Essay

Gravitational Waves & Reality

Robert Campbell*

Abstract

Ripples in the fabric of space and time detected on September 14, 2015 that resulted from the merger of two black holes were assumed to be gravitational waves moving through the presumed spacetime continuum of General Relativity thus confirming Einstein's theory. However there is no direct evidence to indicate that a spacetime continuum exists and Einstein himself came to doubt it in later years, since it is not consistent with quantum phenomena that clearly indicate a discontinuous universe of discrete frames as in a cosmic movie. A review of these discrepancies shows that the ripples in space and time result directly from the release of three solar mass equivalents of energy from the merger and are not attributable to hypothetical gravitational waves.

Keywords: Gravitational wave, reality, General Relativity, space-time, continuum.

Language, Space & Time

Scientists in general seem to believe that reality can be reduced to language, especially the language of mathematics, without proper regard for the ontological structure of being. It is overlooked that all language derives in some way from sensory experience which is then turned on itself to describe how sensory experience of the physical world arises in the first place. It is bootstrapping on a cosmic scale.

Self-contradictions in language are exemplified in the presumed detection of gravitational waves on September 14, 2015 at 5:51 a.m. Eastern Daylight Time by both of the twin Laser Interferometer Gravitational-wave Observatory (LIGO) detectors, located in Livingston, Louisiana, and Hanford, Washington, USA. The instruments detected ripples in the fabric of space and time caused by the merger two black holes. These ripples are called Gravitational Waves and confirmation of Einstein's General Theory of Relativity. [1] A second merger event on December 26 has also been confirmed between smaller black holes.[2]

Space and time are always presumed in some way to describe phenomena. But there is no evidence whatever that either space or time or a continuum exist as *a priori* things in themselves. In the absence of physical phenomena they are illusive as a ghost. The only realistic conclusion to be drawn is that space and time as we know them in ordinary experience both derive directly from physical matter, *a posteriori*. Space and time are in fact intimately connected to atomic matter. We measure space between physical things. We measure time by the rotation of the earth. And the speed of light is universally constant with respect to each individual atom irrespective of its relative velocity. How can a gravitational wave move through space and time if they have no independent existence? Gravitation is also

*Correspondence: Robert Campbell, Independent Researcher. http://www.cosmic-mindreach.com
E-Mail: bob@cosmic-mindreach.com

not an independent "thing". Then what was measured by the LIGO detector when two black holes merged?

Light, Matter, Space & Time

If there is no continuum, as Einstein came to doubt in later years, then atomic matter must be a rapid synchronous projection of independent atoms with three dimensional characteristics linked up by light that itself derives from atomic processes. The external linear distance light can transmit in each frame has a fixed relationship to the spherical inner space of each primary hydrogen atom. Light defines space relative to matter. There is no other universal measuring rod out there. Space and time must be quantized accordingly. It is simply not realistic to assume that space and time are continuous and then use implied general measurements of space and time from our surroundings and raise them to *a priori* status to explain their own creation.

In a discontinuous universe each synchronous three dimensional projection of atomic matter is a still frame in a holographic cosmic movie in which we participate. Light transmission itself links up all atoms everywhere that are separated from one another. We see separate physical things through the agency of light. The action of light is quantized in discrete increments according to Planck's universal quantum of action because it is the only action in each still frame projection. Light thus transmits in discrete pulses that are called photons associated with it action in each still frame. Each atomic space frame has a corresponding duration consistent with the ionization limit of the primary hydrogen atom which is approximately the 12^{th} orbit. This corresponds with the fact that the orbital angular momentum of the electron in the first orbit of hydrogen must be zero because one revolution corresponds to one quantum jump from one space frame to the next.

Atomic Space Frames, the Bohr Postulates & the Void

There is no motion within the atom in each space frame. Since the electron does not move it does not radiate energy away which should cause it to spiral into the nucleus. That is why Neils Bohr had to make the remarkable statement that the traditional laws of physics do not apply within the atom when he postulated atomic theory. He also postulated that an electron does not traverse the space between orbits when it moves from one orbit to another. It makes a discrete instantaneous quantum jump associated with a discrete amount of energy that corresponds to a spectral line in the hydrogen spectrum. Nevertheless its quantum jump in the first orbit corresponds to a motion around a spherical photon energy shell, because the orbital angular momentum in the first orbit must be zero for the Schrödinger wave equation to work. The related centrifugal force of classical mechanics associated with such a real motion is balanced by the static Coulomb centripetal force of attraction between electron and proton that holds it from flying out of its orbit at a tangent. This is revealing since it requires that the Coulomb force operates synchronously with the recurrence of each atomic space frame just as each quantum jump does. They are intimately linked.[3]

Between the succession of still atomic space frames in the cosmic movie are spatially indeterminate quantum energy equivalents that might be compared to the blank screen behind or orthogonal to the movie. Collectively these quantum energy equivalents of explicit spatial

Forms constitute an implicit quantum energy field called the Void that is timeless and boundless. Because it is timeless the space frames close ranks to give the impression of continuous space and time, albeit riddled with boundless irrational seams. The orthogonal Void is a universal memory bank associated with mind since it timelessly spans and integrates linear events in space and time.

