

The Pleistocene Mass Extinction

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"There is no place for dogma in science. The scientist is free to ask any question, to doubt any assertion, to seek for any evidence, to correct any error. Where science has been used in the past to erect a new dogmatism, that dogmatism has found itself incompatible with the progress of science; and in the end, the dogma has yielded, or science and freedom have perished together."

- J. Robert Oppenheimer, http://www.chemistrycoach.com/science_and_other_disciplines.htm

"An unflinching determination to take the whole evidence into account is the only method of preservation against the fluctuating extremes of fashionable opinion."

- Alfred North Whitehead, <http://www.alfred.north.whitehead.com/ANW/WitWisdom/witwis3.htm>

As a request at the outset, you will please allow me some leeway in regards to my imprecise description of the astrophysical extinction event, as I have little technical knowledge of the many specialized fields I will draw upon for my argument. This theory is based on my understanding of the interrelationships between a diverse selection of evidence. In addition, I am attempting to describe phenomena which may not currently have proper nouns assigned to them. Allowing for time and motivation, as I learn more this theory will be revised, perhaps with more specific detail. This theory does not attempt to explain any mass extinction that may have been caused by a meteor or comet impact.

While this theory may at first appear highly speculative because of the novelty of its assertions it is nevertheless based overwhelmingly on verifiable physical observations. This paper merely reinterprets the evidence and presents an analysis that I believe has alluded other scientists and theorists because of its interdisciplinary complexity, the fact that much evidence has been discovered in only the past few years and months and for a number of reasons related to human psychology. Regardless, the veracity of any scientific theory should not be judged by such things but instead on how well it stands against repeated verifiable testing. Within the body of this paper and in the conclusion I provide numerous suggestions on how different aspects of the theory can be tested.

My theory involves a gravity well as large as the galaxy itself and probably larger that I think explains not only the relative orbital velocities of stars at varying distances from the center but also the interaction between neighboring galaxies and the effect on light that creates bunching, periodicity, and arches in redshift observations. This effect on light combined with an invalid 'Big Bang' cosmological model has lead astronomers to conclude things as ridiculous as the Earth is the center of the universe and the Universe in 1997 has begun accelerating in its expansion. Instead I contend our 'solar system' is accelerating exponentially toward its closest point towards the core of the Galaxy in an elliptical orbit and this acceleration accounts for the change in the 1997 supernovae redshift observations.

I contend the astrophysical effects of our proximity can be seen in our Sun's activity. I contend the mass of all objects in our solar system are increasing as we move deeper in the gravity well. (I think the well is spherical.) Since the Sun comprises about 99% of the mass of our solar system the effects should be seen first there and be most pronounced. Despite knowing very little relevant math I submit that if you apply Einstein's $E=mc^2$ to my premise that the Sun's mass is increasing you should expect solar activity and energy/radiation output to increase. Because of the shape of the distortion of space-time the energy production should increase at an accelerating, perhaps exponential rate.

'Some' of the enormous bursts of energy from stars that have typically been understood to be supernovas I contend are actually a nova event which occurs when a star 'sheds' most or all of its corona. To repeat, I contend that the mass and thus the energy of a star increase as it nears the center of its galaxy and decreases as it moves away. However, at its closest point (perigee), when it moves away from the center, the energy and matter (e.g. plasma) in the corona held in place by the increased mass and gravitational forces (sun and galactic core) is released because the energy is subsequently too great to contain. I site at least two studies whose findings indicate this is

possible. Long before reaching this 'most massive' point, the sun will noticeably increase its energy output, resulting in measurable effects on orbiting planetary systems.

With that hypothesis in mind I searched and found substantial supporting evidence enabled by NASA's and others dramatic increase in data collection in recent years. The solar maximum (Solarmax) of sunspot activity and its increasing duration, the correlation between the Solarmax and the rise in global temperature measurements, 8,000 observations of gas falling back into the sun's corona, the 'discovery' that solar radiation destroys atmospheric ozone coupled with the fact that ozone depletion has been most pronounced over Antarctica when it directly faces the Sun in Earth's orbital perihelion. My contention that our acceleration is exponential can be seen in the accelerated melting of not only Earth's ice caps and glaciers but the polar ice caps on Mars as well.

While the Earth has no corona surrounding it, I think it likely there is additional pressure exerted on the Earth's core and other layers as it moves deeper in the gravity well. These effects produce an increase in core temperature and force additional molten material outward. One could consider the surface or crust of the Earth to be positionally analogous to the Sun's corona for this paper, as I believe from a human perspective, the consequential effects will be most dramatic on both. That is, when our solar system and thus the Earth 'leaves' and begins moving away from the center of the Galaxy, at the point it is deepest in the gravitational distortion, there will be a series of explosive events. These events will result in worldwide seismic activity the scale of which has not occurred on this planet for 220 million years. This is the kind of volcanic and tectonic activity that forces whole continents to move "dramatically", forms mountain ranges, covers whole continents with molten lava and creates inland seas. Despite the terrifying enormity of the devastation I site several articles that support this theory with recently discovered evidence. Evidence that indicates two of the largest mass extinctions occurred 440 and 220 million years ago.

I also contend there are measurable effects on matter of 'much' lesser mass that can be observed, effects on humans, for example. There are several psychological and physiological changes occurring among human populations across the planet. Most of these changes are considered mysterious and abnormal by trained professionals because they lack perspective and the frequency of occurrence is accelerating. Among the phenomena I attempt to provide a physiological explanation for are; accelerating increase of IQ, decreasing age of sexual maturation, Attention Deficit Disorder and Hyperactivity Disorder, Social Anxiety Disorder, and Asperger's Syndrome. My hypothesis is based largely on the physiological evidence of cognitive functional differentiation and the research on functional expression (personality).

In many ways understanding human psychology is relevant to scientific research and helps explain why I understand things that specialized professionals have not yet realized. Among them are deference to authority, social or professional status, willingness to admit fault, willingness to consider socially unpopular ideas (and evidence), acknowledgement that human understanding is incomplete and assumptions need to be reassessed in light of new evidence, and recognition that a theory is still a theory even when the majority presumes it to be fact (e.g. Big Bang 'theory'). In order to put my argument in its proper context, my paper will begin by arguing that astronomical observational evidence used to support a Big Bang origin of the universe actually disproves the theory and instead supports the current Quasi Steady State cosmological (QSSC) theory. The theory will then shrink the sphere of evidence by moving from Cosmology to Galaxy formation theory, to the history of our Solar System, the Earth and biosphere and finally to explorations of Human physiology and psychology.

Cosmology

“Cosmology used to be regarded as a pseudo science, an area where wild speculation, was unconstrained by any reliable observations. We now have lots and lots of observational data, and a generally agreed picture of how the universe is evolving. But cosmology is still not a proper science, in the sense that as usually practiced, it has no predictive power... To go further, and be a real science, cosmology would have to predict how the universe should be. We could then test its predictions against observation, like in any other science.”

- Stephen W. Hawking, January '99, Physics Colloquiums - **Quantum Cosmology, M-theory and the Anthropic Principle**, <http://www.hawking.org.uk/text/physics/quantum.html>

Paradoxically, at this point in time the most important subject with the greatest bearing on the collective lives of everyone on Earth is the question of the origin of the universe. The current popular scientific theory is referred to as the ‘Big Bang’ cosmology and asserts that the universe began approximately 10-15 billion years ago in a violent explosion from a singularity. This theory grew in popularity to become the dominant cosmological model based on an expanding universe theory that used Einstein’s theory of General Relativity and evidence discovered by Edwin Hubble that appeared to support it.

“Ripples caused by Einstein's space theory

In 1916, Albert Einstein announced his general theory of relativity and the following year produced his model of space based on that theory. Einstein argued that the universe was immobile, but Dutch astronomer Willem de Sitter calculated Einstein's equation and proved that the universe was actually expanding. In 1922, Russian physicist Alexander Friedmann used Einstein's equations to prove that the universe could either shrink or expand.”

“Hubble's rule of an expanding universe

During the uncertainties of the era, Hubble was able to observe galaxies at distances up to 7 million light years away. By doing so he was able to come up with Hubble's Law, which said that the further galaxies were away from earth the faster they moved away from our planet. Hubble's rule proved the universe was expanding like a big balloon. In 1930, Einstein visited Wilson Observatory and viewed photos of galaxies taken by Hubble. After seeing the photographs, Einstein gave up his theory of an immobile universe for all time. The orbiting space telescope observing the universe is named after Hubble.”

- National Space Development Agency of Japan (NASDA), **Edwin Hubble** - *Lawyer-turned-astronomer who photographed the galaxies*, http://spaceboy.nasda.go.jp/note/kagaku/E/Kag13_e.html

One of the major pieces of evidence for the Big Bang theory is that distant galaxies are "moving away" from us and newer evidence found in the past five years would indicate that these recessional velocities are actually ‘increasing’ as the Universe ‘expands’. Yet how many astronomers do you think consider and factor in the following subjective values when formulating the recessional velocity of other galaxies?

- The Earth’s tangential velocity at 34° latitude is 1.384 km/sec. (0 km/sec at the poles)
- The Earth is orbiting the Sun at 29.79 km/sec. *
- Our solar system is orbiting the center of our Galaxy at least 250 km/sec. *
- Our Galaxy may be moving through the universe at a rate of speed 600 km/sec (~1 million mph). *

* Dinah L. Moche, Copyright 2000, **Astronomy – A Self-Teaching Guide** by, Fifth Edition

If they are factoring all of these "subjective" values along with their "objective" observation of distant galaxies then they should also be asked how are they accounting for Einstein’s theories of General and Special Relativity in regards to our velocity and not just the velocity of other galaxies. How do they propose to obtain a secondary observer’s vantage point? What effect may the theoretical quantum plenum/vacuum energy that seems to permeate the space within a galaxy have on light that enters from outside the galaxy?

According to Margaret Burbidge University Professor Emeritus of the Department of Physics and Center for Astrophysics and Space Sciences at the University of California, San Diego in her lecture that I attended, “**The**

Riddle of the Redshift: The Universe We Don't Understand", 'very' few astronomers even bother to consider 'our' velocity in their research. As suggested in her lecture, I have found a pattern that supports her claim.

"Measurements of periodic red-shift bunching appeared in the literature at least as far back as 1977 in the work of W.G. Tiftt. **The implications of this phenomenon are apparently too terrible to contemplate, for astrophysicists have not taken up the challenge.** They may be forced to take the phenomenon more seriously, because two new reports of redshift bunching have surfaced."

"First, B. Guthrie and W. Napier, at Edinburgh's Royal Observatory, have checked Tiftt's "bunching" claim using accurately known red shifts of some nearby galaxies. They found a periodicity of 37.5 kilometers/second -- **no matter in which direction the galaxies lay.**"

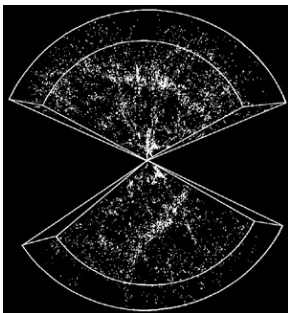
- William R. Corliss, From Science Frontiers #80, MAR-APR 1992, Science Frontiers ONLINE, No. 80: Mar-Apr 1992, **MORE EVIDENCE FOR GALACTIC "SHELLS" OR "SOMETHING ELSE"**, <http://www.science-frontiers.com/sf080/sf080a04.htm>

Dr. William J. Tiftt's work was originally attacked by colleagues by suggesting he had not considered another subjective velocity value I had not 'specifically' cited, that of the 'variation' in Earth's orbital velocity. Note that Tiftt was following through on the same kind of research that Hubble began.

The image below is from another page as credited below. It is a map of galaxies similar to our own. A distinctly similar pattern of galaxies arranged in arches or walls is observed above and below our Galaxy. The comment on the page regarding these patterns is worth noting, "The patterns in the north and south are similar. These large patterns are a **tough challenge** for attempts to model the development of structure in the universe."

"Dr. William J. Tiftt of the University of Arizona is one of many astronomers who have continued Hubble's work by performing increasingly precise red-shift measurements. Tiftt's technique has been to focus attention on stars in the arms of many spiral galaxies and to measure the observed red shift of each. Since such galaxies should be randomly distributed in the universe, one would expect the red shifts to also be random and to form a smooth distribution. Instead, in 1978 Tiftt found that the red-shifts were grouped into clusters of similar values, and that the clusters were regularly spaced with a separation equivalent to velocity shifts of 72 kilometers per second. Such a "quantized" red-shift is completely unexpected and cannot be readily explained. Therefore, it is not surprising that Tiftt's first reports of this phenomenon were met with great skepticism on the astrophysics community. **Some skeptics noted that Tiftt's quantization velocity is not much different from 60 kilometers per second, the semi-annual variation in the Earth's orbital velocity vector in its orbit around the Sun, and suggested that this velocity variation had produced the effect.**"

"Tiftt's results were so controversial that several groups of astronomers set out to prove that they were wrong by gathering data on red shifts more broadly and from a wider variety of galaxy types. To the surprise of the would-be disprovers, they found evidence for the same red-shift quantization that Tiftt had reported. For example, a group of astronomers associated with the Royal Observatory at Edinburgh, Scotland, examined 89 spiral galaxies picked at random and found a periodic bunching of red shifts in their data that was similar to the 72 km/s intervals found by Tiftt. The data they used came from many different observatories and many different telescopes, and it is therefore unlikely that some instrumental effects or systematic errors produce the observed red-shift quantization. The quantized red-shift phenomenon is not exclusively a property of the visible light spectrum of stars. Recent results from precision radio-telescope observations of spiral galaxies also appear to support Tiftt's results. The quantized red-shift phenomenon won't go away. Astronomers are coming to accept it as a real phenomenon."



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"Are there theories that can explain the effect? Not really. Gravitational attraction is known to bunch galaxies into clusters of galaxies with similar red-shifts, but such bunches should be randomly distributed, not regularly spaced. Tiftt's Arizona colleague W. John Cocke attempted to place the quantized red-shift

effect in a theoretical ad hoc "quantum" framework by hypothesizing a "red shift" operator constructed to produce discrete recession velocities as eigenvalues of a wave equation."

- John G. Cramer, *Alternate View Column AV-68*, Published in the November-1994 issue of Analog Science Fiction & Fact Magazine, **Stretch Marks of the Universe**, <http://www.npl.washington.edu/AV/altvw68.html>

- Image from Hans Haubold, A. M. Mathai, 1998, Figure 10, **GRAVITATIONAL INTERACTION: STRUCTURE OF THE MACROCOSMOS**, <http://www.seas.columbia.edu/~ah297/un-esa/universe/universe-chapter5.html>

Here is another more mathematically detailed paper that is forced to conclude by applying available red-shift data to a flawed cosmological model, that **Earth is the center of the universe**.

"From this discussion it is obvious that if two or more quasars have the same value of z , they are at the same distance (though in different directions) from the Earth. In other words, assuming the cosmological red-shift hypothesis, the quasars in the 57 groups in Table I are arranged on 57 spherical shells with Earth as the center. This is certainly an extraordinary result. Some of the possibilities that we shall consider to accommodate this result may be disturbing, but we must consider these possibilities dispassionately."

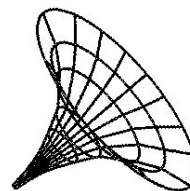
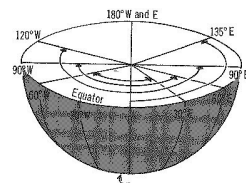
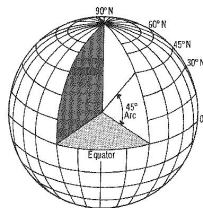
1. "Coincidence in distances could be possible if there were clustering. However, an examination of the coordinates of the various members of individual groups shows that in most cases there is no such correlation. Hence, this explanation has to be ruled out."
2. "Quasars may be arranged like atoms in a crystal lattice, with the Earth being either at an empty lattice site or at a suitable interstitial site. Should that be the case, one would expect some pattern or regularity in the directions of quasars belonging to a certain group. No such evidence is found and this possibility must also be abandoned."
3. "The Earth is indeed the center of the Universe. The arrangement of quasars on certain spherical shells is only with respect to the Earth. These shells would disappear if viewed from another galaxy or a quasar. This means that the cosmological principle will have to go. Also, it implies **that a coordinate system fixed to the Earth will be a preferred frame of reference in the Universe**. Consequently, both the Special and the General Theory of Relativity must be abandoned for cosmological purposes."

"We are essentially left with only one possibility - No.3 in the cosmological red-shift interpretation. However, before we accept such an unaesthetic possibility, we must raise the question: Are the 'red shifts' real? We wish to point out that we have proposed an alternative explanation of the spectra of quasars (Varshni, 1973, 1974, 1975; Menzel, 1970; Varshni and Lam, 1974) which is based on sound physical principles, does not require any red shifts, and has no basic difficulty."

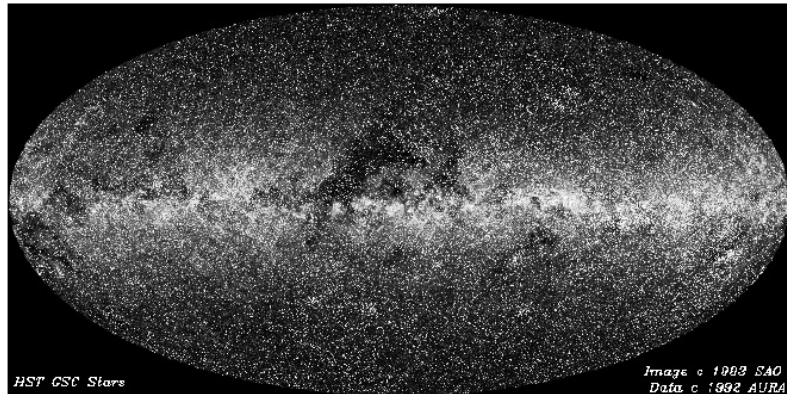
- Varshni, Y.P.: 1976, *Astrophys.Space Sci.*, 43, 3, **THE RED SHIFT HYPOTHESIS FOR QUASARS : IS THE EARTH THE CENTER OF THE UNIVERSE?**, <http://home.achilles.net/~jtalbot/V1976b/index.html>

I want to be completely clear about this, I in no way support the view that the Earth is the center of the universe. That conclusion, based on valid red shift values is a consequence of a flawed cosmological model. I contend the evidence would seem to support such an absurd notion because several factors related to the 'observers' place in the universe was not understood. One should note that these findings parallel the ancient and common sense geocentric (Earth-centered) view of the universe. This view was based on direct observational evidence but a flawed model. Even today in English we say the sun 'rises' and the sun 'sets'. I contend there is no reason to reject red-shift observational data or discard the theories of special and general relativity but instead the data must be reevaluated and utilized in formulating values and theories that incorporate the 'observers' velocity and not just the perceived velocity of extra-galactic bodies.

