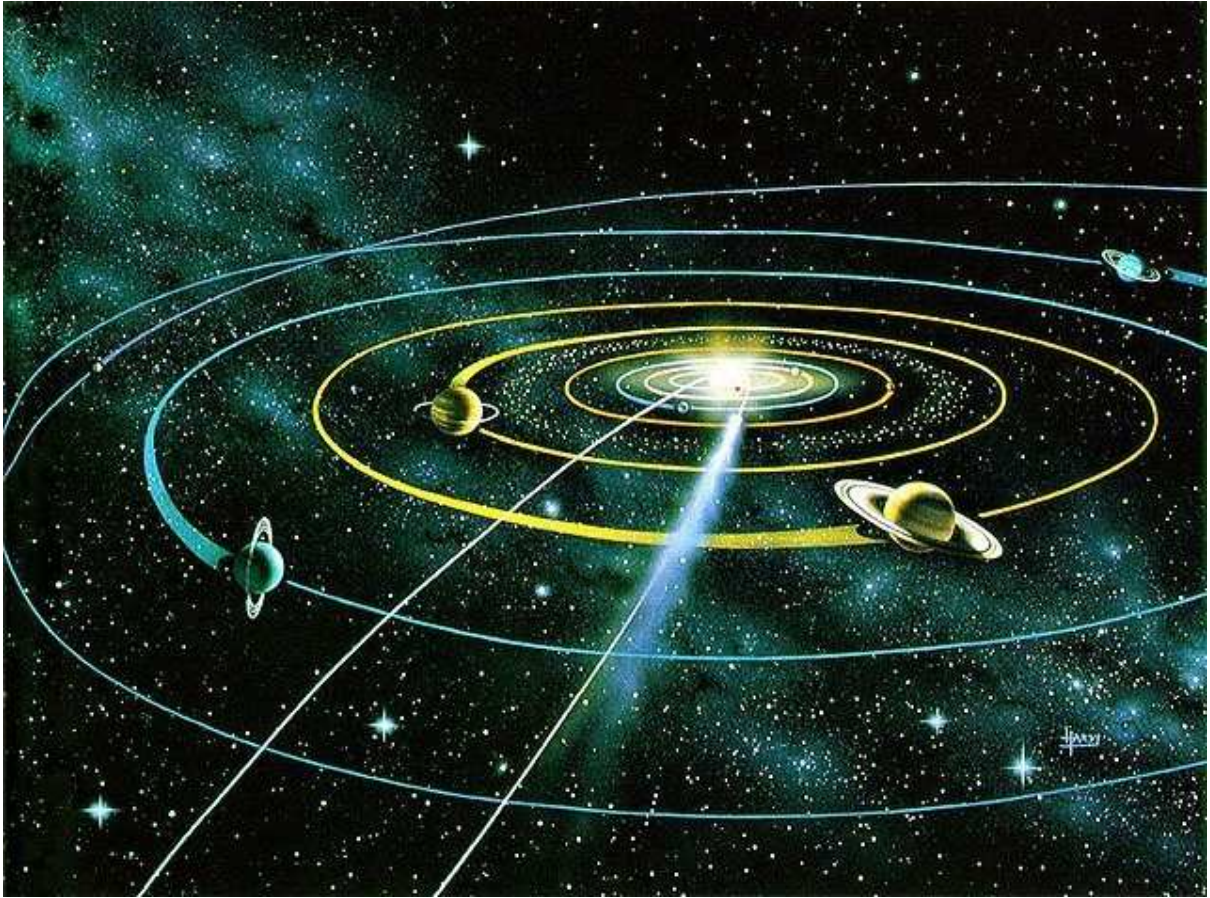


[ Posted : 05.14.04 ]



Interplanetary “Day After Tomorrow?”

***Part 1***

***An Enterprise Mission Hyperdimensional Report***

Richard C. Hoagland  
David Wilcock

The entire solar system - not just our one small planet -- is currently undergoing profound, never-before-seen physical changes. This paper will address and scientifically document a wide variety of significant examples, drawing from a host of published mainstream sources.

We will also outline a new scientific model that, for the first time, coherently explains these simultaneous interplanetary changes via a fundamental “new Physics” - a Physics that predicts “even greater anomalies to come”...

Here are some highlights:

**Sun:** More activity since 1940 than in previous 1150 years, *combined*

**Mercury:** Unexpected polar ice discovered, along with a surprisingly strong intrinsic magnetic field ... for a supposedly “dead” planet

**Venus:** 2500% increase in auroral brightness, and substantive global atmospheric changes in less than 30 years

**Earth:** Substantial and obvious world-wide weather and geophysical changes

**Mars:** “Global Warming,” huge storms, disappearance of polar icecaps

**Jupiter:** Over 200% increase in brightness of surrounding plasma clouds

**Saturn:** Major *decrease* in equatorial jet stream velocities in only ~20 years, accompanied by surprising surge of X-rays from equator

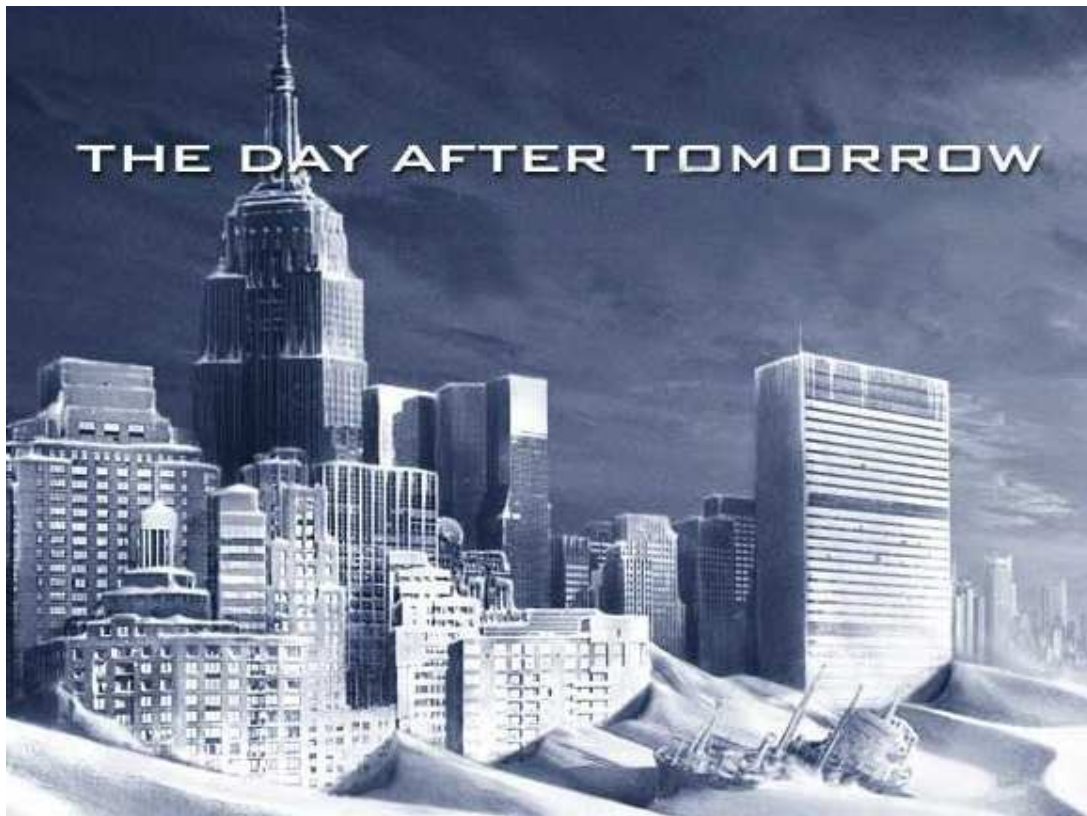
**Uranus:** “Really big, big changes” in brightness, increased global cloud activity

**Neptune:** 40% increase in atmospheric brightness

**Pluto:** 300% increase in atmospheric pressure, even as Pluto recedes *farther* from the Sun

None of these statistics are from “fringe” scientists; they are all very, very real, and what you have just read is only the proverbial “tip of the iceberg.”

This Report’s scientific data, from a variety of highly credible institutions (including NASA itself), reveals that startling “climate change” phenomena are occurring, not just here on Earth, but, in fact -- *throughout* the entire solar system. This material has been publicly available for nearly a decade in some cases, but it was simply never assembled into a coherent picture of “a *System* in significant transition” ... until this writing.



Before we get to the details, let us begin with one of the key reasons why we're tackling this important subject at this time ....

Recognized international talk show superstar, Art Bell, several years ago with co-author, Whitley Strieber<sup>1</sup>, wrote a prophetic book regarding catastrophic climate change on Earth, titled "The Coming Global Superstorm." Now, their book has been turned into a major 125-million-dollar summer blockbuster, "The Day After Tomorrow," opening in theatres nationwide Friday, May 28th. Starring Dennis Quaid<sup>2</sup>, the film's main producer is Roland Emmerich, well known for his previous blockbusters -- "Independence Day" and "Stargate."<sup>3</sup> With outrageous advances in the quality of CG animation effects, and a huge budget devoted almost entirely to rendering those effects scientifically, "The Day After Tomorrow" will feature perhaps the most graphic if not accurate realism of "Earth Changes" yet depicted on the big screen. Just as "Deep Impact" and "Armageddon" led to greater public and Congressional scrutiny of asteroids on potentially Earth-crossing orbits, "The Day After Tomorrow" will very likely (see below) create a major turning point in the public's awareness of the realities of on-going terrestrial climate alterations.



The central premise of the film, paralleling the scientifically documented thesis first outlined in the Bell and Strieber book, is that the Gulf Stream oceanic current, which normally pumps warm tropical waters from the Gulf of Mexico throughout the North Atlantic Ocean, suddenly *collapses*. This cataclysmic change rapidly sends the Northern Hemisphere into an abrupt quick-freeze... with apocalyptic results.

When Art and Whiteley's book was first released in 2000, *Today Show* host Matt Lauer subjected both authors to outrageous public ridicule at its most adolescent level – and this was but one of many examples of the harsh criticism that they received on their initial book tour<sup>4</sup>. However, in the ensuing four years, public awareness of the realities of climate change has increased considerably, and people aren't laughing anymore.

In an article in *The Independent*, climate change expert Michael Molitor, a consultant on the Emmerich film, claims that he has “already attracted more media interest over his connection with the film [‘The Day After Tomorrow’] than at any time in 20 years of working on the science and politics of global warming .... The amount of commentary by climate scientists on this film has been unbelievable and I find it almost comical,” Dr Molitor told *The Independent*. “This film could actually do more in helping us move in the right direction than all the scientific work and all the [US congressional] testimonies put together.”<sup>5</sup>

According to Molitor, “Where the film departs from our knowledge is where the changes in the story occur on a timescale that's probably faster than we expect.” *The Independent* article went on to say, “*The New York Times* revealed that climatologists at NASA, the US National Aeronautics and Space Administration, had received an official instruction not to comment on the film for fear of upsetting the White House, which is famously skeptical of climate change.”





If the accelerated timelines of the film were simply creating needless panic, then NASA HQ and White House would have been correct in trying to reduce such effects. However, a secret Pentagon memo, leaked earlier this year in a copyrighted story in London's *The Observer*, predicts events *almost identical* to those depicted in "The Day After Tomorrow" -- with the collapse of the Gulf stream as the *primary* scientific explanation ... precisely as the film (and the Bell/Strieber book) suggests. The only difference between Art's book, the film, and the Pentagon report, is "timing."

In the film, the events occur over a five-day period, whereas the Pentagon report gives us about 15 years... or less. According to the "rosier scenario" authored in the Pentagon, Britain will be in a "Siberian" climate by 2020, and "nuclear conflict, mega-droughts, famine and widespread rioting will erupt across the world."<sup>6</sup>

The Pentagon study goes on to recommend to the White House that climate change "should be elevated beyond a scientific debate to a US national security concern." One scientist, in the parallel *BBC* coverage of this alarming secret Pentagon report, said "It is a national security threat that is unique because there is no enemy to point your guns at and we have no control over the threat."<sup>7</sup>

The Pentagon is not alone among policymakers in its concerns.

In a related *BBC News* article from February 2004, Prof. John Schellnhuber, a leading British climate scientist, said, "We spoke to the Congressional scientific committee, and my feeling is that in principle **80% of the people in Washington who are really informed feel dramatic climate change is a major threat** . The [Bush] administration is a prisoner of its own determination not to do anything that would affect the lifestyle of US citizens. Perhaps, in a parallel with its stance in Iraq, it has chosen a certain position and will now not alter it for fear of losing face."

Prof. Schellnhuber went on to say, "I don't think the US public and policymakers will be happy to go on with a business-as-usual approach for the next five years... We've

been telling politicians for 20 years that climate change could be a far worse threat than terrorism. Unfortunately, our scientific assessments indicate that the window of opportunity for intervention to protect the climate is closing rapidly.”<sup>8</sup>

With a re-election hanging in the balance, the last thing that the Bush Administration wanted to have happen was “a climate-change bugaboo” exploding onto the scene... at the same time that the Iraqi situation is rapidly turning for the worse in the world’s eyes, with increasing fatalities and graphic images of Iraqi prisoners being tortured by Americans. Nonetheless, the new film itself cannot be suppressed, so the only remaining option has been to attempt to suppress its scientific validity in the eyes of the public. A two-pronged attempt appears to have been made -- partly through NASA HQ, and partly through Republican Party politics.



First: on Saturday, April 24, 2004, the influential Drudge Report web site received a secret memo that was passed to all NASA scientists from the Washington Headquarters on April 1. The memo read, in part, "No one from NASA is to do interviews or otherwise comment on anything having to do with ... " the film, "The Day After Tomorrow."<sup>9</sup> The political fallout from the "outing" of this memo soon led to an embarrassing public *retraction* from NASA, claiming that it had been written because the film’s producers did not want to sign a "cooperation agreement," and that NASA scientists were free to say whatever they wanted."<sup>10</sup>

The NASA memo was written April 1, 2004 (a rather curious date for a serious public policy directive, from a major US government Agency ...).

At about the same time, we now know, a similar memo was passed on to Republican constituents directly from the White House. In this case, the story broke much faster - appearing in Britain’s *The Observer* on April 4... an internal White House memo, titled, "From Medi-Scare to Air-Scare." It said in part, "we are fighting a battle of fact against fiction on the environment -- Republicans can't stress enough that extremists

are screaming "Doomsday!" when the environment is actually seeing a new and better day."<sup>11</sup>

Of course, no reference was made to the astonishingly candid "Pentagon climate memo" -- which certainly does not predict a "new and better day" for the environment, or for any of the rest of us -- even though that story had already broken through *months* earlier to worldwide, mainstream media attention.

*The Observer* article that outed the White House memo, also shed light on the motivations behind the Administration's consistent belief that the entire idea of "climate change" can still be safely dismissed as "unscientific": "Probably the most influential voice behind the [current White House] memo is Frank Luntz, a Republican Party strategist. In a [previous] leaked 2002 memo, Luntz said: "The scientific debate is closing [against us] but not yet closed. There is still a window of opportunity to challenge the science." Luntz has been roundly criticized in Europe. Last month, Tony Blair's chief scientific adviser, Sir David King, attacked him for being too close to Exxon."<sup>12</sup>

A recent article on Strieber's web site quotes Peter Schurman, of Moveon.org, as saying "To have a major studio release of a movie tackling a serious issue is a terrific opportunity for Americans to start talking about the reality of the problem, what can be done about it and the enormous threat that President Bush is not dealing with." Moveon.org will hold a public rally outside New York's American Museum of Natural History -- location of the "The Day After Tomorrow" initial screening -- on the night of the glittery New York May 24th Premiere. Strieber continues: "Former vice-president Al Gore, who will attend the rally, says, "Millions of people will be coming out of theaters on Memorial Day weekend, asking the question, "Could this really happen?" I think we need to answer that question."<sup>13</sup>

Our Report does not directly confirm or deny the specific Gulf Stream scenario presented in Art and Whitley's book, or "The Day After Tomorrow." Rather, it lends major scientific support to the film's underlying premise, by providing dramatic new intelligence that reframes the entire issue of "climate change" -- as part of an effect that is now mysteriously occurring simultaneously *throughout the solar system!*

Like many others, we feel that the time has come for the world to know the truth. This is our solar system, and it is visibly changing all around us. If there are solutions that could dramatically reduce the difficulties coming in this transformation, *now* is the time for open and honest disclosure and discourse on these new "hyperdimensional" sciences, developed by both authors of this Report and many others.




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<sup>1</sup>Bell, Art and Strieber, Whitley. *The Coming Global Superstorm*. Pocket Books (Simon & Schuster, Inc.) New York, 2000. ISBN 0-671-04190-8. 255 PP. Hardcover, \$23.95.

<sup>2</sup>URL: <http://www.thedayaftertomorrow.com>

<sup>3</sup>URL: [http://www.foxhome.com/id4dvd/index\\_frames.html](http://www.foxhome.com/id4dvd/index_frames.html)

<sup>4</sup>"There is only one possible explanation for the editors of Pocket Books accepting and publishing this sorry piece of pseudoscientific propaganda: Profit with a capital 'P'."

Baker, Robert A. *Book Review: The Coming Global Superstorm, By Art Bell and Whitley Strieber*. The Skeptical Inquirer, Committee for the Scientific Investigation of Claims of the Paranormal. 2000. URL: [http://www.findarticles.com/cf\\_dls/m2843/5\\_24/67691844/p1/article.jhtml](http://www.findarticles.com/cf_dls/m2843/5_24/67691844/p1/article.jhtml)

<sup>5</sup>Connor, Steve. The Movie that Claims to be a Vision of the Future. The Independent - UK, Independent Digital (UK) Ltd., May 8, 2004. URL: <http://news.independent.co.uk/world/environment/story.jsp?story=519236>

<sup>6</sup>Townsend, Mark and Harris, Paul. *Now the Pentagon tells Bush: climate change will destroy us*. Guardian Unlimited, The Observer, Feb. 22, 2004. URL: <http://observer.guardian.co.uk/international/story/0,6903,1153513,00.html>



<sup>7</sup>The BBC article later quotes Bob Watson, chief scientist for the World Bank and former chair of the Intergovernmental Panel on Climate Change, who added that the Pentagon's dire warnings could no longer be ignored. "Can Bush ignore the Pentagon? It's going to be hard to blow off this sort of document. It's hugely embarrassing. After all, Bush's single highest priority is national defense. The Pentagon is no wacko, liberal group; generally speaking it is conservative. If climate change is a threat to national security and the economy, then he has to act. There are two groups the Bush Administration tend to listen to, the oil lobby and the Pentagon..."

Townsend, Mark and Harris, Paul. *Now the Pentagon tells Bush: climate change will destroy us*. Guardian Unlimited, The Observer, Feb. 22, 2004. URL: <http://observer.guardian.co.uk/international/story/0,6903,1153513,00.html>

<sup>8</sup>Kirby, Alex. *US "does accept climate threat"*. BBC News Online, Feb. 23, 2004. URL: <http://news.bbc.co.uk/1/hi/sci/tech/3513559.stm>

<sup>9</sup>Drudge, Matt. Ice Age Outrage: Fox's Climate-Change Movie Irks Bush Admin. The Drudge Report web site, Apr. 24, 2004. URL: [http://www.drudgereportarchives.com/data/2004/04/24/20040424\\_155005\\_flash3.htm](http://www.drudgereportarchives.com/data/2004/04/24/20040424_155005_flash3.htm)

<sup>10</sup>Mahone, Glenn. STATUS REPORT: NASA Notice to all Employees Regarding Media Reports about the film "The Day After Tomorrow". NASA HQ, April 26, 2004. URL: <http://www.spaceref.com/news/viewsr.html?pid=12673>

<sup>11</sup>Barnett, Antony. Bush attacks environment "scare stories": Secret email gives advice on denying climate change. Guardian Unlimited / The Observer, April 4, 2004. URL: <http://www.guardian.co.uk/usa/story/0,12271,1185379,00.html>

<sup>12</sup>Barnett, Antony. Bush attacks environment "scare stories": Secret email gives advice on denying climate change. Guardian Unlimited / The Observer, April 4, 2004. URL: <http://www.guardian.co.uk/usa/story/0,12271,1185379,00.html>

<sup>13</sup>Strieber, Whitley. Scientists Back Superstorm Film. The Unknown Country web site, May 7, 2004. URL: <http://www.unknowncountry.com/news/?id=3774> <sup>13</sup>

## Part 2

### **An Enterprise Mission Hyperdimensional Report**

Richard C. Hoagland  
David Wilcock

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## Overview

The significant – nay, *unprecedented* -- weather changes, currently alarming millions here on Earth, are ultimately part of an overall, mysterious transformation that is affecting the Sun, a number of other planets and many of their satellites... all across the solar system.

As noted in Part 1, in this Report we shall be citing specific scientific papers backing up these “system-wide,” apparently systemic changes -- evidence derived from published, mainstream sources, compiled by researchers at major institutions, who obviously (from the authors’ own comments) haven’t themselves fully grasped the magnitude (to say nothing of the underlying *cause*) of what they’re seeing... or, why they’re seeing it *right now*.

The “cause and effect” of these remarkable planetary transformations, we believe, is explained by appealing to a new form of Physics -- not yet embraced by most of mainstream science. In fact, this is an “old Physics” -- once the *centerpiece* of 19<sup>th</sup> Century, pre-quantum reality. At its most fundamental, it is a Physics based on the literal accessibility of “higher dimensions.”

This “higher dimensional/hyperdimensional” description is not just an abstract concept, left over from a few mathematicians a hundred years ago -- but is a serious, *quantifiable* new model, regarding the *real domain of energies* that invisibly flow into and out of our “three-dimensional” reality... literally creating in the process *all* of physical matter... as well as its observed, three-dimensional, highly complex interactions.

In addition to its fundamental *hyperdimensional* component, this “new Physics” is intimately coupled to a modified concept of a spatial “aether.” This “aether,” however, is distinctly different from another old 19<sup>th</sup> Century concept – an “*electromagnetic* aether,” proposed then as a medium (analogous to air or water) necessary to carry rhythmic light and radio vibrations across “empty space.” This “new aether” also has *no* connection to the now popular term “zero point energy” -- the current quantum mechanics description of vacuum processes proposed by mainstream physics to generate matter and energy from empty space.

This new, modified aether is, in fact, a “massless, *non-electromagnetic* aether” – a charge-free *transfer medium* pervading all of space, and conveying “hyperdimensional energy” from more complex, higher dimensions... into “our” dimension.

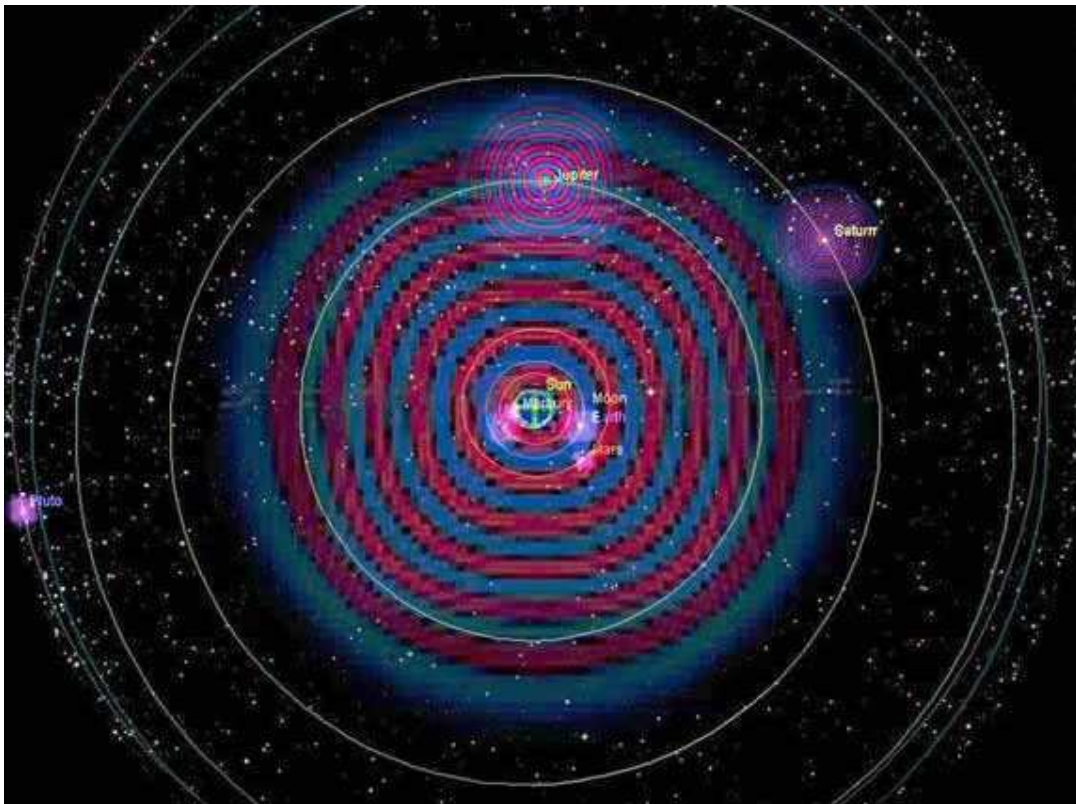
In the model of Hyperdimensional Physics proposed by one of us (Hoagland), it is the innate *rotation of mass in three dimensions* (or, the gravitational revolution of “one mass around another mass, via an orbit”) that opens up a literal “rift,” or “gate,” *between* dimensions. “HD energy” flows through this gate, modifying the massfree aether in *this* dimension -- creating a variety of observable and *measurable* physical effects, including the cyclic appearance of matter and energy in our dimension. The overall quantity of energy “gated” into this dimension is directly proportional to “the total amount of angular momentum” in the spinning or gravitating system involved...

In an *orbital* system, this total quantity is also “modulated” -- by the constantly changing *geometric* relationships between the various masses in their orbits; certain “tetrahedral” angles (60 and 120 degrees), allow maximal energy transmission between dimensions; while other angles (90 and 180 degrees) interfere with that transmission and restrict it... These geometric effects are due to the inevitable “resonance and dissonance effects” of *interfering wave patterns* in the underlying aether “matrix.”

The simplest solar system analogy would be “multiple ripples on a pond” – with the overlapping “energy ripples” being the vast range of frequency alterations of the underlying massfree aether, caused by the hyperdimensional energy entry into our dimension via the rotating Sun, its rotating and orbiting planets... and their rotating and orbiting moons (see illustration, below).

In other words -- the entire “solar system” functions as a real, hyperdimensional, interconnected, *resonant* (or at times, dissonant) *system*...

The dramatically changing planetary effects we are about to recount in this Report, we believe, are a direct result (in the Hoagland Model) of these complex spins and geometrically-changing orbits of the solar system’s currently known planetary members, and their quantifiable effects on this underlying *resonant* aether pattern... augmented (in this Model) by additional, *yet undiscovered* planets that are *also* affecting the pattern – but which are orbiting far beyond the boundaries of the presently known solar system...



**Figure 1 – Hyperdimensionally resonant solar system. (Hoagland)**

By far the most complete laboratory work on the basic properties of this underlying, critical “HD transfer aether” -- required in Hoagland’s Model to transmit the hyperdimensional information *into* our dimension -- has been carried out by Dr. Paulo and Alexandra Correa. A comprehensive overview of their extensively documented research and experiments can be viewed at [aetherometry.com](http://aetherometry.com). The late Dr. Eugene Mallove, former Head Science Writer at

MIT, and former President of the New Energy Foundation, as well as Editor in Chief of its scientific journal, *Infinite Energy*, described it thus:

“What is Aetherometry and how to begin to understand it? It comprises the study and measurement of the aether -- not the static, electromagnetic "luminiferous aether" of the 19th Century, but a dynamic non-electromagnetic aether that is amenable to measurement through the deflection of electroscope leaves, mercury thermometers, Geiger-Muller tubes, oscilloscopes, Tesla coils, Faraday cages, and other commonly available instruments and circuit elements. Of course, anyone who is a close-minded believer in Einsteinian relativity -- the Special or General theories -- would find little or no reason to investigate Aetherometry...”

While the Correias’ work is entirely separate from our own, both authors strongly believe that there is a *fundamental* connection between a “massfree aether,” and the equally demonstrable hyperdimensional energies it is conveying into our three spatial dimensions. Further experimental work – including some unique “HD aether measurements” the *Enterprise Mission* intends to carry out during the up-coming Venus Transit of the Sun, June 8, 2004 -- will advance efforts to ultimately prove or disprove such a critical connection.

