "coils" of the Stellar Transformer may have had different orientations in the past [19].

## 3. ORTHOGONAL MEGATREND INTERSECTIONS

The Murray and Molokai FZs come off their intersections with the San Andreas Fault and pass through the Musician's Seamounts and the eastern Hawaiian Ridge to intersect with the downward trend of the Mamua and another FZ to the west of that [20]. This influences the formation of the Mid-Pacific Mountains (Fig.5). To the west of that, following the Kashima FZ south through the Mapmaker seamount province and the Marcus-Wake seamounts/guyots leads to the intersection with the Mendocino FZ where the Ralik and Ratak (Marshall-Gilbert) seamount chains begin. This is central portion of the middle of the mythical Darwin Rise [4, 5, 12] where the regional base depth is about 5500m. The megatrend continues into a large province at the juncture as the Mid-Pacific trend crossing the Clarion FZ at the Magellan Plateau and intersecting the Clipperton and Galapagos FZs at the Manihiki Plateau.

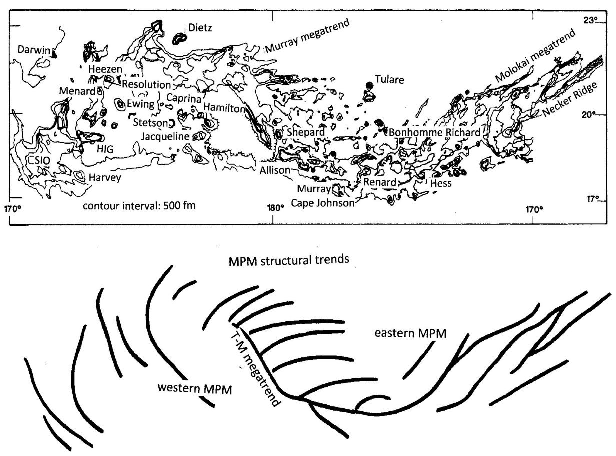


**Fig. 5. Bathymetry (top) and Tectonic Diagram (bottom)** of trends in the Mid-Pacific Mountains. Specifically, notice that the passage of the M-T megatrend from the NNW has heavily influenced the overall tectonic configuration of the center of the feature [11].

Features (Fig. 6) in the north-central Pacific Basin (30°-55°N; 155°E-175°W) expand on the aberrations [21]. Beginning at the Kuril and Aleutian trenches, the Obruchev Rise lies on a general NW-SE azimuth. It joins with the Emperor Trough (ET) megatrend after being overprinted by the Emperor Seamounts. Sub-parallel megatrends flank the ET, such as the Mamua, Krusenstern, and Stalemate FZs.

Standing by with that thought, the WSW-trending Chinook Trough is actually part of a megatrend by that name. Coming from its intersection with the Queen Charlotte Fault in Alaska, it intersects the SSE trending Emperor FZ into the region of the Hess Rise (HR; Fig. 6), and is possibly one of the leading features building the Shatskiy Rise (SR) as it continues to the Mariana Trench.

South of the HR (Fig. 7) the Surveyor and Mendocino megatrends merge at the southern end of the Emperor FZ. The southerly passing of the Emperor-Easter megatrend is offset and continues at the Liliuokalani Ridge, which passes through the Hawaiian chain, is offset to the west with the intersection of the Pioneer-Murray megatrend. There it becomes the Line Islands (Fig. 2). That trend continues to the SE where it intersects the Clipperton and Galapagos megatrends, passing through the Tuamotu Islands and the Easter FZ to the East Pacific Rise. With the Emperor Seamounts possibly being formed between 43 Ma and 73 Ma, and the Shatskiy Rise being formed about 140 Ma, and the HR being formed by whatever means at about 120 Ma, none of the ages and tectonic scenarios fit. The most practical solution is to have a region saturated with intersecting megatrends underlain by leaky heated channels with zero plate motion.


**Fig. 6. Bathymetry (top) and Structural Diagram (bottom)** of the north-central Pacific basin showing the abundant southeasterly-trending FZs that are associated with megatrends. Of primary interest here is the Obruchev Rise, which joins with the Emperor FZ [20].

A similar exercise is possible with the Udintsev in toto, the Kashima-Ratak/Ralik-Louisville-Eltanin, and the Mamua-Manihiki-Tubuai-Chile megatrends. As of this writing, this exercise in the Indian, Southern, or Atlantic Ocean basins appear to have a different framework, because intersecting fracture/megatrends appear much different in the current bathymetry or the GEOSAT data.