I argue we are in a galactic sized gravitational distortion of space-time. While I believe the funnel design (below right) often used to visually represent the warping of space-time is useful, I propose it be considered along with a celestial spherical model, as proposed in Vashni's article, analogous to diagrams used to show the angular distances of latitude and longitude for a planet (below left and center) be used to help explain the differences and arrangement of red-shift values. While I don't propose space within our Galaxy is curved in a perfect sphere, I do think a similar model should be used because it's easy to understand that the gravitational effects of an object warps space-time in 'all' directions.



To visually demonstrate this effect and its shape, the picture below shows that stars, while concentrated along the ecliptic plane of the Galaxy, actually exist in all directions around the center.



- Image from Schombert University of Oregon lecture, <http://zebu.uoregon.edu/~js/ast222/lectures/lec19.html>

I also contend our solar systems orbital velocity around the Galaxy varies continually. For perhaps the last 110 million years we have been ‘falling’ from our furthest position (apogee) towards our closest position (perigee) to the center of the Galaxy in an elliptical orbit. Within the past five years our velocity has accelerated sufficiently to allow astronomers measuring red-shift values to see significant changes in Doppler effect measurements. When these astronomers attempted to incorporate these values into a Big Bang cosmological theory they attempted to explain the values by suggesting that the universe has begun ‘accelerating’ in its theoretical expansion.

“The universe is not only expanding, but that expansion appears to be speeding up. And as if that discovery alone weren’t strange enough, it implies that most of the energy in the cosmos is contained in empty space — a concept that Albert Einstein considered but discarded as his “biggest blunder.” The new findings have been recognized as 1998’s top scientific breakthrough by Science magazine.”

- Alan Boyle, MSNBC, Dec. 17, 1998, **Science lists 1998’s biggest breakthroughs** - *Weird discovery about our accelerating universe ranks No. 1 in annual review*, <http://msnbc.com/news/224520.asp>

Here is a portion of a transcript from the PBS Nova series, “Runaway Universe”. I think it’s wonderfully illuminating to have the opportunity to read the subjective reasoning conveyed by scientists as they discover something that completely surprises them and directly challenges their expectations. The following comments are from two astronomers recollecting their thoughts upon finding that, “*The data showed that the distant supernovae were dimmer and therefore much farther away than the team expected.*” as the narrator stated.

“**ADAM RIESS:** I was actually scared that I had made an error. One by one, we started checking off sort of a long list of possible errors and none of them seemed to be the case. Finally, we had to come to grips with this unusual result. I no longer looked at it as a likely mistake, but rather as something very bizarre that nature was trying to tell us.”

“**BRIAN SCHMIDT:** It was not something that I particularly wanted to be in my data. And so I was horrified because I knew that it was going to be very difficult to sell this to my colleagues, because my colleagues are the ones who have educated me, and they...”

“**NARRATOR:** *Brian's colleagues, along with the entire scientific community, might have discounted his results, except that Saul Perlmutter's group--working separately--announced the exact same conclusion.*”

“*The discovery seemed to contradict everything we thought we knew about gravity and its impact on galaxies and stars.*”

- A NOVA Production by Thomas Lucas Productions, Inc. for WGBH/Boston, © 2000 WGBH Educational Foundation, PBS air date: November 21, 2000, NOVA #2713: **Runaway Universe**, <http://www.pbs.org/wgbh/nova/transcripts/2713universe.html>

As noted, such findings were completely unexpected by the proponents of Big Bang cosmology and were even going to be 'discounted' except that others simultaneously reached the same conclusion. As a consequence, obscure theoretical physics were and are being considered to try and explain this 'acceleration' of an expanding universe. Note the inherent flaw in the application of the scientific method, that is, a Big bang origin is not questioned even though the evidence directly contradicts what was expected and predicted. Instead attempts are made to 'fix' the theory instead of reconsidering the initial premise.

"Is the universe coming apart at the seams or precisely in balance? There's astronomical evidence to back up either side of that argument, based on observations of exploding stars and distant gas clouds. But scientists say both claims could be correct. What is incorrect — or at least incomplete — is our understanding of how the universe works."

"COSMOLOGY'S BIGGEST BOMBHELL came from researchers who studied the characteristics and brightness of a particular kind of exploding star. As detailed last week, their findings indicated that the universe was expanding at an ever-increasing rate, due to a strange characteristic of empty space variously known as vacuum energy, dark energy, the effect of the cosmological constant, lambda, propulsive gravity or even "antigravity.""

"Clear all the matter and radiation that you can out of a piece of space, and there's still energy there," said University of Washington researcher Craig Hogan, a member of the international High-Z Supernova Search Team. "That is a property that is not predictable one way or another by the current theories."
- Alan Boyle, Dec. 24, 1998, **Scientists are seeing the big picture- Supernovae and gas clouds become yardsticks for universe**, <http://msnbc.com/news/226086.asp>

Well the Big Bang theory must entail something more than just red-shift observations for it to have so many advocates right? I present here for your consideration a sweeping and reasoned criticism of numerous aspects of BB theory. Here is only the abstract and the philosophical introduction to the material. The paper is composed largely of content from the author, William C. Mitchell's book, "*The Cult of the Big Bang: Was There a Bang?*"

Abstract

"The very old big bang problems (of the singularity, smoothness, horizon, and flatness) and the failed solutions of inflation theory; newer BB problems relating to missing mass (as required for a flat inflationary universe), the age of the universe, radiation from the "decoupling" ("smearing" of black body spectrum), a contrived BB chronology, the abundances of light elements, and red shift anomalies; and problems, newer yet, regarding inconsistencies of red shift interpretation, curved space, inflation theory, the decelerating expansion of a BB universe, and some additional logical inconsistencies of BB theory are presented."

"In one of its several variations the big bang cosmological theory is almost universally accepted as the most reasonable theory for the origin and evolution of the universe. In fact, it is so well accepted that virtually every media article, story or program that touches on the subjects of astronomy or cosmology presents the big bang (BB) as a virtual proven fact. As a result, the great majority of the literate populace of the world, including most of the scientists of the world, accepts big bang theory (BBT) as scientific fact."

"Education establishments involved in the fields of astronomy, astrophysics, theoretical physics and cosmology are dominated by those who have accepted BB as the theory to be pursued. Scientists who seriously question the BB are generally considered disruptive, ridiculed and derogatorily referred to as big bang bashers."

"As a result of that attitude alternate cosmological possibilities are left uninvestigated. Untold man-hours and vast sums of money are spent in pursuit of data in support of the prevailing theory. Such endeavors are not in keeping with the ideals of impartial scientific investigation. It is all but forgotten that the BB is not fact, but an unproven theory."

"Fortunately there long has been an unindoctrinated minority of scientists, both amateur and professional, who continue to discover and present observational evidence and logic that provides reason to doubt the

accepted paradigm. Some of better known and most effective of the scientists in this struggle are Halton Arp of the Max Planck Institute for Astrophysics in Germany, Anthony Peratt of the Los Alamos National Laboratories, and Jayant Narlikar of the Centre for Astronomy and Astrophysics in India. Other well known astronomers/cosmologists who have long fought for the proper consideration of alternate cosmologies include Geoffrey and Margaret Burbidge, Fred Hoyle, Herman Bondi, Thomas Gold and Eric Lerner.”

“Due to the efforts of those and other fighters for evenhanded cosmological investigation and, despite the powerful influence of mainstream BB cosmologists, evidence against the BB has been building to the point where the world may soon start to doubt it. Some of that evidence is briefly reviewed in this paper.”

- William C. Mitchel, As Published in Physics Essays Volume 10, Number 2, June 1997, **BIG BANG THEORY UNDER FIRE**, <http://newscape.com/big-ban2.htm>

In a search for a credible alternative to Big Bang Cosmology I contend the Quasi Steady State Cosmology is far more theoretically and evidentially valid. It should be noted that Fred Hoyle its chief proponent was no latecomer to the cosmological debate. He is in fact the individual who derisively coined the term, "Big Bang". However, because the theory's proponents were not clever enough to think up a better name, the moniker stuck.

“In the April 1999 issue of Physics Today -- certainly a mainstream publication, but occasionally daring -- we find a long, technically deep article outlining a new cosmology that jettisons the Big Bang and even redshifts as infallible measures of cosmological distances. It should come as no surprise that the authors are G. Burbidge, F. Hoyle, and J.V. Narlikar. They propose a quasi-steady-state universe to replace the hot Big Bang. “

“It is easy to itemize narrow, specific problems bedeviling the Big Bang, but the three "boat-rockers" listed above also have an important philosophical bone to pick with modern astronomers and cosmologists.”

"The theory departs increasingly from known physics, until ultimately the energy source of the universe is put in as an initial condition, the energy supposedly coming from somewhere else. Because that "somewhere else" can have any properties that suit the theoretician, supporters of Big Bang cosmology gain for themselves a large bag of free parameters that can subsequently be tuned as the occasion may require.

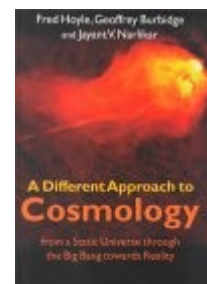
"We do not think that science should be done in that way. In science as we understand it, one works from an initial situation, known from observation or experiment, to a later situation that is also known. That is the way physical laws are tested. In the currently popular form of cosmology, by contrast, the physical laws are regarded as already known and an explanation of the later situation is sought by guessing at parameters appropriate to the initial state. We think this approach does not merit the high esteem that cosmologists commonly accord it."

- William R. Corliss, Jul-Aug 1999, Science Frontiers ONLINE, **A NEW COSMOLOGY**, from Science Frontiers #124, JUL-AUG 1999, <http://www.science-frontiers.com/sf124/sf124p05.htm>

Not long after that article was published their book, “**A Different Approach to Cosmology : From a Static Universe Through the Big Bang Towards Reality**” was published.

“This is a highly-controversial book in which three distinguished cosmologists argue with persuasion and conviction that the astronomical community is wrongly interpreting cosmological data by using the standard Big Bang model. They conduct a deep and wide review of the history of cosmology, explaining what they regard as its defects and inconsistencies. This is followed by the most extensive presentation they have ever published of their alternative view of how to interpret the data. The work touches the most fundamental questions: the origin, age, structure and properties of the universe.”

- Review for Fred Hoyle, Geoffrey Burbidge, Jayant Vishnu Narlikar, April 2000, **A Different Approach to Cosmology : From a Static Universe Through the Big Bang Towards Reality**, <http://www.amazon.com/exec/obidos/ASIN/0521662230/qid=976549249/sr=1-1/104-7342963-9687926>



Sir Fred Hoyle's most widely accepted scientific work concerned Nucleosynthesis, the physics that explained how the chemical elements are synthesized by **stars**. Because of his work there is no reason to believe that the chemical elements, including the material that Earth and 'we' are made of, are a 'by-product' of a theoretical Big Bang process. Hoyle was denied the Nobel Prize for this work apparently because of some of his more controversial ideas. Instead a collaborator, astrophysicist WA Fowler of the California Institute of Technology in Pasadena received the prize for this work. (see, <http://www.guardian.co.uk/obituaries/story/0,3604,540961,00.html>)

"The temperature generated at the centre of a collapsing star is considered and it is shown that values sufficiently high for statistical equilibrium to exist between the elements must occur. The relative abundances of the elements can then be worked out from the equations of statistical mechanics. These equations are considered in detail and it is shown that a roughly uniform abundance of the elements over the whole of the periodic table can be obtained. The process of rotational instability enables the heavy elements built up in collapsing stars to be distributed in interstellar space."

- Fred Hoyle, April 6, 1946, **The Synthesis of the elements from hydrogen**, http://adsbit.harvard.edu/cgi-bin/nph-article_query?bibcode=1946MNRAS.106..343H

Perhaps you may have actually heard of the QSSC before and are aware it has critics. I'm not going to discuss those critiques here, instead I will continue arguing my thesis. For those familiar with the QSSC I think it likely they will find that the evidence I present in this paper could be utilized to augment the research for those unanswered questions that the theory has not yet answered.

And here we have the Royal Astronomical Society acknowledging that 'many' cosmologists have chosen to **reject** the red supernova shift evidence discovered by Reiss, Schmidt and Perlmutter's group, "*But to most theoretical physicists the cosmological constant has seemed utterly mysterious and unnecessary, and many have been reluctant to accept the results of the supernovae teams.*" This reminds me of that quote by Carl Sagan, "*The suppression of uncomfortable ideas may be common in religion and politics, but it is not the path to knowledge, and it has no place in the endeavor of science.*"

Regardless, the important information in the article is not their attempt to proclaim that the Universe expansion is accelerating but that have devised a methodology that supports the existence of dark energy which if you ignore Hoyle's work brings you right back to Einstein's theory of a cosmological constant that logically negates the Big Bang theory.

"Their results show that the universe is full of dark energy, completely consistent with the earlier supernovae results. **It seems that Einstein did not make a blunder after all** -- dark energy appears to exist and to dominate over more conventional types of matter," Efstathiou said. "An explanation of the dark energy may involve String Theory, extra dimensions or even what happened before the Big Bang. At present nobody knows. **The ball is now firmly in the theorists court.**"

- Royal Astronomical Society, 20 March 2002, **Universe Expansion is Accelerating**, *UK and Australian Researchers Say*, http://www.space.com/scienceastronomy/astronomy/universe_expansion_020320.html

The Galaxy

"...Will matter then be destroyed or not?

The Savior said, All nature, all formations, all creatures exist in and with one another, and they will be resolved again into their own roots.

For the nature of matter is resolved into the roots of its own nature alone.

He who has ears to hear, let him hear.

...

Matter gave birth to a passion that has no equal, which proceeded from something contrary to nature.

Then there arises a disturbance in its whole body.

That is why I said to you, Be of good courage, and if you are discouraged be encouraged in the presence of the different forms of nature.

He who has ears to hear, let him hear."

- The Gospel According to Mary, Chapter 4, first century, Nag Hammadi Library, <http://www.gnosis.org/library/marygosp.htm>

Not long ago, maybe 10 years, Black holes were only a very strange theoretical idea. On September 5, 2001 it was reported that the Chandra X-ray Observatory found the first direct evidence of a supermassive black hole in the center of our Galaxy. It is important to note that the article indicates the distance between Earth and the center is 24,000 light years.

"This is extremely exciting because it's the first time we have seen our own neighborhood supermassive black hole devour a chunk of material," said Fred Bagonoff, who with colleagues will publish their findings in the Thursday edition of the journal Nature."

"Astronomers theorize that most galactic cores have black holes, stars so massive that they collapsed into themselves, producing gravitational monsters from which nothing can escape, even light."

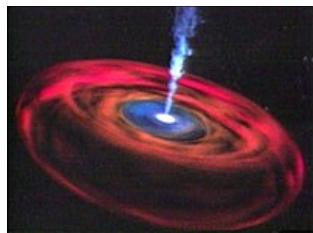
"Circumstantial evidence had hinted that the Milky Way boasted a black hole in its center, about 24,000 light-years from Earth. But astronomers had not been able to rule out another possibility, a dense cluster of dark stars."

"Until the Chandra X-ray Observatory, a NASA satellite that for two years has hunted black holes and other exotic energy phenomena, observed an X-ray flare dim and brighten for a period of only ten minutes."

"From this particular flash, Chandra researchers calculated that the mass at the center of the galaxy, about **2.6 million times that of the sun**, fit into a space no larger than 93 million miles across. **Only a black hole could be that dense**, according to the known laws of physics."

- Richard Stenger, September 5, 2001, **Milky Way black hole spotted, sized**, <http://www.cnn.com/2001/TECH/space/09/05/chandra.black.hole/>

In the past few years thanks to the Hubble Space telescope, astronomers have found evidence that supermassive black holes exist in the centers of many galaxies. These findings have forced astrophysicists to reformulate their theories of galaxy formation to include the functional purpose of these 'monsters'. Here is a two year old article asking if these black holes are somehow instead of being monsters, the 'mothers' of the universe.



"Black holes aren't exactly the celestial darlings of our universe. They're commonly thought of as giant space vacuums slowly and methodically sucking the universe dry. But these monsters of destruction may not be so monstrous after all. New research that identifies three new supermassive black holes - bringing the grand total so far to 20 - adds credence to the theory that massive black holes are also intricately related to the creation and evolution of galaxies. Maybe, without black holes, we wouldn't even be here."

"The 15-member research team has found evidence that bigger galaxies have bigger black holes, and that every galaxy (with a spheroidal distribution of stars) has a central massive black hole. That leads the astronomers to believe that somehow the formation of a giant black hole and the galaxy it resides in are closely related to each other. (There are two mass ranges of black holes, those that have a mass of about 10 or 20 solar masses - one solar mass being equivalent to the mass of the Sun - and the giant black holes that the research team is studying, which are between a million and a few billion solar masses.)"

