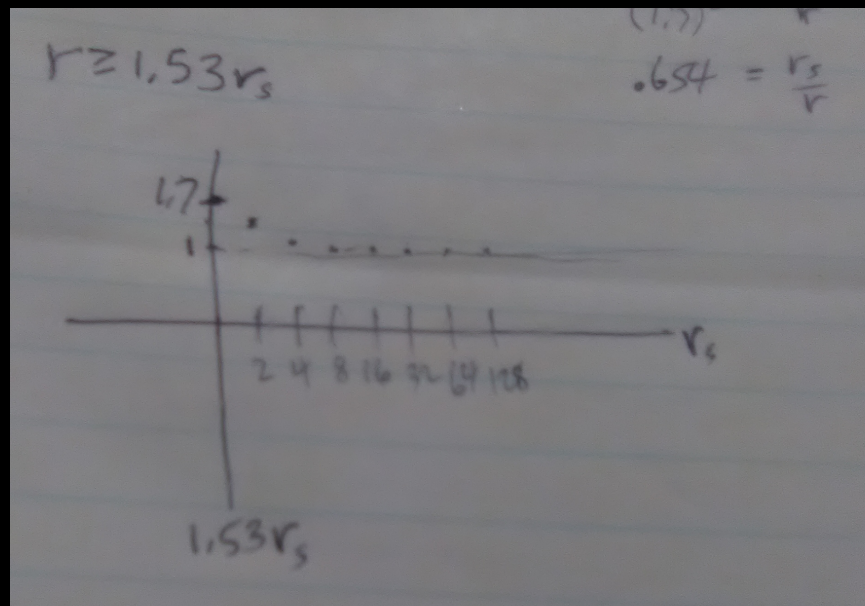


Claims of TET:

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:*

$$1.7 = 1/\sqrt{(1-r_s/r)} \Rightarrow 0.654 = r_s/r$$



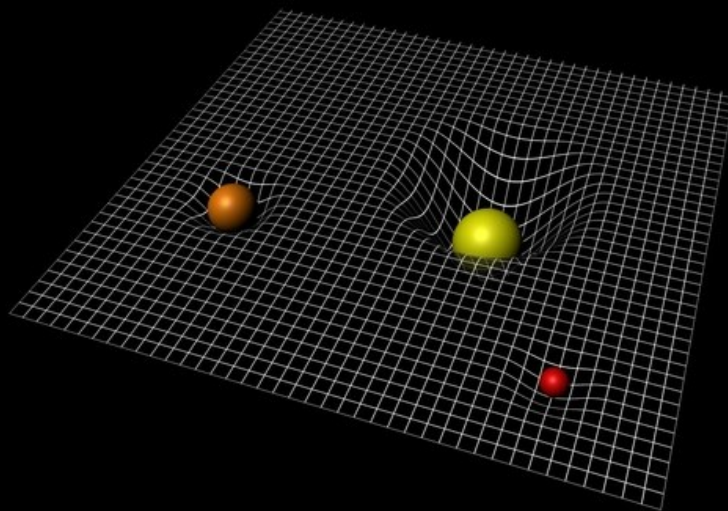
Schwarzschild metric defines gravitational time dilation for typical neutron stars

† 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!*

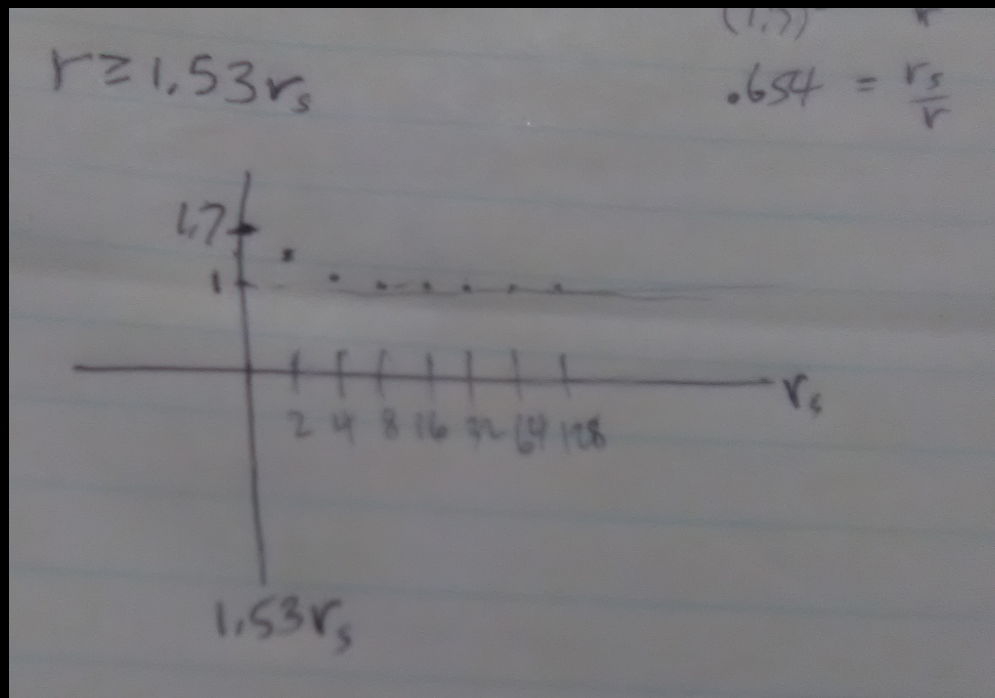
So in order to visualize gravitational 'force' as a function of time-dilation between masses, we recall the traditional view of warped space-time understanding here, we are *limiting warp to time*:



