GREAT AGE COSMOLOGY

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Results of laboratory studies of hydrogen-induced redshift indicate light is shifted spectrally as found in space.[1] Due to improvement in telescopic equipment, vast regions of hydrogen in and around galaxies are now being found, the necessary ingredient for redshift. If this is the cause of the cosmological redshift, then a universe exists that is not expanding, and there was no big bang. This is an effort to compare the big bang model (BBM) to a great age model (GAM). Approximate distances and ages can still be determined based on amounts of red shift currently seen. Size of the universe might be much larger than currently thought. With a GAM, inflation and dark energy are not needed. GAM allows sufficient time for stars to have full life cycles. This process involves their birth, consumption of all their fuel, then cooling to the point of non-visibility naturally resulting in many times more cool or invisible stars than bright ones.

IS THE UNIVERSE EXPANDING

Early spectrum taken of distant galaxy light indicated it was shifted to longer wavelengths, redshifted. It was proposed this could be similar to a Doppler shift, which meant that those galaxies are moving away from us, and the universe is expanding. It also implied that at some time in the past the universe must have been tiny.

It was soon found that galaxies that are more distant were more redshifted, and this was subsequently termed a cosmological redshift. This implied that the expansion was increasing ever faster with distance, and that galaxy motion would become relativistic. Distant galaxies would be moving away close to the speed of light.

Tables have been constructed that show the relation of age to recessional velocity Z, and therefore distance based on Z. They can be found at http://arxiv.org/abs/1303.5961

