A Conservative Standard Model
sgm, 2018/DEC/15

I'm fairly certain, in the future history of physics, that the late 20th century and early 21st century, this span of decades, will be known as the *most speculative in human history* with respect to elementary particle physics. What is called the Standard Model today will be the *butt of jokes and ridicule* centuries from now.

In anticipation of those more conservative times, we propose the most conservative Standard Model possible, without reference to unstable particles, without reference to "bosons" which fulfill dubious function, and with explicit objective to conceptually and realistically unify strong "force" with gravitation. Immediate clues are given above by helping to identify *which current components* of the Standard Model *are superfluous* and *which are absolutely required* in a minimalist sense.

Right away, we dispense with both the weak "force" and strong "force" bosons recognizing essentially *the weak is not a force* and *strong is currently misunderstood*: W, Z, and gluons are eliminated. That leaves the *photon to mediate electromagnetism* and, as detailed in other papers, *temporal elasticity to mediate strong and gravitation*, heretofore known as *gravistrong*. In this Standard Model, photons are *real* ***not*** *virtual* just as temporal elasticity is *real*. There is *no need for virtual* ***anything*** in this Model.

Domains:

Nuclei	Atoms Molecules	Astronomical
p	e	p,e
n		n
nu		nu
f	f	f
te		te

p=proton, e=electron, n=neutron, nu=neutrino, f=photon, and te=temporal-elasticity

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Immediate questions arise about *blank spaces*:
why are there no analogs for neutrons and neutrinos at the atomic and molecular levels?
why does temporal elasticity not appear at those levels?

The concise answer *for both* is that temporal-elasticity is *so strong inside nuclei* compared to outside, that nuclei are the *most dense objects in the universe* next to neutron stars. *This density cannot be found at the atomic and molecular levels.* This implies that neutral particles at the atomic and molecular levels are *transient at best* and have no place in this Model. Temporal-elasticity is actually present at the atomic and molecular levels but relative to the influence of the photon, can be neglected and so is omitted above.

One might naturally ask: if there are neutron stars, why aren't there proton, electron, neutrino, or photon stars? We will attempt to accurately answer each separately:

1. Why no photon stars: while photons *do* respond to temporal elasticity, they *do not aggregate* nor clump as protons and neutrons do inside nuclei. Any discussion of statistical ensembles of photons do not relate to the energy density we find in nuclei and are irrelevant here. *Photons don't form nuclei* so they also don't form photon stars.

2. Why no neutrino stars: same exact reasoning as 1.

3. Why no electron stars: because they're charged and actually have mass as compared to photons and neutrinos, the reasoning is *slightly* different than above. Firstly, electrons repel each other. Secondly, they don't form nuclei as neutrinos and photons don't. We *can* create electron beams and observe *cascades* of electrons in lightning strikes however, these *never approach* the energy density we find in nuclei.

4. Why no proton stars: perhaps the most difficult to explain. While there are solitary protons inside stable nuclei, hydrogen nuclei, there are *never two or more* protons *without neutrons* to accompany. This implies that neutrons somehow *physically separate* protons which are electrostatically *repulsive of each other*. Temporal elasticity inside nuclei is *balanced* with proton electrostatic repulsion – *keeping nuclei together* but *allowing neutrons to separate protons*. The real question should *not* be: why no proton stars? The relevant question is: why is there such a *huge gap* between stable nuclei and neutron star minimum mass?

Unfortunately as with radioactive decay and stable nuclei, I must defer to an anthropic argument. I believe it relates to the proton/electron mass-ratio. If that ratio is too close to 1, there is no such thing as atoms with nuclei; electrons and protons are too similar in mass. If too large, too much mass is in nuclei and that creates other problems relating to biology/life. If there was a *solid line of stability* between stable nuclei and neutron stars, in other words – with *no gap* as there currently is, I suspect there would be a *population distribution of nuclei / atoms incompatible with* biology/*life*. So the same reason there's a huge gap between stable nuclei and neutron star minimum mass – is the same reason the proton/electron mass-ratio is not much higher than it currently is: too much mass in nuclei.

I believe physics of the future, with regard to elementary particles and the Standard Model, will be much more conservative / less speculative than it is today. The *most*

expensive machine in the *history of humanity*, so far, is the Large Hadron Collider at CERN in Geneva, Switzerland – ostensibly *created to look for the Higgs boson* – the most recent extension/addition to the Standard Model. When future historians think of the LHC and the *human-hours* spent constructing, maintaining, and operating it, they will roll their eyes in disbelief regarding the *arrogance and misplaced priorities* of our time. It *won't* be about pure-science versus human-centered research; it will be about our current *total lack of perspective* about what the Higgs *really is* and its *role/function* in particle physics. They will pity us and our ignorance, our lack of werewithal about meaningful priorities, and our bad scientific judgment. We will be the laughing-stocks of future history, the clowns of physics.

The real question is: when will we wake up? When will we pull our heads out of our asses? When will we accept certain things in nature just *are*?

I pray not never.