Light Harmonic X-Ray Data from the "1E1207.4-5209" Neutron Star Shows Quantum-Identified Gravitational Influence within the Stellar Atoms

Before analyzing the significant data from the "1E1207.4-5209" neutron star, it is necessary to first recognize a set of consensus beliefs about neutron stars in general:

1) Neutron stars are the remnants of supernovas, the cores of which are composed of packed neutrons without electron orbital shells, making the stars extremely dense. The "1E1207.4-5209" has the approximate mass of the sun but an estimated diameter which is only 0.00001437 that of the sun[1] .
2) Neutron stars are enveloped in a light emitting "atmosphere.[2] " They emit a light which has a "featureless spectrum." The light from the neutron stars are missing the typical absorption lines associated with other stellar light spectra. *(Minkowski, R)*
3) Neutron stars exhibit evidence of artificially strong magnetic fields produced by rapid spinning[3]. The cause of velocity increase is diameter contraction due to increased density. This diameter contraction also increases the angular rate of spin.
4) Neutron stars are cooling rapidly[4].

There are several facts about neutron stars which cannot be fully understood by contemporary astrophysics because the practitioners are intellectually incapable of conceiving of a four dimensional geometry which operates under two separate systems of mathematics. This is not simply a lack of knowledge, but an apparent intellectual incapacity[5]. Consensus science always revert to mystified three-dimensional explanations.

1) The neutron-star "atmosphere" cannot be composed of intact hydrogen atoms. The electrons have collapsed out of their orbitals due to a strong "super dense" gravitational influence which is being projected within the atom. The light spectrum is "featureless" because electrons cannot be retained in orbital subshells which typically absorb light frequencies. Quantum gravitational calculus demonstrates that star density increases gravitational influence within the atom to the point that the orbital energy can no longer sustain the orbit[6] .
2) The increased density of a neutron stars increases gravitational energy potential as demonstrated by quantum gravitational calculus. The increased density of the 1E1207.4-5209 neutron star has increased gravitational potential energy by approximately 1.21104*e* 9 power[7].
3) "Atmospheric" hydrogen is being converted to neutrons by the imbedding of electrons as the inverted quantum squared[8]. Calculation for the 1E1207.4-5209 neutron star indicates that the potential energy required to sustain the electron in orbit is 1.727319 MeV and that this amount of potential energy is being supplied by the recorded x-ray emissions[9]. The energy required to convert a hydrogen atom to a neutron is 1.2775 MeV[10]. The energy being supplied by density-increased gravity is sufficient to embed electron as the inverted quantum squared and thus convert an hydrogen atom to a neutron. Neutron stars are made by this conversion of hydrogen to neutrons under density-increased gravitational energy. They are rapidly cooling because each conversion cost the star 1.2775 MeV in energy.

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[1] All data from *"XMM-Newton Image Gallery;"* Investigator(s): G. F. Bignami, P. A. Caraveo, A. De Luca & S. Mereghetti; *http://xmm.esac.esa.int/external/xmm_science/gallery/public/level3.php?id=335*

[2] The term "atmosphere" is used metaphorically, not literally.

[3] http://www.astro.umd.edu/~miller/nstar.html

[4] *http://xmm.esac.esa.int/external/xmm_science/gallery/public/level3.php?id=335*

[5] The x-ray data for the J1550-564 black hole jet, as recorded by the CHANDRA X-Ray Telescope, caused a major crisis in black-hole theory. The researchers proved incapable of explaining the data even though it is exactly predicted by the quantum-dimensional model of black holes and quantum gravitational calculus. All attempts to contact the CHANDRA researchers were rebuffed despite sharing a short video proving the claims. They preferred a mystery to an explanation which they were incapable of comprehending. *http://www.srnrl.com; CHANDRA Black-Hole Identifies the Quantum-Dimensional Model*

[6] See "*Gravitational Influence on Hydrogen Atoms at Neutron-Star Densities (Modeled on 1E1207.4-5209)"* at the end of this article.

[7] Ibid.

[8] *Four Dimensional Atomic Structure;* Tab 3, p.p. 1-5. Paradigmphysics, 2013. L. Dawson

[9] Ibid. Tab 1-B; p.6. Op. cit.

