

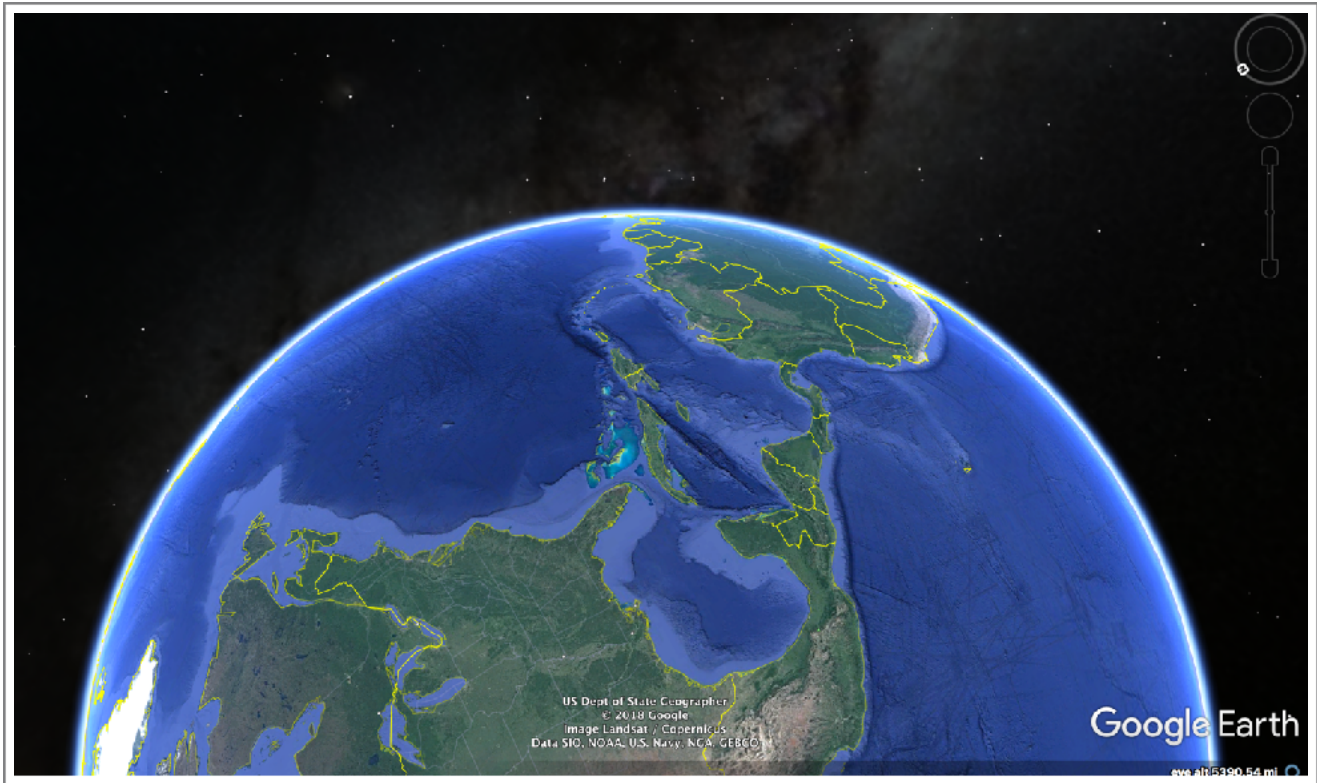
Planetary Collision Dynamics

Parallax & Perspective

- Observations from a Visual Effects Artist's, P.O.V.

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- Vol. 01 -

Comet Impact = Plasma-Crater

The J.I.S.C. in Geomorphologic Anomalies.

“Several aspects of Earth-impact hazards can be re-evaluated with knowledge gained from observations & from simulations of SL9 (Comet Shoemaker-Levy 9).”

- Dr. Mark Boslough, PhD., et. al. 1995 (#04)

Introduction

Current popular theories regarding formation of Caribbean Plate and its anomalous geomorphology:

- 1.) extruded from Galapagos Hot-spot, millions of years ago.
- 2.) accreted/formed in western Pacific, it then drifted eastward, diving under Central America, to arrive snuggled between the NOAM Plate and SOAM Plate, hundreds of millions of years ago.
- 3.) during Pangea break up, mantle cracked open and oceanic basalt plume swelled up between the asthenosphere & lithosphere, pushing up through upper mantle, millions and millions of years ago.

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The hypotheses I propose, will argue in favor of planetary collision with an extraterrestrial object/s, favoring comets, as a viable, reasonable and naturally re-occurring event with the proper energy level requirements. This type of rare impact event, created the Caribbean Plate and the contiguous fragmented plates for the tectonic region. Supporting NASA, GEBCO, Google Earth, and NOAA data is publicly available, for professional and amateur alike, therefore the datasets I rely on are thoroughly peer-reviewed. After many years of researching hypervelocity instabilities and constant over-digestion of the NASA Ames Research Center supercomputer simulation of Comet Shoemaker-Levy 9 as it impacted Jupiter's atmosphere, I surmise that many geomorphological anomalies for the Caribbean region, that go unexplained by current theories, could be remedied by study of the internal plasma anatomy of an impacting comet and its hyper-thermodynamic properties.

A cometary fragment traveling in a northeasterly direction, passing over the Southern hemisphere, re-entry angle $\leq 33^\circ$, roughly 80km-140km wide nuclei, generating a plasma coma spanning estimated 8000km - 10,000km wide, smashed into Earth's equatorial tropics zone, moving at a minimum velocity, Mach ≥ 20 . This re-entry speed impact, caused a compression of the Earth's magnetosphere into the crustal granite, fusing the comet energy pattern of its plasma 'vortex-engine' coma and the Bow-Shock energy into the Earth's lithosphere. The Caribbean Plate and immediate geological anomalies conform to, J.I.S.C. Shock, hypervelocity flow pattern. This includes all coastlines, sea floor formations, plateaus, peninsulas, basins, rises, shelves, trenches & troughs, straits, canyons, mountain chains, volcano chains, and a few abyssal plains.

Agreed Facts:

- Newton's 2nd - Force equals mass multiplied by its acceleration. ($F = ma$)
- Newton's 3rd - Equal but opposite reaction.
- Thermodynamics - the branch of physical science that deals with the relations between heat and other forms of energy & by extension, of the relationships between all forms of energy.
- Conservation of Energy - Principle stating that energy cannot be created or destroyed, but can be altered from one form to another.
- Mach - Ratio of speed of a body to the speed of sound in surrounding medium.
- Supersonic - involving or denoting a speed greater than that of sound
- Gravity - the force that attracts a body toward the center of the earth, or toward any other physical body having mass.
the degree of intensity of gravity, measured by acceleration.
- Astrophysics - the branch of astronomy concerned with the physical nature of stars and other celestial bodies, and the application of the laws and theories of physics to the interpretation of astronomical observations.
- Geophysics - the physics of the earth.
- Geomorphology - the study of the physical features of the surface of the earth and the relation to its geological structures.
- Turbulence - violent or unsteady movement of air or water, or of some other fluid.
- Earth - the surface of the world as distinct from the sky or the sea.
Oblate-Spheroid - flattened at the poles, not perfectly spherical body.
- Anomaly - something that deviates from what is standard, normal, or expected.
- Magnetosphere - the region surrounding the earth or another astronomical body in which its magnetic field is the predominant effective magnetic field.
- Lithosphere - the rigid outer part of the earth, consisting of the crust and upper mantle.
- J.I.S.C. - transverse sonic Jet Injection into a Supersonic turbulent Cross-flow

J.I.S.C. Shock

What act of nature is megaton energy yielding and a cyclical event that generates high-hypervelocity liquid/gas-instability flow structures? How does this contribute to the geomorphological anomalies found on and within Earth's tectonic plates?

When Comets Fall

For a long period of Earth's ancient historical record, comet arrivals equated tragedy for humanity. How far back in humanity's collective history for an actual, recorded observation of a comet impact? That, would be a wild guess, at best. Forgotten knowledge of these impact events may have spawned the sensible fear of fire-spitting, armored, flying, plumed serpents and flaming swords/spears/arrows from the heavens. Which may or may not have collided with Earth or one of our neighboring heavenly bodies? I was a kid when I learned of planet impact events. Death of dinosaurs and all that. As I aged, learning more history and science, I began to entertain the idea of vaporization by impact Mach-shockwave, a natural causation for Missing Link and gaps in evolution theories? Perhaps, science can help illuminate when myth or dogma deviates.

Fortunately today, we do know that on a cyclical basis, comets can and will fall towards the Sun and inner planets. Thanks to modern science, we are able to access multiple years of studies, observations, collected data samplings and writings on this subject. Mythic magic need not manifest itself, hither forth. Yet today, most modern humans do not equate comet visitations with cataclysmic, planet altering events. The more science learns the inner workings of nature, the less some of us reflect on its full impact on our longevity. Comets seem to fall into this category of ignoring, for the most part, how they can effect our evolution. Majority of humans wear blinders to the full dynamic picture we face as a species, once orbital alignments are not in our favor. Nature includes more than just planet Earth.

Comets reside in the Kuiper Belt, located 20 to 60 Astronomical Units from the Sun. Yes, very, very far outside of Neptune's orbit. Planetoid Pluto's orbit weaves in and out of this region. Most short-period comets are originate from this vast swell of space. Well beyond the outer-most edge of the Kuiper Belt, is the supposed Oort Cloud, stretching out to what is considered the furthest limits of our Sun's Heliosphere, around 200k AU. The Oort Cloud consists of the Hills Disc region, which may contain billions of mountainous, icy, carbon-coated comets. Equals very low reflective properties. Astrophysicists tell us that the majority of long-period comets reside in this region. The cometary material located here may date back to older than the inner planets of our solar system? Halley's Comet is one of the most well known short-period comets.

This spherical region is so far away from the effects of the Sun's gravity, these mammoths of ice-elementals may forever remain frozen in their current orbital position and path. However, once perturbed by an external force, a comet may dive for and possibly into the Sun, never to be seen again. Sun-grazer comets earned their names as they pass extremely close to the Sun's surface, at their perihelion. Many comets survive their trip into the Sun's corona and slingshot back into deep space. Most comets evaporate, sublime, due to critical-loss of mass, and several do indeed dive into the Sun. PLOUFF!!!

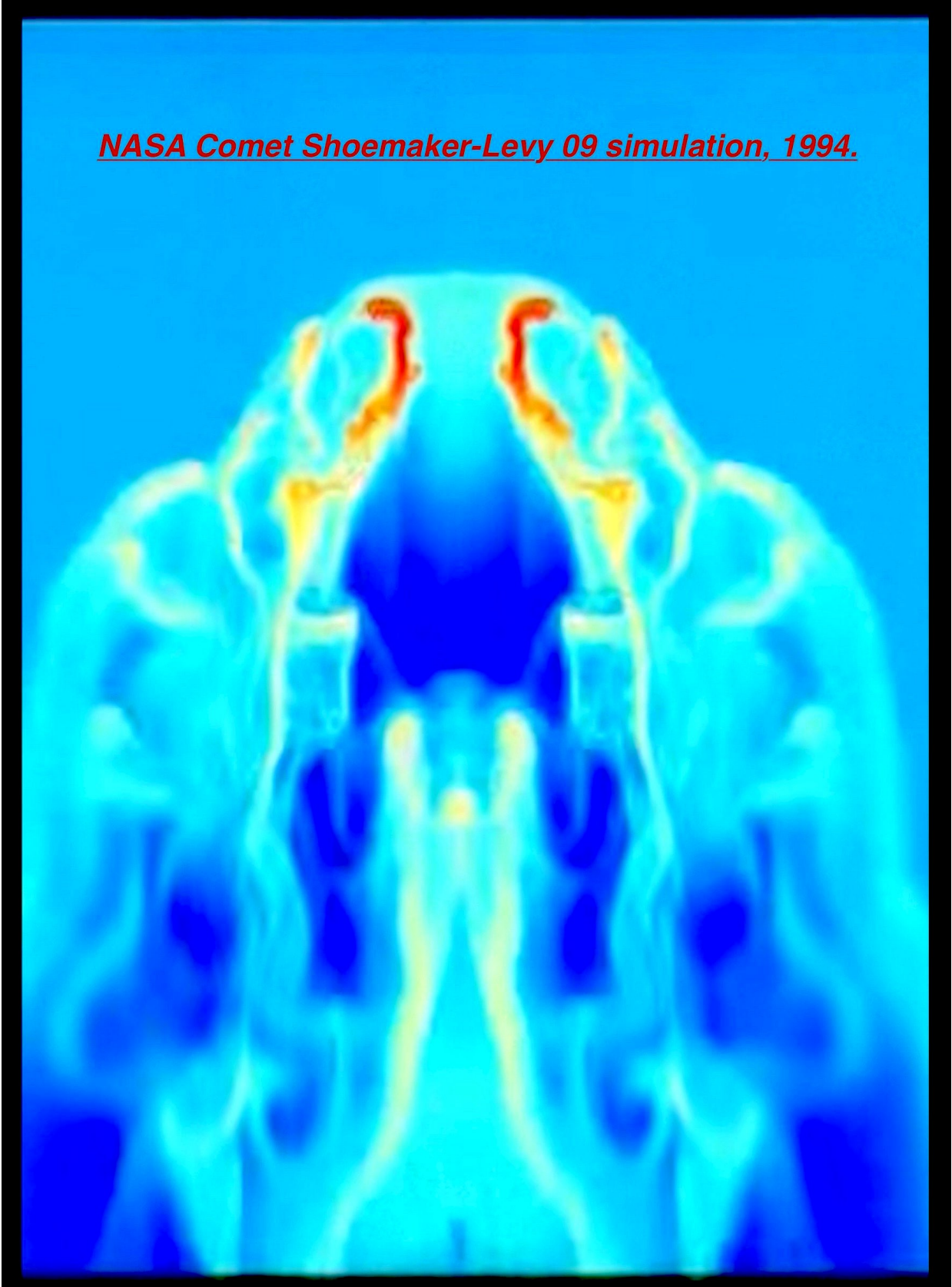
On extremely rare occurrences during this trip into the inner planets, a comet might collide with a planet. It happened in 1994, Comet Shoemaker-Levy 9 [SL9] rendezvoused with Jupiter. Several fragmenting comet-chunks, on an earlier orbit had broken apart due to Jupiter's tidal force effects. Ultimately, on this last pass, Comet SL9 chunks were pulled into Jupiter and they mega-nuked the atmosphere for several days. 100 times more powerful than all Earth's nukes detonating, simultaneously.