Many of the rises/plateaus seem to be primarily seamount clusters, such as the Dutton Ridge. Most of these have been determined to form in leaky fractures by magma leakage though zones of weakness in the overlying crust. This is particularly true at the intersections. Nelson Guyot in the NW Pacific basin sits atop the intersection of the Kashima [6] and Chinook megatrends. As the Chinook continues westerly, it intersects the southeasterly-trending Udintsev megatrend at the Ogasawara Plateau. As the Udintsev continues southerly, it intersects the Mendocino megatrend in the Dutton Ridge where the gross morphology reflects that crossing, possibly breaking up that plateau into the ridge [17, 18]. It may be the agent responsible for producing the western portion of the Ontong-Java Plateau before its passage is engulfed by the eastward migration of the trench system.

In keeping with the theme of this treatise, we question the origin of the rises and plateaus in relation to the intersections. Did they extrude through large weaknesses in Earth's crust? Does a layer of granite underlie the oceanic basalt layer? Has the original crust, whatever it may have been, been transformed by external forces, such as lightning from interplanetary discharges? Some of these intersections may be related to the plasma tectonic explanation as being coils of a stellar transformer. We also question why, with the San Andreas and Queen Charlotte Faults having already been known by 1966, why the intersections were not called to question in the formulation of the plate tectonic hypothesis. WHY?

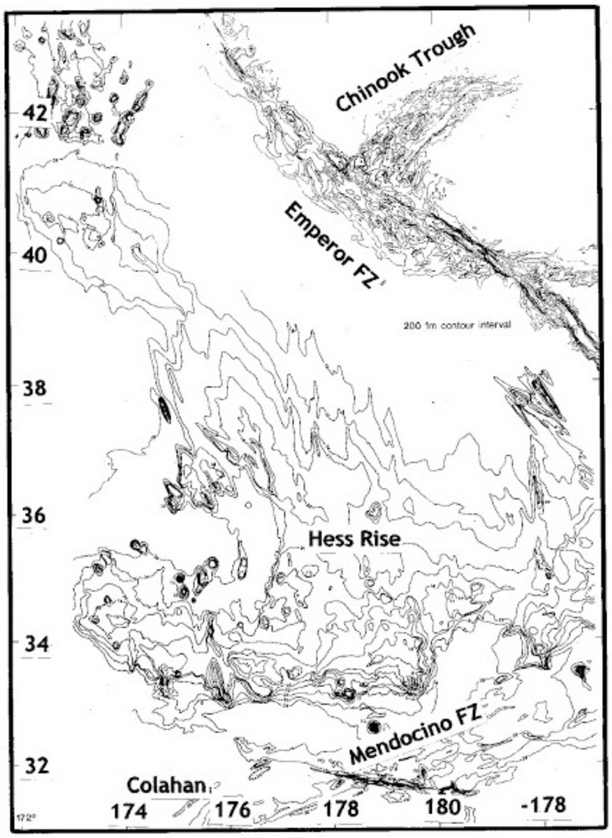


**Fig. 7. The Primary N-S Axis is Built by Fracture Leakage** of the fracture swarm megatrend coming out of the Kamchatka Peninsula. From the HR to the SR the Chinook megatrend is overprinted in the bathymetry. It does not appear in the GEOSAT data either, so it was probably the first in the region, and the HR was possibly built at a later time. Smaller sets of trends, such as the four small ridges on the north of HR [22], influence trends in the Emperor Seamounts and SR.

The Murray and Molokai FZs (Fig. 2 & 3) pass through the Musician's Seamounts and the eastern Hawaiian Ridge to intersect with the downward trend of the Mamua and another FZ to the west of that [20] and influence the formation of the Mid-Pacific Mountains. To the west of that, following the Kashima FZ south through the Mapmaker seamount province and the Marcus-Wake seamounts/guyots leads to the intersection with the Mendocino FZ where the Ralik and Ratak (Marshall-Gilbert) seamount chains begin. This is central portion of the middle of the mythical Darwin Rise [12, 4, 5] where the regional base depth is about 5500m. The megatrend continues into a large province at the juncture at the Mid-Pacific, crosses the Clarion at the Magellan Plateau, and intersects the Clipperton and Galapagos at the Manihiki Plateau.

