What Is the Meaning of Milgrom's Acceleration Constant?

ABSTRACT

G *((Planck mass) / (Planck length)^2) / (1.2 * 10 ^-10 meter/second^2) = 4.634 * 10^61 where Milgrom's acceleration constant is approximately 1.2 * 10^-10 m/s^2. What (if anything) is the meaning of such a large number? What is Milgromian string theory? The answer might (or might not) be Wolframian string theory. Wolfram's mobile automaton allegedly builds each Planck time interval through a huge number of updates by the updating parameter. Energy, spacetime, and string theory are supposedly approximations generated from a network of nonmeasurable Fredkin time, Fredkin distance, and Fredkin digit transition. Wolframian string theory might replace supersymmetry by Wolframian quasi-supersymmetry, which unifies bosons and fermions within Wolfram's mobile automaton. The point is that Wolframian string theory is testable. According to "The Meaning of Relativity", 5th edition, page 91, a unit measuring rod undergoes a gravitational contraction given by $(1 - (\kappa/(8\pi)) * (\int (\sigma/r)\, dV_0))$, where κ is Einstein's gravitational constant. The Fernández-Rañada-Milgrom effect implies that the gravitational contraction is $(1 - ((1 - 2 * \text{D-M-C-C})^{-1}) * (\kappa/(8\pi)) * (\int (\sigma/r)\, dV_0))$, where D-M-C-C = dark-matter-compensation-constant. In the standard form of Einstein's field equations replace the −1/2 by −1/2 + dark-matter-compensation-constant (D-M-C-C) to get the alleged Fernández-Rañada-Milgrom effect, where the constant is approximately sqrt((60±10)/4) * 10^−5.

STRING THEORY & MOND

"The first general feature of string theory, and perhaps the most important, is that general relativity is naturally incorporated in the theory. The theory gets modified at very short distances/high energies but at ordinary distances and energies it is present in exactly the same form as presented by Einstein." — Katrin Becker, Melanie Becker & John H. Schwarz

http://books.google.com/books?id=WgUkSTJWQacC&pg=PA3 "String Theory and M-Theory: A Modern Introduction", K. Becker, M. Becker, J. H. Schwarz, 2006 (page 3)

Is Newtonian-Einsteinian gravitational theory 100% correct?

"In matter of fact, whether MOND is a fundamental theory or not, the very special and central role the constant a_0 plays in galaxy dynamics is well established and is here to stay." — Mordehai Milgrom, page 344 of "Questions of Modern Cosmology"

http://books.google.com/books?id=5r8ZD93tBt4C&pg=PA344 "Questions of Modern Cosmology: Galileo's Legacy", Mauro D'Onofrio & Carlo Burigana, eds., 2009

http://en.wikipedia.org/wiki/Modified_Newtonian_dynamics

http://arxiv.org/abs/1301.3907 "The failures of the standard model of cosmology require a new paradigm", Kroupa, Pawlowski & Milgrom, 2013

FOUNDATIONS OF PHYSICS

An empiricist can neither count nor measure a complete infinity. The foundations of physics might be divided into 4 main possibilities: (1) Nature is infinite and nondigital. (2) Nature is infinite and semidigital. (3) Nature is infinite and digital. (4) Nature is finite and digital. Is it possible to prove that nature is infinite? If the number of physical observations and experiments is finite, then empirical evidence never directly demands an infinite model. However, a finite model might be intellectually abhorrent or open to an infinite number of possible corrections.

IS SPACETIME DOOMED?