For.
Several.
Days.
Plural.
More than one day.

This high-hypervelocity+ ($\text{Mach} \geq 25$) energy release, allowed for the first time in recorded history, factual observations of a comet impacting a planet sized object. The ensuing destructive forces generated space-mountains of data, all collected and deciphered by a global team of Scientists working in concert. Fortunately, our sciences and limited knowledge of the Universe had risen to a level that helped us learn more facts about one of nature's greatest and rarest of events. The exact moment a comet impacts a planet, for modern humans to witness and record for historical scientific accuracy, could have only been imagined before that day back in 1994.

Instantaneously, as SL9's nuclei and coma ripped through Jupiter's atmosphere, the resulting fireball plumes crested her limb. Basically, they tore through the Jovian atmospheric edge, shooting back out into Space. The shock-bubble then collapsed down onto Jupiter, imprinting a puncture wound to the hundreds of kilometers thick cloud cover. The Hubble Telescope was online to witness history unfold, in real spacetime. These literal 'balls of fire' were reported to be larger than the Earth itself. You definitely should Google that, sh...

NASA Comet Shoemaker-Levy 09 simulation, 1994.



The calculations for kinetic energy released into Jupiter's gaseous atmosphere forced some scientists to update their preconceived, pre-impact beliefs. Many Ph.D.s underestimated the high energy magnitude unleashed during comet and planet contact. A few went as far to assume Jupiter would swallow up the comet fragments with little to no fuss. Jupiter's mass being what it is. Yet, after the SL9 event, one can surmise that cataclysmic level of crustal destructive forces are indeed delivered and will alter a hard surfaced planet. That unfortunate celestially timed meeting should leave identifying marks on the planet crust. All the while, astrophysicists want you, me, the regular Joe & Jane to know that comets are just snowy, dirt-balls? Numerous scientists continue to paint comets as dirty-snowballs of loosely clumped ice, rocks, and don't forget the dust.

Space-Mountains works as a much better descriptor for me. Wait, there is an ingredient missing? Who forgot plasma? Has anyone seen or accounted for the comet plasma coma shell? Plasma, charged ionized particles generated by a falling comet as it enters the active phase of its journey. The charged ions form a coma shell, an atmosphere of energy, that spherically engulfs the nuclei and can grow to be thousands of kilometers thick. What I've come to call the, "comet plasma 'vortex-engine' coma." Try saying that three times out loud.

There are also a few fundamental Laws of Physics, Sir. Isaac Newton formulated that might be of great importance to this topic. Mass and Acceleration of the comet, when there is a planetary impact, will Force a planet to change. Forever. Comets fall towards the Sun at high-hypervelocity, achieving speeds well above Mach 30. For myself, Mach illustrates a better speed reference for the extraterrestrial objects hyper-zooming around the solar system, that meters per second (mps) does not convey. We're talking very, very large Mach values, greater than double that of the International Space Station, which orbits Earth around Mach 17-ish.

*Hypersonic: hy·per·son·ic / hīpər'sänik /
adjective - relating to speeds greater than 5x speed of sound (Mach 5)*

"If it carries a pattern, it carries information. If it carries information has to be an energy source that allows that information to persist & the pattern to persist."

-Brian Cox, PhD. (podcast commentary: speaking on energy patterns for possibility of "ghosts" existing within laws of physics)

J.I.S.C. - transverse sonic Jet Injection into a Supersonic turbulent Cross-flow.

Plasma Impact = Plasma-Crater

In my opinion, high-hypersonic cross-flow as a catalyst for geomorphology, rarely, crosses geologists or geophysicists desks. Perhaps, the anatomy of an active phase comet isn't a topic of discussion amongst geophysicists? I would have to believe astrophysicists have dissected the plasma plumbing hidden in the active comet coma core? That information has to live in scientific journal papers, one would think?

Comets do impact planets, SL9 remember. How would we know the difference between a comet impact crater or meteor? Plasma. When is an impact crater, not a meteor crater? Vortex-engine. Does the angle of impact contribute to crater shape formation? Yes. Does a planets crust react differently from comet impact than asteroid impacts? Impact temperature \geq surface of Sun = 5777° Kelvin.



Comets possess different composition than meteors? Yes. Might this variation in composition create differences in their life, death cycles, impact effects and collision aftermath? Comets have pronounced dust and debris trails, coma, jets and tails. Meteors tend to not develop these features. On very rare occasions, meteors can form a partial coma. Perhaps the anatomy of an active comet, corkscrewing around our Sun is very important to this conversation?

JISC Flow Structure; Utilized by SHCRAMJet, [Shock-Induced Combustion Ramjet Engine] hypersonic, air-breathing and single stage to orbit engines.

The JISC structure can also be used to describe the internal energy pattern for an active comet plasma coma that is in state of turbulent hyper-velocity flow. Mother Nature's spinning plasma vortex-engine. Leave it to the Universe, builds floating space-mountains of ice-rock-dust and with just the right nudge, becomes a plasma-arcing, electro-vortex, sublimating, imploding space-volcano. The inner JISC structure forms within bounds of the coma. Increasing gravity and pressure encourages elongation. At any spacetime, it may collide with planet sized object at ludicrous speeds. Plaid is actually more accurate than one would think. Planet atmospheres compression follows, if applicable. Incompressible flows and molecular atomization, added contributors perhaps? Nature and her simple rules.

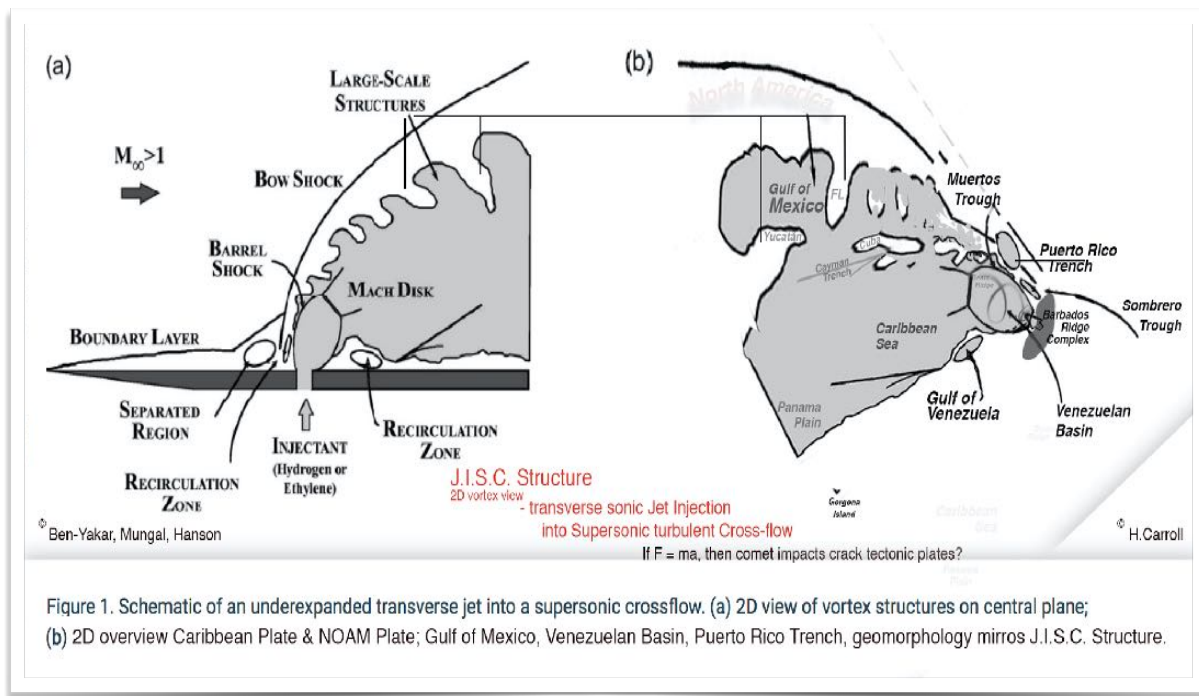
Deduced from the NASA SL9 sim, comet plasma and velocity reveal inner incompressible flows with large embedded boundaries, bow

shock physics and hypersonic re-entry properties, all play their parts. The churning, rotating, ice-rock-dust-spheroid nears ever closer to the Sun, gravity's grip twists tighter. Comets, with a built in supply of Hydrogen and Oxygen, because all engines need fuel, don't they?

(PLASMA: late Latin - 'mold', Greek - from plassein 'to shape')

What is Plasma? Glad you asked. Plasma, for myself, translates to; Life. We exist on this planet, all life exists on Earth, because of plasma. Please, allow me to elaborate. Plasma is, literally, holding yours, mine, all of our blood cells together. Plasma is the Sun's fusion energy blasting at us 24/7. Plasma is the Earth's electro-magnetic flux shielding magnetosphere, protecting us from the Sun's full cosmic energy blast. A very deadly "gift." Plasma happens to also be the ionized coma and tail bourn from an active phase comet. Plasma provides life. Plasma can taketh life away.

I do understand there is a difference between the types of plasma I listed. What I find fascinating is how the word "plasma" was picked by someone, back in the day, to label something vital that our body needs to be alive. Then, using that same word to define electro-magnetic flux energy of the Sun, so we can be alive. Earth's magnetosphere helps deflect most of the Sun's radiation, so we can be alive. Plasma, energy. Energy, plasma. What does energy help do?



“They(Comets) almost have their own engine in them, they’re almost living.”

Prof. Peter Schultz, NASA Ames Research Center

Helps us shape life. Plasma: to shape. How appropriate of a label. This insight helped the path become more clear for me, in grasping the basics of planetary collision dynamics. All forms of plasma effect life existing on Earth. Plasma flow structure, shares liquid dynamical flow patterns. Naturally occurring instabilities, within the flow, create intricate vortical turbulence.

Unbeknownst to myself, when I first began my deep dive into geomorphological anomalies, how important the inner workings of the comet coma would prove to be. Mach velocity might not be everything, but it might just prove to be a major factor for plasma infused crust and Mach shockwave after effects. Combined with the coma shrouding a much denser nuclei that is in a constant feeder state for the coma, as the orbit nears the Sun. A comet's active phase and possible planetary impact is a much more dynamical energy release process than we are currently taught. Fortunately, I am afforded this spacetime to be alive, live in a country with publicly available, peer-reviewed scientific data. Tax payer funded research, readily accessible over the internets. All can learn the basic foundations of planetary collision dynamics and hypersonic energy flow. Curiosity can be a slow-burning type fuel source. The amount of data published by researchers, students, faculty, physicists, mathematicians, etc., grows exponentially daily. New discoveries are made, reviewed and published worldwide. With so much data, certain connective tissues, may get overlooked. The hidden resources of knowledge sit and wait for when the curious and the scientific method-minded rediscover this forgotten digi-treasure trove.

Yes, I am that type, a scientific method-minded, pixel-pusher. My hypotheses, regarding comet impact plasma-craters on Earth, arose around Fall, 2016 while on a "creative" working-vacation. During plane rides over Caribbean Seas, hotels, pools, beach chairs, blue oceans and electronic music studio sessions, a few intellectual distractions would consist of music producer biographies, music business/production insights, and the latest digital visual technology for live shows and in-studio creative. With a side of historical topics on Earth sciences, legends, myths, both mainstream and alternative, to top off. Finally, back at home, I filled my free time with a geomorphological puzzle; Caribbean Large Igneous Province(CLIP) and Caribbean-Colombian Oceanic Plateau formation. Four years later I've learned, Nature doesn't care what we believe.

