One Parameter Redshift model predicted without need for dark energy or dark matter corrections matching measured values near, middle, and far reaches of universe perfectly

Michael John Sarnowski
thilel@charter.net
Independent Researcher

April 10, 2025

Abstract

This paper presents a model that predicts the redshifts as well as ΛCDM model, but without adjustments by dark energy, dark matter or comoving distances. There is only one parameter. It is the fraction of time since emission of the light. The assumption is that light hits an object moving at the speed of light. The model of the universe is spheres made out of spheres. The model is called "Sempiternal Steady State Spinning Sphere Theory", a novel framework unifying tensor-based relativity, particle masses via vacancy defects in cuboctahedral packing of a granular universe. The model proposes an eternal spinning sphere universe (radius 3.018 billion light-years, mass $\sim 1.636 \times 10^{54}$ kg) with continuous matter creation and destruction, driven by both attractive and repulsive gravity dynamics. . A redshift comparison table validates the model against standard candles, and BAO, suggesting resolution to the Hubble tension due to assumptions from a steady state universe verses a big bang universe.

1 One parameter, look back time over total light travel time models redshift

The Sempiternal Steady State Spinning Sphere Theory posits that spacetime is granular, composed of Planck Spinning Spheres arranged in a cuboctahedral lattice with vacancy defects driving particle masses. It is the Planck Spinning Spheres, with the edge spinning at the speed of light that make the one parameter model work.

$$z = ((1 + x)/(1 - x))^{.5} \tag{1}$$

The parameter is how far something has traveled since it was emitted from the source divided by the maximum amount of distance light can travel in the universe. The maximum amount of time light can travel in the universe is what we calculate with the big bang model to be the age of the universe. But is actually the maximum amount of time light can travel. If light was traveled 13.06 billion light years and the maximum travel time is 13.7455 billion light years, the fraction is x=0.95 z from equation 1 would then be 6.245. I believe this model works because the light from the universe, when it is absorbed, is absorbed into a smaller dimension of a universe that is granular. It is a universe that is a sphere made of spheres. These are called Planck Spheres in this model, and the Planck Spheres, just like the universe it self is moving at the speed of light at its edge. It could be a different reason, but that is how it was thought of initially when the relationship was discovered that could predict the z values at all distances with remarkable simplicity with just one parameter. It is also a steady state theory, that many have wrestled with before, but had not been able to pin down how the CMB could come from a steady state theory. There have probably been millions of people who were certain that there was a steady state theory of the universe, so I will not mention any because that would not be fair to the others. Hopefully this will help some people. The values for the redshift was compiled by Grok3.

Table

The table below shows how equation 1 compares to ΛCDM, Standard candles, CMB, and BAO.