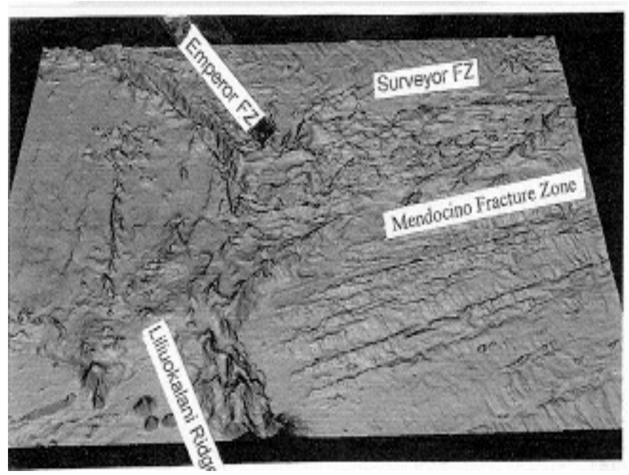


**Fig. 8. The Southern Boundary of HR** is clarified by using a 3D program, which employed anti-aliasing filters, a minimum curvature spline algorithm to generate a regional field, and a merge algorithm to blend input and region data to produce the final output grid. This was made possible by the original surveys with the 1°-beam width sonar package on a close order line spacing that ensured total bottom coverage. Now no confusion exists as to the geomorphology of intersection tectonics [20].

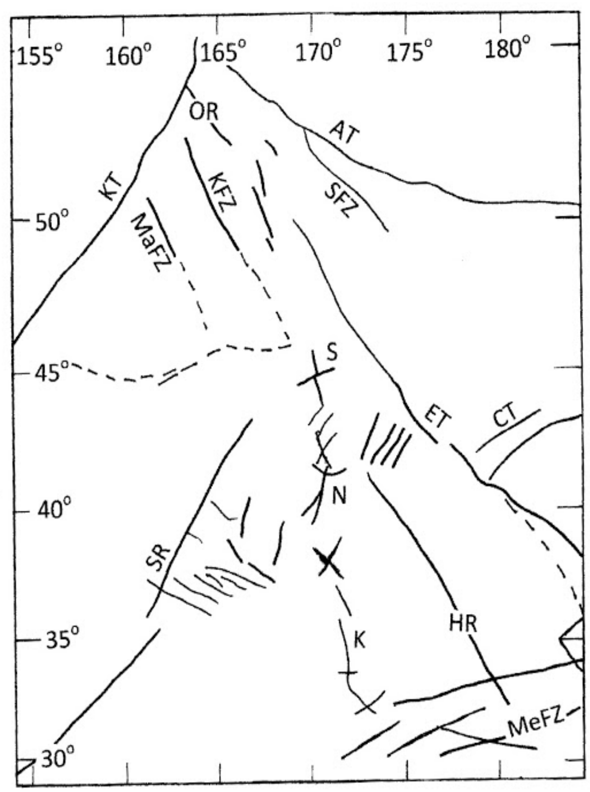


**Fig. 9.** By combining the original Fig.2 with the updated data from Fig. 3 and the total-coverage multi-beam sonar survey data this 2012 breakout map of the northwest Pacific demonstrates the fallacies of the plate tectonic hypothesis while reinforcing the intersecting megatrend idea [21].

Smaller sets of trends, such as the four small ridges on the north of HR [22], influence trends in the Emperor Seamounts and SR. The dashed line on the 45°N latitude line is from the GEOSAT diagram, and it is a trough. Last, the smaller chains of seamounts in the central SR lie on yet another azimuth.

With the Emperor Seamounts possibly being formed between 43 Ma and 73 Ma, and the Shatskiy Rise being formed at a triple junction about 140 Ma, and the Hess Rise being formed by whatever means at about 120 Ma, none of the ages and tectonic scenarios fit. The most practical solution is to have a region saturated with intersecting megatrends underlain by heated channels.

Plateaus and rises mostly occur at the orthogonal intersections, features such as the Ontong-Java, Ogasawara, Kerguelan, and Manihiki plateaus and the Hess, Shatskiy, Rockall, and Obruchev rises. These features have all been sampled profusely by the DSDP and ODP investigators along with many grab samples. Many of these features appear to be something other than basaltic in nature; that is, they are granitic. Some have been called sundered continental fragments.

