

Vortex Tectonics: The Primary Factors Which Govern Earth Dynamics

The occurrence of earthquakes, volcanism, El Nino syndrome, global warming, and the phenomenon of plate tectonics are now explained in a new model of Earth dynamics which provides the ability to predict dangerous periods of peak earthquake activity, the onset of El Nino, and other geological phenomena.

By
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Abstract

This article is based on correlations between activities in the Earth which are easily seen in 22 graphs. The graphs directly demonstrate that most major tectonic activity, including earthquakes, volcanism, El Nino, and global warming phenomenon is caused by the motions of the crust of the Earth as it wobbles and changes its location and orientation relative to the spin axis in response to the gravity of the moon and the sun. In other words, most major tectonic and environmental change is a consequence of the changing location of the poles. The graphs also directly and elegantly confirm the validity of Edgar Cayce's remarkable 1930's predictions that long range geological changes would occur after 1958 and culminate in a shifting of the location of the poles during 2000 or 2001.

Prediction: El Nino Onset Timing: It may commence during the early months of 2001 but the erratic nature of the current motions of the spin axis of the Earth may delay the onset until 2002. (Page 32)

Summary

Correlations are presented in this paper through a series of 22 graphs which demonstrate that earthquake, volcanic, and El Nino (ENSO) phenomenon are directly linked with the wobbling motions of the Earth's spin axis. The obscure

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but well documented wobble in the spin axis (the North and South Pole), which is known as Chandler's wobble, drives most major tectonic activity of the Earth in accordance with 14 month and 6.5 year wave fluctuations induced by orbital variations between the Earth, Sun and Moon.

Findings presented in this article include: (1) The 14 month cycle (defined as the X or Y Wave) and 6.5 year waveform (defined as the Primary Axis Cycle) in Chandler's wobble directly induce earthquakes and volcanic activity and this fact in principle makes possible the prediction of the most probable "windows" for major seismic activity for any area. (2) The rhythm of volcanic activity in major arcs and groups of volcanoes directly reflects the tempo of the Primary Axis Cycle. (3) The El Nino (ENSO) phenomenon parallels the rhythm of volcanic activity, is directly created by the 6.5 year Primary Axis Cycle, and it usually commences at the same cyclical moment in the repeat upswing of the 6.5 year Primary Axis Cycle. Accordingly, in principle, the El Nino onset periods are predictable. (4) The current progressive movement of the location of the spin axis since ~1900 appears to be inducing a major escalation of earthquake activity and volcanism which is creating the much discussed "global warming" phenomenon.

With these seminal findings, this article establishes the paradigm of Vortex Tectonics as the basis for explaining the driving mechanisms behind the major tectonic features of the Earth. In the same way that plate tectonics succeeded static geology because of a superior grasp of the breadth of geological phenomena, Vortex Tectonics will be adapted because it consistently and comprehensively explains how plate tectonics in fact works. The new paradigm will ultimately succeed because it provides a basis for predicting major occurrences of tectonic activity, a power which eluded 20th century science and the types of geological reasoning which were prevalent during the last few decades.

Accordingly, within the framework of the correlations which have been demonstrated in this article, a forecast is presented for the onset of the next El Nino.

Beyond explaining how the activity of the Earth currently is driven by the changing location of the spin axis, Earth scientists can and should apply the principles of vortex tectonics to the paleogeological evidence (records in the rocks, fossils, and ice) to synthesize a more complete, more accurate history of the Earth.

Work being done on ice cores, shoreline measurements, and other phenomenon by many researchers in many specialty fields are currently generating an abundance of evidence which points to a long succession of past sudden dramatic changes in climate, shorelines, and the locations and margins of continental ice sheets. Theories of climate change utterly fail when confronted by such evidence. But vortex tectonics easily correlates most such evidence into a pattern of irregular sudden shifts in the location of the spin axis which generates most of the major tectonic features of the Earth, the last major one of which occurred in ~10,500 BC.

The ability offered by vortex tectonics to use a unified set of principles with a common set of data to explain current and past tectonic behaviors and evolutionary patterns permits a huge step up in the capabilities of the Earth Sciences and may assist specialists in diverse areas to avoid wasting time in blind alleys and Snipe Hunts connected to climate change and failed concepts such as "self-organizing systems".

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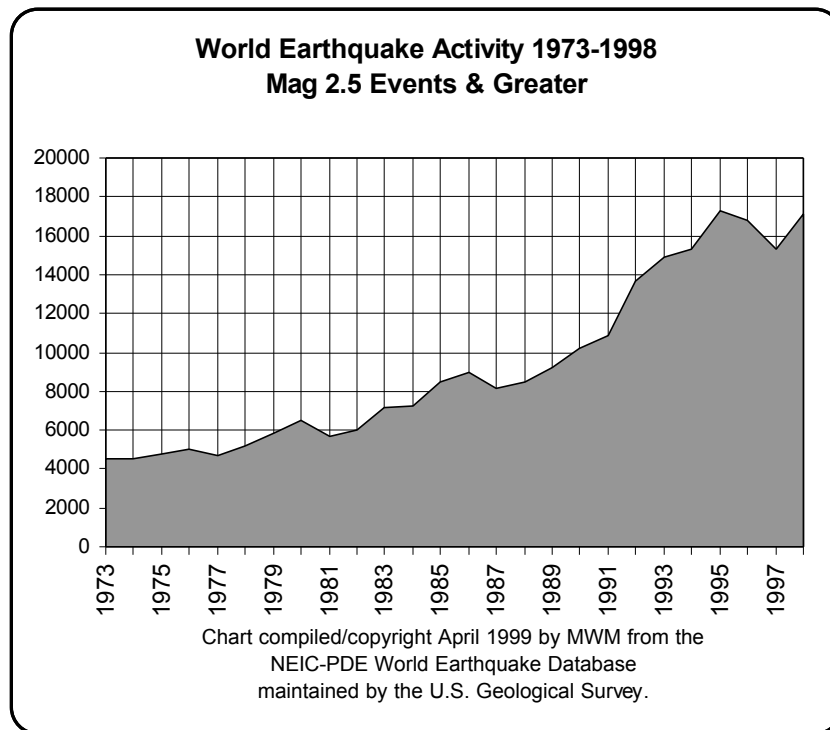
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1. The Anomalous Forty+ Year Acceleration of Earthquake & Volcanic Activity

In an effort to prove or disprove certain comments and predictions made during the 1930's by a well known psychic, Edgar Cayce, the author undertook a study of the Earth's patterns of tectonic activity during the 20th century. Since the only data which permitted an examination of the behavior of the entire Earth were the records of earthquakes and volcanic eruptions, these records were compiled by the author into databases from which two primary summary charts, "Chart 100 Worldwide Trend In Seismic Activity" and "Chart 101 Worldwide Trend In Volcanism" were prepared. Both charts show a dramatic major increase in such activity in a steady progressive upward trend over a period of at least forty years. The increase easily seems to be at least threefold and, after all due quibbling about the adequacies of the statistical samples, a strong case can be made for a fourfold increase in earthquake and volcanic activity.

The methods and scope of this study are recorded in detail in book three of the trilogy of "*The Return of the Phoenix*", which attempts to correlate the findings of geology, geophysics, and archeology with ancient literature and mythology to explain ancient Egyptian stories about the periodic cataclysmic "flight of the Earth-Phoenix".

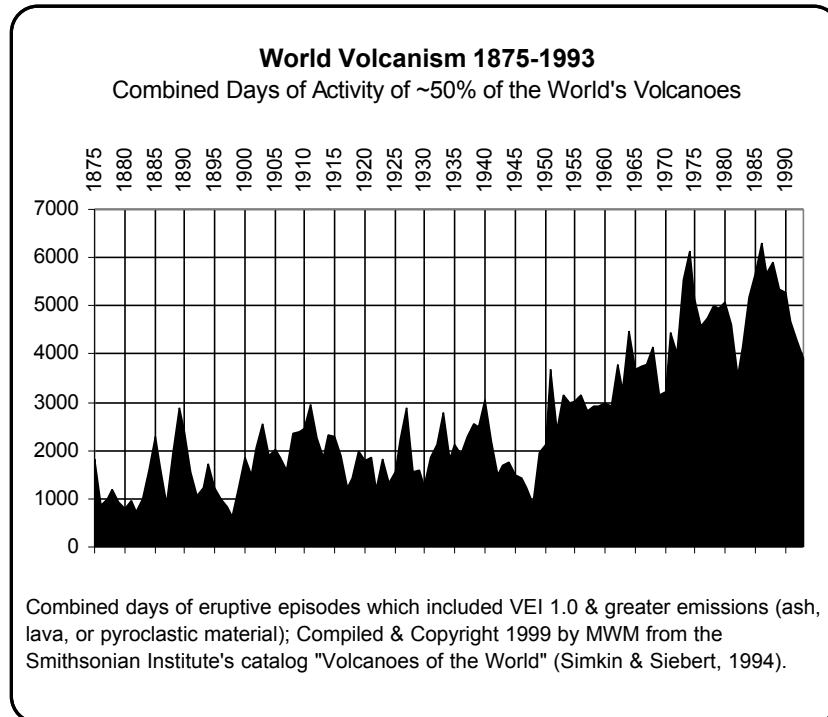
Chart 100 – Worldwide Trend In Seismic Activity



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Chart 100, "Worldwide Trend In Seismic Activity", was carefully constructed to provide a consistent data series since 1973 which avoids "report inflation". It clearly reveals that worldwide seismic activity, defined in this chart as the number of earthquakes of magnitude 2.5 and over, has increased by a fourfold factor.

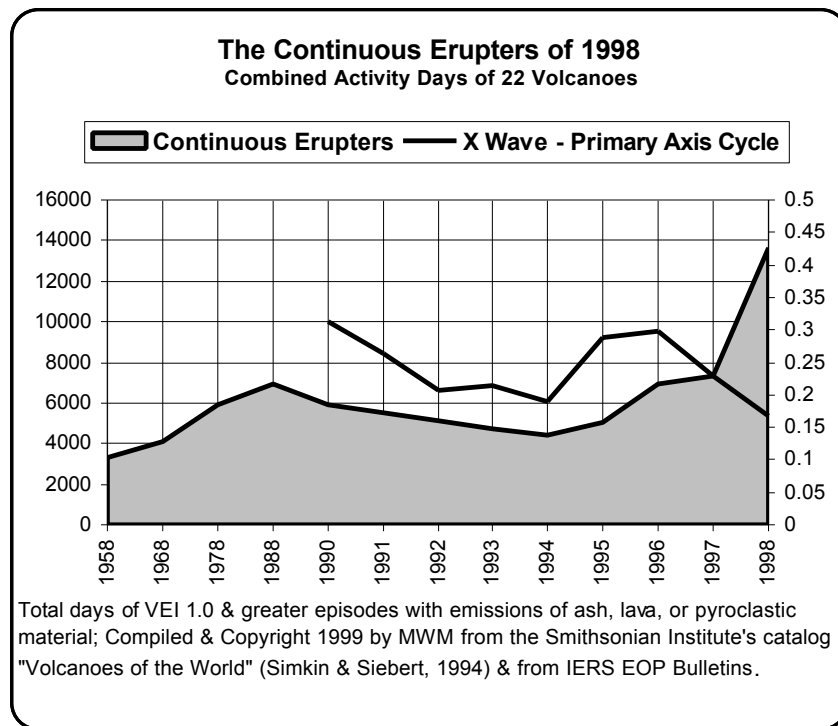
Chart 101 – Worldwide Trend In Volcanic Activity



A study of volcanism shows a similarly large increase in total tectonic activity. The records of the Smithsonian Institute were compiled into a sample of ~50% of the volcanoes of the world with much effort over a considerable period of time. Only those included were those most likely to be consistently monitored and recorded during the past 100 years. Thus extensive volcanism in Kamchatka, the Aleutians, South America, remote areas of Africa and the South China Sea, and of course underwater volcanism, were excluded from the sample. For the sample which was studied, total volcanism is now at least four times greater than was true of the first half of the 20th century. This is most likely true generally of all volcanism.