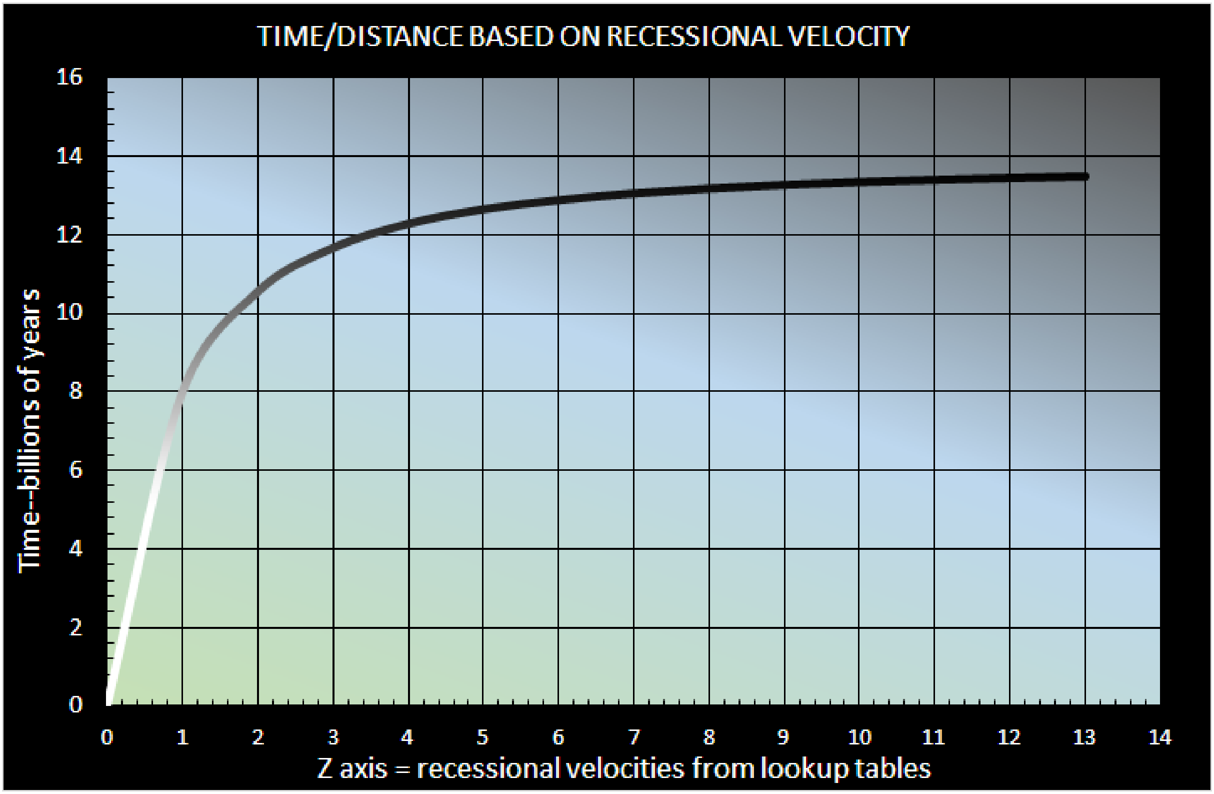

Figure 1

Figure 1 represents the size of the universe as we see it today via the BBM. The universe might be larger than this chart indicates due to light emission from distant galaxies that are by now far more distant. This model limits the size and age of the universe due to those objects at or beyond the speed of light; the result is a constrained universe. This results in an unknowable universe outside this limiting factor.

INFLATION, REALLY

Inflation is required in the BBM to put galaxies everywhere because old galaxies are found everywhere, our local region of space all the way to the edge.

Stating the concept in simple terms, space put everything where it is (inflation) and then expansion took over to put everything where it is. Alternatively, it could be stated that space put everything where it is (inflation) and then the reverse of expansion can put everything where it was. These statements show that the notions of inflation and expansion are contradictory and therefore have little meaning.

Besides, inflation implies everything came from nothing.

Inflation is theorized to be just a distortion of space itself and that no energy is required, but expansion requires enormous energy. If inflation did require energy, the source of energy is completely unknown for either inflation or expansion.

Inflation is based on an illusory concept that is not needed in a GAM.[2]

Space and time are fundamental properties of reality; in this author's opinion, they are fixed and cannot be manipulated in any way by some capricious logic. See notes.

SIZE OF UNIVERSE ASSUMING THE GAM

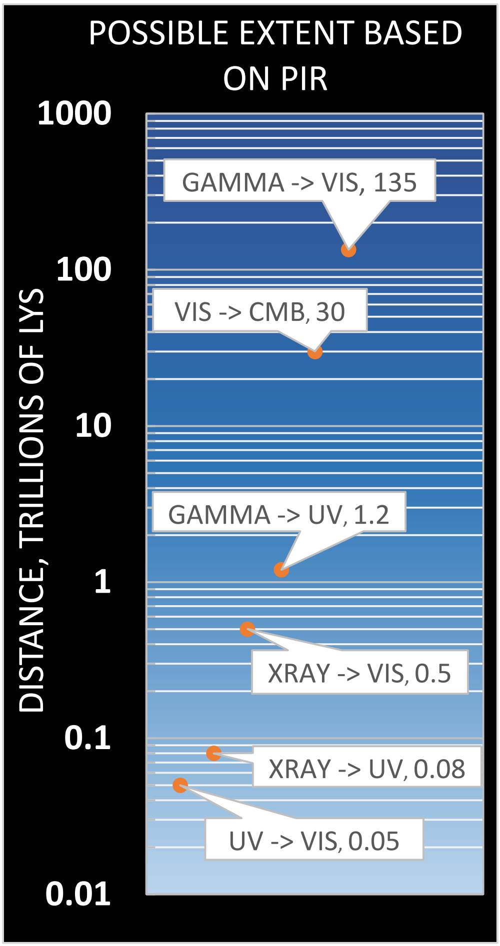

Figure 2.

Assuming a non-expanding universe without the size restriction of a BBM universe, there exists a universe well beyond current limits imposed by expansion theory. Indeed, a PIR might indicate a much larger universe is currently being seen.

Current Z values, if linearized, are useful for estimating distances and ages of galaxies. See the notes for the determination of a linearized Z. The current Z maximum seen of galaxies is about a seven, which is a distance of about 100 billion Lys on the linear scale.