[10] Ibid. Tab 3, p. 9. *"The Energy Conversion of the Proton to a Neutron"*

The Empirical Proof

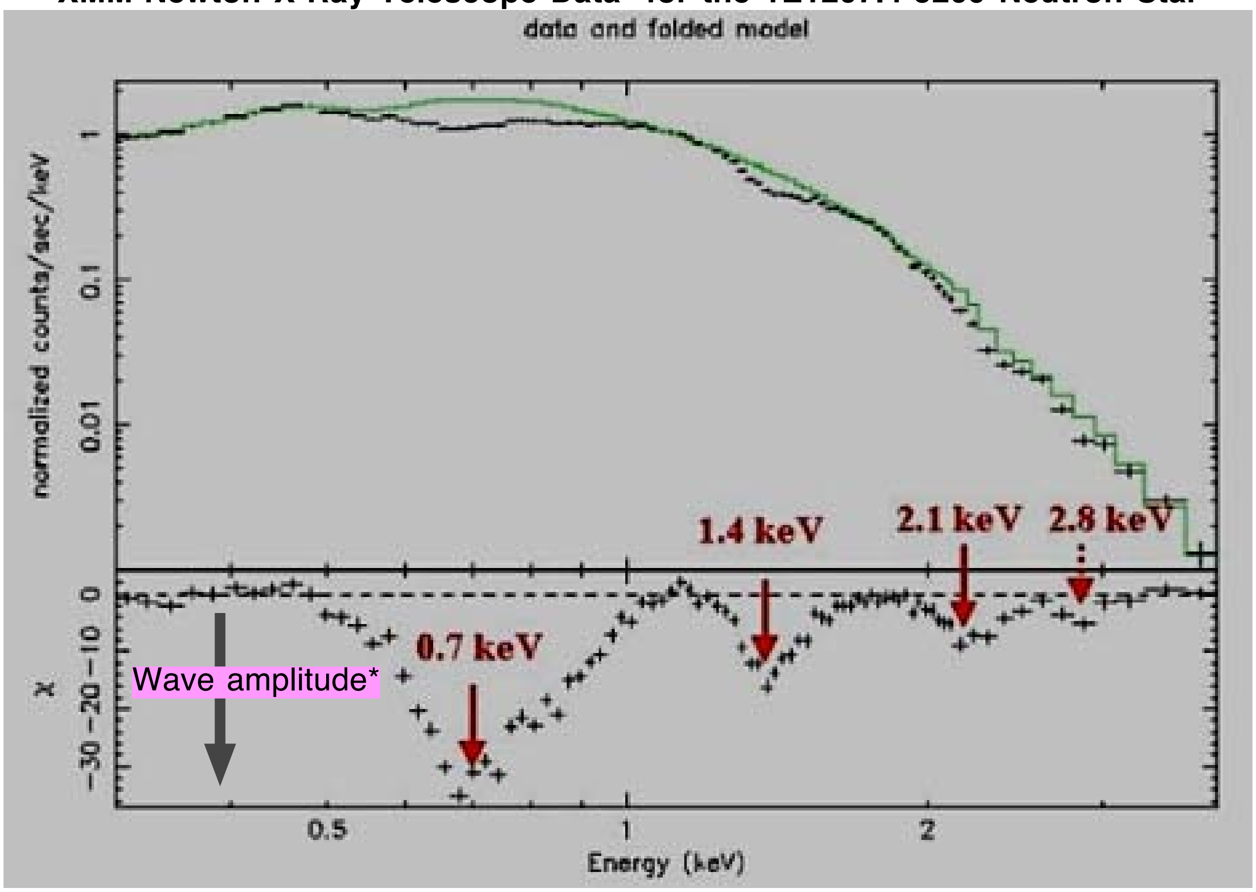
The XMM-Newton x-ray telescope discovered harmonically related and extremely rare x-ray emitted by a neutron star. X-ray telescopes do not generally reveal x-ray data— let alone precise x-ray data— from neutron stars. The researchers explain why:

> *"Neutron stars cool down quickly and hence can only be seen in the X-ray for a limited time after the supernova explosion, meaning only a few neutrons stars can be observed with X-ray telescopes like XMM-Newton[11] ."*

However, the "1E1207.4-5209" researchers failed to indicate that the x-ray they recorded was a harmonic pattern characteristic of a tensioned oscillator undergoing continuous power input. The primary example is a bowed violin string with bowing being a continuous power input. Such strings oscillate at exact subdivisions of the string length and output harmonic frequencies as subdivisional multiples of string frequency. The primary string frequency is then output as a Fourier Series square wave produced by the harmonic series.

> *"The fourth harmonic of a power-stroked oscillator outputs energy as a "stepped" Fourier-series square wave rather than as a gradual energy increase along a wave slope.[12] "*

XMM-Newton X-Ray Telescope Data for the 1E1207.4-5209 Neutron Star



*Our description. Not in original. Image courtesy of Giovanni F. Bignami and ESA.

