TECTONIC EQUILIBRIUM

Introduction to a Stochastic Global Seismic Distribution Model

Charl E Janeke (PE)

Kartago Inc, Los Angeles, CA / USA

www.kartagoinc.com

ABSTRACT: Earthquakes are the result of pressure surges and consequential fractures of the crust of the earth emanating form the interaction of tectonic plates as a consequence of continental drift. The most severe disasters are the consequence of earthquakes. The magnitude of earthquakes depends on how the continental OR tectonic plates interact and collide. Major earthquakes (Richter scale 6.0 up) occur on active fault-lines. The epicenter of a seismic event is perpendicular above the center of the earthquake on the surface of the earth. Earthquakes generate three types of seismic waves. Primary "P" waves propagate at 20,000mph, however with minimal energy content due to the high frequency. Secondary "S" waves are absorbed and attenuated in the molten core of the earth. "L" waves however are destructive of nature due to the extreme amplitude and consequential energy content and displacement surge. "L" waves propagate exclusively on the surface of the earth (credit Oracle). At task however is the enigma of continental plate movement OR continental drift. In accordance with the SuDBE2009 "Polar Equilibrium" treatise, rapid chilling of the earth resulted in the 1st Harmonic of Formation 3.5-4B years after formation that fractured the mantle of the earth as a consequence of transient thermal stress concentrations. The fractured mantle hence initiated continental drift that spawned an era of intense volcanic activity breaking the stranglehold of the deep freeze that was settling onto the incipient earth at the time. The most compelling concept however is that as a consequence of the material makeup of the universe at the time of formation, approximately 5% of the earth's mass comprised elemental carbon. See Binder Schmidt analysis at www.polarequilibrium.com. The consequence is 50% of the carbon at formation was dispersed into the atmosphere as carbon dioxide and natural rock formations, the residual 50% (viz. 10^24lb) equates to a 50-100 mile carbon/graphite layer approx 50-100 miles below the surface of the earth. With μ=0.05 at 1,000F, the friction coefficient of graphite matches the surface vector of the planetary and axial spin centripetal acceleration vectors in unity. Tectonic dynamics is therefore considered germane to centripetal acceleration and continental drift.

Key Words: CONTINENTAL DRIFT, TECTONIC, CENTRIPETAL, SEISMIC and STOCHASTIC

1. *Introduction // Centripetal Acceleration*

The most compelling question confronting modern society is sustaining the global environment in its present form. The retraction of the polar ice caps, destruction of the rain forests, expanding deserts, persistent droughts and destructive flooding raised the scepter of universal demise. In order to answer the question of environmental deflagration we need to understand the thermodynamics of formation of the shell/mantle/crust of the earth, global recurrence harmonics and the dynamics of seismic events. The SuDBE2009 "Polar Equilibrium" presentation was directed at the formation of the earth and a consequential global heat balance, the SuDBE2011 focus is directed at the makeup of a global tectonic (equilibrium) model and the associated (continental) plate dynamics. In accordance with the SuDBE2009 crust-formation synthesis (***Binder Schmidt*** analysis supra), centripetal acceleration has been identified as the principal seismic motive force. Closer analysis of celestial dynamics indicates that the oblique/tilted orbit of the earth around the sun exercise a profound impact on plate dynamics and (harmonic) seismic propagation as a consequence of stress

inversion. Barring an equatorial dead zone the inversions (OR "eclipses") is distributed over the range 10-90 degree latitude where most seismic activity occurs. The presentation is hence focused at the elements of a seismic prediction model comprising (1) a surface vectored centripetal acceleration driven disturbance model (2) a ***Random*** walk (stress) propagation and model (3) ***Kalman*** stochastic event prediction.

Centripetal acceleration is distinction of planetary/tiered motion that represents the rate of tangential velocity change in a circular plane. In event of planetary OR geo-stationary orbit the centripetal acceleration matches the orbital gravity acceleration around the sun in space (OR earth in event of a satellite). Although centripetal acceleration on the surface of the earth does not relate to spatial balance, it's the major force that drives trade winds, ocean currents, global weather and tectonic disturbance consequentially.

In accordance with the definition of tangent velocity change, centripetal acceleration ***Ac*** may in the abstract be presented as;

Ac = lim (d >0) dVt/dt = W^2xR = Vt^2/R

Where ***Ac*** = centripetal acceleration in ft/sec2, ***W*** = angular velocity (rate of rotation) in radians/sec, ***Vt*** = tangential velocity in ft/sec and ***R*** = radius of the focal point in ft.

In event of the earth the centripetal acceleration may be equated as follows;

(1) ***Re*** *= 6,378 km = 6,378 x 1,000 x 3.3 = 21,047,400 ft*
(2) ***We*** *= (2xPi) / (24x60x60) = 7.275 x 10^-5 Radians/sec*
(3) ***Ae*** *= (7.275x10^-5)^2 x 21,047,400 =* ***0.1114*** *ft/sec2*

At 90deg latitude the centripetal acceleration ***Ae.90*** = ***Ae*** x sin (90deg) = *0.1114 ft/sec*
At 60deg latitude the centripetal acceleration ***Ae.60*** = ***Ae*** x sin (60deg) = *0.0965* ft/sec
At 45deg latitude the centripetal acceleration ***Ae.45*** = ***Ae*** x sin (45deg) = *0.0788* ft/sec
At 30deg latitude the centripetal acceleration ***Ae.30*** = ***Ae*** x sin (30deg) = *0.0557* ft/sec
At 00deg latitude the centripetal acceleration ***Ae.00*** = ***Ae*** x sin (00deg) = *0.0000* ft/sec.