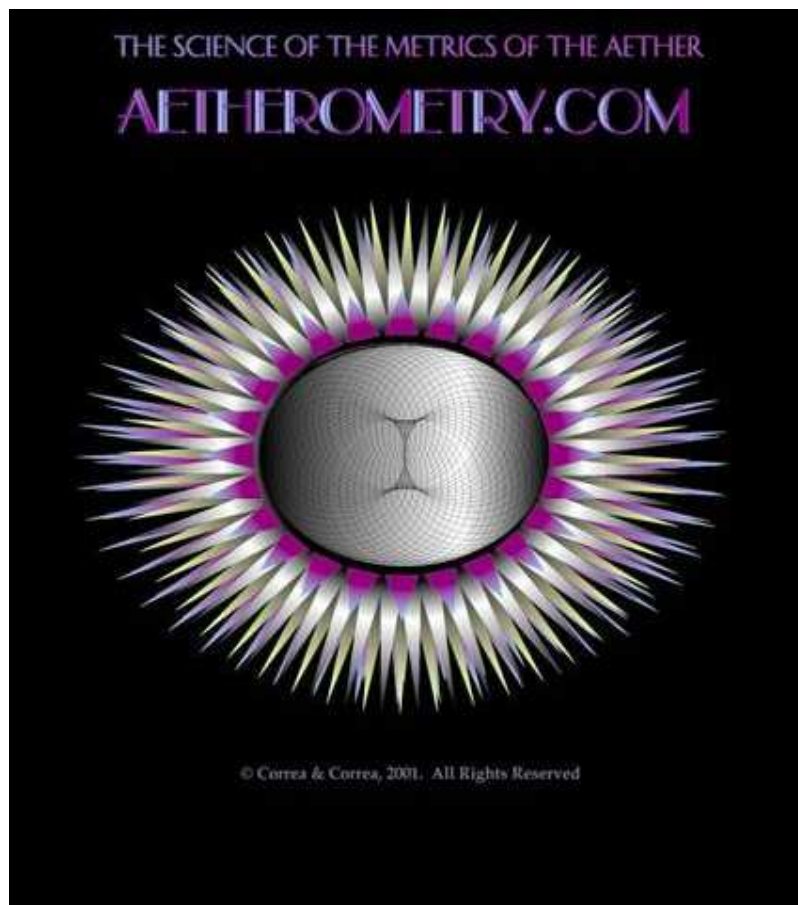
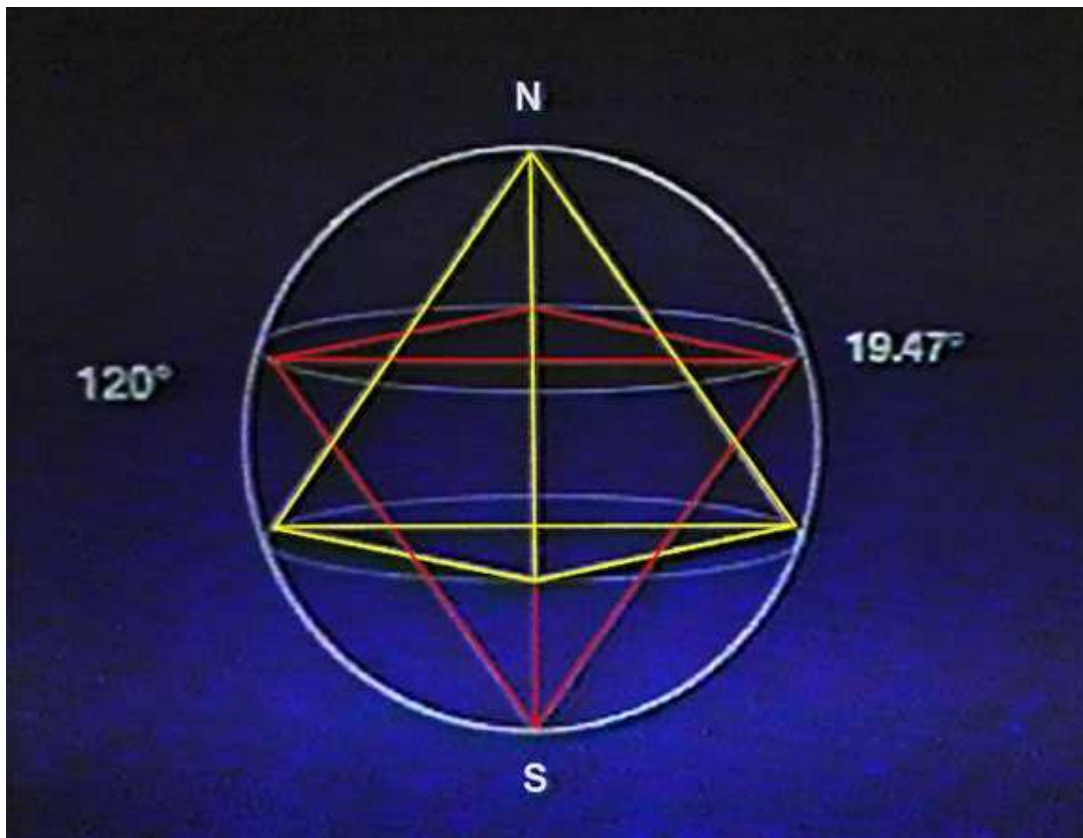


Figure 2 – The new “massless aether” experiments. (Correias)



Hoagland's "magnum opus" -- *The Monuments of Mars: A City on The Edge of Forever* (North Atlantic Books, Berkeley, 1987) -- proposed the first 20<sup>th</sup> Century restatement of the old 19<sup>th</sup> Century Hyperdimensional and Aether Model, coupled with the specific discovery of *hyperdimensional planetary features* identified via contemporary telescope and spacecraft observations. Hoagland showed that "geometric resonant energy fields" within these nearby planets directly affect their observable "atmospheric signatures," as well as the critical location of *major surface features* -- such as the latitude of the largest shield volcanoes.

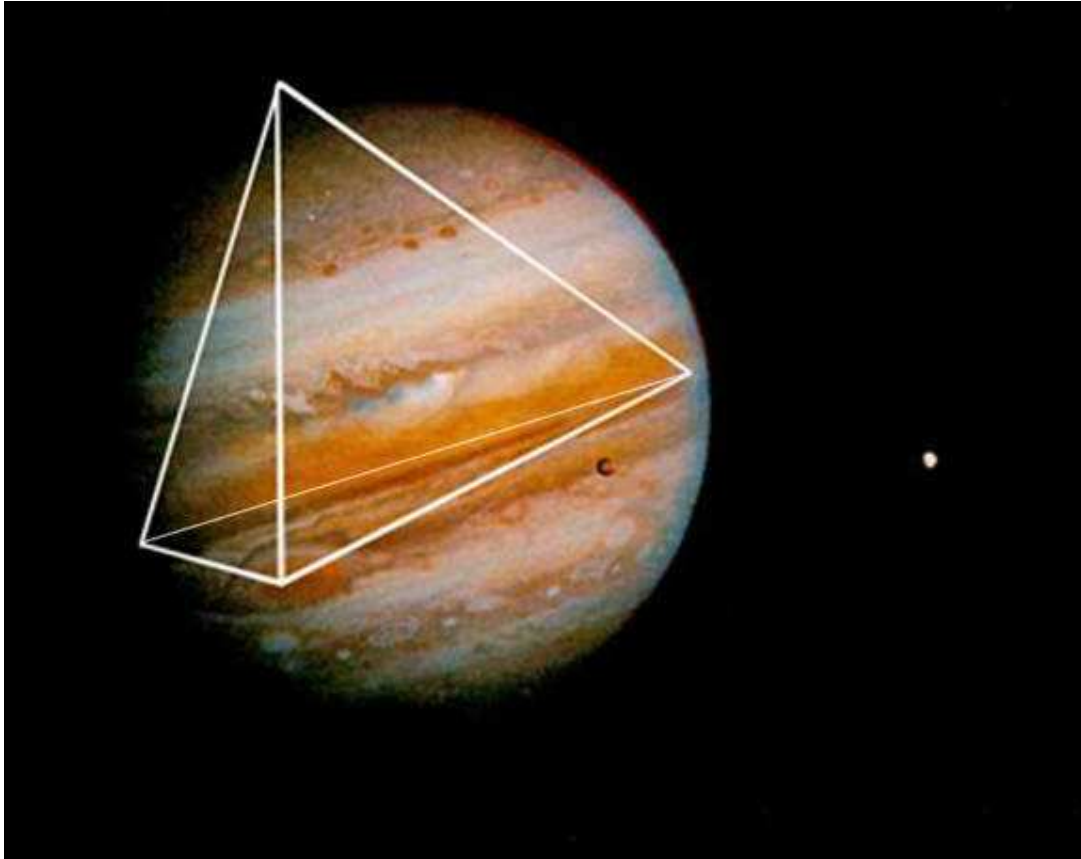
Specifically, the focus was on the simple geometric solid known as a "tetrahedron" -- a four-sided object, with each side as an equilateral triangle. Like the other four "Platonic Solids" -- the "octahedron, cube, dodecahedron and icosahedron" -- the tetrahedron will fit perfectly inside of a sphere. If one of its tips is aligned with the north pole of a rotating, *planetary* sphere -- then the other three points will all emerge at 19.5 degrees, south of the equator. Similarly, if a tetrahedron is hypothetically placed inside with one tip pointing towards the south pole, the other three "vertices" will emerge at 19.5 degrees *north* of the equator:



**Figure 3 - Tetrahedral geometry within rotating sphere. (Hoagland)**

As explained in a series of Hyperdimensional Physics papers ([www.enterprisemission.com](http://www.enterprisemission.com)) authored by Hoagland et al., many planetary energy phenomena are seen to emerge directly at this critical 19.5-degree latitude on a variety of planets. Gaseous worlds reveal uniquely energetic "cloud bands" at these latitudes and giant spiraling vortexes at the exact tips of the

tetrahedral geometry -- such as the Great Red Spot on Jupiter, and the Great Dark Spot on Neptune. Solid planets tend to demonstrate the largest volcanic “upwelling, hotspot activity” at those latitudes -- such as the Big Island of Hawaii on Earth, and Olympus Mons on Mars...



**Figure 4 – Resonant “tetrahedral energy pattern” inside spinning Jupiter, producing Great Red Spot. (Hoagland)**

In this Report, we will combine Richard C. Hoagland’s Hyperdimensional Physics Model (published at <http://www.enterprisemission.com/hyper1.html>), with David Wilcock’s Convergence Model, as expressed in his third book, *Divine Cosmos*, published at <http://ascension2000.com/DivineCosmos>. We believe this synthesis can most easily explain the “mysterious” solar system changes currently occurring. When this paper refers to “the Hyperdimensional Physics Model,” both of these sources are being drawn from in that definition. It is outside the scope of this presentation to fully identify and prove all the postulates of these overlapping HD Models (or their individual variations), so these cited documents should be consulted for a more complete understanding of both authors’ work. For someone reading this who tends toward the non-technical, here are a couple of additional analogies.

Magnetism is not a directly visible energy ... but we know it is there, because of its effects on other things. By the same token, beneath the surface of a body of water, you can’t tell which

direction the currents are flowing ... except by observing other physical things that the water is moving -- such as particles of sand or sunken leaves. Hyperdimensional energy is not directly visible either – but we can see its effects throughout the entire solar system, such as through the emergence of anomalous dust, gas and ionized particles, as well as otherwise-inexplicable geometric phenomena in certain fluid (planetary atmospheric) systems, which appear to be the result of pressure currents caused by resonant vibrations in some hyperdimensional/massless aether “fluid”. (See “The Matrix is a Reality” by Wilcock at <http://ascension2000.com/04.10.03.htm> for a quick overview.)

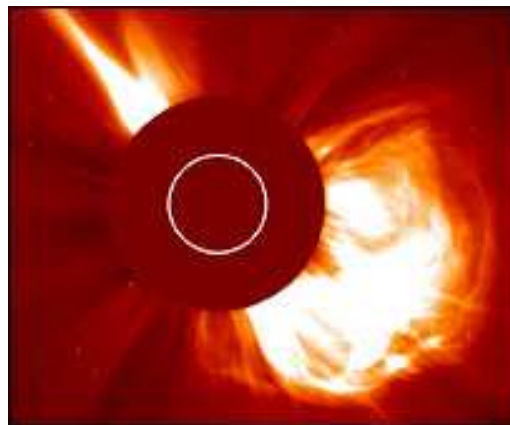
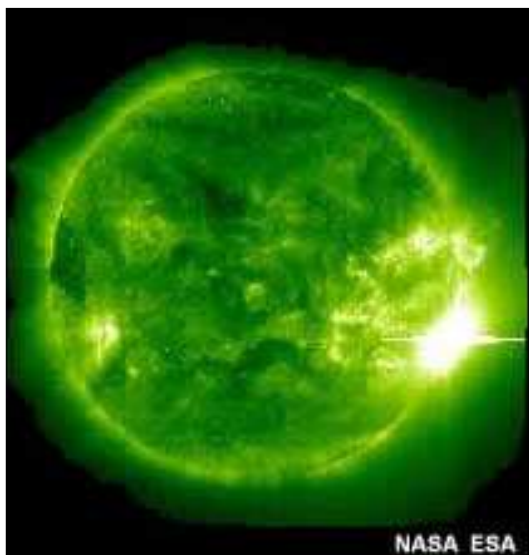
So, on to our examples.

\* \* \*

## The Sun

Since at least the late 1970s, the Sun’s overall radiation emissions (as measured by increasingly sophisticated satellites) have increased by 0.5% per decade, which one NASA scientist said “could cause significant climate change” if such effects were to continue over several decades. [14] Another NASA scientist found that between 1901 and 2000, the Sun’s *magnetic field* has increased in strength by 230 percent. [15] In 1999, a third NASA experimenter observed high increases in the amount of helium and heavier charged particles released during solar events, showing that a real change is occurring in the solar wind component of the Sun’s energetic output, neatly paralleling the other observed changes.. [16]

Prior to 2003, the two strongest solar flares on record were rated at a previously unheard-of X20, and occurred in 1989 and 2001. Then, in November 2003 a flare occurred that some estimate to be at least 200% more powerful than any ever seen before, at a whopping *X40 ... or higher*. [17] As is expected in such events, a coronal mass ejection soon followed – releasing a huge expanding bubble of billions of tons of electrified gas into the solar system. These and other events in late 2003 caused one NASA scientist to say that the Sun is now more active than in living memory, and “there has been nothing like this before.” [18]



## Figure 5 - Largest, Brightest-Ever X40 Solar Flare, 11.5.03, (L) and Subsequent CME (R). (NASA-ESA)

Despite all of the above evidence, the case for a fundamental solar change was never truly complete until late last year, with a study that coincidentally emerged just three days before this massive solar explosion occurred. Ilya Usoskin, a mainstream geophysicist, used polar ice core samples to prove that **the Sun has been more active since the 1940s than in the previous 1,150 years combined.** [19] The Sun's subsequent fury, just days later, only served to underline and emphasize the point. Considering that the Sun contains fully 99.86 percent of the mass of the solar system, making the planets look like grains of sand by comparison, these continuing changes will undoubtedly affect everything within the Sun's formidable magnetic, radiative and gravitational grasp...

### Mercury

Despite huge surface temperatures, Mercury seems to have *ice* in its polar regions. This is blamed on comet-based ice that crash-landed into “permanently shadowed craters,” which NASA scientists admit is a “problematic” assumption to make; the ice supposedly has survived for millennia, whereas a NASA probe landing at the pole is only expected to survive one week in the heat. [20] Mercury also has an unexpectedly dense core of iron, consisting of almost half of its entire mass, [21] and a strong dipole magnetic field as well. Scientists would like to know how these anomalies are possible. [22]

### Venus

The amount of sulfur in Venus' atmosphere was found to have decreased “dramatically” between 1978 and 1983. [23] Unfortunately, no study we have yet located assigned a *percentage* figure to this planet-wide change. But in order to earn the word “dramatic,” it could well have been a 1000-percent decrease (or more!) of sulfur compounds... in only five years.

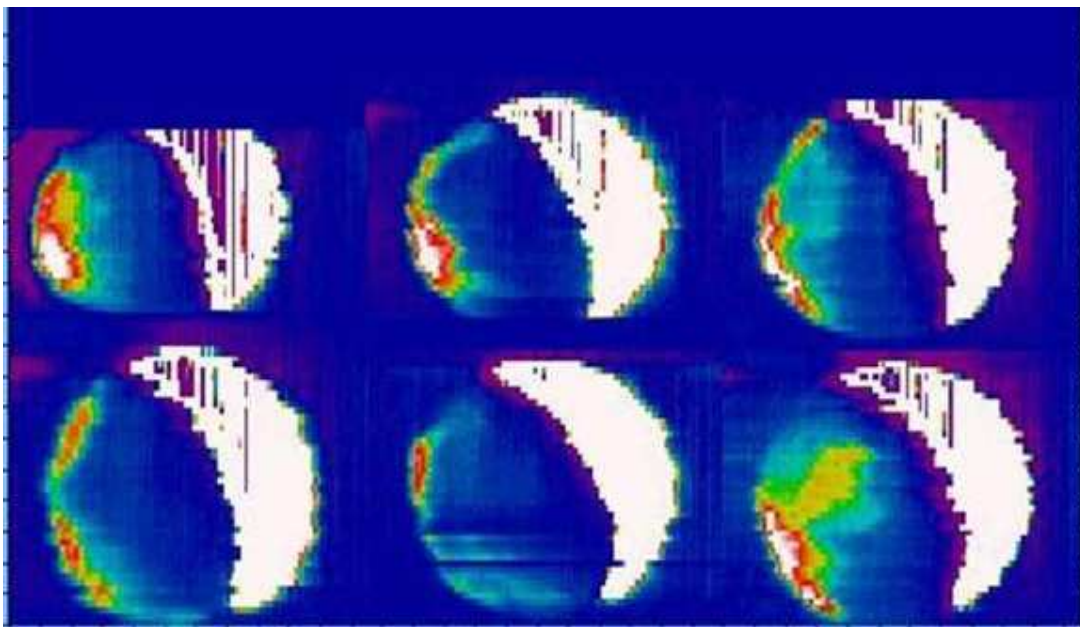
This huge atmospheric “global change” is currently blamed on a hypothetical “giant volcanic eruption,” which released these sulfur compounds all at once into the Venusian atmosphere, sometime just before 1978 (when a fleet of US spacecraft synchronistically arrived to measure the immediate aftereffects). This anomalous sulfur then mysteriously settled out of the Venusian atmosphere at a very rapid rate. Importantly, this “volcanic” model cannot be proven, as this alleged eruption was *never seen* -- either by Earth-based telescopic observations in this timeframe, or by the just-arrived Venus-orbiting spacecraft. Despite this striking lack of actual observational confirmation of such a planet-wide event, NASA simply doesn't suggest any other possible cause for such a massive, mysterious, global transformation of the entire atmosphere of Venus in only *half a decade*... [24]

Even more interestingly, Venus' overall night-side “airglow” brightness increased by a whopping 2500 percent in roughly the same timeframe -- between 1975 and 2001. [25] The new airglow is green in color, which indicates oxygen atoms, and these oxygen emissions are as strong on Venus as they are in Earth's own oxygen-rich aurora (!); so one possible explanation is that there has been a massive *increase* in the oxygen content of Venus' atmosphere. [26]



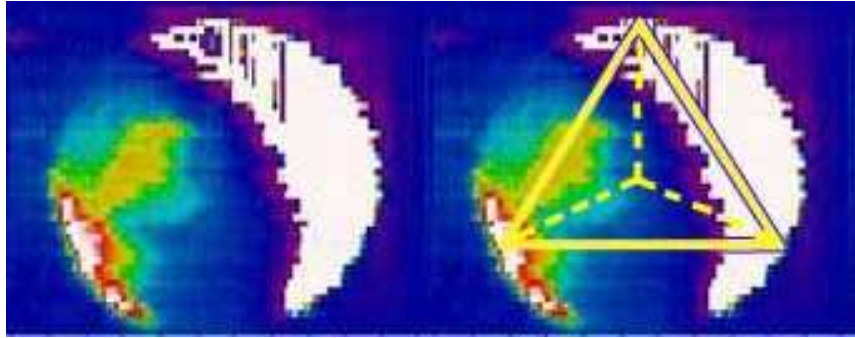
We also have yet to find a single study that mentions this “dramatic” global *decrease* of atmospheric sulfur in 1978-83, while simultaneously mentioning the airglow brightness *increase*, even though the sulfur study was published in *Scientific American* and other mainstream scientific sources -- as there is no current “mainstream model” that can explain both of these changes as being part of one unified phenomenon.

The last of the six Venus images presented here (below), lower-right pane, shows a curiously geometric pattern associated with this overall 2500% airglow brightness increase – a linear feature that reaches almost halfway across the visible atmosphere of the planet. This anomalous “geometry” suggests to us that hyperdimensionally-forced “fluid changes” in the Venusian atmosphere could somehow be associated with this dramatic brightening, based on the HD model as described above and in our previous works.



**Figure 6 - Green nightglow of Venus, ANU 2.3m CASPIR, Sep. 20-26th 2002.**  
(Jeremy Bailey / AAO)URL: <http://www.ausgo.unsw.edu.au/JBailey-talk.ppt>

A careful study of this 2002 image reveals that the geometric atmospheric formation observed in the lower-right pane may be caused by a *tetrahedrally-shaped* “energy field.” A picture is worth a thousand words, and Figure 7 says it all. (*The position and angular relationships of the linear formation mate precisely with the edge of a hypothetical tetrahedron “inscribed into the sphere” of Venus.*)



**Figure 7 – Green nightglow of Venus (L) and Tetrahedral Geometry (R).  
(Bailey/AAO/Wilcock)**

(If you now go back and look at Figure 5, you can see that the unprecedented X40 solar flare is also at a perfect “tetrahedral” point, like the white and red area at the bottom left tip (*node*) of the tetrahedron in this image – only the solar flare is on the right, not the left. Many such “tetrahedral energy node emissions” are visible throughout the solar system, such as the 300-year-long Great Red Spot on Jupiter and the Great Dark Spot on Neptune, and were first brought to public attention through Hoagland’s HD model.)

Planetary scientists cannot explain this remarkable and totally inexplicable recent change in the intrinsic atmospheric brightness of Venus – they honestly admit it’s “a total surprise,” with “no easy explanation.” [27] [28] One NASA/Caltech scientist even went so far as to say that “something weird is going on in the upper atmosphere of Venus,” adding that “the bottom line is that we just don’t know what’s going on.” [29]

Yet another sign of a massive overall increase in the energetic behavior of Venus was revealed in 1997. A tail of charged plasma trailing behind Venus was measured to be *60,000 percent* longer in 1997 – stretching almost to the Earth – than where it was first discovered in the late 1970s. According to one NASA/JPL scientist, this tail is “a really strong signal, and there’s no doubt it’s real.” [30]

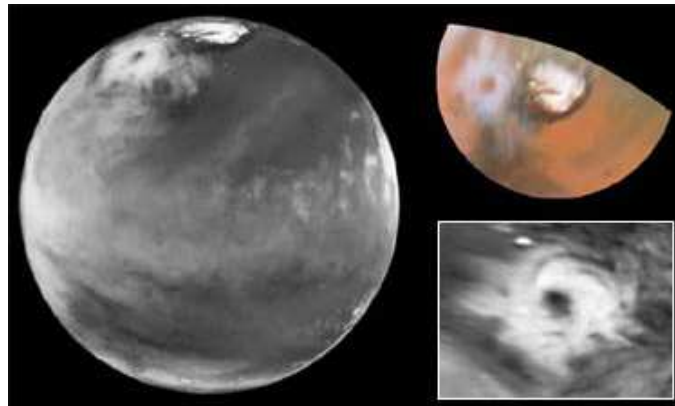


**Figure 8 - Huge Charged Plasma Tail from Venus Extends to Earth (New Scientist, 1997)**

All of these changes in the Venusian environment can be seen as part of a larger, hyperdimensional charge-up affecting the entire solar system -- which will become increasingly clear as we continue with more data.

## Mars

Between the mid-1970s and 1995, Mars developed significant new cloud cover, had an overall reduction in atmospheric dust content, and revealed a “surprise ... abundance” of ozone in its atmosphere. [31] NASA’s Mars Global Surveyor unmanned spacecraft was damaged in 1997 by an unexpected 200% local increase in the density of Mars’ atmosphere. [32] In 1999, a hurricane appeared on Mars for the first time in over 20 years (Figure 9), and was 300% larger than any previously seen. To compare it to the Earth, this hurricane was 400% larger than the state of Texas. [33]



**Figure 9 - Giant Hurricane on Mars (NASA/HST 1999)**

Though many would like to believe that a fast-acting “global superstorm” is science fiction, a powerful global dust storm engulfed the entire planet of Mars in only three months of 2001, as Figure 10 (below) clearly demonstrates. The official Hubble Space Telescope website described this event as the **“biggest global dust storm seen on Mars in several decades,”** with unusually energetic behavior, including a speed of travel across Mars’ equator that was *“quite unheard of in previous experience”*. The description “in several decades” implies that this is the biggest storm in *at least* 40 years, if not more. Especially interesting is a statement describing this as part of an “abrupt onset of global warming in Mars’ thin atmosphere,” the study of which a NASA scientist from Cornell described as “the opportunity of a lifetime.” [34]



**Figure 10 - Planet-Wide Dust Storm on Mars, June 26, 2001 (L) and Sep. 4, 2001 (R). (NASA/HST/WFPC2)**

In 2001, mainstream media awoke to “Global Warming” on Mars, including dramatic year-to-year losses of snow cover at the south pole, with rapid erosion of specific icy features. [35] Interestingly, NASA admitted earlier that an underlying geometric structure was somehow involved in the retreat of the icecap. A hexagon-shaped pattern in the ice can clearly be made out in the middle image from January 1997, and is also visible (though rotated counterclockwise a bit) in the left image from October 1996.





**Figure 11 - Mars' North Polar Cap Retreat, Showing Hexagonal  
"Wave Structure," Oct. 1996- March 1997. (NASA/HST/WFPC2)**

Also interesting is that this Martian geometry has appeared on at least two previous occasions as well, in 1995 and 1972. According to NASA, there is a "marked hexagonal shape of the polar cap at this season, noted previously by HST in 1995 and Mariner 9 in 1972; this may be due to topography [*the shape of Mars' lithospheric crust*], which isn't well known, or to wave structure in the circulation." [36]

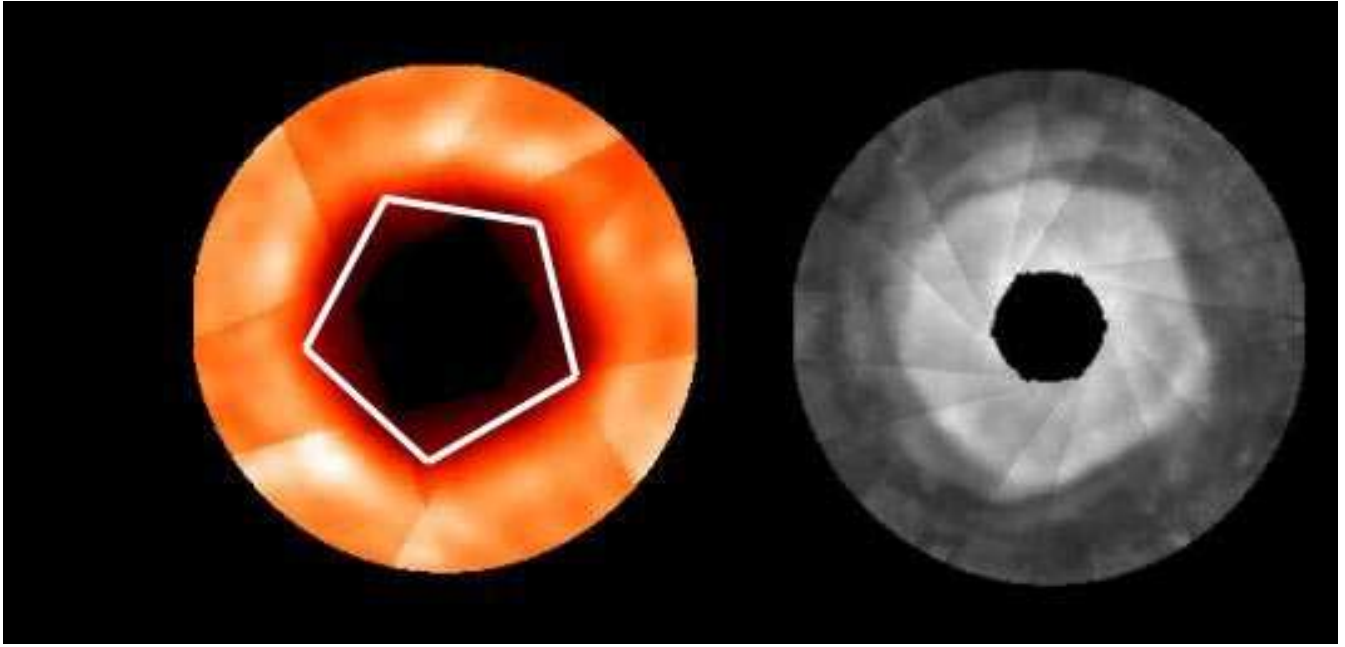
In this case, we wholeheartedly agree with NASA.

There does indeed seem to be a geometric wave structure affecting the retreat of Mars' icecaps as the planet generally heats up. Many scientists are not familiar with three-dimensional wave structures, but they form when any fluid is vibrated. [37] Remember, in the Hyperdimensional Model, the "fluid" that we are looking for is not normally detectable – it is a *hyperdimensional* force that "bleeds through" into our reality via the three-dimensional, massless *aether*... the invisible "fluid" permeating all of space which, in turn, then reorganizes visible structures of matter and energy in this dimension. In this case, the HD transfer path is strong enough to reorganize the "cold" pattern of change in Mars' icecaps along resonance/geometric lines, just as the same HD geometry may be organizing the "hot," rapidly-increasing green oxygen emissions in the Venus' atmosphere.

Overall, Mars satisfies our model quite well. Ozone is up and dust is down, both indicating that increased ionization is taking place – a sign of energetic bleed-through in the HD model. The atmosphere is noticeably cloudier and denser, a massive hurricane and a surprisingly fast-moving planet-wide dust storm have dazzled NASA scientists, and "Global Warming" has been announced from more than one major mainstream Martian study. The retreat of Mars' surface icecaps is seen to be literally shaped by an unseen geometric "wave structure." Again, these changes are not unique to Mars – they are occurring simultaneously throughout the solar system; the formidable data on Jupiter makes this developing trend emphatically apparent.

## **Jupiter**

Equally mysterious geometric effects have been discovered in Jupiter's atmosphere, and reported with little fanfare by NASA. Though the scientists refer to the atmospheric structure in Figure 12 as a "quasi-hexagon," it is also possible within the limitations of the current data to perceive a five-sided pentagon in the Jovian polar cloud structures. What makes this so stunning is that this stable, slowly-rotating feature of Jupiter's northern polar region creates a "sharp temperature drop" within its neat, geometric boundaries, keeping "the polar atmosphere and stratospheric haze isolated from the rest of the atmosphere." (One of us -- Wilcock -- believes it is possible that we are seeing one face of another embedded, resonant 3D geometric shape, known as a "dodecahedron," which is a twelve-sided object, shaped like a soccer ball, where each side is a perfect pentagon.) Using Photoshop, he added in the geometrically-perfect "exposed pentagon" for reference on the left image:



**Figure 12 - Jupiter's Arctic Polar Vortex (NASA/JPL/HST/University of Hawaii 1999) with Added Pentagon on Left (Wilcock 2004)**

NASA discussed this anomalous formation openly, and even mentioned geometry, but only went so far as to suggest that it was a “quasi-hexagonal shape” inside instead of making any mention of its equally possible pentagonal structure. [38]

Remember when we were discussing the mysterious appearance of ice at the polar regions of sun-baked Mercury? At that time, we hinted that **there might be a hyperdimensional “shielding effect” that is protecting this region from the natural heat of the sun,** introducing its own mysterious “refrigerator” mechanism. In Wilcock’s interpretation of the Jovian clouds, the pentagonal “wave geometry” seems to be another signature of equally anomalous cooling in the Jovian polar regions, whereas we saw the already low-temperature polar areas of Mars contained by a *hexagonal* surface pattern. It seems reasonable to conclude from this growing evidence that a planet’s surface or atmospheric heating pattern can be more affected, at times, by its resonant *internal* aether “geometry,” than by direct external solar radiation.

If Jupiter is indeed experiencing a hyperdimensional “charge-up,” in the HD model we might expect to see a literal vortex phenomenon appear at some time near one of the nodes (points) of this northern pentagon. A movie made from about 1,200 images of Jupiter taken by NASA’s Cassini spacecraft in late 2000 reveals exactly this – a dark vortex as large as Jupiter’s Great Red Spot, at the same latitude (60 degrees N) as the pentagon’s points! This node developed a bright spot in the center and then elongated along a straight-line pattern, consistent in its size and angle with the pentagon, with yet another parallel straight line appearing closer to Jupiter’s pole. A Space Daily article mentions this as “unexpectedly persistent polar weather patterns on the giant planet,” where “the movie shows that the small spots last a long time and move in organized patterns.” [39] No comment is made, however, on how the lines that are formed are anomalously *straight and parallel* -- rather than following the usual curved paths of typical cloud movements (See Figure 9.)