The Harmonics of X-ray Emissions from 1E1207.4-5209 are Characteristic of a Tensioned-Oscillator undergoing Continuous Power Input			
Harmonic Subdivision "n"	Root Frequency $\lambda = 1.77120e\text{-}9$ m eV=0.7 keV	Frequency recorded by researchers $f =$ n(root)	Subdivisions of "root" x-ray orbital distance (as % of Rydberg root orbital distance).
1	1.69259184e17 Hz.	1.69259184e17 Hz.	717.34%
2	1.69259184e17 Hz	3.38518368e17 Hz.	358.67%
3	1.69259184e17 Hz	5.07777552e17 Hz.	239.11%
4	1.69259184e17 Hz	6.77036736e17 Hz.	179.34%

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[11] *http://xmm.esac.esa.int/external/xmm_science/gallery/public/level3.php?id=335*

[12] Dawson, L.: *The Twentieth Century's Reordering of Scientific Chaos.* (Sched. 2013) Paradigm : p. 5

The researchers ignored the harmonic characteristics of their recorded x-ray data because they proposed a source for the x-ray which would not produce such harmonics. They assumed the x-ray spectral lines were *"cyclotron lines result[ing] from the spiraling of charged particles around magnetic field lines[13] ."*

The researchers believed that the wavelength data they had recorded were "cyclotron lines" which would allow them to directly measure the neutron star's magnetic field strength. Magnetic field strength is known to be a function of the star's rate of spin. The assumption that the x-ray spectrum recorded "cyclotron lines" was not supported by other data measuring the star's spin-induced magnetic field:

> *"The derived field strength* [by x-ray] *for 1E1207.4-5209 was 30 times weaker than had been predicted based on the indirect methods* [for estimating spin]*. It is also incompatible with the field which was derived from timing parameters[14] "*

In order to explain the x-ray data as cyclotronic emission by the magnetic field, the neutron star would need to be spinning much slower than they had found by *"radio measurements of the spin period."*

> The researchers would have to find *"...some other mechanism [which] may be slowing the neutron star down.[15] "*

The researchers ignored the harmonic characteristics of the x-ray emission in favor of an explanation of the emissions as "cyclotron lines" produced by particle spiraling around magnetic field lines. This non-harmonic source of the x-ray was supposed to directly measure the star's magnetic field and its rate of spin. However, it failed to do so when the spin-rate predicted by the x-ray emissions was compared with the rate of stellar spin as measured by radio-wave emissions. The hypothesis that the harmonically-correct x-ray spectral lines are "cyclotron lines" has to be rejected.

The Quantum-Dimensional Explanation of the 1E1207.4-5209 X-Ray Emissions

The x-ray spectrum are actually quite regular emissions of an Euclidean (non-quantum) oscillator under continuous power input. The energy which the x-ray emissions are measuring *is that provided by the density of the stellar mass*, not by the magnetic moment of the neutron star's spin.

The maximum rate of gravitational influence for any mass is determined by its density[16]. The increased density provided by neutron stars may increase gravitational influence *inside atoms* to the point that the electron can no longer reside in its normal orbital[17].

However, the vibrational energy from a hydrogen electron which has been collapsed out of "normal light" quantum orbitals to acquire an "x-ray" non-quantum distance may supply sufficient energy to sustain the distance. This is a mathematical certainty for the "1E1207.4-5209" neutron star[18] when the stellar specifications supplied by the XMM-Newton researchers is applied to the recorded data.

The density of the neutron star's mass has increased stellar gravitational influence on both the electron and proton to a collective 1.46662*e*18 times[19]. This increase is so great that it makes it impossible for the electron to be "parked" in any orbital. Gravitational influence is greater than any possible centrifugal force provided by non light-emitting or "parked" electrons. Only the energy supplied by active, tension-wave acceleration can provide enough counter force to sustain the electron in the orbit. The calculations for the "1E1207.4-5209" neutron star shows that acceleration centrifugal force is sufficient for the harmonically tuned x-ray emission, but is not true for the orbitals distributed as Rydberg "negations of quantum-squared subdivisions" from the root orbital (ultraviolet 91.143 nm).

The x-ray spectrum recorded by the XMM-Newton researchers actually consists of a root frequency and its second, third and fourth harmonic. The root frequency is "1.69259184e17 Hz (0.7 keV)" x-ray. They report these frequencies as "electron voltages" which are the "0" amplitude Planck energy definitions of

[13] *http://xmm.esac.esa.int/external/xmm_science/gallery/public/level3.php?id=335*

[14] The actual magnetic spin-time of the neutron star had been measured by *"radio measurements of [the] spin period."* http://xmm.esac.esa.int/external/xmm_science/gallery/public/level3.php?id=335

[15] Ibid.