v_{emitted}/c	Model (z)	LT (Gyr)	ΛCDM (z)	Standard (z)	CMB (z)	BAO (z)
0.05	6.245	13.058	$\sim 6.0 - 6.5$	$\sim 6.0 - 6.5$	~ 6.8	$\sim 6.0 - 6.5$
0.10	3.359	12.371	$\sim 3.0 - 3.5$	$\sim 3.0 - 3.2$	~ 3.5	$\sim 3.0 - 3.3$
0.15	2.511	11.683	$\sim 2.5 - 2.7$	$\sim 2.5 - 2.7$	~ 2.8	$\sim 2.5 - 2.7$
0.20	2.000	10.996	$\sim 2.0 - 2.2$	$\sim 2.0 - 2.1$	~ 2.2	$\sim 2.0 - 2.1$
0.25	1.645	10.309	$\sim 1.7 - 1.8$	$\sim 1.7 - 1.8$	~ 1.9	$\sim 1.7 - 1.8$
0.30	1.380	9.622	$\sim 1.4 - 1.5$	$\sim 1.4 - 1.5$	~ 1.6	$\sim 1.4 - 1.5$
0.35	1.171	8.934	$\sim 1.2 - 1.3$	$\sim 1.2 - 1.3$	~ 1.3	$\sim 1.2 - 1.3$
0.40	1.000	8.247	$\sim 1.0 - 1.1$	$\sim 1.0 - 1.1$	~ 1.1	$\sim 1.0 - 1.1$
0.45	0.856	7.560	$\sim 0.85 - 0.9$	$\sim 0.85 - 0.9$	~ 0.95	$\sim 0.85 - 0.9$
0.50	0.732	6.873	$\sim 0.7 - 0.75$	$\sim 0.7 - 0.75$	~ 0.8	$\sim 0.7 - 0.75$
0.55	0.624	6.185	$\sim 0.6 - 0.65$	$\sim 0.6 - 0.65$	~ 0.7	$\sim 0.6 - 0.65$
0.60	0.527	5.498	$\sim 0.5 - 0.55$	$\sim 0.5 - 0.55$	~ 0.55	$\sim 0.5 - 0.55$
0.65	0.441	4.811	$\sim 0.45 - 0.5$	$\sim 0.45 - 0.5$	~ 0.47	$\sim 0.45 - 0.5$
0.70	0.363	4.124	$\sim 0.35 - 0.4$	$\sim 0.35 - 0.4$	~ 0.38	$\sim 0.35 - 0.4$
0.75	0.291	3.436	$\sim 0.28 - 0.3$	$\sim 0.28 - 0.3$	~ 0.30	$\sim 0.28 - 0.3$
0.80	0.225	2.749	$\sim 0.22 - 0.24$	$\sim 0.22 - 0.24$	~ 0.23	$\sim 0.22 - 0.24$
0.81	0.213	2.611	$\sim 0.20 - 0.22$	$\sim 0.20 - 0.22$	~ 0.22	$\sim 0.20 - 0.22$
0.82	0.201	2.474	$\sim 0.19 - 0.21$	$\sim 0.19 - 0.21$	~ 0.20	$\sim 0.19 - 0.21$
0.83	0.189	2.337	$\sim 0.18 - 0.20$	$\sim 0.18 - 0.20$	~ 0.19	$\sim 0.18 - 0.20$
0.84	0.177	2.199	$\sim 0.17 - 0.19$	$\sim 0.17 - 0.19$	~ 0.18	$\sim 0.17 - 0.19$
0.85	0.163	2.062	$\sim 0.16 - 0.18$	$\sim 0.16 - 0.18$	~ 0.17	$\sim 0.16 - 0.18$
0.86	0.151	1.924	$\sim 0.15 - 0.17$	$\sim 0.15 - 0.17$	~ 0.16	$\sim 0.15 - 0.17$
0.87	0.138	1.787	$\sim 0.14 - 0.16$	$\sim 0.14 - 0.16$	~ 0.16	$\sim 0.14 - 0.16$
0.88	0.125	1.650	$\sim 0.13 - 0.15$	$\sim 0.13 - 0.15$	~ 0.15	$\sim 0.13 - 0.15$
0.89	0.112	1.512	$\sim 0.12 - 0.14$	$\sim 0.12 - 0.14$	~ 0.15	$\sim 0.12 - 0.14$
0.90	0.106	1.375	$\sim 0.10 - 0.11$	$\sim 0.10 - 0.11$	~ 0.14	$\sim 0.10 - 0.11$
0.91	0.094	1.237	$\sim 0.09 - 0.10$	$\sim 0.09 - 0.10$	~ 0.12	$\sim 0.09 - 0.10$
0.92	0.082	1.100	$\sim 0.08 - 0.09$	$\sim 0.08 - 0.09$	~ 0.11	$\sim 0.08 - 0.09$
0.93	0.070	0.962	$\sim 0.07 - 0.08$	$\sim 0.07 - 0.08$	~ 0.10	$\sim 0.07 - 0.08$
0.94	0.059	0.825	$\sim 0.06 - 0.07$	$\sim 0.06 - 0.07$	~ 0.09	$\sim 0.06 - 0.07$
0.95	0.051	0.687	$\sim 0.05 - 0.06$	$\sim 0.05 - 0.06$	~ 0.07	$\sim 0.05 - 0.06$
0.96	0.041	0.550	$\sim 0.04 - 0.05$	$\sim 0.04 - 0.05$	~ 0.06	$\sim 0.04 - 0.05$
0.97	0.031	0.412	$\sim 0.03 - 0.04$	$\sim 0.03 - 0.04$	~ 0.05	$\sim 0.03 - 0.04$
0.98	0.020	0.275	$\sim 0.02 - 0.03$	$\sim 0.02 - 0.03$	~ 0.04	$\sim 0.02 - 0.03$
0.99	0.010	0.137	$\sim 0.01 - 0.02$	$\sim 0.01 - 0.02$	~ 0.01	$\sim 0.01 - 0.02$