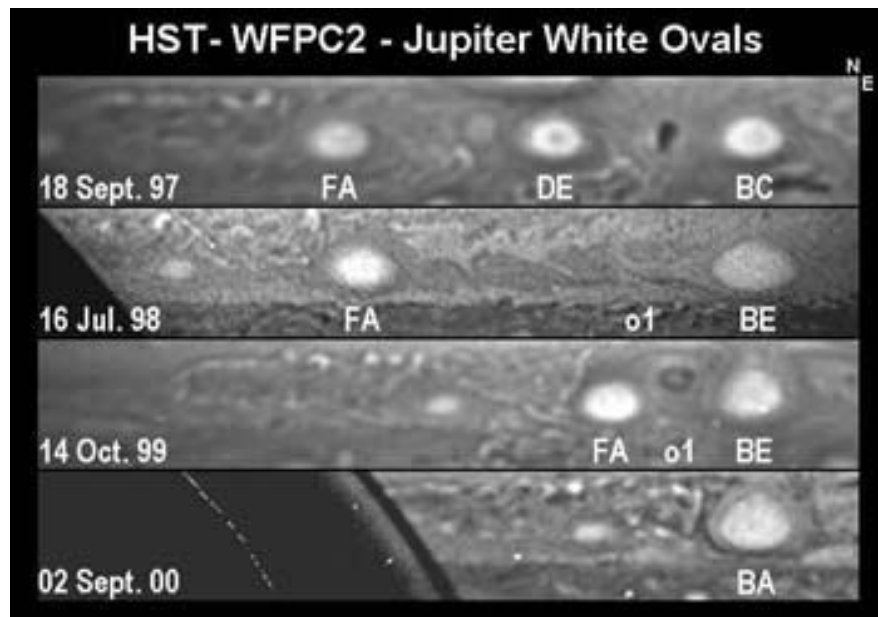
**Figure 13 – Straight-line formations in Jupiter’s northern hemisphere.  
(NASA/JPL/SwRI, 2002)**

The NASA text for the movie itself describes “the birth and motion of a dark vortex wider than Earth,” where “a dark patch appears and within two weeks becomes a well-defined oval about the same size and shape as Jupiter’s southern hemisphere Great Red Spot. While this dark vortex is nestled inside the auroral oval, its outer edge begins to circulate in a clockwise direction as it simultaneously develops a small, brighter, inner core. It eventually moves out of the auroral region and deforms by flattening in latitude and growing in longitude. Near the end of the movie, a second, smaller, dark oval appears nearer to the pole and deforms in the wind shear.” [40]

A published study by Dr. Carolyn Porco and others on this event noted, “Other evidence suggest that large oval formation in the polar regions is a recurring phenomenon ... which may be quasi-periodic, or rare but recurring, and triggered by an unusual auroral event... However, **the evolution of the dark oval is currently unexplained.**” [41] [emphasis added]

So, we have the emergence of a giant vortex phenomenon, showing clear signs of consistent geometry, in a region that NASA already admitted as hosting a “quasi-hexagonal”, i.e. pentagonal, shape in the upper-level clouds. Though some may clearly wish to argue that this is foolish “pattern seeking,” once again we have clear evidence of an increase in Jupiter’s energetic atmospheric activity, occurring along internally consistent, *geometrically-defined* (resonant “standing wave”) patterns...

We are not the only authors to suggest that changes in Jupiter’s vortex phenomena could be related to an overall energetic increase. A major new study on Jupiter actually made it into the April 22, 2004 edition of USA TODAY, announcing the surprise *disappearance* of several major oval formations in Jupiter’s atmosphere (Figure 14) -- between September 1997 and September 2000. The study demonstrated that without these vortices in place, internal Jovian heat will *not* be released as efficiently into space as before... and Jupiter will likely experience substantial “global warming” within the next 10 years – a whopping projected temperature increase of 18 degrees Fahrenheit, or 10C. [42]

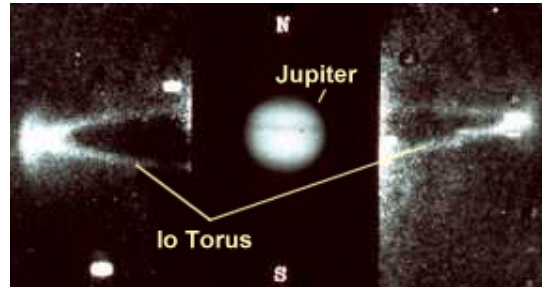


**Figure 14 - Disappearance of white vortexes in Jupiter's middle latitudes.  
(NASA/HST 2004)**

The planetary scientist behind this study also notes that the Great Red Spot has changed from its traditional red to “something more like salmon,” and believes that this color change may also be due to an overall increase in Jupiter’s temperature. [43] These changes are theorized to be part of a 70-year cycle, which is believed to have started when the three largest ovals first appeared in 1939. What we see now may well be just the beginning. The disappearance of the vortices between September 1997 and September 2000 may be directly related to the appearance of the even-larger polar vortex in Jupiter’s northern hemisphere just days later, which was filmed from October 1<sup>st</sup> to December 31<sup>st</sup> 2000. (Figure 13)

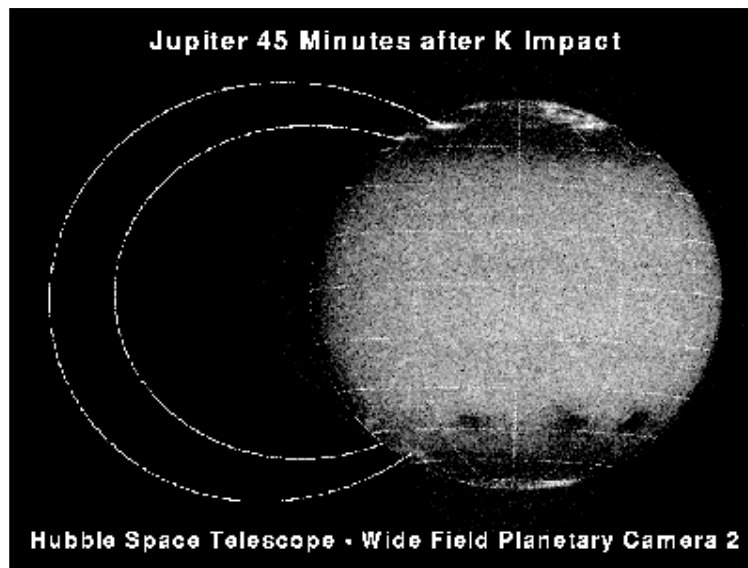
The shift in vortex activity from the middle latitudes of Jupiter to the polar latitudes is just one of a variety of clearly measurable changes that are taking place in the largest known planet of the solar system. Figure 15 shows a tube-shaped cloud of hot plasma that was first discovered surrounding Jupiter in 1979. NASA’s Pioneer 10 and 11 probes detected nothing of the sort in 1973-74, which means that this *major* Jovian system feature, again, emerged *in only five years’ time*. [44]





**Figure 15 - Plasma tube (torus) in the orbit of Jupiter's moon Io. (NASA/HST)**

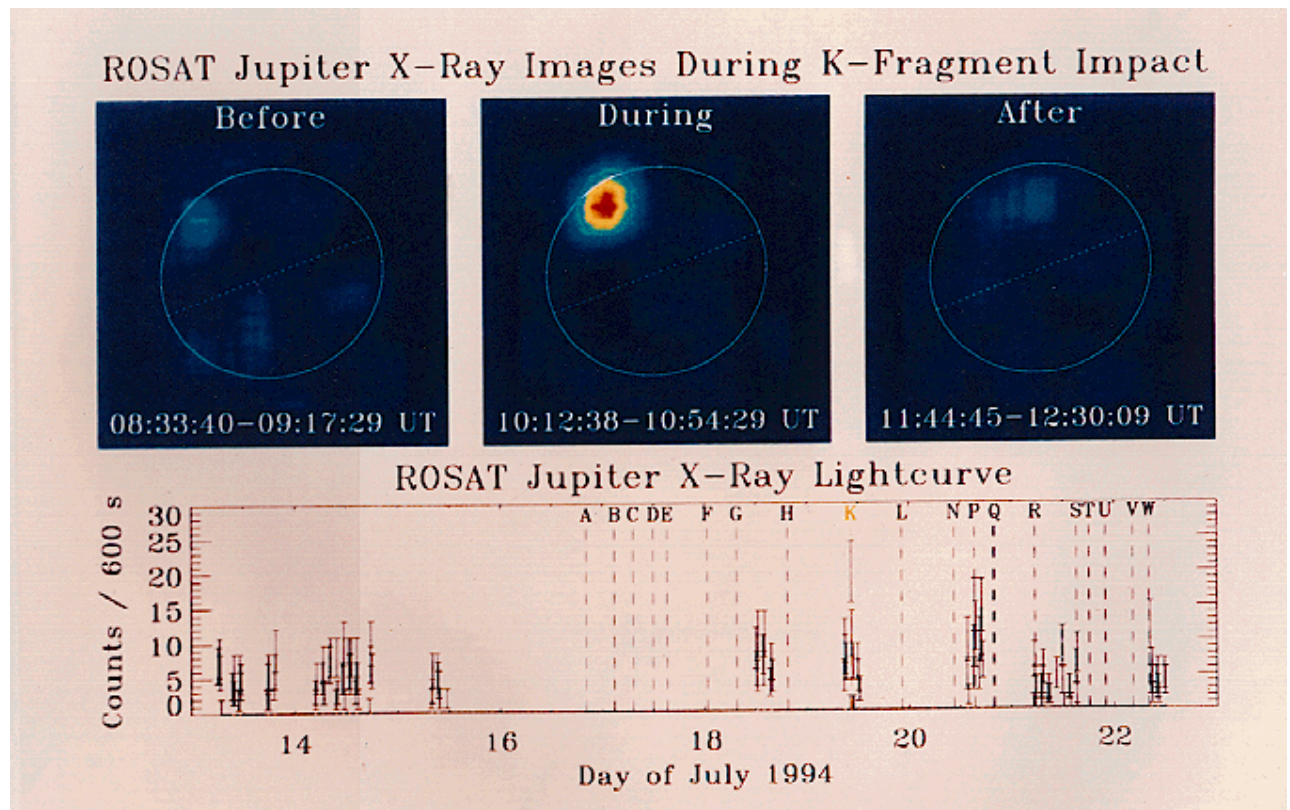
If we remember that this “tube” did not exist at all as of 1974, this next fact again makes it crystal clear that major energy changes are occurring in and around Jupiter. In 1994, the multiple fragments of comet Shoemaker-Levy 9 slammed into Jupiter, causing quite a celestial spectacle -- as many dark, atmospheric “holes” were created by the extraordinarily energetic impact effects in the upper Jovian atmosphere. With the impact of the “K” fragment, a truly amazing thing happened – two arcs of charged plasma burst out of the planet and maintained a visible structure for about an hour. Though it seems hard to believe (and admittedly it is a poor-resolution image), Figure 16 is exactly as it appears on the official JPL website [45]:



**Figure 16 – Auroral emission arcs from Jupiter after SL-9 “K” impact, July 19, 1994. (NASA/HST/WFPC2)**

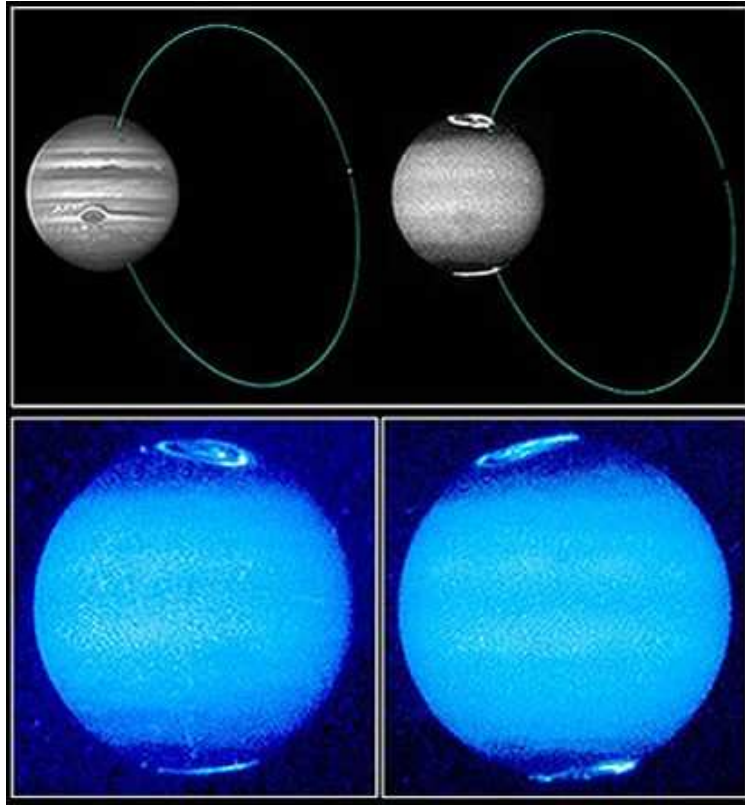
Even more interestingly, the JPL report states that “Based on comparison with ROSAT satellite X-ray images of Jupiter also taken at time of the K impact, astronomers know that the northern disturbance was brightest near the time of the K impact, and then faded. If HST images had been taken during the K impact, they would likely have shown far brighter arcs than those observed 45 min. later [in the image].” “Far brighter” is quite an unsubtle

statement for NASA to make. Figure 17 shows us the ROSAT image that the JPL report is referring to when making this bold statement.



**Figure 17 – ROSAT X-ray images of energy emissions from Jupiter during “K” impact of Comet SL9. (NASA/JPL 1994)**

The way the article is written indicates clearly that these arcs (Figure 16) were a relatively new phenomenon, never before seen with such intensity, which appear to have been first observed by the Hubble Space Telescope in May of 1994. However, a single ring of this type became a *stable, ongoing* feature of Jupiter after the July 19, 1994 impact. It was first detected earlier that May, and filmed over time, with far better resolution, between May 1994 and September 1995. [46] This ring emanates from the polar regions of Jupiter over to the polar regions of the closest moon Io, linking the two together like beads on a bracelet. This tube of energy is equal in its strength to all the manmade power on Earth. Surprisingly, this ring exerts a strong enough influence on Jupiter’s polar regions that it actually bends the cloud flow towards Io. We have not altered this image in any way – what you see is exactly as it appeared on the Hubble website [47]:



**Figure 18 - Jupiter's Aurorae and their Ring-Shaped Formation with Io.  
(NASA/HST 1995)**

Another interesting point about this energy ring is that NASA now knows that **electrons are flowing through it in both directions** – north to south and south to north. NASA scientists call them “bi-directional electrons.” Conventional models have no explanation for this phenomenon, but it fits perfectly with Wilcock’s basic model as expressed in his third volume, *The Divine Cosmos*, once we understand the importance of counter-rotating energy fields in all physics. (<http://ascension2000.com/DivineCosmos>)

In 1995, the Galileo probe arrived at Jupiter, and began measuring a variety of changes. Jupiter’s atmosphere was discovered by NASA scientists to be hundreds of degrees hotter than anticipated. [48] The amount of heavy elements (such as oxygen) in Jupiter’s atmosphere decreased by a stunning 10% between 1979 and 1995, which is equivalent to 20 Earth-masses of oxygen “embarrassingly” disappearing in 16 years. [49] [50] Radiation emissions from Jupiter simultaneously *increased* by about 25% between 1979 and 1995. [51]

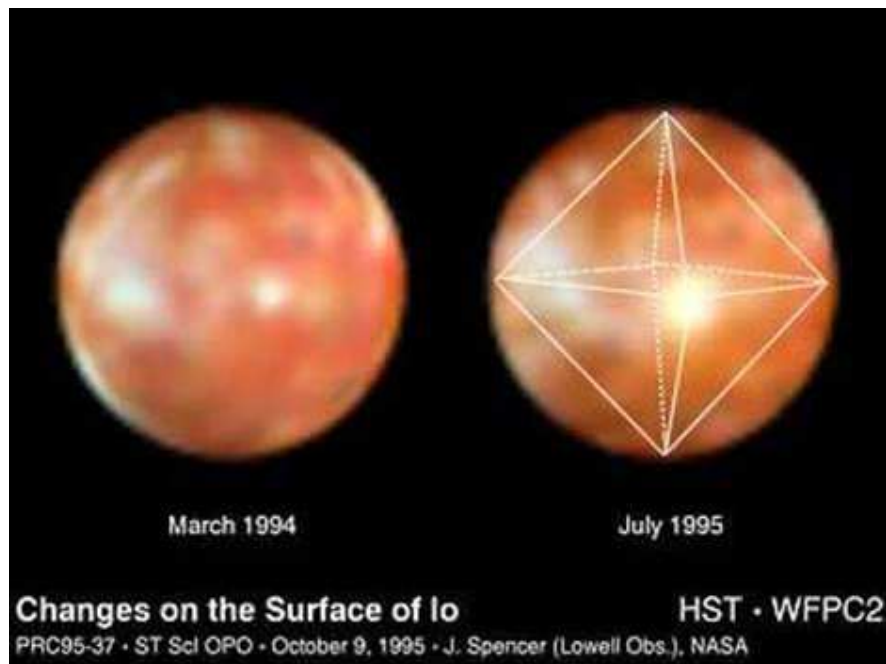
Jupiter’s closest moon is Io, the most volcanically active satellite in the solar system. Let’s not forget that the impact of Comet SL-9 triggered a huge energetic increase in Jupiter, beginning on July 19, 1994 with the “K” impact and the resulting “auroral emission arcs,” (Figure 17), one of which streamed into the north and south poles of Io and revealed itself to be a stable, ongoing feature thereafter. One year later, in July 1995, Io had developed a huge, bright, 200-mile-wide feature... not at the *polar regions* where the bright arc of energy was entering, but directly along the *equator*! This was a more dramatic change than any seen in the previous 15 years. [52]



**Figure 19 - Unexplained 200-mile-wide “Hotspot” on Io Emerges over 16-Month Period (NASA/HST/WFPC2, 1995)**

This circular formation of sudden, inexplicable brightness fits perfectly with the HD model – in this case, showing us the “pure” geometry of a higher energy “octahedral resonance pattern” emerging at one of its points along the equator of Io. The HD energy entered into the moon in the polar regions, and then through the angular momentum of the moon’s rotation, burst out at the equator at a geometrically-defined point, similar to a lawn sprinkler throwing off water. [53]





**Figure 20 - Octahedral Geometry in 1994-95 Io Brightness Increase. (Wilcock, 2004 with NASA/HST, 1995)**

NASA's Hubble Site said that up until this bright feature emerged at the equator, "Io's surface had undergone only subtle changes since it was last seen close-up by the Voyager 2 probe in 1979." [54] However, just one year later, JPL said that "the changes we are seeing on Io are dramatic... The colors of material on the ground and their distribution has changed substantially since the Voyager flybys of 1979." [55] Did this change happen in one year, or are the Hubble and JPL scientists simply interpreting the data in different ways? This "dramatic" color change on Io could indicate that new types of matter are being released from the volcanoes themselves, in just 17 years.

Even more interestingly, NASA actually admitted in 2000 that Io behaves "as though it were a fluid," [56] which we believe is partly responsible for the emergence of otherwise-unexplained geometric effects. As a further support to the fluid concept, "In a 42-hour span, every point on Io goes from high tide to low tide, with its rocky surface rising and falling by up to 300 feet (90 meters) or more... This constant tidal motion is what triggers the endless volcanoes." [57]

Another suggestion of the hyperdimensional geometry of the octahedron at work on Io was spotted in 1997. As can be easily seen in detailed images of Io's surface, the volcano Prometheus sits directly on the equator, suggesting (in the HD model) that it is caused by an internal "octahedral" geometric wave-- similar to how Mars, Venus and Earth all show substantial volcanic activity at the 19.5-degree "tetrahedral" latitude. According to NASA, an "intriguing difference" appears in Prometheus between 1979 and 1997: the volcano is "now erupting from a position about 75 kilometers (46.5 miles) west from where the hot spot resided in 1979." [58]



Volcanoes are not supposed to get up and gallop 46.5 miles along the surface of a satellite in conventional models, (!), but if Prometheus is a sign of octahedral vortex activity, it is possible that *the geometric wave is slowly rotating within Io itself*. The Hawaiian Islands on Earth, clustering in a long chain at the critical 19.5-degree latitude, may be another example of such changes... except that with the Earth's harder, cooler crust, the old volcanoes remain in place as the vortex slowly travels.

The comet impact, energy ring and subsequent geometric “pressure release” of Io in 1995, as well as the volcanic anomalies, are only one aspect of a larger change on and around Io... though this chain of events may have signaled an important turning point in Io's energetic transformation. Io's ionosphere became *1000% higher* between 1973 and 1996, from 30-60 miles to 555 miles in height. [59]

Io's *surface* became over 200% hotter between 1979 and 1998, sporting a temperature over three times hotter than the sunlit surface of Mercury – and according to NASA, “Scientists don't yet know how to explain what is happening on Io.” [60] In 2000, NASA also admitted that “most of the heat [is coming] from Io itself, rather than absorbed sunshine.” [61] New colors [spectral evidence of new ions in the Io environment, not present before... ] were seen in Io's aurorae in 1998. [62] Yet additional new colors were discovered in 2001. [63][64]

In early January 2001, Io had an inexplicable “bright spot” emerge in ultraviolet wavelengths during an eruption of its volcano Pele, which sits at about 19.5 degrees south latitude. According to NASA, “silicate lava cannot be hot enough to explain a bright spot in the ultraviolet, so the origin of this bright spot is a mystery.” [65] This same article also presents “the first image ever acquired of an active [volcanic] plume over a polar region of Io.” [66] (See Figure 21.) “Scientists were astounded to discover so large a plume so near the pole, because all active plumes previously detected on Io have been over equatorial regions and no others have approached Pele's in size.” [67] Volcanoes in the polar regions make no sense to mainstream scientists, but are an obvious consequence of the HD model, since there are geometrically-defined vortices there.

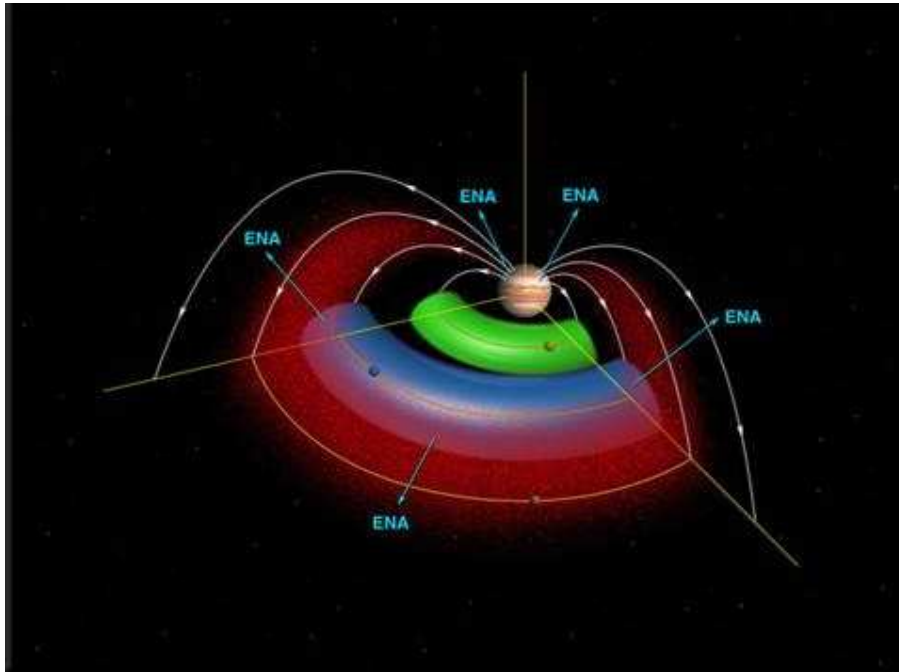
On Aug. 6, 2001, a “previously undiscovered and still unnamed volcano” (read: brand new), released a 310-mile-high plume, “making this the largest plume ever detected on Io.” [68] (See Figure 21.) How, in conventional models, would a brand-new volcano suddenly emerge on the surface of a satellite and then release *the highest plume of gas and dust ever seen there?*



**Figure 21 – New Volcano on Io Releases Largest Plume Ever Seen, Aug. 2001 (NASA)**

The roughly 60-degrees-north geometric position of the new volcano strongly suggests that it could be caused by the same pentagonal (*dodecahedral*) polar geometry that we see in Jupiter's northern hemisphere... a geometry that had fired into action beginning in October 2000, just after the white vortices finished vanishing from the middle of the planet in September 2000. Perhaps it took a little less than one year for this hyperdimensional shift of Jupiter to be "gated" over to Io, causing a very similar energetic effect there – the most massive volcanic eruption ever observed.

As we saw in Figure 15, a donut-shaped tube of glowing plasma energy fills the entire path of Io's orbit. Scientists think this tube is caused by charged particles spewing from Io's volcanoes. The charged particles in this tube became 50% denser between 1979 and 1995. [69] The overall density of the tube increased by 200% between 1979 and 1995, [70] and as we saw earlier, the tube itself *did not exist* prior to 1979. A 'cold' portion of the tube separated itself out and became significantly brighter between 1999 and 2000. This most recent change led NASA scientists to conclude that "sufficient data are probably not available to determine the cause or effect of the torus (plasma tube) variability." [71] This is a very polite way of saying, "We just don't know what the hell, scientifically, is going on!"



**Figure 22 - Io plasma torus (green) and newly discovered Europa plasma torus (blue) surrounding Jupiter. (NASA 2003)**

Confounding the mainstream models even further, another “large and surprisingly dense” plasma tube was discovered in 2003 (Figure 22), this time, sharing the orbit of the moon Europa. In this case, there are *no* volcanoes on Europa’s surface that could account for where the charged particles in the tube are coming from, despite the fact that conventional Jovian system models insist that volcanoes *have* to be the main source of the new plasma. [72] Further underlining these dramatic changes, as of about 2003, Europa’s aurora was observed to have “a much brighter region” than it was “expected” to have, based on a 1998 model (Figure 22). Again, the picture (below) says it all. [73]

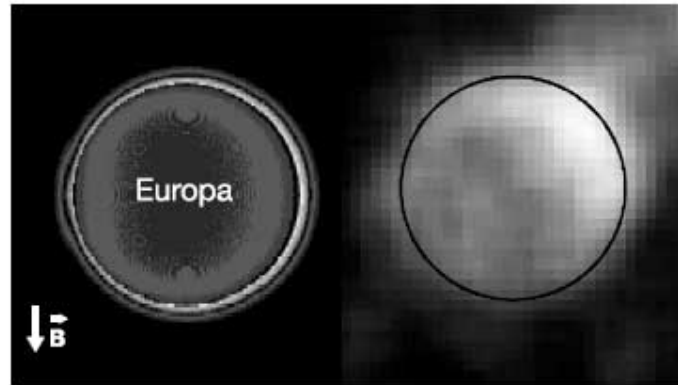
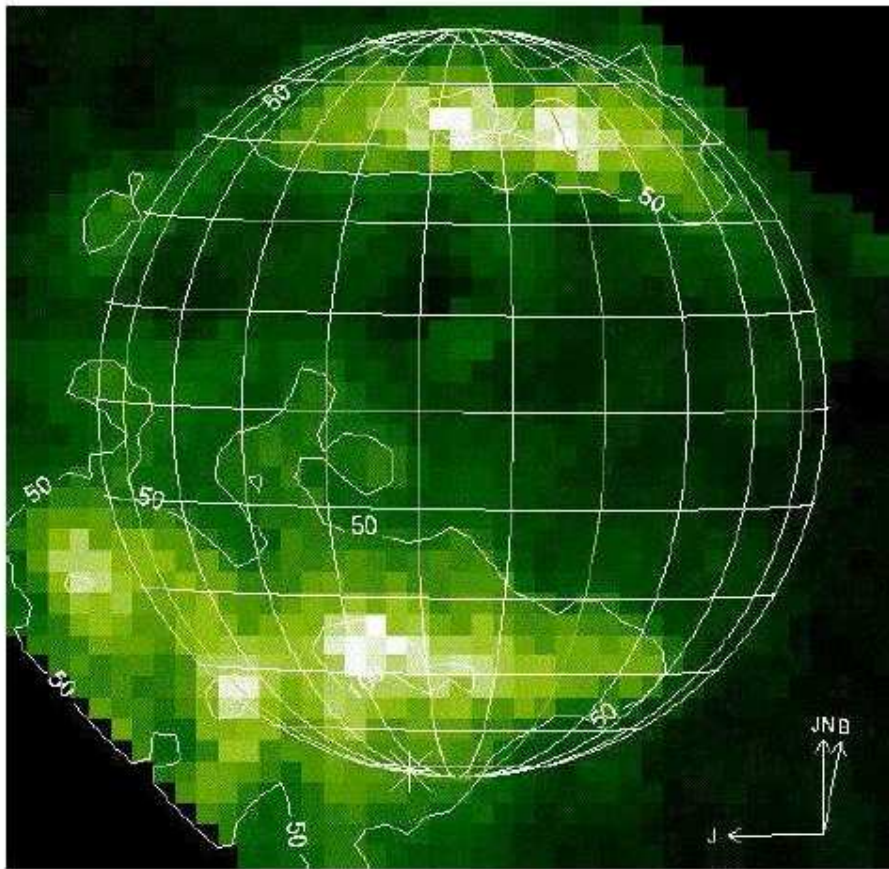


Figure 19.10. Brightness from Saur *et al.* (1998) model (left) compared with recent HST/STIS OI 1356 image of Europa.

**Figure 23 - Difference between theoretical model of Europa's brightness with actual HST observations. (NASA/HST/McGrath et al. 2004)**

Jupiter's third moon, Ganymede, became over 200% brighter in its aurora between 1979 and the mid-1990s, and certain areas are now up to 700% brighter than any before seen (Figure 24). [74] This increase in brightness may be caused by an observed 1000% increase in the density of Ganymede's atmosphere since 1979. [75] Ganymede also has its own magnetic field, in defiance of all conventional expectations, leading one NASA scientist to say, "Either something's wrong with our [internal dynamo] theory, or our understanding of Ganymede's history." [76]



**Figure 19.12.** Ganymede auroral emission from oxygen (OI 1356 Å) observed with HST. Contours illustrate the observed brightness in Rayleighs.

**Figure 24 – Green Oxygen Aurora Brightness on Ganymede  
(NASA/HST/McGrath et al. 2004)**

At the orbit of Jupiter's fourth major moon, Callisto, electron density measurements made by the Galileo spacecraft found 1000 times more electrons per cubic kilometer than expected from Jupiter's own magnetosphere at that great distance. [77] This strongly indicates some type of material (probably water) is currently being liberated from Callisto, despite no observations of associated volcanic activity, et cetera. When ionized by Jupiter's own radiation belts, this material would release excess electrons in direct proximity to Callisto's orbit -- another, albeit indirect, indication of enhanced energy being deposited inside Callisto from "somewhere."