[16] *4-D Atomic Structure ;* Tab 14; "*THE QUANTUM MECHANICS OF A GRAVITATIONAL OPEN ENERGY SYSTEM"*

[17] *"Gravitational Influence on Hydrogen Atoms at Neutron-Star Densities"* at end of article.

[18] Ibid.

[19] The 1E1207.4-5209 neutron star is estimated to have the mass of the sun, but with a radius which is "1/ 70,000" that of the sun (1.43*e* -5 *times* the radius of the sun). The density increase in gravity is the inverse squared of this factor. To find the collective influence on both the electron and proton within the hydrogen atom, this value must be squared again. See Tab 1-B, p.p. 5-6

the wave energy. The formula for electron voltage is the following:

$$f = frequency; \qquad h = Planck's\ Constant; \qquad e = elementary\ charge\ of\ electron$$

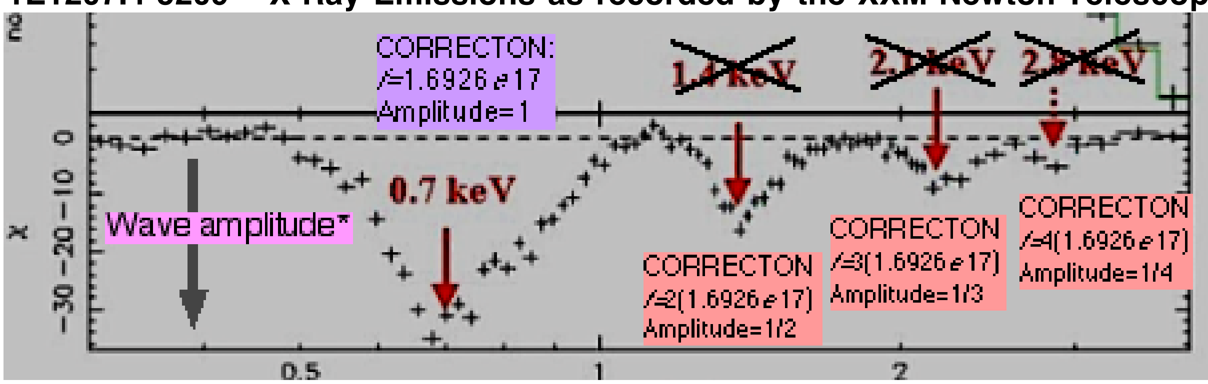
$$eV = \frac{f(h)}{e}; \qquad \{\textit{wave energy described by frequency alone without amplitude}\}$$

While “0” amplitude Planck energies are appropriate to the quantum light harmonics of Rydberg orbitals, such “0” amplitude energy is not appropriate to the Euclidean harmonics of tensioned oscillator vibrating two dimensionally. Euclidean harmonics are dependent upon variations in wave amplitude. Despite recording their data as “0” amplitude electron voltages, The XMM-Newton researchers own data graph reveals that the x-ray emissions have the characteristic variation in amplitudes of Euclidean second, third and fourth harmonics.

The amplitude of the second harmonic (1.4 keV with a frequency of “(2)1.69259184e17”) is approximately “1/ 2” the amplitude of the root frequency. The amplitude of the the third harmonic (2.1 keV with a frequency of “(3)1.69259184e17”) is approximately “1/ 3” of the root amplitude. The amplitude of the the fourth harmonic (2.8 keV with a frequency of “(4)1.69259184e17”) is approximately “1/ 4” of the root amplitude *(See graph below)*.

Euclidean string harmonics provide that the second harmonic is produced by “1/ 2” the string vibrating at twice the frequency with “1/ 2” the amplitude; the third harmonic is produced by “1/ 3” the string vibrating at three times the frequency with “1/ 3” the amplitude; the fourth harmonic is produced by “1/ 4” the string vibrating at four times the frequency with “1/ 4” the amplitude[20] . In all cases, energy is “amplitude *times* frequency” and is equivalent for all harmonics. “0” amplitude Planck energy (establishing electron voltage) is appropriate to quantum orbitals but not Euclidean string harmonics. The researchers data graph demonstrates that the x-ray emissions are Euclidean string harmonics. They are not “0” amplitude Planck energy “electron voltages” as mistakenly identified by the researchers.