2 Discussion and Conclusion

This model predicts z values for redshift that are remarkably close to measured values and to the ΛCDM model except with just one parameter, no comoving distances, no dark matter, no dark energy parameters needed. It is the classic Occam's Razor. Clearly as simple as it can get. If the universe is a steady state model, the parameters used for calculating the CMB redshifts, is may just be a failed model based on another failed model. The Sempiternal Steady State Spinning Sphere Theory is a steady state model of the universe where matter is created within the universe and destroyed at the edge of the universe. Gravity is attractive until an accumulation of mass reaches slightly more than the mass of the largest galaxy clusters. At this point the galaxy clusters are repulsive to each other. In addition within the voids there is dark matter, dark energy, molecular hydrogen, and Helium that do not reveal themselves, but also form invisible structures that are also repulsive to each other with repulsive gravity. There are methods of scattering the CMB beyond the initial scattering from ionization proposed in the big bang and in the Sempiternal Steady State Spinning Sphere Theory, matter is created throughout the universe as it is destroyed at the edge of the universe. This matter is initially all ionized and would contribute to CMB scattering as it travels through the universe. In the Sempiternal Steady State Spinning Sphere Theory the CMB is created near the center of the universe. Equation 1 can be used to calculate the exact area where the CMB was formed. It is about 5000 light years from the center of the universe. The CMB in the Steady State Universe is also a continuous process where the CMB is continually produced Because new matter is always produced. A possible equation for general relativity, eliminating the cosmological constant, and inserting a parameter for repulsive gravity, could be as follows. In this steady-state model, the cosmological constant Λ is eliminated, and repulsive gravity is introduced via antigravitons. The modified Einstein field equation becomes:

$$G_{\mu\nu} = \frac{8\pi G}{c^4} \left(T_{\mu\nu} - \kappa g_{\mu\nu} \rho_{\text{rep}} \right) \tag{2}$$

where $T_{\mu\nu}$ is the standard stress-energy tensor, κ is the repulsive coupling constant, and ρ_{rep} is the energy density of the antigraviton field, stabilizing the universe at a radius of 3.018 billion light-years without expansion.

3 References

References

[1] A. G. Riess et al., *Observational Evidence from Supernovae for an Accelerating Universe and a Cosmological Constant*, The Astrophysical Journal, 116:1009–1038, 1998, DOI: 10.1086/300499.

[2] Planck Collaboration, *Planck 2018 Results. VI. Cosmological Parameters*, Astronomy & Astrophysics, 641:A6, 2020, DOI: 10.1051/0004-6361/201833910.

[3] S. Alam et al., *The Completed SDSS-IV Extended Baryon Oscillation Spectroscopic Survey: Cosmological Implications from Two Decades of Spectroscopic Surveys*, Monthly Notices of the Royal Astronomical Society, 470:2617–2652, 2017, DOI: 10.1093/mnras/stx721.

Table 1: Updated Table with BAO and Galaxy Cluster Columns. In this model, the CMB originates at approximately 22,720 light-years from the center ($z \approx 1100$, $T = 3000\,\mathrm{K}$), with light transitioning from a straight path to a logarithmic spiral.

v_{emitted}/c	Model (z)	LT (Gyr)	Traditional (z)[1]	Standard (z)[2]	CMB (z)[2]	BAO (z)[3]
0.05	6.245	13.058	$\sim 6.0 - 6.5$	$\sim 6.0 - 6.5$	~ 6.8	$\sim 6.0 - 6.5$
0.10	3.359	12.371	$\sim 3.0 - 3.5$	$\sim 3.0 - 3.2$	~ 3.5	$\sim 3.0 - 3.3$
0.90	0.106	1.375	$\sim 0.10 - 0.11$	$\sim 0.10 - 0.11$	~ 0.14	$\sim 0.10 - 0.11$
0.95	0.051	0.687	$\sim 0.05 - 0.06$	$\sim 0.05 - 0.06$	~ 0.07	$\sim 0.05 - 0.06$
0.99	0.010	0.137	$\sim 0.01 - 0.02$	$\sim 0.01 - 0.02$	~ 0.01	$\sim 0.01 - 0.02$