Furthermore, when Galileo was on its way towards Callisto on August 12, 1999, before making its closest approach two days later, it encountered what NASA called an "unexpected whopper dose of radiation." One scientist said, "We anticipated the spacecraft's star scanner would detect about 300 to 400 pulse counts of radiation, so imagine our surprise when the instruments showed Galileo had flown through 1,400 pulse counts!... Then again, that's why



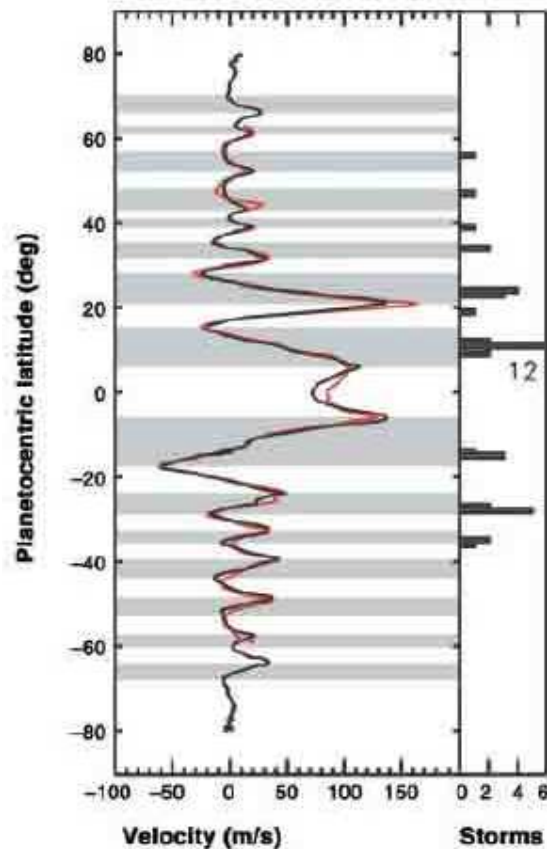
we're exploring Jupiter and its moons -- to discover these unusual phenomena." [78] The radiation caused four different spacecraft faults that were able to be handled by onboard software, which included disabling one backup spin detector that had been damaged in the event.

This unexpected radiation blast "took place one week after the largest heat output since 1986 from Jupiter's volcanic moon Io." It may be significant that all these events clustered around the Grand Cross astrological event of August 1999, where many of the planets were in hyperdimensionally dissonant 90 and 180-degree angles to each other.

As we head even farther away from the center of Jupiter, a new "dust ring" was discovered encircling the planet in 1998 -- and, in defiance of all expected celestial mechanics, its particles orbit in the *opposite direction* to Jupiter's own rotation, and the orbital direction of its major satellites. [79] Again, counter-rotating fields are a basic aspect of Wilcock's hyperdimensional model. [80]

In the course of our research for this article, we dug up two other Jupiter anomalies that support Hoagland's hyperdimensional model, based on the geometry of the tetrahedron inside a sphere, as seen in Figures 3 and 4. We have put these anomalies at the end of this section since they do not precisely show a *change* in Jupiter's energetic activity, but simply demonstrate the underlying "new" physics at work.

First, in an article from *Science* magazine in March 2003, a diagram is shown of the velocities of Jupiter's cloud bands, based on latitude. The fastest and slowest cloud speeds on Jupiter occur at *exactly* 19.5 degrees north and south, respectively. These speed anomalies have shown remarkable persistence -- they were there when Voyager 2 visited Jupiter in 1979, and the latest Cassini data of 2003 continue to show the same phenomena. According to the NASA scientist working on this, "The stability of Jupiter's zonal winds, given the turbulent nature of its cloud patterns, is a remarkable feature of its atmosphere." [81]



**Figure 25 - Graph of Highest and Lowest Wind Speeds on Jupiter, Showing Activity at “Hyperdimensional” Latitudes (Porco et al. 2003)**

The “hyperdimensional bleed-through” geometry of the tetrahedron appears to be creating the Great Red Spot in Jupiter’s southern hemisphere at 19.5 degrees S and slowing down the speed of the cloud rotations at that latitude. If this formation does truly exist, then it would also come to a point at the *geometric north pole* of Jupiter. Interestingly, a recent study has found that in approximately 45-minute intervals, flashes of X-ray activity are emerging from the geometric north pole of Jupiter... *even though Jupiter’s aurora is not centered on the pole*, as we can see in Figure 26. The energy released by this point is equivalent to a colossal *gigawatt* pulse of energy rocketing through the solar system. [82]

A NASA article discussing this phenomenon says the following: ““We weren’t surprised to find x-rays coming from Jupiter,” he [Dr. Randy Gladstone] continued. Other observatories had done that years ago. The surprise is what Chandra has revealed for the very first time: the location of the beacon -- surprisingly close the planet’s pole -- and the regular way it pulses...”

*“The 45-minute pulsations are very mysterious,”* adds Elsner. They’re not perfectly regular like a signal from E.T. might be; the period drifts back and forth by a few percent. *“This is a natural process,”* he adds, ***“we just don’t know what it is...”*** (emphasis added)



**Figure 26 - Composite Image – Jupiter, Glowing Auroral Ring (Blue) and Polar X-Rays (Red) (NASA 2002)**

With Jupiter, the geometric fingerprints of hyperdimensional energy are very clear. In the image on the right in Figure 25, we can see that *the fine lines of the X-rays (in false-color red) actually look like the top of a tetrahedron*, other than the large vertical straight-lined area of extra brightness to the left. The large circular bright area to the *right* would be the top of the tetrahedron, and two lines are seen to extend downward from it in a triangular fashion, maintaining a 60-degree angle from each other as we would expect.

This X-ray phenomenon occurs **15 times for every rotation of Jupiter** on its axis. More research will probably provide an answer to what is causing the cycle, (*we do have ideas, such as varying “hyperdimensional” angles caused by the orbits of the four main moons of Jupiter,*) but the area where the X-rays are emanating from is clearly *geometric*... rather than being in alignment with the center of Jupiter’s electromagnetic aurora.

So, to summarize and review what we have just learned, in just the last 30 years overall, Jupiter and its satellites have undergone a remarkable series of energetic and hyperdimensional changes. Vortexes are disappearing from Jupiter’s middle latitudes and reappearing at geometrically-defined points in the polar regions. A plasma tube in the orbit of the moon Io has shown remarkable increases in brightness and density. Jupiter’s atmosphere has experienced huge decreases in heavy elements and increases in helium, and overall radiation emissions have increased.

A comet impact caused huge, bright arcs to surge out of Jupiter, one of which connected with Io and remained stable. The HD energy streaming in at the north and south pole was redirected to a perfectly geometric, single 200-mile-wide point at the equator. New colors were seen on Io’s surface and the largest volcano ever seen appeared for the first time less than a year later. Io’s ionosphere became much higher, the surface became hotter, and new colors were seen in the aurora. Europa was also found to have a mysterious tube of energy in its orbital path, and was recently observed to be far brighter than expected. Ganymede’s aurora also brightened substantially, possibly indicating an atmospheric density increase.

Callisto’s aurora was fully 1000 times stronger than expected, and nearby radiation levels were as much as 467% higher than expected. Another giant tube of energy was found beyond the orbit of Callisto, and was inexplicably counter-rotating.

The slowest cloud speeds are at 19.5 degrees south latitude, and the fastest cloud speeds are at 19.5 degrees north, in precise alignment with the Hyperdimensional Model. A whopping gigawatt-sized X-ray pulse emerges from the exact geometric north pole of Jupiter every 45

minutes, showing us the top of the same tetrahedral energy field that emerges as the Great Red Spot... which is large enough to hold two Earths.

Taken together, these findings demonstrate the remarkable geometric properties of Jupiter, and an undeniable evolution in the basic nature of its temperature, composition and energetic behavior as a system. As we move on into Part Three of this Report, we will discover that *every other remaining planet... Saturn... Uranus... Neptune... Pluto... Earth...* is showing us similar types of changes, thus truly demonstrating that we are dealing with an *interplanetary* transformation. We will also see evidence from studies of Earth that show how the changes we experience here are directly correlated with changes in the greater solar system.

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[14] "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.

"This trend is important because, if sustained over many decades, it could cause significant climate change," said Richard Wilson, a researcher affiliated with NASA's Goddard Institute for Space Studies and Columbia University's Earth Institute, New York."

NASA Goddard Space Flight Center. *NASA Study Finds Increasing Solar Trend that can Change Climate*. March 20, 2003. URL: <http://www.gsfc.nasa.gov/topstory/2003/0313irradiance.html>

[15] "...according to Michael Lockwood and colleagues at the Rutherford Appleton Laboratory in England... Analyzing instrument measurements taken since 1868, they conclude that the sun's exterior magnetic field has increased by 230 percent since 1901 and by 40 percent since 1964."

Supplee, Curt. *Sun Studies May Shed Light on Global Warming*. Washington Post, Monday, Oct. 9, 2000, pg. A13. URL: <http://www.washingtonpost.com/wp-dyn/articles/A35885-2000Oct8.html>

[16] "A team of researchers led by George Gloeckler, a physics professor at the University of Maryland, published a paper in the Jan. 15, 1999 issue of *Geophysical Research Letters (GRL)* about the unusual composition of the May 2-3 (1998) coronal mass ejection (CME) – a bubble of gas and magnetic field lines that the sun ejects over the course of several hours... Coronal mass ejections carry plasma, or ionized gas, away from the sun at speeds approaching 2,000 kilometers per second...

"We were completely surprised by the highly unusual and unexpected composition in this CME," Gloeckler says. His team observed, for example, that the density of  $4\text{He}^+$  [a form of charged helium] was almost as high as the density of  $4\text{He}^{++}$  for several hours. "Such large  $4\text{He}^+/4\text{He}^{++}$  ratios, persisting for hours, have *never been observed in the solar wind before*," they write. They also observed high increases of helium and heavier ions in the CME plasma. The unusual composition of the CME lasted an exceptionally long time, they write... "This is certainly not an average solar

wind but an anomalous situation,” Gloeckler says. “Yet such anomalous findings often lead to deeper understandings of physical processes.”

Bartlett, Kristina. *ACEing the sun*. American Geophysical Union / Geotimes News Notes, April 1999. URL: <http://www.geotimes.org/apr99/newsnotes.html>

[17] “Craig DeForest, a solar physicist at the Southwest Research Institute, said... “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... “That estimate may even be conservative,” he said.”

Britt, Robert Roy. *Solar super-flare amazes scientists*. Space.com / MSNBC.com, Nov. 6, 2003. URL: <http://www.msnbc.com/news/984388.asp?cp1=1>

[18] Dr Paal Brekke, deputy project scientist for the Solar Heliospheric Observatory (SOHO) Sun-monitoring satellite, told BBC News Online... “I think the last week will go into the history books as one of the most dramatic solar activity periods we have seen in modern times... As far as I know there has been nothing like this before.”

Whitehouse, David Ph.D. *What is Happening to the Sun?* BBC News Online, Tuesday, November 4, 2003. URL: <http://news.bbc.co.uk/2/hi/science/nature/3238961.stm>

[19] “Ilya Usoskin, a geophysicist who worked with colleagues from the University of Oulu in Finland and the Max Planck Institute for Aeronomy in Katlenburg-Lindau, Germany, has found that there have been more sunspots since the 1940s than for the past 1150 years.

Sunspot observations stretch back to the early 17th century, when the telescope was invented. To extend the data farther back in time, Usoskin's team used a physical model to calculate past sunspot numbers from levels of a radioactive isotope preserved in ice cores taken from Greenland and Antarctica...

Mike Lockwood, from the UK's Rutherford Appleton Laboratory near Oxford...told New Scientist that when he saw the data converted to sunspot numbers he thought, “why the hell didn't I do this?” It makes the conclusion very stark, he says. “We are living with a very unusual sun at the moment.”

Hogan, Jenny. *Sun More Active than for a Millennium*. New Scientist, November 2, 2003. URL: <http://www.newscientist.com/news/news.jsp?id=ns99994321>

[20] “Mercury would seem to be one of the least likely places in the solar system to find ice. The closest planet to the Sun has temperatures which can reach over 700 K... Nonetheless, Earth-based radar imaging of Mercury has revealed areas of high radar reflectivity near the north and south poles, which could be indicative of the presence of ice in these regions (1-3). There appear to be dozens of these areas with generally circular shapes. Presumably, the ice is located within permanently shadowed craters near the poles, where it may be cold enough for ice to exist over long periods of time...



Water ice on the surface of Mercury is exposed directly to vacuum, and will rapidly sublime and escape into space unless it is kept cold at all times. This implies that the ice can never be exposed to direct sunlight. The only locations on the surface of Mercury where this is possible would seem to be near the poles, where the floors of some craters might be deep enough to afford permanent shading. Whether such permanently shadowed craters exist on Mercury is still problematic...

The Surface Lander, however, will survive only one week in the harsher conditions on the planet. It will land near a pole..."

Jong, Diana. *Mysteries of Mercury: New Search for Heat and Ice*. Space.com, Dec. 31, 2002. URL:

[http://www.space.com/scienceastronomy/mysteries\\_mercury\\_021231.html](http://www.space.com/scienceastronomy/mysteries_mercury_021231.html)

[21] Woodfill, Jerry. *Mercury*. NASA/Johnson Space Center Space Educators' Handbook, Feb. 8, 2000. URL: <http://vesuvius.jsc.nasa.gov/er/seh/mercury.html>

[22] "(In 1974-75,) Mariner 10 revealed several intriguing features of Mercury, and not all are superficial. Beneath its surface, Mercury is hiding a core that seems to be denser than Earth's, unexpected given the planet's size (about the same as the Moon). Also unexpectedly, Mercury has a relatively strong magnetic field..."

"What we need to know is how particularly the planet is capable of evolving so close to the Sun," says Marcello Coradini, ESA's coordinator for solar system missions."

Jong, Diana. *Mysteries of Mercury: New Search for Heat and Ice*. Space.com, Dec. 31, 2002. URL:

[http://www.space.com/scienceastronomy/mysteries\\_mercury\\_021231.html](http://www.space.com/scienceastronomy/mysteries_mercury_021231.html)

[23] "'Our model shows Venus has changed dynamically in the recent past," said Bullock. "Since Venus and Earth have a number of similarities, there are implications here for our own future." An article by Bullock and Grinspoon regarding global change on Venus appears in the March issue of *Scientific American*..."

In 1984, LASP colleague Larry Esposito used data from NASA's Pioneer Venus satellite to determine that concentrations of sulfur dioxide in the high clouds declined dramatically from 1978 to 1983, indicating a massive volcanic eruption occurred a decade before.

"Venus is the only chance for studying an evolving climate system like Earth in our own solar system," said Grinspoon...

The model indicates "the climates of Earth-like planets can undergo abrupt transitions because of interactions among planetary-scale processes." Studies of Earth's ice cores show temperatures can rise nearly 20 F in less than a decade."

Bullock, Mark et al. *New Climate Modeling of Venus May Hold Clues to Earth's Future*. University of Colorado at Boulder News, Feb. 18, 1999. URL:

[http://www.colorado.edu/PublicRelations/NewsReleases/1999/New\\_Climate\\_Modeling\\_Of\\_Venus\\_.html](http://www.colorado.edu/PublicRelations/NewsReleases/1999/New_Climate_Modeling_Of_Venus_.html)

[24] "Venus has less sulfur dioxide, implying less volcanic activity, than in the 1970s."

NASA. *Aeronautics and Space Report of the President: Fiscal Year 1995 Activities*. Curator: Lillian Gipson, Last Updated September 5, 1996. URL: <http://www.hq.nasa.gov/office/pao/History/presrep95/solarsys.htm>

[25] "Measurements to record the nightglow of Venus were carried out with the Keck telescope just before sunrise on November 20, 1999. Analysis of the resultant spectrum at the position of the oxygen green line showed strong emission from the terrestrial atmosphere and a comparable signal from Venus, with an intensity some 25 times (2500%) greater than the upper limits set by the (Russian) Venera results (from 1975)."

Resnick, Alice. *SRI International Makes First Observation of Atomic Oxygen Emission in the Night Airglow of Venus*. SRI International, Jan. 18, 2001. URL: <http://www.sri.com/news/releases/01-18-01.html>

[26] "Astronomers observing the night side of Venus were surprised to find emissions from oxygen atoms as strong as those from aurora in the Earth's atmosphere. The discovery is puzzling because the Venusian atmosphere is very different to our own - it contains very little oxygen and is dominated by carbon dioxide.

...the Russian Venera orbiters visited Venus in 1975 and found no sign of the green signal. "We do not understand how the variability can be this large", said Slanger, although the team speculates that the fluctuations could be connected with the solar cycle."

Physics Web. *Night-time on Venus*. Physics Web: Physics news, jobs and resources. Jan. 18, 2001. URL: <http://www.physicsweb.org/article/news/5/1/10>

[27] "The Soviet probes (Venera 11 and Venera 12 – back in 1975) spotted the colors that indicated the presence of oxygen molecules – pairs of oxygen atoms that have bonded together – but not the green color given off by excited, single oxygen atoms .

In November 1999, researchers from S.R.I. International in Menlo Park, Calif. and the Lowell Observatory in Flagstaff, Ariz., pointed the 10-meter Keck telescope on Mauna Kea, Hawaii, toward Venus for eight minutes and saw the distinctive green glow of oxygen atoms.

"It was a total surprise," said Dr. Thomas G. Slanger, a scientist at S.R.I. and lead author of a paper in the current issue of Science. The scientists believe the instruments aboard the Venera spacecraft were working correctly when they detected the fainter molecular-oxygen glow...

There is also no easy explanation for what is causing the oxygen atoms to switch on."

Chang, Kenneth. *Mysterious Night Glow in the Skies of Venus Puzzles Scientists*. New York Times, Jan. 28, 2001. URL: <http://www.nytimes.com/2001/01/23/science/23VENU.html>

[28] "Astronomers observing the night side of Venus were surprised to find emissions from oxygen atoms as strong as those from aurora in the Earth's atmosphere. The discovery is puzzling because the Venusian atmosphere is very different to our own - it contains very little oxygen and is dominated by carbon dioxide.

...the Russian Venera orbiters visited Venus in 1975 and found no sign of the green signal. "We do not understand how the variability can be this large", said Slanger, although the team speculates that the fluctuations could be connected with the solar cycle."

Physics Web. *Night-time on Venus*. Physics Web: Physics news, jobs and resources. Jan. 18, 2001. URL: <http://www.physicsweb.org/article/news/5/1/10>

[29] "Accompanying the Science paper by Slanger, et al, is a commentary by Dr. David Crisp from the NASA/Caltech Jet Propulsion Laboratory.

"I certainly trust those data," stated Dr. Crisp. "Something weird is going on in the upper atmosphere of Venus."

The first bottom line is that we just don't know what's going on."

Perew, Mark. *Evidence of Atomic Oxygen Challenges Understanding of Venus*. Universe Today, Jan. 19, 2001: <http://www.universetoday.com/html/articles/2001-0119a.html>)

[30] "Using satellite data, an international team of researchers has found that Venus sports a giant, ion-packed tail that stretches almost far enough to tickle the Earth when the two planets are in line with the Sun.

"I didn't expect to find it," says team member Marcia Neugebauer of the Jet Propulsion Laboratory in Pasadena, California. "It's a really strong signal, and there's no doubt it's real."

NASA's Pioneer Venus Orbiter first found the tail in the late 1970s. Around 70,000 kilometres from the planet, the spacecraft detected bursts of hot, energetic ions, or plasma. The tail exists because ions in Venus's upper atmosphere are bombarded by the solar wind, a stream of plasma that blows out from the Sun.

But now Europe's Solar and Heliospheric Observatory (SOHO), a project partly sponsored by NASA, has shown that the tail stretches some 45 million kilometres into space, more than 600 times as far as anyone realised."

Hecht, Jeff. *Planet's Tail of the Unexpected*. New Scientist, 31 May 1997. URL: <http://web.archive.org/web/19970605230452/http://www.newscientist.com/ns/970531/nvenus.html> (also see <http://www.holoscience.com/news/balloon.html>)

[31] Savage, Don et al. *Hubble Monitors Weather on Neighboring Planets*. HubbleSite News Center, 1995, no. 16. URL: <http://hubblesite.org/newscenter/newsdesk/archive/releases/1995/16/text>

[32] “On that particular orbit [of the *Mars Surveyor* probe], the atmospheric density had suddenly jumped by about a factor of two (200%) above its value on previous orbits, so that the drag force was proportionately greater. Such density variations, while unexpected, are not considered extraordinary for the season on Mars.”

Wheaton, Bill. *JPL and NASA News*. Nov. 1997. URL:  
[http://www.aqua.co.za/assa\\_jhb/Canopus/c97bjpl.htm](http://www.aqua.co.za/assa_jhb/Canopus/c97bjpl.htm)

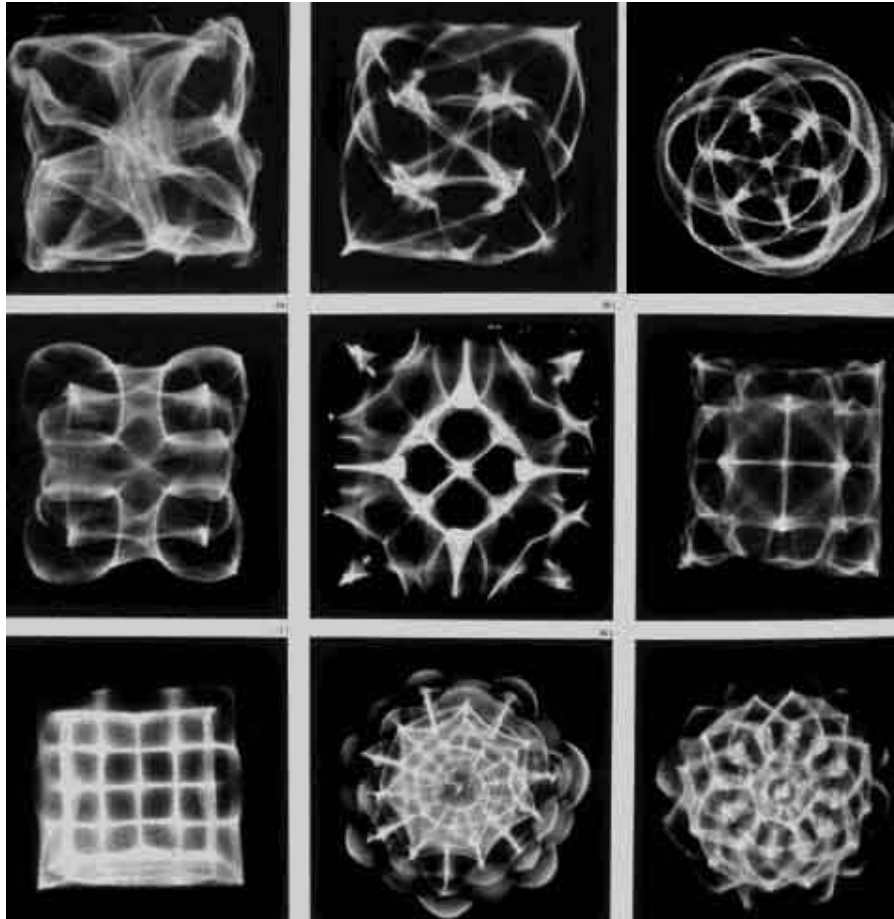
[33] Villard, Ray et al. Colossal Cyclone Swirls Near Martian North Pole. HubbleSite News Center, May 19, 1999, no. 22. URL:  
<http://hubblesite.org/newscenter/newsdesk/archive/releases/1999/22/>

[34] Savage, Don / Hardin, Mary / Villard, Ray / Neal, Nancy. *Scientists Track “Perfect Storm” on Mars*. HubbleSite NewsCenter, Oct. 11, 2001, no. 31. URL:  
<http://hubblesite.org/newscenter/newsdesk/archive/releases/2001/31/text/>

[35] Britt, Robert Roy. *Mars Ski Report: Snow is Hard, Dense and Disappearing*. Space.com, Dec. 6, 2001. URL:  
[http://www.space.com/scienceastronomy/solarsystem/mars\\_snow\\_011206-1.html](http://www.space.com/scienceastronomy/solarsystem/mars_snow_011206-1.html)

[36] James, Phil et al. *Seasonal Changes in Mars’ North Polar Ice Cap*. HubbleSite NewsCenter, 1997, no. 15. URL:  
<http://hubblesite.org/newscenter/newsdesk/archive/releases/1997/15/image/b>

[37] For reference, this next image shows a series of formations that can appear in water, by simply vibrating it at “pure” (*Diatonic*) sound frequencies. The white lines are caused by tiny free-floating particles suspended in the water, which are gathered up by the pressures of the three-dimensional waves. Hexagonal structures are clearly visible in the centers of the top-right and bottom-right panes, and the top-right pane has two very clear tetrahedrons in it, exactly as they appear on planets in the HD model. The tetrahedrons look like a snowflake from this angle:



Supplemental - Three-Dimensional Geometric Wave Patterns Caused by Sound Vibrations in Water (Dr. Hans Jenny)

[38] "Observations with two NASA telescopes show that Jupiter has an arctic polar vortex similar to a vortex over Earth's Antarctica that enables depletion of Earth's stratospheric ozone.

These composite images of Jupiter's north polar region from the Hubble Space Telescope (right) and the Infrared Telescope Facility (left) show a quasi-hexagonal shape that extends vertically from the stratosphere down into the top of the troposphere. A sharp temperature drop, compared to surrounding air masses, creates an eastward wind that tends to keep the polar atmosphere, including the stratospheric haze, isolated from the rest of the atmosphere.

The linear striations in the composite projections are artifacts of the image processing. The area closest to the pole has been omitted because it was too close to the edge of the planet in the original images to represent the planet reliably.

The sharp boundary and wave-like structure of the haze layer suggest a polar vortex and a similarity to Earth's stratospheric polar clouds. Images of Jupiter's thermal radiation [shown in the false-color image on the left] clinch that identification...

These images were taken Aug. 11 through Aug. 13, 1999, near a time when Jupiter's north pole was most visible from Earth. Other Infrared Telescope Facility images at



frequencies sensitive to the polar haze were taken at frequent intervals from June to October 1999. They show that the quasi-hexagonal structure rotates slowly eastward at 1.2 degrees of longitude per day, a rate consistent with the average wind speeds measured from movement of visible clouds.

Of particular interest but yet unknown is how deep into Jupiter's troposphere the phenomenon extends..."

NASA Planetary Photojournal. *PIA03864: Cold Hole over Jupiter's Pole.*

NASA/JPL/HST/University of Hawaii. 1999. URL:  
<http://photojournal.jpl.nasa.gov/catalog/PIA03864>

[39] Space Daily. *Seventy-Day Jupiter Movie Pulls Patterns Out Of Chaos.* Space Daily, July 23, 2001. URL: <http://www.spacedaily.com/news/jupiter-clouds-01a.html>

[40] NASA. *Ultraviolet Movie of Jupiter's Polar Stratosphere.* NASA/JPL/SwRI, March 13, 2002. URL: <http://ciclops.lpl.arizona.edu/PR/2002C13/PR2002C13A.html>

[41] Porco, Carolyn et al. *Cassini Imaging of Jupiter's Atmosphere, Satellites, and Rings.* Science magazine, vol. 299, March 7, 2003. URL:  
<http://ciclops.arizona.edu/sci/docs/porco-et-al-cassini-jupiter-science-2003.pdf>

[42] Yang, Sarah. *Researcher predicts global climate change on Jupiter as giant planet's spots disappear.* UC Berkeley Press Release, April 21, 2004. URL:  
[http://www.berkeley.edu/news/media/releases/2004/04/21\\_jupiter.shtml](http://www.berkeley.edu/news/media/releases/2004/04/21_jupiter.shtml)

[43] Britt, Robert Roy. *Jupiter's spots disappear amid major climate change.* USA TODAY / Tech / Space.com, April 22, 2004. URL:  
[http://www.usatoday.com/tech/news/2004-04-22-jupiter-spots-going\\_x.htm](http://www.usatoday.com/tech/news/2004-04-22-jupiter-spots-going_x.htm)

[44] "[In 1979,] the Voyagers saw ultraviolet emissions (in Jupiter's magnetic field) from doubly and triply ionized sulfur and doubly ionized oxygen. Pioneers 10 and 11 did not detect them, so hot plasma evidently was not present [in Jupiter's magnetic field] in 1973 and 74."

NASA/JPL. *Voyager Science at Jupiter: Magnetosphere.* Jet Propulsion Laboratory, California Institute of Technology. URL:  
[http://voyager.jpl.nasa.gov/science/jupiter\\_magnetosphere.html](http://voyager.jpl.nasa.gov/science/jupiter_magnetosphere.html)

[45] Clarke, John T. *Hubble Sees Auroral Emission Arcs Following the K Impact.* NASA/JPL, Sept. 29, 1994. URL: <http://www2.jpl.nasa.gov/sl9/image271.html>

[46] Cambridge University. *Hubble follows rapid changes in Jupiter's aurora.* Cambridge University Institute of Astronomy, Oct. 17, 1996. URL:  
<http://www.ast.cam.ac.uk/HST/press/32.html>

[47] Free Republic. *Astronomy Picture of the Day.* Hubble Image, Hubble Image, Photo No.: STScI-PRC96-32, Oct. 17, 1996. URL: <http://209.157.64.200/focus/f-chat/727721/posts>

[48] “A central theme that emerges in the discussion of the middle and upper atmosphere is the temperature... In the thermosphere, a top question is about the temperature itself, why it is hundreds of degrees hotter than was anticipated based on a theory that is adequate for Earth and Titan...”

Bagenal, Fran et al. Jupiter: *The Planet, Satellites and Magnetosphere*, Chapter 1: *Introduction*. URL: <http://dosxx.colorado.edu/JUPITER/PDFS/Ch1.pdf>

[49] “Models give a range in Jupiter’s heavy element abundance between 3 and 13% by mass. This is a huge uncertainty. Oxygen is the third most abundant element in the universe and is assumed to comprise half the mass of heavy elements in Jupiter. Up to 20 Earth-masses of oxygen unaccounted for seems a bit of an embarrassment.”

Bagenal, Fran et al. Jupiter: *The Planet, Satellites and Magnetosphere*, Chapter 1: *Introduction*. 2004. URL: <http://dosxx.colorado.edu/JUPITER/PDFS/Ch1.pdf>

[50] “...the Sun has only 2% of its mass in elements other than hydrogen and helium (the *heavy elements*), whereas Jupiter has between 3 and 13%...”

In 1995, after a long journey, the Galileo probe successfully measured the composition and structure of Jupiter’s atmosphere. [Since] the new value for the helium mass mixing ratio... was higher than the Voyager measurement [indicating an increase in helium content in the atmosphere], the models... would necessarily yield a smaller quantity of heavy elements in the molecular region [of Jupiter’s atmosphere.]”