Chart 103 – The Continuous Eruptors of 1999.

The sample in Chart 101 had to be cut-off at 1992 in order to maintain a consistency of the method of evaluating the activity of volcanoes. Nonetheless other samples and compilations of activity days demonstrate that volcanic activity in the original sample escalated more sharply during the 1990's to reach a total combined activity which is currently well over 14,000 days per year. See for example Chart 103 which shows the combined eruption profile of 22 volcanoes which continuously erupted during 1999. This level of volcanism has continued throughout 2000. Never throughout the 20th century did 22 volcanoes (within the sample of 50% of world volcanoes which were studied) show continuous activity throughout an entire year. Unfortunately, record keeping prior to the 20th century is inadequate to make any conclusion about prior periods.



2. Searching For The Causes In The Trends.

This huge increase in tectonic activity, as manifest in earthquaking and volcanism, confirmed Edgar Cayce's psychic predictions. It also led the author on a long search to better understand the dynamics of the Earth which could explain the increases, the obvious trends, and the jagged sawtooth patterns of the phenomena. The charts make it impossible to avoid posing the rather obvious question. Were the increasing concerns about global warming and the increasing indicators that the Earth was in some manner becoming slightly warmer, which began in the 1970's and has escalated through to today, were these directly proportional to the huge increase in volcanism?

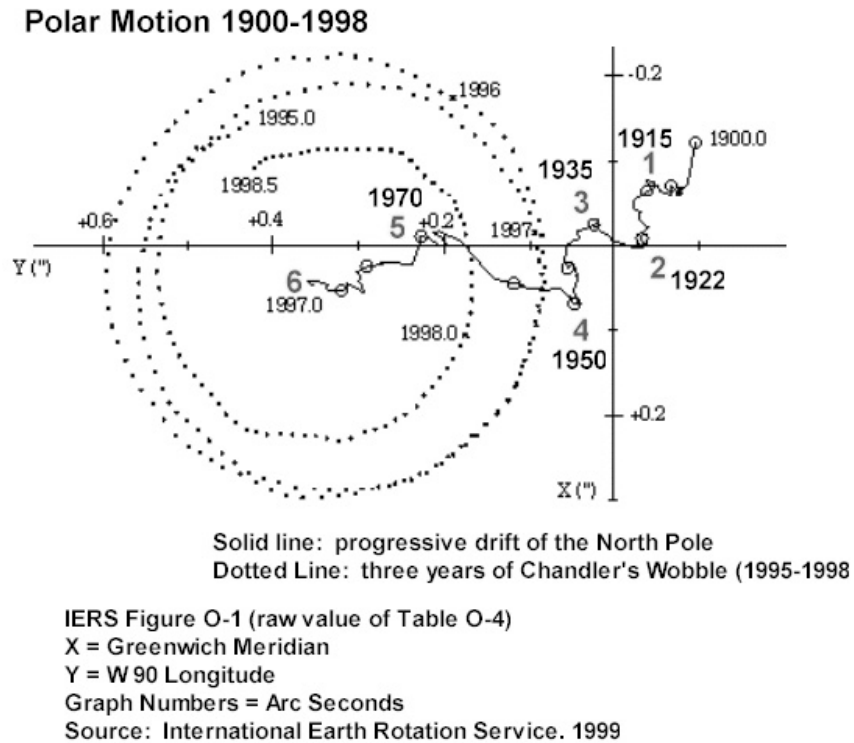
In the search for an explanation, I incorporated the work of Charles Whitten, who was the Chief Geodesist for the U.S. Geological Survey for many years before his retirement in 1972, as well as the "syzygy windows" paradigm which has been pioneered by a professional geologist, James Berkeland. Whitten, in articles published by NOAA during the 1970's, had demonstrated that earthquake activity tends to increase dramatically during a peak of the motion in the wobble of the Earth's spin. Berkeland's work through the 1980's and 1990's has demonstrated that earthquake activity is "phased" into distinct periods of time, which Berkeland calls "windows", by both the alignment of the Moon with the Earth and the Sun as well as by the Moon's distance from the Earth. Accordingly, both Whitten and Berkeland had proven in unique ways that the tectonic behavior of the Earth is influenced directly by the orbital energies of the rotating bodies in the near cosmos of the Earth-Moon-Sun (EMS) System. What to make of this cosmic connection became the foundation stone for the articulation of Vortex Tectonics.

Generally most people think of the North Pole as a stable, fixed point in the exact middle of the arctic circle and that the Earth rotates sedately around it at a constant speed. This is, however, a geographical illusion created by our need for maps. In reality the location of the spin axis is unstable and the axis is constantly changing location by as much as 15 meters (50 feet) a year. It may sound like very little variation but it has hugely profound implications for the brittle shell on the outer surface of the crust of the Earth.

This motion wobbles around an average or mean point which is very close to the geographic point shown on the maps. But this "mean point" is just another fiction because it is also slowly moving, some 4.25 inches (about 10.8 centimeters or 0.0035 arcseconds) each year. Both the wobble motion and the slow creep of the mean point are shown in "*Chart 104: The Spin Axis & Polar Motion 1900-1998*".

It has been well known throughout the 20th century that the wobble is caused by the interaction of the gravity of the Sun and the Moon with the rotating orbital motions of the Earth. These combine to create a constant spiraling motion in the location of the spin axis as it slowly drifts through the Arctic Ocean at 10.8 centimeters per year. Every 6.5 years the circle in the spiral motion is very small, typically about five to ten feet (1.5 to 3 meters or about 0.05 to 0.1 arcsecond) in diameter . And every 6.5 years the spiraling circle motion is much larger, typically with a diameter of about 50 feet (15 meters or about 0.5 arcsecond). In Chart 104, the wobble is seen at what is typically its largest size.

Chart 104: The Spin Axis & Polar Motion 1900-1998



Whitten was able to demonstrate that large earthquakes were much more likely on the U.S. West Coast when the wobble was at its 6.5 year maximum size. For instance, the historic Alaskan quakes of 1957 and 1964 occurred right on this schedule. Echoing Whitten's work, Berkeland has worked with the prediction of earthquake activity during the past 20 years by correlating the monthly orbital positions and alignments of the Earth, Moon and the Sun with the occurrence of earthquakes. He is able to demonstrate a strong correlation well above chance with his monthly schedule of "syzygy windows".

On the basis of such connections, astute questions come into focus. Does the motion of the spin axis, that is to say its constantly changing location, induce tectonic stress in the crust of the Earth which in turn causes seismic and volcanic activity? If so, how does that work? Does the regular 6.5 year cycle in Chandler's Wobble induce the "normal" earthquake and volcanic activity such as is seen in Charts 100 and 101 during the first half of the 20th century? And is the slow, progressive creep in the location of the pole since 1900 causing the anomalous trend of increase in total volcanic and earthquake activity? Did the wobble of the Earth, unbeknownst to us, begin moving chaotically out of its accustomed location during the 19th century and did it begin to exceed the previous limits of its "bounds" in about 1950, thus causing a steady increase in the cracking of the Earth?

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Unfortunately the records of the 20th century, as presented below, can only answer the first three questions. The latter two questions about the cause of the anomalous increase in activity must be left on the table while seeking further clues.

The reasoning behind these questions is based on the nature of the Earth's shape and substance and requires no leaps in logic nor faith to follow. Centrifugal motion of the Earth's spin has flattened the poles slightly and has caused a bulge in the Earth which is widest at the equator. This flattening and bulging creates a shape which is not quite perfectly round (a shape which is called ellipsoid) by a factor of about one third of a degree. Any change whatsoever in the location of the spin axis changes as well the location and orientation of the equator. Even a change of one foot in the location of the spin axis requires a change IN THE ENTIRE SHAPE OF THE EARTH throughout the entire length of the great Longitudinal arcs. Obviously the biggest change in the shape of the Earth must occur in the tropical zones and in fact we appear to have about 70% of the Earth's volcanoes and the most actively spreading rift zones on the ocean bottoms in the tropics. It certainly appears, looking very broadly at the tectonic activity in the tropical zones, that the Earth is actively shape-shifting itself on a continuous basis.

Accordingly then, the specific, seminal, paradigm-proving question is, does a regular 6.5 year change in the location of the pole contain the power to shift the shape of the Earth sufficiently to cause the earthquakes of the Earth? If the answer is yes, does the same motion of the Earth cause volcanic activity? As will be seen in the charts below, there cannot be much doubt about this fundamental fact of direct causation of both phenomenon.

During the past 50 years geophysicists have learned enough about the substance of the Earth and its dynamics to literally describe the Earth as behaving more like a rotating balloon filled with Jell-O than as a "rock" with a constant, fixed shape. Within this point of view, the centrifugal force of the spinning Earth is sufficient to "force" a change in the actual "ellipsoid" shape of the Earth, NOW, as opposed to later. In other words, changing the location of the spin axis is synonymous with changing the shape of the Earth. They happen simultaneously or near simultaneously. For most of the mass of the Earth, which is molten a few hundred kilometers beneath the surface, such shape shifting poses no resistance, no problem, hence it is unnoticeable and has no consequence. It is mainly the brittle crystallized outer surface which poses resistance and creates some "lagging", but probably not much. The progression must move something like this: move the spin axis slightly, shape-shift the Earth slightly, induce just a little stress in the crystalline shell, crack it just a little, shake the rocks just a bit, scare the mammals all to hell. In other words, the more motion, the more shape shifting, the more stress, the more tectonic activity. Could the mechanism driving earthquakes, volcanoes, and plate tectonics be this simple?

The answer to all these questions, as it turns out and is demonstrated with the proofs which follow, is reasonably clear: yes with some qualifications. Like all complex systems, there appears to be some complexity in how the mechanisms actually manifest. But the connections are in fact consistently simple enough to demonstrate that the driving force behind these phenomena, as well as most other major tectonic dynamics and features of the Earth, is the constantly changing location of the spin axis, combined with the pulling action of the Moon and the Sun on the crust of the Earth as it rotates.

3. Correlations Of Earthquake Activity With The Wobble In The Earth's Spin.

It is apparent in Chart 100 that worldwide seismic activity tends to add up too smoothly into an increasing trend line. It fails to provide a way to correlate anything with a 6.5 year cycle. There are not enough peaks and valleys to correlate with the rapidly varying exact motion or location of the pole. Most likely each area or region of the world has its own unique pattern of response to the exact location of the pole relative to it and equally likely the seismic activity of the whole Earth averages out most of the time into a constant dull roar. To determine a primary correlation between earthquake activity and the changing location of the spin axis one has to do as Whitten did and select a specific area and compare earthquake activity in the area with the motion of the axis. The author selected Japan and California, two of the world's most active seismic zones which lie nearly 140 degrees apart in the Northern Hemisphere.