- Cynthia Reynolds, January 13, 2000, EXN.ca is Discovery Channel Canada's Website, **Black holes: mothers of the Universe?**, <http://exn.ca/Stories/2000/01/13/57.asp>

As argued by Einstein's theory of General Relativity which helps to explain gravity and how the 'fabric' of space-time may be warped or curved, I submit that recently discovered evidence of Black hole observations support my claim that our solar system is contained within a galactic sized distortion of space-time. (And Earth and the other planets are also 'in' one created by the sun.)

The following article discusses observations of two bright areas of stars orbiting the black hole in the galaxy Andromeda (M31). As my theory would predict, the orbital velocity of stars should slow the further they move away from the center of the galaxy and accelerate the closer they get. In the article this is exactly what is observed while watching stars that are 'apparently' among stars that comprise part of the core. I contend that while it is easier to watch this phenomenon for stars whose orbits are relatively small, the same effect holds true for stars 'much' further from the center. Of course stars much further away from the center would not be as effected by their mutual attraction as those very near the center, due to the lower population density.

"But as past observations have suggested, Andromeda has two points of brightness at its center. Statler and his colleagues used the Hubble's Faint Object Camera to record the spectrum of the two nuclei. A spectrum, unlike a direct picture, splits the light into its component colors. Using this information, the astronomers were able to map the orbital motions of the stars around the center."

"Their findings, published in the February issue of *The Astronomical Journal*, support a model that suggests stars in Andromeda are orbiting the galaxy's black hole in a lopsided path and are piling up -- sort of a cosmic traffic jam -- at the section of the orbit that is farthest away from the black hole."

"When stars swing closer to the center, they go faster. When they move away from it, they go slower. It's almost like you're getting a traffic jam at the slow section of the orbit," Statler says. "One of the bright spots in the nucleus would be the area where the stars are piling up, and the other marks where they rush through on their closest approach to the black hole."

- Report on the work of Thomas Statler, 3/3/99, **RESEARCHERS OBTAIN CLEARER VIEW OF NEARBY GALAXY'S CORE**, <http://www.ohiou.edu/researchnews/SCIENCE/19990303.htm>

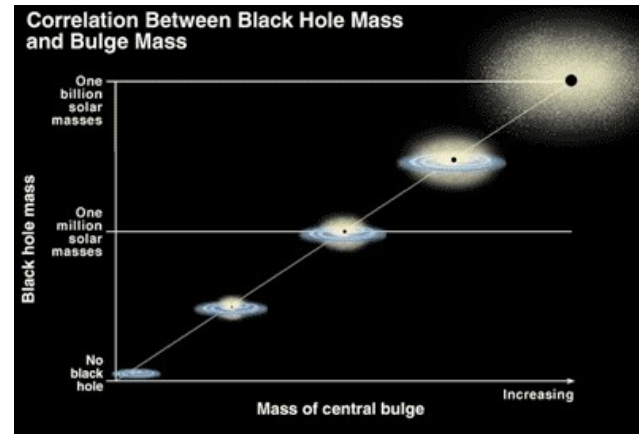
In the article Statler has trouble explaining how the stars' orbits are arranged in such a lopsided way. I contend that the bright spot on the side furthest from the center is due to the slower orbital velocity resulting in clustering (like when a bunch of kids run around the corner of a building). Where the article mentions Statler's idea that the other area of brightness closest to the black hole may be due to a specific 'cluster' of stars it's also noted that he has data that challenges that idea. I contend the brightness is certainly not entirely due to star clustering as it is on the other end but instead is largely due to coronal 'shedding' or novae.

Through further study of Black holes, fundamental and direct relationships have been found to exist between the mass of the objects and all of the other material within their galaxy. This is an **extremely** important set of findings.

"Though this secret relationship between a black hole and its host galaxy has been suspected for the past several years, it is bolstered by the Hubble discovery of 10 more supermassive black holes in galaxy centers, raising the total to more than 30 black holes now available for study. "For the first time we can put strong constraints on the relationship between galaxy formation and black hole formation and growth," says Kormendy."

“The results now show a close relationship between the black hole mass and the stars that comprise an elliptical galaxy or the central bulge stars of a spiral galaxy. But surprisingly, an even tighter correlation is found. "Other observations of the entire stellar mass of the bulge show a very tight relationship between a black hole's mass and the depth of the gravitational potential well as measured by the magnitude of random velocities of stars in the galaxy's hub. This bolsters the conclusion that the mass correlation is real," says Gebhardt.”

- SPACE TELESCOPE SCIENCE INSTITUTE PHOTO RELEASE, Posted: June 5, 2000, **Black hole survey sheds light on galaxy formation**, <http://spaceflightnow.com/news/n0006/05hstblackholes/>



In the center of our Galaxy exists the combined mass of a supermassive black hole, 100 billion stars, gas and dust. The most important thing to note in this article is the realization that this new evidence defies prior theoretical predictions as to how far the event horizon should be from the black hole and how far away matter orbits the ‘hole’.

“Separately, in the Sept. 8, 2001 (vol. 160, #10) issue of Science News (offline) is an article about a recently measured X-ray/radio flare-up of the super massive black hole at the center of the galaxy. The measurements, were for the first time, able to pinpoint the location of this black hole to high precision. Investigators have reported that nearby orbiting stars indicate that **the event horizon is 30,000 times larger than it is supposed to be** for the measured black hole mass as predicted by current theory. And the **nearby orbiting matter is 1,500 times farther away from the event horizon** than it should be as predicted by current theory.”

- E-mail by Joe Firmage of Motion Sciences, December 17, 2001 republished at <http://www.timeenoughforlove.org/Engage/MotionSciencesDecember2001Email.htm>

The super massive black hole in the center of our Galaxy (and most galaxies) is not the only kind of black hole we are aware of and can learn from. The black hole and its ‘lunch’ companion now passing over our solar system provides evidence that matter swirling around the black hole is ‘much’ farther away than expected.

“Observations from four spacecraft have identified the inner edge of a spinning disk of material around a black hole about 5,000 light-years from Earth. The surprising results show **that the disk is much farther from the black hole than astronomers expected.**”

- Vanessa Thomas, 5/13/2001, **Black Hole Accretion Disk Keeps its Distance**, <http://astronomy.com/Content/Dynamic/Articles/000/000/000/445wrzvl.asp>

It seems to me that the physical evidence discovered from these two black hole studies as well as the relationship of black hole mass and galaxy mass significantly challenges traditional theories of black hole gravitational effects and space-time distortions. It’s my opinion that those theories should be altered to incorporate a quantum theory of gravity, and include the gravitational effect of the combined mass of the black hole, 100 billion stars, gas and dust in an attempt to explain how stars even at the outer ‘rims’ of spiral galaxies are contained within and do not ‘spin out’ beyond the galactic core’s influence. Actually I think the chart above ‘visually’ explains quite a bit about the effects.

Not surprisingly, these new and theory busting discoveries have forced astrophysicists and astronomers to reconsider galaxy formation. The following recently published article contains references to research and conclusions that **directly supports** my theory of the dimensions of the space-time distortion in which our solar system is traveling. NB. I disagree with the article’s claim that we are 27,000 light years from the center. I have already noted the various claims that the distance is in dispute and measurements range from 24,000 to 30,000. At this rate of discovery which will only be accelerated by the March 2002 upgrade to the Hubble telescope I anticipate several groups in different countries will reach the same conclusions I am proposing very soon. Note the evidence that the Galaxy Corona is hot, "It probably has a temperature in excess of 1 million degrees (Fahrenheit)." Wouldn't this source of energy and heat provide a more plausible explanation for the cosmic background radiation? Particularly in light of the fact that this energy appears to be contained within the gravitational boundaries of the Galaxy.

After a decade when other astronomical targets got more attention, the Milky Way has come back into vogue as a hot research subject in the new millennium, leading to a whole new picture of how the galaxy formed, how unimaginably huge it is, and what it looks like from afar.

"**There's been a renaissance in studying the Milky Way,**" says Steven Majewski, an astronomer at the University of Virginia who specializes in the structure of the galaxy.

As a result of the newfound interest, astronomers are rapidly unraveling the Milky Way's mysteries.

What they're learning is that the mighty Milky Way attained some of its girth by gravitationally dominating many merger transactions, otherwise known as galaxy gobbling. And surprisingly, our home galaxy was recently found to be surrounded by **an invisible sphere that appears to influence space for well more than 100,000 light-years in all directions.**

Cosmic archeology

Majewski says the new interest stems in large part from an incredible finding in the 1994, when astronomers spotted a nearby galaxy they'd never seen before.

The Sagittarius dwarf galaxy turned out to be the closest neighbor to our own, just 75,000 light-years from Earth. **Researchers began to suspect the galaxy was being absorbed by the Milky Way,** an idea that got further support in a study released two weeks ago.

Other evidence of mergers has shown up in the past couple of years in the form of stellar entrails, small streams of stars that travel in packs throughout the Milky Way but on paths unrelated to the movement of the rest of the galaxy's stars.

Invisible corona

The stars of the Milky Way's main disk span a region of space about 100,000 light-years across, and the thick central bulge is a sphere about 25,000 light-years in diameter. To picture this, think of a typical sci-fi flying saucer. For decades, this was the official picture of our galaxy. More recently, a handful of studies have added a sprinkling of stars that live in a sparse halo outside the main disk.

Then early this year, astronomers made a remarkable announcement: **Our galaxy's influence extends as far as 150,000 light-years in all directions, in the form of an invisible, gaseous sphere called a corona.**

Researchers have known for some years that a corona existed. But **its newfound size is astonishing,** says Kenneth Sembach of the Space Telescope Science Institute, who made the discovery with a team of other researchers using NASA's FUSE spacecraft.

"The corona is hot," Sembach told SPACE.com. "It probably has a temperature in excess of 1 million degrees (Fahrenheit)."

The corona is only sparsely sprinkled with particles, however, and nearly impossible to detect on its own. Yet when cold, extragalactic clouds of hydrogen gas fall into the corona, their outer shells become superheated and thus detectable, Sembach explained. FUSE found several of these clouds racing into the galaxy at nearly 1 million mph.

- Robert Roy Britt Senior Science Writer, 12 March 2002, **The New Milky Way: Bird's Eye View and Other Fresh Insights,** http://www.space.com/scienceastronomy/astronomy/milky_way_020312-1.html & http://www.space.com/scienceastronomy/astronomy/milky_way_020312-2.html



Solar System and Earth

The first Stone of the Sun Bear Medicine Wheel is in honor of Creator, represents Creator, is Creator in the Wheel. In the Wheel building ceremony this Stone is placed first, with prayer and song, and in the very center of the space you have marked out for the Wheel.

... "The Creator is the beginning of life and its ending, the Great Mystery within all things and around all things, the Universal Energy"....."In many Native languages the word for Creator..... "was a verb, indicating the movement, the activity, the motion, the pulsation of this sacred, never-ending force."

- In The Beginning, the Sun Bear medicine Wheel
<http://www.ewebtribe.com/StarSpiderDancing/begin/>

"And God [Elohim] said, Let there be light: and there was light.

And God called the light Day, and the darkness he called Night. And the evening and the morning were the first day.

...

And God saw every thing that he had made, and, behold, it was very good. And the evening and the morning were the sixth day."

- Genesis, King James Version of the Bible,

http://bible.gospelcom.net/bible?passage=Genesis&KJV_version=yes&language=english

As one should expect from my theory, there is ample evidence of the astrophysical event found in Earth's geologic and fossil record. To obtain the evidence, radiometric dating of rocks has been performed by comparing the radioactive decay rate of various isotopes.

"The longer the half-life, the longer the span of measurable time, but the less accurate the calculation."

"The geological time scale is an internationally used reference point."

- Stephen Jay Gould and Contributing Scientists and Illustrators Copyright 2001, Pp. 24-25, **The Book of Life – An Illustrated History of the Evolution of Life on Earth.**

The geological time scale is presented in a **linear** format. However, our solar system, including Earth, does not travel through the Galaxy in a straight line. I believe it to be elliptical and I don't believe our velocity is constant. This is analogous to Earth's orbit of the Sun and the findings of the examination of stars in the galaxy Andromeda. I contend our solar systems orbital velocity of 250 km/sec is at best, an 'average' velocity.

"Our Sun, with its family of planets, is racing around the center of our Galaxy at about 250 km/sec (563,000 miles per hour). Even at that incredible speed, our solar system requires about **220 million years** to complete just one revolution."

- Dinah L. Moche, Copyright 2000, p. 140, **Astronomy – A Self-Teaching Guide** by, Fifth Edition

While I've seen 30,000 light years stated in multiple places in the past (e.g. Astronomy by Moche and the Cosmos series by Sagan), and 24,000 cited in the Sept. 5, 2001 Chandra X-Ray observatory findings previously mentioned, our solar systems distance from the galactic center remains a matter for significant debate. All of the estimates I've cited vary by 20%. I contend that this dispute over technique is concealing the fact that the distance has in total, decreased dramatically over the past 10 years. The image below is from the PBS NOVA program, "Runaway Universe". The caption reads, "*The solar system is situated about halfway between the Milky Way's center and its outer edge.*"



"The distance of 28,000 light years has recently (1997) been confirmed by the data of ESA's astrometric satellite Hipparcos. Other investigations published consequently have disputed this investigation (McNamara *et al* 2000, based on RR Lyrae variables) yields roughly 26,000 light years. These data, if

of significance, wouldn't immediately effect values for distances of particular objects in the Milky Way or beyond.”

- Hartmut Frommert and Christine Kronberg, 13 Apr 1999, 12:10 MET, **The Milky Way Galaxy**

<http://www.seds.org/messier/more/mw.html>

- Image is from http://www.pbs.org/wgbh/nova/universe/tour_map03.html

From my own research I've discovered that if you divide the geological time scale **by our orbit of the Galaxy** and accept 'increasing' inaccuracy for older dates, you will find **major** events occur at the beginning/end of galactic 'years'. For example in millions of years, (* dates taken from "The Book of Life— *An Illustrated History of the Evolution of Life on Earth*")

- $\sim 4,800 / 220 = 21.8$ (Origin of the Sun) *
- $\sim 4,600 / 220 = 20.9$ (Origin of Earth and Moon) *
- $\sim 4,000 / 220 = 18.1$ (Origin of Life) *
- $\sim 3,800 / 220 = 17.2$ (Oldest known rocks) *
- $\sim 439 / 220 = 1.99$ (Begin Silurian (First land plants) also marks the Ordovician-Silurian mass extinction) *
- $\sim 220.7 / 220 = 1.00$ (Permian-Triassic boundary. Very rapid mass extinction which marked the rise of dinosaurs) – 220.7 date from Christopher Behrens on Yahoo! News BBS, August 13, 2001, **Misleading story** , republished at, <http://www.timeenoughforlove.org/saved/MisleadingStory.htm>

According to "*The Book of Life*" and other resources, the continents of North and South America, Antarctica, Eurasia and Africa were combined into a super continent (often referred to as Pangaea) as recently as 225 million years ago (I believe it to be 220 mya / 1 galactic year). There appears to be considerable disagreement of the date of the Permian-Triassic boundary. I have found a variety of sources that give 250, 248, 245, 225 and 220 million years ago. While the traditional consensus appears to be 250 there appears to be a trend moving toward 220.

Before reviewing this material I was under the impression that the continents had 'drifted' apart several billions of years ago. This evidence indicates that the Earth has been 'much' more seismically active over its history than I think most people realize. While I agree that occasional dramatic tectonic shifts occur throughout Earth's orbit of the Galaxy, I assert that the most widespread and dramatic upheavals occur, with regularity, in a very short period of time at the end of a galactic year.

“Where two plates collide, and drive one continent against another, the land is forced upward, caught between colossal bulldozers. This happened when the Indian subcontinent plate left its original moorings next to Africa, Australia, And Antarctica, and slid northward over the asthenosphere to collide with the main Asian plate. The Himalayas are young mountains, and still growing.”

- Stephen Jay Gould and Contributing Scientists and Illustrators Copyright 2001, P.27, **The Book of Life – An Illustrated History of the Evolution of Life on Earth.**

Some significant evidence that these upheavals result in large scale mass extinctions was announced very recently. The research confirms that in Earth's history there have been lava flows that have covered areas as large as entire continents. Again I contend that the date of 250 mya should instead be 220 mya and most of the confusion can probably be attributed to the enormity of event and the upwelling of older material over younger.

“We knew it was big - but not this big. Geologists now suspect the massive eruption of lava in Siberia 250 million years ago was **at least twice as large as they'd thought**. This makes it even more likely to have caused the biggest extinction the world has ever seen.”

“The **Permian period ended with the extinction of 85% of all ocean creatures and 70% of land ones** - a toll three times greater than the extinction that killed off the dinosaurs at the end of the Cretaceous, 65 million years ago.”

“At the same time Siberia was flooded with at least a million cubic kilometres of lava. Scientists have wondered for years whether the two were related.”

“Very probably, say Andrew Saunders of the University of Leicester in the UK and co-workers. They have found that the Siberian flood basalt province extends much farther west than previously analyses suggested.”

- PHILIP BALL, 7 June 2002, **More evidence for mass extinction** - *Lava flow twice the size of Europe covered Siberia 250 million years ago.*, <http://www.nature.com/nsu/020603/020603-6.html>

The following article identifies what I believe to be the most likely source of the enormous quantities of molten material that could cover an entire continent, allow whole continents to move apart or collide and is likely the source of the continents themselves as well as the oldest known rocks at 17 galactic years.

“Scientists have documented two of what they call superplumes of molten rock pushing through the boundary between the Earth's upper and lower mantle, and they may be the source for volcanoes and could be affecting movement of the planet's crust.”

“Smaller regions of magma rising to the Earth's crust provide the force under volcanoes and other hot spots. But the superplumes come from far deeper, crossing the boundary between the upper and lower mantle about 400 miles deep, an area that had been thought by some scientists to impede the flow of material.”

"Generally, it is assumed that only about 10 percent of the heat that comes out at the surface of the Earth comes from the earth's core. This number may thus be underestimated, perhaps as much as by a factor of two," she [Barbara Romanowicz] wrote.

