OSP Journal of Physics and Astronomy

Short Communication

An Infinite Universe

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Received: January 22, 2021; **Accepted:** January 26, 2021; **Published:** February 07, 2021

Abstract

The alleged big bang never happened. That the universe could have begun from any kind of singularity is both logically impossible and scientifically indefensible. There is no point in time at which time began. Time is in the universe; the universe is not in time. The universe is a limitless, endless, infinite expanse that is without beginning or ending.

Introduction

The alleged *big bang* never happened. That the universe could have begun from any kind of singularity is both logically impossible and scientifically indefensible [1, 2].

The universe is defined as everything which exists. It is not possible for any cause to pre-exist existence. There is no point in time at which time began. Time is in the universe; the universe is not in time [1, 2].

If the universe did not begin at some point in time, then from our perspective it must have always been here. The universe has no beginning and can never have an ending. The universe is infinite.

There is no point or locale in space where the universe could have begun. Space exists within the universe; the universe does not exist in space. Space has no shape and no boundaries. Space is an endless expanse within the infinite universe.

Failure of Expansion Theory

If the universe is infinite, then it cannot have any boundaries that are expanding. Infinity cannot become any larger than the everything that it already is.

Hubble's law, the statement that galaxies are moving away from Earth at velocities proportional to their distance, is considered the ultimate defining evidence supporting the hypothesis that the universe may be expanding. Because of false assumptions, faulty reasoning, and data that appear to have been contrived, Hubble's law is fatally flawed. Edwin Hubble made the unwarranted assumption that nebulae are accelerating away from each other, and then found the mathematics to prove his foregone conclusion [1, 8].

In 2014, Eric Lerner and a team of astrophysicists measured the surface brightness (per unit area) of over 1,000 near and far galaxies. If galaxies were moving away from each other, they would appear fainter the farther away they get, i.e., their surface brightness would diminish. Lerner's team, however, found that in every case surface brightness remains constant regardless of distance. If any far distant galaxy had been in motion away from us, its surface brightness would have been much less than that of nearby galaxies, a phenomenon that has never been observed. Thus, there is zero tangible evidence that galaxies are moving apart and overwhelming evidence that they are not [4].

The Redshift Misconception

Over extreme distances, light attenuates – meaning that the farther light travels, the greater degree to which its frequency slowly diminishes as its wavelength correspondingly increases. We observe this phenomenon as a *redshift*, i.e., the tendency of visible light to drop toward the red end of the spectrum. The farther away a galaxy is, the more its light gradually shifts toward the red end of the spectrum [3].

For over a century, astrophysicists have been falsely presuming that redshift is a Doppler effect. This fundamental error began in 1915 when Vesto Slipher observed that light from some spiral nebulae is redshifted and jumped to the conclusion that what he was witnessing was a light source rapidly moving away from the observer and somehow stretching the wavelength of light it emits [1, 3].

Slipher did not appreciate how light attenuates and thought he was witnessing a Doppler effect. In redshift there is an actual increase in wavelength. In Doppler, there is only the illusion of a change in wavelength. Redshift and Doppler are fundamentally different. Redshift is attenuation of light whereas Doppler is distortion of sound. To presume they are the same "Doppler-redshift" is rather like referring to a line in geometry as a straight-curve.

Light waves are transverse (i.e., oscillate perpendicular to their path) and do not require any medium through which to travel. Sound waves are longitudinal (i.e., vibrate parallel to their path) and can propagate only by compression and

rarefaction of the medium through which they travel (e.g., air, water, solids) [2, 3].

The Doppler-redshift misconception falsely presumes that a light source is travelling away from us at a rapid velocity. The true interpretation of redshift is that it is a measure of two things only: (1) Distance from source and (2) Temperature of source [1, 3].

Cosmic Microwave Background

Cosmic microwave radiation can be detected by telescope in every direction as a patchy background, about 13.4 billion light-years away. This observation is mistakenly believed to be thermal radiation left over from *recombination*, the supposed epoch during which charged electrons and protons allegedly first became bound to form electrically neutral hydrogen atoms, shortly after the alleged *big bang*.