The first problem to solve is to learn how to plot the motions of the spin axis. The easiest solution is to use the same method used by the geophysicists who keep track of the position of the pole for the International Earth Rotation Service. This international body of scientists maintain a database in France for the exact historical daily record of the measured position of the spin axis (primarily measured from changes in the positions of the stars as they wheel overhead).

As can be seen in Chart 104, the position of the axis is defined by an XY grid. The X line is Longitude "0", commonly called the Greenwich Meridian. The Y Line is Longitude West 90 degrees, or denoted in the earthquake catalogs as Longitude - 90, which is the Longitude running down through the Great Lakes in North America to pass very close by Chicago.

To create a time graph to compare with daily events, the simplest method is to define the location of the pole along the X axis. Or, one could use the Y Axis. And in fact it is useful to use both axis' for various purposes. As the location of the axis wobbles in and out during its 6.5 year spiral, the location on the X line generally reaches about .1 to .2 arcseconds on the negative side and generally reaches about .2 to .3 arcseconds on the positive side.

The graph which results is demonstrated below in Chart 105 for Japan. The wavelike motion of the axis on the X plot looks very much like a somewhat erratic, slightly lopsided sine wave. To fully understand the directions of motion, one can visualize a convenient spot on the X line (Greenwich Meridian), let us say England. As the numbers of the X wave go positive, the location of the spin axis is moving towards England. Or, much more accurately, England is moving North.

The Y wave looks very much the same as the X Wave except all of its numbers are always positive because the average position of the spin axis has drifted towards Chicago during the past 100 years. The Y Wave is also 90 degrees "ahead" of the X Wave.

Since the orientation of the spin axis of the Earth is not actually moving relative to the stars, it is imperative to correctly visualize the crust of the Earth moving over the spin axis. When the X Wave is positive, England and the North Atlantic portion of the crust is moving over the spin axis, pushing the North Pacific area towards the equator, which of course expands the North Pacific crust

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and contracts the North Atlantic crust. Accordingly, when the X Wave numbers are negative, the crust of the North Pacific is moving to the North over the spin axis and England is dipping to the South away from the North Pole. The total amount of motion involved is generally in the range of three to fifteen meters (10 to 50 feet). At three meters or so every 6.5 years, the X Wave is at a Min and at 15 meters about 3.5 years after a Min, the X Wave is at a Max. And so it is that the crust of the Earth has been chattering up and down spiraling around and around continuously between a Min and a Max position in various frequencies and harmonies within Chandler's Wobble, probably since the Earth-Moon-Sun system was formed.

This chattering causes a continual progression of shape-shifting in the Earth which induces waves of pressure stress and relief in the fixed crystalline crust. If one could speed up time and see the shape-shifting, the Earth would seem to shake like a quivering bowl of Jell-O. As portions of the egg-shell thin crystalline outer layer crack and break, earthquakes are felt. The shape-shifting also most likely induces hydraulic pulsations in the liquid portions of the interior which create the deep earthquakes and the flow of magma through cracks in the rocks which generates volcanic activity.

Since the orbital variations introduced by the Sun and the Moon constantly vary and almost never repeat exactly, every moment in all stress zones is unique and thus the results constantly vary within a repeating cycle which is always somewhat different. Thus, nothing repeats literally and exactly in ways which statistical studies can easily reduce to simple relationships.

The general pattern involves an ever-present differential contraction and expansion of the crust. As the X Wave goes positive, the North Pacific expands while the South Pacific contracts. As the X Wave goes negative, the action is the reverse. Because the Earth is a sphere, the action is the mirror opposite on the Atlantic side of the Earth. It is this differential stress and pulsation from the shape-shifting which must generate the tensions and stress which drive earthquake and volcanic activity. Ultimately, in combination with the changing distance and angle of the Moon from the Equator, which levers, lifts, and hauls on one portion of the globe more than other portions, the shape-shifting must drive the progressive movement of the great tectonic plates as well. It remains only, as Berkeland has discovered, for the orbital variations of the EMS system to "trigger" the release of the stress in certain monthly rhythms.

Chart 105: Correlation of The X Wave With Earthquakes In Japan

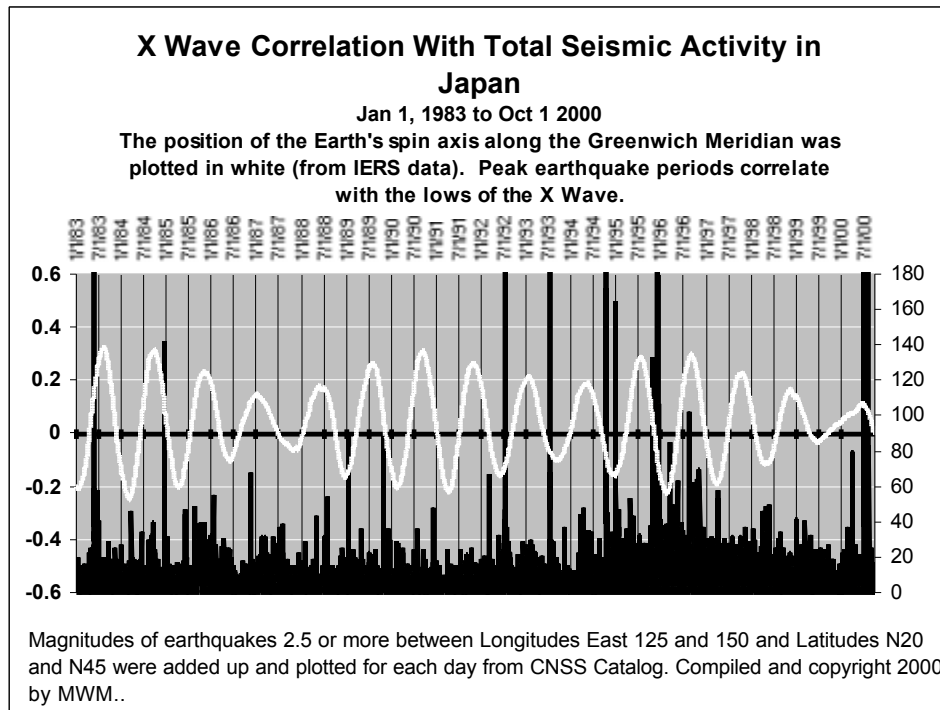
Obviously these patterns, if true, must be observable throughout the planet. And in fact, where ever one turns to in the data, no matter how it is sliced, one can find such correlation, even in the middle of complex phenomena.

Japan is an excellent place to start looking because it is doubtless very nearly the most active tectonic zone on the Earth. If there are correlations, they must appear in Japanese data. As is seen, the correlations in Japan are complex yet nonetheless self-evident in Chart 105.

In Chart 105 the magnitudes of all earthquakes greater than or equal to 2.5 were added together to find an indicator of the total seismic energy being released in a large rectangle which encompasses all of Japan and its nearby chains of

volcanic islands. Four different tectonic plates converge on Japan within the rectangle defined for this study, hence the recorded earthquakes are inclusive of many vectors of stress and countless numbers of fault zones. During 1983 to the present (Oct 2000), eight peak periods of seismic energy greater than magnitude 100 for any given week were identified. Four of the greatest peaks were in the middle of the lows or troughs of the X Wave motion. Two other periods came during or very near the transition of the X Wave across the 0 line from positive numbers to negative numbers (heading towards the trough). One came just after the transition headed to a high peak, and the last one came during 2000, during which time the X Wave is much truncated (much smaller than normal) and anomalously drawn out (nearly three months longer than normal) while the Y Wave is in its trough.

If the current period (August-October 200) is considered too anomalous to correlate, then during the past 18 years in Japan the general pattern of seismic energy released (for all quakes above 2.5 at magnitude 100 plus during any given week) with the low of the X Wave is directly contradicted only one time out of eight periods, is directly correlated four times, and is weakly correlated two times during the transition phase of the X Wave near the Zero Line. Below the magnitude 100 line, additional correlation can be found through a considerable zone of variation in magnitude, but as one sinks into the lower magnitudes one sinks into increasing increasing randomness.

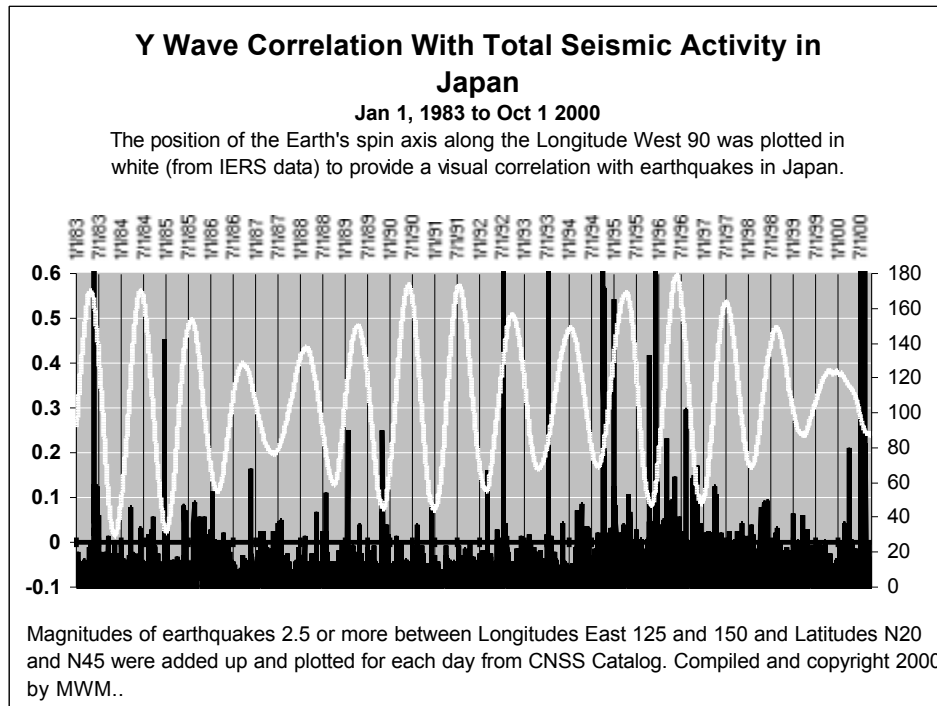


Given the immense size of the body of the Earth, the lag times which are probably at work, the great diversity in the type and layering of the outer strata of the Earth, and the constantly varying nature of the cycles of the EMS system, one should not and indeed cannot, as one looks at the evidence, find ultra-simple

correlation. But one can find, consistently, fairly clear, reasonably strong patterns of correlation which are easily seen without fancy statistical manipulation and despite any fancy statistical punditry of denial. The same patterns of correlation as can be seen in Japan were found by the author in every area and window of time which he plotted.

Chart 106: Correlation of the Y Wave With Earthquakes In Japan

If we take in a more full view of the motion of the pole we can find even more power to this correlation with the change in the location of the spin axis. As we have done on the X Axis, one can plot the motion of the spin axis as it spirals up and down the Y Axis, West 90. . The Y Wave is about 90 degrees “out of phase” with the X Wave and its trough always precedes the trough of the X Wave. As the Y numbers go higher up into the positive numbers, the portion of the Earth’s crust on which Chicago rides is going North over the spin axis headed towards Siberia We can see that the correlation holds up. Major earthquake activity in Japan tends to occur then the Y Wave is low or when it is headed low, as when Siberian crust is headed towards the North Pole and pushes Chicago to the South.



