Spacetime Engineering 201

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In January 1972, I was freshman in industrial chemistry, age 19. Today I commemorate 50 years of my research; check out my website.

My second video lecture *Spacetime Engineering 201* (app. 20 min) is scheduled on 23 June 2022. It will be available only upon request, until Christmas 2022. To receive the link to the video, please follow strictly the requirements (1)-(2)-(3) at p. 5 (last) in explanation.pdf.

The video is about brain-controlled quantum tunneling (BCQT). For example, the rice in the jar can "tunnel" into the empty jar at right.





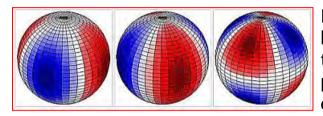
This is BCQT. Not Chinese "magic". Read about the 'gimbal' at p. 19 in Notes on Spacetime Engineering (SE.pdf); details in pp. 25-28 therein.

Let me stress that all demonstrations of spacetime engineering must be recorded under tightly controlled laboratory conditions at some renowned technical institute or laboratory, under the supervision of qualified physicists and technicians. I hope to find such institute or laboratory in EU very soon. My first video was recorded at my home, and it was completely ignored and called "magic". Was this because I rejected the fake "discovery" of some "gravitational waves"? Have you seen pink unicorns dancing with red herrings? It is called GW150914.

NB: Geometry itself *cannot* produce work. Forget GW parapsychology. The energy of BCQT is from the fifth force: p. 25 in the *Notes* (SE.pdf).

Pity the theoretical physicists do not want to challenge the idiotic gravitational-wave hypotheses: read the bold facts in Addendum 3 at pp. 28-31 in the *Notes* (SE.pdf). Sorry, I can't give them what they obviously do *not* want. Will leave them to simmer in their our sauce.

I am definitely certain that the majority of theoretical physicists do not endorse GW parapsychology. LIGO is *totally* useless, by its design, to detect the genuine gravitational radiation, because it cannot detect *any* non-linear GW. As LIGO "scientific" collaboration confessed, "a *vacuum* BBH merger does not produce any EM or particle emission whatsoever" (p. 9 in arXiv:1602.08492v4). Thus, LIGO can only try to "measure" a vacuum ghost. This is GW parapsychology. Proof: the "experts" at LIGO "scientific" collaboration have *no idea* how gravity produces work, for example, in Earth tides. They only cry for money.

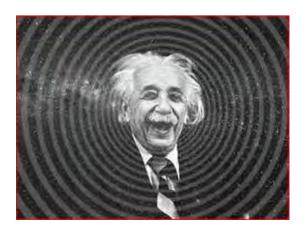


If GWs transport energy, they will be *physical* waves; if GWs *cannot* transport energy, they will be some parapsychological ghosts. This is the dilemma in GW parapsychology.

The Christoffel symbols cannot rotate the Earth and pull up rocks.

Read Angelo Loinger. We need "a device that measures the energy carried away by the gravitational field" (P.T. Chrusciel), and the simple proof of concept is to measure the *stresses* (R.M. Wald) induced by the *non-linear* gravitational radiation. However, the linearized approximation of GR (M. Maggiore) cannot offer *any* hope (H. Ohanian). As Albert Einstein acknowledged (p. 19 in the *Notes*, SE.pdf):

The right side is a formal condensation of all things whose comprehension in the sense of a field-theory is still problematic. Not for a moment, of course, did I doubt that this formulation was merely a makeshift in order to give the general principle of relativity a preliminary closed expression. For it was essentially not anything more than a theory of the gravitational field, which was somewhat artificially isolated from a total field of as yet unknown structure.



Back to BCQT: the physical manifestation of the force of Life, called the fifth force (p. 25 in the *Notes*, SE.pdf), has a wave-like behavior, which creates both the quantum waves at microscopic scale and the wave-like gravitational radiation at macroscopic scale, thanks to the dynamics of *twisted* (not "curved") 4D spacetime. On 24 August 1920, Arthur Eddington called the gravitational radiation *ether waves*: "for though ether waves are not usually classed as material, they have the chief mechanical properties of matter—viz., mass and momentum".

Oct. 1920. Internal Constitution of the Stars.