We are all allowed to be wrong, just as much as the possibility of being correct. All part of the scientific process, errors lead to revisions and opens new pathways. Science benefits from all aspects of experimentation and observations. Dreamers and abstract thinkers should apply. Today, we dismiss many technological achievements that, once upon a spacetime, were considered magic or impossible. We are advancing in knowledge at an accelerated rate. Historical mysteries can benefit from a revisiting with fresh eyes, an open mind, basic grasp of modern sciences, maths and physics. And, an understanding of computer simulations doesn't hurt either.

Lithosphere Smash



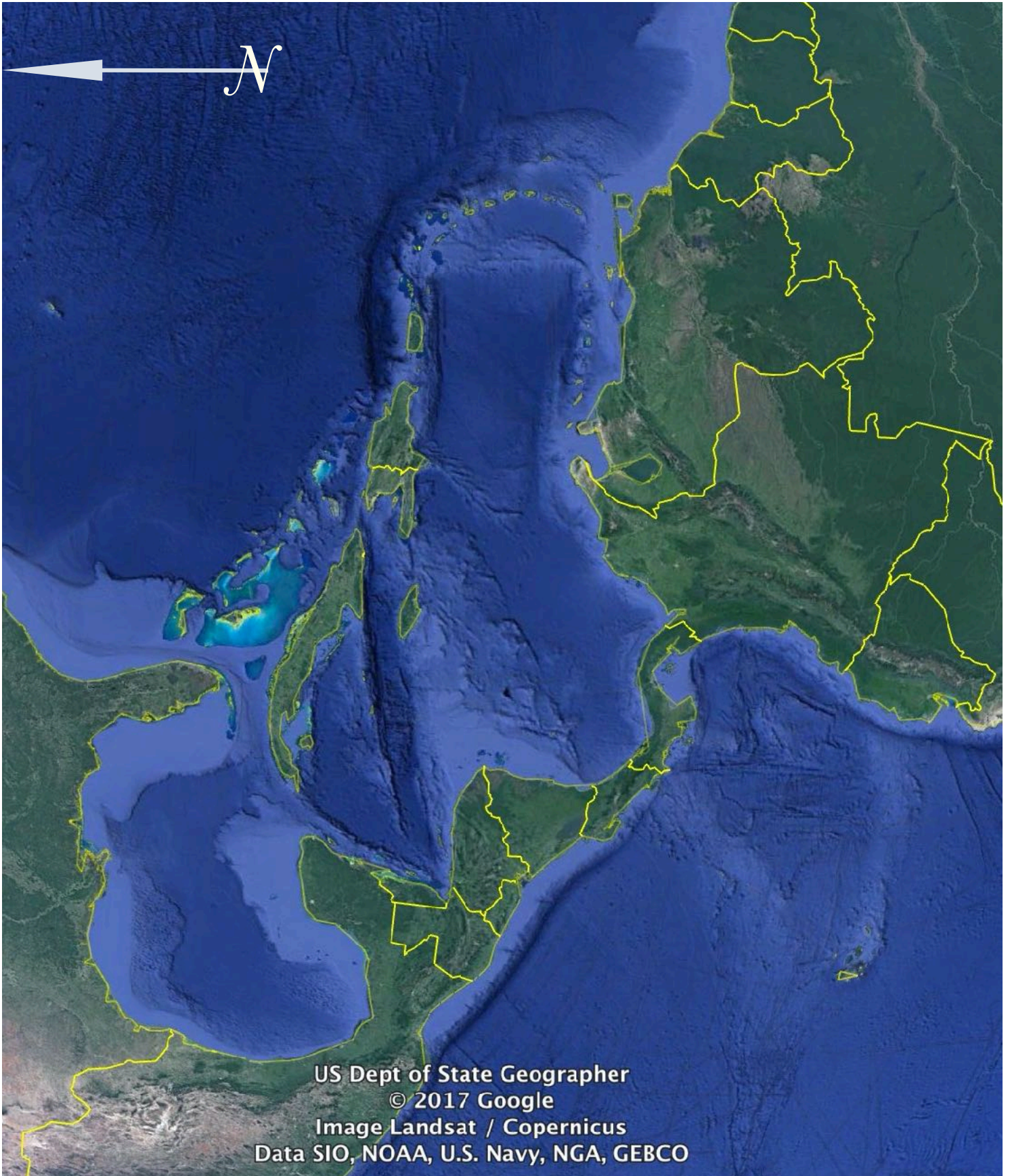
Modern humans living in our computer based technological age, can say that we are the fastest moving humans that have ever lived. From information data exchange, global banking, shipping, planes, trains, automobiles, humans move fast. We move, even when we don't move a muscle. Our information, money, identities, avatars, the products we create, are in motion.

Let's go back 100 years ago, around 1920. Human powered flight had just recently been proven possible. Radio and telegraph are the latest technologies used in this period for transmission of information and data. Moving pictures, aka., silent-films, have been around for less than twenty years. The top tier technology for the age, the telephone and car, grow in popularity. TV is but a blip on the Radar. Radar hasn't even been discovered yet. What we today consider a computer, back in 1920's spacetime would equate to science fiction. How fast things can change in only one hundred years. Our science based knowledge of plate tectonics is less than 75 years old. Seventy-five years. I would say that 50 years of "acceptance" is being generous.

Comets fall towards the Sun at extremely high speeds that the solar wind can't move out of the comets path. This causes a build up of plasma, separate from and in front of the comet's own, plasma coma. A Mass Loaded Plasma. All comet components, hauling Mach-Ass, around solar system orbital-skyway. How may a snowball have a chance in hell? When it generates a plasma shroud of dust particles, magnetized ion build-up as a 'dirty-snowball' plows through solar winds. Enough mass, will out last, the sublimation stresses during an orbital pass.

Temperatures rise, density of gravity twists tighter. Stellar mechanics align and the comet impact forever alters a hard surfaced, magnetosphere generating planet. Astrophysics and geophysics will not argue this fact. They may argue exactly when it occurred and how often an impact will reoccur? But, no one can ignore Newton's Second Law. Ignore Sir, Newton at your own peril. I hear, on good authority, that Newton's Second Law is the most important and fundamental to the core of modern Physics. Quantum keep quiet, for now, now, now...

Now, how does one find a comet impact plasma-crater? Has that been asked before? After many months of analyzing NASA's Comet SL9 simulation data, USGS, NOAA and GEBCO geographical satellite and bathymetry scans, I propose that plasma-craters are hiding in plain sight, fused into Earth's crustal plates. Here is an example of tectonic plates, plagued with geomorphological anomalies, that I propose quantifies, what a plasma-crater is.



Caribbean-Colombian Oceanic Plateau, Central America, Gulf Of Mexico, Florida, Yucatan, Mexico, Grand Bahamas Plateau, Lesser & Greater Antilles Arc, NOAM & SOAM Plates, Galapagos Archipelago/Hotspot.

Numerous published geological journal papers, convey the same conclusion for the Caribbean Plate's geomorphological record. The majority of opinions expressed about the geological anomalies for CLIP formation admit a tectonic puzzle still remains open for interpretation. Geologists, mostly, favor the accepted Caribbean tectonic plate igneous extrusion and drift theory of today. I was not aware of this, normal, contention of theories between geophysicists that work to decipher the cryptic crustal pieces that combine the Caribbean Plate geomorphology. Most of us were taught the prerequisites of plate tectonics and how continental drift was the very slow hand of change for the surface of Earth. Isn't it amazing how much we've learned about Earth's turbulent formation in just the last 75 years -ish?

The heavy bombardment period took place billions of years ago. Today, geophysicists do not give much credence to planetary collision dynamics for current existing geological anomalies. A cyclical, naturally reoccurring event not given due consideration, because modern uniformitarians dismiss impact physics as a valid geomorphological contributing agent of chaos and natural cycle of change? Interesting. Uniformitarianism might need a reexamination at its core foundation. It could be reclassified as a belief system and maybe hobbling factual, foundational science based approach in geophysics and planetary hyper-turbulent deformation. Hopefully, one day geophysicists will reintroduce impact physics and collision dynamics, as a cyclical event. Perhaps, a new way of observing the Earth's geophysical past will evolve to include more hyper-fluid dynamics simulations?

Furthermore, fluid dynamics, spatter and splatter mechanics are not given enough weight for their contribution to many geological symmetries and fluvial-rock formations found at fantastical vacation getaways. Impact ejecta that does not achieve escape velocity, nor escape vector, will re-impact the Earth, subsequently, creating new topography in new locations. Including, on top of older topography. Newton's Third, gives as much as it gets. If we accept impacts, Newton's Second, then we accept ejecta as a major contributing geological creation force by recognizing Newton's Third. Crustal granite melt point is between 900°C - $2\text{k}^{\circ}\text{C}$.

Fluid dynamics is the lock, then scale invariance is the Master-Key. Gravity always wins, even though some do dismiss gravity as a weaker force. When comet impact event occurs, expect granite-basalt melting and vaporizing temperatures, high-hypervelocity Mach Shock-waves, fluid dynamic patterns, and electro-magnetic plasma arcing. Collision dynamics and gravity control events evolution. Duration of impact still needs clarification. Overall conditions should stabilize after several millennia. A new, "Cool Blue World" emerges from the fires of lost history. Vaporization point for crustal granite, $4\text{k}^{\circ}\text{K}$.

Life begins anew. Survivors reemerge, recover and rebirth begins. Again.



Comet - Long Haired Star

Skip the oversimplification. What does Mother Nature's recipe book have to say about comet ingredients?

[Utilizing peer reviewed datasets for the core foundation of my research, limits the 'pseudoscience' nonsensical claims that are par for the course when it comes to challenging biases in Sciences. I'll remind the pseudo-invokers that most modern science based "accepted" theories and technologies of today, had their genesis as unfavorable alternate methods of thinking. When compared to their own days accepted theories. And, because it's hard for me to ignore Sir, Isaac Newton's Laws, a Force in motion, my scientific pursuits forge forward.]

According to NASA:

The components of a comet observable within several astronomical units of the Sun include the nucleus, the coma, and the tail. According to the "dirty ice" model, comet nuclei consist of simple and complex organic molecules and meteorite-like dust and rock embedded in a matrix of frozen water and possibly solid CO₂. As the comet approaches the Sun, heating by the Sun occurs and the ices sublime, ejecting volatile "parent" compounds (possibly H₂O, CO₂, CH₄, C₂H₂, NH₃, HCN, CH₃CN, etc.) and entraining nonvolatile dust and rock from the nucleus. In the coma, interactions of the parent compounds with solar radiation can lead to physical and chemical processes that result in the partial-to-complete breakdown of the so-called parent molecules.

A third possibility is that both parent molecules and simpler species are released into the coma where they undergo reactions to yield the observed ions, atoms, and molecules. In addition to the species indicated in figure 2, metallic elements (Fe, Si, Mg, Ca, Ni, Na, Cr) have been detected in spectroscopic studies of meteor showers associated with comets. The relative abundances of these elements suggest similarities between the chemical compositions of cometary dust and carbonaceous meteorites.^(#31)

Did you see the actual word, plasma? The plasma coma shell and mass load are not being considered a part of the collision mechanism, in my opinion. Hopefully, the hypotheses I'm presenting and my analysis of NASA SL9 sims will encourage debate, instead of cancelation? Now, look at that, "metallic elements" can be found within comets. Dirty snowball, indeed. Truth is for legends. Facts are essential when it comes to planetary collisional events. I live on a planet, people I care about live on the same planet. If you're reading this, then you live on a planet also, or in a space vehicle orbiting above. We all can witness comets falling around their orbital plain, if we choose to invest time learning and utilizing latest technology of today. Life is truly cyclical and nature drives the mechanism, then comets have impacted Earth before. Fact. Comets will hit the Earth again. Only a matter of alignments in spacetime.

Dr. John Doe, PhD., Prof. Mathematics, wasn't swayed by my, Mach >30, comet impact cracks crust/plasma-crater theory. Late Fall 2019, I posted a brief summation on his blog, about NASA Ames Research Center's Comet Shoemaker-Levy 9 sim as it impacts Jupiter's atmosphere. Explained JISC Shock and introduced my Caribbean Plate = Comet Impact Plasma-Crater theory. High-energy comet coma fused plasma-crater into Earth's cracked crust. He emailed explaining standard issue "dirty snowballs," comets can not crack tectonic plates because of math. I thanked him for his response, emailed more geological anomalies, and geomorphology that corresponds to JISC Shock. No response, my argument wasn't convincing. Hadn't even gotten to discuss Shock Hugoniot, and, I am still intrigued by some of the Dr. of Mathematics' research. Spring 2020, I was a little dismayed that Prof. John Doe dismissed my analysis. I then assumed he utilized some of the comet impact research I shared, to update his own current, impact theory. My confusion was due to his original emailed link explaining his theories behind plate movement and why he didn't agree with, 'cracked plasma-crater' summation. That link is now 404/kaput. Our theories overlap with current tectonic plate locations only, not how they were formed. His 2020 update to his blog, theorizes two XXL solid body impactors (not comets) slammed into the far western Pacific Ocean region simultaneously, details that were not published in his book. Prof. John Doe argues now that the Caribbean Plate region and Scotia/Sandwich Plates are impact "troughs" with resulting force, pushed NOAM/SOAM Plates across the Pacific Ocean floor, to present locations. No cracking damage to Earth's crustal plate for the Prof.

