

The analysis presented in the article *Big Bang* can be supplemented by further information.

The Real Structure of the Universe

Actual observation of the stars has led to an impression of the structure of our universe. Current thinking is that our real universe has a form like a mass of soap bubbles. This means there are relatively dense strings of galaxies forming the lines of interface between bubbles and large volumes of empty space are the actual bubble volumes between these strings of galaxies. At length scales above 70 mpc/h (roughly, the average diameter of the bubbles), the universe starts to become homogeneous.

Strangely, this is a view of the universe held by those who think a big bang once occurred. But, a homogeneous distribution of stars throughout our known universe is inconsistent with a bang of any kind. No other explosion phenomenon distributes matter in this way, and especially not known forms of star explosions.

Other Thinking

The justification for the Big Bang theory comes from the observation that all stars are receding from us in all directions. This recession proceeds at equal velocities for any radius drawn around the earth. The larger the radius, the faster the rate of recession from our position. That means that earth just happens to be at the original center location of the big bang. Really? Considering the vast size of the universe, the probability that our planet just happens to be at the original center is virtually zero.

Also puzzling are results such as recently announced that galaxy UDFy-38135539 is located 13.1 billion light years from earth while the Big Bang occurred 13.7 billion years ago. The light we are receiving now from this galaxy is said to have been emitted only 600 million years after the Big Bang. But if that light has been traveling to us for 13.1 billion years, then galaxy UDFy-38135539 was already 13.1 billion light years away from us when that light was first emitted. How did it get that far away in only 600 million years? It's materials would have traveled at speeds many times the speed of light and then magically slowed to its currently observed velocity. And, in the short time period after this violent journey, this galaxy would still have had to form into a normal galaxy held together by weak gravitational forces.

The Solution

Our own Local Group (of galaxies) is a very small collection of galaxies compared to most galactic clusters and the more famous Superclusters from which we gather most of our data. From the article *Big Bang* equation (68), it is easy to see why larger clusters and Superclusters would be red shifted as observed by our Local Group. This is due to their

larger mass, a type of red shifting that is also evident from current methods (using equation (61)).

But this red shifting should also be taken in context of Figure 16. Convert the observer planet M_o to our Local Group and convert the M_{ei} planets each to a similar sized group of galaxies and the red shift becomes apparent, even though current methods would indicate that no red shift should take place. Now think of what happens when the M_{ei} planets of Figure 16 were Superclusters surrounding a smaller emitter cluster, M_e , which is a cluster similar to our own. Red shifting would be further emphasized. This red shifting would happen even if the emitter M_e was smaller than our Local Group.

This type of red shifting is even more important when it is recognized that the farther away galaxy clusters are from us, the larger they will have to be if we are to accurately observe them. In other words, it is hard to see small emitters when there is a Supercluster encroaching on our view of the small emitter. Could inaccuracies in seeing what is actually so far away also be influencing our understanding of the red shift data? Do we fully understand the effects of gravitational lensing on these observations?

Summary

There are a number of fantastic explanations for the problems brought about by the Big Bang theory. Theories on the metric expansion of space and dark energy have not been seen or measured. I do not know how the universe began and do not know how it will end. I do not know the structure or contents of space in the vast voids between the galaxies or in any other location in the distant cosmos. Neither does anyone else. But since all this theory depends on red shift data, I think that a close examination of red shift theory is in order.