“1E1207.4-5209” X-Ray Emissions as recorded by the XXM-Newton Telescope



Annotated graph-image. Original image: Giovanni F. Bignami ; ESA/XMM-Newton

The energies of subdivisional Euclidean harmonics cannot be “0” amplitude or “frequency only” Planck energies. If they were expressions of Planck energies, then the higher frequency of the fourth subdivision would have four times the energy of the whole string (incorrectly reported as “eV” increases on the XMM-Newton data graph). Two hundred years of experience with stringed musical instruments have proved this not to be the case. If a violin string is “stopped” to produce subdivisional vibrations, frequency goes up by the inverse of the subdivision. However, the increase in frequency is accompanied by an equivalent decrease in the loudness of the sound output. Higher pitched sounds of less intensity are output. Increasing frequency does not change overall sound energy under equivalent bow pressures. The “four fold increase,” as predicted by the Planck energy formula, simply does not occur for subdivisional harmonics.

Only quantum harmonic energies can be expressed by “0” amplitude (frequency only) Planck energies. This is true because quantum harmonics are by the “negation of subdivision,” not “subdivision.” Negations of subdivision do not retain the root “string” distance as do subdivisional harmonics. The formula for quantum harmonics is based upon the Rydberg distribution of hydrogen light emissions from a root frequency as modified by Dawson’s Tensor. The formula is the following:

$$f_{\text{root}} = \frac{c}{\lambda_{\text{root}}} = \frac{c}{91.143\ nm} = 3.289253788e15\ Hz.; \qquad f_{\text{harm.}} = \{\textit{harmonic frequencies}\}$$

[20] See *Four Dimensional Atomic Structure;* Tab. 12; *Dawson’s Tensor for String Frequency;* p.5 “

$$f_{\text{harm.}} = \left(\frac{1}{n^2} - \frac{1}{n'^2}\right) f_{\text{root}};\quad n \le 7;\quad n' \ge (n+1) \le 8 \quad \{\text{"}n\text{" and "}n'\text{" are whole numbers}\}$$

$$k^2 = \left(\frac{1}{\alpha}\right)^2 = (\textit{tension constant});\quad \left\{\text{number "}\alpha^2\text{" units kinking a "meter}^2\text{" into curvature}\right\}$$

$$f = k^2\left(Q^2\right) = \frac{Q^2}{a^2};\quad f\left(\alpha^2\right) = Q^2 = (\textit{orbital distance});\qquad \{\text{by Dawson's Tensor}\}$$

$$Q^2_{\text{harm.}} = \left(\frac{1}{n^2} - \frac{1}{n'^2}\right) Q^2_{\text{root}} = \left(\frac{1}{n^2} - \frac{1}{n'^2}\right)\left(8.2944162e\text{-}16\ m^2\right)$$

There are similarities between the quantum-squared orbital oscillator and the common Euclidean tensioned oscillator. Both derive frequency from "string or distance stretch" and a tension constant, *as per* Dawson's Tensor. However, the quantum-squared oscillator *provides much more sophisticated tension mechanics* than does the common Euclidean tensioned oscillator.

First, "0" amplitude energy is not possible for the tensioned string. The Euclidean tensioned oscillator defines energy as "frequency *times* amplitude" and frequency *times* "0" *equals* "0" energy. Planck energy ["E=*f* (*h*)"] is "0" amplitude or "frequency only" energy. Euclidean tensioned oscillators require amplitude to define their energy state. The "0" amplitude, "stilled string state" is under tension but, at "0" amplitude, possesses no existent energy. The "stilled string state" cannot posses Planck "frequency only" energy.

Unlike the tensioned string oscillator, the vibrational amplitude of which decays to the motionless "stilled string state," the vibrational amplitude of the quantum-squared oscillator decays to an orbital velocity. That is, "0" amplitude energy has a positive energy value established by orbital velocity. Planck "frequency only" energy has a value equal to the mass of the electron *times* velocity-squared *divided by* two:

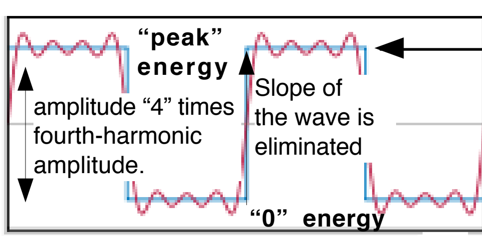
$$\{\text{"0" } \textit{amplitude energy}\} = f(h) = m_e \frac{v^2_{orb.}}{2}$$ *A positive value for the Q^2 orbital.*

The second improvement in tension mechanics provided by the quantum-squared orbital oscillator is its capacity to absorb constant power without vibrational interference. The continuos power stroking of an Euclidean tensioned "string" oscillator prevents the string from vibrating at the primary frequency. The vibrating string returns back upon itself and against the direction of power input, preventing vibration of the full string. The root frequency must be output as a Fourier[21] Series square wave.