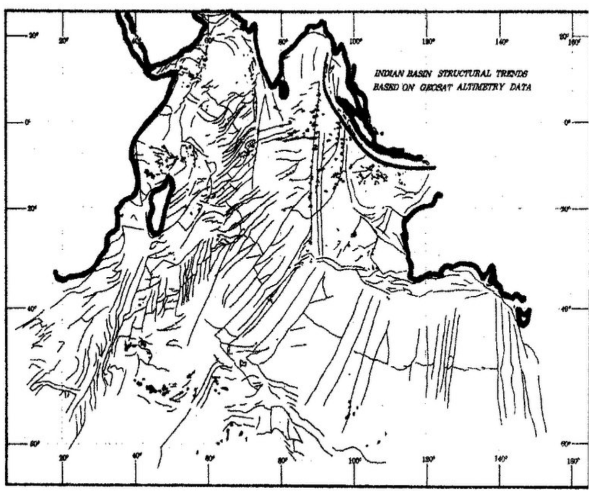


**Fig. 10. 1995 high-pass filtered GEOSAT Structural Diagram** of the Indian Ocean basin [19]. The Rodrigues triple junction lies in the center. Primary alignments here are the Central Indian Ridge with the 90-east ridge and the Chagos-Laccadive Ridge. The large orthogonal intersection on the Antarctic region is home to the Kerguelan Plateau.

Figures 10 and 11 carry the GEOSAT structural trends into the Indian and Atlantic basins, neither of which display the absolute orthogonal intersections of the 750 million year old Pacific Basin. The fracture alignments in the Indian basin (Fig. 10) are confused by the inclusion of the three different Indian ridges and the composition of a huge vortex structure, the Rodriguez Triple Junction just west of Madagascar. The Atlantic basin (Fig. 11) does show the braiding, anastomosing pattern of the megatrends however and their orthogonal intersections with the Mid-Atlantic Ridge. These "Coils" of a Stellar Transformer may have been organized much differently when these Ocean Basins were formed or have possibly been modified by some more recent event or cataclysm, yet to be understood or explored. The opposing orthogonal patterns in the North vs. South of the Atlantic Basin implies some difference in the "Coils" possibly confined to the northern vs. southern hemispheres long ago.

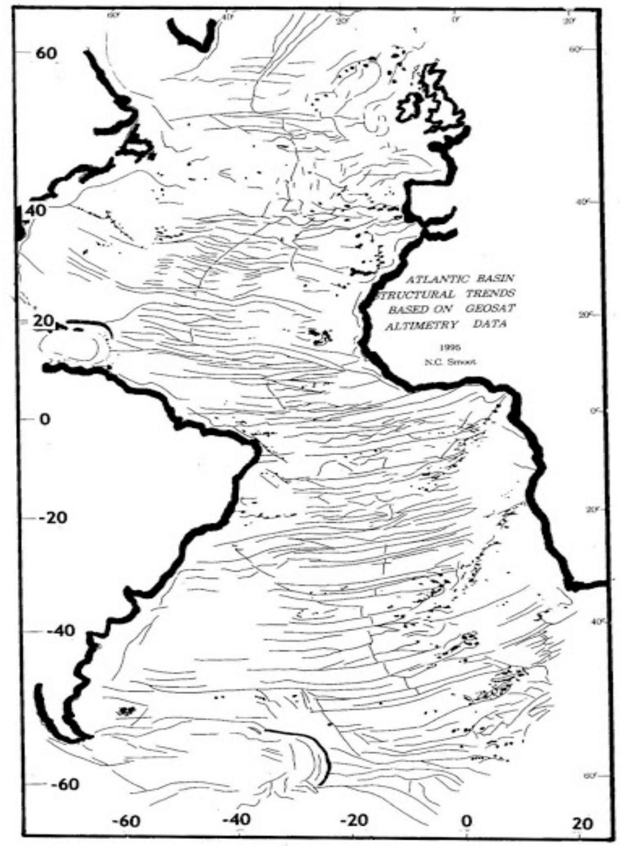


**Fig. 11. 1995 high-pass filtered GEOSAT Structural Diagram** of the Atlantic Basin showing non-linear alignments of the fractures [19].

