Time Dilation and a Big Crunch Universe

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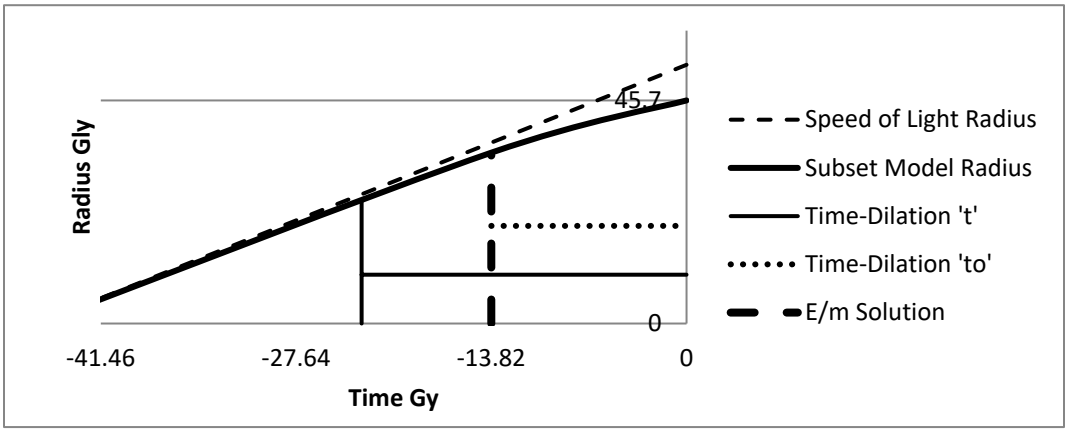
An alternative approach is used to develop a 'Time Dilation/Big Crunch Universe' model by means of addressing reported observations, perceived cosmology results, and defining a possible solution. Analysis finds a trillions of year old, spherical Universe from a Big Bang beginning. Its initial expansion rate was near the speed-of-light and this gradually slowed, resulting in size being less than the speed-of-light expansion. Universe size eventually reaches a maximum and decreases to a single point, resulting in a 'Big Crunch' type finale, but with likely repetition. An argument is presented contradicting the current approach of a 'Big Bang' type beginning and validating the event as a relativistic 'time-dilation' phenomenon, instead of the beginning of everything.

The Universe is now very early in its life cycle and expanding at near the speed-of-light. The 14-billion-year period of observed visible light is the 't_o' in the 't/t_o' = $(1 - v^2/c^2)^{-1/2}$ in a subset model's time-dilation equation. The Earth is located about 80% away from the Universe's center and is moving radially outward at a relative velocity of slightly less than this 80% number. Because of the Universe's huge size relative to the Earth's radial velocity, anything observable from Earth is essentially steady-state. The expression $(Ro/T - 2)^3 = Ro/T - 1$ that solves to Ro/T = 3.32471… is identified and significant to a solution. The ratio defines the normalized 'now-time radius to time' relationship for a speed-of-light expanding sphere. The expression equals the cubic equation $x^3 = x + 1$ with 'x' taken as Ro/T – 2. The equation's 'x' is the literature's 'plastic number' 1.32471…, the unique real solution of the cubic equation. A number from cosmology, 3.31183 (45.7/13.799), has 99.6% agreement with Ro/T. The 0.4% difference is taken as slow-down effect.

A sample case relates to the 'apparent' energy-matter composition of the Universe, as what scientist Adam Riess recently reported, where he states the Universe is made up of 0.5% ordinary visible matter, 30.1% dark-matter-energy, and 69.4% dark energy (total energy of 69.4% and total matter of 30.6%). The period of observable light is taken to be in the range of 13.799 billion-years as the Lamda cold dark matter (LCDM) model predicts. The LCDM model and its accelerating expansion findings are questioned and an alternate Universe scenario where dark-matter does not exist is presented.

The cosmic microwave background (CMB) model's observable universe radius of 45.7 billion light years is used as baseline for study. The theory of dark-matter and dark-energy is inconsistent with the study's findings. Statistical variation of observations makes all study results mostly only applicable for identifying trends and gaining insights, however, various findings make a strong case for this alternative model.

The model below, *Subset Model and Parameters*, is based on one of the study conditions and gives an indication of the findings that are discussed.



Subset Model and Parameters