"… It's very difficult to come up with an idea of discreteness in space-time in any way consistent with the ideas of special relativity. …" Nima Arkani-Hamed

http://www.cornell.edu/video/nima-arkani-hamed-spacetime-is-doomed "Space-time is doomed. What replaces it?" - CornellCast, Oct. 18, 2010 (quotation about 14:15 into video)

"… our investigations of the special theory of relativity have shown that in place of the scalar density of matter we have the tensor of energy per unit volume." — Einstein, "The Meaning of Relatity", 5th edition, page 82

Is the energy per unit of volume representable by a tensor? To assume a totally scalable tensor might be to assume that the Planck length is not a feature of nature. Discreteness in spacetime refers to a measurable concept, but Wolfram's automaton uses Fredkin-Wolfram information to generate approximations to time, space, energy, and quantum information. There might be two basic possibilities: (1) spacetime breaks down into higher dimensional hbar/alpha-prime uncertainty, or (2) spacetime exists only as an approximation built up from Fredkin-Wolfram information. Is infinity doomed?

WOLFRAM'S VISION

"It might not at first seem sensible to try to use simple functions as a basis for understanding physics."

http://www.wolframscience.com/nksonline/page-433 "A New Kind of Science, Chapter 9 Fundamental Physics", Stephen Wolfram

"Do we need this revolution? According to Wolfram, "traditional" mathematics and science are doomed: mathematics because of its emphasis on rigorous proof, and science because of its preference for models that can make accurate predictions. He says that the most interesting problems presented by nature are likely to be formally undecidable or computationally irreducible (ANKS, pp. 7, 794–5, and 1138), rendering proofs and predictions impossible. Mathematicians and scientists have managed to keep busy only by carefully choosing to work on the relatively small set of problems that have simple solutions (ANKS, p. 3)." — Lawrence Gray

http://www.ams.org/notices/200302/fea-gray.pdf "A Mathematician Looks at Wolfram's New Kind of Science", Lawrence Gray, 2003

“Wolfram himself is a lapsed elementary particle physicist, and I suppose he can’t resist trying to apply his experience with digital computer programs to the laws of nature. This has led him to the view (also considered in a 1981 article by Richard Feynman) that nature is discrete rather than continuous. He suggests that space consists of a network of isolated points, like cells in a cellular automaton, and that even time flows in discrete steps. Following an idea of Edward Fredkin, he concludes that the universe itself would then be an automaton, like a giant computer. It’s possible, but I can’t see any motivation for these speculations, except that this is the sort of system that Wolfram and others have become used to in their work on computers. So might a carpenter, looking at the moon, suppose that it is made of wood.” — Steven Weinberg

http://www.nybooks.com/articles/archives/2002/oct/24/is-the-universe-a-computer/
"Is the Universe a Computer", Steven Weinberg, 2002

Are the space roar and the photon underproduction crisis compelling motivations for developing Wolfram’s speculations?

http://en.wikipedia.org/wiki/Space_roar

http://en.wikipedia.org/wiki/Photon_underproduction_crisis

http://vixra.org/abs/1410.0155 "Testing Milgromian String Theory"

http://vixra.org/abs/1407.0113 "Lambda-VDM Model: a Testable Modificiation of Lambda-CDM"

http://vixra.org/abs/1401.0226 "What Is Measurement? Why Does Measurement Exist?"

SUPERSYMMETRY versus QUASI-SUPERSYMMETRY

“Supersymmetry is a generic feature of all potentially realistic string theory. The fact that this symmetry has not yet been discovered is an indication that the characteristic energy scale of supersymmetry breaking and the masses of supersymmetry partners of known particles are above experimentally discovered lower bounds.” — Katrin Becker, Melanie Becker, John H. Schwarz

http://books.google.com/books?id=WgUkSTJWQacC&pg=PA4 "String Theory and M-Theory: A Modern Introduction”, K. Becker, M. Becker, J. H. Schwarz, 2006 (page 4)

Wolfram’s automaton might provide a quasi-supersymmetry that replaces supersymmetry.

http://vixra.org/abs/1411.0026 "Why Are There 3 Generations of Fermions?"

My guess is that Wolframian quasi-supersymmetry is needed to unify spacetime with energy. There are two ways that spacetime can be doomed: string theory with the infinite nature hypothesis and string theory with the finite nature hypothesis.