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interior of a star are far more cogent. Secondly, the outflowing stream of ethereal energy is powerful enough to exert a direct mechanical effect on the equilibrium of a star. It is as though a strong wind were rushing outwards. In fact, we may fairly say that the stream of radiant energy is a wind; for though ether waves are not usually classed as material, they have the chief mechanical properties of matter—viz., mass and momentum.

Three months earlier, on 5 May 1920, Albert Einstein gave a speech at the University of Leiden, entitled *Ether and the Theory of Relativity*:

Recapitulating, we may say that according to the general theory of relativity space is endowed with physical qualities; in this sense, therefore, there exists an ether. According to the general theory of relativity, space without ether is **unthinkable**; for in such space there not only would be no propagation of light, but also no possibility of existence for standards of space and time (measuring-rods and clocks), nor therefore any spacetime intervals in the physical sense. But this ether may not be thought of as endowed with the quality characteristic of ponderable media, as consisting of parts which may be tracked through time. The idea of motion may not be applied to it.

The Platonic world cannot be tracked through time. It is atemporal. It is the aether of general relativity (global mode), perfectly hidden by the "speed" of light. On 21 September 2008, I suggested two modes of spacetime: local (physical) mode, and global (Platonic) mode (p. 6 in SE.pdf and my note at p. 18 therein). The topological properties of 4D spacetime cannot be derived from the local (physical) mode alone. For example, the ideal rods and clocks (E.F. Taylor and J.A. Wheeler) are embedded in 4D spacetime even when matter is absent (MTW p. 397). We need quantum gravity, and the first step is the theory of gravity.

NB: What is the phenomenon that pulls up↑ (Sic!) the physical universe and rotates galaxies? The fifth force. It works in your brain as well.

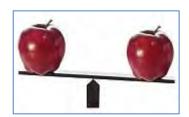


Think globally, act locally. See the human brain and Slide 12.

Every spacetime point from the shoal of fish is capable of **self-action**: it acts *upon* itself, *by* itself. There is no need to introduce any cutoff on the spacetime region governed by the fifth force. It is *unbounded*. It includes *absolutely* **all** points in 'the only isolated system': the **ONE**.

The fifth force underpins the holistic wave-like holomovement of (i) the neural correlates of consciousness (NCC), (ii) the quantum waves, and (iii) the non-linear and self-acting gravitational radiation (p. 3): their common Platonic source, along the hyperimaginary axis W, is physically zero. Otherwise the human brain will be a dumb computing machine, the quantum waves will be created by some "vibrating" quantum drum, and the gravitational radiation will be nothing but mundane physical waves (p. 2). Do not trust the current GR textbooks. More from H. Ohanian and Albert Einstein.

Read about the so-called *evolution equation* at p. 28 in *The Physics of Life* (Intro.pdf) and in my essay on physical theology. The aim is to eliminate the "mystery matter" (p. 7) by a *balanced* non-conservation of the positive, imaginary and negative mass; details by Y.P. Terletskii.



Click the *balanced* apples to read an illustration of the *evolution equation*. It is still in symbolic form, pending the precise formulation of the so-called *hyperimaginary numbers* (W² = 0).

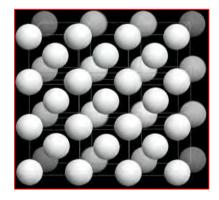
Again, to watch my second video lecture *Spacetime Engineering 201*, follow the conditions explained at p. 1. But if you are interested in Chinese "magic" and "levitation", don't bother to contact me, ever. Same if you are indulging in GW parapsychology. Ignorance is bliss.

Questions and Answers

Q1. How come $W^2 = 0$?

A1. Let me quote Wikipedia (emphasis mine): "the spacetime interval $(\Delta s)^2$ between the two events that are separated by a distance Δx in space and by $\Delta ct = c\Delta t$ in the ct-coordinate is $(\Delta s)^2 = (\Delta ct)^2 - (\Delta x)^2$."