Guillot, Tristan et al. Jupiter: *The Planet, Satellites and Magnetosphere*, Chapter 3: *The Interior of Jupiter*. 2004. URL: <http://dosxx.colorado.edu/JUPITER/PDFS/Ch3.pdf>

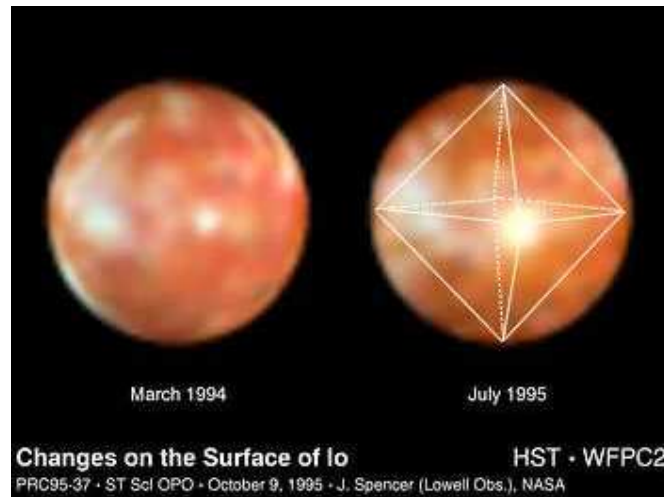
[51] “The synchrotron [radiation] emission intensity levels at the time of the Galileo probe measurements [beginning in 1995] were about 25% higher than during the Pioneer flybys [of 1979.] (Klein et al. 2001).”

Bolton, Scott J. et al. Jupiter: *The Planet, Satellites and Magnetosphere*, Chapter 27: *Jupiter’s Inner Radiation Belts*. 2004. URL: <http://dosxx.colorado.edu/JUPITER/PDFS/Ch27.pdf>

[52] “This pair of images of Jupiter’s volcanic moon Io, taken with the Hubble telescope, shows the surprising emergence of a 200 -mile-wide, yellowish-white feature near the center of the moon’s disk [photo on the right]. This represents a more dramatic change in 16 months than any seen over the previous 15 years, say researchers. They suggest the spot may be a new class of transient feature on the moon. For comparison the photo on the left was taken in March 1994, before the spot emerged.”

Spencer, J (Lowell Observatory) and NASA. *Hubble Discovers Bright New Spot on Io*. Hubble News Center, 1995, No. 37. URL: <http://hubblesite.org/newscenter/newsdesk/archive/releases/1995/37/>

[53] If you look carefully at the image of Io on the left, there is a diagonal straight -line formation in the upper-left area that fits beautifully with the position of the upper left line of the octahedron. Furthermore, some traces of this line are still visible in the July 1995 image on the right. A similar line was seen in Venus' ever -increasing green aurora in Figures 3 and 4. Here, the apparent emergence of such a line might also be construed as a “warning signal” that the octahedral energy flow in the planet was heating up, before energy burst out at one of the node points of the octahedron.



[54] “The [first] photo indicates that Io’s surface had undergone only subtle changes since it was last seen close-up by the Voyager 2 probe in 1979.”

Spencer, J (Lowell Observatory) and NASA. *Hubble Discovers Bright New Spot on Io*. Hubble News Center, 1995, No. 37. URL: <http://hubblesite.org/newscenter/newsdesk/archive/releases/1995/37/>

[55] Murrill, Mary Beth. *Galileo Finds Big Changes on Jupiter’s Volcanic Moon Io*. NASA/JPL/Caltech Press Release, July 18, 1996. URL: <http://www2.jpl.nasa.gov/galileo/status960718.html>

[56] Heil, Martha. *Jupiter’s Volcanic Moon Io: Strange Shapes in a Sizzling World*. NASA/JPL/Caltech Press Release, Oct. 26, 2000. URL: <http://members.fortunecity.com/volcano/pele/news102600.htm>

[57] CNN. *Images reveal lakes, snow, geysers on Jupiter moon Io*. CNN.com/SPACE, May 19, 2000. URL: <http://www.cnn.com/2000/TECH/space/05/19/io.images/index.html>

[58] NASA Planetary Photojournal. *PIA00495: Changing volcanoes on Io*. NASA/JPL, Nov. 18, 1997. URL: <http://photojournal.jpl.nasa.gov/catalog/PIA00495>

[59] "Sensors on the spacecraft found a very dense region of ionized oxygen, sulfur and sulfur dioxide at 555 miles on Io that must be pumped into that region by Io's relentless volcanic activity," said Dr. Louis A. Frank of the University of Iowa, principal investigator on Galileo's plasma science experiment. "Instead of being swept away by Jupiter's rotating magnetosphere as anticipated, the ionized gases surprisingly remain with Io," he said.

"Passage of the Galileo spacecraft through an ionosphere was not expected because images of the volcanic plumes previously taken with the Voyager spacecraft indicated that the plume heights extended only to a few hundred kilometers or less," Frank said. **A radio occultation by the Pioneer 10 spacecraft in 1973 indicated ionospheric heights only about 30 to 60 miles above the surface. "No one expected to see this at 900 kilometers' [555 miles'] altitude,"** he added. The difference between what Pioneer saw and what Galileo has observed indicates that Io's atmosphere and ionosphere are variable and may grow and shrink with more or less volcanic activity." (emphasis added)

Murrill, Mary Beth and Isabell, Douglas. *High-Altitude Ionosphere Found at Io by Galileo Spacecraft*. NASA/Goddard Space Flight Center, Release 96-216, Oct. 23, 1996. URL: [http://nssdc.gsfc.nasa.gov/planetary/text/gal\\_io\\_ionosphere.txt](http://nssdc.gsfc.nasa.gov/planetary/text/gal_io_ionosphere.txt)

[60] "PROVIDENCE, R.I. – Hundreds of millions of miles from the sun, volcanoes on Jupiter's moon Io sizzle at the highest recorded surface temperatures of any planetary body in the solar system. Planetary scientists from University of Arizona, Brown University and five other institutions report this finding in the cover story of the July 3 issue of the weekly journal *Science*...

"The very hot lavas erupting on Io are hotter than anything that has erupted on Earth for billions of years," says lead author Alfred McEwen, director of the Planetary Image Research Lab at the University of Arizona. "They are the highest surface temperatures in the solar system other than the sun itself."

At least 12 different vents on Io spew lava at temperatures greater than 2,200 degrees Fahrenheit. One volcanic vent may be as hot as 3,100 degrees Fahrenheit – about **three times hotter than the hottest sunlit surface of Mercury**, the closest planet to the Sun...

The latest temperature measurements are **more than double the highest temperatures recorded by the Voyager spacecraft in 1979** and also **exceed more recent measurements made by telescopes**...

Scientists were surprised by the extreme temperatures... **Scientists don't know yet how to explain what's happening on Io.**" (emphasis added)

Morton, Carol. *Scientists find solar system's hottest surfaces on Jupiter's moon Io*. NASA / The Brown University News Bureau, Distributed July 2, 1998. URL: [http://www.brown.edu/Administration/News\\_Bureau/1998-99/98-001.html](http://www.brown.edu/Administration/News_Bureau/1998-99/98-001.html)

[61] Heil, Martha. *Jupiter's Volcanic Moon Io: Strange Shapes in a Sizzling World*. NASA/JPL/Caltech Press Release, Oct. 26, 2000. URL: <http://members.fortunecity.com/volcanopele/news102600.htm>

[62] "The vivid colors, caused by collisions between Io's atmospheric gases and energetic charged particles trapped in Jupiter's magnetic field, had not previously been observed."

NASA/JPL Planetary Photojournal. *PIA01637: Io's Aurorae*. Oct. 13, 1998. URL: <http://photojournal.jpl.nasa.gov/catalog/PIA01637>

[63] "Cassini captured several time-lapse image sequences of Io, Europa, and Ganymede being eclipsed by Jupiter... Io's [atmospheric] emissions were detected in previously unseen spectral regions, from 250 to 380 nm and from 670 to 850 nm."

Porco, Carolyn et al. *Cassini Imaging of Jupiter's Atmosphere, Satellites, and Rings*. Science magazine, vol. 299, March 7, 2003. URL: <http://ciclops.arizona.edu/sci/docs/porco-et-al-cassini-jupiter-science-2003.pdf>

[64] Some of this effect might be due to increased instrument sophistication: "Cassini's camera is also sensitive to shorter wavelengths than is Galileo's camera, and it could record more colors using different filters." This does not account for the new colors seen by the Galileo probe in 1998, so it is likely a combination of real changes (visible throughout the solar system) with increased instrument sophistication.

Stiles, Lori. *Cassini Captures Light Show on Jupiter's Moon Io, During Eclipse*. University of Arizona News Service, May 31, 2001. URL: <http://members.fortunecity.com/volcanopele/news053101.htm>

[65] McEwen, Alfred. *Galileo and Cassini Image Two Giant Plumes on Io*. NASA's Planetary Photojournal PIA-02588, March 29, 2001. URL: [http://pirlwww.lpl.arizona.edu/missions/Galileo/releases/29Mar2001\\_g29plumes.html](http://pirlwww.lpl.arizona.edu/missions/Galileo/releases/29Mar2001_g29plumes.html)

[66] McEwen, Alfred. *Galileo and Cassini Image Two Giant Plumes on Io*. NASA's Planetary Photojournal PIA-02588, March 29, 2001. URL: [http://pirlwww.lpl.arizona.edu/missions/Galileo/releases/29Mar2001\\_g29plumes.html](http://pirlwww.lpl.arizona.edu/missions/Galileo/releases/29Mar2001_g29plumes.html)

[67] Keszthelyi, Laszlo. *Io Reveals Towering Volcanic Plume Never Seen Before*. Daily University Science News (UniSci), March 30, 2001. URL: <http://unisci.com/stories/20011/0330011.htm>

[68] NASA Planetary Photojournal. *Northern Plume and Plume Deposits on Io*. NASA Planetary Photojournal PIA-02592, October 4, 2001. URL: [http://pirlwww.lpl.arizona.edu/missions/Galileo/releases/4Oct2001\\_i31plume.html](http://pirlwww.lpl.arizona.edu/missions/Galileo/releases/4Oct2001_i31plume.html)

[69] "Throughout much of the Io torus passage leading up to the encounter, Galileo measured ion densities that were about 50% greater than those observed by Voyager at the same distance [Bridge et al. 1979; Bagenal, 1994]...

The plasma phenomena seen from Galileo (in Jupiter's magnetic field in 1995) were, in general, not unexpected, but their strength exceeded expectations. The plasma was denser than expected in the torus and in the wake region. The wave amplitudes were greater than expected."

Russell, C.T. et al., *Eos, Transactions, American Geophysical Union, Vol. 78, No. 9* (1997), p. 93, 100. URL: [http://www-ssc.igpp.ucla.edu/personnel/russell/papers/Io\\_Jovian/](http://www-ssc.igpp.ucla.edu/personnel/russell/papers/Io_Jovian/)

[70] "The observations acquired during the Io flyby (of the Galileo probe) in December 1995 witnessed an interaction that was stronger than expected from Voyager era observations (in 1978-79). Torus plasma densities were about a factor of two [200%]

higher, an intense magnetic field perturbation was observed (most likely a consequence of an enhanced total electric current), the plasma flow was very strongly reduced and intense bi-directional electrons were present in the wake.

A possible cause for the changes observed might be the variability of Io's volcanic activity that modified the neutral atmosphere and resulted in stronger plasma interactions in a denser torus."

Saur, Joachim et al. *Jupiter: The Planet, Satellites and Magnetosphere, Chapter 22: Plasma Interaction of Io with its Plasma Torus*. URL: <http://dosxx.colorado.edu/JUPITER/PDFS/Ch22.pdf>

[71] "In 1998-99, the cold torus (in the orbit of Io) appeared as a bump on the inside edge of the (plasma) ribbon. In 2000, the cold torus is well resolved from the ribbon, and brighter than the ribbon at virtually all longitudes..."

Comparison with Cassini and other groundbased observations may place the variability in context, though sufficient data are probably not available to determine the cause or effect of the torus variability."

Schneider, N.M. et al. *Substantial Io Torus Variability 1998-2000*. NASA Planetary Astronomy Program, DPS 2001 meeting, November 2001. URL: <http://www.aas.org/publications/baas/v33n3/dps2001/513.htm>

[72] "Using a sensitive new imaging instrument on NASA's Cassini spacecraft, researchers at The Johns Hopkins University Applied Physics Laboratory (APL) in Laurel, MD., have discovered a large and surprisingly dense gas cloud sharing an orbit with Jupiter's icy moon Europa..."

The cloud's mass indicates... that Europa, in an orbit some 416,000 miles (671,000 kilometers) from Jupiter, wields considerable influence on the magnetic configuration around the giant planet.

Surprisingly, Europa's gas cloud compares to that generated by the volcanically active satellite Io," says Mauk. "But where Io's volcanoes are constantly spewing materials – mostly sulfur and oxygen – Europa is a comparatively quiet moon..."

...The dense gas torus gives Europa much greater influence than was previously thought on the structure of, and energy flow within, Jupiter's huge space environment, its magnetosphere," he says."

Buckley, Michael et al. *Johns Hopkins Applied Physics Lab Researchers Discover Massive Gas Cloud Around Jupiter*. JHU Applied Physics Laboratory, Feb. 27, 2003. URL: <http://www.jhuapl.edu/newscenter/pressreleases/2003/030227.htm>

[73] "Recent HST/STIS images in the OI multiplets (Figure 19.10) indicate a more complex pattern of [brightness] emission than would be expected from [Europa's] plasma interaction with an optically thin atmosphere. The [Hubble Space Telescope] OI 1356 image displays the expected limb glow around the disk plus a much brighter region on the anti-jovian hemisphere."



McGrath, Melissa et al. *Jupiter: The Planet, Satellites and Magnetosphere, Chapter 19: Satellite Atmospheres*. 2004. URL:  
<http://dosxx.colorado.edu/JUPITER/PDFS/Ch19.pdf>

[74] "Voyager measurements in the plasma sheet [of Jupiter's moon Ganymede]... could support [a] glow of 10-40R... However, the [Hubble Space Telescope] STIS observations display polar limb glow in the range 50-100R, suggesting that more than [the moon's own] plasma sheet electrons are involved in the excitation process.

The latter point is [even] more evident when an explanation is sought for the hot spots of intense auroral emission seen in the HST/STIS observations... [of] 300R bright spots."

McGrath, Melissa et al. *Jupiter: The Planet, Satellites and Magnetosphere, Chapter 19: Satellite Atmospheres*. 2004. URL:  
<http://dosxx.colorado.edu/JUPITER/PDFS/Ch19.pdf>

[75] "One other potential solution to understanding the high HST intensities [of plasma around Jupiter's moon Ganymede] is to argue that the Voyager... measurements are not applicable to the Galileo/HST epoch and atmo spheric column densities are [now] perhaps an order of magnitude larger [i.e. 1000% larger]...

In summary our limited information prevents a definitive inference of the average O<sub>2</sub> column density on Ganymede."

McGrath, Melissa et al. *Jupiter: The Planet, Satellites and Magnetosphere, Chapter 19: Satellite Atmospheres*. 2004. URL:  
<http://dosxx.colorado.edu/JUPITER/PDFS/Ch19.pdf>

[76] "How did it get so hot that liquid iron in its core moves around enough to make a magnetic field? Either something's wrong with our theory or our understanding of Ganymede's history," said Johnson."

Stenger, Richard. *New revelations, riddles about solar system's most intriguing satellites*. CNN.com / Space, Aug. 23, 2000. URL:  
<http://www.cnn.com/2000/TECH/space/08/23/moons.of.mystery/index.html>

[77] "Galileo plasma wave measurements [have been reported] that imply the presence of electrons with a density almost a thousand times [100,000%] higher than the expected jovian magnetospheric electron density [i.e. the density of Jupiter's own trapped electron population, ensnared in its own magnetic field] at the orbit of Callisto. This density is comparable with that inferred from similar measurements made in the vicinity of Ganymede."

McGrath, Melissa et al. *Jupiter: The Planet, Satellites and Magnetosphere, Chapter 19: Satellite Atmospheres*. 2004. URL:  
<http://dosxx.colorado.edu/JUPITER/PDFS/Ch19.pdf>

[78] Platt, Jane. *Galileo Survives Unexpected Whopper Dose of Radiation*. NASA/JPL/Caltech Press Release, Aug. 16, 1999. URL:  
<http://www2.jpl.nasa.gov/galileo/status990816.html>

[79] "Scientists have found evidence for a new ring of dust that occupies a backward orbit around Jupiter, based on computer simulations and data from NASA's Galileo spacecraft, it is reported in today's issue of Science magazine .

A team led by researchers at the University of Colorado at Boulder reported that a faint, doughnut-shaped ring of interplanetary and interstellar dust some 1,126,000 kilometers in diameter (about 700,000 miles) appears to be orbiting the giant planet.. .

Surprisingly, the researchers say, most of the interstellar and interplanetary dust particles appear to be in a "retrograde" orbit -- that is, moving in the opposite direction of the rotating planet and its moons, Colwell said. The reason for the backward orbit of the tiny particles is not yet clear, he said...

NASA's Voyager 2 detected an uneven dust ring around Jupiter in 1979 that scientists believe was created by the collisions of small moonlets with micrometeoroids in the Jovian system. But the newly identified ring of dust with smoke-size particles originating from beyond the Jovian system appears to be much larger, more sparse and, possibly unique in the solar system."

Platt, Jane. *New Class of Dust Ring Discovered Around Jupiter*. NASA/JPL Press Release, Apr. 3, 1998. URL: <http://www.jpl.nasa.gov/releases/98/glring.html>

[80] Wilcock's model incorporates the work of Rod Johnson, who has modeled the entire quantum realm on counter-rotating geometries, particularly focusing on the interaction between the tetrahedron and octahedron. In the HD model we see the same basic phenomena at all size levels in the universe, from the quantum to the super-galactic, and Wilcock's most recent in-progress work extends this into biology as well.

[81] Porco, Carolyn et al. *Cassini Imaging of Jupiter's Atmosphere, Satellites, and Rings*. Science magazine, vol. 299, March 7, 2003. URL: <http://ciclops.arizona.edu/sci/docs/porco-et-al-cassini-jupiter-science-2003.pdf>

[82] "**March 7, 2002:** Every 45 minutes a gigawatt pulse of x-rays courses through the solar system.

Astronomers are accustomed to such things. Distant pulsars and black holes often bathe the galaxy with blasts of x-radiation. But this time the source isn't exotic and far away. It's right here in our own solar system.

"The pulses are coming from the north pole of Jupiter," says Randy Gladstone, a scientist at the Southwest Research Institute and leader of the team that made the discovery using NASA's orbiting Chandra X-ray Observatory.

"We weren't surprised to find x-rays coming from Jupiter," he continued. Other observatories had done that years ago. The surprise is what Chandra has revealed for the very first time: the location of the beacon -- surprisingly close to the planet's pole -- and the regular way it pulses...

"**The 45-minute pulsations are very mysterious,**" adds Elsner. They're not perfectly regular like a signal from E.T. might be; the period drifts back and forth by a

few percent. "This is a natural process," he adds, "we just don't know what it is...."

It's possible that Jupiter's south pole is also an x-ray hot spot, blinking at the same rate as the north -- but no one knows because the south pole is not as easy to see from Earth...

Solving the puzzle will require more data...

Until then Jupiter's x-ray beacon -- relentlessly pulsing, and not where it ought to be -  
- will likely remain a mystery. (emphasis added)

Phillips, Tony. *Puzzling X-rays from Jupiter*. Science@NASA, March 7, 2002. URL: [http://science.nasa.gov/headlines/y2002/07mar\\_jupiterpuzzle.htm](http://science.nasa.gov/headlines/y2002/07mar_jupiterpuzzle.htm)

## Part 3

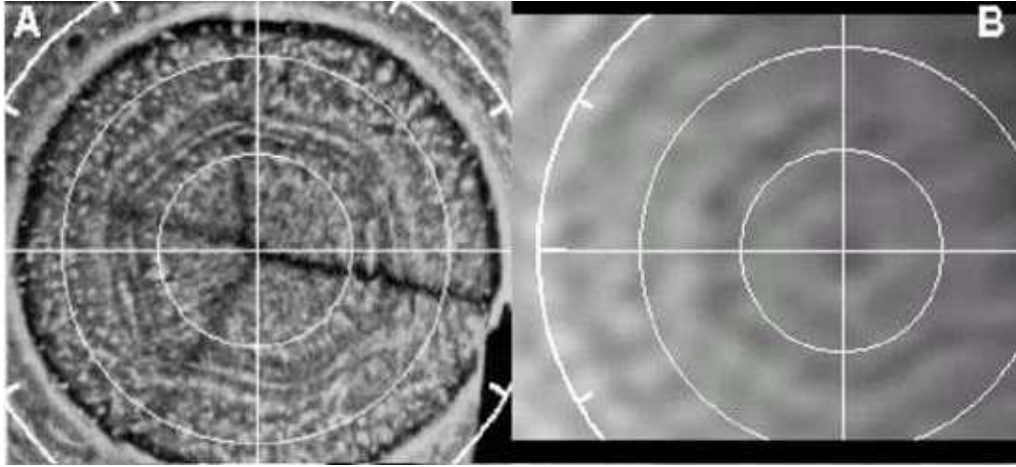
# An *Enterprise Mission* Hyperdimensional Report

Richard C. Hoagland  
David Wilcock

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## Saturn

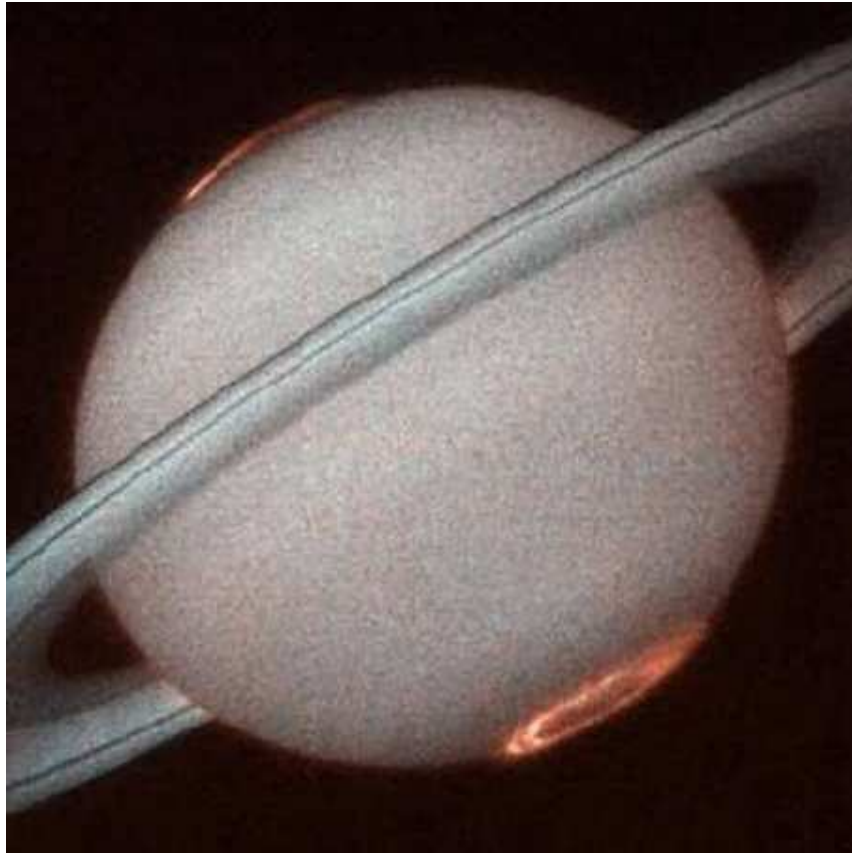
As seen in Figure 27, Saturn displays a quasi-stationary, highly geometric, multi-tiered linear cloud pattern -- arranged in the shape of a perfect hexagon -- centered precisely over its northern polar region. This remarkable formation (the clouds within this geometric pattern continually race *backwards*, against Saturn's eastward spin) was first discovered by time-lapse imaging from the Voyager unmanned missions, in 1980-1981. The apparent "upper atmosphere, standing wave pattern" has remained stable and visible for at least 15 years, "suggesting [it is] a long-lived feature apparently insensitive to the strong seasonal forcing in Saturn's polar regions." The hexagonal wave-structure is thus "conjectured to be deeply-rooted in Saturn's interior." This provides powerful geometric support for an ongoing, interior hyperdimensional energy flow *through* Saturn -- which, in turn, creates a high-altitude, resonant, hexagonal (*embedded tetrahedral*) atmospheric pattern around its northern rotational axis.<sup>[82]</sup>



**Figure 27 - Saturn's North Polar Hexagon: as seen (A) by the Voyager spacecraft in 1980 (resolution -- 566 nm; from Godfrey 1988) and (B) with the HST in July 1991 (resolution -- 656 nm).**

In the space immediately surrounding Saturn, the planet's own tube-shaped (*toroidal*) cloud of plasma energy (similar to that lying along the orbit of Jupiter's moon, Io) became *1000% denser than expected* between 1981 and 1993... truly a stunning change for only twelve years' time, *exactly* like the energetic increases we are seeing with Jupiter.<sup>[83]</sup> We do know that this cloud is closely aligned with the orbit of Saturn's moon, Enceladus. Unfortunately, we have not been able to locate any images of this stunning, rapidly-changing cloud formation.

And, though Saturn was approached three times previously -- by Pioneer II (in 1979) and Voyagers 1 and 2 (in 1980 and 1981, respectively) -- it wasn't until 1995 that a bright aurora was photographed around Saturn's poles by the Hubble Space Telescope, an aurora capable of "rapid changes in its brightness in short periods of time."<sup>[84]</sup> This is not conclusive proof that the Saturn aurorae are a new phenomenon, but it certainly is another potential point of interest that correlates well with the over 1000% increase in the density of Saturn's plasma torus. Below (Figure 28) is a Hubble image of the brilliant aurorae from 1998.



**Figure 28 – Saturn aurorae imaged at both poles by HST in 1998 (NASA)**

Between 1980 and 1996, the speed of rotation for Saturn's clouds at the equator reduced by a whopping **58.2 percent**, described as an "*unexpected and dramatic change in weather*." The NASA explanation offered for this definitely anomalous behavior, however, was that old standby -- "seasonal changes":

WELLESLEY, Mass. - Saturn, one of the windiest planets, has recently had an *unexpected and dramatic change in weather*: its equatorial winds have subsided from a rapid 1700 km/hr during the Voyager spacecraft flybys in 1980 -81 to a modest 990 km/hr from 1996 to 2002. This slow-down in the winds has been detected by a Spanish-American team of scientists, including Richard French of Wellesley College in Massachusetts, who report their findings in the June 5 issue of the journal, *Nature*. (5 June 2003, Vol. 423, pp. 623 -625)...

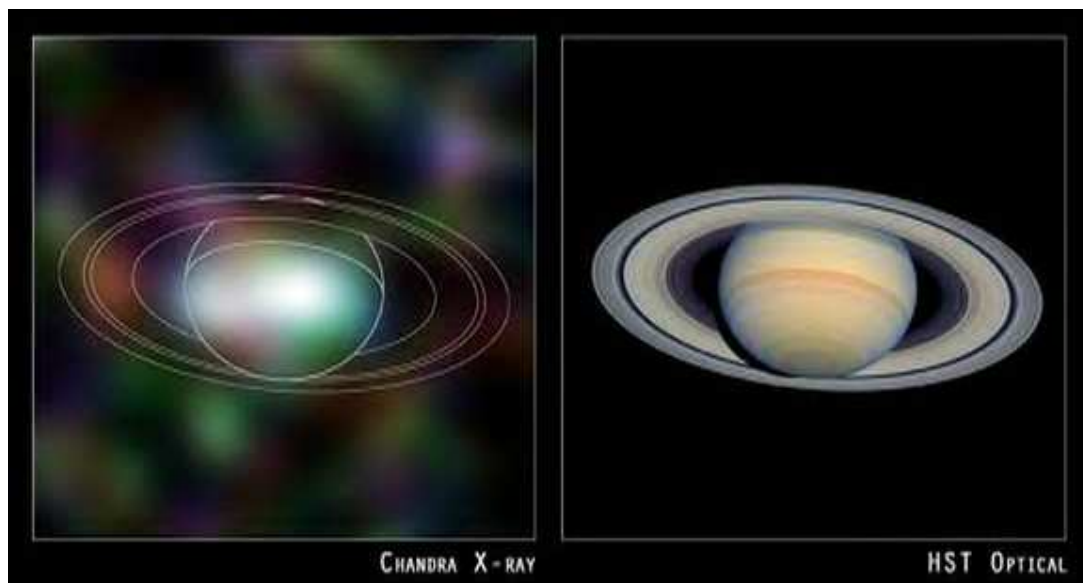
Using the high-resolution capability of the Wide Field Planetary Camera onboard the HST, the Spanish-American team has been able to track enough cloud elements in Saturn to measure the wind velocity over a broad range of latitudes. **The equatorial winds measured in 1996-2001 are only half as strong as was found in 1980 -81, when the Voyager spacecraft visited the planet.** In contrast, the windy jets far from the equator have remained stable and show a strong hemispheric symmetry not found in Jupiter.

The different behavior of Saturn's winds could have a simple explanation, note the scientists. The long **seasonal cycle** in Saturn's atmosphere (one Saturn year is about thirty terrestrial years) and the *equatorial shadowing* by the planet's giant rings

could account for the sudden slowdown in the equatorial winds [emphasis added]....<sup>[85]</sup>

Even more provocative changes in Saturn were detected by non-optical telescopic data....

“Massive,” highly anomalous emissions of x-rays from Saturn’s *equatorial* region (Figure 29) -- as opposed to x-rays accompanying the polar aurorae as expected -- were detected and localized to Saturn’s equator for the first time in 2004, by NASA’s Chandra X-Ray Observatory, operating in Earth orbit.<sup>[86]</sup> Though the left image appears to show another “Great Spot” similar to the one on Jupiter, this is actually a *time-lapse image* -- spanning more than one ~10-hour Saturnian rotation (actually, about ~20 hours total)! So, the concentration of brightness here is NOT due to any “Great Saturn Spot,” but is due to geometric factors of the x-ray image acquisition process itself. The brightest x-rays are emerging from all along the equatorial plane, not just in any one area.