2. Centripetal Surface Vector

Whereas centripetal acceleration in the abstract is germane to the radius of rotation, the acceleration vector may be 3-dimensionally implied as the circumference or surface disk or sphere. In event of the earth the respective surface vectors may hence equated as follows;

At 90deg latitude the surface vector ***Aes.90*** = ***Ae.90*** x cos (90deg) = *0.0000* ft/sec
At 60deg latitude the surface vector ***Aes.60*** = ***Ae.60*** x cos (60deg) = *0.0079* ft/sec
At 45deg latitude the surface vector ***Aes.45*** = ***Ae.45*** x cos (45deg) = *0.0091* ft/sec
At 30deg latitude the surface vector ***Aes.30*** = ***Ae.30*** x cos (30deg) = *0.0079* ft/sec
At 00deg latitude the surface vector ***Aes.00*** = ***Ae.00*** x cos (00deg) = *0.0000* ft/sec.

The equator and pole vectors will however equate to ZERO under all circumstances as the surface vector component = ZERO at the equator and the centripetal acceleration = ZERO (zero radius) at the poles.

3. Planetary Inversion Vector

As for the earth's trajectory around the sun the planetary centripetal acceleration may be equated as follows;

(1) ***Rs*** *= 140M km = 140M x 1000 x 3.3 = 4.62x10^11 ft*
(2) ***Ws*** *= (2xPi) / (8,800x60x60) = 1.984 x 10^-7 Radians/sec*
(3) ***As*** *= (1.984 x 10^-7)^2 x 4.62x10^10 =* ***0.0182*** *ft/sec2.*

Although the planetary centripetal vector amounts to only 16.3% (viz. 0.0182 / 0.1114 =0.163) of the earth driven vector as measured at the equator, the surface vector ***Aes*** constitutes the only rational and proper

means of impact comparison. The ranking (viz. ***Aes/As***) may hence be applied as basis of comparison as to the earth and sun driven centripetal vectors from ZERO (equator) to 90deg latitude (poles), as follows;

At 90deg ratio = ***Aes/As*** = ***Ae.90*** x cos (90deg) / 0.0182 = 0.0000 / 0.0182 = 0.000 = ***0.00***%
At 80deg ratio = ***Aes/As*** = ***Ae.80*** x cos (80deg) / 0.0182 = 0.0031 / 0.0182 = 0.170 = ***17.0***%
At 70deg ratio = ***Aes/As*** = ***Ae.70*** x cos (70deg) / 0.0182 = 0.0059 / 0.0182 = 0.324 = ***32.4***%
At 60deg ratio = ***Aes/As*** = ***Ae.60*** x cos (60deg) / 0.0182 = 0.0079 / 0.0182 = 0.434 = ***43.4***%
At 45deg ratio = ***Aes/As*** = ***Ae.45*** x cos (45deg) / 0.0182 = 0.0091 / 0.0182 = 0.500 = ***50.0***%
At 30deg ratio = ***Aes/Ac*** = ***Ae.30*** x cos (30deg) / 0.0182 = 0.0079 / 0.0182 = 0.434 = ***43.4***%
At 20deg ratio = ***Aes/As*** = ***Ae.20*** x cos (20deg) / 0.0182 = 0.0058 / 0.0182 = 0.319 = ***31.9***%
At 10deg ratio = ***Aes/As*** = ***Ae.10*** x cos (10deg) / 0.0182 = 0.0031 / 0.0182 = 0.170 = ***17.0***%
At 00deg ratio = ***Aes/Ac*** = ***Ae.00*** x cos (00deg) / 0.0182 = 0.0000 / 0.0182 = 0.000 = ***0.00***%.

4. Superposition Reaction Vector

In order to determine the gross tectonic impact the (surface/crust) "superposition" vector must however be determined as to BOTH the earth's rotational and sun driven planetary vectors for BOTH the inner and outer (facing) surfaces of the earth. The superposition vectors may hence be equated as follows;

INNER;