We are interested in null intervals: $(\Delta s)^2 = 0$; $(\Delta x)^2 = (\Delta ct)^2$ or $x = \pm ct$. "Because of the minus sign, the spacetime interval between two distinct (Sic! - D.C.) events can be **zero**. If s^2 is positive, the spacetime interval is timelike, meaning that two events are separated by *more time* than space. If s^2 is negative, the spacetime interval is spacelike, meaning that two events are separated by *more space* than time. Spacetime intervals are **zero** when $x = \pm ct$. In other words, the spacetime interval between two events on the world line of something moving at the speed of light is **zero**. Such an interval is termed lightlike or **null**. A photon arriving in our eye from a distant star will *not* have aged, despite having (from our perspective) spent years in its passage." Namely, a photon can "spend years" in its *atemporal* state in which it "still" does *not* belong to 4D spacetime. We can imagine a "lattice" of 4D spacetime, in which the photon lives on the light cone.



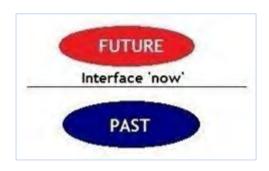
For example, it takes 500 s, as read with a clock, for sunlight to reach the Earth. In the full 4+0 D spacetime, there are black gaps "between" the nodes (balls) at which the photon is still "before light" (p. 6). At every instant/node, we can see the Sun *only* in the past (p. 4 in Time.pdf), i.e., only along a *perfectly* continual pathway of 500 s.

The nodes (balls) in the lattice are explained with Fig. 5 and Fig. 7 in the *Notes* (SE.pdf). The invisible black background is the aether in GR.

Physically, the null interval is squared ($s^2 = 0$) at the nodes above, the Platonic world is zero ($W^2 = 0$), and the spacetime is shifted one step

into the **re-**created **past**. This is the *arrow of spacetime*, called 'arrow of Time' (Slide 1), after Heraclitus. Hence the universe "flies" in Time. We will *split* the photon (see below) to introduce the arrow of Time.

Sure enough, the **Platonic** world is *not* made of matter and fields, so it (not "He") will never "collapse". It cannot be eaten by worms either.





See also Slide 1 and Side 2, and Heraclitus.pdf.

In general, the distance from two points, A to B, is zero iff A and B are 'the same point' along the null interval. Now we *split* 'the same point' with the *interface* 'here and now' and show the internal structure and topology of the *atemporal*, not-yet-squared Platonic world ($\pm w \neq 0$). It is explicated with the *atemporal* matrix (p. 9 in the *Notes*, SE.pdf), which is the crux of spacetime engineering (p. 1). For more, read p. 20 in the *Notes* (SE.pdf). If we use *only* the physical time 'as read with a clock', the *atemporal* interactions along *null rays* (F. Hoyle and J.V. Narlikar) will be "before light", because all physical interactions are *already* completed (Macavity) at the very *instant* A \equiv B of observation. There can no metric space "within" the *instant* A \equiv B 'here and now'. Regarding [A \equiv B], see Fig. 4 in *Quantum of Spacetime* (quantum.pdf).

I thank Stavros (Greece) for this question. Don't hesitate to send yours.

Q2. Why are you banging your head against a wall?

A2. The climate change — check out the Rossby Waves at YouTube. We need new clean energy sources and spacetime engineering may be the only chance to reduce CO₂ emissions by 7.6 per cent every year until 2030. If we fail now (report 25102021), by 2025 the cut needed will steepen to 15.5 per cent each year, which is absurd, plain and simple. If we pass the tipping point in 2030 — only eight years left! — we will be close to Climageddon and WWIII. Don't play with the thought that WWIII can be avoided because governments were smart. They are not. Time is running out!

I thank E.V.G. (UK) for this question. Don't hesitate to send yours.

Addendum 1

If you think of the **fifth force** (p. 6) as some *physical* field, you will have to call this new physical field "dark matter" and "dark energy" (Addendum 5), and speculate extensively about "black holes". **Don't**.



The monad itself has no windows through which something can enter or leave (Leibniz, Monadology 7). The Platonic hand has no windows either. We see only its 4D glove, and can deduce the existence of Platonic hand only from the selfacting faculties of its glove.