## 4. "COILS" OF A STELLAR TRANSFORMER

*Electro-Magnetic* or *Magnetic* induction is the production of an electromotive force, or voltage, across an electrical conductor in a changing *Magnetic* field. The *Stellar Transformer Concept* [23, 24] (Fig. 12) contends that simple step down energy induction occurs between sun and earth, much like the transformer process that steps down your household energy from higher voltage transmission lines sourced from the power company.

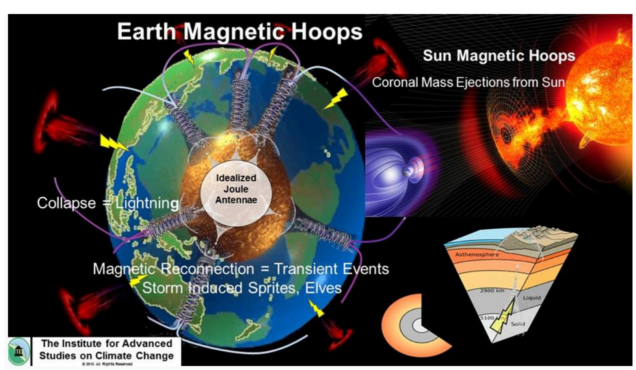


**Fig. 12. Earth as a Stellar Transformer** idealized *Plasma Core Planetary Electronics* based on Sea Urchin Spike Model [25] as anodes tufts (Safire Project 2017 http://safireproject.com/) See: *Electric Universe 2015* Presentation https://www.iascc.org/free-stuff.

The sun would represent a large coil from the power company, while the earth represents the smaller coil to your home. The larger coil element generally excites current into the smaller coil element by induction of "step down energy". Layers within the Earth hold and release charge acting as condensers, or capacitance layers. *Thus the larger Stellar Transformer hypothesis concludes that induction characteristics are determined by the Earth's **Magnetic Moment**[1] representing the Magnetic strength and orientation that produces Magnetic field current alignments between layers in the Earth and polarity and field strength* primarily considered in relationship to the Sun and Moon and to a lesser extent other planets related to the total Interplanetary Magnetic Field (IMF) within which the Earth resides. Vector induction components of torque generating power for Earth's magnetic moment are outlined below.

Earth's Vertical (z) induction effects, associated primarily with magnetic moment linked to Sun-moon tidal variations affecting volcanic and magmatic electric joule energy production of sea-urchin spines or anode plasma tufts. Considered connectors between the oppositely (+/-) charged double layers of the radial-toroidal **(E)** and axial-poloidal **(E)** electric fields. Using a model similar in nature to a "sea-urchin", Gregori explains the propagation of electrical "Joule" energy along these "sea urchin" spines (Fig. 12 and 13) to Earth's core and geologic hotspots around the globe [25].

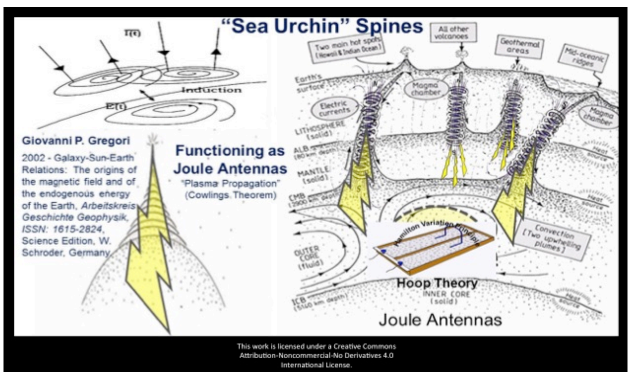


**Fig. 13. Earth "Internal" Sea Urchin Spike/Antenna** Adding to conventional Earth Model the concept of electrical potential joule spikes emanating from a plasma core. [25].

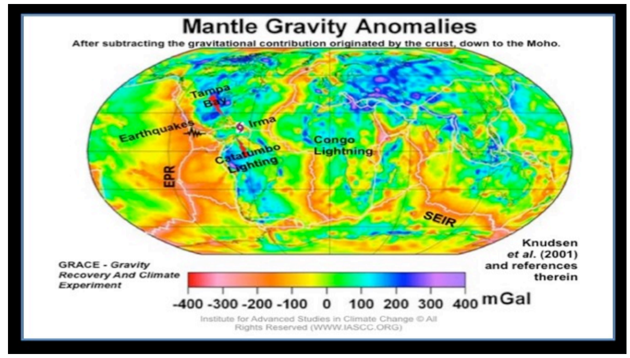


**Fig. 14. Mantle Gravity Anomalies** from GRACE satellite mission data [26] indicate East Pacific Rise (EPR) polar and continental circuit connections to Catatumbo, Tampa Bay *Lightning* anomalies, and Southeast Indian Rise (SEIR) connections to the African Rift/Congo global lighting anomalies.