At 90deg ratio = ***Aes/As*** = ***Ae.90*** x cos (90deg) + 0.0182 x sin (90) = ***0.018***
At 80deg ratio = ***Aes/As*** = ***Ae.80*** x cos (80deg) + 0.0182 x sin (80) = ***0.037***
At 70deg ratio = ***Aes/As*** = ***Ae.70*** x cos (70deg) + 0.0182 x sin (70) = ***0.053***
At 60deg ratio = ***Aes/As*** = ***Ae.60*** x cos (60deg) + 0.0182 x sin (60) = ***0.064***
At 45deg ratio = ***Aes/As*** = ***Ae.45*** x cos (45deg) + 0.0182 x sin (45) = ***0.068***
At 30deg ratio = ***Aes/Ac*** = ***Ae.30*** x cos (30deg) + 0.0182 x sin (30) = ***0.057***
At 20deg ratio = ***Aes/As*** = ***Ae.20*** x cos (20deg) + 0.0182 x sin (20) = ***0.042***
At 10deg ratio = ***Aes/As*** = ***Ae.10*** x cos (10deg) + 0.0182 x sin (10) = ***0.022***
At 00deg ratio = ***Aes/Ac*** = ***Ae.00*** x cos (00deg) + 0.0182 x sin (00) = ***0.000***

OUTER;

At 90deg ratio = ***Aes/As*** = ***Ae.90*** x cos (90deg) - 0.0182 x sin (90) = -***0.018***
At 80deg ratio = ***Aes/As*** = ***Ae.80*** x cos (80deg) - 0.0182 x sin (80) = -***0.001***
At 70deg ratio = ***Aes/As*** = ***Ae.70*** x cos (70deg) - 0.0182 x sin (70) = ***0.019***
At 60deg ratio = ***Aes/As*** = ***Ae.60*** x cos (60deg) - 0.0182 x sin (60) = ***0.032***
At 45deg ratio = ***Aes/As*** = ***Ae.45*** x cos (45deg) - 0.0182 x sin (45) = ***0.043***
At 30deg ratio = ***Aes/Ac*** = ***Ae.30*** x cos (30deg) - 0.0182 x sin (30) = ***0.039***
At 20deg ratio = ***Aes/As*** = ***Ae.20*** x cos (20deg) - 0.0182 x sin (20) = ***0.029***
At 10deg ratio = ***Aes/As*** = ***Ae.10*** x cos (10deg) - 0.0182 x sin (10) = ***0.016***.
At 00deg ratio = ***Aes/Ac*** = ***Ae.00*** x cos (00deg) - 0.0182 x sin (00) = ***0.000***

Noteworthy is that the surface fractional vector will always be ZERO at the equator for BOTH the earth and planetary driven acceleration vectors as a consequence of orientation, the net polar vector is not only negative but REVERSES daily as a consequence of rotation of the earth around it's axis. Noteworthy also is the magnetic exitation impact of the slated centripetal inversion to the earth's magnetic field.

5. Tilt Inversion

The impact of tilt is twofold as a consequence of seasonal inversion of the planetary trajectory of the earth around the sun. The numbers are being presented in detail in the appended spreadsheet analysis.

6. Random Walk Model

Random walk is an event that is driven by successive random disturbances OR random steps. ***Random*** walk in the purist sense only has a beginning and an end. There is no rational relationship between the initial and the terminal state f a purist ***Random*** walk process. In event of a chain of successive disturbances within the confinements of a determinative process, ***Random*** walk becomes a ***Stochastic*** process where the (n+1) th state is germane to the (n) th state. However where the (n) th state contains the COMPLETE history of ALL proceeding steps (viz. akin to mathematical DNA), the process is called a ***Markov*** chain. Mathematically a ***Markov*** chain may hence be expressed in terms of the probability vector { Pij } as;

Pij = SUM (k=1, k=r) [Pik.Pkj]

where "k" denotes the number of steps of process "k" from beginning "1" to state "r" with Pik and Pkj the makeup of the successive steps viz-a-viz. A tectonic plate system that is being impacted by an sequence of harmonic disturbances may be designated as ***Markov*** chain as a consequence of (1) the confinements of a determinative process (viz. a rational relationship between the "n" and (n+1)" steps) and (2) the infiniteness of the disturbances as a consequence of the galactic time scale.

The ***Random*** walk OR ***Markov*** chain will hence become an the primary tool as to computational analysis re (1) probability propagation as to the movement and (2) stress distribution on the continental/tectonic plates as a consequence of centripetal reaction force emanating from earth's rotational spin, the trajectory around the sun and the tilt/inversion of the axis of the earth towards the sun.

7. Kalman filter

The ***Kalman*** filter is a "stochastic" computational process that pairs recorded data and computationally predicted estimates of state as to an ***uncertainty*** between the measured and computationally predicted values of state and hence reforms the uncertainty into an "optimal estimate of state" OR "optimal gain vector" (the filter lemma) whereby the recorded data is computationally refined as to the "***Kalman***" optimal estimate of state. In accordance with the premise of uncertainty (1) a computational relationship (OR system model) and (2) the measured data are essential requisites. The computational relationship/model is employed to equate the propagation form state (n) to state (n+1) based on the "filtered"/refined state (n) measurements. The measurements are conversely applied to equate the propagation of uncertainty in order to equate the (n+1)th stage gain OR "predicted" filter gain. Properly developed measurements streams with a ***Gaussian*** white noise disturbance base are essential ***Kalman*** filter requisites.

Here we once again have a perfect fit as to the model (the ***Markov*** chain) and the application (***Tectonic equilibrium***). The application however in this instance would be the focused on the probability distribution and timing between successive events.

