Quantization of starlight redshift not from Hubble Law

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An analysis of the spectrum of incoming starlight reveals some interesting information, including the shift of the light's wavelengths to be longer or shorter than would be expected. We know from spectroscopy that light travelling through a gas, such as hydrogen, will have certain wavelengths absorbed by that gas. Therefore, we would expect light emitted from stars made up of mostly hydrogen to have these same wavelengths of light removed as the light is emitted from the star into space and received by us. However, as we analyze the spectrum of this light we see that these expected 'hydrogen absorption lines' are shifted from their normal position. Regardless of the direction we look, the farther the apparent distance to the star (or galaxy of stars), the greater the shift is towards the red (longer wavelength) end of the spectrum. This distance to redshift relationship is known as the Hubble law. The redshift was initially explained as resulting from the velocity at which the star was moving through space away from the earth (a Doppler shift). However, cosmologists now attribute the stars movement away from us (redshift) to the actual expansion of space itself.

One conclusion could be drawn that this puts us in a special place in the universe given that almost everything in the universe appears to be moving away from us. However, this did not sit well with secular astronomers as this astronomical information was being discovered. For example, the following quote reveals Hubble's own bias against this interpretation:

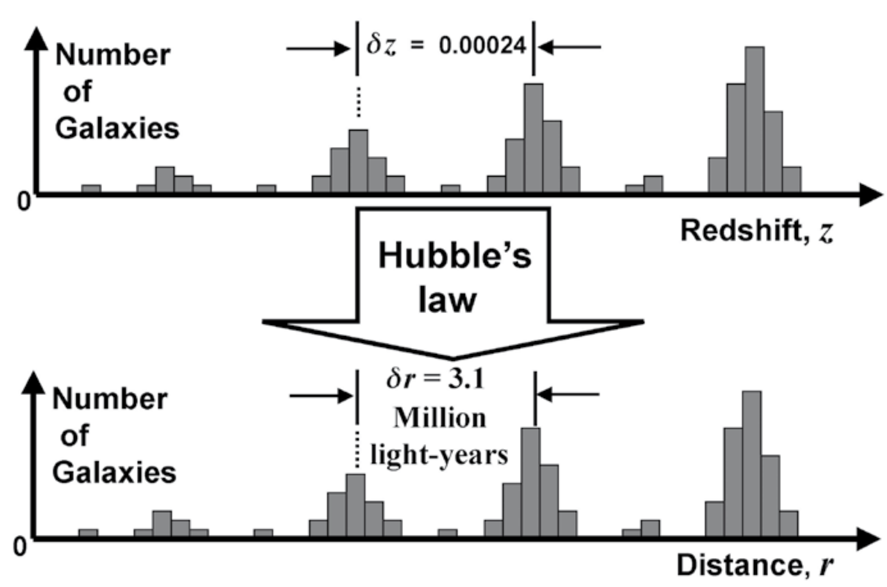
> 'Such a condition [these Doppler shifts] would imply that we occupy a unique position in the universe … But the unwelcome supposition of a favoured location must be avoided at all costs … [and] is intolerable … moreover, it represents a discrepancy with the theory because the theory postulates homogeneity.'[1]

Therefore, Hubble and other secular cosmologists attribute this phenomenon to the universe being homogeneous and isotropic, not us being in the centre of the universe. In other words, they state that every other place in the universe is relatively similar to our place in the universe and would experience the same view of the expansion of the universe. These homogenous and isotropic positions are assumptions they make given their evolutionary bias and not conclusions based on fact. Neglecting these evolutionary biased assumptions, the straightforward view remains that the movement of everything away from us could be an indicator that we are at the centre or near the centre of the universe, and this seems more consistent with biblcal assumptions.

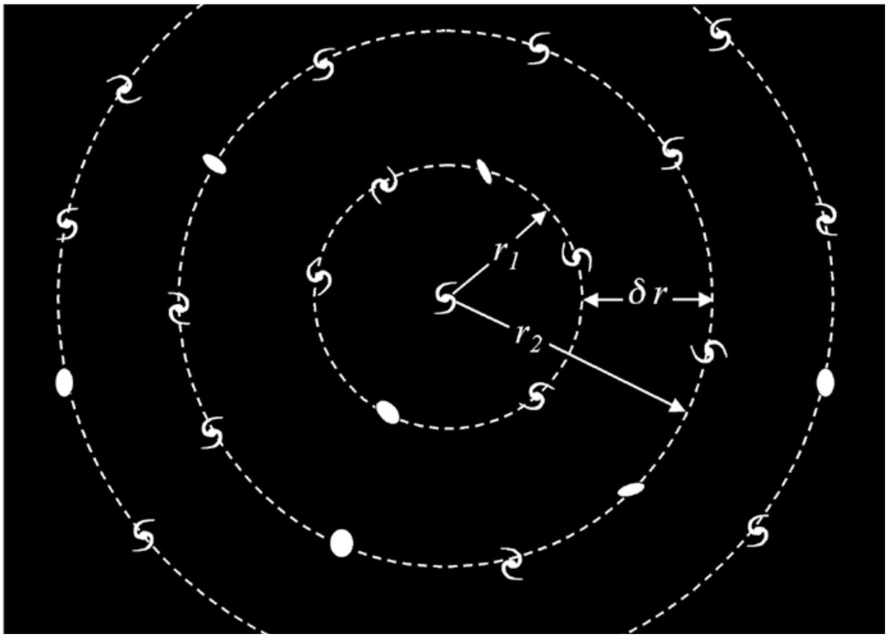
Quantized redshifts

The quantization of redshifts refers to their apparent clumping around regular intervals, rather than being continuously distributed. Therefore, by Hubble law, this would indicate the galaxies tend to be at discrete distances from us. This is not an expected result of big bang cosmology, which would expect a smooth distribution of redshifts from smaller to larger shifts. For example, this would be analogous to a baseball pitcher only throwing fastballs that were exactly 120, 140, or 160 km/h. What happened to the speeds in between?