Earth's Axial (y) dipole induction effects of the poloidal **(E)** electric field primarily on polar connected north-south circuits of the mid-ocean ridges, western Pacific rim, and inner core, associated with magnetic moment of the total field strength and polarity variability of mostly the sun, moon and planetary orientation can be large especially as related to position of Earth's liquid outer core. A direct coupling with the Earth's most powerful induction current elements occurs within its mantle and inner/outer core. Mantle circuit trends can be mapped with satellite mantle *Gravity* imaging of the thermal signatures given off by induction current elements of the mid-ocean ridge circuits (Fig. 14).

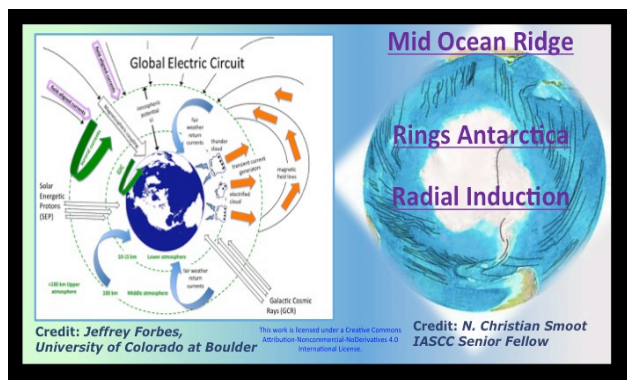


**Fig. 15. Global Electric Circuit** Conventional Model includes Ground Inductions Currents (GIC) magnetically coupled to Aural Ring Currents torqued by Field Aligned Induction currents from magnetosphere coupling to solar forcing. (Forbes, J. - University of Colorado – Boulder). Step down aurora energy to the Mid-Ocean Ridges encircling Antarctica would generate powerful radial ground induction currents (Smoot, N.C. - Sr. Fellow IASCC).

Earth's Radial (x) induction effects of the toroidal **(E)** electric field, associated primarily with variations of the magnetic moment of solar winds magnetic field strength and polarity variability primarily affecting Earth's outer core and E-W oriented **"orthogonal" fracture systems are the "COILS"** of the Earth component of a Stellar Transformer. IMF polarity determines which othogonal system swithes on and the direction of energy flow through the planet, indicating earth is set in an *Alternating Current (AC)* space environment. The south pole has most energy transfer from a ring effect along the

[1] The ***Magnetic Moment*** is defined as a quantity that represents the *Magnetic* strength and orientation of a magnet or other object that produces a *Magnetic* field. The *Magnetic Dipole Moment* of an object is defined in terms of the torque the object experiences in a given *Magnetic* field. The strength and direction of this torque depends not only on the magnitude of the *Magnetic Moment* but also on its orientation relative to the direction of the *Magnetic* field and is therefore ***considered a vector***. The direction of the *Magnetic Moment* points from the South to North Pole within the magnet in this case the Earth. The magnetic field of a *Magnetic Dipole* is proportional to its *Magnetic Dipole Moment*. The dipole component of an object's magnetic field is symmetric about the direction of its *Magnetic Dipole Moment*, and decreases as the inverse cube of the distance from the object. The strength of a *Magnetic Dipole* is called the *Magnetic Dipole Moment*. ***Considered a measure of a dipole's ability to turn itself into alignment within a given external magnetic field.*** In a uniform magnetic field, the magnitude of the dipole moment is proportional to the maximum amount of torque on the dipole, which occurs when the dipole is at right angles to the magnetic field. The *Magnetic Dipole Moment*, often simply called the *Magnetic Moment*, may be ***defined then as the maximum amount of torque*** caused by magnetic force on a dipole that arises per unit value of surrounding magnetic field in vacuum (Wikipedia & Britannica).

ridge encircling Antarctica (Fig. 15). In space above the earth's poles the aurora plasma rings, induce ground currents within the mid-ocean ridges, especially the mid-ocean ridge encircling the South Pole *(Radial Induction)*, transformer **"COILS"** (Fig. 15).