Regions above the superplumes tend to bulge upward. The plateaus of southern and eastern Africa are about 1,600 feet higher than most old continental areas in the world, she pointed out. This is referred to as the "African superswell."

Also, she wrote, heat flow from the Earth's interior measured in a wide area of southern Africa is higher than expected, indicating that an unusually large supply of heat must be coming from underneath.

Volcanoes in Africa and in the southern Atlantic Ocean could be related to the superplume in the same way as Hawaii and other hotspot volcanoes in the southern Pacific may be related to the Pacific superswell, she said.

- Cosmiverse Staff Writer, April 19, 2002, Source: University of California, Berkeley; AP, **Inner Earth Spews Superplumes**, <http://www.cosmiverse.com/news/space/space04190202.html>

From the Superplume research, note the revised estimate for the core's contribution to surface temperatures. Because this evidence is new I don't believe most theories of global warming include its contribution. This contribution in addition to my contention that core temperatures are increasing I believe helps explain the current accelerated melting of Earth's icecaps and glaciers.

“Vast sheets of ice on the warming fringes of Antarctica may be on the verge of collapse and could eventually release rivers of ice that would cause sea levels worldwide to rise **more rapidly than expected**, according to new study of satellite images released Tuesday.”

“Ice experts say the greatest immediate danger doesn't even come from polar ice. Glaciers around the world are melting at **ever-faster rates**.”

- Robert Roy Britt, 17 January 2001, **Meltdown: Satellites Show Accelerated Polar Ice Threat**, http://www.space.com/scienceastronomy/planetearth/ice_melt_010117.html

“Satellite imagery being presented today shows that the great majority of the world's glaciers are melting at rates equal to or greater than long-established trends, **including some that are receding at alarming and accelerating paces**.”

"Glaciers in most areas of the world are known to be receding," said Kargel, who heads up the project. "But glaciers in the Himalaya are wasting at alarming and accelerating rates, as indicated by comparisons of satellite and historic data, and as shown by the widespread, rapid growth of lakes on the glacier surfaces."

- SPACE.com Staff, 29 May 2002, **Satellites Show Alarming Retreat of Glaciers**,
http://www.space.com/scienceastronomy/planetearth/glacier_retreat_020529.html

I think it is worth considering how an inland sea might develop as a consequence of seismic activity. Here is an article reporting on a study released in August 2001 calmly titled, "*Mega-Tsunami Threatens To Devastate U.S. Coastline*". The prior article on Superplumes provides an explanation for a catalyst that could trigger this event.

"A tsunami wave higher than any in recorded history threatens to ravage the US coastline in the aftermath of a volcanic eruption in the Canary Islands, UK and US scientists will report today. Locations on both African and European Atlantic coastlines - including Britain - are also thought to be at risk."

"The new research, a collaboration between Dr. Simon Day of the Benfield Greig Hazard Research Centre at UCL and Dr. Steven Ward of the University of California, reveals the extent and size of the mega-tsunami, the consequence of a giant landslide that may be triggered by a future eruption of the Cumbre Vieja volcano."

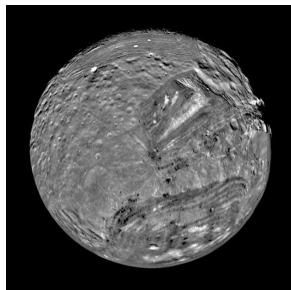
"The greatest effects are predicted to occur north, west and south of the Canaries. On the West Saharan shore waves are expected to reach heights of 100 metres from crest to trough and on the north coast of Brazil waves over 40 metres high are anticipated. Florida and the Caribbean, the final destinations in the North Atlantic to be affected by the tsunami, will have to brace themselves for receiving 50-metre high waves - higher than Nelson's column in London, some 8 to 9 hours after the landslide. Towards Europe waves heights will be smaller, but substantial tsunami waves will hit the Atlantic coasts of Britain, Spain Portugal and France."

- College London, August 31, 2001, Mega-Tsunami Threatens To Devastate U.S. Coastline,
<http://www.sciencedaily.com/releases/2001/09/010903091755.htm>

One could argue that such dramatic seismic and tectonic activity on Earth could be explained by the radioactive forces in the Earth's core alone and does not need an external catalyst. For evidence of the kind of explosive outward thrust I am attempting to describe I direct your attention far from Earth and the Sun to Uranus' moon Miranda. It is a very cold moon and has no radioactive core and yet there are dramatic and unexplained geologic formations on its surface thought to have formed as recently as "half a billion years ago". That time frame would encompass the last two galactic orbits.

"For one thing, when Pappalardo studied the racetracks of concentric ridges and grooves, they didn't look like features formed by compression. Instead, **it looked as if the moon's crust had been ripped apart.**"

"The sawtooth were likely books falling Pappalardo and



"Suddenly the the crust, up from

patterns of ridges, so striking in Voyager's first closeups, created when blocks of icy crust fractured and tipped, like over on a bookshelf. And a close look at the ridges by others indicated that some are actually icy volcanoes."

whole picture changed. Instead of dense blocks sinking into Miranda's features seemed to be formed by something rising below."

"For that reason, McKinnon and others **doubt** that Miranda's geologic activity could have been powered by the decay of radioactive elements, the heat source that has **helped** fuel the Earth's geologic 'engine'."

- Andrew Chaikin, 16 October 2001, **Bizarre geologic formations on Uranus' moon Miranda**, (images of Miranda including the one shown here are found on the first page), http://www.space.com/scienceastronomy/solarsystem/miranda_creation_011016-1.html
http://www.space.com/scienceastronomy/solarsystem/miranda_creation_011016-2.html

While I had hypothesized that the rings around gas giants such as Saturn, Jupiter, Neptune and Uranus were formed as a result of the same outward explosive thrust, I now have some research to cite to support the idea. Keep in mind that gas giants are most likely not entirely made of gas. While we have been unable to examine their core's because of the surrounding gas it's commonly believed that Saturn has a rocky core much like Earth. I propose that

an explosive outward ejection of rock and dust from its core is what primarily constitutes the rings around Saturn. Also note that Jeff Cuzzi places the origin of the rings at around 200 million ago which coincides with the other evidence I present.

"After all this time **we're still not sure about the origin of Saturn's rings**," says Jeff Cuzzi, a planetary scientist at the NASA Ames Research Center.

Astronomers once thought that Saturn's rings formed when Saturn did: 4.8 billion years ago as the Sun and planets coalesced from a swirling cloud of interstellar gas. "But lately," Cuzzi says, "there's a growing awareness that Saturn's rings **can't** be so old."

Cuzzi speculates that **some hundreds of millions of years ago -- a time when the earliest dinosaurs roamed our planet -- Saturn had no bright rings**. Then, he says, something unlikely happened: "A moon-sized object from the outer solar system **might** have flown nearby Saturn where tidal forces ripped it apart. Or **maybe** an asteroid smashed one of Saturn's existing moons."

"Cuzzi says **there are two reasons to believe the rings are young**:"

"First, they are bright and shiny like something new. It's no joke, he assures. The wide-spanning rings sweep up space dust (bits of debris from comets and asteroids) as Saturn orbits the Sun. Rings much older than a few hundred million years would be darkened by accumulated dust."

"The fact that they're bright suggests they're young," he says.

"Second, small moons that orbit through the outermost regions of the ring system are gaining angular momentum at the expense of the rings."

"During the **next few hundred million years**," explains Cuzzi, "**the outer half of the rings will fall toward the planet**, and the little moons -- called shepherd satellites -- will be flung away. **This is a young dynamical system**."

"The first argument (shiny rings) is less certain than the second (angular momentum), he cautions, "because we're not sure there's enough dust at the orbit of Saturn to pollute and blacken the rings."

- Tony Philips, 20 February 2002, Space.com, The Real Lord of the Rings, Saturn Still Mystifies,
http://www.space.com/scienceastronomy/solarsystem/lord_rings_020220-1.html &
http://www.space.com/scienceastronomy/solarsystem/lord_rings_020220-2.html

This might be an appropriate point to comment on evolutionary theory since most people who are aware of it think of it as a very slow and gradual process. Evolutionary theory is an 'evolving' science based on incorporating physical evidence into the theoretical 'process' of evolution particularly where it involves the transition from one species to another. The study of Genetics I believe is the most thoroughly researched and best understood area of the 'theoretical' evolutionary process. The study of genetics proves that changes can occur 'gradually' through a process of mutation and natural selection. The fossil record however, contradicts the notion that the most significant 'changes' to species occur on a slow and gradual scale. This aspect of evolutionary theory has been termed "punctuated equilibrium".

The "punctuated equilibrium" theory of Niles Eldredge and Stephen Jay Gould was proposed as a criticism of the traditional Darwinian theory of evolution. Eldredge and Gould observed that evolution tends to happen in fits and starts, sometimes moving very fast, sometimes moving very slowly or not at all. On the other hand, typical variations tend to be small. Therefore, Darwin saw evolution as a slow, continuous process, without sudden jumps. However, if you study the fossils of organisms found in subsequent geological layers, you will see long intervals in which nothing changed ("equilibrium"), "punctuated" by short, revolutionary transitions, in which species became extinct and replaced by wholly new forms. Instead of a slow, continuous progression, the evolution of life on Earth seems more like the life of a soldier: long periods of boredom interrupted by rare moments of terror.

- F. Heylighen, Jul 22, 1999, Copyright© 1999 Principia Cybernetica, **Punctuated Equilibrium**,
<http://pespmc1.vub.ac.be/PUNCTUEQ.html>

I'm proposing two major catalysts for these punctuation marks. Both are somewhat controversial but nevertheless supported by solid evidence. The first is my theory of a galactic annual event every 220 million years and the second involves comet impacts and new genetic instructions. For centuries this second theory was called Panspermia but enough supporting scientific understanding and evidence has accumulated that a new theory of Cosmic Ancestry was created.

“Cosmic Ancestry is a new theory of evolution and the origin of life on Earth. It holds that life on Earth was seeded from space, and that life's evolution to higher forms depends on genetic programs that come from space. It is a wholly scientific, testable theory for which evidence is accumulating.”

“The first point, which deals with the origin of life on Earth, is known as *panspermia* — literally, "seeds everywhere." Its earliest recorded advocate was the Greek philosopher Anaxagoras, thought to be Socrates's teacher. However, Aristotle's theory of spontaneous generation came to be preferred by science for more than two thousand years. Then on April 9, 1864, French chemist Louis Pasteur announced his great experiment disproving spontaneous generation as it was then held to occur. In the 1870s, British physicist Lord Kelvin and German physicist Hermann von Helmholtz reinforced Pasteur and argued that life could come from space. And in the first decade of the 1900s, Swedish chemist and Nobel laureate Svante Arrhenius theorized that bacterial spores propelled through space by light pressure were the seeds of life on Earth.”

- Brig Klyce, Cosmic Ancestry, **INTRODUCTION: MORE THAN PANSPERMIA**, <http://www.panspermia.org/intro.htm>

In order to explore one of these galactic annual events here is a somewhat confusing article on several mass extinction topics. I have included it here because it is necessary in discussing some of the issues it raised.



“WASHINGTON (Reuters) -- Like homicide detectives searching for a mass murderer, scientists are trying to find the culprit behind one of the biggest killings in Earth's history. “

“About 230 million years ago, the first dinosaurs arose from earlier reptiles. But there were many other types of animals competing with the dinosaurs. There were other forms of reptiles, including giant, semiaquatic crocodile-like phytosaurs such as *Leptosuchus* that were among the dominant carnivores of their time. There were the rauisuchians such as *Postosuchus*, a fearsome bipedal predator.

Reptilian herbivores included aetosaurs such as *Desmatosuchus*, an armored quadruped, and the somewhat cow-like therapsid *Placerias*.”

“All of these were knocked out at the end of the Triassic. The situation in the seas was even more devastating. Multitudes of marine creatures disappeared. Clams and corals were clobbered. And many species of land plants also were lost.”

"The Triassic-Jurassic boundary wiped out the competitors to the dinosaurs. It's only after the boundary that you get a dinosaur-dominated ecosystem," said Columbia University paleontologist Paul Olsen, a leading expert on dinosaurs of this period. "It's really quite a dramatic change."

- Will Dunham, 13 August 2001, **Did Triassic Asteroid Impact Spare the Dinosaurs?**, http://www.space.com/scienceastronomy/solarsystem/asteroid_triassic_wg_010813.html

While that article gives voice to various researchers' ideas as to what may have caused the two mass extinctions during the Triassic, it did not include the most convincing statements made by graduate student Christopher Behrens and his identification of more precise dates for this “horribly researched” time period. His identification that one of the extinctions occurred 220.7 million years ago was the last bit of data needed to trigger my realization of the cause of the galactic annual event.

“1.) There were two extinctions in the late Triassic, one at **220.7 Ma**, and one near the end, at 205.1 Ma. These two extinctions affected different groups, and in neither situation were dinosaurs nor mammals severely affected.”

“2.) Dinosaurs and mammals (well, protomammals) had already significantly diversified even in the face of stiff competition from the reptilian-amphibian megafaunal assemblage. Both groups had significant evolutionary advancements over the other groups. Further, the groups of dinosaurs Paul Olsen sites as not appearing until the Jurassic, such as large predators, sauropods, and the like, had already diversified by 215 Ma. I don't have the source in front of me (I'm at work), but a French journal in 2000 published an article by Michael Benton about a Triassic sauropod, and Paul Sereno describes some early sauropods in "The Evolution of Dinosaurs", Science 268 (it was a special issue).”

“In actuality, The Triassic extinction has been horribly researched, and there is little evidence to date that any extinction in the oceans can be linked to extinctions on the land. I have spent a great deal of my undergraduate years researching this one, and the data just aren't there yet to support any statement that the dinosaurs passively ecologically replaced the previous megafauna, and vice versa. This whole area needs a lot more work, and I think it should begin by asking some more fundamental questions than the current research asks.”

- Christopher Behrens on Yahoo! News BBS, August 13, 2001, **Misleading story**, republished at, <http://www.timeenoughforlove.org/saved/MisleadingStory.htm>

Of course I would expect a researcher to look for similarities in the evidence for both the 220.7 extinction and the ~439 Ordovician-Silurian extinction to substantiate my claim. By examining the effects the event had on aquatic life for example.

“University of Washington paleontologist Peter Ward said carbon isotope evidence found in rocks from the Queen Charlotte Islands off Canada's British Columbia coast demonstrated a swift collapse in marine plankton populations at the Triassic-Jurassic boundary.”

"This thing was real fast," Ward said.

“Other theories include massive volcanic activity that released gases into the atmosphere that caused intense global climate changes, and the explosion of a nearby star (a supernova) so intense that it blew away the Earth's protective ozone layer.”

- Will Dunham, 13 August 2001, **Did Triassic Asteroid Impact Spare the Dinosaurs?**, http://www.space.com/scienceastronomy/solarsystem/asteroid_triassic_wg_010813.html

For early circumstantial evidence of my theory that we are undergoing a mass extinction process, or ‘event’ in geologic terminology, I wish to draw attention to both the evidence that there was a “swift collapse in marine plankton populations” during the Triassic and the recent studies finding alarming drops in both Atlantic and Pacific zooplankton of 70%-90%.

“(12/02/2001) Scientists suspect global warming is cause of "deeply worrying" 80-90% drop in Atlantic zooplankton; loss of bottom of marine food chain threatens to cause widespread starvation and death of all levels of marine life from fish to dolphins and whales, destroying entire ocean ecosystem already being devastated by overfishing.”

"This is deeply worrying," said marine biologist Dr Phil Williamson, of East Anglia University. "We don't know why zooplankton numbers have plummeted, though global warming looks the best candidate. What is certain is that removing the bottom link from the ocean food chain could have profound and unpleasant results."

“(11/19/2000) Scientists say global warming cause of alarming 70% drop in zooplankton off California coast since mid-1970s, warn impact on entire West Coast marine ecosystem could be catastrophic. More than 70 percent of the zooplankton - the tiny free-floating animals that are food for larger creatures - have disappeared from the Pacific Ocean along the coast of California since the mid-1970s, a phenomenon

related to the overall rise in ocean temperature due to global warming, say scientists at the Scripps Institute of Oceanography. Plankton are critical to the survival of all marine life from whales to sea birds, scientists warn, but warmer waters and changing ocean currents mean less plankton for marine animals, which may be why harbor seals, stellar sea lions and sea birds are disappearing.”

"What is going on in the ocean is large and unprecedented," said John McGowan, an oceanographer at Scripps. "These are huge events. This is a new kind of ecology."

- Earth Crash Earth Spirit, updated as of 1/24/2002, **Global Warming: Oceans**, (citations from various publications), <http://www.eces.org/ec/globalwarming/oceans.shtml>

I included the quote above postulating a mass extinction scenario that involved an exploding star and the destruction of the Earth's ozone layer because I contend that our own sun is rapidly destroying our protective ozone layer. Consequently this increase in radiation exposure is the principle cause of "worldwide" amphibian extinction and mutation today.

“WASHINGTON, D.C. -- Frogs, toads, salamanders and other amphibian populations have been mysteriously dying in Oregon for years.”

“But now the species decline is being documented around the world. Fourteen species of amphibians have disappeared from Australia in recent years. The golden toad has become extinct in Costa Rica, and other amphibian declines have been recorded in Europe, South America, Asia and Africa.”

"The overall result is that this group of animals, which has been around since the time of the dinosaurs, is now in serious decline all over the world," said Andrew R. Blaustein, a zoology professor at OSU. "And some of the things that are killing frogs almost certainly have implications for other animal species, including humans."