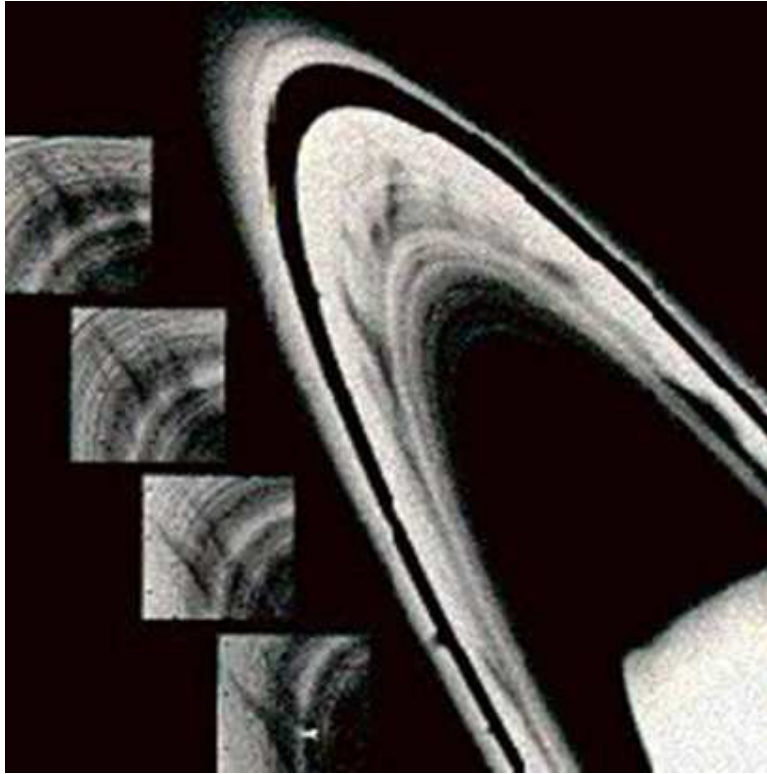


**Figure 29 - Chandra X-Ray image of Saturn (left), compared with Hubble visual image (right). Note concentration of x-ray emission from Saturn’s equatorial atmosphere, below the sunlit plane of the rings (NASA)**

NASA scientists have had to confront equally dramatic changes that *also* seemed to be occurring in Saturn’s most well-known and illustrious feature -- its stunning planetary rings....

Curious, *linear* dark features... termed “spoke” formations (Figure 30)... were first observed lying *across* the rings during the previously mentioned Voyager robotic flybys in 1980-1981. Their most anomalous characteristic: the spokes revolved in distinct “non-Keplerian” fashion -- with the outer sections of the narrow, inexplicably *radial* formations racing around Saturn *much faster* than the underlying ring particles can orbit under gravitational attraction... at the same distance from the giant planet.<sup>[87]</sup>

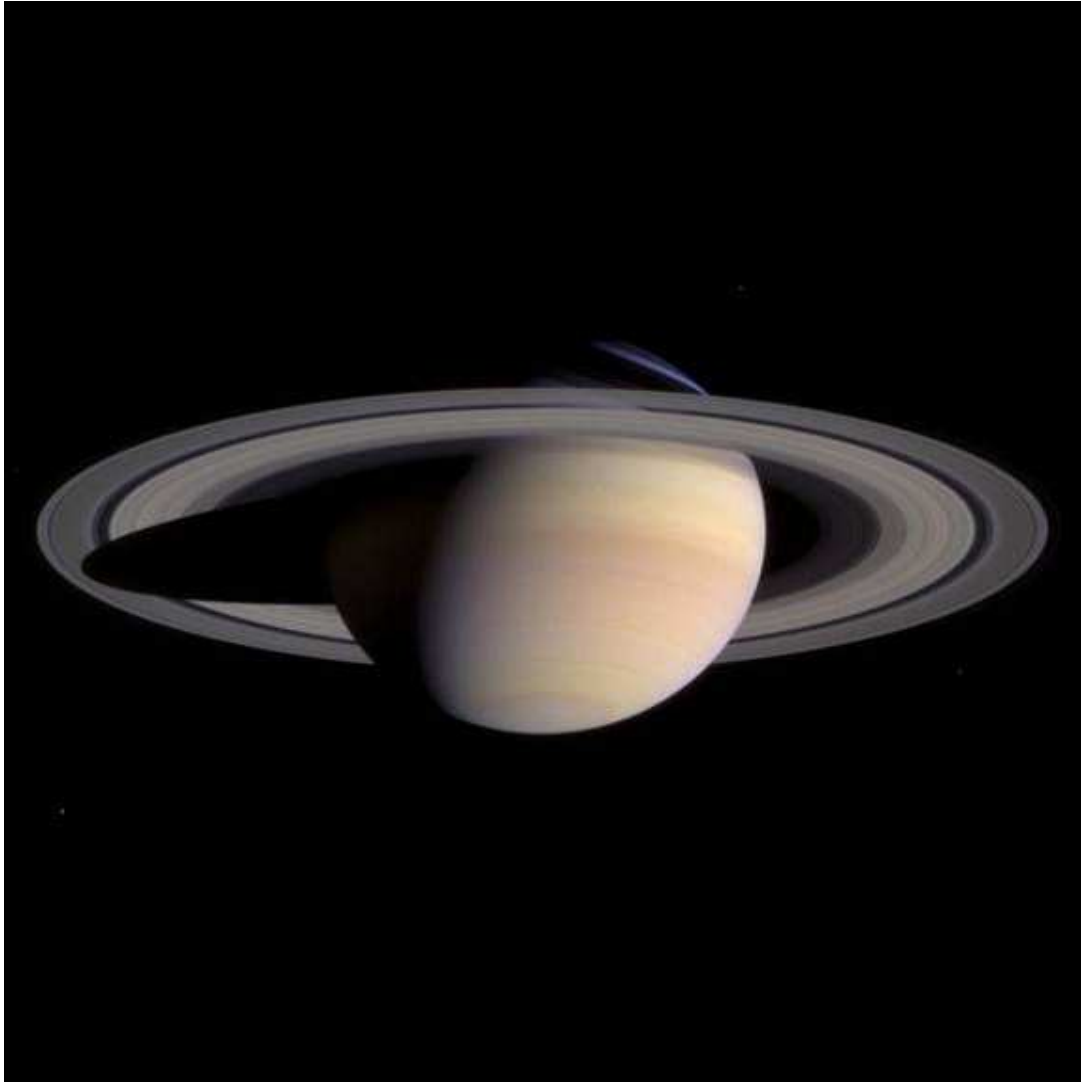




**Figure 30 - Composite Image of “Spoke” Formations Observed by Voyager in 1980-81 (NASA)**

In December of 2003, planetary scientists working the Cassini mission -- the first new spacecraft to return to Saturn since the '80's Voyager visitations -- eagerly anticipated learning more about these remarkable *radial* formations -- this time, via extreme close-ups, acquired with a CCD Cassini imaging system fully 100 times better than Voyager's “primitive” vidicon cameras.<sup>[88]</sup> How would they look? What new things could they teach us? How did they get there? Why do they exist in the first place?

However, by February 2004, the problem could no longer be ignored... the Cassini imaging team was forced to acknowledge that, mysteriously, the spokes -- despite far superior imaging, taken at closer distances than Voyager's discovery observations (Figure 30) -- were *no longer visible*.<sup>[89]</sup> They, quite literally, just *disappeared!* Hence, “something” in Saturn's formidable rings *also* has changed... dramatically... in just two *decades*, just like the other changes we are seeing on Saturn and throughout the solar system.



**Figure 31 – Saturn as breathtakingly imaged by the approaching Cassini spacecraft.  
And... nary a “spoke” to be seen. (NASA)**

Turning to some of Saturn’s major satellites:

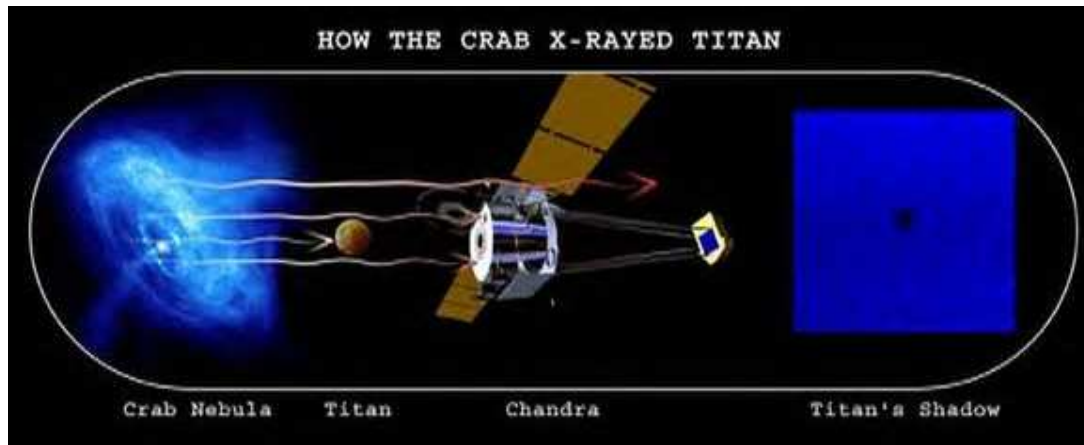
Chandra x-ray observations of Saturn’s largest moon, Titan, produced a major surprise: Titan appears to have had a 10 -15% increase in the height of its atmosphere, as of January 2003 (Figure 32). According to the official NASA release:

“On January 5, 2003, Titan -- Saturn’s largest moon and the only moon in the solar system with a thick atmosphere -- crossed in front of the Crab Nebula...

The diameter of Titan’s shadow was found to be larger than the known diameter of its solid surface. This difference in diameters yields a measurement of about 550 miles (880 kilometers) for the height of the X-ray absorbing region of Titan’s atmosphere.

The extent of the upper atmosphere is consistent with, or slightly (10 -15%) larger, than that implied by Voyager I observations made at radio, infrared and ultraviolet

wavelengths in 1980. Saturn was about 5% closer to the Sun in 2003, so increased solar heating of Titan may have caused its atmosphere to expand.”<sup>[90]</sup>



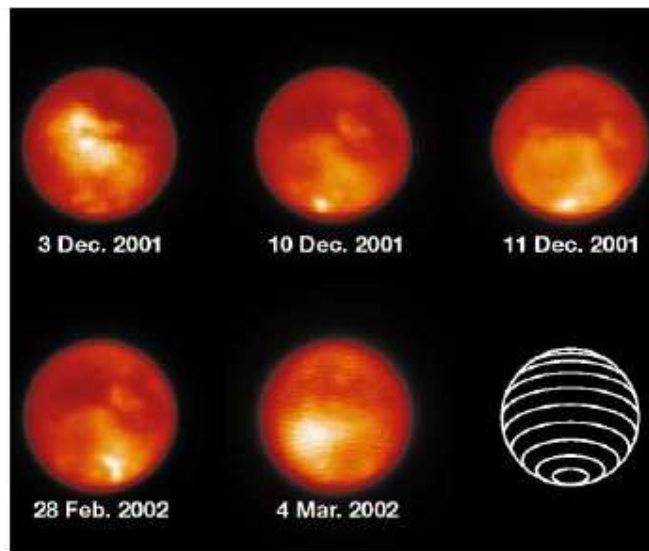
**Figure 32 – Chandra X-ray Telescope captures x-ray *shadow* of Titan, measuring its diameter, as Saturn’s largest satellite crosses in front of the Crab Nebula – a shattered stellar remnant nebula emitting copious x-rays, located approximately 6000 light years beyond Saturn. (NASA)**

However, if NASA’s more conservative estimates of Titan’s former atmospheric depth (250 miles -- from Voyager observations in 1981) were correct,<sup>[91]</sup> then Titan’s total atmosphere may have actually expanded by as much as 200%... in just the last 23 years... from 250 to 550 miles in height!

In Titan’s atmosphere itself, optical and infrared observations carried out with the 10 - meter Keck telescopes in Hawaii have imaged fast-moving, bright methane clouds in Titan’s southern hemisphere -- which are equally inexplicable in mainstream models. According to a recent paper in *Nature*:

The December 2001 cloud has a brightness equivalent to about 0.3% of the total brightness of the disk of Titan at these wavelengths, and can be explained by a single (foreshortened) cloud of 200 km diameter or smaller clouds withi n the same total area. **The 28 February 2002 cloud is significantly larger, reflecting a flux equivalent to about 1% of the total flux of Titan...**

**The most striking property of these transient cloud events is their unexpected concentration near the *south pole* of Titan.** Although heating at southern summer solstice might be expected to drive polar convection, studies of tropospheric conditions on Titan have suggested an absence of seasonal variation (12, 13) and predicted that methane clouds, if present, should concentrate at the equator year round (14)...”<sup>[92]</sup> [emphasis added]



**Figure 1** Images of Titan show the transient existence of cloud features near the south pole. Images and spectra from 3, 10 and 11 December 2001 were obtained using NIRSPEC, the facility near-Infrared spectrograph<sup>®</sup>, while images (only) from 28 February and 4 March 2002 were obtained using NIRC2, the facility near-infrared AO Imager. Images were obtained in the K' wavelength band, which extends from 1.96 to 2.99  $\mu\text{m}$ , and have an angular resolution of 0.05 arcsec (a linear resolution of 330 km on 10 December 2001) on the satellite. The images shown are combinations of from 4 to 20 individual images shifted to a common centre, summed, and divided by an image of the individual pixel response function ('flat field'). The apparent elongation of the cloud feature on the 11 December 2001 image is a temporary artefact of the AO system. Owing to non-photometric observing conditions during some of the nights, no absolute flux calibration was obtained. The individual images are scaled to best see the polar clouds. The line figure shows every 15° of latitude projected for Titan's subsolar latitude of  $-25.6^\circ$  at the time of the observations. Titan's subsolar longitudes at the times of observations were 69°, 228°, 249°, 235° and 325° for the 3, 10 and 11 December, and the 28 February and 4 March observations, respectively.

**Figure 33 – Sequential IR imaging over several months by the 10-meter Keck Telescope, showing Titan surface features and bright, high-altitude methane polar clouds.**

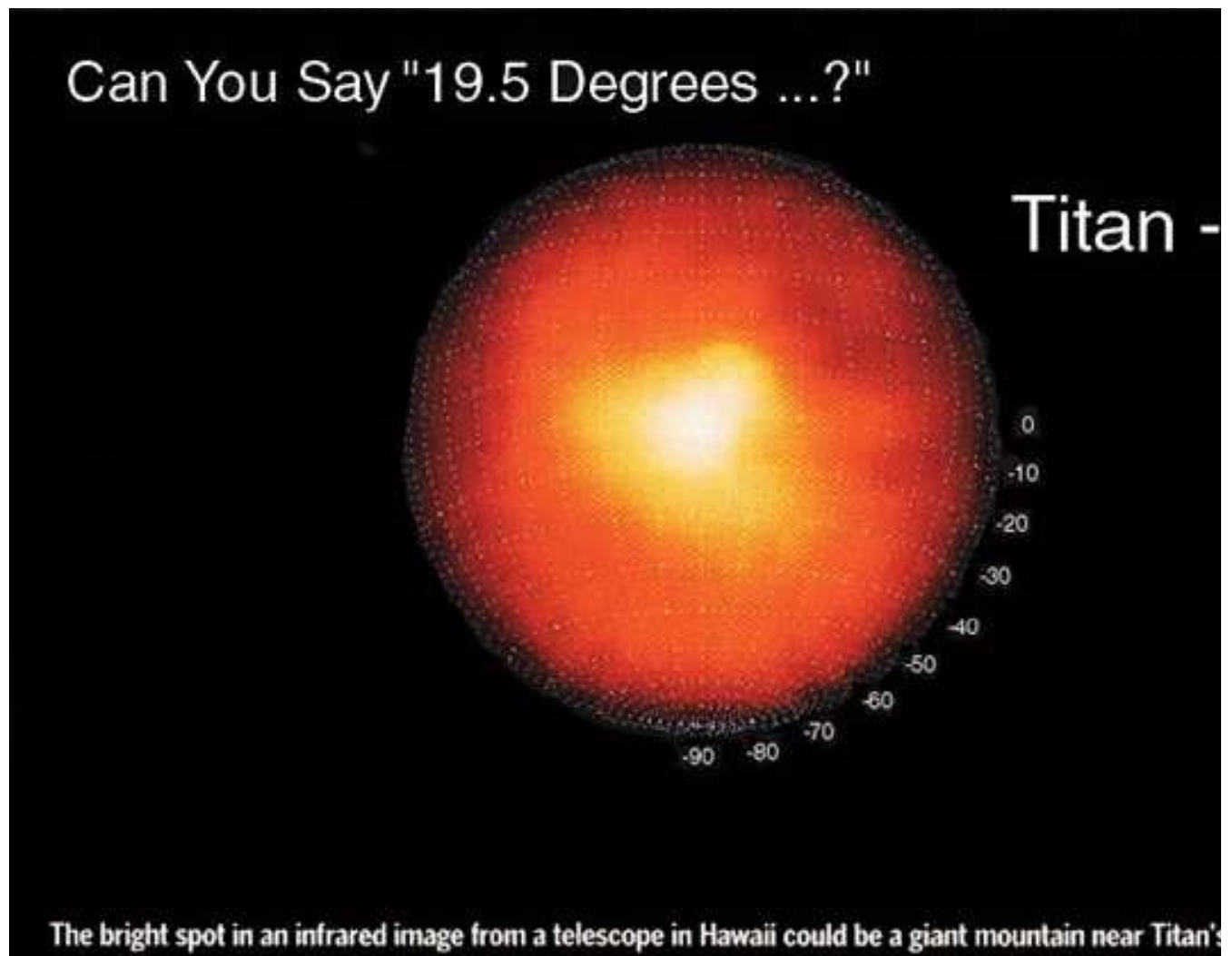
In conventional Titan meteorology, “bright” clouds would be expected over the warmest, not the coldest, regions (because of thermal convection -- upward movement due to heating -- resulting in high level recondensation into highly reflective methane “cirrus ice”). In colder latitudes, such high methane cirrus -- if present at all -- would not be expected to move around so quickly... so the observations of “fast-moving, bright clouds” in the southern polar regions of Titan pose *another* major Saturnian puzzle.

However, since the south pole of Titan marks another perfect “standing wave” resonance point in the Hyperdimensional Model, it is not surprising to see brightness flares at and around that exact location -- as hyperdimensional forces there, actually assisted by the extreme cold (via a dramatic reduction in random thermal activity), could be causing the observed high-level condensation. Also, if you go back to Figure 33 and look again -- particularly, at the one for Dec. 11, and Dec. 10, 2001, and also Feb. 22, 2002 (but especially, Dec. 11,) -- you can see portions of what appears to be *two straight lines* enclosing a brighter area that could form part of

either a “hexagon,” or “pentagon.” Three lines are actually visible in the Dec. 11th image within Figure 33...

And, while we’re on the subject of Titan and “Hyperdimensional signatures,” we cannot leave without demonstrating one just more ....

A few years ago, in one of the first ground-based telescopic images to penetrate Titan’s thick methane atmosphere in the infrared and see the actual moon’s surface, a bright “mountain” was detected “near Titan’s equator.” Careful measurements of its position by one of us (Hoagland), revealed another fascinating confirmation of the internally resonating fluid (lava), Hyperdimensional Model (Figure 34) ....



**Figure 34 – 10-meter Keck infrared image reveals possible “large mountain” on Titan ... at 19.5 degrees south latitude. (Keck)**

In terms of the other Saturnian moons: ozone molecules were detected over two satellites for the first time, via Hubble observations in the late 1990s. The ozone was detected hovering over Saturn’s moons, Dione and Rhea, in 1997. The presence of ozone is impossible without a supply of free oxygen – presumably, from the extensive (water) icy surfaces of these two moons.<sup>[93]</sup>

But, what could suddenly be liberating enough water vapor from these frigid satellite s to be split into *free* oxygen... to then recombine into newly detectable *ozone*... in the essential *vacuum* just above those perpetually icy landscapes? Unless, of course, the water vapor was coming up from warmed water *beneath* all that ice (but warmed by *what* -- underwater *volcanoes*?! ) -- and the water vapor was then split into hydrogen and oxygen, when it escaped (through surface cracks) and was exposed to the intense ionizing radiation around Saturn ....

The split-off oxygen atoms would then have recombined ( briefly) into the detected ozone molecules.

No matter what the final explanation, the Hubble observations are significant additional evidence of things also “heating up” -- more energy available, from “somewhere” -- *throughout* the Saturnian system....

Of all these new observations -- from persistent polar hexagonal cloud geometries and mysterious “polar methane clouds,” to the appearance of molecular ozone above otherwise geologically inactive icy satellites... all indicative of internal *hyperdimensional resonance patterns* within both Saturn *and* it’s largest moon... to totally baffling new x-ray phenomena in Saturn’s atmosphere... to a 1000% increase in the bright cloud surrounding Saturn... to the mind -boggling disappearance of one of the most alluring “new Voyager phenomena” of Saturn’s rings, its remarkable “spokes” -- the overwhelming evidence is that Saturn, like the rest of the solar system, is inexplicably *changing*. Not on a timescale of “geological eras”... or, even in a human lifetime... but in mere *decades*.

In another paper, we shall treat in some detail two of these dramatic changes -- the highly mysterious disappearance of the “spokes”... and the simultaneous detection of equally mystifying x-rays coming from the *equatorial regions* of Saturn -- and how they are *related*.

For, it is obvious from official comments--

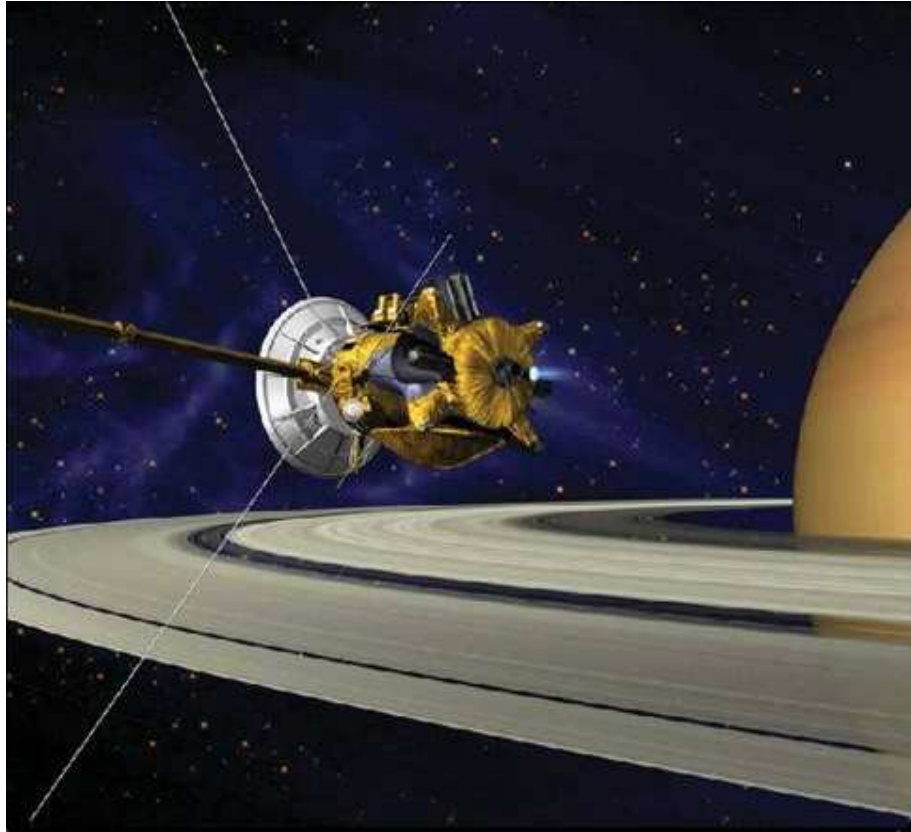
"It's a puzzle, since **the intensity of Saturn's X-rays requires that Saturn reflects X-rays fifty times more efficiently than the Moon** [emphasis added]."[<http://www1.msfc.nasa.gov/NEWSROOM/news/releases/2004/04-031.html>]

--that mainstream NASA planetary scientists *haven't a clue* as to what's causing these two simultaneous phenomena... Or--

*The grave danger they pose to the approaching, billion-dollar Cassini Mission.*

Fortunately, we do.





**Figure 35 – Cassini brakes into Saturn orbit, July 1, 2004, directly over the rings -- by firing its on-board engine to allow capture by Saturn's massive gravitational field. (NASA artist's concept)**

## Uranus

Though Uranus “appeared as featureless as a cue ball” in 1986 when Voyager flew by, *remarkably bright clouds* began appearing as of at least 1996... clouds “almost as large as continents on Earth, such as Europe” showing up in *only ten years or less!* <sup>[94]</sup>

By 1998, two years later, the Hubble Space Telescope had discovered nearly as many clouds in a short time in the high Uranian atmosphere as had ever been observed in the *entire history* of Uranus before. One of these clouds was “brighter than any other cloud ever seen on Uranus.” <sup>[95]</sup> (Figure 36)

About a year later in 1999, with the changes only *continuing* to increase, NASA articles were referring to Uranus as being “hit” by “Huge Storms,” <sup>[96]</sup> making it “a dynamic world with the brightest clouds in the outer solar system.” As an interesting analogy, NASA also said that “If springtime on Earth were anything like it will be on Uranus, we would be experiencing waves of massive storms, each one covering the country from Kansas to New York, with temperatures of 300 degrees below zero.” <sup>[97]</sup>

Sound a bit familiar ... like certain cataclysmic weather elements being depicted right now here on Earth ... in a certain feature film?

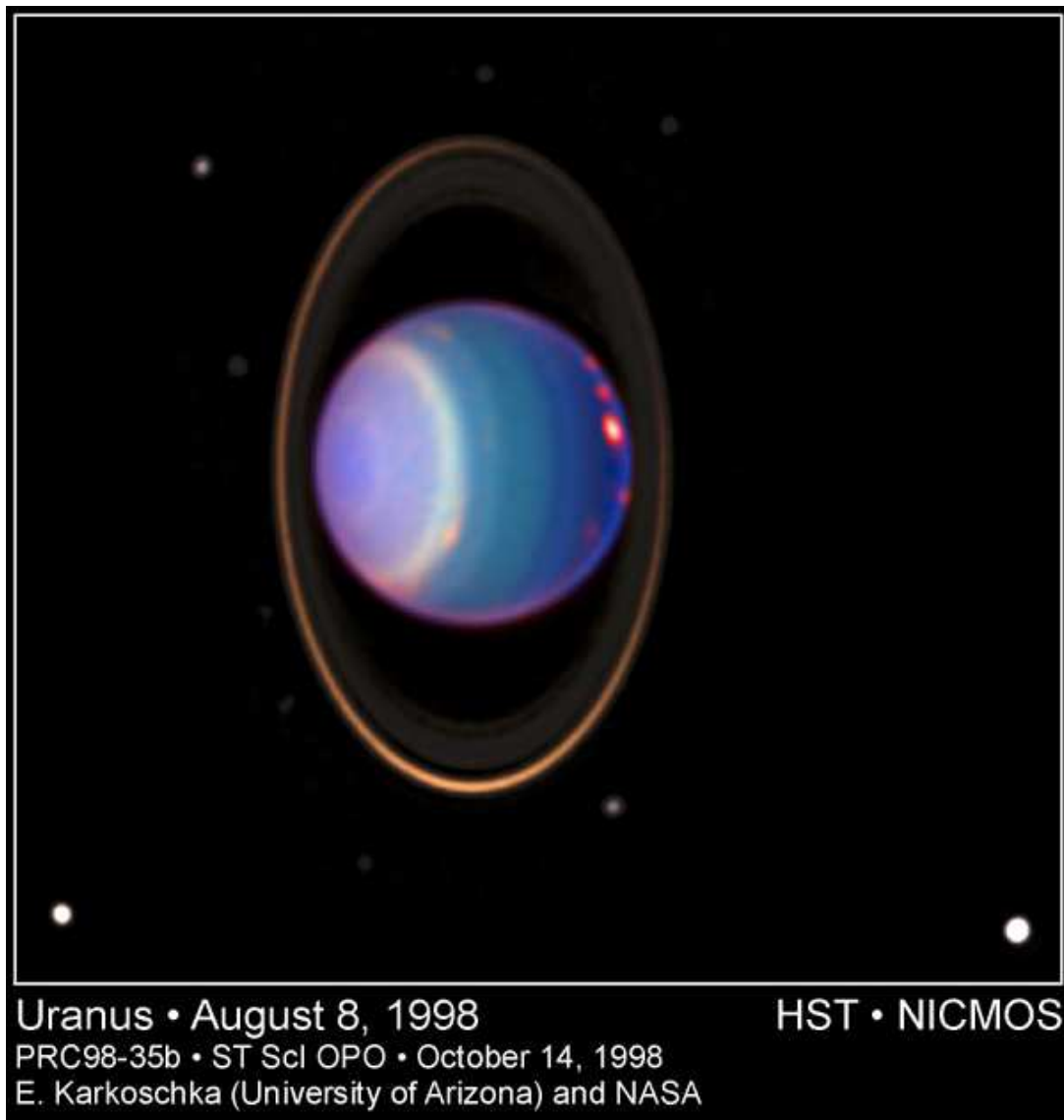


Figure 36 - False-Color Infrared Image of Emerging High -Altitude Bright Clouds on Uranus  
(NASA/HST 1998)

All this begs a question, though ....

Has Uranus *always* been like this, displaying these *specific* brilliant features in the clouds -- and we simply didn't get the chance to properly observe them any time before? Or, have they just tilted into Earth view with the passage of time and Uranus's ponderous 64-year orbit of the Sun? Are there really any changes going on that are *that* unusual ... or, are we just learning about what was *already there before*?

Here's the answer: the head NASA scientist referred to these increasingly bright and active clouds as "*really big, **big** changes*" on Uranus [emphasis added], compared to what we had seen with Voyager just 13 years before. And, let's not forget that Voyager did not see Uranus from *the same angle* that we do from Earth with ground-based telescopes or Hubble. [98]

Even so, some skeptics will probably still attack -- confidently asserting "nothing unusual is going on" ... "it's all the 'same-old-same-old' ..." or, "any changes are just the result of normal 'seasonal' variations, due to Uranus' constantly changing position relative to the sun."

Quite the contrary.

In October 2000, an official NASA briefing admitted that there are "discrete features northward of 25 degrees N that have the *highest contrast ever seen* for a Uranian cloud" [emphasis added]. Remember: the highest-contrast (read: greatest brightness) cloud ever seen on Uranus was not spotted until the year ... 2000.

Here's the official clincher: "long-term *ground-based* observations [of Uranus, are showing] seasonal brightness changes"... So, even from Earth, significant *changes* have been cataloged... based on new cloud patterns "*whose origins are not well understood.*"<sup>[99]</sup> [emphasis added]

Ok, even though it is easiest to blame Uranus' brand new, continent-sized, surprisingly bright clouds on its angular position relative to its orbit of the Sun, the preceding *official* NASA analysis reveals that *the science just does not exist to explain **how** such clouds could be formed ... in such a manner.*

The HD Model does ....

Higher-dimensional, fluid-like energy (existing all around us, in a massfree aether, just out of reach of our physical five senses and most conventional detection instruments...) is obviously building up within Uranus, and the many other bodies we've been examining all across the solar system. When this occurs, objects (such as planets, or satellites) are forced to "bleed off" this energy into our own three-dimensional frame of reference, where it manifests in various forms depending on the nature of the three-D materials involved.