Joule energy in this sense means "electrical energy" at the termination point results in heating, like a soldering iron or element, i.e. a "shorted circuit". The Sea-Urchin *Plasma Core* concept has now been confirmed with "Star in a Jar" developments like the Safire Project, http://safireproject.com/, which shows the development of plasma anode tufts in organized energy patterns as the Sea-Urchin model predicts. Repulsive forces in the anode tufts control their energy geometry. While the induction energy mechanism is the key to internal forcing [25, 27].

The induction characteristics are determined by current alignments between layers in the Earth and polarity relationships between of the Earth, Sun and other planets. The alignment and polarity determine the attraction or repulsive forces in *Plasma Core* physics and determine charging and discharging forces on our planet (Fig. 12, 13, 14, and 15). Fig. 12 conceives an idealized *Plasma Core Model* of *Earth as a Stellar Transformer*.

Each vector has a primary effect when considered as separate vectors, but in reality, these are not separable circuits and should be considered together as coupled with the Sun's total variability and output, and ideally with position and magnetic fields of the moon and other planets. To simplify, understanding of the relationships, solar coronal holes that are aligned with the Sun's north-south polar axis can be considered axial induction elements, while those aligned with the equator can be considered radial induction elements. Many coronal hole configurations represent some combination of the axial and radial elements. This is important to understand because the elements on Earth are directly energized by alignment relationships between these Sun and Earth elements controlled by magnetic moment orbital physics. These dark coronal holes on the Sun represent the induction current elements of our ***Solar Stellar Transformer*** (Fig. 16), charging/discharging the Sun from elements within the arm of our spiral galaxy and thereby the Solar System including Earth, via electro-magnetic wavelength and frequency response, within an Electric Universe framework [28]. *The alignment and polarity determine the attraction or repulsive forces in plasma physics and determine charging and discharging forces on our planet.*

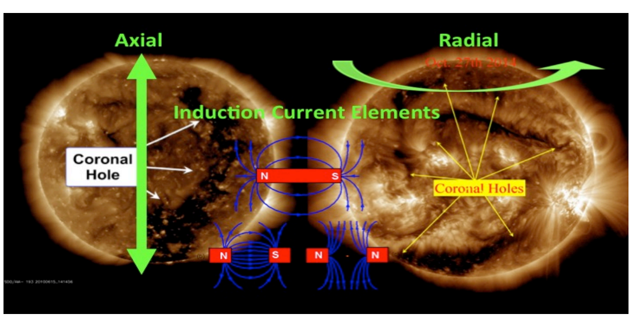


**Fig. 16. Solar Stellar Transformer Coronal Hole Induction Current Elements** express induction elements in axial vs. radial orientations determining axial vs. radial affects on Earth systems. Polarity determines attractive/repulsive force determining charging/discharging relationships [23, 24].

## 5. CONCLUSIONS

With the inclusion of the orthogonally intersecting megatrends and the fallacies associated with calibrating the magnetic anomalies on the ocean floor, one has to seek umbrage under some other tectonic explanation for the existence of these anomalous findings. The existence of oceanic plateau and rises at many of these intersections leads the astute investigator to examine those features more circumspectly, especially the rock compositions. Many are more granitic. This could be sundered pieces of continents. It could also be the result of some physical force that has as yet been undecided, or even undiscovered. A hypothetical conclusion proposed is that electric transmutation of original crust by global plasma events may produce granite not only mid-ocean, but likely continental elements as well. Thus, ocean basin orthogonal fractures are in-line with, and correspond to, the coils of an ***Earth-Sun Stellar Transformer***, where anode tuffs or "sea-urchin spikes" emanating from Earth's core intersect the coils.

As a result, magnetic moment alignments of Earth's North-South tectonic ridge system with the Sun can influence our daily weather via a noon-midnight induction of lightning on the continents. The implications to humanity are that *Stellar Transformer* concepts can be implemented with an improved understanding of common *Electro-Magnetic* denominators associated with *Space Weather* hazards such as; *Electro-Magnetic Pulse (EMP)*, communication problems, general every day and extreme weather events, i.e. *Hurricanes*, *Tornadoes* associated with the variable frequencies of *Climate Change*, *Earthquakes*, *Volcanoes*, and certain types of wildfire outbreaks associated with *Coronal Mass Ejections (CME's)*, but these is the subject of a further discussion.

## 9. REFERENCES


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