From 1989 until 1993, COBE satellite Explorer 66 investigated the cosmic microwave background (CMB). Astrophysicists expected to see evidence of directional dependency (anisotropy) that could be traced back to the site of the alleged *big bang*. That was not what they saw, however. Instead, Explorer 66 measured an isotropic blackbody spectrum with little variation across the sky [5].

NASA confirms that the CMB follows the precise curve for blackbody radiation. A blackbody is an opaque object in space that absorbs radiation of all wavelengths that falls on it. Then, when the blackbody is at a very hot and uniform temperature, it emits its own radiation that is outside the visible spectrum of light. NASA's measurements show that this blackbody curve peaks at 0.3 cm. wavelength and 100 GHz frequency, which is at the high end of the microwave spectrum [5]**.** The blackbodies in question appear to be interstellar dust. The cosmic microwave background is smooth and looks the same in all directions for the same reason that a fog looks smooth and uniform in all directions.

A Spherical Horizon

The Hubble Space Telescope creates for us a spherical horizon with radius of about 13.4 billion light-years (Gly). At the perimeter of our horizon is galaxy GN-z11 (distance 13.39 Gly) [**7].**

Supposed there is an advanced civilization in GN-z11 with technology equivalent to ours. We are at the perimeter of their spherical horizon. If we were to draw a graphical representation of our two horizons connecting, the distance from their furthest edge to our opposite furthest edge would be two diameters or 53.6 Gly.

Suppose there is another advanced civilization at the farthest edge of GN-z11's horizon. Adding the three connecting horizons gives us an expansive view of three diameters or 80.4 Gly. This process of connecting spherical horizons can go on forever because the universe extends to infinity in every direction.

How Far Can Light Travel

Over extreme distances, light attenuates according to the following equation $c = \lambda f$

where c = speed of light; λ = wavelength of light; and f = frequency of light wave [3]. The farther light travels, the greater the degree to which its frequency slowly diminishes as its wavelength correspondingly increases. We observe this phenomenon as a "redshift", i.e., the tendency of visible light to drop toward the red end of the spectrum. The farther away a galaxy is, the more its light shifts toward the red end of the spectrum.

Galazy GN-z11 enables us to estimate rate of attenuation over its distance of 13.39 billion light-years. Light from GN-z11 is dull red, and its frequency is documented by NASA as being in the low red range of the spectrum [6, 7].

Suppose that GN-z11's frequency at source (fs) is 590 THz (mid spectrum) and its frequency received (fobs) is 410 THz (low red). This would mean that over 13 Gly, frequency from GN-z11 has dropped by 180 THz. This is equivalent to frequency dropping every billion light-years by 2.75% of the frequency of the previous billion light-years. We can thus express redshift attenuation (RA) by the following equation in which distance (D) is expressed in incremental units of one billion light-years (Gly) [3].

RA = fobs = fs (0.9725) D

When its frequency drops below 400 THz, light is no longer visible. It continues at the speed of light but as electromagnetic energy that cannot be seen. This would happen for GN-z11 at 14.6 Gly – which means that an observer located 2 Gly from Earth in the opposite direction would not be able to see GN-z11 at all.

At distance 10 Gly, the frequency of light from a sun-like star emitting at 525 THz (yellow range) drops below the visual threshold of 400 THz. Thus, we have no way of knowing how many stars within the outer range of our telescopes may be invisible to us.

Our spherical horizon has a radius of about 13.4 Gly. We have no way of knowing how many galaxies there may be at or beyond 15 Gly because their light will have dropped below the visual threshold of 400 THz at a distance of at least 400 million light-years before it reaches us.

It only makes sense that at some point attenuating light eventually drops below the visible range, and it is a convenience of nature that it does so. Without a maximum distance that visible light can travel, the night sky would be ablaze with a patchwork blanket of light rendering us incapable of distinguishing one celestial object from another. We would never be able to understand the cosmos or our place in it.

Conclusion

The universe is a limitless, endless, infinite expanse that is without beginning or ending.

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