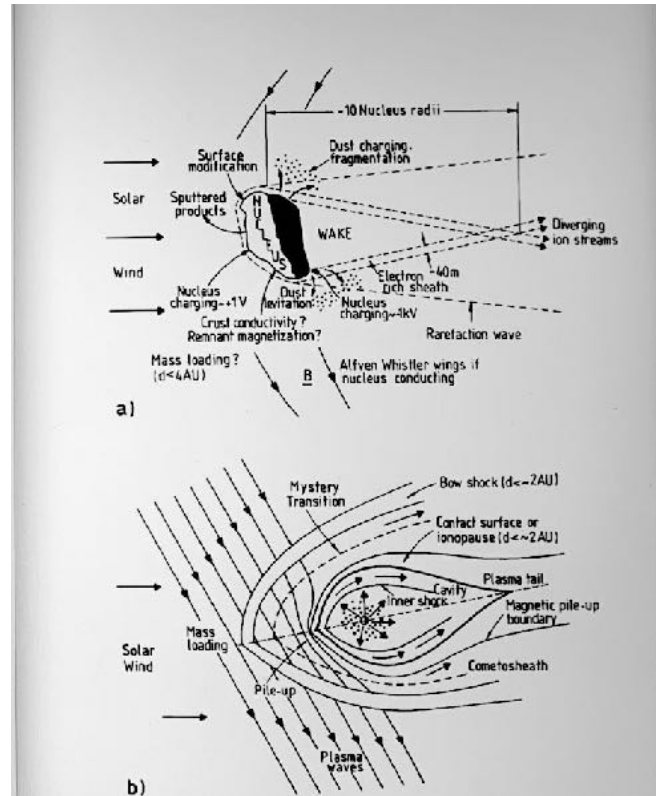
My comet plasma-crater theory, utilizing Newton's 2nd and thermodynamically fused crust, Prof. John Doe said, is a no go. But, his simultaneous, double whammy solid impactors, gouges crustal-troughs and slides tectonic plates 1000's of kms, works for him. It is a very, intriguing theory. I'll stick with Newton's 2nd, conservation of energy, and plasma Mach shock theory. And, with today's modern computing graphics power, expect even more comet plasma physics facts to emerge. Spacetime is dynamic and flowing. I may only agree about 33.3% with Prof. John Doe's impact theory, but I do respect his approach 100%. Understanding impacts are

cyclical and can happen in multiples, is a fact most ignore. Prof. John Doe's theory could be right? When it comes to impact theories, I believe that if we all cooperate, we will work to find a way to deter the next event. Belief is a powerful thing.

Turbulent Instabilities

Considering the comet *Velocity* alone. Active phase comets can achieve Mach 30 and greater. This has major consequences for any object in the comets path. Earth, as we know it, would end. Period. Newton's Laws are not to be ignored. There will be visible surface scaring and the crustal damage evidence would be abundant. How does one define the imprinted impact power punch from comet plasma coma? Dare I say it? Astrophysicist Mark Boslough, Ph.D., is right?

All together, the Shoemaker-Levy 9 simulations, comet illustrations, and geomorphological anomalies, Prof. Charles H. Hapgood came to mind, along with his Earth Crust Displacement theory. Unfortunately, Prof. Hapgood lacked supercomputer simulations created by and for NASA. He lacked knowledge of Comet Shoemaker-Levy 9 / Jupiter event, which did not occur until a little over a decade after his untimely passing. I think Dr. Hapgood's theories were drifting in the correct direction, pun intended. An impacting comet acts as a space bound "vehicle" at re-entry speeds. The comet path through the Solar Wind and Plasma-waves, builds up on leading edge of the comet. The resulting Bow Shock "wake-turbulence" will endure re-entry velocities, until the full evolution of the comets trajectory through planet atmosphere is eroded or terminated. I'm no rocket scientist or missile expert and I did not sleep at a Holiday Inn, Extended Stay. But that's a lot of speed, a lot of plasma mass, a lot of frozen water, dust, rock. And, Metallica-elements. All traveling $\text{Mach} \geq 30$ ($\geq 23,018.1\text{mph} \geq 37,044\text{kph}$) smashing into the magnetosphere, ionosphere, and lithosphere. THWACK!



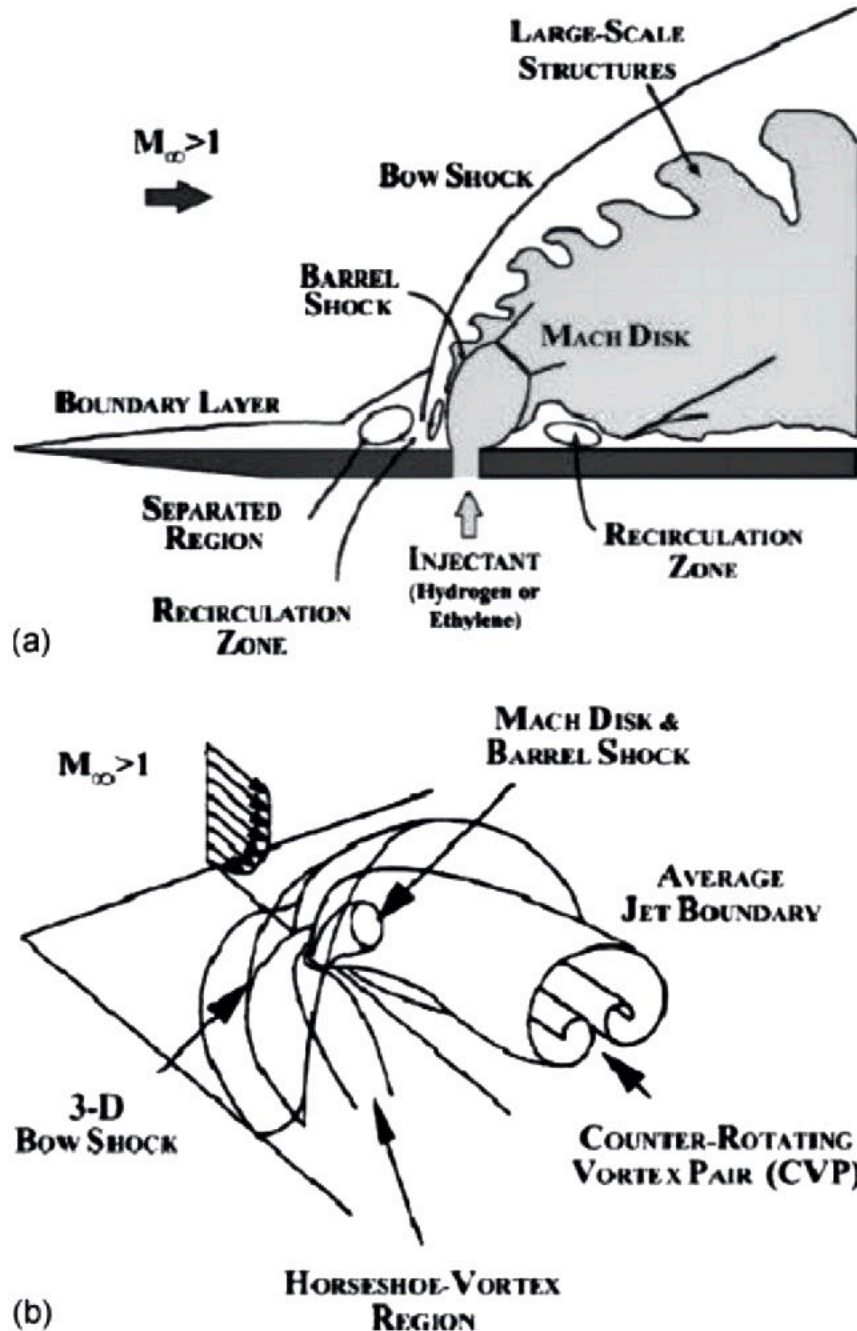
(#8) *Physics of Mass Loaded Plasma:*
 a.) solar wind low activity comet interaction, far from the Sun.
 b.) solar wind high activity comet interaction (not to scale)

Prof. Hapgood's Earth Crust Displacement theory lacked a sufficient energy source. Yet, Dr. Albert Einstein found the theory of E.C.D. plausible. Why? Perhaps Dr. Einstein felt that Prof. Hapgood's theory met his criteria for a scientific way of thinking? A way to look at nature and let the facts in, regardless of your personal biases and beliefs. Universal fact, active phase comets hit planets, possess a plasma coma shell, and solar wind stack while doing it. Newton's Second is real. First Law of Thermodynamics isn't too shabby either. Think about it, world's entire nuclear arsenal x 30, high-energy level release at impact. Various factors of mass/Mach randomize the variables for precise impact dynamics. Estimated size of comet nuclei; 100km, estimated size of plasma coma & mass load, best guess? Kinetic energy stored in the comet mass, including unaccounted for plasma coma and mass loaded plasma? Astrophysicists, at their leisure can guesstimate. I'm audio-visual & simulation department. Imagination engines primed with theories for hypersonic dynamical instabilities and NASA supercomputer impact simulations. Great thinkers have championed the practice of thought experiments. For myself, planetary collisions, plus fluid dynamics, multiplied Mach Shock Hugoniot, is perfect testing grounds. I can confirm, from my own thought-experimentation, observations, Prof. Hapgood and Dr. Einstein, were very much on to something.

Binary, C++, and Python matrix codes crunched by latest graphics-engine hardware, visuals are digitally painted and projected through emitted diodes. Adds up to high-hypervelocity plasma patterns of turbulence, instabilities, embed boundaries, and incompressible flows. Today, computational expense is reduced drastically by modern technology. More facts, datasets and research materials are within reach. Once properly disciplined in hyper-fluid dynamics the electro-magnetically charged energy shroud, resonating as hyper-dynamic fluid, is readily discerned. Turbulence and instabilities dominate the atmospheric strike zone. The planets atmosphere will compress, then conform to the hypersonic energy flow created by comet, tail, debris, and bow shockwave.

How, could I ever guess that I would need to learn about SHCRAMJet engine hypersonic flow, when I first began researching planetary collisions and geomorphological anomalies? Perhaps, similar ingredients are shared by both high energy systems? Nature likes keeping things simple. A little bit of this, a little of that, shaken, stir and voila; Life. Too much of a good thing, opposite. I had never heard of a Shock-Induced Rotating Detonation Engine before my research began, either. I go where the data leads me, the path brought me to hypersonic rocket and jet engine flow. Hydrogen, ethylene, or oxygen is injected at supersonic speeds into a Mach 1.0 or greater transverse crossflow. Once facts are found, they force their way to the forefront of our frontal lobes. Factoids can present themselves at any moment. Hydrogen is the most abundant element in our Universe. We benefit from that everyday. Hydrogen-Iceberg comet, perfect fit for Hapgood's impact history energy mystery?

Phys. Fluids **23**, 046103 (2011)



**Schematic of an under-expanded transverse injection into a supersonic crossflow. a) Instantaneous side view at the centerline axis of the jet; b) 3D perspective of the averaged features of the flow-field. (A.Ben-Yakar, M.G.Mungal, & R.K.Hanson)

It's Bathymetry, Sir, Newton /\ Geomorphological Anomalies \/

Flow of spacetime helps hide the history of impact events on Earth. Plate tectonics, erosion, super-volcanoes, cataclysmic tsunamis, cosmic radiation, all help the surface of the Earth undergo an erasure of facts. That's what we've been taught for the better part of the past sixty or so years. I do find that I agree with most of these modern theories, considering there is a lot of what reads as reasonable, logical thinking. That doesn't mean this is absolute fact, only that it's the closest to the truth of the facts that can be deciphered by humans, at this spacetime. The journey of science is an ever pursuit towards knowledge of facts. A wanderlust journey it is.

Now, when theories sound, "iffy," "hinky," or hog-washy, then I'm inclined to decline the assumption of accuracy. That is, if the theory is held up solely based on what additional letters, or the lack of, that are printed after a last name. Errors in analysis extending into conclusions can and will occur. I have done this many of times. Old data is discarded replaced by the latest and greatest, it's easy to forget that science is like a building under constant construction. Trusting in scientific processes, laws of physics, the maths, all working in harmony helps to reinforce the foundations. I believe, Dr. John Doe, Ph.D., Prof. of Mathematics and I can agree on this fact? The foundations are very very strong, Sir, Issac Newton would be proud. The deeper I dove into the dynamics of high-energy patterns, instabilities and turbulent flow became, "devil in the details." And, thanks to NOAA, GEBCO, U.S. NAVY, USGS Landsat, and Google Earth Pro, modern technological satellite imaging, LIDAR, radar, sonar, lasers, scanners, a multitude of science based technological toolsets help bring new insights into focus. Oh, and thank god for the Oily-garchs.