There are gamma ray bursts, x-rays, and UV to visible that can undergo changes as influenced by PIR. In addition, there might be visible light shifted to the cosmological microwave levels or below seen in the universe. These distances can be estimated based on Z but are subject to varying levels of universe gas.

Figure 2 indicates the necessary distances for PIR to produce the required redshift to convert certain energies to longer wavelengths. Even with next generation telescopes, it is unlikely that light from clearly defined galaxies of distances much beyond current ability will be seen.

Any unassociated light could have a source well beyond what is thought the current size of the universe and could be detected as similar to star light or other background light.

Olbers thought that an infinite universe of countless stars would light up the night sky background to a visible level. However, luminosity intensity is inversely proportional to distance squared, and light is shifted to longer waves, the farthest light is extremely weak and could be at or near CMB levels. The GAM is a very large universe of galaxies but the extent cannot be known at this time.

The redshift can still be a rough indicator of distance but the effect of somewhat varying gas densities plays an important but yet mostly undetermined role. As time allows and technology improves, eventually density variations will become well known and mapped. This might provide an answer to the quasar’s red shift, that they are closer than currently thought. Those objects might have a very large and dense gas field around them that provides more shift to their light.

THE CASE FOR PIR

The gaseous forms of Hydrogen in intergalactic space has not been easy to see, and was being detected and mapped mostly where it was possible to do so under certain conditions such as warming from nearby stars. Newer methods are bringing to light star fuel in regions outside of galaxies, a clear indication of hydrogen everywhere.

Intergalactic space contains hydrogen gas being now detected by various means such as the alpha line. This star fuel is essential for the birth of stars in space and in galaxies.[3] Due to its presence, light is being affected in various ways such as by losing energy and shifting to red, naturally resulting in more redshift with distance.

Recently found were vast amounts of starlight located in intergalactic space, indicating the possibility that stars are located there.[4,5] It was proposed stars were thrown out of galaxies, yet there is little evidence this is happening. Instead, if stars exist intergalactically, likely most of these stars come from fuel located where these stars are. Another possible source for that light is the PIR shift of some higher energy to visible coming from great distance.

One thing is certain, it is now being shown that intergalactic space is not a perfect vacuum.

The GAM provides time for stars everywhere to become cool. Not directly seen, their quantities could be very great so there is a possibility that they might even block some of the more distant light.

PIR could tell us if we were close to an edge of the universe. However, there seems to be no evidence of this yet.

WHAT IS DARK MATTER

Sufficient time is needed for stars to complete the cycle of birth leading to a very hot state for a time until fuel is consumed, and a very long time to cool to a level of very feeble emission. These cold stars are not detected except by their gravity. Cold stars would accumulate to levels far exceeding visible stars.

The mass content of individual galaxies has been found to be far greater than what visible stars can account for. All those old cold stars produce the necessary gravity to hold galaxies together, and are the so-called mysterious dark matter. This explains why the Milky Way and other spiral galaxies have a coupled rotation of their stars around the galaxy’s central bulge.