FOUR QUOTATIONS AND FOUR QUESTIONS

“Mathematicians of the nineteenth devoted much time to elastic solid and other material aethers. Waves of light were supposed to be actual oscillations of this substance … If physics evolves a theory of matter which explains some property, it stultifies itself when it postulates that the same property exists unexplained in the primitive basis of matter.” — Arthur Stanley Eddington

http://babel.hathitrust.org/cgi/pt?id=wu.89048368104;view=1up;seq=55 “Space, time, and gravitation” (page 39), A. S. Eddington, 1921

“Force, as known to us observationally, is like the other quantities of physics, a relation.” — Eddington

http://babel.hathitrust.org/cgi/pt?id=wu.89048368104;view=1up;seq=59 (page 43) “Space, time, and graviton”

“Was there any reason to feel dissatisfied with Newton’s law of gravitation? Observationally it had been subjected to the most stringent tests, and come to be regarded as the perfect model of an exact law of nature. The cases, where a possible failure could be alleged, were almost insignificant.” — Eddington

http://babel.hathitrust.org/cgi/pt?id=wu.89048368104;view=1up;seq=109 (page 93) “Space, time, and gravitation”

“One of the most important consequences of the relativity theory is the unification of inertia and gravitation.”

http://babel.hathitrust.org/cgi/pt?id=wu.89048368104;view=1up;seq=152 (page 136) “Space, time, and gravitation”

If physics evolves a theory of reality which explains some property, then does it stultify itself when the same property exists unexplained in the primitive basis of reality? Are randomness and causality relations in a model that has not yet been discovered? Have the successes of Einstein’s general relativity theory misled physicists in several ways? Is the disunification of inertia and gravitation the key to understanding dark matter and dark energy as phenomena of the multiverse?

WHAT IS RANDOMNESS?

Newtonian mechanics and Maxwell’s equations imply that the hydrogen atom is unstable. Quantum theory resolves the problem by replacing causality by semi-causality and semi-randomness. Has quantum theory satisfactorily defined randomness? Why did Einstein and others object to quantum theory?

“… there is no doubt of Einstein's principal objection. He believed that the quantum wave function of some system, the ψ-function, was not a complete description of the system. Rather, it provided some sort of statistical summary of the properties of many like systems.” — John D. Norton

http://www.pitt.edu/~jdnorton/teaching/HPS_0410/chapters/quantum_theory_completeness/ "Einstein on the Completeness of Quantum Theory"

Suppose that we ask “What determines the quantum probability distributions?” The proponents of the Copenhagen Interpretation point to Bell’s theorem and reaffirm operational philosophy. I conjecture that the Copenhagen Interpretation can never be empirically refuted because it allows the string landscape to be formulated. By means of cleverly contrived brane interactions, the string landscape can model any plausible or implausible physics. Can Wolfram’s automaton precisely define randomness in empirically valid terms? Those who answer “No” to the preceding question need to explain the space roar and the photon underproduction crisis. I conjecture the MILGROM DENIAL HYPOTHESIS: The main problem with string theory is that string theorists fail to realize that Milgrom is the Kepler of contemporary cosmology.

NEWTON: Time and space are absolute.

EINSTEIN: Measurements of time and space depend upon mathematical considerations involving the observer’s velocity and acceleration.

BROWN: Measurements of time and space are generated by nonmeasurable Fredkin-Wolfram information below the Planck scale.

Are Brown, Fredkin, and Wolfram quite mistaken about the foundations of physicists? In science, sometimes the majority of experts are wrong. I conjecture that Newtonian-Einsteinian string theory should be replaced Milgromian string theory.

“The current standard model of cosmology (SMoC) requires The Dual Dwarf Galaxy Theorem to be true according to which two types of dwarf galaxies must exist … The Dual Dwarf Galaxy Theorem is falsified by observation and dynamically relevant cold or warm DM cannot exist. It is shown that the SMoC is incompatible with a large set of other extragalactic observations.” — Pavel Kroupa

http://en.wikiquote.org/wiki/Pavel_Kroupa