Just kidding. All that oil hidden away, locked deep in the soil, requires Geophysicists to use their science skills and talents for analysis of geophysical data by the petabytes. Combo'd with latest modern hardware to peer deeper into the layer-cake of ancient sediments, compressed and compacted over multiple millennia. The oil behemoths hire great minds, the truest of deep thinkers, that helps contribute to development of technology that sound-beams through, drills through, bores and cores its way through Mother Earth. News of salt domes brings all to attention and pulses quicken. This type of research, hunting for Earth's natural energy resources, helps lead to discoveries of what is securely locked hidden from view, under the ocean waters. From sprawling abyssal plains, plateaus, cliffs, grandest of sea-canyons, cracked crust, and underwater venting stacks, to "X-Ray vision" through continental ice pack. Planet baking is dynamic, the more we explore, the more our knowledge expands. We unlearn our bias first, before we open our minds to the possibilities that are at unlimited disposal to Nature.

Miles beneath the dark ocean depths, life clings to the edges of oceanic basalt-granite rocky outcrops. Deep ocean rock-chimney “smokers” are found bellowing intense super heated water, gases, nutrients, and various chemicals from deep beneath the ocean crust, spewing into the intense cold waters. Void of all sunlight, various sea life, crabs, shrimps and anemones carve out their existence, in complete darkness and human soul crushing ocean depths. Life this deep in the midnight-black ocean is made possible by these exhaust tubes that dot along cracks in certain plate regions. New locations for these ominous, towering, ocean floor rock-tubes are discovered, as more ocean floor investigation is performed. End result is that more life discovered in extremely hostile environments. As a great man once acted; “Life, finds a way.”

Consider the fact that currently, we as a modern society, do not know the exact plate tectonics full evolution. This is not a bad thing. This is a normal part of the scientific process. There are actually very good theories that focus on convection, subduction, recirculation, super-volcanism as the standard accepted models. Collision by large extraterrestrial object had been considered a factor in the past, Late Heavy Bombardment Period, if you recall, multitude of eons ago. Only back in the billion years range, do modern geophysicists entertain this high-yield energy force. Maybe, one million years ago? How does 88k years ago sound? Or YDB event? Planetary collision dynamics, Nature’s equal opportunity eraser of lithosphere. My hypotheses for instantaneous crustal plate rearrangement, realignment, isostatic deformations and anomalous geomorphology favors heavily on comet impacts. Including, above all, the previously ignored plasma coma shell, the mass loaded plasma build up, and bow shock impact effects now brought into light. Picture this, a charged plasma ice-dirt ball, smashing into a planets ionosphere, magnetosphere and lithosphere at around 30,000 mph -ish. While also dragging cosmic wind/radiation in its bow shock-wake. Would this qualify for Prof. Hapgood’s missing datasets? Nature delivering the correct amount of energy required to reset a planets progress.

A comet with enough mass, favored entry angle, will connect with the lithosphere, the hard surface of a planet. Will a planet without prior plate tectonics crack from the force? Maybe the energy transfer of a certain size comet mass, including the effects its plasma coma, is one way plate tectonics gains its initial “push,” including the eons of rebounding effects? Echoes of impacts past? The Mach-shock wave radiates through the mantel, reminder that sound moves faster through mantle rock and water, then through the air. Yes, there was sound. A comet with an estimated, 80km-100km wide nuclei, and an energy coma, at least 5k-10k km thick, enshrouding the dense core. Like a heavy metal ice-rock in a soaking plasma-sweat sock. In the blink of an eye, this Plasma-Basilisk connects to ground; BADA-BOOM! A large body comet hits dry land or ocean floor. Cracks? [Factoid: Ocean crust is thinner than continental crust and granite melts at lower temperature, several meters under water.] Nobody’s forgetting about the plasma power, hither forth. Fundamental, foundational physics. Thermodynamics on deck.

Shock Hugoniot/Rayleigh Lines in the Sand

Magnetometer GPS? What are Shock-Quartz Diamonds? Possibly, the future of GPS navigation as many aircraft navigation technologists, such as the Air Force Research Laboratory postulate, this is the next major shift for aircraft navigation. Due to their affixed nature, the SQDs baked into their geo-location, locked patterned layout are fused into the Earth's crustal plates. How did all that shock-quartz get fused into the Caribbean-Colombian Oceanic Plate fault zones? Electromagnetically? No? Perhaps, it was just the plates pressing against each other over millions of years? Or, might it have been a re-entry speed object of charged plasma mass, smashing a planet's magnetosphere into the mantle-crust? Maybe all of the above? Offers solid theory for suspended mantle slabs below Puerto Rico Trench as plausible collision damage.

What type of a sensor or scanner is needed to detect plasma coma, ionosphere, magnetosphere, lithosphere, asthenosphere, compressive and concussive damage effects, oh my? The hypervelocity, solar wind, and the comets own plasma coma, cooperatively form a bow shock wave, similar to a Jet-Ski carving through water(space.) Rooster tail instabilities included. The comet fall mimics a similar fluvial flow but does it with much, much, much, much, more velocity and a helluva lot, more mass. Carving, weaving through cosmic waves and on solar winds. Like surfing or skiing the water-wedge, at full throttle directly behind a JetSki or speed boat.

And, because of scale invariance, even at solar system scale, gravity waves, solar winds and a planet's own electromagnetic flux, familiar fluid mechanics patterns form. For myself, this translates as any object at high enough Mach, breaks Earth's atmosphere at re-entry velocity, hyper-dynamic instabilities will manifest. Portions of the lithosphere will succumb to the melting effects and will lead to liquefaction, while other zones of crust will be evaporated by impact temperatures. What does direct plasma contact cause? Dynamical instabilities at Mach shock speeds leads to anomalous tectonic plate geology, volcano creation, mountain chain distribution, rocks, sand, over and over and over. Energy unleashed at cataclysmic levels.

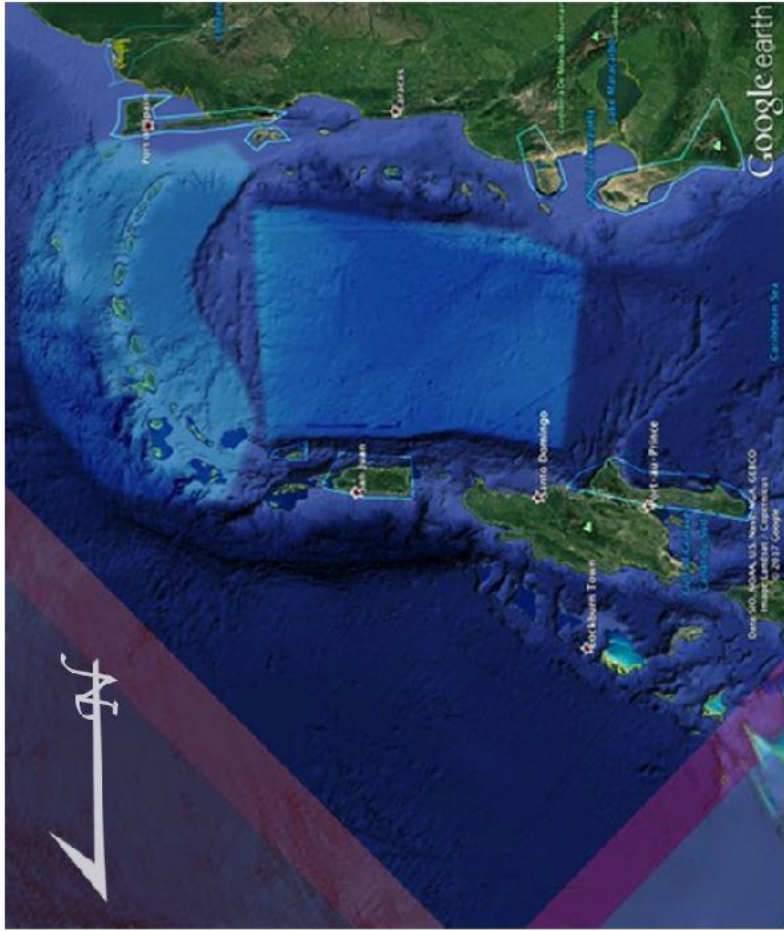
[Shock Hugoniot describes the locus of all possible thermodynamic states a material can exist in behind a shock, projected onto a two dimensional state-state plane. It is therefore a set of equilibrium states and does not specifically represent the path through which a material undergoes transformation.]

Central American Volcanic Arc - CAVA, what I would describe as the central serpentinite link in a Rayleigh-Taylor, Kelvin-Helmholtz, and Vishniac Instability, oceanic H₂O vortical hyper-dynamic chain, at planetary scale. Rendered in a natural, geological medium, with a deep heather-grey overtones. Sierra-Madres, Chihuahuan & Sonoran Deserts, Rocky Mountains, Sierra Nevadas, Cascades Range, Coast Mountains Canada, at times, inter-weaving with each other. Dominating the western corridor of North American Plate, extending down through Central America. Non-Linear Thin Shell Instabilities, in my opinion, are fused across Southwestern desert lands and mountainous terrain of NOAM Plate. Precious, heavy metals, hydrocarbon deposits, including toxic and radioactive decaying deposits and shocked-quartz are spattered across many layers of this same geology, at a continental size distribution pattern, possible shock-bubble collapse? Lonsdaleite - hexagonal diamonds, that may just prove how all life on Earth is effected after nature rips a hole in the magnetosphere? Gashed open from a space mountain-ice volcano, plasma-discharge effects included, at re-entry speeds. Followed by repeated damage from continuous debris, plasma tail/trail possible impacting as well. Ejecta is in short order, Newton's Third can be equally as destructive, whilst in the act of creating "new" topography and geology. Comet impacts forge plasma-craters at impact; Mother Nature's reset button.

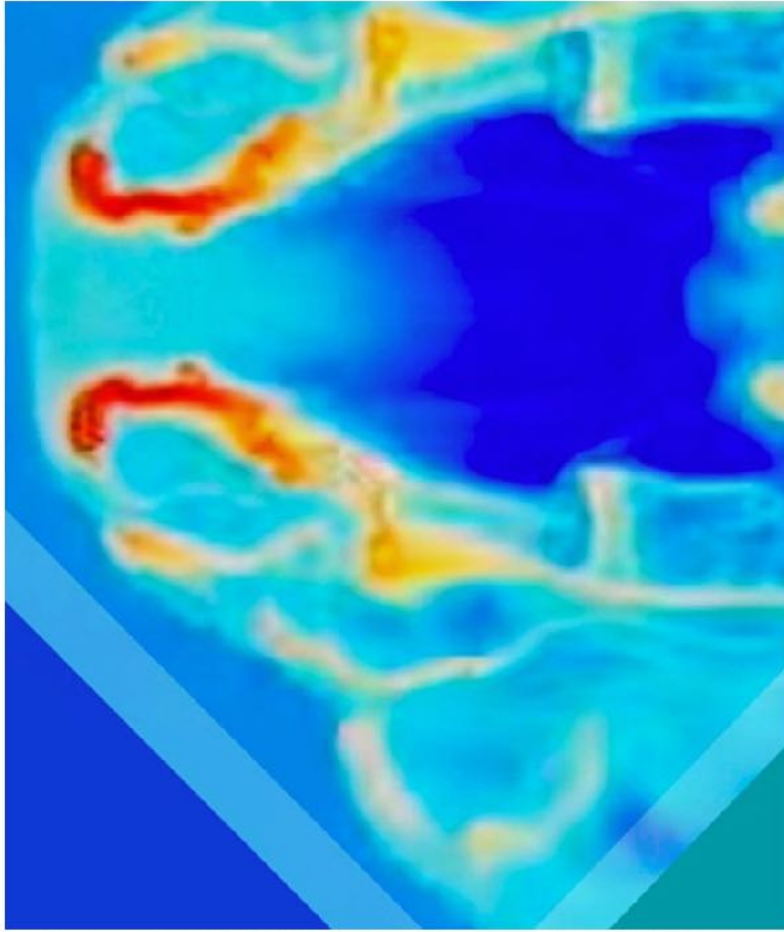
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I've amassed data in support of JISC plasma vortex-engine profile for an active comet. A comet or comets, impacted, cracked, and fused once contiguous American Continent. Planetary collision was more than one single impact. Comets do fragment, when conditions arise, SL9-1994. If my analysis is accurate, a fragmented comet smashed Earth's surface into the familiar plates, coastlines, mountain chains and island hops that is the anomalous geomorphology we live, work and vacation on today. North American Plate, South American Plate, Caribbean, Cocos, Nazca Plates, & Scotia/Sandwich Plates. Comet impacts crack tectonic plates then forged plasma-craters. Reference links to papers, books, documentaries, illustrations and sims that aided in my research and understanding, provided. I do understand that my overall conclusions can be wrong, part of the process. #Newtons2nd was too hard to ignore.