Linear light transmission as incremental space has a timeless quantum counterpart in the Void. This means that quantum increments of space are subject to synchronous recall together with atomic Forms depending on the degree of relative atomic frame skipping associated with relative motions of separate atoms. Relative frame skipping is introduced because the heavens are dominated by relative cyclic motions such as the revolution of galaxies and the rotation of stars and there must be a preponderance of synchronicity for the universe to be perceived as a coherent unity. Light prescribes linear distance space frame by space frame accordingly.

Light, Space-Time, Gravitation & Black Holes

Where there is no light there is a black hole, meaning no space or time. In a discontinuous universe this occurs when a relative skipping of space frames due to relativistic effects (relative light speed or core collapse of super-massive suns) proceeds to a limit where the space frames vanish with a consequent doubling of timeless and boundless quantum frames. Since the atomic quantum frames are the quantum reciprocal of space frames they have an energy equivalent of mass with a synchronous gravitational component. From an exclusively external spacetime continuum perspective the energy of the singularity proceeds to infinity with respect to the vanishing mass. From the balanced Internal /External perspective of the cosmic order the quantum frame energy is the conjugate reciprocal of the space frame mass so there is only a doubling of energy involved. The skipped frames are the missing space that constitutes the black hole. This is a general condition at the centers of galaxies.[4]

All relative motion occurs as quantum jumps in position between the extremely rapid succession of synchronous atomic still frame projections. This is consistent with both relativistic effects in a discontinuous universe and with Planck's universal quantum of action. A new Quantum Relativity emerges naturally.[5]

In this scenario gravitational attraction is implicit in the time-like synchronous projection of space frames from the timeless and boundless Void that is irrationally present in the orthogonal bottomless seams between atomic space frames. In other words mass is both separate and distinct in each space frame projection and unified and boundless in the Void, *at the same time* because the Void is timeless. This is the structural basis of the wave-particle duality.

Gravitational attraction is a universal expression of this simultaneous unity and separation in each frame by frame projection. Gravitation is not transmitted through spacetime. It is an implicit universal static attraction in each frame projection. Gravitational acceleration of free falling objects occurs as discrete frame by frame quantum increments but gravitational attraction itself is universally present in each space and conjugate quantum frame pair, since the quantum frame is a timeless and boundless unity.

The Release of Space & Time from Black Hole Mergers

In a discontinuous universe the rotational velocity of galaxies about their centers creates external space frame skipping at all their centers with respect to their peripheries. This is a consequence of maintaining a preponderance of synchronicity in the universe as a whole. It introduces a contraction profile for each galaxy depending on it relative rotational rate. This spatial contraction at their centers is compensated by star formation which contracts space through the fusion of hydrogen atoms into helium and heavier atoms. This contraction at stellar centers is large because the neutron is essentially a neutral atom contracted to the size of a proton, which is over 15 orders of magnitude smaller in diameter. When large stars supernova to produce a black hole through core collapse, the contraction of space proceeds to the limit of an event horizon. There is a black hole because there is no atomic matter, and thus no light and no space. The atomic mass energy of the core is transformed into its quantum energy reciprocal which is boundless and timeless.

The quantum energy equivalent of the black hole displays gravitational effects that enable science to estimate their solar mass equivalents. Consequently massive nearly instantaneous ejections of energy from the two merging black holes warps the synchronously integrated fabric of space and time locally because the energy released has a space-time equivalent. A significant portion, equivalent to three solar masses of the roughly 60 solar mass equivalent of the two black holes is released as electromagnetic energy by their rapid junction in a fraction of a second. It is released back into the integrated space-time fabric of the movie as a tiny blip in space and time itself, somewhat like ripples caused by dropping a pebble in the water. The event horizon of the merged black hole encompasses less space than their separate event horizons. There is a net increase in space itself in a short period of time.