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!*

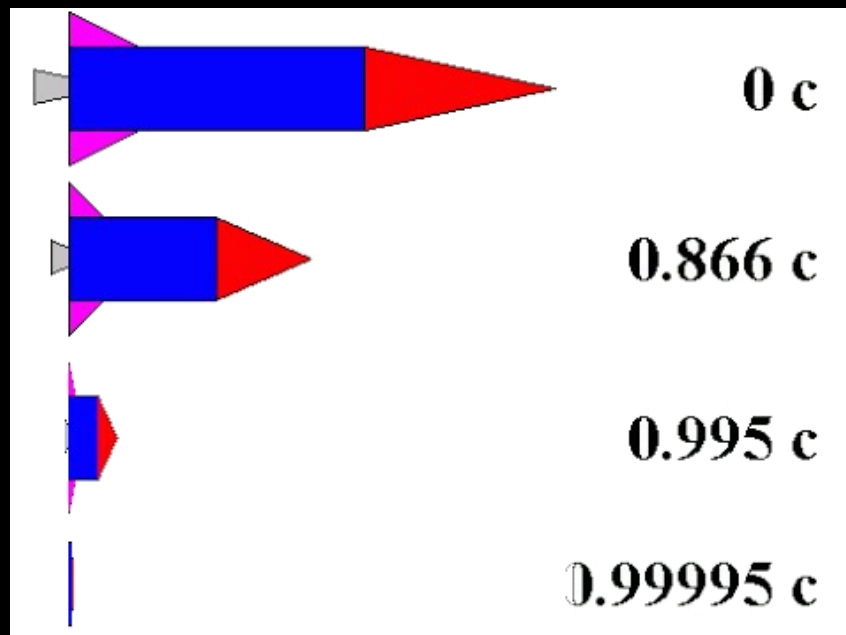
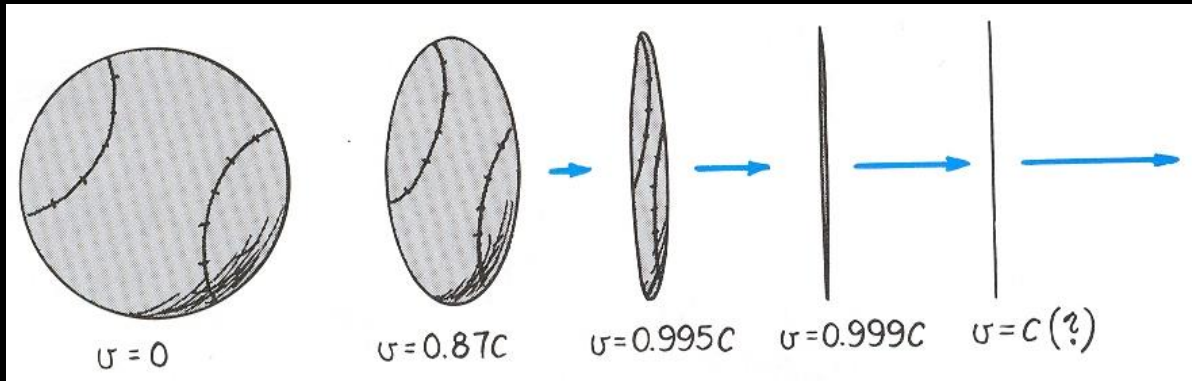
Justification for 2 (and more):

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*:



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:

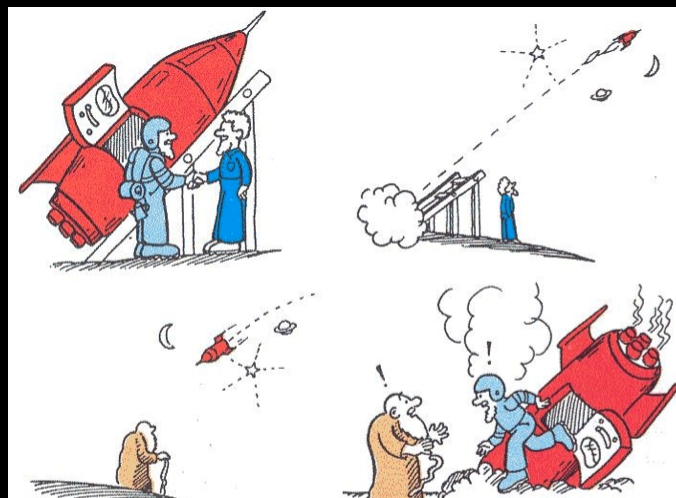
[image next page]



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