In bloated, gaseous planets, it is signaled by the appearance of "bright, new cloudlike features" -- via the additional input of energy sustaining heightened convective activity, and the subsequent high-altitude condensation of brilliant clouds of ice crystals ... such as the methane cirrus now appearing in Uranus' upper atmosphere.

On the other hand, if the energy appears in a rocky satellite (or planet), *without* a substantial atmosphere -- such as Jupiter's Io -- the increased thermal activity creates a recognizable geometric pattern of *internal* volcanic heating and eruptions, corresponding to the hyperdimensional resonance flow *between* dimensions -- resulting, for instance, in the newly-seen "200-mile-wide lava hotspot" at a precise geometric location on Io's surface.

What about Uranus' *atmosphere* itself?

If the overall planetary brightness of Uranus, due to increased convective cloud activity, is changing so dramatically -- then is there any *hint* of equally massive atmospheric *compositional* changes that should accompany these climate variations in the HD Model? Changes similar to the "high increases of helium and heavier ions" now being seen in the Sun's plasma emissions; the "embarrassing" 10% *decrease* of

heavy elements in *Jupiter's* atmosphere (coupled to a corresponding 10% increase in *helium*, one of the same basic elements also mysteriously increasing in the Sun); the recent "surprise... abundance" of ozone in Mars' atmosphere; *or*, the "dramatic" decrease in sulfur gases in Venus' atmosphere... coupled with that equally baffling, apparent simultaneous *increase* in oxygen -- the latter appearing in the form of a geometrically-defined, "tetrahedral" auroral brightness increase ... of over 2500 percent!?

There is, indeed.

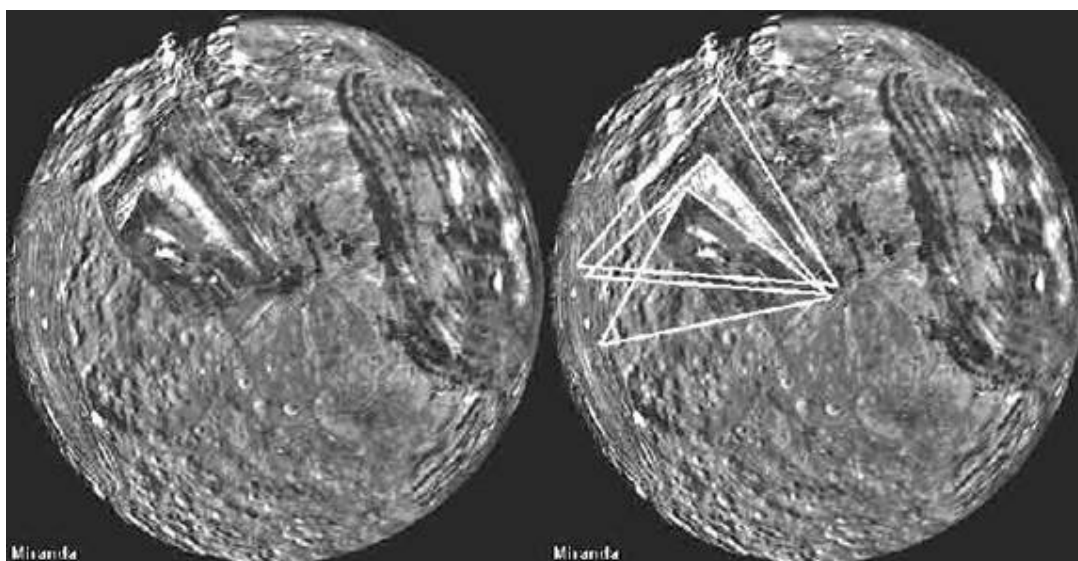
We do, in fact, see a *measurable change* in the composition of the Uranian atmosphere, which has appeared just recently. Carbon monoxide (CO) gas was detected in Uranus' atmosphere *for the first time* in December 2003, and the observing scientists feel that this gas comes from *dust flowing throughout the solar system*.<sup>[100]</sup> The *origin* of this new dust plays a very important role in (the Wilcock version of) the HD model, as we briefly explore later in Part 4... This "anomalous" dust appears to be finding its way into planetary atmospheres all across the solar system where it was never seen before, including Earth.

By contrast, it is the other author's opinion (Hoagland) -- backed by revolutionary laboratory data from the "new energy community" -- that such dramatic compositional changes are likely a direct by-product of the rising HD energies themselves ... a literal planetary *alchemical transformation of one element (or elements) into another*, within these planetary atmospheres .... A more definitive detailing of this Model, and an overview of the current, supporting laboratory evidence, will be forthcoming on *Enterprise* soon ....

Before we leave the Uranian system, we have yet another surprise in store.

There is a unique *geometric* phenomenon present on one of Uranus' most intriguing moons -- not directly connected with any of the current changes we've been highlighting -- but highly indicative of the fundamental Physics *underlying* all these solar system changes. Our last set of images in this section dramatically reveals this remarkable phenomenon -- *a physical process*, involved in the formation (one of us, Wilcock, believes) of the Uranian moon, Miranda -- a process that *directly* supports the HD model.

Acquired by Voyager 2, in January, 1986, the startling images of a bright, obviously *geometric*, "L- shaped" formation on Miranda (Figure 37 -- left) is very unambiguous - - and completely without *any* theoretical explanation in conventional geological models for the moon's formation, or subsequent evolution .... Look closely, and study the two sides of the image (below) carefully....



**Figure 37 - Voyager image of Uranian moon Miranda (L) and underlying three -fold triangular geometry (R).  
(NASA (L) with additions by Wilcock (R), 2004.)**

What is the likelihood of seeing a set of similar angles, in such nearby proximity and relationship, with such straight-lined geometric perfection -- if this were *only* a “natural formation” (in the mainstream sense)? Even the slightly widened nature of the two higher, smaller triangles is not unexpected: since the shape of the underlying geometric “stress patterns” is being projected onto a *spherical surface*. The geometry is patently obvious, even without a theoretical basis in place -- with the major clue to its origin being that the largest observable “triangle” on Miranda is ... or once was ... *perfectly* equilateral.

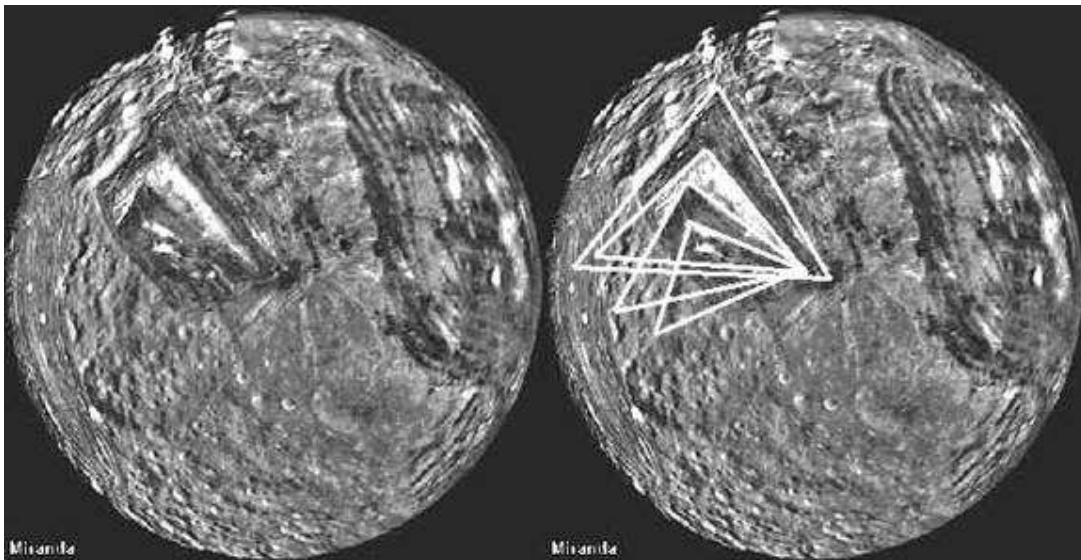
A more complete overview of the scenario that accounts for this unique satellite geometry has been presented in Wilcock’s “*Divine Cosmos*” (and will be reiterated, to some degree, in Part 4 of this Report), but here’s the crux of the mode I:

After Miranda formed, in the dust and gaseous nebula which orbited Uranus in the forming solar system, there was a subsequent, apparent physical *expansion* of Miranda ... shortly (geologically speaking) after its own formation. The process appears to have been shaped by internal “geometric forces” -- resonant internal energy patterns still unacknowledged (let alone *explained*) by any mainstream planetary models.

When this process was occurring, most of the surface of the now icy Miranda was composed of a high percentage of *liquid* water (!) for a time -- ideal conditions for a fluid-like HD energy to express itself as “formative geometry” in *our* dimension. In that early era, the normally-invisible *internal geometric resonances* that we have proposed elsewhere in this Report -- as shaping surface other features on other planets and their moons -- were apparently able to leave their unmistakable geometric signature on the rapidly-cooling, icy surface layers of this “ice ball” moon ... for Voyager to find.

According to Wilcock, the “triangles” that we can still make out in Figures 37 and 38 appear to show the faces of a regular geometric solid -- an *icosahedron* -- which is

shaped like a soccer ball, with 20 faces, each of which is a perfect *equilateral* triangle. Studying the image more closely, it is also possible to see a straight white line (indicated) -- that could indicate a *fourth triangle*, in a perfect “ratcheted” angular position immediately below the two others, and perfectly offset at the same base angle. Yet *another* white mark on the moon’s surface could locate the top corner of a *fifth triangle*, smaller than the others and with the same basic rotation involved, but we haven’t drawn it into Figure 38 in order that the image stays a little less cluttered . See for yourself:



**Figure 38 - Voyager composite image of Uranian moon Miranda (L) and underlying “ratcheting” four-fold triangular geometry (R). (NASA 1988 / Wilcock 2004)**

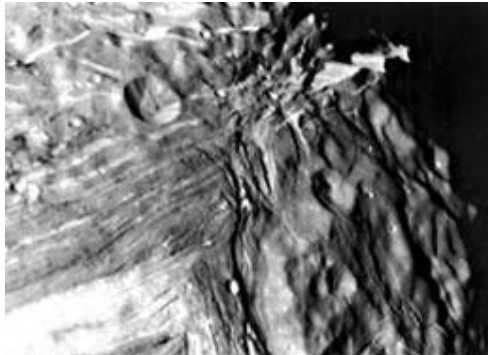
Though we have not tried to model it here, notice that the largest (again, equilateral!) triangle is *not just one line*... it is a series of “nested” or “striated” straight lines, suggesting that the “energy geometry” may have been rapidly expanding (or, the moon rapidly contracting), leaving the striations in the freezing ice and dirt behind .... These striations are easier to spot as we investigate the next image , Figure 39, where we get a far more “up close and personal” view of the top of this remarkable triangular formation.

In examining Figure 39 -- again, taken from the 1986 Voyager 2 imagery of this amazing landscape -- you may notice a feature that NASA scientists have also puzzled over for almost a generation... a very large, *vertical* cliff that pokes *straight up out of the surface*, just above the northern tip of the largest triangle (Figure 39 -- upper right), and aligned with its western edge. Indeed, at 5 to 6.25 miles tall, this is quite literally the largest cliff in the entire solar system -- *fully 300% higher than the Grand Canyon is deep!*

This 6-mile-high, straight-lined cliff clearly shows the *enormous* internal stresses that these geometric energies were able to exert during the formation of the moon. The apparently fragile nature of the surface ice allowed the internal geometric resonances to *literally* tear the brittle surface of the moon apart ... leaving 6 -mile-high “fingerprints” pointing toward the stars.



These silent sentinels now stand as 30,000-foot, shining shards of ice ... mute testimony to the awesome Hyperdimensional forces that can literally shatter worlds  
....

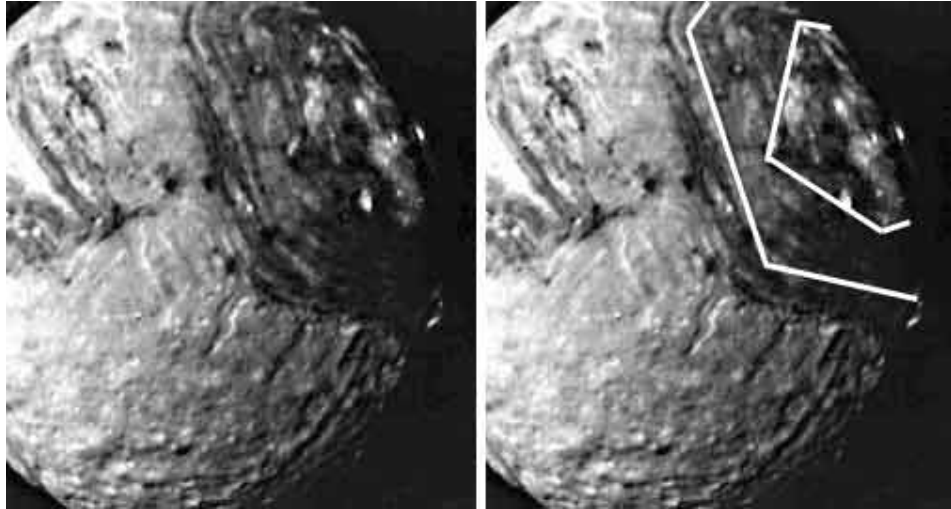


**Figure 39 - Geometrically Positioned Vertical Cliff on Miranda, 5-6 Miles High (NASA 1986)**

When presented with this stupendous evidence, falling on the exact same straight line that anyone can extend off of the main “triangle” on Miranda, even NASA had to say “something” about how “anomalous” it was... seeing such huge cliffs towering above the surface of such a comparatively tiny moon (Miranda is only ~300 miles across!). It is not often that NASA claims that an anomaly is “quite surprising,” but this is one example where they *had to*:<sup>[101]</sup>

Figure P-15.3 offers more evidence of the intensity of both vertical and horizontal deformation on Miranda. A near-vertical, stratified scarp 8 to 10 km [5-6.25 miles] in height (upper right) represents the **highest cliff known in the solar system** (even exceeding the relief of the huge cliffs in Valles Marineris on Mars and **more than three times the relief of the Grand Canyon**). Vertical grooves (from shearing between fault blocks?) appear on the cliff face. **Such a huge cliff, remaining intact, is quite surprising on a small icy body** [emphasis added].

Also potentially significant is a seemingly *pentagonal* structure in the same striated dusty ice, to the *east* of the main triangular figure. In this next Voyager 2 image, we see multiple “nested” layers of straight lines on the right side of the moon, just as we have seen in the main triangular area. The angles between these lines seem to be *perfectly pentagonal*... the second huge, *unmistakably geometric* “bite” into an otherwise smooth “cookie,” with many visible layers of striations (Figure 40).

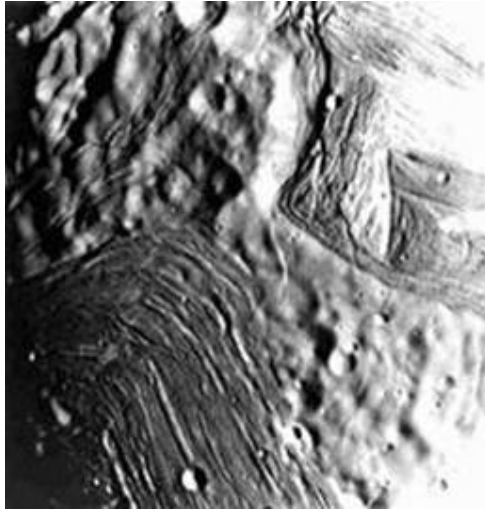


**Figure 40 - “Nested” Pentagonal Feature on Uranian moon Miranda (NASA 1988, Wilcock 2004)**

Furthermore, if you look closely at the image on the left in Figure 40, you will see an area in the center of the “pentagonal” striated feature where there is a distinct change... a different geometry seems to *slice through* the straight lines, as if it were *superimposed on top* of them! Inside this geometric area, the striations stop, and the surface looks far more similar to the rest of the moon’s surface. Upon close inspection, this “superimposed” area *also* appears to be pentagonal, but on a *slight rotational offset* from the other pentagon formation. Thus, the “triangles” are not the only “ratcheting” geometry visible in the formation of Miranda.

For those who really do get excited by the details, the angle of offset between these two main pentagonal formations appears *very similar* to the main offset angle between the triangles in Figures 37 and 38. NASA’s “full moon” composite image shown in Figures 37 and 38 seems to have *distorted* some of the pentagonal details, as gray areas were arbitrarily filled in where data was missing (at the top) ... apparently *assuming* that the striated structure did not continue past the point where Voyager’s imaging cuts off.

When we look to the *west* of the main triangular image, even *more* ribbed straight-line structures appear... (!) ... suggesting that there could be *yet additional geometry* to discover, if the entire moon were properly photographed -- since at present we have only seen the better part of one side of it. In this case, it appears (Figure 41) that we are *again* seeing a 60-degree angle in the straight lines, suggesting similar equilateral triangles as those appearing in the main “L” feature:



**Figure 41 - Layered, Possibly Triangular Feature Due West of “Ratcheted Triangle” Formation (NASA 1986)**

All in all, the Uranian moon Miranda is second-to-none in showing us how these geometric “resonance energies” emerge within a solid, planetary object and can shape major portions of its surface -- even if that object is “only” 300 miles across. In these historic Voyager images, remarkable and surprising additional support is thus provided to the Hyperdimensional Model... which gives us the physical engine to drive these otherwise *totally* inexplicable surface patterns on Miranda.

An important afterthought: why just on *Miranda*? Why not equally tell-tale, equally geometric “Hyperdimensional surface features” on any of the *other* ~138 moons... currently known to orbit the major planets of this solar system?

Due to Miranda’s unique display of highly ordered surface features, coupled with its *unique* position in the solar system, the other author of this Report (Hoagland) has a slightly *different* explanation for the remarkable geometries Voyager 2 discovered on Miranda ....

As most people who are interested in the solar system already know, Uranus has a highly anomalous “obliquity” (tilt) to the plane of its orbit around the Sun (~98 degrees...), compared with any of the other planets. For this reason, Hoagland theorizes that sometime in the past history of the solar system, Uranus experienced a literal, radical, *polar shift* in space. Such a “major polar reorientation” -- for such a massive, rapidly spinning object -- would have created *enormous* hyperdimensional forces, not only inside Uranus... but also in the space immediately *surrounding* the massive, rapidly rotating planet -- forces that would have included the close-in orbit of... Miranda.

Hoagland contends that such unimaginable forces would have literally “turned Miranda inside out” -- *re-melting the entire, previously icy moon in the process!*

As Miranda literally resolidified, the enormous hyperdimensional resonances in the space surrounding it -- attempting to reshape the moon’s internal structure to conform to these resonant geometries *still present* in the aether from its massive, nearby primary -- were literally *frozen into portions of the surface of this refreezing icy moon*,

preserving ... forever ... the otherwise invisible hyperdimensional fingerprints of the awesome planetary catastrophe which had occurred.

The presence of extensive cratering in other regions of this satellite, right alongside the highly geometric sections, Hoagland believes, testifies to the true nature of the Event which caused this literally moon-wrenching destruction and recreation: the explosion, 65 million years ago, of another *major planet* -- Planet V -- orbiting closer to the inner solar system... where now only the scattered debris of asteroids roam. [For a fuller examination of this theory and its other far-reaching solar system implications, the reader is referred to "The Mars Tidal Model" at <http://www.enterprisemission.com/tides.htm>].

Thus, in Hoagland's Model, it is because of Miranda's unique location -- as the closest satellite to a major planet that one day literally *tipped over*, creating enormous hyperdimensional stresses in the space (and any objects!) immediately surrounding it -- that this tiny moon has now preserved upon its surface a unique record of the literal process of hyperdimensional *creation*... vital, additional clues to what is *really* going on all across the solar system ... even now.

Our next stop on this bold new tour of the solar system is Neptune... and if you think that the data is going to tire out and get any *less* dramatic, as we head into colder and colder regions of the outer solar system, where solar energy *must* carry less and less of an effect ... then you're in for a *real* surprise.

Neptune is a "textbook Hyperdimensional case" -- in every sense of the word.

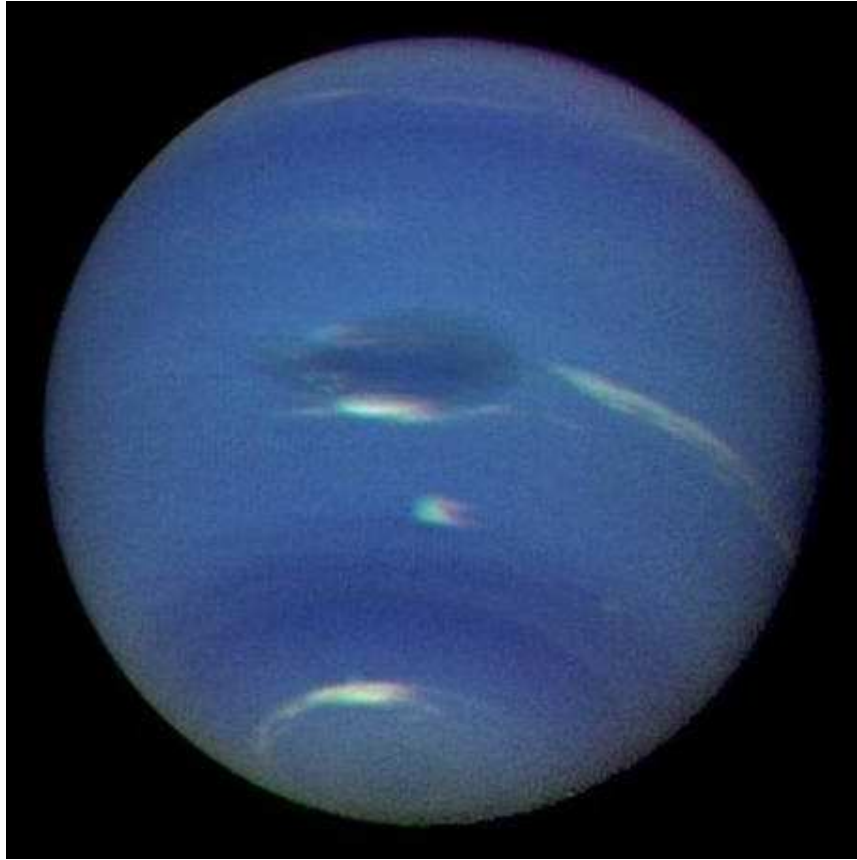
The image of Neptune featured in Figure 43 is one of the single most dramatic, *full color* images of undeniably obvious solar-system change now have available. If you know someone who really has trouble believing any of this, no matter how *obviously* you spell it out for to them, show them Figure 43 ... and show it *first*.

The increasing brightness that we have just explored on Uranus is *precisely* mirrored with an even *greater* increasing brightness on Neptune... plus a myriad of *other* changes totally reinforcing our earlier discussions.

## Neptune

By June 1994, Neptune's "Great Dark Spot" -- a circular atmospheric feature in the southern hemisphere, at our familiar 19.5-degree latitude, just like the "Great Red Spot" on Jupiter -- had mysteriously *disappeared*.

For reference, Figure 42 shows us what this Great Dark Spot looked like to Voyager 2... *before* it literally vanished.



**Figure 42 – Neptune, with Great Dark Spot in center, as seen by Voyager 2 in 1989.**  
(NASA)

By April of 1995, Neptune's Great Dark Spot had *reappeared* ... but ... in Neptune's *northern* hemisphere... accompanied by more bright, high-altitude clouds! NASA itself noted that this new spot was a “*near-mirror image of the first spot* previously imaged by Voyager 2.”<sup>[102]</sup> [emphasis added]

This surprising change also led NASA scientists to observe that “Neptune has changed radically since 1989... New features indicate that with Neptune's extraordinary dynamics, the planet can look completely different in just a few weeks.” And even more importantly, for the HD model, NASA said: “Energy from the Sun drives the Earth's weather system. However, the mechanism on Neptune must be very different because the planet radiates 2 times more energy than it receives from the distant, dim Sun ...”<sup>[103]</sup> [emphasis added].

Are you starting to see a pattern here?

Two years after these official descriptions, NASA wrote of “a looming mystery”:

When the planetary probe *Voyager* visited Neptune in 1989, it detected the Great Dark Spot, a pulsating feature nearly the size of the Earth itself. Two years ago, Hubble observations showed the spot had disappeared, and that another smaller spot had emerged. But instead of growing to a large-scale storm like the Great Dark

Spot, *the new spot appears to be trapped at a fixed latitude* and may be declining in intensity, said Sromovsky, a senior scientist ...<sup>[104]</sup> [emphasis added].

What, exactly, would “trap” the new spot at a fixed latitude, exactly the same number of degrees *above* the equator as the previous spot was *below* the equator!? This is easily explainable in the Hyperdimensional Model, as a 180 -degree phase shift in the simplest resonant (*tetrahedral*) pattern underlying Neptune’s internal fluid dynamics... which forces the precise positioning of “the Great Dark Spot” -- the vortex resonantly shifting from 19.5 degrees *south* latitude... to 19.5 degrees *north*. [Refer back to Figure 3, in Part Two of this Report, for an explanatory diagram of this underlying HD geometry.]

If you’re thinking that this “HD phase shift” of Neptune is somehow correlated with the shift of vortex activity *away* from Jupiter’s equatorial regions, *towards* the polar regions... *and* the 58.6% *slowdown* of cloud rotations at Saturn’s equatorial region... with the surprise emergence of x-ray emissions along Saturn’s *equator*, rather than the poles as NASA would expect... **and** the *disappearance* of the so-called “spoke” formations in Saturn’s rings... then congratulations, Neo...

...you have taken “the red pill” and begun using your new “eyes” for the first time... seeing “the real world” beyond the limitations inherent in the confined “box” of three dimensions... or what some might call the “Matrix.”

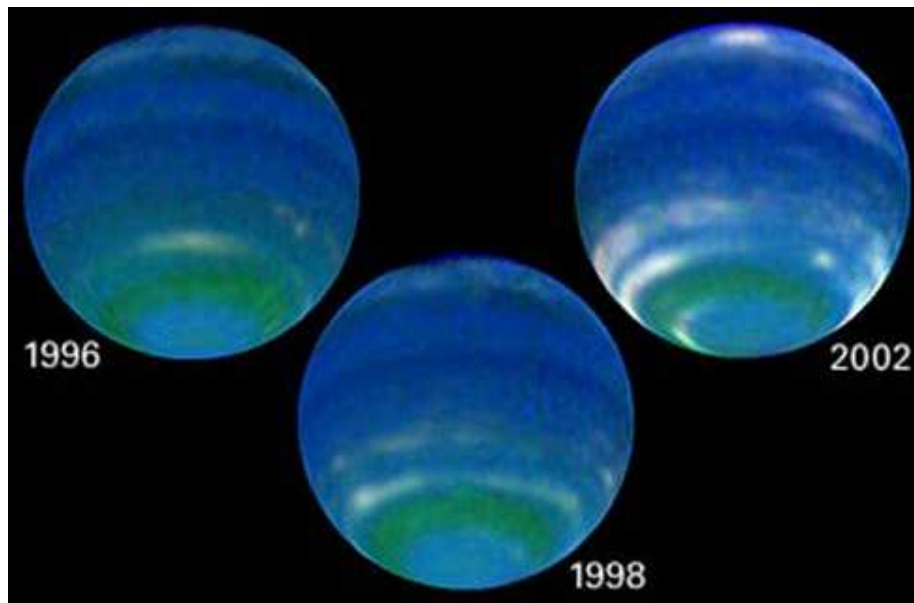
Well done. There is, indeed, no spoon...

It gets better. By 1996, less than a year after this “hyperdimensional Neptunian pole shift,” Dr. Lawrence Sromovsky noticed an *increase in Neptune’s overall brightness*, which continued dramatically surging upwards through 2002 (Figure 43). Though the false-color photo speaks far louder than the statistics, the fact is that in *only six short years*, blue light became 3.2% brighter on Neptune, red light 5.6% brighter... and near-infrared light intensified by a whopping *40%*. Even more surprisingly, some areas of latitude became fully *100 percent brighter!*

In this case, we invite you to read this stunning discovery in NASA’s own words, while also noticing how these *unprecedented, planet-wide changes* in brightness are boringly “explained away” by a “simple seasonal variation model” related to Neptune’s tilt angle to the Sun... ( ...yawn...)

**April 22, 2002, Madison, WI**—Hubble Space Telescope (HST) imaging observations in August 2002 show that Neptune’s brightness has increased significantly since 1996... and now appears to be consistent with a simple seasonal variation model... Comparing August 2002 observations to similar observations in 1996, the authors found that Neptune’s reflectivity averaged across the planet’s face (disk -averaged) increased by 3.2% at 467 nm (blue), 5.6% at 673 nm (red), and 40% in the 850 nm – 1000 nm band (near infrared). These changes result from even larger brightness increases in restricted latitude bands, reaching 100% in some cases. The reason for the increases may be seasonal forcing, which is the seasonal variation in local solar heating.”<sup>[105]</sup>





**Figure 43 – Atmospheric brightness increases on Neptune, 1996-2002. (Sromovsky et al. / NASA / HST)**

Though this last NASA article makes it all seem good and simple, like “a neat little light show brought on by very ordinary meteorology”... there are *other* articles that speak far more candidly. The bottom line is that the physics to explain such a change in brightness is *just not there* in the conventional models, since Neptune “seems to run on almost no energy”. But don’t take our word for it... read what the scientists *themselves* have had to say:

...Some of the wildest, weirdest weather in the solar system... a planet whose blustery weather -- monster storms and equatorial winds of 900 miles per hour - bewilders scientists...

The weather on Neptune, the eighth planet from the sun, is an enigma to begin with. *The mechanism that drives its near-supersonic winds and giant storms has yet to be discerned.*

On Earth, weather is driven by energy from the sun as it heats the atmosphere and oceans. On Neptune, ***the sun is 900 times dimmer*** and *scientists have yet to understand how Neptune's weather-generating machinery can be so efficient.* “It’s an efficient weather machine compared to Earth,” said Sromovsky. ***“It seems to run on almost no energy.”***...

Sromovsky said that compared to the look provided by the Voyager spacecraft, Neptune is a different place: “The character of Neptune is different from what it was at the time of Voyager. *The planet seems stable, yet different.*”<sup>[106]</sup> [emphasis added]

If the planet *itself* is changing, then what about its *satellites*?

Look no further: Neptune’s major moon, Triton, *also* experienced great changes... in this case, a “very large” 5% temperature increase between 1989 and 1998. According to MIT researchers, this is comparable to the Earth’s atmosphere globally

heating up by 22 degrees Fahrenheit... in only 9 years!<sup>[107]</sup> It is believed that Triton's atmospheric pressure also has "at least doubled... since the time of the Voyager [1989] encounter."<sup>[108]</sup>

It is curious that each of these components we have discovered throughout the solar system, like the warming trend on Triton, are so often discussed as *single events*, or perhaps with "one or two others" included... in a few, rare instances.