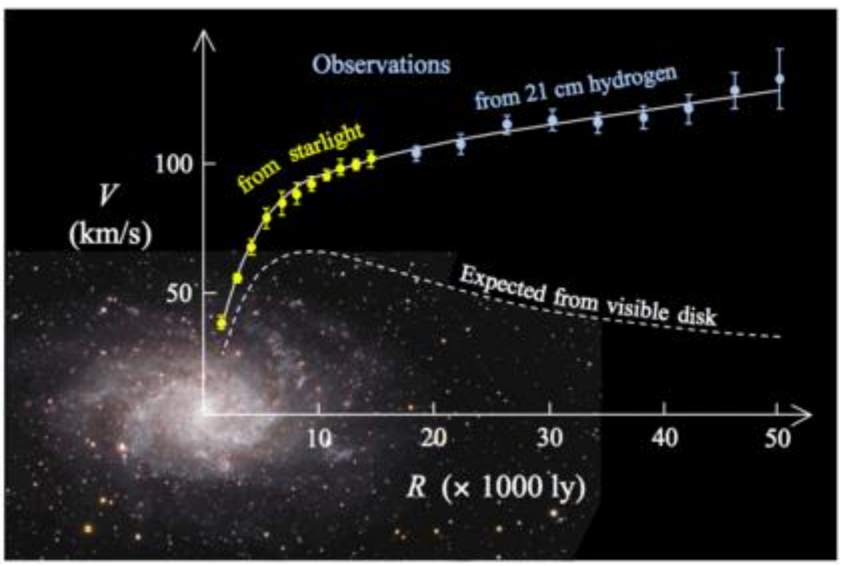

Figure 3, analysis of M33

The upper curve in figure 3 shows the measured velocity of stars and gas that represents an actual rotation of a galaxy. Lower curve is theory based on bright stars and is far different from what is being measured.[6] This galaxy’s center is shown to orbit at a different rate than that further out, as most spiral galaxies do. This clearly indicates gravity at the center has a local or central independent gravity region, while dark stars and their gravity in those regions further out are holding the bright stars in their orbits around the galaxies center. Most spiral galaxies have a central bulge that is known to have very strong gravity involved. This central star region is likely to contain many billions of cold stars. Latest study indicates there is dark matter everywhere in our galaxy.[7]

The GAM provides time for billions of cold stars about equivalent to the sun to accumulate in certain regions in galaxies. These cold stars or bodies could be in local groups or globular clusters or even whole galaxies where only a few bright stars coexist.[8] Older galaxies would be ideal candidates for dark star collections. Current technology cannot directly detect them except perhaps if they are in close proximity to our sun system but they can currently be found elsewhere by their gravity effects on bright stars. They likely end up emitting less light than can be seen from exoplanets that reflect light from their parent star.

Easy detection and study of very energetic stars has skewed the Hertzsprung-Russell diagram in their favor, but some day might include more of the average stars, and especially those much cooler, those that can be detected by their gravity.

LARGE GALAXIES FOUND EVERYWHERE

It has been proposed that the very distant large galaxies are forming by mergers. There is evidence of only a few handfuls of galaxy collisions and most show long star trails as if being torn apart. The question is, when would there be a merger. Moreover, what would a merger actually look like? Mergers may take a considerable long time requiring a GAM. It is rather clear that even in the Milky Way most of the stars that come into being are a normal consequence of sufficient gas densities in various locations within and near the periphery of the galaxy, not by some sort of imagined quickie merger from outside the galaxy.

A universe of great age would contain similar galaxies almost everywhere, even beyond the current limit of seeing them. Evident are large galaxies as far as we can see, implying that the universe continues beyond. Certain restrictions would apply in finding them such as their light is too dim to see, or their emissions are shifted perhaps even to the cosmic microwave background level by the time those emissions get here. Stars are born of gas and dust and in time increase in numbers, galaxies are growing, and likely the outer boundary of the universe beyond the range of our detection is also.

Where does star fuel come from and why does it seem never to be used up? The same question could be asked of the BBM. One clue is from vacuum experiments indicating there are forms of energy hidden in the vacuum. We know that energy and matter are interchangeable. In the GAM, there could be an end to a star after becoming very cold that results in a sudden release of all content back into the universe that is used over again as primal building material. Such a cold star dissipation might have its gravity suddenly decrease with matter pushed out at great velocity sufficient to create gamma energy copiously.

Discovery of varying concentrations of gas in and near galaxies is possible where it is made visible by photon energy, and by polarization or other changes of light passing through. However, most of the tenuous intergalactic medium might actually be relatively uniform. The future will provide much more information in this area as new techniques and technologies become available.

It is suggested that the so-called gravitational lensing of background galaxies is caused mostly by refraction of light due to the presence of gas.

NEW AND OLD STARS

To have stars, the region of tenuous fuel must be very large for a stars birth. In our region, star density is about 0.004 Lys per star. This could account for the reason most stars are widely separated. Galaxy fuel region is many times the volume of the galaxy.