8. Conclusion

In order to rationally manage the environmental deflagration catastrophe emanating from global warming and seismic events, we need to better understand the thermodynamics of formation of the shell/mantle/crust of the earth, global greenhouse harmonics and seismic disturbances. Predicting OR understanding the forces of nature generally and tectonic equilibrium specifically has been an elusive quest to date. The analysis would therefore serve a the purpose of developing a large scale (global) tectonic model on the foundation of (1) a global ***Centripetal*** surface reaction model as illustrated (2) a global ***Random*** walk model and (3) a large scale distributed ***Kalman*** filter model.

This presentation hence serves as (1) a disposition re global tectonic dynamics and (2) an invitation to participate with a global tectonic (prediction) model based on the underlying Centripetal, Random walk and Kalman filter model systems as illustrated.

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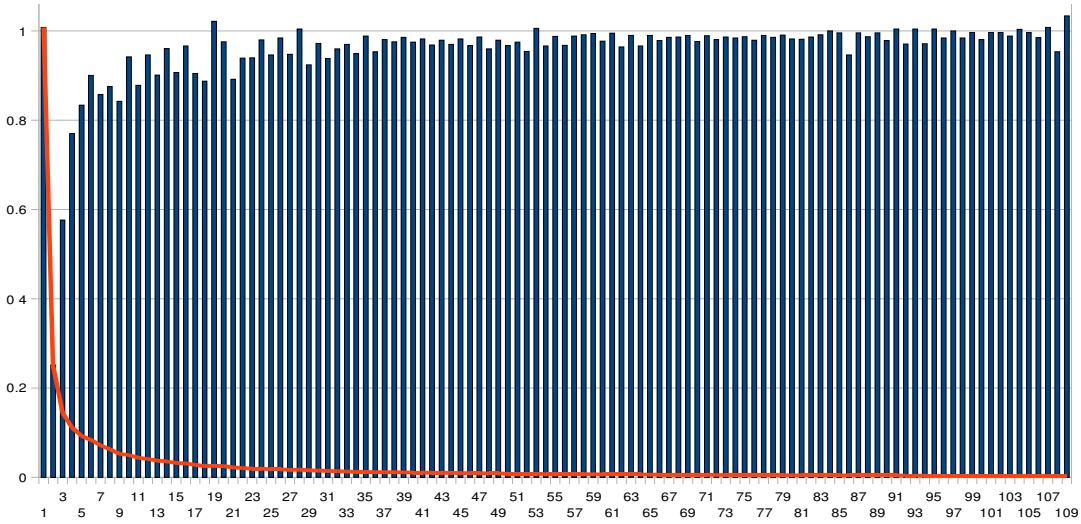
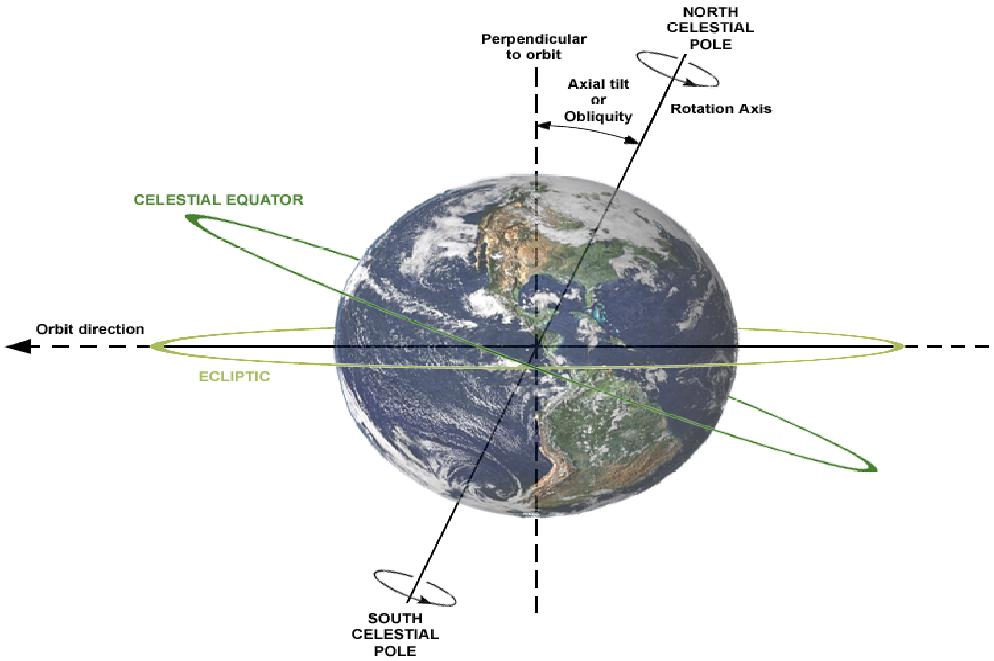
AGE OF THE UNIVERSE: *PERFECT* ***sequencing*** *(...the doctrine of infinite resources!!)*