On these charts three different types of pattern emerge. One is the clear correlation of the major peaks, let is say all activity peaks greater than 80, with the lows of the XY Waves. Clearly the main “windows” of peak activity can be predicted. Another pattern is the continuous level of activity which is seen at the bottom of the charts. This is largely the continuous release of small, very deep earthquakes in the size of 2.5 to 4.5 magnitude. They are probably best interpreted

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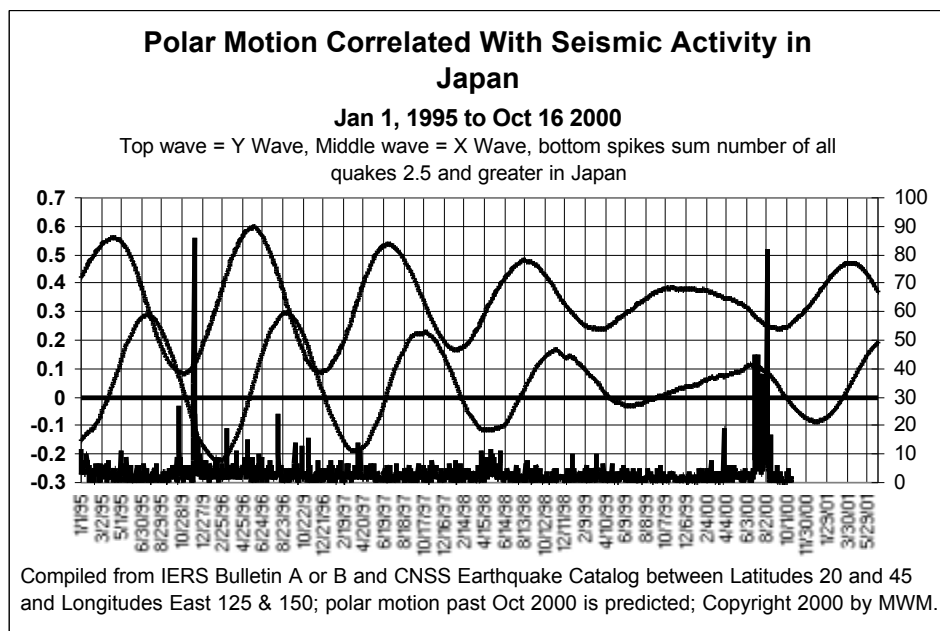
as the rumble of the plates as they slowly move and it is doubtful any orbital correlation directly connects with them, though hourly connections to the Moon may be found. They are probably a sort of randomized “Brownian motion” of the tectonic plates. The third pattern is composed of the small peaks of activity between 10 and 80 events per day, some of which correlate with the lows of the XY Waves, some of which do not. These may be more a product of Berkeland’s monthly seismic windows than the location of the spin axis and they deserve careful study from that point of view, along with the “syzygy windows” timing of the major peaks.

4. Making Earthquake Predictions With The X Wave Correlations.

If we simplify the data to combine the X and Y Waves through a shorter span of time, as is shown in Chart 107 for 1995 through 2000, we can better see when bursts of earthquake activity are created in Japan as the crust of the Earth wobbles over and around the spin axis. From this, perhaps we can learn to predict more precisely the windows of increased seismic activity.

Chart 107: Correlation of the X & Y Wave With Earthquakes In Japan

Notice that the two major spikes of earthquake activity occur in a fairly narrow range of the “lows” of one or both of the waves. As can be seen, the huge spike of seismic activity during the last three months of 1995 (which included the destructive Kobe earthquake) commenced at a point when the X Wave (the location of the spin axis) moved to about -0.05 arcsecond on the graph.



As can be easily seen from this Chart and Charts 105 and 106 which show seismic activity in Japan, the huge spike in activity during August, September, and early October of 2000 is highly anomalous. The breadth of activity has not been matched since at least 1962 and the many Japanese who have become alarmed have considerable justification. What is going on here? Is there something about this particular low time in the X Wave? Why is such activity showing up when the crust of the Earth is moving the least?

Apparently the motion of the Earth has shifted in some way which changes the typical angles of the stress vectors. The entire period since April

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1999 through to about August 2000 can be characterized as an X Wave Min, the 14 month period in the 6.5 cycle of Chandler's Wobble when the crust is moving the least and the change in the location of the spin axis is less than three meters (usually). From the historical pattern, one would expect a spike of increased activity to occur later in November, when the X Wave goes negative and the crust moves to a point about -0.05 arcseconds from the Pacific into the Atlantic to contract the North Pacific.

That point will be reached on about November 5, 2000, which should cause earthquake activity, if in accordance with past patterns, to multiply into as many as 50-100 events per day for a period of about two weeks. From this perspective, the period of high activity during the past three months is early. True to the XY Wave correlations, the recent increase began during a low in the Y Wave but it does not appear to be a low which merits such movement in the faults. And the spike of activity began when the X motion was on the positive side, the zone in the wave during which large spikes of seismic activity are rarely found in the North Pacific.

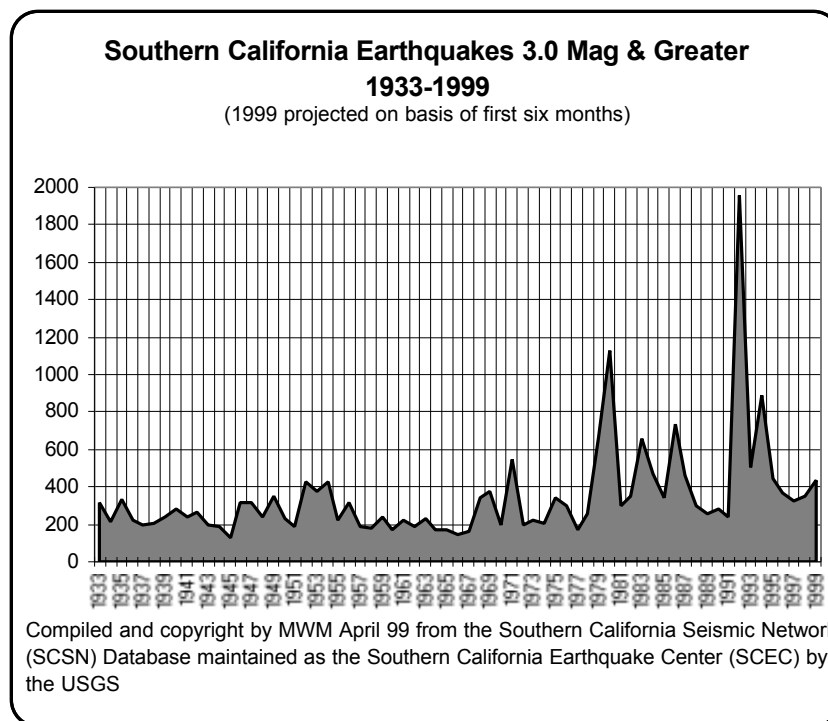
Perhaps the anomalous earthquake activity should be attributed simply to the anomalous, long, drawn-out slow motion which the spin axis is currently exhibiting. This entire X Wave Min waveform is much longer than normal by some three to four months. This is not at all a typical pattern, in fact if one compares in detail all X Wave Min's since 1931, this particular one is uniquely different than all the others. But such anomalies are to be expected occasionally, especially at the Min points, when the Earth is the least stable in its motion (the greatest variations in the patterns of the X Wave occur during the 6.5 year Min's). Geophysicists have identified various cosmic and terrestrial factors and other small wave cycles in Chandler's Wobble which creates such variations. If this period during 1999/2000 is truly anomalous for various geophysical reasons, then a safe prediction is that anything could happen during the next few weeks in Japan.

This, of course, is not terribly helpful. But, based on the overall patterns of the X Wave, based on what we can think of as the "house odds", we can in fact make a more definite prediction. Accordingly, one of the first predictions for the new paradigm of vortex tectonics is that, more probable than not, a strong burst of earthquake activity will commence in Japan by about November 5, 2000, perhaps two weeks early, perhaps two weeks late, and persist for about 10 to 14 days.

The entire period during which the X Wave slides down into its trough (October through to about December 30th) should be considered highly dangerous but the bulk of action should be around November 5 close to the -0.05 point. The last two weeks in December and the first two in January may see a calm period as the direction of the crust begins to turn back towards the South (in the Pacific) in its vast spiraling motion. Then from about the beginning of February to the end of February 2001, most especially around the 15th of February 2001, another time of exceptionally high earthquake activity may occur as the X Wave passes once again through the -0.05 point. During these two periods of high activity, Japan could experience a Kobe-style killer earthquake. It may not necessarily occur during this period in the 6.5 year X Wave cycle, such a specific prediction likely can never be made from a spin perspective, but such an event will eventually occur during one of these periods or windows of the X Wave low.

Chart 108: The Long Term Trend of Earthquakes In Southern California

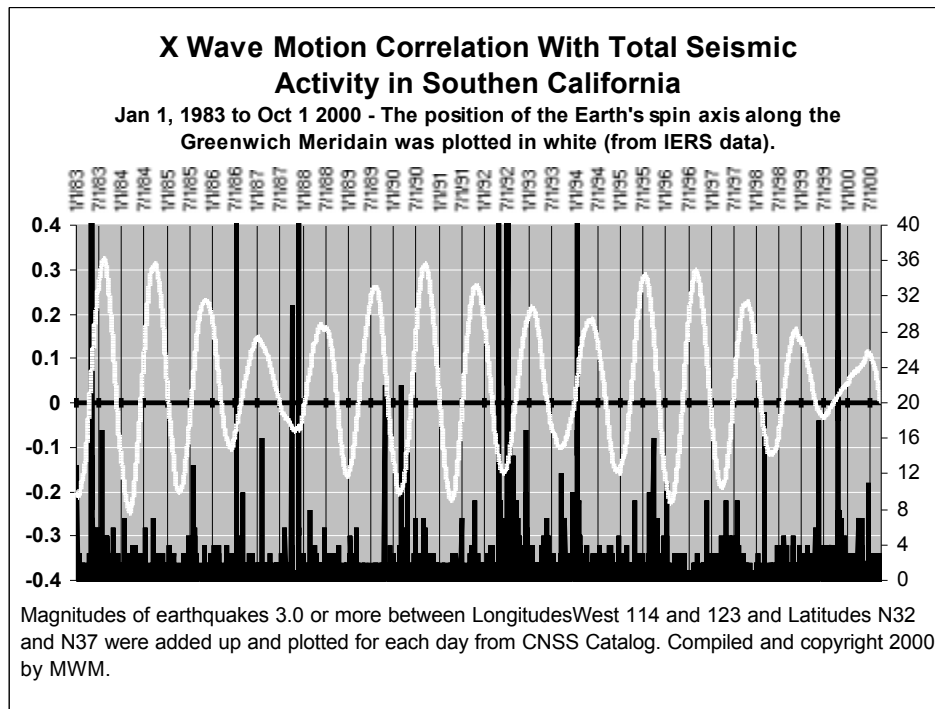
After establishing that Japan's extremely active tectonic environment is highly reflective of the motions of the Earth's crust as it bobs over and around the spin axis, the author examined earthquake activity in Southern and Northern California. Because of the highly accurate and complete record of earthquakes larger than magnitude 3.0 in Southern California since 1933, it is apparently one of the few places on Earth for which an accurate long term trend line longer than 50 years can be drawn up. One of the prime questions was how California's trendline would compare with the world trendline. Accordingly, a simple trend line for the period 1933-1999 is shown in Chart 108.



