A New Method of Calculating Gravity without the Gravitational Constant.

Abstract: By using the Space Constant Equation it is possible to accurately calculate the gravitational force of any celestial body and the "fudge factor" of the gravitational constant is able to be discarded forever. This article expands upon the underlying principles outline by Siepmann JP, Journal of Theoretics, Vol. 1 No. 1, The Laws of Space and Observation and demonstrates the usage of the Space Constant Equation.

Keywords: gravity, gravitation, Observational Physics, Space, aether, gravitational constant, Space Constant, general relativity, cosmology.

The "gravitational constant" is the number that determines the strength of gravity and is the constant that is derived from Newton's law of universal gravitation and is often referred to as "Newton's gravitational constant" or the "Newtonian gravitational constant." Newton's law of gravitation can be simply expressed as \( F = G m m' / r^2 \) where \( F \) is the gravitational force between two bodies, \( m \) and \( m' \) are the two masses, \( r \) is the radius or distance between the two masses, and \( G \) is the gravitational constant which has been experimentally calculated to be \( 6.6726 \times 10^{-11} \text{ m}^3 \text{ kg}^{-1} \text{ s}^{-2} \).\(^1\)

It is readily apparent that the current gravitational constant is not a tangible physical concept as demonstrated by its units of measure which are currently mandatory for the law of universal gravitation to yield the correct units for force. It is a constant that grossly works in most instances but yet we have no understanding of why. This is because we have had an erroneous understanding of gravity.

Gravity as detailed in the Laws of Space and Observation\(^2\) does not exist as a direct force but rather as the result of the pressure exerted by "Space" on the matter/energy that is displacing it. Gravity is equal to the Relative Space Warp (the \( \text{RSW} = \frac{\text{APD}}{360} - \sin(\text{AGI}) \times \frac{\text{APD}}{360} \) and is the corrected angle of photon deviation at a certain radius around a mass divided by 360) multiplied by the Space Constant (the \( \text{SC} \) is the pressure exerted by Space [gravity] at the horizon of a black hole and is equal to \( 2.0 \times 10^8 \text{ m/s}^2 \)).\(^2\) This will yield a value for gravity in \( \text{m/s}^2 \). In the Laws of Space and Observation, \( G \) does not exist. Some may say that the \( \text{SC} \) is still a constant, but unlike \( G \), it is a real value with meaning.

The table below is used to demonstrates the use of the Space Constant Equation\(^2\) \( (g_x = \text{SC} \times \text{RSW}_x) \) for some the bodies in our solar system.
The value of $g$ in this table is in m/s$^2$ and is based upon current estimates found in the Handbook of Chemistry and Physics, 78th edition, while the RSW is a ratio value that can be physically observed and verified (though for this purpose only the RSW for the sun is an observed value while the rest are calculated values due to lack of available data). The value of the SC is $2.0E8$ m/s$^2$.

By using the Laws of Space and Observation and in particular the Space Constant Equation, we can throw away the antiquated "fudge factor" of the gravitational constant. It will also allow for the future calculation of gravity to yield more accurate values than currently possible for celestial masses.


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