H > He > Li > Be > B > C > N > O > Fl > Ne > Na > Mg > Al > Si > P > S
5.46>6.83>7.62>8.23>8.74>9.2>9.59>9.94>10.23>10.5>10.74>10.96>11.17>11.36>11.54>11.71 ***(16)***
Cl > Ar > K > Ca > Sc > Ti > Cr > Fe > Co > Ni > Cu > Zi > Ga > Ge > As
11.87>12.01>12.15>12.28>12.41>12.52>12.63>12.73>12.83>12.93>13.03>13.12>13.21>13.29>13.37 ***(31)***
Se > Br > Kr > Rb > Sr > Y > Zr > Nb > Mo > Tc > Ru > Rh > Pd > Ag > Cd
13.45>13.52>13.59>13.66>13.72>13.79>13.85>13.91>13.97>14.03>14.09>14.15>14.2>14.25>14.3 ***(46)***
In > Sn > S > Te > I > Xe > Cs > Ba > La > Ce > Pr > Nd > Pm > Sm > Eu



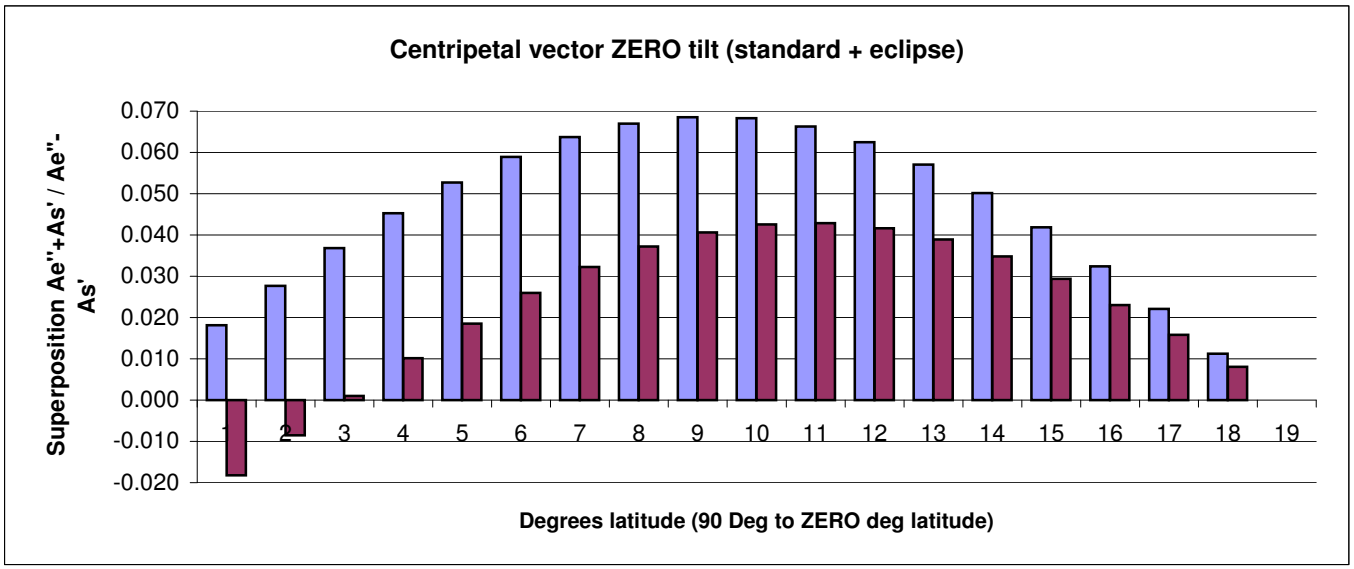
Binder Schmidt Analysis, Tianjin Jan/2010 http://kartagoinc.com/BSAnalysis-Tianjin-Jan2010.pdf

