Claims of TET:

1. *curved time is necessary and sufficient to explain gravitation* †

2. *time must possess elasticity, heretofore called temporal elasticity*

3. as temporal elasticity is the basis for gravitation, it is also the basis for the strong nuclear ‘force’

4. ‘Relativistic mass’ is a misnomer – and – the difference between ‘Relativistic mass’ and rest-mass is energy in temporal warp which *causes* time-dilation – both *Relativistic and gravitational*

5. every mass creates a *temporal dilation field* equal in energy to that mass

6. the temporal dilation field tapers off to ‘zero’ radially as the Schwarzschild metric defines gravitational time dilation for typical neutron stars:

\[ 1.7 = \frac{1}{\sqrt{1-r_s/r}} \Rightarrow 0.654 = \frac{r_s}{r} \]

Schwarzschild metric defines gravitational time dilation for typical neutron stars
† Heuristic Proof of Claim 1:

Classically, position, speed/velocity, and acceleration are all functions of time. Newton’s law of universal gravitation is based on distance between centers-of-mass, which is another name for relative positions. The force two masses experience based on gravitational attraction between them is based on position, a function of time.

But time is not a uniform metric with fixed ‘length’ ANY where except in mythical flat empty space devoid of mass!

So in order to visualize gravitational ‘force’ as a function of time-dilation between masses, we recall the traditional view of warped space-time understanding here, we are limiting warp to time:

With the understanding that warp only applies to time in the image above, we realize there’s a dilation around and between masses that never really flattens out – especially between them. This is the key to understand the force of gravitation and the evolution of relative positions with respect to the constantly increasing temporal dilation between two masses. As two masses approach each other, their individual temporal dilation patterns super-pose essentially creating a deeper trench for each to follow – directly toward each other. No wonder masses accelerate toward each other gravitationally; time is increasingly dilating between them!
Justification for 2 (and more):
It’s an accepted fact that time slows down near gravitating bodies such as Earth and neutron stars. The following diagram depicting the time-dilation near a typical neutron star is merely an illustration of an accepted fact:

![Diagram](image)

The vertical axis is time-dilation; the horizontal axis is distance from surface in units of Schwarzschild radii, \( r_s \). As you can inspect, ‘connecting the dots’ allows us to surmise that temporal-curvature energy density is an exponentially decaying function – decaying radially – resembling a (3D) Normal / Gaussian distribution. So by inspection, it’s natural to assume 5, a spherically uniform temporal dilation field – and – 3, that temporal elasticity is the actual mediator for the strong nuclear ‘force’ since we’re talking about neutron stars – the macroscopic analog of nuclei.
Justification for 4:

Two illustrations of Lorentz contraction along line-of-flight as the object approaches $c$, the speed of light in a vacuum. Now, the illustrations are misleading because no physicist who actually understands Special Relativity (inclusive of Lorentz contraction) — believes the objects actually physically shorten. We consider this phenomena a kind of ‘optical illusion’ analogous to bending light in different media:
Nobody who has seen this phenomenon actually believes the straw is bending – whether they understand refraction or not – they know it’s an optical illusion.

The fact baseballs and spaceships always return normal tells us Lorentz contraction is a temporary effect at best. Which means we should be thinking about what else changes at relativistic velocities (besides mass increase)? The passage of time.

The only permanent Special Relativistic effect is the time you lose during those Relativistic jaunts: both length and mass return to normal when your spaceship returns to Earth:
Since gravitational time-dilation and Special Relativistic time-dilation have the **same effect** on time, it’s natural to assume the **same thing** that **causes** time-dilation near neutron stars, the temporal dilation field — here **enhanced** by ‘Relativistic mass’, also **causes** time-dilation in very fast spaceships.. To be honest, I **personally** don’t care if Special Relativistic time-dilation is a ‘pseudo effect’ which **simply resembles** gravitational time-dilation or not. Claim 4 is a **minor assumption** for me. The ‘real meat’ of the framework is in Claims:

1: gravitation is curved time

2: time has elasticity

3: the nuclear strong ‘force’ is mediated by that

4: nobody really cares [wink]

5: mass is equivalent to its temporal dilation field

6: the accepted Schwarzschild metric defines that temporal dilation field for every mass

For scientists, I could have started with 6 and ended with 1, but the average person would have stopped reading at the word ‘Schwarzschild’.. Why did I waste so much time on 4 only to dismiss it near the end? Because I spent a **significant portion of my life** trying to understand Special Relativistic effects from a **purely physical** standpoint. Realizing Lorentz contraction is merely a **consequence** of time-dilation made me understand it’s a kind of ‘virtual phenomenon’.. The core of the framework is obviously Claim 6 which **essentially is an accepted fact**. Just, we typically don’t take that ‘leap of faith’, 5. Then 3, then 2, then 1 which for me – has been proven above.

I have spent **years** avoiding the use of the word **field** for very good reasons. I had hoped to avoid it here. Hopes and reality are obviously dissonant at times. sgm, 2018/DEC/02