The primary example of this is the bowed violin. Continuous bowing prevents vibration of the full string, but induces vibrations of subdivisional harmonics. The subdivisions are whole numbers because they must induce wavelengths which "fit" a whole number within the originating wavelength. Since "energy=(frequency)(amplitude" and the amplitude of the harmonic wavelengths are "1/ n," then "n" waves at "1/ n" amplitudes is exactly equal to the energy of the originating wavelength. This allows the originating frequency to be output as a Fourier Series square wave.

Fourier Series Harmonics are produced by the higher harmonic frequencies of an tensioned oscillator undergoing continuous energy input. At the fourth harmonic (frequency 4 times the original frequency), the harmonic frequencies begin to output the original frequency as a "square wave ." Higher harmonic frequencies are arranged such that they output the energy of the lower parent frequency:

The fourth-harmonic Fourier-series approximations of a square wave



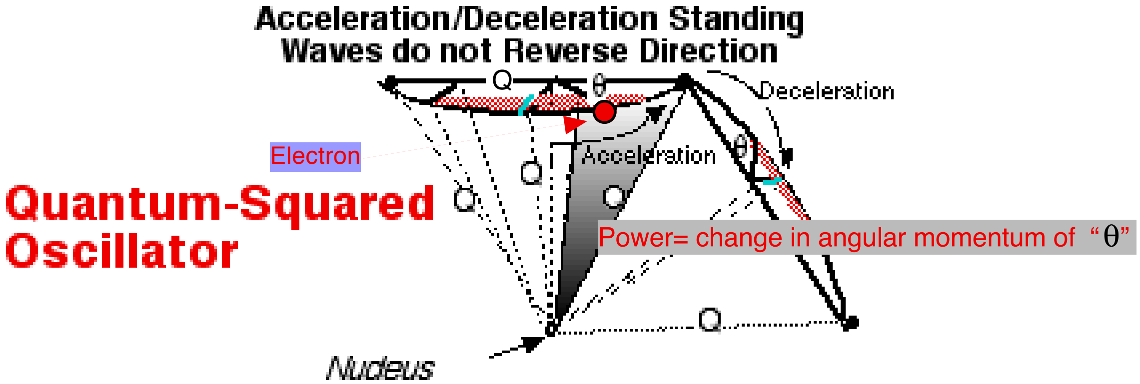
Primary wavelength is four times the wavelength of the fourth harmonic .

[21]

[21] "In mathematics, a *Fourier series* decomposes periodic functions or periodic signals into the sum of a set of simple oscillating functions, namely sines and cosines....The Fourier series is named in honor of Joseph Fourier (1768–1830)." Wikipedia

The fourth harmonic allows the energy of the primary frequency to approximate a quantum. Energy will either be "on" or "off." However, it will never be Planck's *constant quantum* as the amplitude of the primary wave will vary as the amount of power input varies.

The superior tension mechanics of the quantum-squared oscillator provides that the vector of power never opposes the vector of acceleration/deceleration. Power is supplied to the angular momentum of the quantum "kink"(provides curvature to an electron's rotated charge).



The "kink" is the Euclidean tension component resulting from quantum radial distance "stretch." Continuous power from the nucleus or from an impeded sympathetic light wave provides increasing angular momentum for "θ."

There is never a contradiction between the path of acceleration/deceleration and the vector of "power." The path of acceleration/deceleration never returns against the vector of power as it does with the common Euclidean tensioned oscillator *(example: a bowed violin string)*.

The quantum-squared orbital oscillator can receive continuous power input— either from the nucleus or an impeded light wave of sympathetic frequency— without interference with its primary vibrational frequency. It does not require subdivisional harmonics to output the primary frequency as do common Euclidean tensioned oscillators.

Further, the amplitude of the powered wave is a constant which is determined by a constant quantum acceleration distance. That distance is the acceleration phase of the orbital which is equal to "Qπ/ 4," where "Q" is the quantum orbital distance. If the acceleration distance were only a partial of "Qπ/ 4," the vibrations would not decay to orbital velocity (and its "0" amplitude Planck energy) over the whole of the orbit. A partial acceleration/deceleration would transmit only a partial of Planck energy to the nucleus. Acceleration /deceleration energy is a quantum value which requires sufficient a power input in order to be engaged. The power supplied to "θ" must reach the threshold which allows acceleration across the whole of the wave-phase distance, if acceleration/deceleration is to occur.