- Richard L. Hill, February 19, 2000, **World amphibian populations plummet toward extinction**, <http://www.oregonlive.com/news/00/02/st021910.html>

“Global declines in amphibian population are perhaps one of the most pressing and enigmatic environmental problems of the late 20th century (12-19). While some declines are clearly due to habitat destruction, others are not associated with obvious environmental factors. **Causal hypotheses include** the introduction of predators or competitors, **increased ultraviolet (UV-B) irradiation**, acid precipitation, adverse weather patterns, environmental pollution, infectious disease, or a combination of these. Transdermal water uptake and gaseous exchange and a biphasic life cycle are important aspects of amphibian biology. These factors led to the hypothesis that amphibians act as sentinels for global environmental degradation (12,18). However, this role has yet to be demonstrated, and many causal factors may be present (12,19,20).”

“**Of particular concern are population declines in ecologically pristine areas**, such as the montane tropical rain forests of Australia and Central America, where human impact from agriculture, deforestation, or pollution is thought to be negligible. Here, long-term data demonstrate recent and catastrophic amphibian population declines, often resulting in the complete loss of amphibian species (local extinction of multiple species) from large swaths of habitat (20-25).”

- Peter Daszak, Lee Berger, Andrew A. Cunningham, Alex D. Hyatt, D. Earl Green, and Rick Speare, November 15, 1999, **Emerging Infectious Diseases and Amphibian Population Declines**, <http://www.cdc.gov/ncidod/eid/vol5no6/daszak.htm>

According to research conducted with the aid of NASA and NOAA satellites, solar radiation can and does destroy atmospheric ozone.

“A new study confirms a long-held theory that large solar storms rain electrically charged particles down on Earth's atmosphere and deplete the upper-level ozone for weeks to months thereafter. New evidence from NASA and NOAA satellites is helping scientists better understand how man and nature both play a role in ozone loss.”

“Solar storms consist of coronal mass ejections and solar flares. Coronal mass ejections are huge bubbles of gas ejected from the Sun and are often associated with these flares. Solar flares are explosions on the Sun that happen when energy stored in twisted magnetic fields (usually above sunspots) is suddenly released.”

“When protons like these bombard the upper atmosphere, they break up molecules of gases like nitrogen and water vapor, and once freed, those atoms react with ozone molecules and reduce the layer.”

"A lot of impacts on ozone are very subtle and happen over long periods of time," said Charles Jackman, a researcher at NASA Goddard Space Flight Center's Laboratory for Atmospheres and lead author of the study. "But when these solar proton events occur you can see immediately a change in the atmosphere, so you have a clear cause and effect."

- Goddard Space Flight Center, August 1, 2001, **Stormy Space Weather Takes a Toll on Ozone**, <http://www.gsfc.nasa.gov/topstory/20010801solarproton.html>

While the research that demonstrates that CFC's can destroy ozone is compelling I don't believe scientists have demonstrated successfully that these chemicals are primarily responsible for the destruction of atmospheric ozone, nor do I believe their models anticipated the patterns or intensity of its ongoing destruction.

“Earth's protective ozone layer thinned considerably over parts of Europe for three days in January, highlighting a growing problem of mini ozone holes over the continent that could threaten peoples' health, scientists said Wednesday.”

“Studies suggest higher exposure to UV rays can lead to cancer and premature aging of the skin. The mini ozone holes occur in addition to larger holes seen each year above Earth's polar regions. **The smaller events have been noticed only in recent years and are occurring more frequently and, strangely, only over Europe.**”

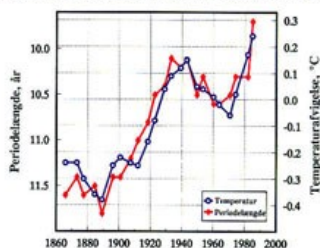
"The increase in frequency of mini ozone holes over Europe is resulting in an increase in harmful biologically active UV radiation," Erbertseder said.”

- Robert Roy Britt, 07 February 2002, Mini Ozone Holes Over Europe Pose Growing Health Risk, http://www.space.com/scienceastronomy/planetearth/ozone_europe_020207.html

I contend that the earliest and largest holes in the ozone layer were found over Antarctica is primarily because the South Pole receives the most radiation exposure (24 hours a day) when Earth is closest to the Sun in its elliptical orbit (perihelion). It then appeared over the North Pole because it also experiences prolonged exposure even if further away. While I don't cite an article to prove it, I have read that the hole over Antarctica opens during their summer. In the remaining paragraphs of this section I present additional evidence of environmental consequences that can easily be explained by increasing solar output. In the next section, “The Sun” I present direct evidence that indicates the Sun has been noticeably and increasingly more active for the past 13 years.

I think many people are aware that there is significant evidence that the Earth's average temperature is rising. The trend is referred to as “global warming” and within popular debate it is said to be caused by an increase in mostly human induced atmospheric gasses which trap heat thus preventing it from dissipating back into space. While I believe this is very likely a contributing factor for the rising temperatures on Earth, from my research this theory and its models have failed to explain or anticipate the phenomenal rate at which it's warming. In fact there is significant and compelling evidence that the sun is primarily responsible for this temperature increase. The graph below indicates a direct correlation between solar activity and the rise in climatic temperatures from 1860-2000.

SOLPLETPERIODERS LÆNGDE OG TEMPERATUR



“Global warming -- the gradual increase in planet-wide temperatures -- seems to be accepted by many scientists and people now as fact. Generally, this warming is attributed to the increase of green-house gases in the Earth's upper atmosphere.”

“However, some solar scientists are considering whether the warming exists at all. And, if it does, might it be caused, wholly or in part, by a periodic but small increase in the Sun's energy output. An increase of

just 0.2% in the solar output could have the same affect as doubling the carbon dioxide in the Earth's atmosphere.”

- Stanford University, 1997, **Global Warming - Does it Exist? If so, is it Man- or Sun-made?**, <http://solar-center.stanford.edu/sun-on-earth/glob-warm.html>

- Image from Friis-Christensen, E., and K. Lassen, "Length of the solar cycle: An indicator of solar activity closely associated with climate," *Science*, 254, 698-700, 1991, found at <http://solar-center.stanford.edu/sun-on-earth/glob-warm.html>

“There are three important points to make about the reported warming of the last 20 years:”

“1. The warming has occurred mostly at night and not during the day. This result is inconsistent with a warming caused by greenhouse gases, but is consistent with urban heat island and other surface effects.”

“2. The reported warming has occurred only at the surface and not in the upper atmosphere. This type of warming is completely opposite to what is predicted if greenhouse gases are the cause. Again these observations are consistent with problems in the surface measurements.”

“3. The warming has occurred primarily in the Northern Hemisphere mid-latitudes with little in the polar and tropical regions. This result is consistent with urban influences, but is incompatible with the climate warming predicted from greenhouse gases which predict it to be largest in the polar regions.”

“In short, the reported warming is inconsistent with warming due to greenhouse gases in its temporal, vertical, and geographical distribution. The reported warming is consistent with problems in the surface network.”

- Douglas V. Hoyt, 1997, **Greenhouse Warming: Fact, Hypothesis, or Myth?**, <http://users.erols.com/dhoyt/>

For the Sun to be the principle cause for the increase in Earth’s global temperature one should expect to find evidence of its effects on other planets or moons in our solar system. On Dec. 7, 2001 NASA reported just such evidence on Mars thanks to the Mars Global Surveyor. Earth is not the only planet whose ice caps are melting at an accelerating rate.

“The Earth's ice cover is melting in more places and at higher rates than at any time since record keeping began. Reports from around the world compiled by the Worldwatch Institute (see attached data table) show that global ice melting accelerated during the 1990s-which was also the warmest decade on record.”

“Some of the most dramatic reports come from the polar regions, which are warming faster than the planet as a whole and have lost large amounts of ice in recent decades. The Arctic sea ice, covering an area roughly the size of the United States, shrunk by an estimated 6 percent between 1978 and 1996, losing an average of 34,300 square kilometers-an area larger than the Netherlands-each year.”

“The Arctic sea ice has also thinned dramatically since the 1960s and 70s. Between this period and the mid-1990s, the average thickness dropped from 3.1 meters to 1.8 meters-a decline of nearly 40 percent in less than 30 years.”

“The Arctic's Greenland Ice Sheet-the largest mass of land-based ice outside of Antarctica, with 8 percent of the world's ice-has thinned more than a meter per year on average since 1993 along parts of its southern and eastern edges.”

- Lisa Mastny, 06 March 2000, **Melting of Earth's Ice Cover Reaches New High**, <http://www.worldwatch.org/alerts/000306.html>

“Global climate change is having a direct impact on the Earth's sea level and a group of scientists led by two U of T geophysicists is providing the sea level "fingerprints" of polar ice sheet melting to prove it.”

“Rates of sea level change over the last century vary widely from one geographic location to another even after these rates have been corrected for known effects. The question has always been, why? What is causing these significant variations? Jerry Mitrovica, U of T's J. Tuzo Wilson Professor of Geophysics, is

lead author of a paper to appear in the Feb. 22 issue of *Nature* that claims to have discovered the answer. And it is an answer that has an important impact on the debate over global climate change.”

"We've really strengthened the link between today's sea level changes and ice melting and we've found a way of unraveling the details of this link. By doing that, we've also strengthened extrapolations being made for the future effect of climate warming. **And these extrapolations show continued acceleration of sea level rise late into the present century, leading to more flooding of coastal communities,**" says Mitrovica.”

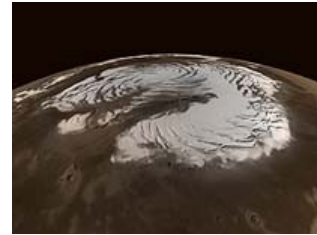
- Janet Wong, Feb. 21, 2001, 'Fingerprints' of melting ice caps point to global climate change - Sea levels are rising, on average, by about 1.8 mm per year, <http://www.newsandevents.utoronto.ca/bin1/010221a.asp>

“WASHINGTON (AP) -- Vast fields of carbon dioxide ice are eroding from the poles of Mars, suggesting that the climate of the Red Planet is warming and the atmosphere is becoming slightly more dense.”

“Caplinger is co-author of a study appearing in the journal *Science* that analyzes photos of Mars taken by an orbiting spacecraft. The photos were taken in 1999 and in 2001, a period of time that represents one Martian year. Mars is farther from the sun than the Earth and it takes the Red Planet about 23 months to complete one year, a single solar orbit.”

"It is eroding away at a rapid pace and is going to continue to do that," said Caplinger. **"This is not a seasonal change."**

- PAUL RECER, December 6, 2001, **Mars climate may be changing** - *Study suggests permanent carbon dioxide ice caps are eroding,* http://www.canoe.ca/CNEWSSpace0112/06_mars-ap.html



High-resolution images snapped by NASA's Mars Global Surveyor show that levels of frozen water and carbon dioxide at the Red Planet's poles have dwindled dramatically — by more than 10 feet — over a single Martian year (equivalent to 687 days or about two Earth years).

"We weren't expecting to see something nearly this large," said Caplinger.

- Amanda Onion, Dec. 7, 2001, **Red Planet Warming, Images Show Mars' Ice Caps Are Melting Fast,** <http://abcnews.go.com/sections/scitech/DailyNews/mars011207.html>

The Sun

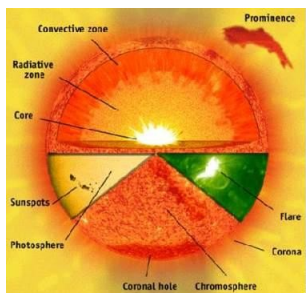
"It is a mistake to believe that a science consists in nothing but conclusively proved propositions, and it is unjust to demand that it should. It is a demand only made by those who feel a craving for authority in some form and a need to replace the religious catechism by something else, even if it be a scientific one."

- Sigmund Freud, http://www.chemistrycoach.com/science_and_other_disciplines.htm

I contend that there are several important things not well understood about our own sun and its life cycle. Among the unanswered questions are; "why is the corona so hot?", "What causes CMEs (Coronal Mass Ejection)?", "Why would clouds of gas fall back to the sun?", "Do novas occur only when a star dies?", and "Why has the latest 'Solar Maximum' cycle of sunspots not subsided as expected?".

Here is an article concerning the unexplained paradox of the Sun's hot corona. There are several theories attempting to explain why the corona is so much hotter than layers closer to the core but today the explanation remains a mystery.

"As you might expect, the sun's temperature drops steadily from its core, 15 million kelvins, to the photosphere, a mere 6,000 kelvins. But then an unexpected thing happens: the temperature gradient reverses. The chromosphere's temperature steadily rises to 10,000 kelvins, and going into the corona, the



temperature jumps to one million kelvins. Parts of the corona associated with sunspots get even hotter. Considering that the energy must originate beneath the photosphere, how can this be? It is as though you got warmer the farther away you walked from a fireplace."

"The mystery of why the solar corona should be so hot has intrigued astronomers for more than half a century, but the reason is now within our grasp, given the latest findings from spacecraft and fast imaging of the corona during eclipses. But even as one mystery begins to yield to our concerted efforts, others appear.

The sun and other stars, with their complex layering, magnetic fields and effervescent dynamism, still manage to defy our understanding. In an age of such exotica as black holes and dark matter, even something that seems mundane can retain its allure."

- Bholu N. Dwivedi and Kenneth J. H. Phillips published in June 2001, Pp. 40-47, Scientific American, *The Paradox of the Sun's Hot Corona*

- Image, Anatomy of The Sun, http://www.space.com/spacewatch/sun_anatomy.html

Apparently astrophysicists were 'completely' surprised to find gas clouds falling back into the sun's corona. This process doesn't surprise me at all. While I can't explain the phenomena in precise terminology I suggest this is physical evidence of not just the increasing mass of the sun but also a partial explanation for why the corona is composed of material that will be ejected violently once the sun's mass 'decreases'.

"November 20, 2001 - Mysterious clouds of gas falling towards the Sun have been spotted with the Solar and Heliospheric Observatory (SOHO) spacecraft. They go against the fast-moving streams of gas that pour out continuously into space in the solar wind."

"About **8,000 inflow events have now been logged** -- most of them since 1998 while the Sun has been at its most active, as judged by the high count of sunspots."

"For decades, we've been able to observe cooler gas rising and then falling, under the influence of gravity, lower down in the solar atmosphere," notes Dr. Joe Gurman, NASA's project scientist for SOHO. "Until now, though, the hotter, electrically charged gas higher in the Sun's outer atmosphere, the corona, has only been seen flowing up and away."

"We are seeing something opposite to what we expected," says Sheeley. "Normally, when this happens, we initially doubt the observation -- suspecting, for example, that the movie is running backwards. But when we confirm that the observation is really correct, we are forced to change our way of thinking. Such mind-changing discoveries help us past temporary snags in our understanding and inevitably lead to progress."

- Goddard Space Flight Center, November 20, 2001, **SOHO'S LATEST SURPRISE: GAS NEAR THE SUN HEADING THE WRONG WAY**, <http://www.gsfc.nasa.gov/topstory/20011120sohogas.html>

Please keep an open mind on what massive solar bursts often called 'novae' might be and recognize 'similar' events occur under different conditions. Be aware that astrophysicists are learning new things about solar events that are fundamentally challenging their assumptions. In this article astrophysicists are surprised to find the sun producing **gamma rays**.

"A major priority for high-energy astrophysicists has been to isolate and understand gamma-ray bursts, which appear without warning somewhere in the observable universe about three times a day."

"Left: The sun as seen in gamma rays by COMPTEL during a June 15, 1991, solar flare. The sun is ordinarily not known to produce gamma rays, but during this solar flare, streams of neutrons poured into the intrastellar medium to create gamma rays. This image provided the first evidence that the sun can accelerate particles for several hours. This phenomenon was not observed before CGRO and represents a new understanding of solar flares."

- Dave Dooling, dave.dooling@msfc.nasa.gov, **Cataloging the gamma-ray universe, weighing black holes, and a hat trick**, http://science.nasa.gov/newhome/headlines/compton_ast.htm

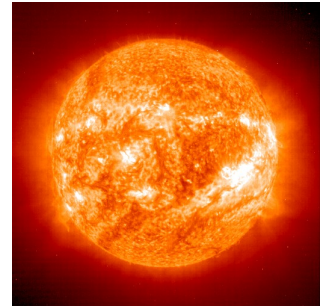
Identifying the fact that the sun can produce gamma rays is very significant because some astrophysicists have been trying to find evidence that Gamma Ray Bursts (GRB) are a possible cause of mass extinctions on Earth and surprise, even contributed to the formation of our solar system.

"Gamma rays are the highest energy form of radiation," says NASA's Jerry Fishman, who leads the Burst and Transient Source Experiment (BATSE), an instrument aboard the Compton Gamma Ray Observatory. "They are higher energy than X-rays -- they are very penetrating. They'll go through several inches of steel, for example."

"Another group of researchers, writing in "Astronomy and Astrophysics," recently suggested that a nearby gamma ray burst long-ago might have seeded our solar system, providing the needed influx of energy to urge a vast disk of sun-circling dust to begin forming into small chunks, which eventually became the asteroids and planets."

Robert Roy Britt, 21 October 1999, **Gamma Ray Bursts and Supernovae**, http://www.space.com/scienceastronomy/astronomy/grb_supernova_991021.html

- Image of the sun, Feb. 6, 2002, SPACE.com Cam: **Sun Snapshot**, http://www.space.com/spacewatch/sun_cam.html



"Shooting out jets of energy or blobs of stuff the size of Earth at nearly light-speed, exploding stars called supernovae may hold more potential peril than anyone had ever imagined, according to a growing suspicion among some researchers."

"While **scientists have long tried to link supernovae to mass extinctions on Earth**, there is no solid evidence. But recent observations of high-energy emissions in space have some scientists suggesting that our planet may in fact get fried every now and then."

"For three decades, scientists have been puzzling over brief but intense flashes of energy known as gamma ray bursts. These GRBs, as they are called, pack more punch than any other cosmic event. Their source has been a mystery, but so far they have been observed only coming from the far corners of the cosmos."