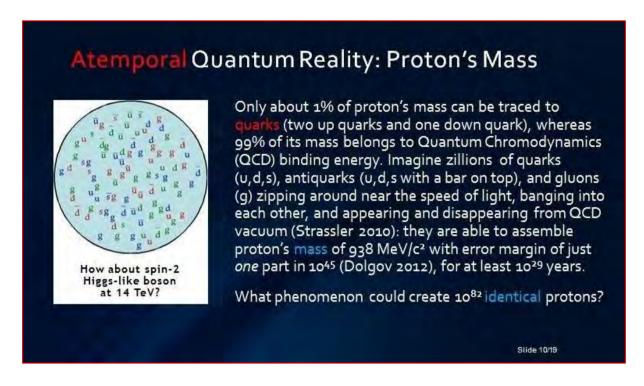
To grasp intuitively the holistic **fifth force** (p. 4), think of **Platonic** hand embedded in its 4D glove, thanks to which the 'glove' becomes **self-acting** (p. 7 in the *Notes*, **SE.pdf**). It's not like Baron Munchausen. The **Platonic** hand does *not* act like an external physical force, but **only** *through* its 4D glove (e.g., the shoal of fish at p. 4), which is how the physical glove **acts on itself** by the *universal* holistic **fifth force**.

Recall the dilemma in GW parapsychology (p. 2): the **fifth force** itself is *not* physical field and does *not* have its own generic energy. One of its manifestations — only *through* its 4D glove — is the **self-acting** universal "gravitational" energy. Likewise, the quantum entanglement originates also from the **self-acting** universal **fifth force**, and does *not* possess some generic "entanglement energy" either. Read about the **fifth force** in the human brain on p. 25 in the *Notes* (SE.pdf).

The arrow of Time *animates* the quantum entanglement. The latter is *not* created by some new element attached to the entangled parties, e.g., like a new bridge connecting the banks of a river. We simply say that the whole is *greater* (recall the math) than the sum of its parts. The quantum theory can be unified with the theory of relativity only with *quantum geometry*. Not with some "non-commutative" fantasies.

Can the theory of quantum spacetime be falsified? For example, take the Platonic matrix (p. 5 and p. 7 in the *Notes*, SE.pdf) of creating protons (Slide 10): the mechanism is anything but probabilistic. The reason why nothing goes wrong with creating 10²⁸ identical protons is "a central mystery of physics" (John Wheeler, MTW p. 1215), but in

our theory the explanation is provided from the outset: the Platonic matrix — the hand in the glove — is neither physical nor mental entity (p. 6). Once created, the matrix will remain invariant indefinitely.

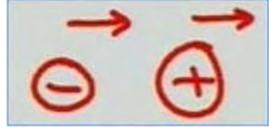


If this Platonic matrix, or the matrix creating photons (Slide 9), can be fully reduced to the constituents of its 'glove', the Platonic matrix will be fake, the fifth force will be pure fantasy, the theory of quantum spacetime will be totally wrong, and the whole will be identical to the sum of its parts: some of it plus the rest of it is all of it (Baldy's Law).

This is old hat, you may say. The new, to the best of my knowledge, proposal is the doctrine of *trialism* (p. 14 in the *Notes*, SE.pdf), which predicts the possibility to create a new matrix capable of channeling quantum effects at macroscopic scale, such as the brain-controlled quantum tunneling (BCQT). The latter requires, but is not limited to, the universal self-acting fifth force (p. 7) to animate the rice (p. 1), under tightly controlled laboratory conditions (p. 1) monitoring the expected miniscule energy non-conservation (p. 4). Qui vivra verra.

To wrap up, let me repeat the *origin* of what we call 'arrow of Time': the Unmoved Mover depicted below.





Time itself is *not* physical stuff and does not possess some generic "temporal energy". It is explicated through the **self-acting** 'glove' only, whereas the **Platonic** 'hand' is **unobservable** with <u>light</u> (p. 6).

The new, to the best of my knowledge, proposal is the interpretation of the "runaway" force from "negative mass" shown with the drawing at right above (p. 6 in *Can Geometry Produce Work*, GR_textbook.pdf). The self-acting 4D 'glove', propelled by the "runaway" force, is made exclusively from *positive* mass, whereas the "negative mass" pertains only to the Platonic 'hand' (p. 7) "between" the lattice nodes (p. 5).

This is *the* only possible explanation of the universality of gravity, as it applies to all physical stuff made of positive mass. The gravitational radiation (forget the fake GWs, check out p. 1) is inherently *non-linear* (recall Escher's drawing hands) in order to "transport its own source" (J. Pereira). But it is not like a cargo plane loaded with containers, which flies in the sky and carries its engine and fuel. The engine & fuel of gravity — the Platonic hand (p. 7) — is instantaneously *everywhere*, like an *atemporal* bootstrapping web attached to every 4D point on the light cone along null intervals (p. 5). See the new *atom of geometry* in *Quantum of Spacetime: Zenon Connection* (quantum.pdf). This is the quantization of 4+0 D spacetime in a nutshell.