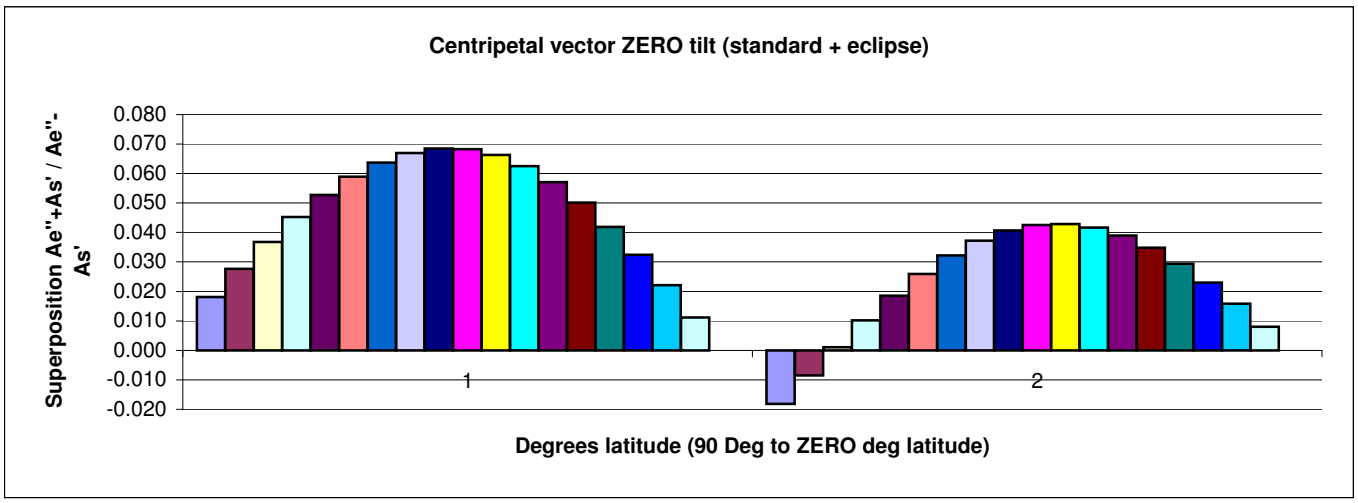


http://en.wikipedia.org/wiki/File:AxialTiltObliquity.png

ZERO Tilt Tectonic Centipetal ACCELERATION Vector

	3.142			*24*	*8800*	*6350*		*1.4E+08*	*2Pi*			*2Pi*			
Deg	***Pi***	***Cos***	***Sin***	***We***	***Ws***	***Re***	***Re'***	***Rs***	***Ae***	***Ae'***	***Ae''***	***As***	***As'***		
90	1.571	0.000	1.000	7.27E-05	1.98E-07	2.10E+07	2.10E+07	4.62E+11	0.111	0.111	0.000	0.018	0.018	0.018	-0.018
85	1.484	0.087	0.996	7.27E-05	1.98E-07	2.10E+07	2.09E+07	4.62E+11	0.111	0.110	0.010	0.018	0.018	0.028	-0.009
80	1.396	0.173	0.985	7.27E-05	1.98E-07	2.10E+07	2.06E+07	4.62E+11	0.111	0.109	0.019	0.018	0.018	0.037	0.001
75	1.309	0.259	0.966	7.27E-05	1.98E-07	2.10E+07	2.02E+07	4.62E+11	0.111	0.107	0.028	0.018	0.018	0.045	0.010
70	1.222	0.342	0.940	7.27E-05	1.98E-07	2.10E+07	1.97E+07	4.62E+11	0.111	0.104	0.036	0.018	0.017	0.053	0.019
65	1.135	0.422	0.906	7.27E-05	1.98E-07	2.10E+07	1.90E+07	4.62E+11	0.111	0.100	0.042	0.018	0.016	0.059	0.026
60	1.047	0.500	0.866	7.27E-05	1.98E-07	2.10E+07	1.81E+07	4.62E+11	0.111	0.096	0.048	0.018	0.016	0.064	0.032
55	0.960	0.573	0.819	7.27E-05	1.98E-07	2.10E+07	1.72E+07	4.62E+11	0.111	0.091	0.052	0.018	0.015	0.067	0.037
50	0.873	0.643	0.766	7.27E-05	1.98E-07	2.10E+07	1.61E+07	4.62E+11	0.111	0.085	0.055	0.018	0.014	0.069	0.041
45	0.786	0.707	0.707	7.27E-05	1.98E-07	2.10E+07	1.48E+07	4.62E+11	0.111	0.078	0.055	0.018	0.013	0.068	0.043
40	0.698	0.766	0.643	7.27E-05	1.98E-07	2.10E+07	1.35E+07	4.62E+11	0.111	0.071	0.055	0.018	0.012	0.066	0.043
35	0.611	0.819	0.574	7.27E-05	1.98E-07	2.10E+07	1.20E+07	4.62E+11	0.111	0.064	0.052	0.018	0.010	0.063	0.042
30	0.524	0.866	0.500	7.27E-05	1.98E-07	2.10E+07	1.05E+07	4.62E+11	0.111	0.055	0.048	0.018	0.009	0.057	0.039
25	0.436	0.906	0.423	7.27E-05	1.98E-07	2.10E+07	8.86E+06	4.62E+11	0.111	0.047	0.042	0.018	0.008	0.050	0.035
20	0.349	0.940	0.342	7.27E-05	1.98E-07	2.10E+07	7.17E+06	4.62E+11	0.111	0.038	0.036	0.018	0.006	0.042	0.029
15	0.262	0.966	0.259	7.27E-05	1.98E-07	2.10E+07	5.42E+06	4.62E+11	0.111	0.029	0.028	0.018	0.005	0.032	0.023
10	0.175	0.985	0.174	7.27E-05	1.98E-07	2.10E+07	3.64E+06	4.62E+11	0.111	0.019	0.019	0.018	0.003	0.022	0.016
5	0.087	0.996	0.087	7.27E-05	1.98E-07	2.10E+07	1.83E+06	4.62E+11	0.111	0.010	0.010	0.018	0.002	0.011	0.008
0	0.000	1.000	0.000	7.27E-05	1.98E-07	2.10E+07	0.00E+00	4.62E+11	0.111	0.000	0.000	0.018	0.000	0.000	0.000