- Robert Roy Britt, 19 June 2001, Cosmic Cannon: **How an Exploding Star Could Fry Earth**, http://www.space.com/scienceastronomy/astronomy/gammaray_bursts_010522-1.html
http://www.space.com/scienceastronomy/astronomy/gammaray_bursts_010522-2.html

Here is a description of what may or may not be a coronal release. I suspect however that it is because of the way the nova 'pulsed' and continued to shine after the burst. These findings according to the article have left the researchers searching for radically new explanations because the evidence defies prior predictions of a nova event. In the article they also claim that novae are usually found in binary star systems where one star 'feeds' off of gas from its companion. I believe this is significant when you consider my prior identification of 8,000 observations of gas falling back into our own sun.

"As Nova Aquila wound down in brightness between April and October 2000, when the observations were made, its X-ray output was seen to pulsate over periods lasting roughly 40 minutes.

"We have never seen a nova perform in this way," Starrfield said last week at a Chandra Observatory symposium here. **"We don't know what causes this."**

"A colleague of Starrfield's, Jeremy Drake of the Harvard Smithsonian Center for Astrophysics, speculated that the pulsations might represent the outer layers of the white dwarf expanding and shrinking. But then came a stark spike of activity."

"In one swift burst -- just 15 minutes long -- the X-ray output jumped to six times the previous levels. Again, an explanation will require further study. But in an interview, Starrfield said the spike could have been similar to flares on our Sun, when twisted magnetic fields snap and hurl hot gas into space. Or, he said, a blob of hot gas might have crashed onto the surface of the white dwarf."

"At least as important, our Chandra observations told us that thermonuclear fusion reactions were still occurring on the surface layers of the white dwarf," said Robert D. Gehrz of the University of Minnesota. "Eight months after discovery, the explosion was not over."

- Robert Roy Britt, 10 September 2001, **Going Nova: New Surprises From an Ancient Star**,
http://www.space.com/scienceastronomy/astronomy/nova_burst_010910.html

From many years of observation of sunspots on the surface of the sun a cyclical pattern of increasing and decreasing activity was found. Researchers have named the cycle the Solar Maximum or Solar Max for short.

"Scientists became aware that the sun went through cycles and changes by observing sunspots, the darker, relatively cooler areas of the sun. The number of sunspots can be an indication of the degree of solar activity. The average number of visible sunspots varies over time, increasing and decreasing on a regular cycle of between **9.5 to 11 years, on average about 10.8 years**. An amateur astronomer, Heinrich Schwabe, was the first to note this cycle in 1843. The part of the cycle with low sunspot activity is referred to as "solar minimum," the portion with high activity is known as "solar maximum." **The year 2000, it is believed, will be the solar maximum for the current solar cycle.**"

- webteam@exploratorium.edu , Copyright ©2000, The Exploratorium, **What is Solar Max?**,
<http://www.solarmax2000.com/whatis.html>

According to the SolarMax2000 web site the cycle averages 10.8 years. Today to state that the cycle averages 11.3 years would be an apparent misrepresentation of the historical data unless perhaps the average has been adjusted based on the current 'extended cycle'.

"The flurry of Sun flares and expulsions seen over the past two years has begun to ebb, and activity will continue to decline for the next five years or so. Now it has set into motion a series of salutary changes to the planet's long-term climate and perhaps even daily weather."

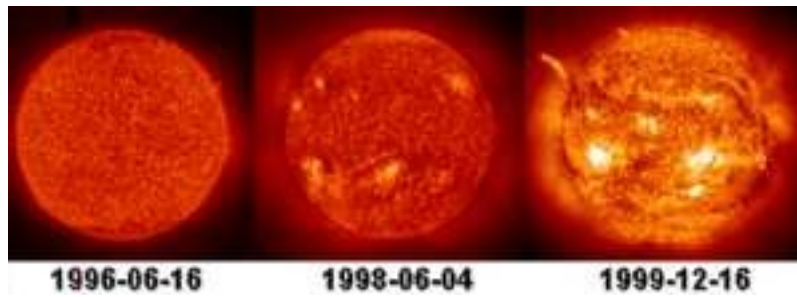
"The Sun has rhythm. Beyond its propensity to show up in the East every 24 hours (a rhythm actually dictated by Earth's rotation) there is a **deeply rooted** cycle of activity within the Sun that increases and decreases **every 11.3 years, on average.**"

- Robert Roy Britt, 28 August 2001, **Solar Max is Over, Earth's Future Looks Brighter**,
http://www.space.com/scienceastronomy/solarsystem/sun_weather_010828-1.html
http://www.space.com/scienceastronomy/solarsystem/sun_weather_010828-2.html
http://www.space.com/scienceastronomy/solarsystem/sun_weather_010828-3.html

According to SolarMax2000, this last "deeply rooted" cycle was supposed to have peaked more than a year ago in December 2000. Interestingly the <http://www.solarmax2000.com/news.html> page even stopped updating their news stories since December 2000 but solar activity continues to increase.

"This is a unique solar maximum in history," said Dr. George Withbroe, Science Director for NASA's Sun-Earth Connection Program. "The images and data are beyond the wildest expectations of the astronomers of a generation ago."

- NASA Press Release, December 22, 2000, **Watching the Angry Sun - Solar physicists are enjoying their best-ever look at a Solar Maximum thanks to NOAA and NASA satellites**, http://spacescience.com/headlines/y2000/ast22dec_1.htm



In August 2001, I predicted in accordance with my theory, that solar activity would continue to intensify and not diminish. Following that prediction there have been at least two major solar eruptions or CMEs (Coronal Mass Ejection). The second one was the largest ever recorded.

"The Sun unleashed a powerful "solar prominence" Friday, Jan. 4. Then instruments on SOHO recorded what one researcher says could be the most complex coronal mass ejection the spacecraft has ever witnessed. Coronal mass ejections, or CMEs, are tremendous outpourings of energy. This one involved billions and billions of tons of charged particles hurled into space at 3.5 million kilometers per hour, Brekke said."

- Robert Roy Britt, 04 January 2002, **New Picture: Solar Eruption Among Most Complex Ever Recorded**, http://www.space.com/scienceastronomy/solarsystem/solar_flare_020104.html

Recently, (1/23/02) at Space.com we have an article from Tony Phillips of NASA performing a little public relations spin on the 'Solar Max' claiming the increasing intensity is explainable due to a 'Double Peak'. I call it a PR spin because if the 'double peak' had occurred during the last two peaks why was its reoccurrence not mentioned or predicted in prior Solar Max articles? Why are they claiming it is understandable 'after' the solar eruptions have increased in frequency and violence? Are they disputing the statements about the current solar maximum's uniqueness made by Dr. George Withbroe as I previously cited?

"But now, as 2002 unfolds, it's back. The Sun is again peppered with spots, and eruptions are frequent. Says David Hathaway, a solar physicist at the NASA Marshall Space Flight Center: "The current solar cycle appears to be double-peaked," and the second peak has arrived."

- Tony Phillips, Science.nasa.gov, 23 January 2002, **Sun's Fury Returns, Marking Double Peak in Cycle**, http://www.space.com/scienceastronomy/astronomy/solar_max_020123.htm

It appears to me that NASA is on a frantic search to discover more about the sun and its effect on Earth as they have launched at least three satellites and one probe in the last 9 months for this purpose, Genesis, Jason 1, TIMED and HESSI. I cite these articles because I recommend keeping an eye on their findings. To review the launch logs you could look here, http://www.space.com/missionlaunches/explore_the_archives.html. If you wish to find information on current solar activity one place to explore is, http://www.space.com/spacewatch/space_weather.html#solar.

"NASA's **Genesis** spacecraft will begin its primary science mission of collecting particles from the solar wind when it begins to orbit a point between the Sun and Earth on Friday, Nov. 16."

“On its return, the spacecraft swoops past Earth and around another Lagrange point, L2, a mirror image of L1 on the opposite side of Earth, to position itself to enter Earth's atmosphere and return its precious cargo of solar wind samples in August 2004.”

- NASA Press Office, 16 November 2001, **Genesis Begins Primary Science Mission**,
http://www.space.com/scienceastronomy/solarsystem/genesis_update_011116.html

“**Jason 1**, a joint effort of NASA's Jet Propulsion Laboratory and the French space agency CNES, is designed to measure the surface topography of the ocean and by using that data help build more accurate models of how changes in the oceans affects Earth's climate.”

“Meanwhile, the **TIMED** spacecraft -- a NASA satellite built by Johns Hopkins University's Applied Physics Laboratory -- holds a complement of instruments that will take a variety of measurements on a region of Earth's atmosphere that has traditionally not been studied because it's been difficult to do so until now.”

“Temperatures, wind patterns and solar radiation are among the data points TIMED will scan for between the altitudes of 40-110 miles (60-180 kilometers) above Earth's surface. TIMED is short for Thermosphere, Ionosphere, Mesosphere, Energetics and Dynamics.”

- Jim Banke, 07 December 2001, **100th Delta 2 Lofts Earth Monitoring Spacecraft for U.S., French Space Agencies**,
http://www.space.com/missionlaunches/delta2_launch_011207.html

The following article from Feb. 5, 2002 says the HESSI satellite's launch has been delayed by nearly two years for a variety of reasons. They note this delay means they have missed the Solar Max peak. I predict they will have more than sufficient opportunity to examine solar flares and CMEs.

“A revolutionary NASA satellite at long last is ready to set sail on an \$85 million mission to shed light on what ignites the most powerful explosions in the solar system.”

“What's more, the unpredictable outbursts often are accompanied by coronal mass ejections -- billion-ton clouds of gas that billow away from the sun, triggering geomagnetic storms that can knock out power grids that transmit electricity to homes and businesses.”

“Enter NASA's High Energy Solar Spectroscopic Imager. More commonly called **HESSI**, the spacecraft will be carried aloft inside an Orbital Sciences Corp. Pegasus XL rocket mounted to the belly of a Lockheed-built L-1011 aircraft.”

“**Yet even the most erudite solar physicists have no idea what sparks solar flares, or how they unleash so much energy so quickly.** And scientists would like to figure out how to forecast impending solar eruptions so that more accurate space weather warnings can be issued.”

- Todd Halvorson, Cape Canaveral Bureau Chief, 05 February 2002, **NASA Spacecraft Seeks to Unravel Explosive Solar Mystery**,
http://www.space.com/missionlaunches/pegasus_preview_020205.html

Earth and the Biosphere

"The nature of time is that it inherently moves in an exponential fashion-either geometrically gaining in speed, or, as in the history of your Universe, geometrically slowing down. Time only seems to be linear during those eons in which not much happens. Thus most of the time, the linear passage of time is a reasonable approximation of its passage. But that's not the inherent nature of time.

Why is this significant? It's not when you're stuck in the eons in which not much happens. But it is of great significance when you find yourself in the "knee of the curve," those periods in which the exponential nature of the curve of time explodes either inwardly or outwardly. It's like falling into a black hole (in that case, time accelerates exponentially faster as one falls in."

- Ray Kurzweil, The Law of Time and Chaos, Pp. 10-11, "The Age of Spiritual Machines: When Computers Exceed Human Intelligence"

<http://www.amazon.com/exec/obidos/tg/detail/-/0140282025/qid=1118714155>

"Nature shows that with the growth of intelligence comes increased capacity for pain, and it is only with the highest degree of intelligence that suffering reaches its supreme point."

- Arthur Schopenhauer, <http://www.ecst.csuchico.edu/~mvaldez/schop.html>

In addition to the evidence I've already presented regarding global warming, melting ice caps, amphibian mutation and extinction, and zooplankton destruction there is also substantial evidence for human neurological (evolutionary) changes that support my theory that our solar system is accelerating towards our galactic perigee. For example, there is substantial evidence for the accelerating increase in cognitive potential or general IQ worldwide. Many refer to it as the "Flynn Effect" after the political scientist who noticed the pattern.



"James Flynn, a political scientist working in New Zealand, observed in the 1980's that the scores of different groups of people on standard intelligence tests had consistently augmented over the past decades."

"Since then, the so-called "Flynn effect" has been confirmed by numerous studies. The same pattern, an average increase of over three IQ points per decade, was found for virtually every type of intelligence test, delivered to virtually every type of group."

"The increase was highest, 20 points per generation (30 years), in Belgium, Holland and Israel, and lowest, 10 points per generation, in Denmark and Sweden. Although the data are limited, it moreover seems that **the increase is accelerating.**"

"One might expect that the Flynn effect would be more clear for tests that emphasize culture or education. The opposite is true, however: the increase is most striking for tests measuring the ability to recognize abstract, non-verbal patterns. Tests emphasizing traditional school knowledge show much less progress. **This means that something more profound than mere accumulation of data is happening inside people's heads.** None of the scientists who have studied the effect can offer a simple explanation."

"For one type of test, Raven's Progressive Matrices, Flynn found data that spanned a complete century. He concluded that someone who scored among the best 10% a hundred years ago, would nowadays be categorized among the 5% weakest. That means that someone who would be considered bright a century ago, should now be considered a moron!"

- Principia Cybernetica Web, **Increasing intelligence: the Flynn effect**, <http://pespmc1.vub.ac.be/FLYNNEFF.html>

"**IQ scores are rising so dramatically**, say researchers who study intelligence, that a high proportion of people considered average at the turn of the 20th century would be regarded as significantly below average by today's tests."

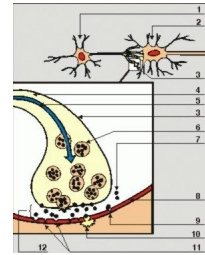
"It's a genuine mystery," said John Loehlin, a University of Texas-Austin professor of psychology. "All of the explanations given are probably true, but it's still hard to see how they would account for such a large jump."

- Todd Ackerman, 3/15/1998, Copyright 1998 Houston Chronicle Science Writer, **Experts at loss to explain large jump in average IQ**, <http://www.chron.com/content/chronicle/page1/98/03/16/iq.html>

My explanation for the accelerating rise in standard IQ again is due to Earth's proximity to the center of the galaxy. I propose that the increase in IQ may be due to an increase in neural cellular density, packing more neurons in a smaller space, and possibly a decrease in the synaptic cleft (the space that neurotransmitters must cross from neuron to neuron). In the following web site it is stated that the synaptic cleft spacing is variable and typically averages, "0.02-0.05 microns wide". I propose that a statistically significant decrease in average cleft spacing could partially explain the rise in standard IQ.

I propose this as one possible explanation and I base it as supporting evidence of an accelerating increase in mass and as an analogy of a similar trend in microcircuitry known as Moore's law. I propose an increase in neural density results in greater electro-chemical efficiency (less resistance). If I remember correctly there are billions of neurons in the human brain and trillions of connections. If you consider the distances between these connections are measured in microns I think that even a 'very' small change at that scale can result in measurable differences in cortical efficiency. To prove this hypothesis, obviously quite a bit of study would need to be done in measuring synaptic clefts across the brain of many subjects of several age groups. Only then do I think someone could calculate the rate and find the trend correlation between IQ scores and astrophysics. Again, this explanation is one hypothesis for these natural changes but it's the best one I have at the moment.

"Figure 11a illustrates the site where information is conveyed from one neuron to the next. At this junction, called the *synapse*, chemicals are used to transmit the electrical neuronal impulse. The structures (magnification approximately 93,000X) and substances involved in synaptic transmission at a *directed synapse* are identified, and the sequence of events in chemical transmission are described. A directed synapse is one in which the neurotransmitter release sites and receptor sites are close, but not touching. The cleft or space between these structures is typically 0.02-0.05 microns wide. A greater distance between the site of neurotransmitter release and the site of reception characterizes another type of synapse. In this so-called *non-directed synapse*, the neurotransmitters are released from varicosities (called "string-of-beads") along a neuron's axon."



- Athabasca University, 25-Sep-2001, **Advanced Biological Psychology Tutorials**, Figure 11a: Synaptic Transmission, <http://psych.athabascau.ca/html/Psych402/Biotutorials/11/part1.html>

I propose that there is additional evidence that an increase in brain density is a cause of natural yet unexplained 'evolutionary' changes other than IQ. The evidence can be found in the expression of other physiological and neurological processes related to the brain. Among the most alarming of them is the increase in human physical sexual maturation.

"By secreting various hormones, the hypothalamus and the pituitary gland control many normal functions, including sleep, appetite, temperature, sexual maturation, and reproduction. The hypothalamus, located at the base of the brain, is connected by blood vessels to the nearby pituitary gland."

- WebMD Corporation, 1996-2002, Chapter 9 -- Introduction, http://my.webmd.com/content/asset/yale_lab_tests_chapter_9_introduction.html

"**There are new guidelines for pediatricians that are guaranteed to shock:** girls who start to develop breasts and pubic hair at age six or seven are not necessarily "abnormal" (Kaplowitz, et al., 1999). In fact, by their ninth birthday, 48% of African American girls and 15% of white girls are showing clear signs of puberty."

“Pediatricians, nurse practitioners, and physician assistants examined three to 12-year-old girls between July 1992 and September 1993. Girls were recruited who came for a well-child visit, or for a problem that would routinely require a complete physical.”

“Results found that in their seventh year, 27% of African-American girls and 7% of white girls had begun breast development and/or had pubic hair. Between ages eight and nine, those numbers had increased to 48% of African-American girls and 15% of white girls. Also at age eight, 17% of African-American girls and 2% of white girls had axillary hair.”

“Menarche occurred in the girls’ eleventh year for 28% of African-American girls and 13% of white girls. At age 12, 62% of African-American girls and 35% of white girls had begun menstruating. For white girls in the US, the age of first menstruation has remained stable over the past 45 years. In African-American girls, age at menarche has declined by about 6 months in the past 20 to 30 years. The authors felt that the change in age at menarche in African-American girls may be due to their coming closer to achieving optimal nutritional and health status.”

“Girls in this study were taller and heavier than in the first and second National Health and Nutrition Examination Surveys (NHANES, which occurred more than 20 years ago), especially the older girls. Girls in the study who had one or more secondary sexual characteristic were larger and heavier than girls who had not begun puberty. A 1994 report on the National Growth and Health Study found a similar increase in the height and weight of nine and 10-year-old African-American and white girls compared to results from previous NHANES studies.”

