the general science journal

Decelerating Universal Expansion

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Cosmologists have for ten years been convinced from observations of supernovae that universal expansion is accelerating. However, more recent data available from the Chandra Observatory for galactic clusters reveals that this is clearly not the case. By using that data, a graph derived from far more information is produced herein that indicates universal deceleration, provided the data is interpreted correctly.

Multiple observations of red shift against calculated distances for type 1a supernovae have suggested that universal expansion is accelerating, but this conclusion appears to have been premature. As the data obtained produces graph coordinates that are scattered away from a mean curve, some observations may be presumed unrepresentative and the associated coordinates disregarded to result in a mean curve indicating the opposite case of deceleration. It may be assumed that angular velocities of galaxies causing recessional motion relative to us is responsible for certain observations to be untypical for the regions they occupy.

In contrast to the mass of one exploding sun and the 'small' portion of space it interacts with, a cluster of galaxies contains the mass of up to a million billion suns and defines the motion of matter for an immense region of space, so that individual velocities of stars (such as those becoming supernovae) relative to a frame fixed to the cluster cancel one another. Therefore, the motion of galactic clusters, rather than individual exploding stars are far more representative of how the universe is behaving as a whole. Researchers for the Chandra X-Ray Observatory offer data determined from observations of four typical clusters as set out below [1a].

Cluster Reference	Billions Of Light Years From Earth	Red Shift
Abell 2029	**1**	**0.08**
MS 2137.3-2353	**3.5**	**0.31**
MACSJ 1423	**5.4**	**0.54**
MS 1137.5+6625	**6.7**	**0.78**

The website for Chandra defines the method for calculating the distances given to those clusters as follows [1b]: -
"Astronomers used radio telescopes to measure distortions of the cosmic microwave background. Chandra measured the properties of the hot gas revealed in X-ray emission, which told astronomers the physical size of the galaxy clusters and thus allowed their distances to be determined".
This suggests they recognize that Hubble's Law (relating to red shift) cannot be applied to calculate distance, especially on such a large scale.

Expansion dictates that distances are increased with time, so light velocity relative to observers must be reduced in defiance of SRT, which is in any case invalidated regardless of expansion [2] and the Doppler Effect of red shift is explained. The distance unit of 'a billion light years' based upon experiments here on Earth appears to be constant where increasing distances resulting from universal expansion are compensated by reducing light velocities. Therefore, we may rely upon the temporal aspect of this unit without hesitation as explained thus.

If we take light from the furthest cluster to have been emitted at 'year zero' and subsequent emissions at periods relative to that, a graph relating red shift to time of light travel is produced, ref. Fig.1. This clearly shows that changes in red shift per billion light years decreases with time and is an indication of additional distance/space being continuously introduced ahead of, within and behind a light beam, which reduces light velocity relative to observers.

Observations of clusters rather than individual galaxies or stars have evidently provided an accurate representation of universal mean behaviour, as the resulting co-ordinates give a curve of extra-ordinary smoothness. Consequently, it is feasible to predict for given distances from Earth, the red shifts of light from other clusters. It is of interest to note that uniform expansion would produce a straight-lined graph, ref. Fig. 2, and accelerating expansion would produce a graph with a line that curves increasingly downward with time, ref. Fig. 3.