As can be readily seen, there is a definite trend of increasing activity which can be seen in the area for the latter part of the 20th century. Though hardly smooth and progressive, the pattern shows a progressive steep escalation in a few peak periods of activity. Ominously, if one looks at the pattern of activity which is shown from about 1971 onwards, it would seem that Southern California is due for another season of a huge increase in earthquake activity. The question is when? Can we pin down a window like we did in Japan?

Chart 109: The Correlation of Earthquakes In California With The X Wave

Since California's quake trendline seemed to correspond with Japan's as well as with the general patterns, Chart 109 was prepared to determine if there was any correlation with the motions of the crust over the spin axis.



The patterns in Chart 109 reveal a powerful pattern of correlation which is definitely greater than chance. For this data series between 1983 and October 2000, a total of 8 peak earthquake activity periods were found (20 events or more in a day). Of these, 4 occurred during the X Wave low and 4 occurred during the transition of the X Wave at or very close to the zero line. Three of the peak activity periods during the transition of the X Wave occurred when the X Wave was at the zero line on the way up into the positive numbers (with England bobbing North as California was headed South). In a larger sample (not shown) which includes all 3.0 or greater magnitude earthquakes from 1962 to 1993, the pattern of correlation holds up but greater complexity introduces more mixed results.

A study of earthquakes in Northern California (between Longitude West 121 & 123 and between Latitudes 37 to 39) confirmed these results, though with a much smaller number of quakes. For this data series (not shown) between 1962 and October 2000, a total of 14 peak earthquake activity periods were found (four or more events in a day). Of these 14 peak periods, 9 occurred during the X Wave low. Three activity peaks contradicted the overall pattern and occurred during the

high portion of the X Wave. An interesting contrast with the Southern California sample appeared in two 2 spikes of activity. These occurred on the transition very close to the zero line as California was headed North rather than South. Apparently then, with as little as 400 miles of separation, each region develops its own characteristic ways of responding to the moving lines of stress.

Chart 110: The Correlation of 1992 Earthquakes In California With The X Wave

We can zero in on this data to find more exactly what the relationship is between Southern California's quakes and the motion of the Earth's crust over the axis. Charts 110 and 111 zero in like a microscope to magnify a view of the relationships during two larger than normal spikes of activity during the past ten years. Normally, the Southern California area experiences some 10 to 20 events per week (magnitude 3.0 or more) but most of these are deep enough so that they are not felt on the surface and thus do not appear in the news media. In May and June of 1992, while the X Motion was at a low, Southern California began to experience swarms of up to 100 earthquakes per day.

Chart 110 computes this data on a daily basis. It demonstrates that a Southern California swarm of quakes sprouted about seven weeks after the X Motion passed the crust of the Pacific over the "0" point (which intersects with the Y Axis or 90 degrees West Longitude) into the Atlantic Hemisphere. In this chart earthquakes sprouted about two weeks after the X Motion passed -0.1 arcsecond, quite literally at about -0.12 arcsecond. A second, much larger swarm occurred about four weeks after the X Motion bottomed out and began to return. They sprouted with the axis at very close to -0.15 arcsecond on the X.

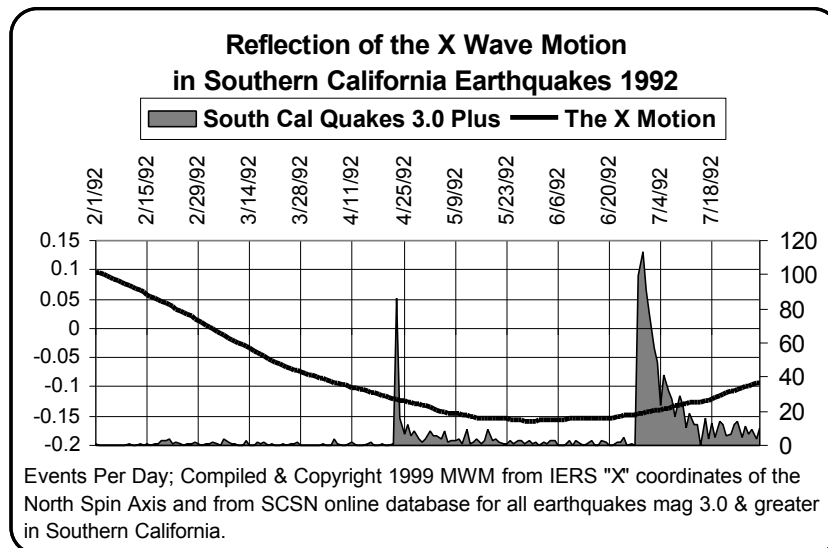


Chart 111: The Correlation of 1999 Earthquakes In California With The X Wave

The X Wave was also low for 1999 so I plotted the absolute X motion of the crust for the first seven months of 1999 to see what patterns it would show for Southern California earthquakes. Chart 111 shows the same overall pattern as Chart 110, though the numbers are different. Once again, the major tectonic movement shows as a swarm of action in two distinctive clusters, one cluster sprouts with the X motion on the way down and another cluster sprouts on the rebound. The first swarm occurred about three weeks after the crust passed the Zero or Y Axis, the second swarm began about five weeks after the rebound started. The action seemed to cluster most strongly on the same arcsecond, like the 1992 swarms, but this time the action occurred at about -0.02 arcseconds, substantially different than the -0.12 arcseconds of 1992. Interestingly the -0.02 point is very close to the -0.05 point in Japan's swarm of 1995.

The correlation which is revealed in these charts make it quite obvious that the bottom of the annual X motion in the bottom of the 6.5 year cycle in the X Wave is the major witching season for tectonic activity in Southern California. This simple, elegant, correlation is a stark raving, arm-waving demonstration of how seismic energy is directly induced by the fluctuating motion of the Earth's crust in Chandler's Wobble. The situation could not be more clear.

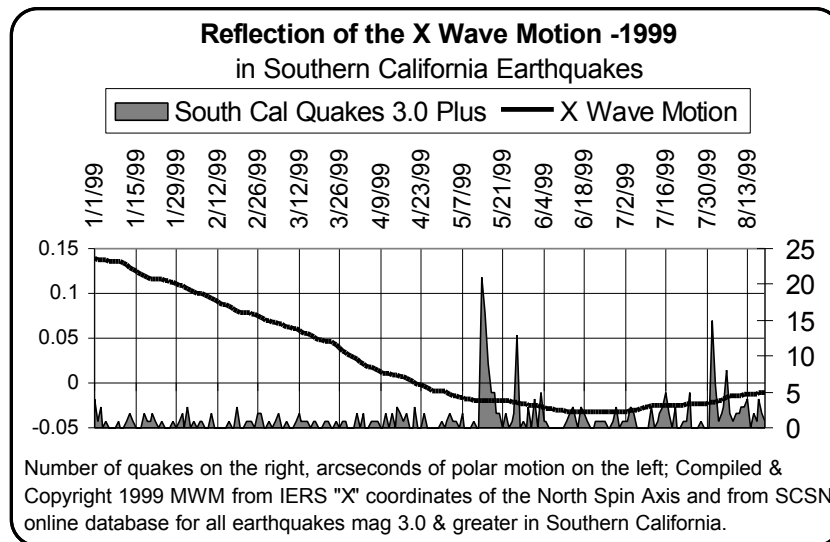
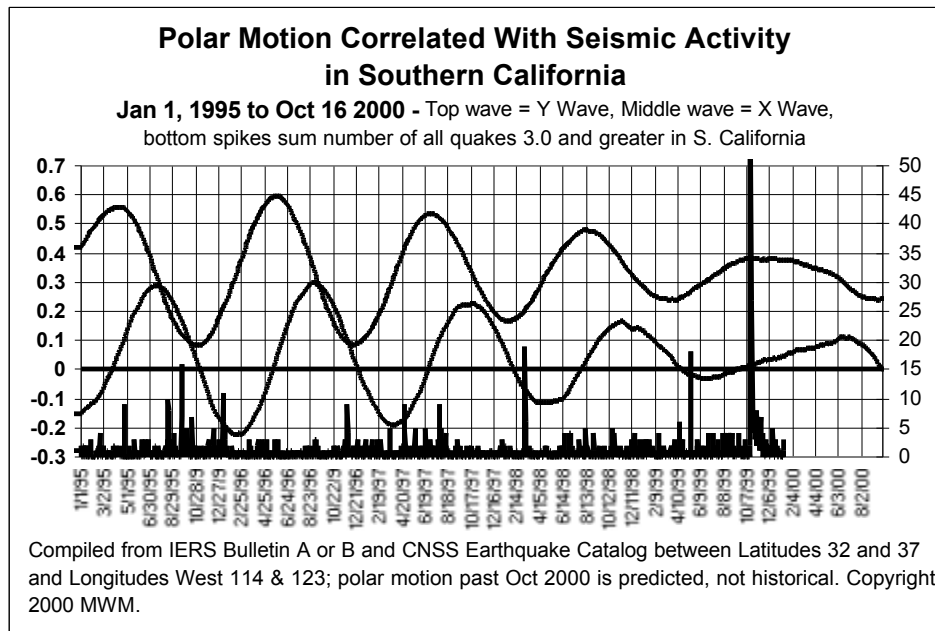


Chart 112: The Correlation of the X & Y Wave With Earthquakes In California

From the clear correlation of earthquakes in Southern California with the changing location of the spin axis of the Earth, can a prediction for this area be made like the one made for Japan in a previous section? Yes, and probably with more certainty than for Japan



One of the patterns which emerges in Chart 109 for Southern California is the decidedly clear pattern of a major spike of seismic activity on both sides of the X Wave which appears during the X Wave Min. If one looks at the smallest positive X Wave for 1986/87 and then the one for 1992/93, which are two different X Wave Min's, one will observe a huge spike in the troughs on each side of the two small positive waves.

As explained above, we have been in an X Wave Min since 1999 and will be out of it soon (we should already have been out of it but this wave form is now at least three months longer than normal). During 1999 we had the first X Wave Min trough, as can be seen connected to the huge spike of activity which can be seen for November 1999. The timing of the spike is a little off but then so is the wave form action as well as its shape. The important fact is that we have in November 1999 the first of what should be a pair of major X Wave Min spikes. The next one is due when the X Wave again goes into the negative numbers, which it did about the beginning of October 2000.

Based on the overall correlation of Southern California with the X Wave, again based on what we can think of as the "house odds", we can in fact make a definite prediction which, because the correlation in Southern California is stronger than in Japan, is most probably more certain than the prediction for Japan. Accordingly, the second prediction for the new paradigm of vortex tectonics is

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that, more probable than not, a strong burst of earthquake activity will commence in Southern California sometime from the middle of October 2000 through to about the middle of December 2000, with another danger zone from about the beginning of February through to the end of February 2001, with the greatest danger about February 15th. A destructive 6.0+ class earthquake somewhere in Southern California is highly likely at any time in these periods.

Since earthquake spikes have been generated in the past in Southern California at any point on the X Wave trough between -0.02 and -0.12 , the spike off activity could begin before this article is disseminated and could occur at any time during this period. But since -0.05 may roughly represent a mean figure, we can use it to paint the most likely scenario. Accordingly, a major round of earthquake activity is most likely to occur within a few days of November 5, 2000 and persist for about 10 to 14 days. Thereafter things will seem to return to normal and the last two weeks in December and the first two in January may see a calm period as the direction of the crust begins to turn back towards the South (in the Pacific) in its vast spiraling motion. Then from about the beginning of February to the end of February 2001, another time of exceptionally high earthquake activity is likely to occur as the X Wave passes once again through the -0.05 point. During these periods of high activity, it is more probable than not that Southern California will experience a destructive surface earthquake of magnitude 6.0 or greater.