“The mean onset age for breast development was 8.9 years for African-American girls and 10.0 for white girls. Pubic hair onset began at age 8.8 for African-American girls and 10.5 for white girls. Axillary hair appeared at the average age of 10.1 in African-American girls and 11.8 in white girls. All of the characteristics emerged significantly earlier in African-American girls both with and without controlling for height and weight.”

- Diana Zuckerman, Winter 2001, **When Little Girls Become Women: Early Onset of Puberty in Girls**, <http://www.cpr4womenandfamilies.org/children11.html>

While the trend was first observed in females it was also found in males when subsequently studied. Because these changes have been so dramatic, the acceleration so pronounced and the possible causes so poorly understood, they are typically considered abnormalities that need to be corrected, as was the case initially for early menarche.

“Recent research has shown girls in the US may be starting puberty at an earlier age than in generations past, and a new study now suggests the same is true of boys.”

“Looking at data on more than 2,100 US boys and teens, researchers found evidence that males growing up in the 1980s and 1990s reached puberty sooner than those growing up in earlier years.”

“Dr. Marcia E. Herman-Giddens of the University of North Carolina at Chapel Hill--who, with her colleagues, reported the first evidence that US girls are maturing at ever more tender ages--led the new study on boys.”

“The researchers used data from a national health and nutrition survey collected between 1988 and 1994. They looked at the onset of pubic hair growth and genital maturation among 2,114 males aged 8 to 19.”

“The team found that, on average, white boys showed pubic hair development at age 12, Mexican American boys just past age 12 and black boys just beyond age 11. And African Americans were age 9.5, on average, when they showed testicle growth and other signs of genital maturation. White and Mexican-American boys were just past their 10th birthdays.”

“Overall, Herman-Giddens said, these boys began maturing at a younger age compared with boys in studies past. In a statement, she said the findings suggest US boys are now beginning puberty up to 6 months

sooner. This echoes the findings from her 1997 study showing US girls--especially African Americans--may be maturing earlier than in the past.”

“An editorial accompanying the report notes the **"dramatic difference"** in puberty onset found in this study compared with previous ones.”

“Most evidence indicates that boys should begin genital maturation by age 14, according to Dr. Edward O. Reiter of Tufts University in Boston, Massachusetts, and Dr. Peter A. Lee of Hershey, Pennsylvania.”

“But based on these findings, the editorialists note, anywhere from 27% to 38% of US boys hit this milestone at age 8.”

- Reuters Health, Sep. 13, 2001, NEW YORK, **US boys may be hitting puberty sooner: report**, http://www.drbobmartin.com/2001k_09_13news02.html

Several possible contributing factors have been proposed to explain the trend, from obesity, to fetal chemical exposure to consumption of hormones in dairy products. While each of these explanations may explain some aspects of physical development I contend that even combined they fail to explain the rate, the worldwide prevalence or the fact that the subjects appear to be physically healthy. For each of the causal factors proposed I think it can be demonstrated that they are ‘not’ found in every country. On the other hand my theory accounts for the possible cause, the global nature, the rate of change and the fact those affected are physically healthy. The following articles don’t provide the same quality of evidence that the two prior articles do but they are evidence that the phenomenon is worldwide.

Europe

“Previous **recent estimates from a number of European countries suggest that the mean age of menarche is declining**, and was approaching 13y in the early 1980s. Even a conservatively corrected estimate from our data is less than 13.0y. [USA figures are said to be stable but already average less than 13y.]”

“We cannot conclude with complete certainty that the estimate from this work is significantly lower than the other estimates from recent decades. Nonetheless, the data are very suggestive of a further fall in the mean age of menarche since the 1980s. Confirmation from an older sample and/or longitudinal study would add to our confidence in the data.”

- Schools Health Education Unit (UK), **Press release: Early onset of puberty raises questions for teachers and parents**, <http://www.sheu.org.uk/pubs/puberty.htm>

Taiwan

Height and Weight Change Across Menarche of Schoolgirls With **Early Menarche**

“Design: Nine hundred five fourth grade school girls were identified as a closed cohort from the first semester of 1993 for the observational study of the onset of menarche and its predictive factors.”

- Shu-Hui Chang, PhD; Shinn-Jia Tzeng, MS; Jung-Yu Cheng, BS; Wei-Chu Chie, MD, PhD, December 9, 1999, **Height and Weight Change Across Menarche of Schoolgirls With Early Menarche**, <http://archpedi.ama-assn.org/issues/v154n9/abs/poa90351.html>

Nigeria

“The project, which has a three-month implementation time frame, was **in response to the decline in the age at menarche**, early sexual debut by adolescents and high prevalence of HIV/AIDS among adolescents and youths aged 15- 24 years. The main goal of the project therefore was to create awareness on HIV/AIDS among early adolescents in primary schools in Osun state in three months through training, information, education and counseling.”

- Life Vanguard Nigeria, Dec 28, 2001, **Early adolescence HIV/AIDS prevention project**, <http://www.nigeria-aids.org/MsgRead.cfm?ID=386>

From an evolutionary perspective I think it is interesting to note the advantages that both improved IQ and earlier reproductive maturation have for the survival of the species. Following a worldwide cataclysm these two qualities would increase the chances for survival in a highly variable environment that included large amounts of radiation exposure and subsequently high rates of birth defects. It should be obvious from my theory that other

animals on the planet would also be effected by increasing neural density. There may in fact be zoological records that support this conclusion particularly for those animals that are part of captive breeding programs.

In addition to IQ and physical maturation I propose that there are various behavioral 'disorders' that have been found to be increasing in the general population and are neurologically based. The three I wish to identify here are Social Anxiety Disorder, Attention Deficit Disorder/Attention Deficit Hyperactivity Disorder ADD/ADHD, and Asperger Disorder (Syndrome). For each disorder I will cite a brief description of, and a link below it which provides the American Psychiatric Association's Diagnostic and Statistics Manual (DSM-IV) definition.

“Social anxiety is the fear of social situations and the interaction with other people that can automatically bring on feelings of self-consciousness, judgment, evaluation, and criticism. Put another way, social anxiety is the fear and anxiety of being judged and evaluated negatively by other people, leading to feelings of inadequacy, embarrassment, humiliation, and depression. If a person usually becomes anxious in social situations, but seems fine when they are alone, then "social anxiety" may be the problem.”

“Social anxiety disorder (social phobia) is a much more common problem than past estimates have led us to believe. Millions of people **all over the world** suffer from this devastating and traumatic problem every day of their lives, either from a specific social phobia or from a more generalized social phobia. In the United States, epidemiological studies have recently pegged social anxiety disorder as the third largest psychological disorder in the country.”

- Thomas A. Richards, Ph.D, Copyright 1996-2001, Social Phobia/Social Anxiety Association, The Least Understood Anxiety Disorder, <http://www.socialphobia.org/social.html>

- TIMOTHY J. BRUCE, PH.D., and SY ATEZAZ SAEED, M.D., November 5, 1999, Social Anxiety Disorder: A Common, Underrecognized Mental Disorder, <http://www.aafp.org/afp/991115ap/2311.html>

“Asperger Syndrome or (Asperger's Disorder) is a neurobiological disorder named for a Viennese physician, Hans Asperger, who in 1944 published a paper which described a pattern of behaviors in several young boys who had normal intelligence and language development, but who also exhibited autistic-like behaviors and marked deficiencies in social and communication skills. In spite of the publication of his paper in the 1940's, it wasn't until 1994 that Asperger Syndrome was added to the DSM IV and only in the past few years has AS been recognized by professionals and parents.”

“Individuals with AS can exhibit a variety of characteristics and the disorder can range from mild to severe. Persons with AS show marked deficiencies in social skills, have difficulties with transitions or changes and prefer sameness. They often have obsessive routines and may be preoccupied with a particular subject of interest. They have a great deal of difficulty reading nonverbal cues (body language) and very often the individual with AS has difficulty determining proper body space. Often overly sensitive to sounds, tastes, smells, and sights, the person with AS may prefer soft clothing, certain foods, and be bothered by sounds or lights no one else seems to hear or see. It's important to remember that the person with AS perceives the world very differently. Therefore, many behaviors that seem odd or unusual are due to those neurological differences and not the result of intentional rudeness or bad behavior, and most certainly not the result of "improper parenting".”

- Barbara L. Kirby, Online Asperger Syndrome Information and Support (includes DSM IV criteria), **What Is Asperger Syndrome?**, <http://www.udel.edu/bkirby/asperger/aswhatisit.html#DSM>

“Attention Deficit Disorder, or ADD/ADHD, is a psychological term applied to anyone who meets the DSM IV diagnostic criteria for impulsivity, hyperactivity and/or inattention. The diagnostic criteria are subjective and include behavior which might be caused by a wide variety of factors, ranging from brain defects to allergies to giftedness. ADD is really more of a description rather than a specific disease. However, there is a tendency for people to over-simplify ADD and view it as a singular defect or disease. Not true!”

There are two major types of ADD at this time (this aspect of ADD keeps evolving): ADD with hyperactivity (the traditional type of ADD) and ADD without hyperactivity ("inattentive" type). Here are the DSM IV diagnostic criteria in a condensed form:

Inattention (must meet six of the following to a degree that is "maladaptive"):

- Often fails to give close attention to details or makes mistakes in schoolwork;
- difficulty sustaining attention in tasks;
- seems not to listen;
- fails to follow instructions or finish work;
- unorganized;
- difficulties with schoolwork or homework;
- loses things like school assignments, books, tools, etc.;
- easily distracted;
- forgetful about daily activities.

ADD with Hyperactivity (must meet six of the following to a degree that is "maladaptive"):

- fidgety in a squirmy sense;
- doesn't stay seated;
- runs or climbs excessively (or feelings of restlessness in older children);
- difficulty playing quietly;
- often "on the go" or acts if "driven by a motor";
- often talks excessively;
- blurts out answers to questions;
- difficulty waiting in lines or waiting turns;
- often interrupts or intrudes on others.

- Teresa Gallagher, quoted Feb. 2002, Born to Explore, **What is ADD?**, <http://borntoexplore.org/whatisadd.htm>

- TCAMS.ORG , Copyright 2000, Criteria for Attention Deficit (ADHD) Hyperactivity Disorder - 314.01, <http://www.voyager.net/tcams/adhd.htm>

It is my contention that these behaviors are intrinsically considered ‘disorders’ because of societal expectations of individual ‘normalcy’ (by generally unhealthy societies), the fact that individuals have specific cognitive preferences that put them in a statistical minority is not commonly understood, and these physiologically based preferences are being amplified by the physical neurological changes I have already attempted to explain.

To present an explanation for why there are societal expectations of ‘normal’ that are not only culturally prolific but also exist within institutions such as the American Psychiatric Association I propose that it is not generally known that ‘normal’ physiological cognitive functional differences exist. Not only do they exist but natural preferences are not distributed evenly across populations. The functions I am speaking of were identified by Carl Gustav Jung a Swiss Psychoanalyst and were published in 1921 in a book called, *Psychological Types*. The four functions as described by Jung are Thinking, Feeling, Sensing and Intuition. Jung identified that individuals were also often either Extroverted (gregarious) or Introverted (reflective).

While Jungian personality theory is popular in many places, American Psychiatry is unfortunately not one of them. This is significant because in the past few years neuroscience has identified the structures that explain these natural preferences. Consequently all of the DSM’s behavioral criteria used in the identification of a ‘disorder’ are fundamentally flawed because they don’t incorporate these demonstrable facts in their criteria.

These facts incorporate empirical evidence that each of the functions that Jung identified are localized to ‘quadrants’ of brain, how these functions are used is regulated by the Reticular Activating System (RAS), why a person’s natural lead preference is determined by relative cortical efficiency in the consumption of oxygen and glucose, and why a person’s least developed cognitive function is determined by how the quadrants are ‘wired’ to each other.

R.A.S. - Reticular Activating System

“The Reticular Activating System, located in the core of the brain stem and linked directly to the Frontal Lobes by a substantial conduit of neurons, functions to regulate our arousal -- that is, the degree and quality of our sleep, REM, or wakefulness.”

“Understanding the role of the reticular activating system in human "thinking" is important to fully appreciating Dr. Jung’s and Dr. Benziger’s work. There are three distinct ways in which understanding the functioning of our R.A.S. promotes a deeper appreciation of Jung’s model.”

“First, as the regulator of our stable level of wakefulness, it sets and maintains how much information or stimulation we take in, second per second, while we are awake.”

“Secondly, our R.A.S. when affected by anxiety or our fight-or-flight response rapidly and temporarily increases our arousal level. This enables us to be suddenly and fully alert, seeing much more than we normally see, noticing much more than we normally notice, when we are in danger. It prepares us to successfully respond to danger.”

“Finally, as a major communication link between our Frontal Lobes and our energy reserves in the brain stem, our R.A.S. makes it possible for us to obtain additional energy to focus our attention when, directed to do so by our Frontal Lobes. This direct provision of additional energy to focus on a problem, experienced most powerfully by people with a natural preference in one of the Frontal Lobes – in either Thinking or Intuition - explains how and why Frontal thinkers – with a lead in Thinking or Intuition - tend to be more energetic than Basal thinkers, whose natural lead function is Sensation or Feeling. Frontals are often seen as: fast moving, fast talking, and intense or driven, Type A's - workaholics. Understanding this internal functioning explains why many Frontals are in a real sense addicted to problem solving. What's more, Frontals actively choose to do problem solving because of this energy high.”

...
“Given the above, it is possible to understand the following definitions for Extraversion and Introversion as well as to understand their implications for an individual.”

Extraversion

“Having a naturally low level of arousal which causes the individual to seek higher than normal levels of stimulation in order to "feel alive."

Typical ways in which the extravert seeks stimulation include: trying to influence or control his or her environment; confronting others; engaging in competition; attending crowded parties or events "where the action is".”

Introversion

“Having a naturally high level of arousal which causes the individual to seek lower than normal levels of stimulation in order to not feel overwhelmed.”

“Over a period of years, this need to not be overwhelmed by external stimulation develops into an internally focused thinking style which may seem withdrawn, meditative, quiet, or even reclusive to more extraverted persons. Typical ways in which the introvert seeks to control the level of stimulation include: spending time reading, reflecting, or otherwise alone; avoiding or being accommodating to others; competing mostly with oneself or self image; going to small parties or out of the way places.”

- Katherine Benziger, Ph.D., Page updated: 11 January 2000, Articles in Jungian Psychology, **The Physiology of Type** – Part 1, <http://www.benziger.org/intro-extra.html>

According to the work of Dr. Richard Haier at UC. Irvine as cited by Katherine Benziger, “Moreover, Haier’s research has shown repeatedly that most people have **one area** which enjoys a much lower level of electrical resistance – using only one one-hundredth the oxygen / energy - when compared with all the other areas of that person’s cortex.” When you consider relative cortical efficiency with the fact that the human brain comprises about 2% of a person’s weight but even at rest it consumes about 20% of the bodies energy you can begin to understand why such factors play a dominant role in our behavior.

“From the above overview we have learned that:”

1. “Jung’s four Functions are rooted in four distinct areas of the cortex. Thinking is housed in the Left Frontal Lobe. Intuition is housed in the Right Frontal Lobe. Sensation is housed in the Left Posterior Convexity. Feeling is housed in the Right Posterior Convexity.
2. Jung’s assertion that each of us has one Natural Lead Function is the result of a neuro-chemical - physiological fact that each person has one area which is 100 times more efficient than their remaining three areas.

3. Jung's assertion that each person has two natural auxiliaries can be understood to be the natural result of the brain's structure. Factually speaking, neuronal bridges hardwire a person's Natural Lead to their auxiliaries, making communication between their lead and auxiliaries easy, even though each actual auxiliary is relatively speaking highly inefficient.
4. Jung's assertion that once a person's Natural Lead Function has been identified, one can confidently calculate the person's greatest Natural Weakness, is the result of the simple fact that there are no diagonal bridges in the human brain.
5. The difference between the Feeling Function and Emotions can be understood more clearly. The Feeling Function is a cortical capacity to recognize the presence or absence of harmony – between colors, tones, or human beings. By contrast, emotions are a limbic capacity to experience delight, anger, fear, grief.
6. Jung's belief that Falsification of Type was a real possibility is understood to be the natural result of anyone developing and using any of their three inefficient, non-preferred Functions more than their highly efficient Natural Lead Function. What's more, Jung's assertion that Falsification of Type can be a serious threat to a person's physical and mental / emotional health has been validated by the work of Dr. Katherine Benziger and Dr. Arlene Taylor, resulting recently in the profound recognition that Falsification of Type leads dependably to a serious result as defined by PASS."

"Thus, quite simply, the elements of Jung's Typology related to the existence and relative organization of four specialized functions or ways of "thinking" is explained."

- Katherine Benziger, Ph.D., Page updated: 11 January 2000, Articles in Jungian Psychology, **The Physiology of Type** – Part 2, <http://www.benziger.org/4function.html>

Here are some descriptions of the four functions in each attitude, Sensing, Feeling, iNtuition, and Thinking. Each cognitive function can be expressed in either an Introverted or Extroverted "attitude". (Se, Si, Fe, Fi, Ne, Ni, Te and Ti). One book I might recommend on the expression of functions is "*Personality Type an Owners Manual*" by Lenore Thomson.

Markku Jantunen's Definition of the 8 Functions

Ne is perceiving abstract patterns and connections in response to stimuli (either in the external world or in the mind.) Ne generates new information starting from something existing. Ne focuses on future possibilities.

Ni is the creation of mental imagery independent of outer stimuli. Ni generates abstract structural images of a given problem domain that a person can view from different points of view at will. Ni focuses on the structure of things from a timeless point of view.

Se is indiscriminant awareness of the physical environment. Se prefers to indulge in that which exists in the present moment.