NASA *does* give us all the hard evidence we would ever need to make a case... but they, or the media reporting on their discoveries, simply never put this evidence *together* under one roof. Thus, the data continues to quietly slip out into the open undetected, while the gaping silence of yawns from the public perpetual ly haunts the prospects of *any* newly proposed space mission *ever* getting off the ground.

If these changes *were* to break into the open media, it is quite natural to assume that the public would become *far* more interested in tracking these truly remarkable changes... especially because of how they might affect *us*... and the funding would come rolling on in.

We know that the Earth is also undergoing major changes, as we will explore in unprecedented detail in Part 4 of this Report.

In the meantime, the only unexplored territory still remaining is the distant Pluto -- the icy planet on a long, elliptical orbit at the far outer reaches of our solar system, recently downgraded to a "planetesimal" status in most planetologists' eyes. If Pluto can be shown to have *any* changes *at all*, then we most certainly are dealing with a solar-system-wide effect. Case closed.

Pluto does not disappoint.

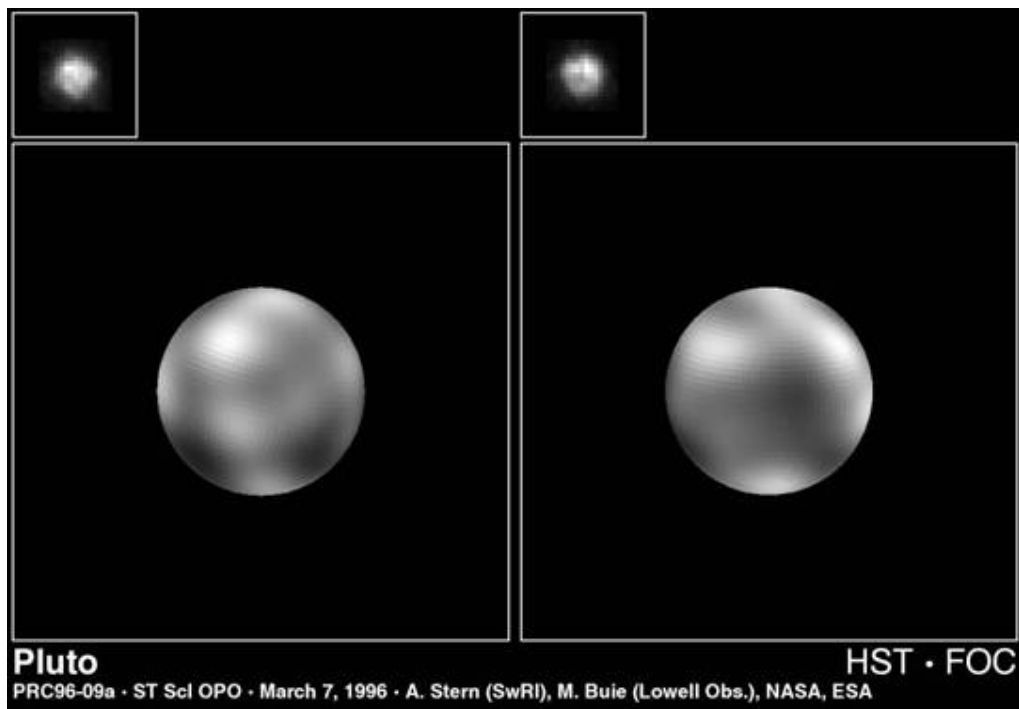
## Pluto

Before we discuss the likelihood of any *real changes* going on with Pluto, we have to begin by taking note of something important. Most conventional NASA explanations for these changes, as we have seen, revolve around the notion (pun intended!) that the planet or satellite's angular tilt (*obliquity*) relative to the Sun, is *by far* the most likely cause of any observable changes. In the case of Pluto, the 248-year elliptical orbit it traces around the Sun actually brings it *closer* to the Sun than Neptune at certain times... which, incidentally, just occurred between 1979 and 1999... and much farther *away* from the Sun at other times.

Obviously, we would naturally assume that if a planet moves closer to the Sun, it is exposed to more heat than if it moves farther away from the Sun. Simple, right? If you're heating your house with a single fireplace, you're not going to hang out in the kitchen if the fire is in the living room. So, where is Pluto now?

Below (Figure 44) is a Hubble Space Telescope image of Pluto, taken several years ago. Because Pluto was slightly less than 3 *billion* miles from Earth (and still, at the time, inside Neptune's orbit) when the image was acquired, even with Hubble's superb resolution, the size of each "pixel" on the surface of the tiny planet was more than 100 miles across!

At that enormous distance, the strength (and thus the heating effect) of sunlight reaching Pluto's surface was *800 times less* than sunlight at Earth's distance ... and getting smaller with each passing hour!



**Figure 44 – Pluto as imaged by the Hubble Space Telescope (actual images, upper right). The two larger images are computer-synthesized maps made from the raw Hubble images (NASA/ST Sci)**

This is because -- *crucially* -- since 1989, Pluto has been moving *away* from the Sun in its highly elliptical, 248-year orbit. As you probably already guessed, 1989 was exactly halfway in the middle of the 1979-1999 period when Pluto was inside Neptune's orbit.

Despite this drifting into the nether regions, where we would logically expect it to get colder and colder, something *phenomenal* is going on... something that utterly, totally puts the capstone on our Hyperdimensional Model.

Pluto's temperature is *increasing*. Its atmospheric pressure is *increasing*. And not just a little...

*A lot.*

No, scratch that... by a truly *tremendous* amount.

Yet, this is all occurring even as Space.com admits, "Logic suggests the planet might cool as it receives less sunlight each day."<sup>[109]</sup> Indeed.

A groundbreaking Pluto study, recently led by Dr. James L. Elliot, took advantage of a rare event, similar to the one we previously discussed with Saturn's satellite, Titan. Pluto passed in front of a star in 2002, and this allowed Dr. Elliot and his associates

to determine whether Pluto's structure and composition had *stayed the same*, as previously observed in 1989, or if it had *changed* in some way.

To their obvious surprise, they discovered that the atmospheric pressure of Pluto has *increased... by a full three hundred percent... (!) ... between 1989 and 2002!* This has also caused a noticeable rise in Pluto's surface temperatures. Again, this is attributed by mainstream planetologists to... you guessed it... "seasonal change."<sup>[110]</sup>

Remember just a bit earlier when we were discussing Neptune's moon, Triton... how its global warming compares to the Earth becoming globally *22 degrees Fahrenheit hotter -- in only nine years?* According to Dr. Elliot, "The changes observed in Pluto's atmosphere are much more severe [than the "global warming" seen on Triton]. The changes observed on Triton were subtle. Pluto's changes are not subtle... We just don't know what is causing these effects."<sup>[111]</sup>

Indeed, elsewhere Dr. Elliot says that the idea of "seasonal changes" being responsible for such a "severe" increase is "*counterintuitive*," because, by orbiting farther from the Sun, it would be expected that Pluto's temperatures would naturally *fall... not rise!*"<sup>[112]</sup>

Hence, Dr. Elliot and his other NASA team members acknowledge this unexpected "global warming" of Pluto, but they also say that this warming trend is "likely not connected with that of the Earth" since the "Sun's output is much too steady."<sup>[113]</sup> Furthermore, "some longer term change, analogous to long-term climatic changes on Earth" could be responsible.<sup>[114]</sup> Without identifying precisely *what* this longer-term change could be, they tread *very* closely to suggesting some single, unified cause... like what we present here in our hyperdimensional model.

Furthermore, not only has Pluto's atmospheric pressure increased, but it is also showing signs of *weather... for the first time*, as was reported in a Space.com article:

Meanwhile, the new studies reveal what appear to be the first signs of weather on Pluto, small fluctuations of air density and temperature. Sicardy's team figures the changes, seen as spikes in the data, are caused "either by strong winds between the lit and dark hemispheres of the planet, or by convection near the surface of Pluto."

Scientists have long suspected that pressure difference in the tenuous atmosphere, created by stark temperature differences from the day side to the night side, would fuel brisk breezes.

The researchers did not attempt to estimate the strength of Pluto's apparent winds.

Pluto gives up its secrets slower than any planet.<sup>[115]</sup>

Given that even NASA seems to be vaguely aware that these distant, totally unexplainable changes in Pluto's environment are, somehow, analogous to equally inexplicable "global warming" occurring here on Earth... by saying that the "global warming" of the Earth and of Pluto are "likely not connected"... in the closing section of this Report we shall therefore turn our attention back towards the Earth, where all of these changes truly matter most ....

\* \* \*

For, it is in these Earthly shifts that we are shown most directly how our own lives may be dramatically affected by the “cosmic” physical processes and changes under discussion in this Report.

The Earth, in Part 4, will dramatically reveal a host of anomalies that are literally *identical* to many of the others that we have investigated elsewhere in the solar system. We will also explore “resonance interactions” between the Earth, the Sun, the Moon, other planets -- even a nearby pulsar, CP1133. Once the Earth data is complete, anyone who has read this paper with an open mind is likely to laugh out loud at petroleum-funded scientists who try to insist that “nothing much has changed” on the Earth... or in the greater solar system.

Climate change is here. It is real. It is taking place *simultaneously* on all our nearby worlds. It *cannot* be denied.

The question is this... could the knowledge of the Hyperdimensional Model enable Humanity to team up and find a way out of the cataclysms that may otherwise await us?

Is it worth it for scientists and political leaders to take this seriously, knowing that if they continue to ignore this evidence, they may be turning their backs on *billions* of lives that could be saved?

Think about it. Then act. Let others know what you may have learned for the very first time here. Forward them the link to this full Report... or, summarize the excerpts you think matter most and work up your own synopsis, giving your readers the link to bring them back to the full Report, in case they are interested...

If they live on Earth, they probably are. Here is “the red pill” that you can give them:

[\[http://www.enterprisemission.com/articles/05-14-2004/Interplanetary\\_1.htm\]](http://www.enterprisemission.com/articles/05-14-2004/Interplanetary_1.htm)

The time to argue that “nothing is happening” is over.

These *are* seasonal changes occurring all around us... a “Hyperdimensional Spring” that is blooming throughout our entire solar system. Will anyone be brave enough, and *care* enough, to act... in time?

Will you?

**(Continued in Part 4)**

**Part 1 | 2 | 3 | △**

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<sup>[82]</sup> "Polar map projections of Voyager 1 and 2 images of Saturn's northern hemisphere revealed the existence of a feature with a remarkable hexagonal shape surrounding the pole at planetographic latitude 78.5 deg N (see Fig. 1A) (Godfrey 1988). The hexagon was embedded within an eastward jet of 100 m s<sup>-1</sup> but was itself stationary with respect to Saturn's internal rotation period (Desch and Kaiser 1981). Related to it was a large oval (the North Polar Spot (NPS))..."

Both features (hexagon and NPS) were reobserved 10-15 years later in the 1990s from the ground (Sanchez-Lavega et al. 1993) and from the Hubble Space Telescope (Caldwell et al. 1993), suggesting that they are long-lived features apparently insensitive to the strong seasonal forcing in Saturn's polar regions Fig 1B. Because of its slow drift, the hexagon was conjectured to be deeply rooted in Saturn's interior (Gierasch 1989, Godfrey 1990)."

Sanchez-Lavega, A. and Perez-Hoyos, S, et al. *NOTE: No Hexagonal Wave around Saturn's Southern Pole*. Icarus 160, 216-219 (2002). URL: <http://www.ajax.ehu.es/grupo/2002b.pdf>

<sup>[83]</sup> "At present, most of our knowledge of the Saturnian system can be traced to the pioneering observations of Saturn's plasma population, energetic particle population, magnetic fields, plasma waves and remote sensing observations from the Pioneer II and Voyager 1 and 2 encounters... Johnson et al. (1989) constructed from all these observations a model of a neutral cloud torus that surrounds Saturn..."

This work was followed by the discovery using HST of a relatively large toroidal cloud of OH that was surrounding Saturn with densities as high as 500 cm<sup>-3</sup> near the L shell of [the moon] Enceladus (Shemansky et al., 1993; Hall et al. 1996; and Richardson et al. 1998). This density was more than an order of magnitude larger [1000% larger] than that predicted by Johnson et al. (1989) [based on the original Pioneer and Voyager data]..."

Sittler, Ed et al. *Pickup Ions at Dione and Enceladus: Cassini Plasma Spectrometer Simulations*. NASA/Goddard Space Flight Center et al. URL: [http://caps.space.swri.edu/caps/CAPS\\_Publications/Sittler.pdf](http://caps.space.swri.edu/caps/CAPS_Publications/Sittler.pdf)

<sup>[84]</sup> "The Hubble telescope has taken the first picture of bright aurorae at Saturn's northern and southern poles [top picture]..."

Hubble's far-ultraviolet-light image resolves a luminous, circular band centered on the north pole, where an enormous curtain of light rises as far as 1,200 miles (2,000 kilometers) above the cloud tops. This curtain changed rapidly in brightness and extent over the two-hour period of observations."

Trauger, J.T. et al. *Hubble Provides the First Images of Saturn's Aurorae*. HubbleSite NewsCenter, 1995, no. 39. URL: <http://hubblesite.org/newscenter/newsdesk/archive/releases/1995/39/> - see also <http://hubblesite.org/newscenter/newsdesk/archive/releases/1998/05/>

<sup>[85]</sup> Hill, Mary Ann. *Saturn's Equatorial Winds Decreasing: Spanish-American Team's Findings Raise Question About Planet's Atmosphere*. NASA / Wellesley College News Release, June 4, 2003. URL: <http://www.wellesley.edu/PublicAffairs/Releases/2003/060403.html>

<sup>[86]</sup> "The first clear detection of X-rays from the giant, gaseous planet Saturn has been made with NASA's Chandra X-ray Observatory. Chandra's image shows that the X-rays are concentrated near Saturn's equator — a surprising result since Jupiter's X-ray emission is mainly concentrated near the poles."

Existing theories cannot easily explain the intensity or distribution of Saturn's X-rays...Jan-Uwe Ness, of the University of Hamburg in Germany and lead author of a paper discussing the Saturn results in an upcoming issue of *Astronomy & Astrophysics*... [said,] "It's a puzzle, since the intensity of Saturn's X-rays requires that Saturn reflects X-rays fifty times more efficiently than the Moon."

Roy, Steve and Watzke, Megan. *X-rays from Saturn pose puzzles*. NASA/Marshall Space Flight Center News Release #04-031, March 8, 2004. URL: <http://www1.msfc.nasa.gov/NEWSROOM/news/releases/2004/04-031.html>



<sup>[87]</sup> “In the early 1980s, NASA’s two Voyager spacecraft revealed that Saturn’s rings are made mostly of water ice, and they found “braided” rings, ringlets, and “spokes” – dark features in the rings that seem to circle the planet at a different rate from that of the surrounding ring material.”

NASA Solar System Exploration. *Overview: Saturn*. NASA SSE website. URL:  
<http://solarsystem.nasa.gov/planets/profile.cfm?Object=Saturn&Display=OverviewLong>

<sup>[88]</sup> “Dr. Carolyn Porco, a planetary ring specialist and leader of the Imaging Science team, said, “For someone who was involved in the Voyager exploration of Saturn twenty-three years ago, this is turning out to be a very sentimental journey. I’m reminded of what it felt like to see Saturn’s rings for the first time with Voyager, and how rich and surprising they were. **The spokes in the B ring**, the twisted F ring and its shepherding moons, the sheer number and diversity of ring features... **we’ll be on the lookout for all these things** and more over the next few months”.” (emphasis added)

Finn, Heidi. *Saturn Details Become Visible to Cassini Spacecraft*. Cassini Imaging Central Laboratory for Operations (CICLOPS,) News Release, Dec. 5, 2003. URL:  
<http://ciclops.lpl.arizona.edu/PR/2003L05/NR2003L05A.html>

<sup>[89]</sup> “Cassini’s approach to Saturn has begun... new details in the atmosphere and rings are becoming visible, and **scientists are already puzzling over the noticeable absence of the ghostly spoke-like dark markings in the rings** first seen by Voyager on its approach to the planet 23 years ago. One thing is manifestly clear: there will be many more puzzles in store for us as the mission progresses.”

Porco, Carolyn. Cassini Imaging Central Laboratory for Observations (CICLOPS), *Latest Release*, Feb. 27, 2004. URL: <http://ciclops.lpl.arizona.edu>

<sup>[90]</sup> Harvard-Smithsonian Center for Astrophysics. *Titan Casts Revealing Shadow*. Chandra X-Ray Observatory Photo Album website of NASA / SAO. April 05, 2004. URL:  
<http://chandra.harvard.edu/photo/2004/titan/>

<sup>[91]</sup> “A dense, hazy atmosphere at least 400 kilometers (250 miles) thick obscures the surface [of Titan.]”

Woodfill, Jerry. *The Satellites of Saturn: Titan*. NASA JSC Space Educator’s Handbook, Last Updated Feb. 11, 2000. URL: <http://vesuvius.jsc.nasa.gov/er/seh/satsaturn.html>

<sup>[92]</sup> Brown, Michael E. et al. *Direct detection of variable tropospheric clouds near Titan’s south pole*. Nature, vol. 20, 19/26 Dec. 2002. URL: <http://www.gps.caltech.edu/~antonin/spclouds/article.pdf>

<sup>[93]</sup> “Recent observations by HST have shown the presence of ozone at both Dione and Rhea, which also implies the presence of molecular oxygen at these bodies...”

Sittler, Ed et al. *Pickup Ions at Dione and Enceladus: Cassini Plasma Spectrometer Simulations*. NASA/Goddard Space Flight Center et al. URL:  
[http://caps.space.swri.edu/caps/CAPS\\_Publications/Sittler.pdf](http://caps.space.swri.edu/caps/CAPS_Publications/Sittler.pdf); see also Noll KS, Roush TL, Cruikshank DP, Johnson RE, Pendleton YJ. 1997, *Detection of ozone on Saturn’s satellites Rhea and Dione*, Nature, July 3; 388(6637): 45-7.

<sup>[94]</sup> “Using the Hubble telescope’s visible-light camera, astronomers for the first time this century have detected clouds in the Northern Hemisphere of Uranus. The snapshots show banded structure and multiple clouds...The clouds can be seen along the planet’s right edge [the bright dots]. Another cloud [faint white dot] is barely visible near the bottom of the blue band. The clouds are almost as large as continents on Earth, such as Europe.”

NASA / Karkoschka, Erich et al. *Huge Spring Storms Rouse Uranus from Winter Hibernation*. HubbleSite NewsCenter, Mar. 29, 1999, no. 11. URL:  
<http://hubblesite.org/newscenter/newsdesk/archive/releases/1999/11/text>

<sup>[95]</sup> "Hubble recently found about 20 clouds — nearly as many clouds on Uranus as the previous total in the history of modern observations. The orange-colored clouds near the prominent bright band circle the planet at more than 300 mph (500 km/h). One of the clouds on the right-hand side is brighter than any other cloud ever seen on Uranus."

Karkoschka, Erich et al. *Hubble Finds Many Bright Clouds on Uranus*. HubbleSite NewsCenter, Oct. 14, 1998, no. 35. URL: <http://hubblesite.org/newscenter/newsdesk/archive/releases/1998/35/>

<sup>[96]</sup> NASA. "Huge Storms Hit the Planet Uranus." Science@NASA website, Mar. 29, 1999. URL: [http://science.nasa.gov/newhome/headlines/ast29mar99\\_1.htm](http://science.nasa.gov/newhome/headlines/ast29mar99_1.htm)

<sup>[97]</sup> "If springtime on Earth were anything like it will be on Uranus, we would be experiencing waves of massive storms, each one covering the country from Kansas to New York, with temperatures of 300 degrees below zero."

A dramatic new time-lapse movie by the Hubble telescope shows for the first time seasonal changes on the planet. Once considered one of the blander-looking planets, Uranus is now revealed as a dynamic world with the brightest clouds in the outer solar system...The Northern Hemisphere of Uranus is just now coming out of the grip of its decades-long winter. As the sunlight reaches some latitudes, it warms the atmosphere. This appears to be causing the atmosphere to come out of a frigid hibernation and stir back to life. "...when NASA's Voyager 2 flew by in 1986, Uranus appeared as featureless as a cue ball."

NASA / Karkoschka, Erich et al. *Huge Spring Storms Rouse Uranus from Winter Hibernation*. HubbleSite NewsCenter, Mar. 29, 1999, no. 11. URL: <http://hubblesite.org/newscenter/newsdesk/archive/releases/1999/11/text>

<sup>[98]</sup> "The only other detailed photos of Uranus were taken in 1986 when Voyager 2 passed by on its way to the outer limits of the solar system. At that time, the northern hemisphere was shrouded in darkness..."

One major difference [in the new Hubble images] is a system of giant jet-streams pushing through Uranus' cloud layers at hundreds of miles an hour. Another is several isolated, bright clouds - measuring about 600-1200 miles across - relatively small by Uranus' standards..."Compared to what we have seen on Voyager, these are really big, big changes," said Karkoschka, a senior research associate at the Lunar and Planetary Laboratory."

McLachlan, Sean. *UA scientists look closely at Uranus*. University of Arizona Daily Wildcat, March 30, 1999. URL: [http://wildcat.arizona.edu/papers/92/123/01\\_3\\_m.html](http://wildcat.arizona.edu/papers/92/123/01_3_m.html)

<sup>[99]</sup> "Uranus is rapidly approaching equinox in 2007, with another 4 degrees of latitude in the Northern Hemisphere becoming visible every year. Recent HST images during this unique epoch have revealed: {i} strongly wavelength-dependent latitudinal structure, {ii} the presence of numerous visible-wavelength cloud features in the northern hemisphere, and, {iii} in the near-IR, discrete features northward of 25degrees N that have the highest contrast ever seen for a Uranian cloud."

Long-term ground-based observations show seasonal brightness changes whose origins are not well understood."Hubble Space Telescope Daily Report #2719. 1.29 Completed WF/PC-2 8634 (*Atmospheric Variability on Uranus and Neptune*). Period Covered: 09/29/00-10/02/00. URL:

[http://www.stsci.edu/ftp/observing/status\\_reports/old\\_reports\\_00/hst\\_status\\_10\\_02\\_00](http://www.stsci.edu/ftp/observing/status_reports/old_reports_00/hst_status_10_02_00)

<sup>[100]</sup> "A team from Paris Observatory, led by Therese Encrenaz (LESIA), has just detected for the first time the molecule of carbon monoxide (CO) in the atmosphere of Uranus. The origin of this molecule is probably external to the planet, for example due to micrometeorites."

In spite of their common status of "icy giants" in the outer solar system, the two giant planets Uranus and Neptune, with comparable sizes and densities, show significant differences. In particular, the CO and HCN molecules have been detected in large amounts in Neptune's stratosphere, from millimeter

spectroscopy, while this technique was unsuccessful in the case of Uranus...New measurements made in the infrared range have now allowed the detection of CO in the atmosphere of Uranus. This measurement has been made possible by the very high sensitivity of the infrared spectrometer ISAAC...This result, if confirmed, seems to imply an external origin for [the] CO, which would come, like the water vapor detected in the giant planets' stratospheres, from an interplanetary flux of micrometeorites trapped in the planets' gravity field."

Encrenaz, T. et al. *First detection of CO in Uranus*. Observatoire de Paris Press Release, SpaceRef.com, Wed. Dec. 17, 2003. URL: <http://www.spaceref.com/news/viewpr.html?pid=13226>

[101] Short, Nicholas M. Sr., and Blair, Robert W. Jr. *Geomorphology From Space – A Global Overview of Regional Landforms. Plate P-15: The Satellites of Uranus*. NASA/GSFC/DAAC, 1986. URL: [http://daac.gsfc.nasa.gov/DAAC\\_DOCS/geomorphology/GEO\\_10/GEO\\_PLATE\\_P-15.HTML](http://daac.gsfc.nasa.gov/DAAC_DOCS/geomorphology/GEO_10/GEO_PLATE_P-15.HTML)

[102] Savage, Don et al. *Hubble Discovers New Dark Spot on Neptune*. HubbleSite NewsCenter, April 19, 1995. URL: <http://hubblesite.org/newscenter/newsdesk/archive/releases/1995/21/text/>

[103] "The distant, blue-green planet Neptune has again surprised astronomers with the emergence of a new great dark spot in the cloudy planet's northern hemisphere. The feature was discovered by NASA's Hubble Space Telescope.

Only last June (of 1994,) Hubble images revealed that a great dark spot in the southern hemisphere [of Neptune] – discovered by the Voyager 2 spacecraft during its 1989 flyby – had mysteriously disappeared. The new dark spot is a near mirror-image of the previous feature first mapped by Voyager 2. The northern dark spot discovered by Hubble is accompanied by bright, high-altitude clouds... "Hubble is showing us that Neptune has changed radically since 1989," said Heidi Hammel of the Massachusetts Institute of Technology. "New features like this indicate that with Neptune's extraordinary dynamics, the planet can look completely different in just a few weeks." Energy from the Sun drives Earth's weather system. However, the mechanism must be very different on Neptune because the planet radiates 2 times more energy than it receives from the distant, dim Sun..."

Savage, Don et al. *Hubble Discovers New Dark Spot on Neptune*. HubbleSite NewsCenter, April 19, 1995. URL: <http://hubblesite.org/newscenter/newsdesk/archive/releases/1995/21/text/>

[104] Sromovsky, Lawrence et al., University of Wisconsin, Madison. *Hubble Provides a Moving Look at Neptune's Stormy Disposition*. Science Daily Magazine, Oct. 15, 1998. URL: <http://www.sciencedaily.com/releases/1998/10/981014075103.htm>

[105] Sromovsky, Lawrence A. et al. *Neptune's Increased Brightness Provides Evidence for Seasons*. Wisconsin-Madison University Space Science and Engineering Center (SSEC), April 22, 2002. URL: <http://www.ssec.wisc.edu/media/Neptune2003.htm>

[106] Sromovsky, Lawrence et al., University of Wisconsin, Madison. *Hubble Provides a Moving Look at Neptune's Stormy Disposition*. Science Daily Magazine, Oct. 15, 1998. URL: <http://www.sciencedaily.com/releases/1998/10/981014075103.htm>

[107] "We're not the only ones experiencing global warming... Neptune's largest moon, Triton, seems to have heated up significantly since the Voyager space probe visited it in 1989..."

"At least since 1989, Triton has been undergoing a period of global warming. Percentage-wise, it's a very large increase," said James L. Elliot, (MIT) professor of Earth, Atmospheric and Planetary Sciences and director of the Wallace Astrophysical Observatory. The 5 percent increase on the absolute temperature scale from about minus-392 degrees Fahrenheit to about minus-389 degrees Fahrenheit would be like the Earth experiencing a jump of about 22 degrees Fahrenheit."

Halber, Deborah. *MIT researcher finds evidence of global warming on Neptune's largest moon*. MIT News, June 24, 1998. URL: <http://web.mit.edu/newsoffice/nr/1998/triton.html>

[108] "Elliot and his colleagues explain that Triton's warming trend may be driven by seasonal changes in its polar ice caps... The scientists are basing a rise in Triton's surface temperature on the Hubble telescope's detection of an increase in the moon's atmospheric pressure, which has at least doubled in bulk since the time of the Voyager encounter... Elliot says scientists can infer a temperature rise of two Kelvin (three degrees Fahrenheit) over nine years."

Savage, Don, Weaver, Donna and Halber, Deborah. *Hubble Space Telescope Helps Find Evidence that Neptune's Largest Moon Is Warming Up*. HubbleSite NewsCenter, June 24, 1998, no. 23. URL: <http://hubblesite.org/newscenter/newsdesk/archive/releases/1998/23/text/>

[109] Britt, Robert Roy. *Puzzling Seasons and Signs of Wind Found on Pluto*. Space.com, 2003: [http://www.space.com/scienceastronomy/pluto\\_seasons\\_030709.html](http://www.space.com/scienceastronomy/pluto_seasons_030709.html)

[110] "Seasonal change on Pluto is causing the planet to warm up even as it moves away from the Sun..."

Britt, Robert Roy. *Puzzling Seasons and Signs of Wind Found on Pluto*. Space.com, 2003: [http://www.space.com/scienceastronomy/pluto\\_seasons\\_030709.html](http://www.space.com/scienceastronomy/pluto_seasons_030709.html)

[111] "BIRMINGHAM, Ala.—Pluto is undergoing global warming, as evidenced by a three-fold [300%] increase in the planet's atmospheric pressure during the past 14 years..."

A 1997 occultation of a star by [Neptune's moon] Triton revealed that its surface had warmed since the Voyager spacecraft first explored it in 1989... Elliot said... "the changes observed in Pluto's atmosphere are much more severe [than on Triton]. The change observed on Triton was subtle. Pluto's changes are not subtle..." "This is a very complex process, and we just don't know what is causing these effects" on Pluto's surface, Elliot said. "That's why you need to send a mission."

Halber, Deborah. *Pluto is undergoing global warming, researchers find*. MIT News, Oct. 9. 2002. URL: <http://web.mit.edu/newsoffice/nr/2002/pluto.html>

[112] "Elliot said the new results seem counterintuitive, because observers assumed Pluto's atmosphere would begin to collapse as it cooled. In fact, the temperature of Pluto's mostly nitrogen atmosphere has increased around 1 degree Celsius since it was closest to the sun in 1989."

Halber, Deborah. *Pluto's Atmosphere is Expanding, Researchers Say*. Massachusetts Institute of Technology Spaceflight Now News Release, July 9, 2003. URL: <http://www.spaceflightnow.com/news/n030709pluto/>

[113] "Jay Pasachoff, an astronomy professor at Williams College, said that Pluto's global warming was "likely not connected with that of the Earth. The major way they could be connected is if the warming was caused by a large increase in sunlight. But the solar constant—the amount of sunlight received each second—is carefully monitored by spacecraft, and we know the sun's output is much too steady to be changing the temperature of Pluto."

Halber, Deborah. *Pluto is undergoing global warming, researchers find*. MIT News, Oct. 9. 2002. URL: <http://web.mit.edu/newsoffice/nr/2002/pluto.html>

[114] "Seasonal change is a possible but not proven explanation," Elliot told *SPACE.com*. "Another possibility would be some longer term change, analogous to long-term climatic changes on Earth."

Britt, Robert Roy. *Puzzling Seasons and Signs of Wind Found on Pluto*. Space.com, 2003: [http://www.space.com/scienceastronomy/pluto\\_seasons\\_030709.html](http://www.space.com/scienceastronomy/pluto_seasons_030709.html)

[115] Britt, Robert Roy. *Puzzling Seasons and Signs of Wind Found on Pluto*. Space.com, 2003: [http://www.space.com/scienceastronomy/pluto\\_seasons\\_030709.html](http://www.space.com/scienceastronomy/pluto_seasons_030709.html)