Conclusion: Primitive Quantum Mechanics fails "1E1207.4-5209" Data

The XXM Newton researchers failed to reject an hypothesis— disproved by their own data— as to the the origin of the x-ray emissions from the "1E1207.4-5209" neutron star. The hypothesis that the XXM Newton x-ray recordings were "cyclotron lines" which would measure the strength of the star's magnetic field was disproved. It was disproved because the x-ray emissions were discovered to be 30 times too weak to be explained by the star's rate of magnetic spin. That rate of spin had also been measured by radio emissions.

The researchers could not reject the hypothesis because the application of primitive quantum mechanics to their data blinded them to the actual implications. As *per* primitive quantum mechanics, the researchers graphed the frequencies of the x-ray spectral lines as Planck energies (electron volts) which varied by the number of "photon counts." That is, "wave-particle duality" and assumed "photon counts" were proposed as explaining the difference between "Planck-energy" electron volts for the higher-frequency spectral lines and actual energy measurements.

What the graph actually revealed were the near perfect harmonics of an Euclidean oscillator with a primary frequency identified as "0.7 keV." All of the other spectral line frequencies were whole number multiples of this frequency and formed an exact harmonic distribution of an Euclidean oscillator. Further, the graphing of variations in "photon counts" nearly exactly reproduced the amplitude variations required by the harmonic distribution. That is the electron voltage of the root frequency *times* its "photon count" was a duplication of frequency *times* amplitude— or the energy equation for the Euclidean tensioned oscillator .

For the whole of the spectral x-ray, electron voltage *times* "photon count" unknowingly duplicated frequency *time* amplitude[22]. The artificial explanations of primitive quantum mechanics prevented the researchers from identifying their data graph as revealing the harmonics of an Euclidean tensioned oscillator.
Blinded by primitive quantum mechanics, the researchers could not recognize that their use of "Planck energy" electron voltage was inappropriate to the x-ray spectral lines. They could not recognize that the spectral lines form an exact harmonic series of an Euclidean tensioned oscillator and that "0" amplitude Planck energy— or electron voltage— is applicable only to quantum-squared orbital oscillators outputting the natural hydrogen light spectrum as the Rydberg distribution.

Without quantum-dimensional mathematics, the researchers failed to recognize that the "1E1207.4-5209" neutron star's x-ray emissions were also mathematically related to the quantum root (91.143 nm wavelength). The Rydberg distribution identifies the natural hydrogen light spectrum as quantum harmonics by the the negations of quantum-squared subdivisions from the "91.143 nm" root frequency. The quantum harmonics are established as the negations of "7" quantum-squared subdivisions of the root frequency. The quantum root wavelength is also approximately the "7th" subdivision (calculated as the "7.17th[23] ") of the linear quantum distance of the reported primary x-ray wavelength(1.7712 nm).

Quantum harmonics are differentiations of the quantum-squared. Euclidean harmonics are subdivisions of the *square root of the quantum squared:*

$$\{\textit{Quantum harmonics}\} = \left(\frac{1}{n^2} - \frac{1}{n'^2}\right) Q^2; \qquad \{\textit{Euclidean harmonics}\} = \frac{Q}{n}$$

$$Q^2 = f\left(\alpha^2\right); \qquad Q = \sqrt{f}\,(\alpha); \qquad \{\textit{by Dawson's tensor}\}$$

$$\frac{\sqrt{f_{x\text{-}ray}}\,(\alpha)}{7} = \sqrt{f_{root}}\,(\alpha); \qquad 7 = \frac{\sqrt{f_{x\text{-}ray}}}{\sqrt{f_{root}}}; \qquad \{\textit{Root is "7th" subdivision of x-ray}\}$$

The root "91.143 nm" orbital is the boundary between the quantum harmonics provided by quantum-squared orbital oscillators and Euclidean harmonics provided by electron distances as "tensioned-string" oscillators. The "7" subdivisions of the quantum harmonic series identify the "shells" of electron orbital structure. This number of subdivisional shells is energy determined. The number "7" provides the range of electron orbitals for which tension is sufficient to provide required orbital energy[24]. This same subdivisional number, "7," may provide the lower range at which orbital distances superior to the root can output Euclidean harmonics as "tensioned-string oscillators." Only orbital distances which are 7 *times* greater than the root orbital distance can output Euclidean harmonics without interfering with quantum-squared orbital distances. The root as the "7th" Euclidean harmonic of a superior electron distance establishes the boundary of tensioned-string oscillators outputting x-ray.

[22] See "*Annotated graph-image*. Original image: Giovanni F. Bignami ; ESA/XMM-Newton" p. 20

[23] Taking the quantum root as the exact "7th" subdivision of the x-ray emission would calculate an electron voltage for the x-ray of "0.67 keV" rather than the exact "0.7 keV" reported by the researchers. The variance between "0.67" and "0.7" keV might be explained as imprecise "rounding upward" of the measured x-ray data. The inexact graphing of data points seems to indicate such an "imprecision factor."