24 Deg Tilt Tectonic Centipetal ACCELERATION Vector

	3.142			24	8800	6350		1.4E+08	2Pi			2Pi	0.42 / 24.00		
Deg	**Pi**	**Cos**	**Sin**	**We**	**Ws**	**Re**	**Re'**	**Rs**	**Ae**	**Ae'**	**Ae''**	**As**	**As'**		
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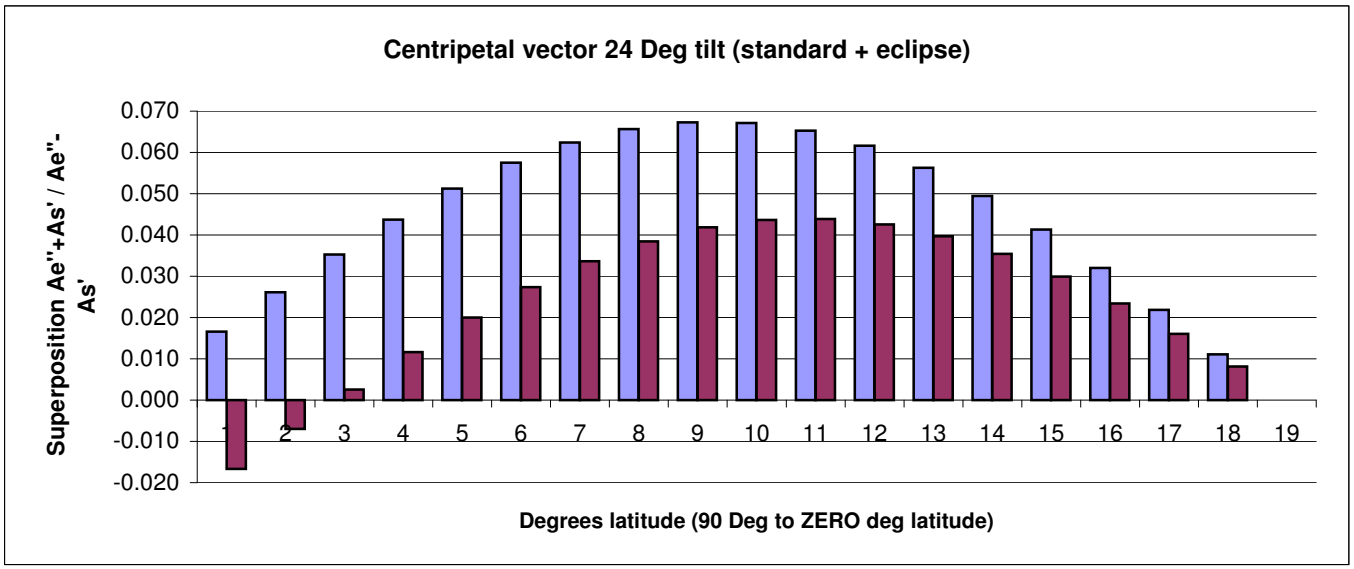
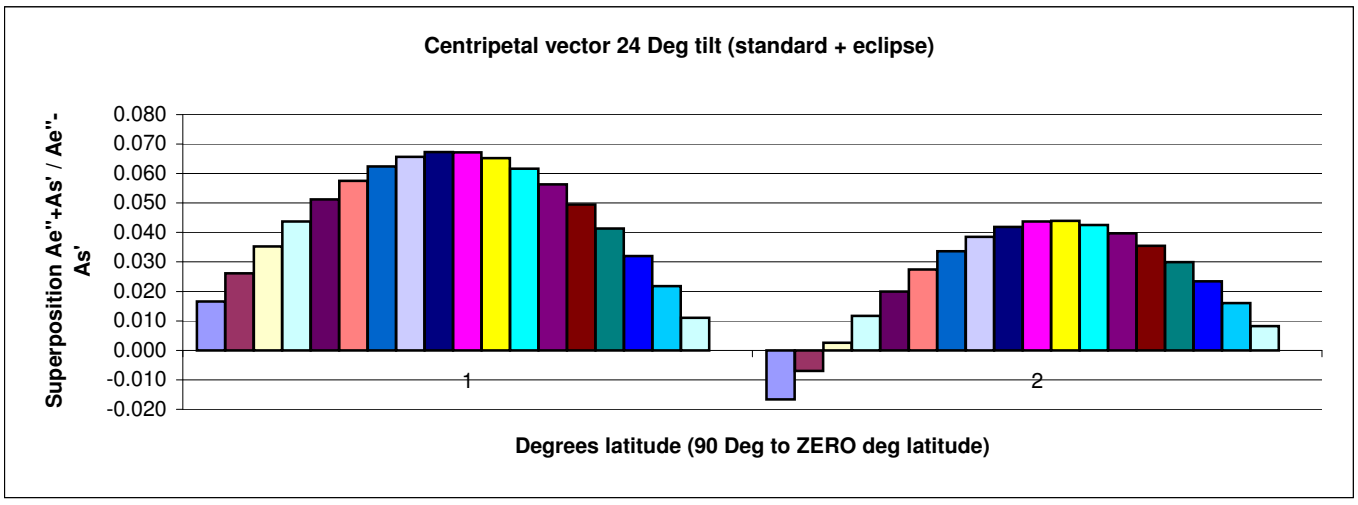
25	0.436	0.906	0.423	7.27E-05	1.98E-07	2.10E+07	8.86E+06	4.62E+11	0.111	0.047	0.042	0.018	0.007	0.049	0.035
20	0.349	0.940	0.342	7.27E-05	1.98E-07	2.10E+07	7.17E+06	4.62E+11	0.111	0.038	0.036	0.018	0.006	0.041	0.030
15	0.262	0.966	0.259	7.27E-05	1.98E-07	2.10E+07	5.42E+06	4.62E+11	0.111	0.029	0.028	0.018	0.004	0.032	0.023
10	0.175	0.985	0.174	7.27E-05	1.98E-07	2.10E+07	3.64E+06	4.62E+11	0.111	0.019	0.019	0.018	0.003	0.022	0.016
5	0.087	0.996	0.087	7.27E-05	1.98E-07	2.10E+07	1.83E+06	4.62E+11	0.111	0.010	0.010	0.018	0.001	0.011	0.008
0	0.000	1.000	0.000	7.27E-05	1.98E-07	2.10E+07	0.00E+00	4.62E+11	0.111	0.000	0.000	0.018	0.000	0.000	0.000