To elaborate on the analogy with a cargo plane above, the energy-momentum and angular momentum of gravity (recall the Earth tides, p. 2) are produced by the *physical* stuff in the 'containers', which can *alter* (but not "curve") the *physical* 'glove'(p. 7), and also induce non-conservation of mass-energy ("apples", p. 4). Sure enough, there are no "dark matter" or "dark energy" or "black holes": matter and fields become *gravitalized* (Sic!) by the unobservable Platonic 'hand' (p. 7).

Read again Albert Einstein. Interested? Read Q2/A2 at p. 6. But first, follow strictly the steps (1)-(2)-(3) at p. 5 (last) in explanation.pdf. Because the so-called "GW150914" is in fact an enormous FRAUD.

Shame on you, LIGO "scientific" collaboration! You only cry for money.

Addendum 2

Many physicists and philosophers have published and promoted their erroneous speculations about the *physics* of the brain and the origin of mind and consciousness, ensuing from their materialistic religion — the brain is the hardware, the mind is the software — known as antitheism.

They also deeply believe that the arrow of Time does not exist. Only global hyperbolicity that might eventually suggest some "well-defined time evolution". But their speculative theories cannot separate (i) the motion from the left to the right and back from (ii) the motion from the past to the future and back. It is a dead frozen 4D block universe. As Murphy noticed, complex problems have simple, easy to understand, wrong answers.

The main challenge is the ontological embedding of the unobservable (with light) Leibnizian monad in the physical world, which goes back to the proposal by Plato about the unobservable (with light) Platonic world (p. 7), in 4+0 D spacetime. Today's theoretical physicists (p. 1) are not interested in the wegtransformierbar "gravitational" energy (MTW p. 467) nor in the wave-function "collapse". They simply don't care and keep dead silent. The last feedback to my project, launched in July 1997, came from Maurice de Gosson at the University of Vienna: "Buzz off, idiot!" (Mon, 21 May 2012 18:47:46 +0200).

So, why talking to a brick wall? Read again Q2. Time is running out! I am old (age 69) and may not be here to see the climate catastrophe, but my children and grandchildren will. Again, time is running out!

Addendum 3

Today is January 6, 2022. The COP26 climate summit was a failure (Greta Thornberg). We don't have a choice but to get the job done without support from the climate bureaucrats. Here's what I will do.

We need new and perfectly clean energy sources (Q2). The first step (p. 12) is to unravel the mathematical foundation of quantum gravity: the hyperimaginary numbers ($W^2 = 0$). Once we develop the full theory of quantum gravity, we will (hopefully) formulate the precise evolution equation (p. 4), which may enable us to build the industrial spacetime engineering. This is the future. If you are fluent in topology and differential geometry, feel free to contact me by email, and I will explain the challenges of the phase space of the Platonic 'hand' (p. 7).

The industrial spacetime engineering (p. 19 in the *Notes*, SE.pdf) will be a brand new field to study and explore: the *unknown* unknown. It will be a real challenge. But winners never quit and quitters never win.

Do you want to see 'reversible elimination of inertial mass' (REIM)? Read p. 5 and follow the requirements explained at p. 1. Good luck.

Addendum 4

Spacetime engineering is not some mystical "magic". Any sufficiently advanced technology is indistinguishable from "magic" (Arthur Clarke).

You can learn spacetime engineering all by yourself. No need to have me sitting next to you (p. 21 in *Quantum of Spacetime*). All you need is available at my website. You only have to know the theory *very* well, to avoid 'kicking spoons on the floor' (p. 8 in the *Notes*, SE.pdf).

Watch my announcements from 23 September 2018 and 6 January 2022 at this http URL (text here). But if you are *not* interested in quantum gravity and cosmology, and only wish to be "entertained", watch instead chi/september/2018/ and only wish to be "entertained", watch instead Chi/september/2018/ (Yif), and his British colleague.

Die gegenwärtige Situation in spacetime engineering resembles the efforts of Otto Lilienthal on 16 August 1894 to fly with his home-made wings. Perhaps I am many steps behind him, for a number of reasons.