A more tightly drawn prediction could be offered but it would have to be based on the exact motions of the crust over the spin axis and it is not likely that the predicted motions of the crust are accurate enough to offer greater specifics which are worthwhile. During this current period of the X Wave Min, the real motion of the crust has consistently deviated substantially from the predicted motion for at least the last 12 months.

The best road to a more specific prediction during this period is probably offered by the concept of "syzygy windows" developed by James Berkeland. A complete "window" includes three days before and after a lunar perigee (closest approach of the moon to the Earth) and the same around a New Moon, when the Moon is perfectly aligned with the Sun to introduce greater than normal stress on the crust of the Earth. The perigee moments are Oct 19, Nov 14, Dec 12, Jan 10, and Feb 7. The New Moon moments are Oct 27, Nov 25, Dec 25, Jan 24, and Feb 23. The complete window for each moment includes three days before and three days after the date.

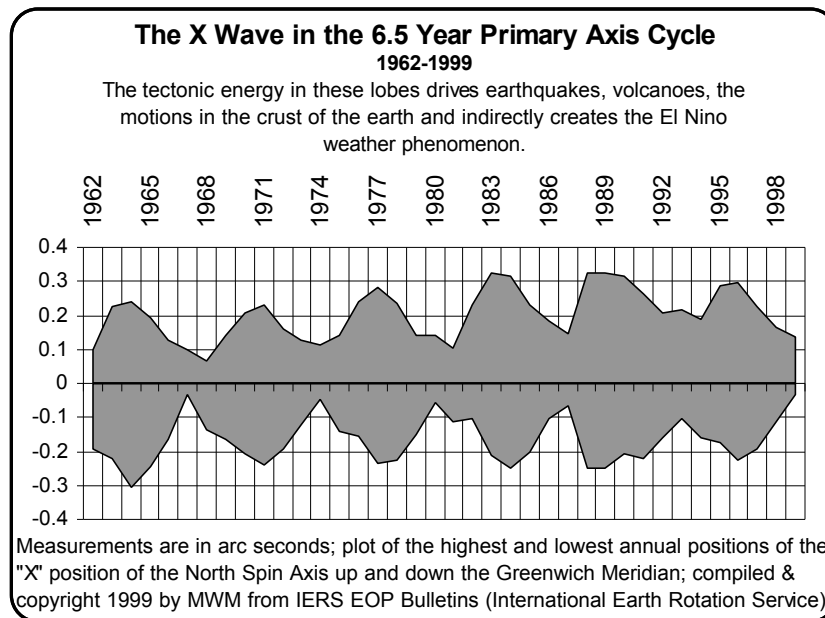
Additionally, the Earth will be at perihelion (its closest approach to the Sun) on Jan 6 very close to a lunar perigee and this could be a major trigger for a destructive spike of earthquake activity. But of all these dates and windows, Oct 19 and November 14 seem to be the most dangerous for both California and Japan within the limited framework of correlation presented in this article.

5. Defining The Primary Axis Cycle In The X Wave

Whitten’s work stressed finding the high point in the 6.5 year X Wave, what is termed the X Wave Max in this article. This is the period when the spiral circle in the wobble is at its greatest diameter. Since this is the moment of the greatest change in the location of the spin axis, it would seem to be the moment of the greatest overall stress in the Earth. But during the course of looking at the California quakes, I found that the two largest spikes of activity during the 1990’s occurred at the Min of the 6.5 year X Wave, the moment when the spiral in the location of the crust is at its smallest. This begs for an explanation.

In an effort to find an explanation, the author began to hunt for an explanation by filtering out the annual X Wave motion in Chart 113 to make the individual spirals invisible. The highest POSITIVE values of the X plot of the spin axis were plotted for each year on the upper (positive) half of Chart 113. The biggest negative numbers of the X plot were plotted on the lower (negative) half of Chart 113. The result is a pure 6.5 year X Wave showing only the 6.5 year modulation. Since the graph is based on just two values per year, the plot is somewhat rough and magnifies some of the irregularity in the X Wave.

Chart 113: The X Wave 6.5 Year Primary Axis Cycle



One should correctly visualize the movement of the crust in this type of plot. The crust of the Earth is moving over the spin axis, during any given year, from a high point on the positive side to a low point on the negative side. From year to year, the crust spirals in a smaller and smaller circle to decrease the size of the spiral until the smallest circle of movement, the Min point (about 3 meters), is

reached. Then the spiral motion becomes greater and greater each year until the greatest peak is reached at the Max point (about 15 meters). All of the annual motion is filtered out and thus all we see is the overall (greatest) size and location of the spiral each year.

Chart 114: Southern California Quakes & The X Wave Min 1962-1999

To keep things easy to plot for correlation with earthquakes and volcanoes, I discarded most of the spiral wave form of the Primary Axis Cycle and used just an outline of the positive half. In Chart 114 one can see the correlation of earthquake activity in Southern California with the X Wave Min which was found in Charts 110 and 111.

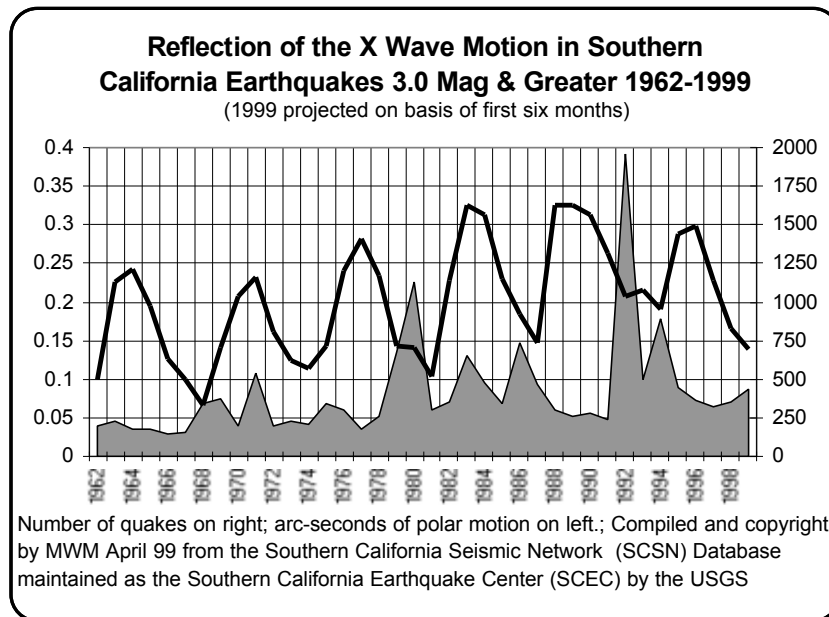
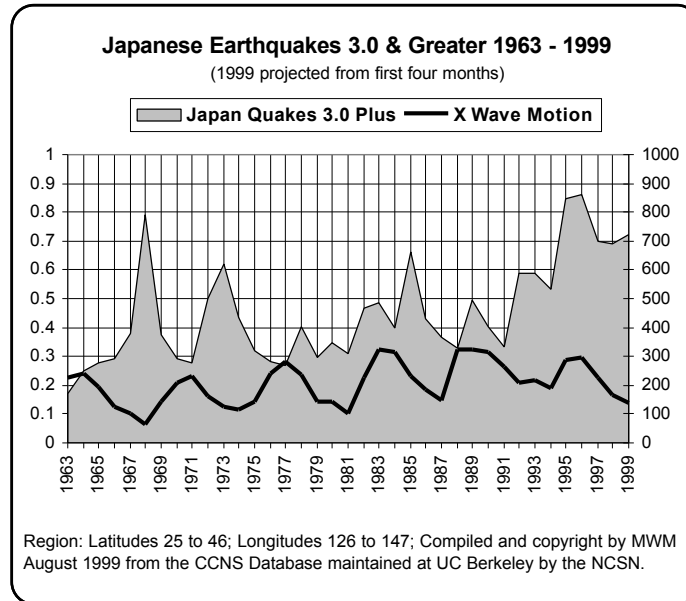


Chart 115: Japanese Quakes & The X Wave Min 1962-1999



A pattern similar to the correlation in Chart 114 for Southern California can be seen for Japanese earthquakes for the period 1963 through about 1989. After that, Japanese earthquake activity became anomalous, much higher than all historical norms. The greatly increased level of activity seems to have swamped out the normal pattern.

As can be seen by the various correlation of earthquakes with the annual X motion and the 6.5 year Primary Axis Cycle of the X Wave, clear relationships with seismic activity exist, at least for a substantial portion of the time, but complexity and variation sometimes overwhelm the patterns while betraying the effects of other factors.

More profoundly, one can easily see that the relationship is not a simple linear action. This article began by posing the question if the pattern was a simple one, such that with more motion in the crust, is there more stress and hence more quakes? In fact it is not that simple. Indeed California and Japanese earthquakes strongly tended to peak when the position of the spin axis was moving the very least, during the X Wave Min. Positional relationships, the geometry of the dynamics, and/or the rate of motion in the wobble are self-evidently important.

Can this pattern of relationship be explained? Most likely but exactly how is not apparent within the framework of this study. Perhaps the peak quakes in California and Japan tend to occur when the Earth “relaxes” at the Min. In other words, perhaps the spiraling out into the peak of the Primary Axis Cycle is an acceleration which loads in energy and stress while keeping the parts locked together by pure momentum. Then, perhaps, when the spiraling motion decelerates into its smallest circle, the parts of the Earth become less locked and the release of accumulated stress creates actual relative movements in the crust.

6. Correlations Of Volcanic Activity With The X Wave In The Earth's Spin.

With strong if somewhat mysterious connections between motions of the crust and the occurrence of peak earthquake activity, the author began to look for correlations within patterns of volcanic activity. To construct a data series, the approximate dates of eruptions and summary activity ratings which are found in the Smithsonian Volcanoes of the World Catalog were computerized for about 1000 volcanoes. Simple extrapolation rules were used to handle incomplete ratings in a way which randomized any errors which may have been introduced. A discussion of the methods of this study can be found in the "*Return of the Phoenix*".

Selecting only the well documented areas of the world, dozens of plots were made for major volcano groups in the most active, well-known areas. Sometimes individual bellwether volcanoes were charted such as Italy's Etna, which is literally in a class of its own like the Hawaiian Kilauea. Most people are fascinated by major eruptions but the drama of a huge explosion was irrelevant for this data series. To create the correlations, the total activity of a volcano for the 20th century needed to be measured as objectively as possible. Accordingly, any period of activity which included the emission of gray ash, pyroclastic materials, or lava went into the data series for the charts. All other activity, including steam (white) venting, was ignored. The validity of this data series rests on the proposition that if you could see the activity and objectively categorize it as ash, lava, or rocks, you could objectively record approximately when it started and stopped. All other activity was ignored.

The result was twofold. One, as discussed above, was the clear revelation of the trend of a major increase in volcanism. Another was the clear revelation of a distinct tempo in the rhythm of volcanic activity which is highly reflective of the Primary Axis Cycle (6.5 year X Wave). Over and over in the plots, both patterns revealed themselves in volcanic areas in all parts of the Earth. A statistician could no doubt make much more of these charts than has been accomplished by this author.