[24] See *4-D Atomic Structure;* Tab 9; *"Establishing the Lower Energy Limits on Orbital Subshells which can be Sustained by Standing-Wave Tension Energy"*

Gravitational Influence on Hydrogen Atoms at Neutron-Star Densities (Modeled on 1E1207.4-5209)

mass of sun=1.99 x 10^{30} kg
radius of sun= 6.96 x 10^{8} meters
quantum gravitational constant at sun's surface= G_{sun} =m/radius^2

$=4.1061814639e12\ m/sec^2$

Gravitational Constant as modified by Neutron Star Density Increase:

$$\Delta G_{sun} = \frac{M_{sun}/(new\ radius)^2}{M_{sun}/(radius)^2} = \frac{(radius)^2}{(new\ radius)^2} = \frac{(6.96e8)^2}{(20{,}000)^2} = 1.21104e9$$

Newton's formula for orbital centrifugal force opposing gravity is:
2(orbital potential energy)/(distance). Converted to electron orbital tension energy:

$$\frac{2(potential\ energy)}{distance} = \frac{2f(h)}{Q} = \frac{2f(h)}{\sqrt{f}(\alpha)} = \frac{2\sqrt{f}(h)}{\alpha} = Force$$

Gravitational force of orbital:

$$G_{nuc.} = \frac{M_2}{(r_{surface})^2} = \frac{m_p}{\alpha^2}; \quad \alpha = proton\ radius; \quad x = \frac{d}{\alpha}; \quad f = \frac{Q^2}{\alpha^2} \quad \{\text{by Dawson's Tensor}\}$$

$$(nuclear\ Gravitational\ force) = F_{nuc.g} = m_e \frac{G_{nuc}}{x^2} = m_e \frac{G_{nuc}}{Q^2/\alpha^2} = m_e \frac{G_{nuc}}{f} = m_e \frac{6632.9031 m/s^2}{f}$$

$$F_{nuc.g} = \frac{6.042169918e-27}{f}\ Newtons$$

As modified by neutron star gravity:

$$F_{nuc.g} = m_e \frac{G_{nuc}}{f}(G_{sun})^2(\Delta G_{sun})^2 = m_e \frac{6632.9031\ m/\sec^2}{f}(2.4728242563e43)$$

$$F_{nuc.g} = \frac{2.252591981e13}{f}$$

Frequency at which tension force equals gravitational force for neutron star:

$$\frac{2\sqrt{f}(h)}{\alpha} = \frac{2.252591981e13}{f}; \quad f\sqrt{f} = \frac{(1.1262959905e13)\alpha}{h}; \quad \sqrt{f^3} = 8.5357242818e30$$

$$\lfloor gravitational\text{-}frequency \rfloor = f_g = 4.1766388014e20$$

eV=1.727319 MeV Conversion of hydrogen atom to neutron requires "1.290272 MeV."
Derived frequency for acceleration of root:

$$\delta f = (2t_\psi)^2 f^3$$

$$f_{root} = 3.289253788e15\ hz.$$

$$\delta f_{root} = 6.0881205357e19\ hz. < f_g$$

Root x-ray frequency of "*1E1207.4-5209 " neutron star*=1.69259184e17

$$eV(x\text{-}ray) = \frac{f(h)}{e} = \frac{(1.69259184e17)h}{e} = 700.0000007817\ eV \quad (\textbf{\textit{researcher report of eV}})$$

$$\delta f = 8.2956003284e24 > f_g$$

Sun Gravitational effects upon hydrogen atoms at natural Solar density:

$$F_{nuc.g} = m_e \frac{G_{nuc}}{f}(G_{sun})^2 = m_e \frac{6632.9031\ m/\sec^2}{f}(1.6860726214e25)$$

$$F_{nuc.g} = \frac{0.1018753729}{f}$$

Frequency at which tension force equals gravitational force at Solar density:

$$\frac{2\sqrt{f}(h)}{\alpha} = \frac{0.1018753729}{f}; \quad f\sqrt{f} = \frac{(0.0509376864)\alpha}{h}; \quad \sqrt{f^3} = 3.8603533235e16$$

$$\lfloor gravitational - frequency \rfloor = f_{\mathrm{g}} = 1.1422242351e11$$

$$f_{\mathrm{g}} < \lfloor \textit{all frequencies for Rydberg orbital structure} \rfloor$$

Frequency for the least energetic "1s" subshell in the Rydberg distrbution

$$f_{1s} = 1.5733037889e13$$