66 Deg Tilt Tectonic Centipetal ACCELERATION Vector

	3.142			24	8800	6350		1.4E+08	2Pi			2Pi	1.15 66.00		
Deg	**Pi**	**Cos**	**Sin**	**We**	**Ws**	**Re**	**Re'**	**Rs**	**Ae**	**Ae'**	**Ae''**	**As**	**As'**		
90	1.571	0.000	1.000	7.27E-05	1.98E-07	2.10E+07	2.10E+07	4.62E+11	0.111	0.111	0.000	0.018	0.007	0.007	-0.007
85	1.484	0.087	0.996	7.27E-05	1.98E-07	2.10E+07	2.09E+07	4.62E+11	0.111	0.110	0.010	0.018	0.007	0.017	0.002
80	1.396	0.173	0.985	7.27E-05	1.98E-07	2.10E+07	2.06E+07	4.62E+11	0.111	0.109	0.019	0.018	0.007	0.026	0.012
75	1.309	0.259	0.966	7.27E-05	1.98E-07	2.10E+07	2.02E+07	4.62E+11	0.111	0.107	0.028	0.018	0.007	0.035	0.021
70	1.222	0.342	0.940	7.27E-05	1.98E-07	2.10E+07	1.97E+07	4.62E+11	0.111	0.104	0.036	0.018	0.007	0.043	0.029
65	1.135	0.422	0.906	7.27E-05	1.98E-07	2.10E+07	1.90E+07	4.62E+11	0.111	0.100	0.042	0.018	0.007	0.049	0.036
60	1.047	0.500	0.866	7.27E-05	1.98E-07	2.10E+07	1.81E+07	4.62E+11	0.111	0.096	0.048	0.018	0.006	0.054	0.042
55	0.960	0.573	0.819	7.27E-05	1.98E-07	2.10E+07	1.72E+07	4.62E+11	0.111	0.091	0.052	0.018	0.006	0.058	0.046
50	0.873	0.643	0.766	7.27E-05	1.98E-07	2.10E+07	1.61E+07	4.62E+11	0.111	0.085	0.055	0.018	0.006	0.060	0.049
45	0.786	0.707	0.707	7.27E-05	1.98E-07	2.10E+07	1.48E+07	4.62E+11	0.111	0.078	0.055	0.018	0.005	0.061	0.050
40	0.698	0.766	0.643	7.27E-05	1.98E-07	2.10E+07	1.35E+07	4.62E+11	0.111	0.071	0.055	0.018	0.005	0.059	0.050
35	0.611	0.819	0.574	7.27E-05	1.98E-07	2.10E+07	1.20E+07	4.62E+11	0.111	0.064	0.052	0.018	0.004	0.056	0.048
30	0.524	0.866	0.500	7.27E-05	1.98E-07	2.10E+07	1.05E+07	4.62E+11	0.111	0.055	0.048	0.018	0.004	0.052	0.044
25	0.436	0.906	0.423	7.27E-05	1.98E-07	2.10E+07	8.86E+06	4.62E+11	0.111	0.047	0.042	0.018	0.003	0.046	0.039
20	0.349	0.940	0.342	7.27E-05	1.98E-07	2.10E+07	7.17E+06	4.62E+11	0.111	0.038	0.036	0.018	0.003	0.038	0.033
15	0.262	0.966	0.259	7.27E-05	1.98E-07	2.10E+07	5.42E+06	4.62E+11	0.111	0.029	0.028	0.018	0.002	0.030	0.026
10	0.175	0.985	0.174	7.27E-05	1.98E-07	2.10E+07	3.64E+06	4.62E+11	0.111	0.019	0.019	0.018	0.001	0.020	0.018
5	0.087	0.996	0.087	7.27E-05	1.98E-07	2.10E+07	1.83E+06	4.62E+11	0.111	0.010	0.010	0.018	0.001	0.010	0.009
0	0.000	1.000	0.000	7.27E-05	1.98E-07	2.10E+07	0.00E+00	4.62E+11	0.111	0.000	0.000	0.018	0.000	0.000	0.000