The great Otto Lilienthal, known as the 'flying man', was an audacious adventurer. Sadly, his marvelous discovery took his life. On 9 August 1896, he lost control over his glider and fell from 15m, broke his neck, and died on the next day. In my case, flying with REIM (p. 10) will be demonstrated and posted at YouTube only after I have proved to be perfectly safe. How? Well, I always follow 'the two rules for success':

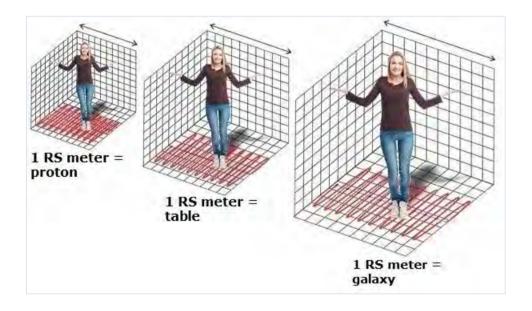
Rule #1. Never tell everything you know.

The second lesson from the story of Otto Lilienthal is that his discovery was used by Orville and Wilbur Wright in the USA. In September 1909, one of them went to Berlin and demonstrated his flights at Tempelhof aerodrome. In my case, flying with REIM (p. 10) will be demonstrated to the public only after I have minimized the risk of having unwanted "colleagues". I am the founder of spacetime engineering, I am solely responsible for its applications, and I set the rules. Take it or leave it.

As of today, nobody has shown any interest in spacetime engineering. I am still working alone on the climate crisis — see Q2 and Addendum 3. Perhaps I may never learn to fly like a 'gimbal' (p. 9) and harness the vacuum: read Q1 at p. 19 in the *Notes* (SE.pdf). If you wish to join me, check out Addendum 1, then p. 5, and follow strictly the requirements explained at p. 1. But if you only wish to be "entertained", do not try to contact me, ever. Just stay dead silent. No problem, I can take it.

Addendum 5

Let me explain the crux of the so-called Relative Scale (RS) spacetime: read p. 14 in *The Physics of Life* (Intro.pdf).



The relative "inflation" of the RS 'one light second' (1m = 3.3 ns) creates the so-called Hubble flow discovered by Edwin Hubble. The relative "deflation" of the RS 'one light second' creates the Small as well, so that a table is larger than a proton and smaller than a galaxy. True, yet at the same instant a proton and a galaxy will also have the indistinguishable RS size of one RS 'light second' (1m = 3.3 ns). The immense force that both spins and pushes galaxies (Hubble flow) is real, but it does not originate from some idiotic physical dark energy.

This is the **fifth force** (p. 9): read Addendum 1. Moreover, if it turns out that the **RS** proton and **RS** galaxy are *entangled*, the 4D partition of the universe can be bootstrapped like a school of fish (p. 4). I believe this is *the only* path to quantum gravity, after the theory of gravity.

Nothing in Nature is absolutely "large" or "small". We do not accept some absolute length scale. All is relative, as uncle Albert used to say.

If you are fluent in topology and differential geometry (p. 10) and are interested in the *evolution equation* (p. 4) and the fifth force (p. 9) eliminating the "black holes" and all "dark" features of gravity (p. 7), see "the *intangible* energy of the gravitational field" (Hermann Bondi) and the prerequisites from Friedwardt Winterberg. My theory promotes the **self-acting** fifth force (Addendum 1) to the origin of Time, which is of course highly speculative. But not manifestly **false**, like GR (p. 2).

To sum up, the Platonic theory of spacetime suggests that Nature is driven by a fundamental phenomenon, as proposed by Heraclitus: you cannot look twice at *the same* river. You cannot look (with light) at the Unmoved Mover (p. 8) either. Only at its 4D 'glove' (Addendum 1).

My first announcement, posted at Vimeo on 23 September 2018 (see below), is not valid anymore. I am not able to address any questions that are *not* related to the hyperimaginary numbers, and will have to ignore them. If you wish to learn more about the physical 'glove' — the 4D partition of the universe — please follow strictly the requirements (1)-(2)-(3) at p. 5 (last) in explanation.pdf. I will gladly respond, ASAP.



Read Addendum 3 and Q2. Time is running out!

6 January 2022, 20:30 GMT