Slated for Vol.02: Shock-bubble formation & collapse, ballistic trajectory, ejecta field/blanket, tail & debris trail, #Newtons3rd. Got JISC? And, much more to learn from an even earlier impact event. Thank you for your spacetime.



pic01: Google Earth; Caribbean Plate, Northern rim of SOAM Plate. Barbados Ridge, Tobago Plain, Grenada Plain, Aves Apron, Venezuela Basin, Bonaire Basin, Beata Ridge, Muerfos Trough, Mona Passage, Puerto Rico Trench, Hispaniola Plain. Barbados, Trinidad & Tobago, Delta Amacuro, Isla de Margarita, Venezuela, Colombia, Lesser Antilles, British & U.S. Virgin Islands, Puerto Rico, Dominican Republic, Haiti, Turks & Caicos Islands.

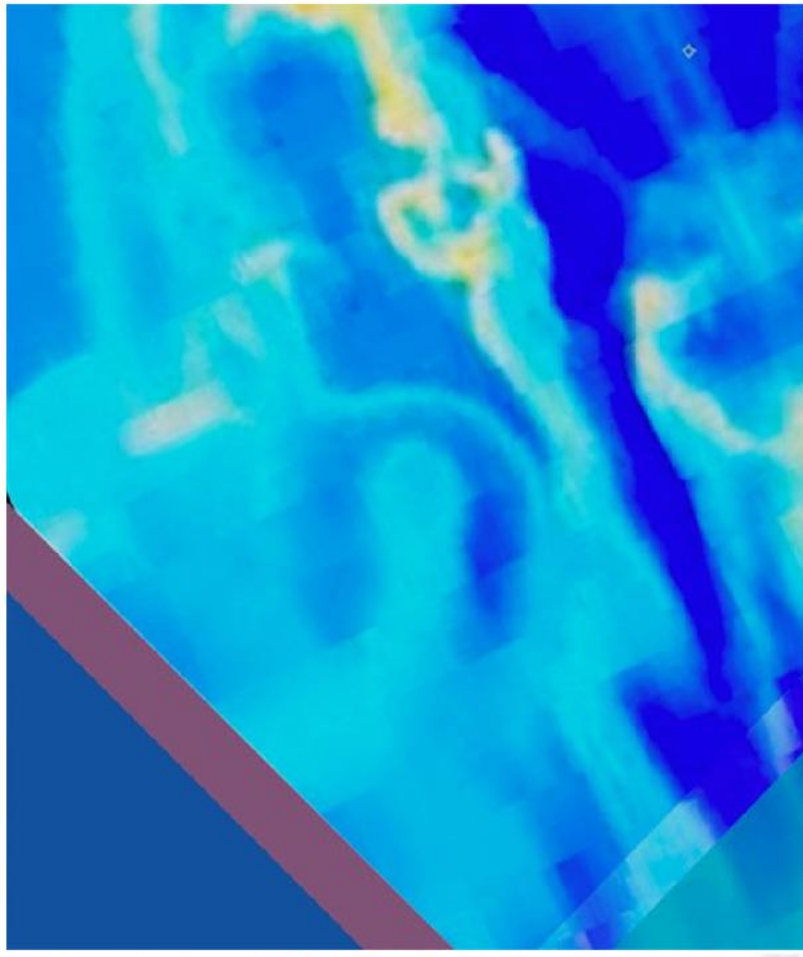


pic02: NASA Ames; Comet Shoemaker-Levy 9 impacts Jovian atmos sim. JISC Shock - Blunt Leading Edge, Rayleigh-Taylor, Barrel Shock, Separated Region; Recirculation Zone, Mach Disk, 3D Bow Shock, Entropy Layer, Kelvin-Helmholtz, Boundary Layer.
= J.I.S.C. - transverse sonic Jet Injection into a Supersonic turbulent Cross-flow.

Side by side comparison Google Earth satellite view Caribbean Plate & NASA Shoemaker-Levy 9 sim. Caribbean Plate rests between the North & South America Tectonic Plates; Trinidad and Isla de Margarita form a familiar musical notation shape, IMO, mirrored in Rayleigh-Taylor Instabilities. Comet's poses a Diamagnetic Cavity, which coincides with Barrel Shock region and Venezuela Basin. The Puerto Rico Trench is considered one of the largest gravity anomalies on Earth. My hypothesis is the Bow Shock, Barrel Shock, Entropy Layer compressed the Boundary Layer into the lithosphere, plasma-boring into crust. Vortex-engine got stuck in the muck? Kelvin-Helmholtz Instabilities give way to Hairpin Structure, similarly as the Turks & Caicos interwoven with The Bahamas Grand Bank.

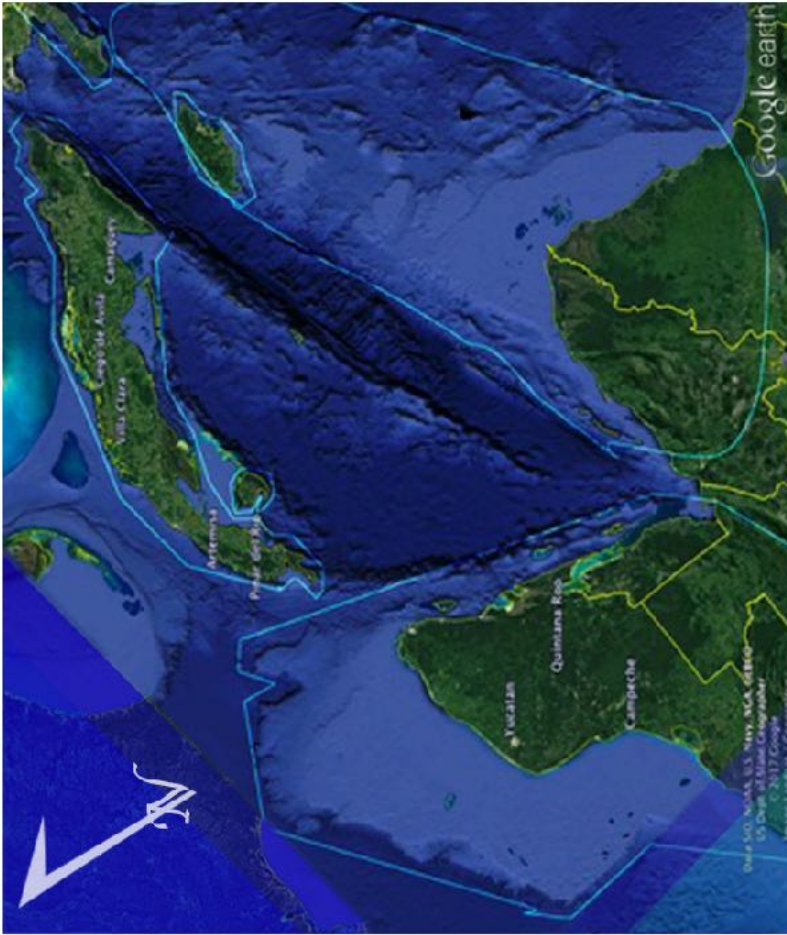


pic03: Google Earth; North American Plate borders Caribbean Plate
 Grand Bahamas Plateau, Cayman Trench, Yucatan Plateau, Gulf of Mexico
 Bahamas, Turks&Caicos, Cuba, Jamaica, Grand Cayman, Yucatan, Florida & Keys.

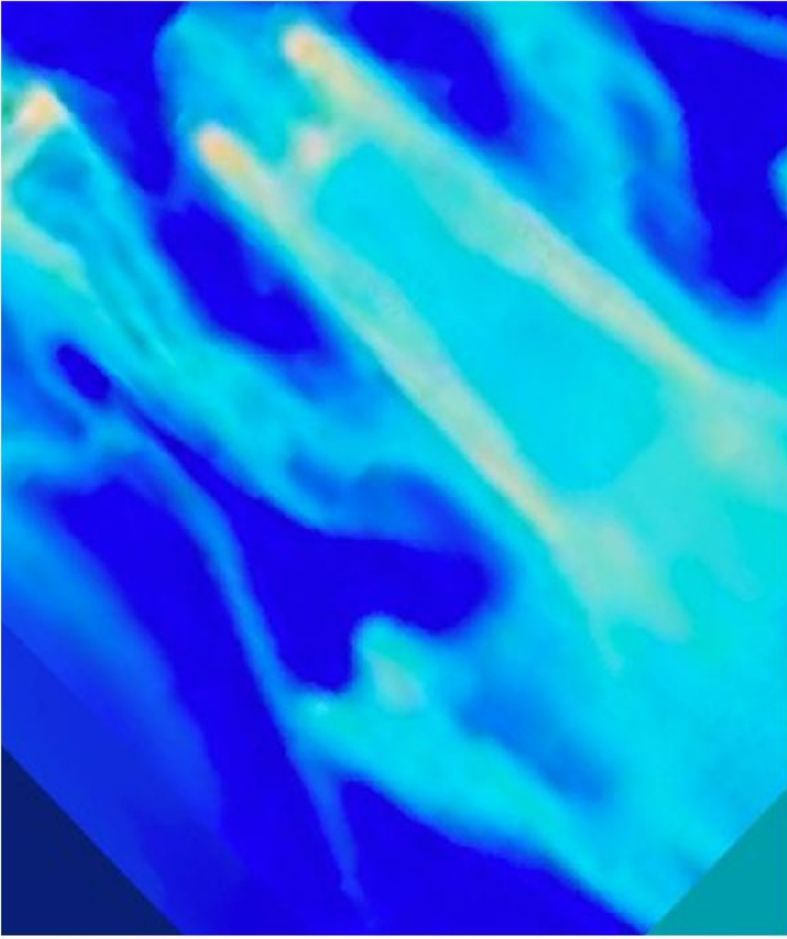


pic04: NASA Ames; Comet Shoemaker-Levy 9 impact Jupiter simulation.
 - freeze frame cutaway interior; Mach Disk, Large Scale Structures, K-H Instabilities,
 Hairpin Structures, Separation Shockwave, Separation Zone, Reattachment Shockwv.
 = J.I.S.C. - transverse sonic Jet Injection into a Supersonic turbulent Cross-flow.

Side by side comparison Google Earth's satellite view of the Northern edge of Caribbean, Southern tip of North America; Florida, FL.Keys, FL.Straights, Bahamas, Cuba, Cayman Trench and Jamaica can be discerned within the NASA supercomputer Comet SL9 simulation. Impact temperatures exceed melt & vaporization points for crustal granite. Plasma coma's incompressible flows, LES & Boundary Layers form a J.I.S.C. vortex structure, fused/forged its energy pattern into Earth's crust, as the Atlantic Ocean poured in to quench the newly exposed lower crust. This is an oversimplification of the actual events full energy release & transfer, was indeed a lot more dynamic, cataclysmic and dire to the Earth and her inhabitants, at that space-time. Vast liquid ocean is a key factor.