William G. Tifft of the University of Arizona was the first to notice the quantized nature of the redshift. In the 70s, he found that the quantization appeared to be centred around 72.45 km/s (Tifft described the shift as a velocity based on the traditional view that the redshifts are due to Doppler shifts). Later, in the 80s, research showed that the quantization also occurred in fractions (½, ⅓, etc.) of this value. Studies then shifted away from the visible spectrum and into the radio spectrum given our ability to measure its redshift more accurately. Here also, the quantization was similarly occurring. Additionally, it was found that subtracting out the movement of our solar system through space and accounting for relativistic effects improved the data.[2] In the 90s, the quantization data was improved even further when our movement through space was taken into account assuming we are at rest with respect to the cosmic microwave background.[3]



Hubble's law transforms redshift groups to distance groups. Data are idealized, illustrating only one of the observed spacings between groups. (From Humphreys[4]).



Galaxies tend to be grouped in concentric spherical shells around our home galaxy. The distance interval between shells is of the order of a million light years, but since several different intervals exist, the true picture is more complex than the idealization shown here. (From Humphreys[4]).

Quantization Possibilities

Hubble Law—concentric spheres model

Given the common redshift-distance interpretation given by Hubble law, the most natural conclusion for its quantized nature would be that the surrounding galaxies tend to be at distinct distances from us. This interpretation was proposed by Humphreys in 2002.[4] He said that the quantization is due to us being roughly at the centre of the universe and the surrounding galaxies residing on concentric spheres from this centre point.[4] These concepts are illustrated in the figures.

As attractive as this view appears from a creationist perspective, the following discussion shows some difficulties with this interpretation. Most all of the recent publications since the 1970s dealt with the quantization of starlight by comparing different galaxies. However, the initial publications in which the quantization was first observed and reported, dealt with the light from different stars in the same galaxy showing the characteristics of the ~72 km/s quantization. This quantization was observed within the Andromeda (M31) and Whirlpool (M51) galaxies as well as several others.[5] Additionally, the newer and more accurate 21 cm radio spectrum studies have involved galaxy pairs and closely associated groups of galaxies that have exemplified the same quantized characteristics.

Clearly, the stars within a given galaxy could not be on separate concentric spheres separated by millions of light-years and therefore follow the Hubble law explanation for the quantized nature of the redshift. For example, if the ~72 km/s quantization observed within the Andromeda galaxy was due to Hubble law, its stars would be more than 3 million light-years apart. Yet, this is farther than the distance from us to the Andromeda galaxy and orders of magnitude larger than its size. Likewise, galaxy pairs or clusters of galaxies gravitationally bound together that exhibit the redshift quantization effect do not fit a concentric sphere model either. Therefore, it is difficult to reconcile this evidence with the proposal of concentric spheres of galaxies being the cause of the quantization. Additionally, it is logical that the same factors causing the quantization from within a single galaxy are the same factors attributing to the quantization noticed by comparing galaxies. This leads us to look for causes for the quantization other than distance related effects.

Other causes

The distance to a star is not the only factor causing the redshift, and the quantization may come from these other contributors of redshift.

Actually, there have been well known anomalies to the redshift/distance relationship for some time. For example, hot, early stage stars within our own galaxy exhibit excessive amounts of redshift. This is known as the K-effect. Therefore, if we accept that there are other sources for the redshift, then we open up the door for many alternate explanations for additional causes of the quantization of starlight. Some of the possible explanations that seem related to a quantized redshift are as follows:

- Tiffts' proposal that the quantization is an inherent property of the galaxies themselves.[3]
- Photons interact in strange ways as they travel through space, causing distinct values for the redshift.
- Time or space itself may be quantized and this provides the quantized nature of redshifts.[6] Physics has led us down this same road before (for example, matter being quantized). If matter is quantized, why not time or space? Although we cannot detect the quantized nature of time or space here on earth, the heavens have been through a dramatically different history. Scripture's 17 references to God stretching out the heavens like a curtain indicate this.[7] Therefore, quantized redshifts may just be the effect of the stretching of space God performed during creation week. This appears to be consistent with Dr. Humphreys' relativistic cosmology.
- Other possibilities. Halton Arp may well have spent the most time of any researcher showing examples that point towards other sources for the redshift than Hubble's law. Although not a biblical creationist,

his research contradicts the big bang hypothesis and may contain the key to discovering the proper source of the quantization of the redshift. Those interested in this subject would benefit from reading some of his material.[8]

Conclusion

The quantization of starlight does not appear to be a solid creationist argument for our being at the centre of concentric spheres of galaxies. The observed quantization from the same galaxies or clusters of galaxies moves us towards a different explanation for the quantization than Hubble Law effects. It appears much work still needs to be completed concerning our understanding of the total sources of redshift. The quantization of starlight looks to be a source of interest for years to come in the scientific community. However, as biblical creationists, we should be encouraged since we have the best framework for understanding these issues. Scripture is clear that the earth is young and we are not clouded by false presuppositions based on naturalistic explanations. May God bless our efforts as we continue to tackle these issues in cosmology.

References

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