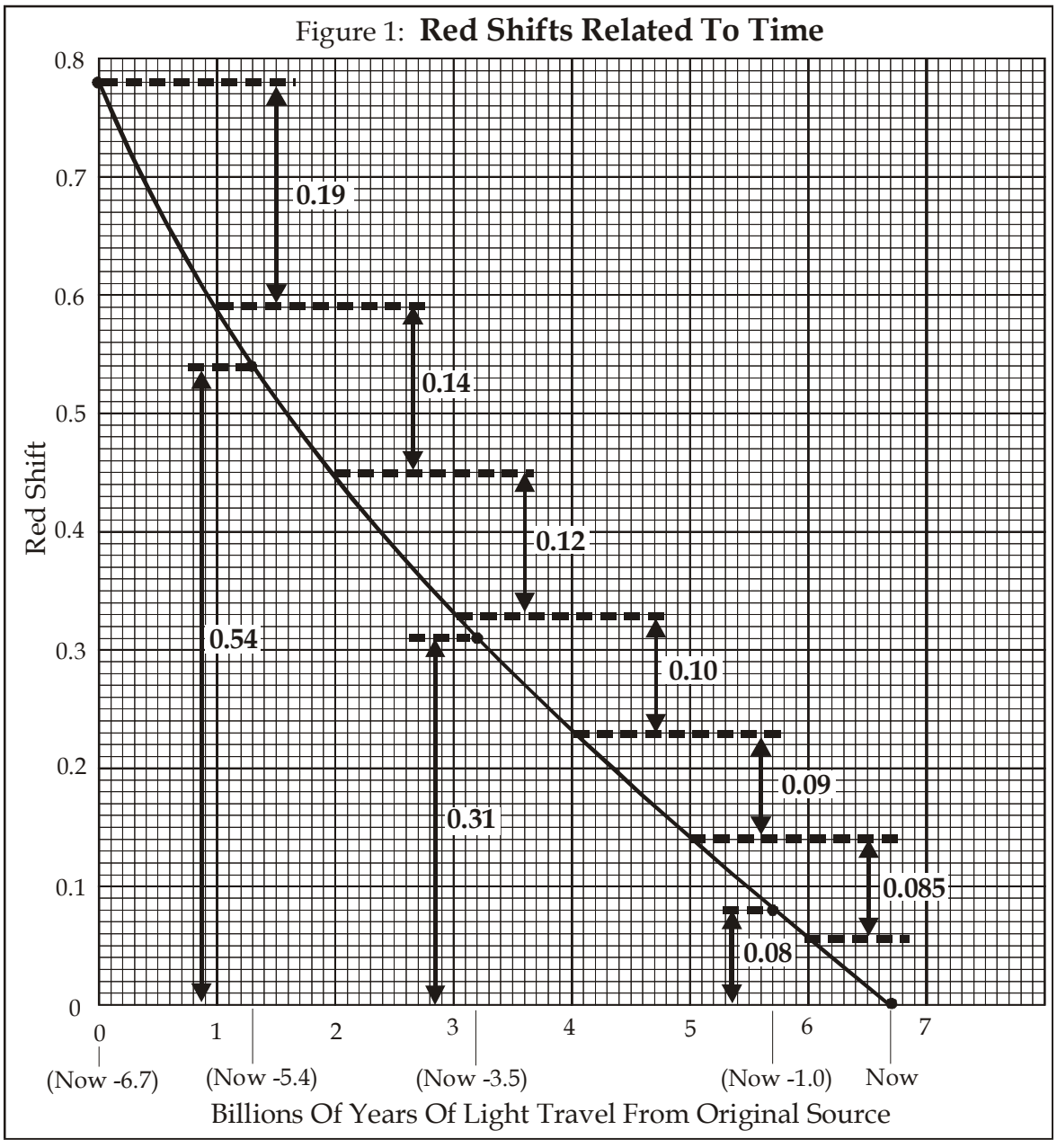


Figure 2: **Uniform Expansion**

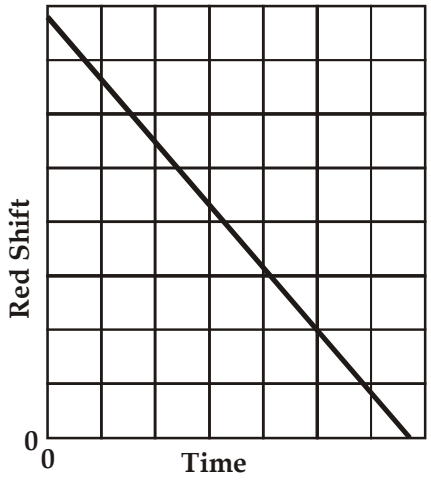
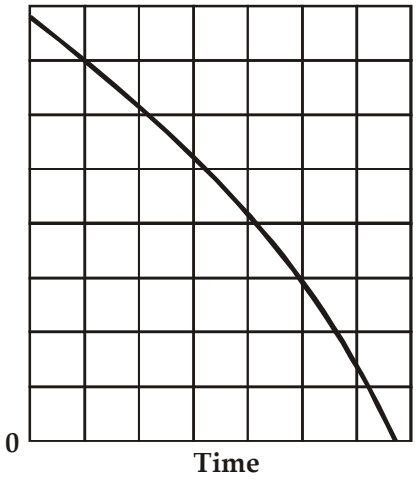


Figure 3: **Accelerating Expansion**



Reason For Error

We may now consider how cosmologists have misinterpreted data such as that provided to conclude that expansion is accelerating. By viewing Fig. 1, it appears that by considering a 'billion light years' primarily as a measure of distance from us rather than time from emissions, the graph has been interpreted from the wrong direction. As light observed from distant bodies has red shifts that increase with distance away from us at an exponential rate, this has presumably been mistaken as an accelerating expansion relative to our location, whereas a deceleration is clearly evident when the graph line is followed in positive chronological order. This is an example further to SRT of how the importance of 'the observer' has been exaggerated. When a typical beam of light being observed from the furthest cluster was emitted, Earth did not exist. This slowed with the passage of time relative to Earth's future location owing to the expansion of space to produce a gradually increasing red shift to be later observed. Owing to these reductions in velocity relative to a future Earth, it would have passed the nearer clusters many millions of years before the light also now being observed from those were emitted.

In short, acceleration was deduced by calculating velocity changes from red shifts while working backwards in time from now rather than forwards in time from emissions, beginning with the earliest.

Dark Energy: An Unnecessary Invention

Observations of supernovae led to the reasonable assumption that universal expansion is accelerating, much to the amazement of astronomers. Then, in the absence of any observable cause for this apparent phenomenon, a mysterious Dark Energy was invented. But is this a legitimate direction that science should take? When something is discovered, it is a reasonable custom to provide that thing with a name, but astronomers have given a name to something that probably does not exist and will therefore never be discovered, but in doing so, believe a solution was found: just by creating a name!

Astronomers are well aware that this is an unsatisfactory state of affairs and are uncomfortable with resorting to such an invention, so it is surprising that repeated attempts to obtain a response from astronomers for the Chandra Observatory to these logical interpretations have failed.

References:

[1] The Chandra X-Ray Observatory (website); provided by : Harvard-Smithsonian Center for Astrophysics, (60 Garden Street, Cambridge, MA 02138 USA).
[1a] http://chandra.harvard.edu/photo/2004/darkenergy/

[1b] http://chandra.harvard.edu/photo/2006/clusters/

[2] Alan Newman; Misconceptions Governing SRT & Interpretations Of Related Experimental Results; Galilean Electrodynamics, 2006; Volume 17, No. 4, p. 73-76.