Chart 116: The Tempo & Rhythm In World Volcanism & The X Wave 1890-1993

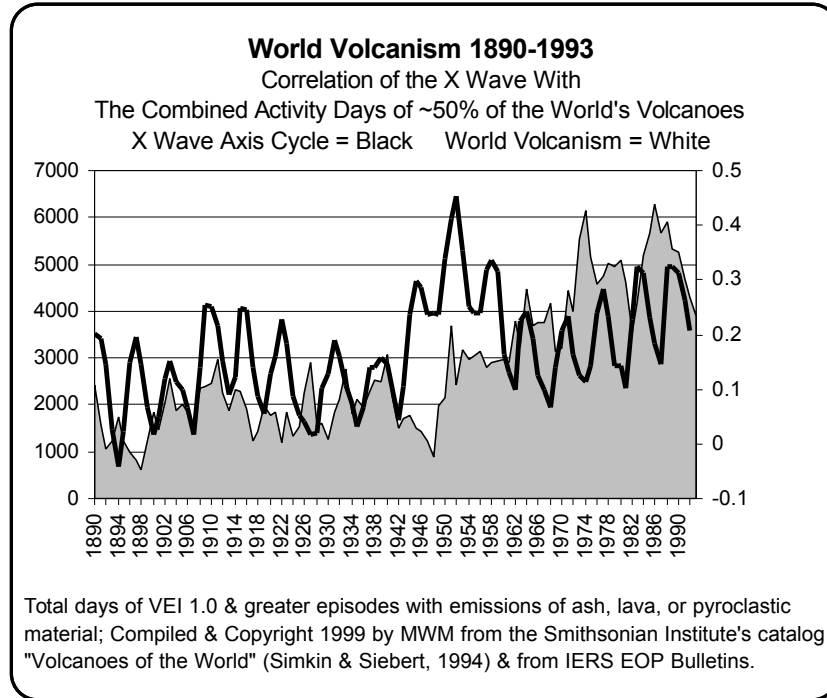
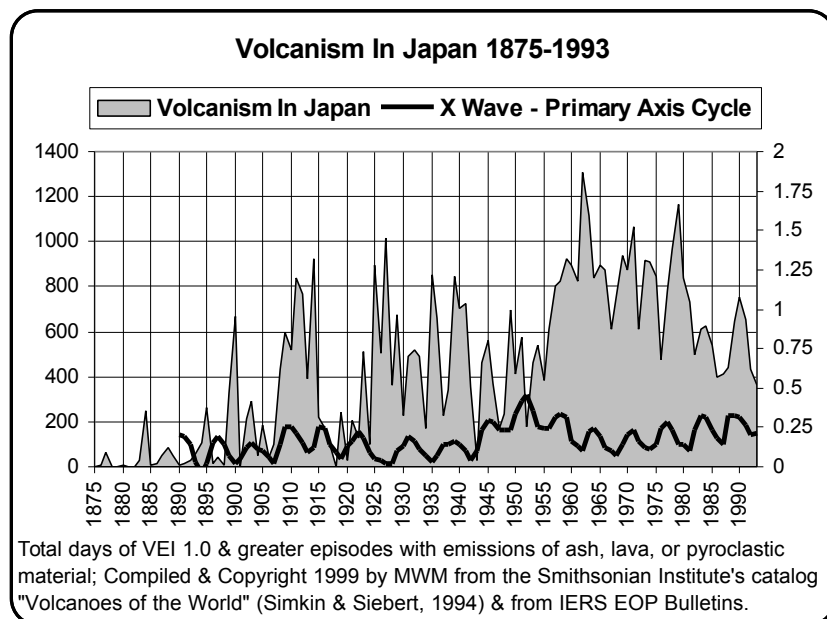


Chart 117: The Tempo & Rhythm In Volcanism In Japan & The X Wave 1890-1993



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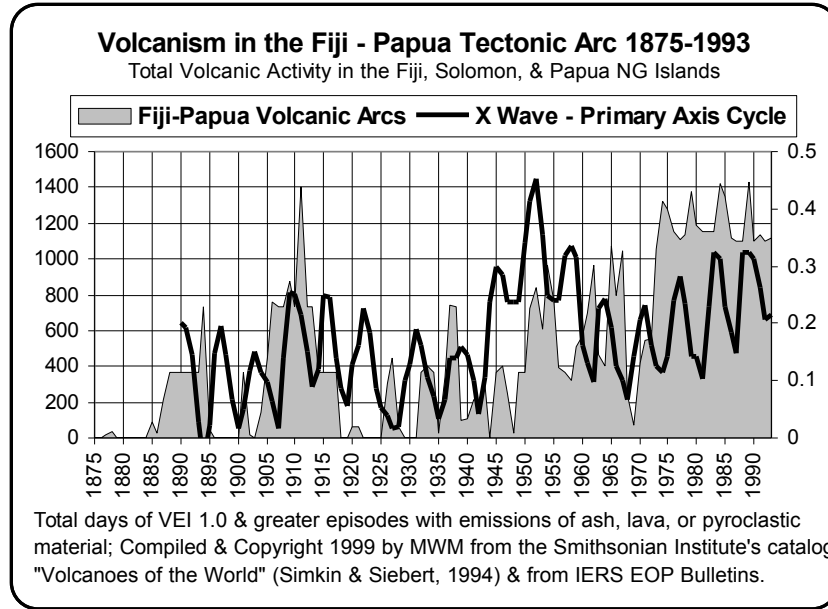
Since the frequency of volcanic peaks is so similar to the X Wave, it would seem to appear that sharp pulsations in volcanic activity are induced by the wobbling motion of the Earth's crust. No simple exact relationship in timing exists as with the earthquake correlation, thus the exact connection is somewhat obscure, but it is impossible to suppose that the similar tempo of the two phenomena are not connected. They are definitely playing the same score on the same sheet of music.

Since the trend of increase in surface volcanism is worldwide, it is most likely that underwater volcanism and heat venting has also increased by a similar amount. Unfortunately underwater volcanoes are not monitored in a consistent fashion, thus no data series can be created to accurately measure underwater volcanism. This is a severe scientific handicap because this increase in underwater volcanism is most likely the cause of the global warming phenomenon. The steady increase in volcanism commenced in the later half of the 1960's and has continued to climb since then. It is currently at levels at least twice as high as shown in Chart 115 while the Arctic summer ice melts for the first time in recorded history. Concern about global warming appeared in 1970's and increased to all time record levels in 2000 with much arm waving about the melting Arctic ice pack. Scientists debate about whether global warming is occurring and cannot explain how it is created. Climate specialists cannot find a "theory of climate" to explain or prove it. Some data seems to prove that the ground is heating up but not the atmosphere, accordingly some claim that humans are not to blame, perhaps cosmic factors.

Is it reasonable to suppose that these are not all connected in the same truth? It is highly likely that ALL of the hot air, as it were, as well as the water, are all connected as these charts demonstrate, and that the cosmic factors of the EMS system are creating changes in the location and motion of the spin axis sufficiently to force a major new trend in shape shifting of the Earth's crust in the tropical zones sufficient to induce a fourfold increase in the release of the Earth's interior heat into the bottoms of the oceans, most especially in the Pacific, thus causing both El Nino and global warming. It really is that simple.

In this regard, Chart 118 may demonstrate one of the most conclusive pieces of evidence about Vortex Tecotons in the Fiji/Tonga-Papua Tectonic Arc. The reflection of the X Wave in the peaks of volcanic activity for that vast arc of South Pacific Islands is in nearly perfect rhythm for a substantial portion of the century. This huge arc of volcanic islands begins in the Tonga Islands, passes through the Fiji Islands and continues easterly to parallel the northern coast of Australia and eventually join with Papua New Guinea on the north side. The arc is created by the collision of the Australian Plate with the Pacific Ocean Bottom Tectonic Plate, which Australia is over-riding. To add to the complexity, in the area of Vanuatu, just to the northeast of Fiji/Tonga, a great Pacific Ocean Rift is spreading very rapidly to create THE most active tectonic zone on the Earth. And just to the north of this area, along the Equator, the El Nino warm water syndrome forms every few years...

Chart 118: The Tempo & Rhythm In Volcanism In Fiji & The X Wave 1890-1993



7. The X Wave Correlation With El Nino

Since there is such a strong, close reflection of the X Wave in the Earth's most active tectonic zone, which is suspiciously close to the birthing waters of the El Nino syndrome, how can one avoid wondering if there could be any correlation between El Nino and motion of the crust? Accordingly, Chart 119 plots the El Nino years along with the active volcano days for the Vanuatu Islands, which are about as close to the great spreading rift zone in this part of the Pacific as one can get while standing on the ground. Once again an uncanny correlation in phasing appears. If El Nino is caused by heat released by underwater volcanoes on the Pacific Ocean bottom, exactly this sort of pattern should be observable somewhere. How convenient that the pattern shows as close as you can get to the most active tectonic zone on the bottom of the Pacific Ocean.

Chart 119: Correlations Of Volcanic Activity With The El Nino

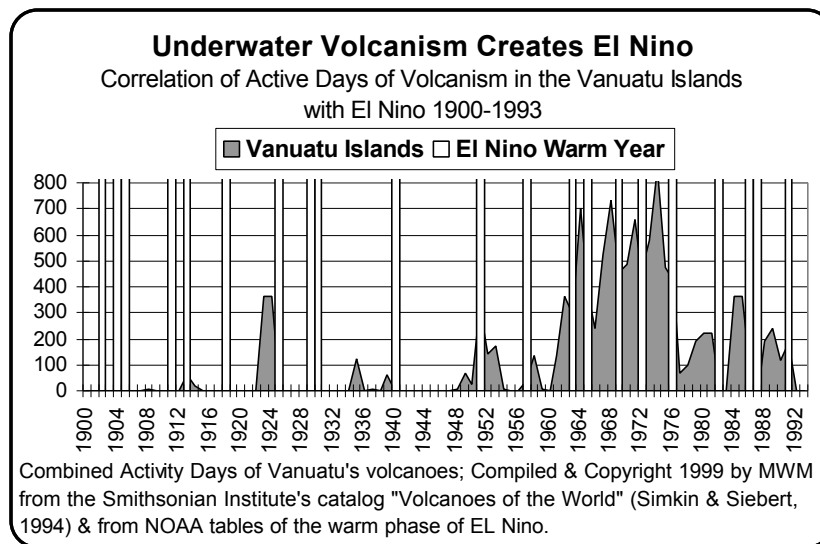
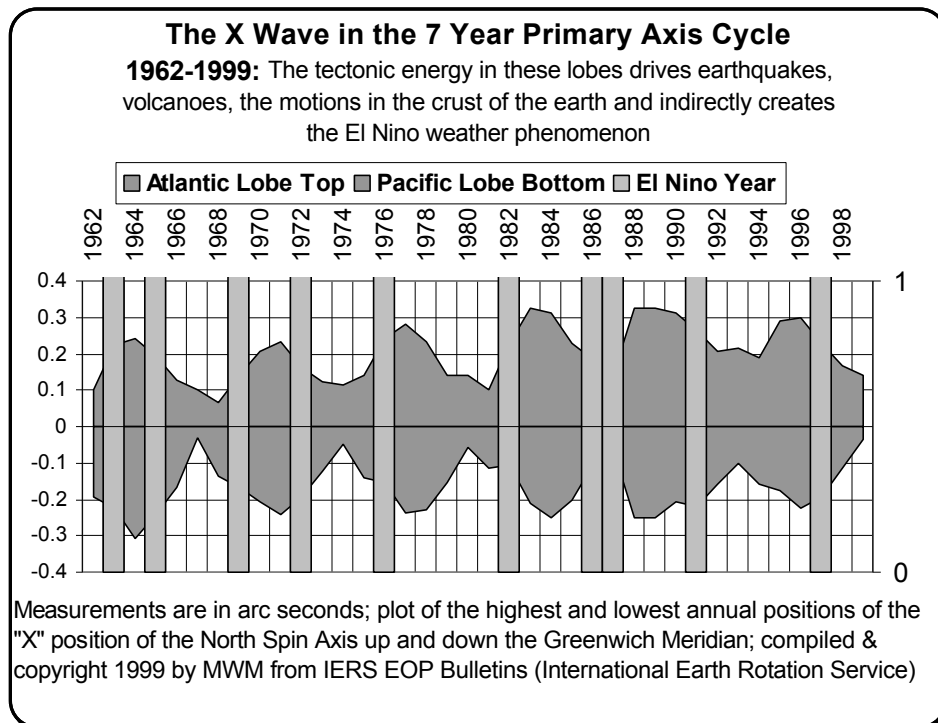


Chart 120: Correlations Of The X Wave With The El Nino

Unfortunately underwater volcanism simply is not very well monitored, especially in that part of the world. Consequently no direct evidence can be found which specifically links a heat vent in the Pacific Ocean bottom with the El Nino. Nonetheless these nearby island volcanoes are pretty good smoking guns. The close connection in the pattern between Vanuatu’s volcanism and the El Nino years prompted the author to simply plot the El Nino years over the X Wave in Chart 120.