Original birth size of stars is a critical criterion of stability and longevity. It is known nearly all stars are about as massive as the sun or a little less and they can last a very long time. Stars in our galaxy have ages that are known to exceed the limit of big bang. Most of those stars would have planets of great age also. Consequently, many would have intelligent life with perhaps a high technology. A GAM places no arbitrary limit on a stars life of brightness and eventual cooling period, which can take many trillions of years.[9,10]

CMB

Cosmic Microwave Background in a GAM has a much different source or sources than that of a big bang. The substance causing redshift perhaps contributes most to the source of CMB through black body emission, which might be used as an indicator of local background temperatures of the universe. It would also have signature that might indicate variation of gas density. Likely, there are other contributions well beyond the distance for our ability to see or define sources.

BLACK HOLES TO THE RESCUE---NOT

The theoretical black hole is often brought in to explain what is occurring in the centers of galaxies and other objects. Rigorous math indicates black holes cannot form.[11] Replacement of black holes with bunches or groups of many cool stars will likely also explain the gravity and other phenomena seen in these regions.

CONCLUSION

The BBM theory has almost never predicted correctly anything about the universe, yet is going strong primarily due to a considerable promotion effort. Currently, the BBM has uncovered a universe that has dark energy and matter, both mysterious and unknown, yet is more than ninety percent of the universe. This is easily replaced by a universe of very old age, a GAM, one that does not have those mysteries. It opens other questions that can have solution with further study and investigation, such as trying to map gas densities throughout the universe to find distances to all objects more accurately. Much larger apertures and other supporting techniques are needed to find more distant objects than now seen. Lab work on many issues such as PIR and CMB will better characterize them.

REFERENCES

[1] http://vixra.org/pdf/1105.0010v1.pdf

[2] http://www.space.com/28423-cosmic-inflation-signal-space-dust.html

[3] http://hubblesite.org/newscenter/archive/releases/1997/02/text/

[4] http://www.dailygalaxy.com/my_weblog/2014/12/cosmic-glow-discovered-radiates-more-light-than-all-the-known-galaxies-in-the-universe.html#more

[5] http://en.wikipedia.org/wiki/Extragalactic_background_light

[6] http://en.wikipedia.org/wiki/Galaxy_rotation_curve

[7] http://www.sciencedaily.com/releases/2015/02/150209113046.htm

[8] http://www.space.com/28615-dark-matter-galaxies-coma-cluster.html

[9] http://www.astroscu.unam.mx/rmaa/RMxAC..22/PDF/RMxAC..22_adams.pdf

[10] http://www.caltech.edu/news/intergalactic-medium-unveiled-caltechs-cosmic-web-imager-directly-observes-dim-matter-42699

[11] http://www.dailygalaxy.com/my_weblog/2014/09/black-holes-can-never-come-into-being-new-theory-forces-scientists-to-rethink-big-bang-and-whether-i.html#more

NOTES: Z is in general use to represent recessional velocity, its relativistic expression can be stated as: $Z = ((1 + v/c) / (1 - v/c))^{0.5} - 1$

For the GAM, a linear scale can be determined from the beginning of the Z tables, they can be found at http://arxiv.org/abs/1303.5961 Nearby space converts a Z of 1 to about 14.5 billion LYs. This allows the use of Z commonly used in tables as a rough indicator of GAM distances.

A linearized Z was used for figure 2. $Z = (L - L0) / L0$, where L is the shifted wavelength, L0 is about 0.5 microns.

Acknowledgement is given to those involved in the references, especially for figure 3, an item copied from Wikipedia.

Accounting for signal delay is part of understanding the universe, but space and time are fundamental properties of reality and cannot be changed by merely writing a math equation. The big bang math model suggests there was no space or time prior to the big bang therefore reality did not exist. Is this math telling us the truth? We simply do not know what occurred in the beginning, this could occupy our search for more answers for very many generations.

Our efforts based on knowing so little of the universe will likely be thought of by future generations as we do of a past generation a thousand years ago.