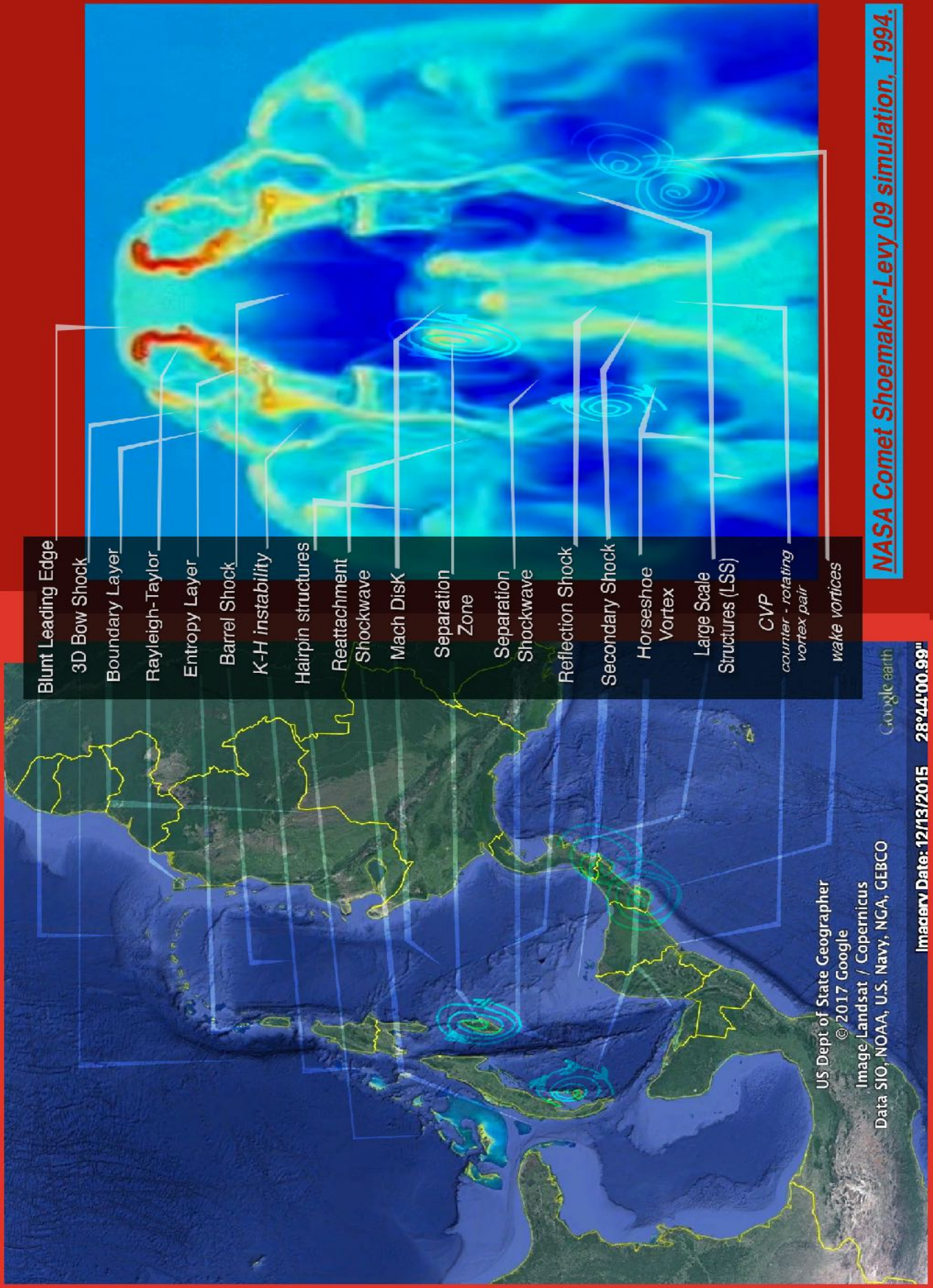


pic05: Google Earth; North America Plate & Caribbean Plate. Nicaraguan Rise, Cayman Trench, Yucatan Plain, Straights of Florida. Cuba, Haiti, Jamaica, Nicaragua, Honduras, Guatemala, Belize, Mexico, Florida Keys.

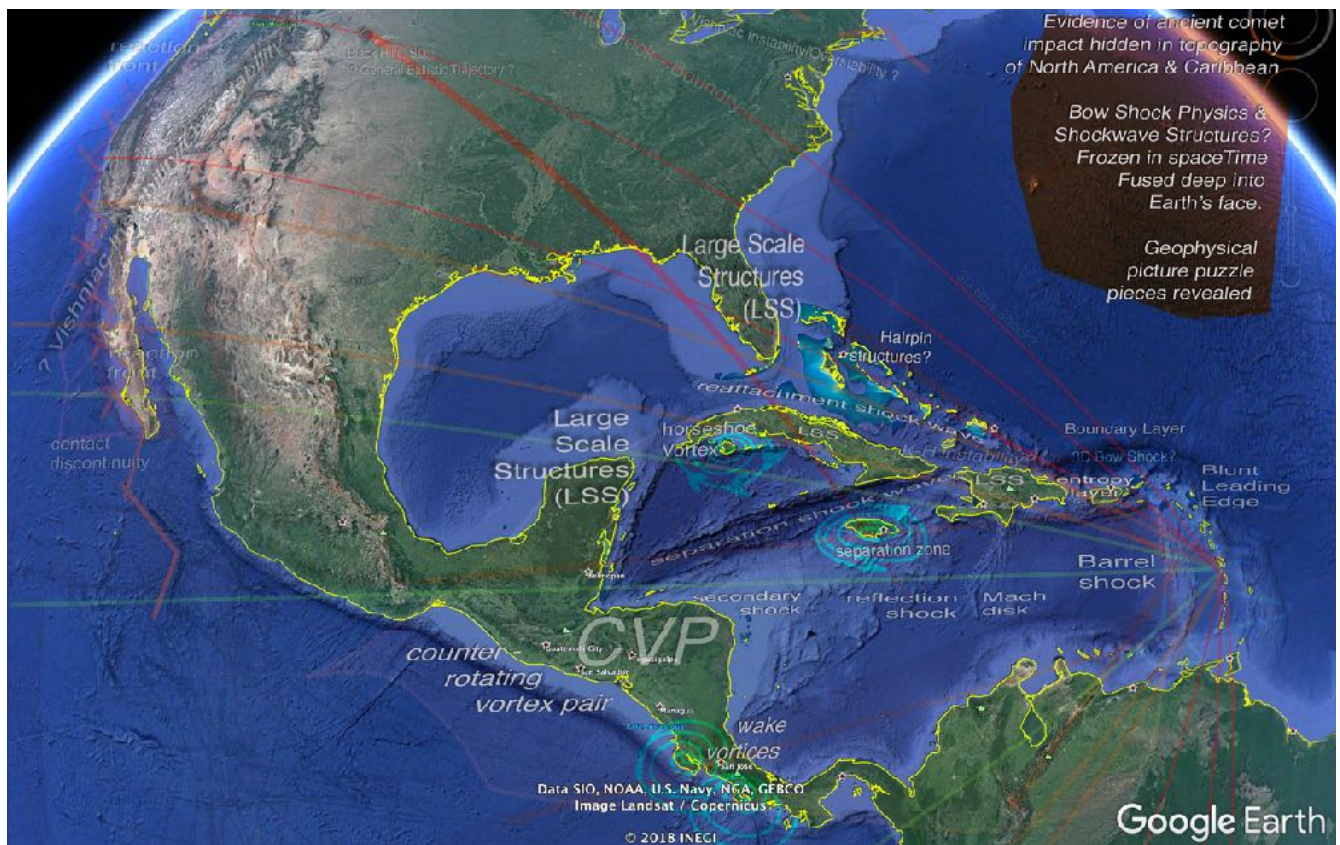


pic06: NASA Ames; Comet Shoemaker-Levy 9 impact Jupiter simulation. Plasma hypervelocity turbulent cross-flow; Mach Disk, Counter-Rotating Vortex Pair, Large Scale Eddy Structures, Horseshoe-Vortex Region. = J.I.S.C. - transverse sonic jet injection into a supersonic turbulent cross-flow.

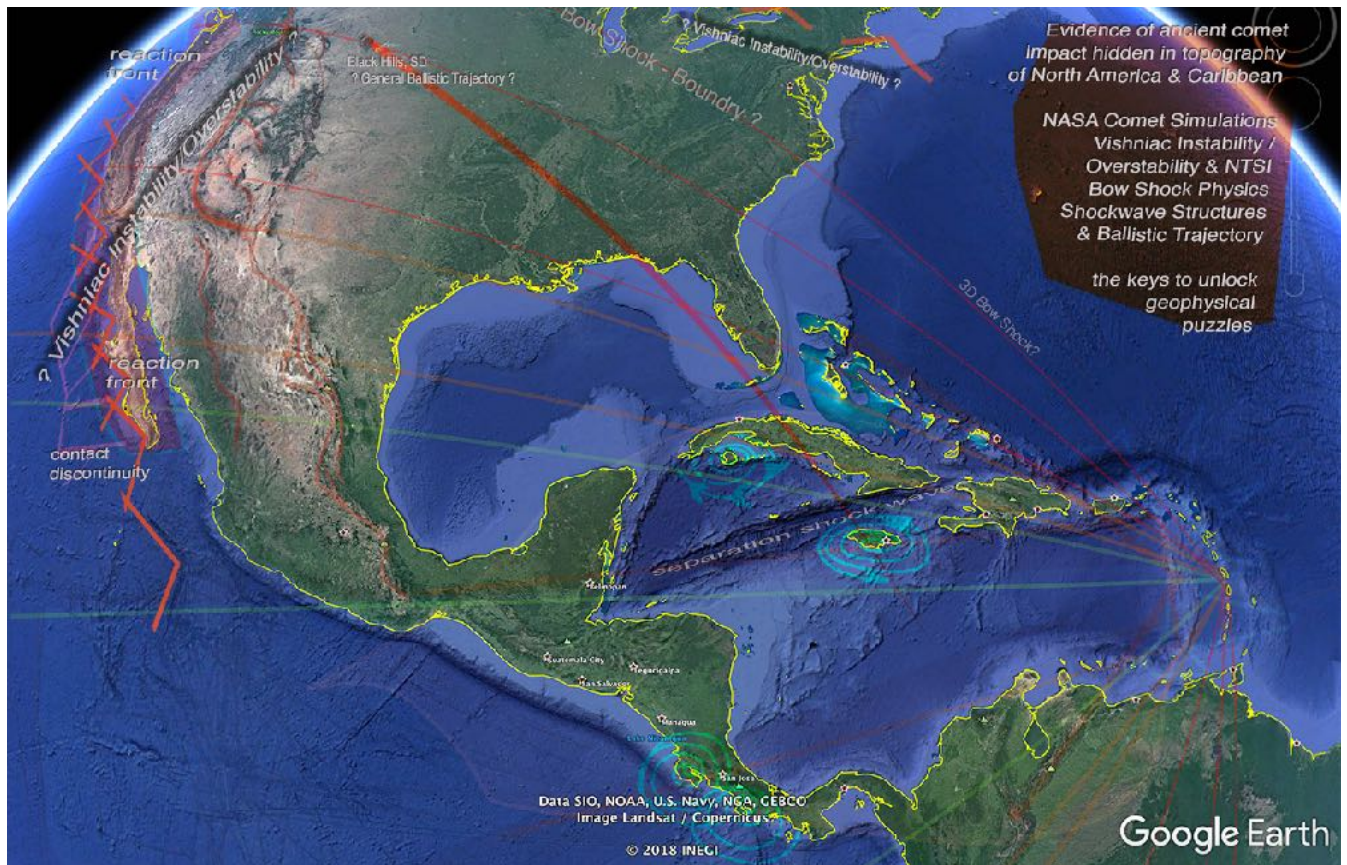
Side by side comparison Google Earth & NASA sim: Western Caribbean, Central America, Mexico, FL Straights, Cuba, Cayman Trench, Jamaica, Clark Basin, Belize Fan, Motagua Fan, Cotache Tongue. Also, notice the Yucatan dry land region carved out appearance from the underwater plateau mirrors positive/negative plasma space seen in JISC flow found in NASA Comet SL9 simulation freeze frame. Similarly, for the Nicaraguan Rise, as it shares wedge shape like the central plasma shock-cone zone. JISC Shock structure, if accurate descriptor for impacting comet coma compression, could open more insights into Earth's geomorphological past? Well, it's only just an hypothesis.



NASA Comet Shoemaker-Levy 09 simulation, 1994.



JISC Shock Structure overlays Caribbean Plate geomorphology, plausible elapsed spacetime of proposed comet impact plasma-crater formation?



Vishniac Instabilities/Overstability, Mach Shockwave, Ballistic Trajectory, Ejecta blanket/field.

J.I.S.C. Shock
= Geomorphological Feature
(hypothesized)

Blunt Leading Edge
= Barbados Ridge Complex

Rayleigh-Taylor Instabilities
= Trinidad, Isle de Margarita, St.Croix

Barrel Shock
= Venezuela Basin, Muertos Trough

Entropy Layer
= Puerto Rico, Dominican Republic, Haiti

Mach Disk
= Beata Ridge N/S

Separation Zone / 3D Bow Shock
= Puerto Rico Trench

Boundary Layer
= NOAM Plate

Kelvin-Helmholtz Instabilities
= Beata Ridge NE/SW, Turks & Caicos East

Hairpin Structures
= Bahama Islands, T&C West

Separation Shock
= Cayman Trench

Reflection Shock
= Pedro & Hess Escarpments

Secondary Shock
= Nicaraguan Rise

Large Scale Structures
= Yucatan, FL, Cuba, Panama

Counter Rotating Vortex Pair
= Central America

Wake Vortices
= Puntarenas & Nicoya Peninsula, Costa Rica

Glossary of Terminology:

<i>Astronomical Unit</i>	-	<i>Distance between Earth & Sun, 93 million miles (150 million km), approximately 8 light-minutes.</i>
<i>Bathymetry</i>	-	<i>Measurement of depth of water in oceans, seas, or lakes.</i>
<i>Caribbean Plate</i>	-	<i>Caribbean Plate, mostly oceanic tectonic plate, flood basalt, underlying Central America & Caribbean Sea</i>
<i>Cataclysm</i>	-	<i>Large-scale and violent event in the natural world.</i>
<i>CAVA</i>	-	<i><u>Central American Volcanic Arc</u>. Volcano chain extends parallel to Pacific coast line of Central America.</i>
<i>CLIP</i>	-	<i><u>Caribbean Large Igneous Province</u>: Large submarine plateau thought to have been constructed initially as a LIP, forms a thickened zone of oceanic crust between NOAM and SOAM.</i>
<i>Coma</i>	-	<i>[Astronomy] a diffuse cloud of gas and dust surrounding the nucleus of a comet. [Optics] aberration which causes the image of an off-axis point to be flared like a comet.</i>
<i>Comet</i>	-	<i>Celestial object consisting of a nucleus of ice and dust and, when near the sun, a "tail" of gas and dust particles pointing away from the sun. Long haired star. Dirty snow-ball. (Plasma Vortex-Engine*)</i>
<i>Cosmic Rays</i>	-	<i>Highly energetic atomic nucleus or other particle traveling through space at a speed approaching that of light.</i>
<i>E.C.D.</i>	-	<i><u>Earth Crust Displacement theory</u>. Earth's mantle-crust is a separate skin/shell, like an orange peel.</i>
<i>Ejecta</i>	-	<i>Material forced or thrown out, resulting from volcanic eruption, meteoritic impact, or stellar explosion.</i>
<i>Evaporation</i>	-	<i>Process of turning from liquid into vapor.</i>
<i>Prof. Charles H. Hapgood</i>	-	<i>(May 17, 1904 - December 21, 1982) American college professor & author, best known advocate of the pseudoarchaeological claim of a rapid & recent pole shift w/catastrophic results. (Harvard University)</i>
<i>Heliosphere</i>	-	<i>Region of space, encompassing the solar system, in which the solar wind has a significant influence.</i>
<i>Hydrodynamics</i>	-	<i>Branch of science concerned with forces acting on or exerted by fluids (especially liquids).</i>
<i>Hydrogen</i>	-	<i>Colorless, odorless, highly flammable gas, the chemical element of atomic number 1. (Symbol: H) - the lightest of the chemical elements and has the simplest atomic structure, a single electron orbiting a nucleus consisting of a single proton. It is by far the commonest element in the universe, although not on the earth, where it occurs chiefly combined with oxygen as water.</i>
<i>Impact crater</i>	-	<i>Crater on a planet or moon caused by the impact of a meteorite or other object, typically circular with a raised rim.</i>
<i>Isostatic</i>	-	<i>Characterized by or involving the equilibrium that exists between parts of <u>the earth's crust</u></i>
<i>Implosion</i>	-	<i>Instance of something collapsing violently inward.</i>
<i>Kelvin</i>	-	<i>SI base unit of thermodynamic temperature (equivalent in size to the degree Celsius), first introduced as the unit used in the Kelvin scale.</i>
<i>Kinetic</i>	-	<i>Relating to or resulting from motion.</i>
<i>Kuiper Belt</i>	-	<i>Region of solar system beyond orbit of Neptune, believed to contain many comets, asteroids, and other small bodies made largely of ice.</i>
<i>Limb</i>	-	<i>(Astronomy) edge of the disk(atmosphere/corona) of a celestial object, sun, moon, planet.</i>

<u>Mass Loaded Plasma</u>	-	<i>A generalization of the solution for solar wind flow past a cometary exosphere, containing two shocks & contact surface, is considered qualitatively in terms of this approach. Such a consideration predicts that the interplanetary magnetic field penetrates through the contact surface, reaching the inner shock, which becomes a diamagnetic boundary.</i>
Megaton	-	<i>Unit of explosive power chiefly used for nuclear weapons, equivalent to one million tons of TNT.</i>
Meteor	-	<i>Small body of matter from outer space that enters the earth's atmosphere, becoming incandescent as a result of friction and appearing as a streak of light.</i>
Missing Link	-	<i>Hypothetical fossil form intermediate between two living forms, especially between humans and apes.</i>
NOAM Plate	-	<i>North American tectonic plate.</i>
Oort Cloud	-	<i>Spherical cloud of small rocky & icy bodies postulated to orbit the sun beyond Pluto's orbit up to 1.5 light years from the sun, and to be the source of comets. Its existence was proposed by J. H. Oort.</i>
Perihelion	-	<i>Point in the orbit of a planet, asteroid, or comet at which it is closest to the sun.</i>
Plasma	-	<i>Ionized gas consisting of positive ions and free electrons in proportions resulting in more or less no overall electric charge, typically at low pressures or at very high temperatures.</i>
Plumed Serpent	-	<i>Mythical creature depicted as part bird, part snake, in particular Quetzalcóatl, god of the Toltec & Aztec civilizations having this form. Possible connection to myths/legends ancient comet/meteor sightings.</i>
Radar	-	<i>System for detecting the presence, direction, distance, & speed of aircraft, ships, & other objects, by sending out pulses of high-frequency electromagnetic waves that are reflected off the object back to the source.</i>
<u>Rankine-Hugoniot (shock-Hugoniot)</u>	-	<i>Conservation of mass, momentum & energy equations for transition of unshocked material to a shocked state are known collectively as the Rankine-Hugoniot jump conditions.</i>
<u>SHCRAMjet</u>	-	<i>[Shock-Induced Combustion Ramjet Engine] hypersonic, air-breathing and single stage to orbit engines.</i>
Shock-wave	-	<i>Sharp change of pressure in narrow region travels through a medium, air, liquid, solid. Caused by explosion or by a body moving faster than sound.</i>
Shock-Bubble	-	<i>Impact or explosive blast creates spherical-bubble of expanding pressure shock-wave at supersonic velocity. aka; acoustic cavitation.</i>
<u>Shoemaker-Levy 9</u>	-	<i>Fragmented comet discovered by Carolyn & Gene Shoemaker and David Levy in March, 1993.</i>
SOAM Plate	-	<i>South American tectonic plate.</i>
Solar Wind	-	<i>Continuous flow of the Sun's charged particles that permeates solar system</i>
Sublimation	-	<i>[sublime -](of a solid substance) change directly into vapor when heated, typically forming a solid deposit again on cooling</i>
Sun-grazers	-	<i>Comet passes extremely close to the Sun at perihelion. Some evaporate, large comets make it out. Fragmentation usually occurs.</i>
Tectonic	-	<i>Relating to the structure of the earth's crust and the large-scale processes which take place within it.</i>
Telegraph	-	<i>System for transmitting messages from a distance along a wire, especially one creating signals by making and breaking an electrical connection.</i>
Vortex	-	<i>Mass of whirling fluid or air, especially a whirlpool or whirlwind.</i>

The theories and hypotheses I have expressed here, in regards to the complexity and my attempts at simplicity of the actual cataclysmic events, are my sincerest efforts to explain, in a condensed form, what I've learned. I understand, I'm oversimplifying the physics. I have made every attempt to be faithful to the scientific method, process, logic and deductive reasoning. I may have made errors in certain areas when I do not fully understand the physics and/or math and my oversimplification, inadvertently invited errors? But, this is my science journey into astrophysics, geophysics, focusing on comet plasma turbulence and contact with Earth at re-entry velocities. The reference material is scarce. Planetary Collision Dynamics has taught me that discovery hides where ignorance lies, especially when Newton's Laws are on your side. Wait until you see the ejecta fields. Ballistic trajectory can take on mythic-like qualities at times.

I'm a tracer and this is my Kung-Fu.

"This Universe is under no obligation to make sense to you."
 - Neil deGrasse Tyson, Ph.D.

...end of line...



Would You Like To Know More?

Notes/Sketchbook:

Suggestions:

“Caribbean Plate: Comet Plasma Crater” / Copyright 2021 / All copyrights belong to original owners.

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<https://deepblue.lib.umich.edu/bitstream/handle/...>
- 9.) **“Foundations of Gulf of Mexico & Caribbean evolution, Eight controversies resolved.”**
https://.researchgate.net...Foundations_of_Gulf_of_Mexico_and_Caribbean_evolution_Eight_controversies_resolved
- 10.) **“Tectonic evolution of the Caribbean and northwestern South America”**
https://www.researchgate.net/publication/27648365_Tectonic_evolution_of_the_Caribbean_and_northwestern_South_America_The_case_for_accretion_of_two_Late_Cretaceous_oceanic_plateaus

But Wait! There is more! Always more.

11.) **NASA Ames Research Center; “Comet Shoemaker-Levy 9 simulation”**

<https://youtu.be/KMiUrziLdEo?t=114>

12.) **“Gravity modeling Muertos Trough & tectonic implications north-eastern Caribbean”**

https://academia.edu/...Gravity_modeling_of_the_Muertos_Trough_and_tectonic_implications_north-eastern_Caribbean

13.) **“Newton’s Laws of Motion”**

<https://youtu.be/qgIm96-WkwY>

14.) **“A New 3D Multi-Fluid Model: A Study Of Kinetic Effects And Variations Of Physical Conditions In The Cometary Coma”**

<https://iopscience.iop.org/article/10.3847/1538-4357/833/2/160>

15.) **“Optical techniques for measuring the shock Hugoniot using ballistic projectile and high-explosive shock initiation”**

<https://www.nmt.edu/academics/mecheng/faculty/mhargather/docs/Svingala2012.pdf>

16.) **“Interstellar Shocks, Supernovae & Bubbles”**

<http://w.astro.berkeley.edu/~ay216/05/NOTES/Lecture11.pdf>

17.) **“Isolated Carbonate Platforms – Lessons Learned from Great Bahama Bank”**

<http://www.searchanddiscovery.com/documents/2008/08061eberli/images/eberli>

18.) **“Investigation of sonic jet mixing in a stream of supersonic cross-flow using large eddy simulations”**

https://researchgate.net..publication/...Investigation_of_sonic_jet_mixing_in_a_stream_of_supersonic_cross-flow_using_large_eddy_simulations

19.) **“Comet Freight Train to Collide with Jupiter”**

<https://www2.jpl.nasa.gov/sl9/back1.html>

20.) **“Study of Unsteady, Sphere-Driven, Shock-Induced Combustion for Application to Hypervelocity Airbreathing Propulsion”**

<https://doi.org/10.2514/6.2011-5790>

21.) **“Why the Yellowstone Supervolcano Could Be Huge”**

<https://www.youtube.com/watch?v=IMLo0E66O8A&list=PLy7-bd9pJPb6FeVj0ZMCtsrUx3eUrUD4h&index=45&t=0s>

And more!

22.) **Yellowstone 3D Scan**

https://www.oregonlive.com/environment/2009/12/scientists_say_yellowstone_lav.html

23.) **Meteor Terminology Graphic**

<https://www.amsmeteors.org/fireballs/faqf/#1>

24.) **“Ghost Volcanoes In the Cascades”**

<https://youtu.be/6H18xVnb14I>

25.) **“Geologic Map of Alaska/2015” USGS: Scientific Investigations Map 3340**

https://pubs.usgs.gov/sim/3340/sim3340_sheet2.pdf

26.) **“Marble Resources of Southeastern Alaska”**

<https://pubs.usgs.gov/bul/0682/report.pdf>

27.) **Nicaraguan Rise:**

<https://www.britannica.com/place/Nicaraguan-Rise>

28.) **Event Horizon: Ep. “Oumuamua Rarest Object Universe?”**

<https://youtu.be/TwYAiSAmurM>

29.) **“Chicxulub collision put Earth’s crust in hot water for over a million years”**

<https://www.sciencenews.org/article/chicxulub-collision-earth-crust-hot-water-microbes-million-years>

30.) **NASA Asteroid Watch “Asteroids, Comets, Meteorites”**

<https://www.jpl.nasa.gov/asteroidwatch/asteroids-comets.php>

31.) **“CP-2156 Life In The Universe; Comets #28, #29, #30.**

<https://history.nasa.gov/CP...>

32.) **“Comets: Facts About The 'Dirty Snowballs' of Space”**

<https://www.space.com/53-comets-formation-discovery-and-exploration.html>

33.) **All works of “Nick on the Rocks”**

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

34.) **“The Caribbean Ocean Plateau, an overview, and a different understanding.”**

<http://www.mantleplumes.org/WebDocuments/CaribbeanPlateau.pdf>

35.) **“Rocket Engine, Liquid Fuel, J-2”**

<https://airandspace.si.edu/collection-objects/rocket-engine-liquid-fuel-j-2/nasm...>

Recommended Reading/Reference:

- 36.) "Geology of the United States Seafloor, the View from GLORIA"
Gardner, Field, & Twichell / USGS
- 37.) "Earth's Shifting Crust"
Prof. Charles H. Hapgood, Foreword by Dr. Albert Einstein, Ph.D.
- 38.) "The Cycle of Cosmic Catastrophes"
Firestone, West, Warwick-Smith
- 39.) "Fingerprints of the Gods"
G. Hancock
- 40.) "America Before"
G. Hancock
- 41.) "Atlantis in the Caribbean"
A. Collins
- 42.) "Forbidden Archeology"
M. Cremo & R. L. Thompson
- 43.) "Forgotten Civilization"
R. M. Schoch, Ph.D.
- 44.) "Magicians of the Gods"
G. Hancock
- 45.) "Aftershock"
B. Foerster
- 46.) "Catastrophobia"
B. H. Clow
- 47.) "Lost Cities of North & Central America"
D. H. Childress
- 48.) "Lost Cities of South America"
D. H. Childress
- 49.) All works: R. Carlson / Kosmographia / Sacred Geometry
- 50.) All works: A. Zamora - Carolina Bays