Si is awareness of concrete forms and categories of sensory perception. Si interprets stimuli in terms of the past. Si stores and recalls facts, figures and past situations.

Te is structuring one's interactions with the external world in a systematic fashion, based on logical and impersonal hierarchies and categories.

Ti is judging the validity of perceptions logically. Ti as a

mental process is a collection of threads of thought taking concepts or percepts apart or pulling them together based on rules and criteria.

Fe is adapting one's interactions with the external world to the moods and feelings of others. Fe is sensitive to events like changes in people's expressions or other such "soft," hard-to-quantify conditions in the environment.

Fi is judging perceptions emotionally, based on weight of evidence. Fi as a mental process is the flow of judgements on perceptions personal ideals or feeling of right and wrong. Fi strives for integrity and consistency in it's ideals. Fi is higher cognitive refinement personal emotion. Fi enables one to vividly re-experience past feelings.

I stress that the "Feeling" function is poorly understood (as is iNtuition). This function is used for judging/reasoning. It is **not** the same as "emotions". As Benziger pointed out emotions are a product of the limbic system. Instead, 'Felling' or as I prefer to call it 'Subjective Reasoning' interprets and assigns qualities or values of perceptions based on subjective criteria. For example, if you are near an electrical power generation device that emits a large electromagnetic field and you subjectively experienced (feel) a "tingling" in your stomach, the skin and hair on your arms tingles, a light headedness in your brain **and you attempted to interpret** these sensations and convey them to someone is this "irrational"? Is it an "emotion"? Of course not, it's simply difficult to describe to others using objective language. This function is used to discern variances in perceptions and to change your point of view. This function is appropriate for use in the area of ethics, musical and artistic expression as well as fictional literature.

Today most people understand personality types through a personality test developed by Isabel Briggs Myers. Ms. Myers and her mother used Jung's theory of personality type and over decades working with psychologists, career counselors and others, developed a testing system to identify the personality traits. The test is referred to as the MBTI (Myers-Briggs Type Indicator) and the organization, which refines, administers and trains people to administer the test, is the Association for Psychological Type at <http://www.apcentral.org/>. When these personality trait "preferences" are combined a dominant "personality type" can be identified. There are consequently 16 base personality types. I recommend the following web site for well written descriptions of each type, <http://www.personalitypage.com/portraits.html>.

I wish to emphasize I believe a distinction between 'personality' and cognitive functional preference must be maintained in order to resolve various nature/nurture questions. Personality as usually described is a 'product' of cognitive function. But of course 'environment' influences the development of cognitive functions.

Here are two tables listing each of the 16 personality types grouped by function/trait. In the first table, next to each type is a percentage of the US population by gender that could be identified as having that personality type as scored by the MBTI. (These percentages are from the MBTI Manuel – A Guide to the Development and Use of the Myers-Briggs Type Indicator. Third Edition 1998.) The second table indicates each MBTI personalities' first four functional preferences in each attitude. While other tables would make it more clear those with a preference for Sensing generally outnumber those with a preference for iNtuition by 3 to 1. With that information in mind, guess which group is more likely to be considered 'abnormal'?

MBTI Notation

	ST	SF	NF	NT	
I	ISTJ – F 6.9 M 16.4	ISFJ – F 19.4 M 8.1	INFJ – F 1.6 M 1.3	INTJ – F 0.8 M 3.3	J
I	ISTP – F 2.4 M 8.5	ISFP – F 9.9 M 7.6	INFP – F 4.6 M 4.1	INTP – F 1.8 M 4.8	P
E	ESTP – F 3.0 M 5.6	ESFP – F 10.1 M 6.9	ENFP – F 9.7 M 6.4	ENTP – F 2.4 M 4.0	P

E	ESTJ – F 6.3 M 11.2	ESFJ – F 16.9 M 7.5	ENFJ – F 3.3 M 1.6	ENTJ – F 0.9 M 2.7	J
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Jungian Notation

	ST	SF	NF	NT	
I	Si Te Fi Ne (ISTJ)	Si Fe Ti Ne (ISFJ)	Ni Fe Ti Se (INFJ)	Ni Te Fi Se (INTJ)	J
I	Ti Se Ni Fe (ISTP)	Fi Se Ni Te (ISFP)	Fi Ne Si Te (INFP)	Ti Ne Si Fe (INTP)	P
E	Se Ti Fe Ni (ESTP)	Se Fi Te Ni (ESFP)	Ne Fi Te Si (ENFP)	Ne Ti Fe Si (ENTP)	P
E	Te Si Ne Fi (ESTJ)	Fe Si Ne Ti (ESFJ)	Fe Ni Se Ti (ENFJ)	Te Ni Se Fi (ENTJ)	J

- Glen Hendler, August 2001, **Functional Notation**, <http://www.timeenoughforlove.org/Notation.htm>

Making a distinction between the two forms of notation is significant for those who research personality theory. The distinction is important because a person’s personality develops over time. The MBTI system attempts to discern a person’s dominant personality type through preferred ‘behaviors’. In societies with large populations and advanced organizations there tends to be a high degree of individual specialization. As a result people tend to over develop their first two naturally preferred functions and the remaining are too often, very poorly developed. Identifying all four of an individual’s functions by preference and attitude would allow them to become consciously aware of their natural preferences and weaknesses. This is ‘very’ important because most of our thinking (cognitive processing) is done at an ‘unconscious’ level.

So, if one considers the defining attributes of the cognitive functions in each attitude, the neuro-physiological basis for differentiation, the variability in an individual’s RAS, the various levels of utilization and development of each function which forms the individuals working cognitive matrix, and the evidence of unexplained accelerating IQ then one can see the patterns that emerge in the behaviors for each of the ‘disorders’ I identified. I think most of the subjects diagnosed with Asperger Disorder (Syndrome) would be found to have a 100% more efficient Introverted Thinking (Ti) function and consequently an extremely underdeveloped Feeling (subjective reasoning) function. On the flip-side I think many of those diagnosed with Social Anxiety Disorder are likely to be found to be Introverted Feeling (Fi) dominant and thus a poorly developed objective Thinking (objective reasoning) function. Additional support for this theory can be found in the success of Cognitive Behavior Therapy (CPT).

The fact that Attention Deficit Disorder/Attention Deficit Hyperactivity Disorder ADD/ADHD entails a variety of qualifying behaviors is evidence itself that those who define the ‘disorder’ really don’t know what they are dealing with. They have drugs that placate ‘unruly’ children so they have tried to discern common behavioral patterns. The pattern I see between the type 1 “inattentive” children and the type 2 “hyperactive” children lead me to believe that the differences are dominated by extroverted perceiving differences. That is, I think the type 1 children are most likely to be Ne dominant and the type 2 kids Se dominant. Evidence of this can be found if the children are evaluated on a Jungian basis as evidenced by the “Born to Explore” argument that many of these children excel in similar areas.

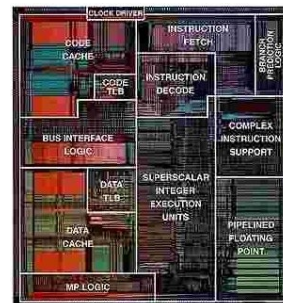
One of the first things I’ve discovered from my own research is that peering eye movement corresponds positionally to the location of the cognitive functions. That is, when someone consciously retrieves a memory, they may for different lengths of time change their eye position in an attempt to “peer” into their mind. That is for Thinking they would peer upper left, for iNtuition they would look upper right, Sensing lower left and Feeling lower right. Here is what that would look like if you were watching someone else’s eyes.



Sounds dubious? To prove this to yourself try the following, comfortably look up and diagonally to your right and try to describe a place that is very familiar to you like your work office or your bedroom, somewhere where you are not at the present time (sensing details i.e. just physical facts). You will probably not be able to describe more than one or two features comfortably. Now move your eyes lower left and do the same thing. You should find the thoughts flow easily. Now do the opposite, look lower left and describe your ‘future’ plans for your career or a relationship. You should find it nearly impossible. Now look upper right and try again.

I have also been studying computing for more than twenty years and have held several technical computer related jobs for more than twelve years. From my research I've reasoned that many advanced concepts and constructs are actually subconscious projections of our own thought processes and brain structure. I contend these technologies include but are not limited to, hyperlinks, parallel processing, abstraction layers, basic input/output systems, preemptive, multi-tasking, multi-threaded operations, relational databases, neural networks and of course microprocessors.

I've done a bit of research and I believe I'm the first to realize that the high-level CPU functions in the Intel Pentium processor as seen here directly correspond with the human cognitive functions. That is, Sensing = Data, Feeling = Fluidic calculations, Intuition = Prediction and Fetch, and Thinking = Code and Logic. These functions are not only in the same relative positions to each other, it's also likely that the relative location of the functions is significant. That is, the Introverted functions are closer to the center and the Extroverted functions are further from the center. You can go to the following page of web site where I attempt to equate each of the CPU functions with each cognitive function in each attitude, the 'four' language structures and even the RAS represented as the 'Clock Driver', <http://www.timeenoughforlove.org/CPU.htm>



- Image is Intel microprocessor found at Kids Online, **Microprocessor**, <http://www.kids-online.net/learn/clickjr/details/cpu.html>

I attribute the internal (subconscious) perception and development of these technologies primarily to the INTJ personality type. I rest this hypothesis on many factors, but most significant among them are the attributes of the INTJ's Ni-Te-Fi-Se functional matrix, surveys that indicate such jobs are occupied by a high percentage of INTJs and my own professional experience. It's also important to note that given time, the development of such technology is an evolutionary eventuality. Without a conscious understanding of one's own mind the subconscious will dominate thought and express itself.

I also contend the natural and underdeveloped cognitive matrix of most astronomers, particularly those who excel mathematically is one of the principal reasons why they continually ignored problems like the redshift observations that placed Earth at the center of the Universe. I don't want to go into a lengthy explanation but much of it concerns the reliance on a highly developed and efficient objective reasoning (Thinking) function and the naturally inferior subjective reasoning (feeling) function that hindered their ability to alter their perspective. Fortunately once we become consciously aware of our shortcomings we can alter our thinking and see the universe in new ways.

“We may, appear to be watching the galaxies recede from us and believe ourselves to be stationary, however this is simply our relative view of the universe. For example, a galaxy receding from us at a rate of "x" km/sec would see our galaxy relative to itself moving away also at the same speed of "x" km/sec. Some galaxies do not recede from each other, as their gravitation holds them together as a whole. These groups of galaxies are called "clusters".”

“There is a lot unknown about our expanding universe but there is more and more being discovered every day. Soon we might just know for fact the true story of the universe. “

- Matthew Dolan, © Marc Delehanty 2001, **Cosmology Section - Big Bang**, <http://www.astronomytoday.com/cosmology/bigbang.html>

Conclusion

"Our acceptance of any new concept always seems to pass through three phases: At first, it is declared impossible. Then, as supporting facts accumulate, their interpretation is said to be erroneous. But finally, everybody says blandly, 'We knew it all the time.'"

- Ivan Sanderson

- Predictions originally made February 2002
Supporting articles beneath each prediction are dated

If this Pleistocene Mass Extinction theory is correct then the most important question becomes, "How much time is left until the event/s?" I have no practical means to discern such a thing. But, in accord with Hawking's observation that for cosmology to be a proper science we should be able to make predictions that can be tested against observation, I propose the following predictions. My hope is that others may test them in a controlled scientific manner and share the results with others. I will certainly do what I can to check my predictions.

- Solar volatility should continue to increase with probably more dramatic CMEs.
http://www.space.com/scienceastronomy/solar_storm_031023.html
Seeing Double: Astronomers Amazed at Two Huge Sunspots
23 October 2003
"It's somewhat unusual to have this much activity when we're approximately three-and-a-half years past solar maximum," said Larry Combs, a forecaster with the NOAA Space Environment Center's Space Weather Operations. "In fact, just last week, solar activity was very low with an almost spotless Sun."
http://www.space.com/scienceastronomy/solar_flare_031028.html
Major Solar Storm Begins Onslaught of Earth
28 October 2003
Meanwhile, satellite operators and power grid managers prepared to endure a potentially damaging event. And astronauts aboard the International Space Station took cover from heavier radiation sent out by the flare. They are not expected to be in any serious danger.
"This is the real thing," said John Kohl, a solar astrophysicist at the Harvard-Smithsonian Center for Astrophysics and principal investigator for an ultraviolet imager on the Solar and Heliospheric Observatory (SOHO) spacecraft. "The eruption was positioned perfectly. It's headed straight for us like a freight train."
http://www.space.com/scienceastronomy/xtreme_flare_031105.html
Latest Sun Flare Put at X28, Strongest on Record
05 November 2003
The strongest flares on record, in 1989 and 2001, were rated at X20. This one is at least that powerful, scientists say. But because it saturated the X-ray detector aboard NOAA's GOES satellite that monitors the Sun, a full analysis has not been done.
The satellite was blinded for 11 minutes.
Craig DeForest, a solar physicist at the Southwest Research Institute, said others in his field are discussing the possibility that Tuesday's flare was an X40.
"I'd take a stand and say it appears to be about X40 based on extrapolation of the X-ray flux into the saturated period," DeForest told SPACE.com.
- Solar energy and Ultraviolet radiation output should continue to rise.
<http://www.gsfc.nasa.gov/topstory/2003/0313irradiance.html>
NASA STUDY FINDS INCREASING SOLAR TREND THAT CAN CHANGE CLIMATE
top story - Goddard Space Flight Center
March 20, 2003 - (date of web publication)
Since the late 1970s, the amount of solar radiation the sun emits, during times of quiet sunspot activity, has increased by nearly .05 percent per decade, according to a NASA funded study.
http://www.space.com/scienceastronomy/sun_output_030320.html
Sun's Output Increasing in Possible Trend Fueling Global Warming
By Robert Roy Britt
20 March 2003
In what could be the simplest explanation for one component of global warming, a new study shows the Sun's radiation has increased by .05 percent per decade since the late 1970s.
...

Willson said the Sun's possible influence has been largely ignored because it is so difficult to quantify over long periods.

...

The new study shows that the TSI has increased by about 0.1 percent over 24 years. That is not enough to cause notable climate change, Willson and his colleagues say, unless the rate of change were maintained for a century or more.

The study analyzed data from six satellites orbiting Earth at different times over the 24 years. Willson ferreted out errors in one of the datasets that had prevented previous studies from discovering the trend.

A separate recent study of Sun-induced magnetic activity near Earth, going back to 1868, provides compelling evidence that the Sun's current increase in output goes back more than a century, Willson said.

- Polar ice caps on Earth and Mars should continue to melt at an accelerating rate.
- Global temperatures on Earth should continue to rise, and at an accelerating rate, resulting in more unpredictable weather patterns.

<http://www.gsfc.nasa.gov/topstory/2003/0313irradiance.html>

NASA STUDY FINDS INCREASING SOLAR TREND THAT CAN CHANGE CLIMATE

top story - Goddard Space Flight Center

March 20, 2003 - (date of web publication)

"Historical records of solar activity indicate that solar radiation has been increasing since the late 19th century. If a trend, comparable to the one found in this study, persisted throughout the 20th century, it would have provided a significant component of the global warming the Intergovernmental Panel on Climate Change reports to have occurred over the past 100 years," he said.

- Volcanic activity including lava flows should increase in frequency worldwide.
- Identification of increases in average standard IQ, 'early' sexual maturation, and neurological 'disorders' should continue to increase.
- If professional psychiatry utilizes Jungian personality theory that is supported by neurology they will be able to develop more accurate and useful criteria for judging 'normal' behavior.
- Astronomers using identical methodologies should be able to discern a pattern from past, present and future measurements of Earth's distance from the galactic core that indicates we are getting closer.
- Astronomers should be able to reevaluate their red-shift observations and discern a pattern that confirms that the record of 'recessional' velocities are proportionally consistent with the distances from, and acceleration toward, the galactic core.
- I also have a hypothesis that atomic clocks have been and will continue to become less accurate.

http://dsc.discovery.com/news/briefs/20031229/atomicclock_print.html

Faster World Whirls Into 2004

By Jennifer Viegas, *Discovery News*

Dec. 31, 2003 — The world's timekeepers, who track time using an atomic clock and the rotation of the Earth, say our planet is speeding up.

Because of the faster rotation, a leap second will not be added to Coordinated Universal Time (UTC) on Dec. 31, making 2003 the fifth consecutive year without such an adjustment.

"Evidence from 4 to 5 million years ago shows that a day was 20 hours long," said O'Brian, who explained that coral growth rings and documentation of lunar and solar eclipses allow researchers to determine both daily and annual time in the past.

Because Earth's rotation has a tendency to slow, timekeepers decided to implement leap seconds in 1972 to make UTC agree with astronomical time to within .9 second. Since 1972, 22 leap seconds have been added. Adjustments, when needed, always are made midyear and at year's end.

"By far this is the longest period without a leap second," said O'Brian. "The change may have to do with global weather patterns, but this is speculative at this point and we will have to wait and see what happens in future."

If there was no Big Bang origin of the universe then I believe the philosophical consequences are profound. If the universe has no beginning and no end as suggested or indicated by the QSSC and String theory, then it has no age. To me this implies that the probability of the existence of other intelligent life in the Universe must be 100% even without in-your-face evidence. From Earth's timeframe of 4.6 billion years, intelligent life 'may' have developed spontaneously 'quintillions' of years ago. With that possibility in mind, no matter how probable you believe it to be, I recommend a review of the other controversial subjects I examine on my web site,

<http://www.timeenoughforlove.org>.

Glen Hendler, Sammasambuddha
glen@timeenoughforlove.org

"Stupidity cannot be cured with money, or through education, or by legislation. Stupidity is not a sin, the victim can't help being stupid. But stupidity is the only universal capital crime; the sentence is death, there is no appeal, and the execution is carried out automatically and without pity."

- Robert A. Heinlein from the book "Time Enough for Love"
<http://www.amazon.com/exec/obidos/ASIN/0441810764/104-7342963-9687926>