The pattern of timing which shows in the chart is a remarkably lucid testimony of the main truth of the matter. The gray bands display the El Nino years, which almost always occur on the upswing and the downswing of the X Wave in Chandler’s Wobble. The pattern may not always hold perfectly but it is definitely strong enough to demonstrate that the motion of the crust in the X Wave induces a repeating cycle of the venting of underwater volcanic heat which warms the water in the western Pacific along the Equator and creates the cyclical if somewhat irregular behavior of the El Nino (ENSO) phenomenon. How could it be otherwise?

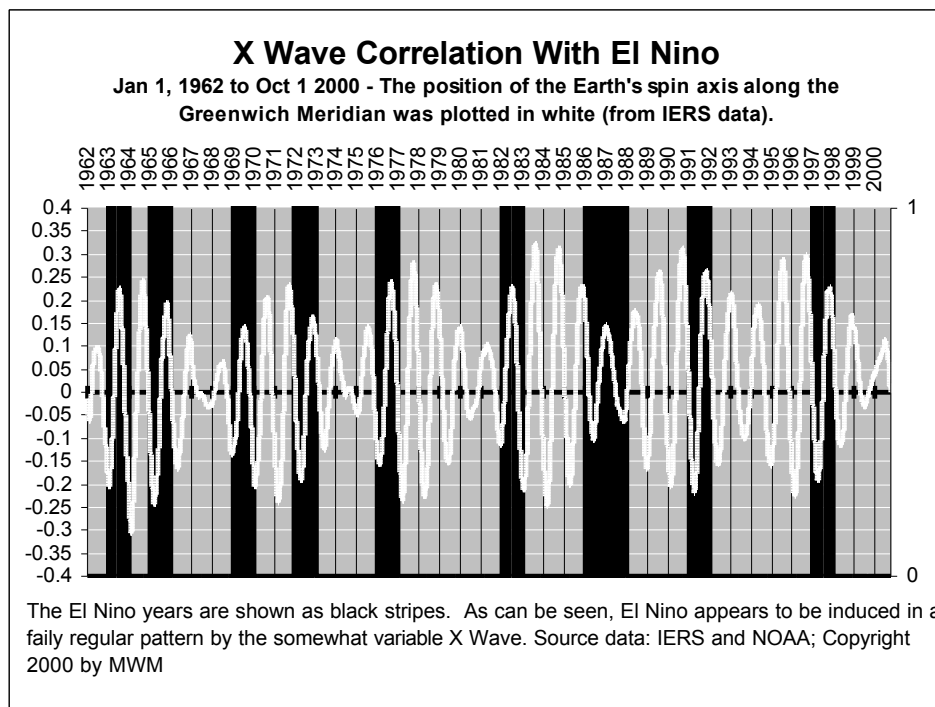
Try as they might, the world’s climatologists have not been able to deduce the pattern of El Nino within the framework of solar radiation and earthly heat budgets, mainly because there is not enough variation in the solar heat output to drive a phenomenon as large as the El Nino phenomenon. They have sought to

use reactive models called “self-organizing” systems. Unfortunately none of these efforts have succeeded, mainly because the main weather is driven directly by orbital facts. Self-organizing the weather is not. In Chart 120 the problem is shown to be resolved. El Nino is ultimately an expression of the EMS orbital variations which drive the fluctuations in Chandler’s Wobble.

This chart and its findings are as significant for geology, geophysics, and climatology as "E=MC Squared" is for physics. Many a geophysicist will remain in a state of denial about the correlation of the earthquakes and volcanoes and will waste a lot of professional resources attempting to disprove it. But this chart will bring a revolution in thinking about the Earth sciences similar to the Copernican/Galilean and Newtonian revolutions. The importance of this chart in focusing scientists to the main issues of Vortex Tectonics cannot be understated.

Chart 121: Correlations Of The Annual X Wave Motion With El Nino

Given the importance of the connection to the central thesis of Vortex Tectonics as well as to the weather-driven economics of human civilization, which suffers consequences in the hundreds of billions of dollars from the unpredictable timing and nature of El Nino, the question immediately arises if an even clearer pattern of the relationship could be found in the records. Accordingly Chart 121 was prepared to show the annual X motion in greater detail. Unfortunately “El Nino” dates are somewhat arbitrary and in fact this is the main limitation in plotting the relationship. Except for the most recent El Nino's, the records categorized the entire year as an El Nino year without assigning specific dates for the onset of El Nino phenomena. Thus a truly close correlation is not possible and we must be satisfied with a “grainy” view.



Even with the graininess, the picture is pretty clear. We can discern the main pattern sufficiently clearly to see that El Nino commences under one of two conditions. It almost always onsets during the first major annual X motion spiral after the Primary Axis Min every 6.5 years. Out of six Primary Axis Cycles since 1962, this pattern was missed only once when the Min was not very low during 1994 (it was exceptionally high that year). This pattern also varied once by occurring one year early during the Primary Axis Min of 1987. This Min was also uncharacteristically large, compared with previous cycles for the 20th century.

The other condition for the onset of El Nino is the first or second 14 month X Wave low just after the Primary Axis Cycle Max. This pattern was missed only once in 1978.

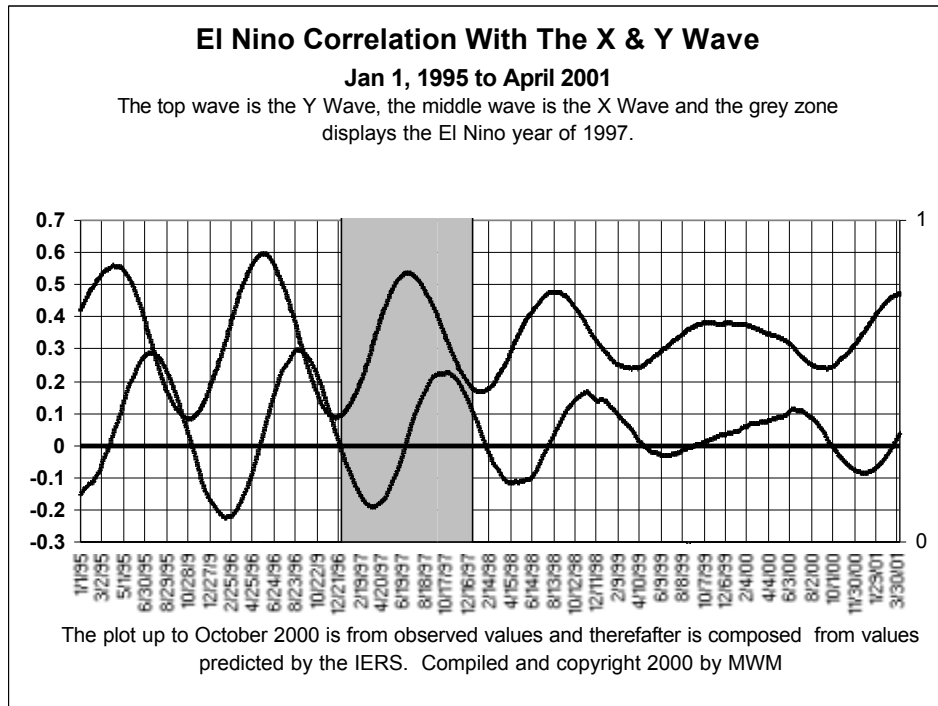
Given these two patterns of onset connected with the X Wave, we can say quite confidently that El Nino is nailed to the spiraling spin axis. We can also see, for reasons which only the Weilu Master of the Earth knows, is that there are two missing El Nino years, 1978 and 1994.

8. Prediction For The Next El Nino From The X Wave Correlations

From the patterns on Chart 121, it appears that the El Nino, if it is not early, always appears after a Primary Axis Cycle Min on the first X Wave which goes negative by more than -0.1 arcseconds. Theoretically we have just passed Primary Axis Min in 1999 and we are now on the first X Wave which is going low. Normally, from most of the record of the 20th century, the X Wave should pass -0.1 during the next three months and thus it would be a reasonably safe bet to predict the onset of El Nino to begin to show up in 2001.

However, the motion of the crust is also variable and the cycles occasionally vary or become anomalous. We are at such a period and it is not certain if the X motion will be large enough on this cycle of the spiral. The IERS computers, as shown in Chart 122 below predict that the X Wave motion will not reach -0.1 arcseconds, making this a highly anomalous moment in the past 100 year history of the spin axis. Under this circumstance the vortex prediction should be that El Nino will not occur during 2000 or 2001. Since the X motion should normally pass -0.1 about 14 months later, by about the end of February 2002, the El Nino onset should begin sometime later in that year.

Chart 122: The Projected X Wave For El Nino Prediction



The X motion plot in this chart is based on historical data up to October 2000 and thereafter on values predicted by the International Earth Rotation Service.

However, the current motion of the crust of the Earth is so anomalously erratic that all of the predicted positions of the spin axis made by the IERS computers have been consistently wrong during the past 12 months. By a large amount. Consequently the predicted X motion shown in Chart 122 past October 2000 is not likely to occur. Accordingly, a final prediction about the next onset of El Nino must await the actual historical plot of the X Wave as it moves through its low period during the next three to four months. A final prediction can then be made by about the end of January 2001.

9. *The Principles of Vortex Tectonics*

Can the various correlations which are presented in this article be explained in a new model of how geological processes work? Yes, and without leaps of logic and grand sweeping presumptions which underlay some of the prevalent theories of Earth processes. The direct, simple, empirical relationships which are perfectly obvious in these correlations can be integrated with a wide variety of findings and research which have contributed by a variety of Earth scientists in a number of different specialities during the past 30 years. The author has prepared a brief on the new paradigm which is provided in a separate paper titled "*An Outline Of The Paradigm Of Vortex Tectonics*". Additionally, many of the key ideas are discussed in elaborate detail in "*Return of the Phoenix Book Three: The Prophecies*".

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