It follows that this slight warp relative to the total synchronous projection of the universe propagates at light speed through the integrated fabric of the universe, since light itself defines space. It is not a literal gravitational wave because there is no a priori space-time continuum for a gravitational wave to move through. There is a gravitational component but only because a significant energy equivalent of mass is released in the instant of black hole union in such a way as to slightly adjust space itself locally in a fraction of a second which then must ripple away at light speed. It is the slight distortion in the integrated fabric of space and time itself that LIGO directly measured. That this is a gravitational wave is a hypothetical conclusion of Einstein's General Theory. The science community firmly maintains this despite other disturbing inconsistencies that are ignored without mention.

Einstein's Dilemma & LIGO Results

The excitement over the supposed discovery of gravitational waves from two colliding black holes is misplaced. The result has been substantiated as real but there is a different reason for the result. Quantum mechanics is fundamentally inconsistent with Einstein's General Relativity. They are not compatible because the former is discontinuous and the latter is a continuum. Einstein also maintained that singularities (black holes) must be excluded from his theory because they are not consistent with the assumptions on which the theory is based. The field equations do not hold for singularities. But this is ignored in the claim that the so-called discovery of gravitational waves from the merger of two black holes confirms his theory. It is a kind of double speak.

In the final appendix of his book *The Meaning of Relativity 5th Ed*, Einstein states: "*One can give good reasons why reality cannot at all be represented by a continuous field. From the quantum phenomena it appears to follow with certainty that a finite system of finite energy can be completely described by a finite set of numbers (quantum numbers). … This … must lead to a purely algebraic theory for the description of reality. But no one knows how to obtain the basis to such a theory.*"[6]

A coherent non-linguistic structural basis to the ontological basis of space and time from the integrated perspective of Quantum Relativity is provided at Reference 3 and related articles on the website. It defies reduction to algorithm. The meaning implicit in all language derives from the structural dynamics of the cosmic order, not vice versa.

Space and time derived from creation cannot rationally be raised to *a priori* status to explain their own creation in a hypothetical big bang. This disturbed Einstein as it does many others. It is nevertheless curious that Einstein's equations describe reality from an exclusively external perspective that can be regarded as a degenerate or involutionary variant that nevertheless has a certain correspondence to the evolutionary variant offered here that also acknowledges an internal aspect to all phenomena. Phenomenal experience derives from active interface processes between a universal inside and outside. The cosmic order requires a subjective to objective balance that by its nature precludes a physical beginning or end.

Unfortunately physicists tend to have rather fixed beliefs and career agendas and the peer review process, although needed, prohibits the publication of ideas that stray from generally accepted dogma. In my view physics is wandering dangerously into fantasy. Such things as infinitely small strings, dark matter, parallel universes, probability waves, or a big bang can never be directly confirmed in phenomenal experience of any kind.

Einstein expressed his concerns in this quote: "*I see on the one hand the totality of sense-experiences, and, on the other, the totality of the concepts and propositions which are laid down in books. The relations between concepts and propositions among themselves and each other are of a logical nature, and the business of logical thinking is strictly limited to the achievement of the connection between concepts and propositions among each other according to firmly laid down rules, which are the concern of logic. The concepts and propositions get "meaning," viz., "content," only through their connection with sense-experiences. The connection of the latter with the former is purely intuitive, not itself of a logical nature. The degree of certainty with which this relation, viz., intuitive connection, can be undertaken, and nothing else, differentiates empty fantasy from scientific 'truth.'*"[7]

In a letter to his friend Michele Besso the year before he died he wrote: *"I consider it quite possible that physics cannot be based on the field concept, that is, on continuous structures. Then nothing remains of my entire castle in the sky, including the theory of gravitation, but also nothing of the rest of modern physics."*[8]

In summary it is clear that the LIGO detector did detect ripples in the fabric of space and time as claimed by the science community. What is not justified is the unsubstantiated belief that the ripples were caused by a gravitational wave moving at light speed through the hypothetical spacetime continuum of General Relativity.

Received July 17, 2016; Accepted August 3, 2016

[1] Abbott B. P. *LIGO Scientific Collaboration and Virgo Collaboration, (February 11, 2016). "Observation of Gravitational Waves from a Binary Black Hole Merger"*. Physical Review Letter 116, 061102 (2016).
[2] Abbott, B. P. *et al*. Phys. Rev. Lett. 116, 241103 (2016).
[3] http://www.cosmic-mindreach.com/Atomic_structure.html.
[4] http://www.cosmic-mindreach.com/Cosmology.html
[5] http://www.cosmic-mindreach.com/Gravitational.html.
[6] Einstein A. *The Meaning of Relativity 5th Edition.* MJF Books, NY 1956
[7] Einstein A. *Autobiographical Notes*. Schilpp PA, trans. Chicago: Open Court, 2007
[8] Pais A. *Subtle is the Lord: The Science and the Life of Albert Einstein.* Oxford: Oxford U Press, 1982:467.