

IS AN ALTERNATE COSMOLOGY BECOMING NECESSARY?

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Very recent studies of halos around galaxies found them to be much more extensive than previous studies indicated, and that they have enormous mass consisting of gas and dust from supernovas, SNs. The results of these studies and a recent study of SN rate of occurrence can be used to determine age, and for the Milky Way the result is roughly six trillion years with a conservative preliminary calculation. Other strong evidence exists as well which indicates a great age, yet it is truly a wonder any of this will shake up or change current beliefs.

THE IMPORTANCE OF RECENT HALO FINDINGS

If stars are massive enough, they can and often do explode. SN explosions or blasts can violently expel materials, and apparently, with little in most areas of interstellar space to slow it, this gas and dust can flow into regions or halos surrounding galaxies. Some of the gas and dust stays in the galaxy from past explosions and is recycled back into stars and planets. The recently studied halos surrounding galaxies indicate they extend at least twice the diameter of the source galaxy. The study of column densities in these halos points to their mass as about equal to the star mass in the source galaxy. About ten percent of stars in a galaxy will have sufficient size, roughly about 10 sun masses, for an explosion to occur. If the MW has about five hundred billion shining stars, for SN remnants in the halo to be equal to this mass, fifty billion large stars exploded in the past.

MASS OF GALAXY STARS

Fresh hydrogen combined with SN remnants becomes galaxy stars, so an additional number of SNs are needed for this. If a conservative estimate of SNs such as 20% were recycled back into stars and planets in the MW, this would be another ten billion SNs, and when added to the fifty billion for the halo, the total is now at least sixty billion SNs occurring in the past for the Milky Way and its halo. This number could actually be much higher.

RESULTS OF SUPERNOVA RATE STUDY

Fifty trillion stars in five hundred galaxies were monitored for a three-year period to determine SN rate, and only three were found. Assuming a MW of five hundred billion bright stars and applying this frequency to the MW, the rate of occurrence is 0.01 SN per year.

AGE OF THE MILKY WAY BASED ON THIS DATA

All that is required is to divide the number of SNs by rate of occurrence:

$$60,000,000,000 \text{ SN} / 0.01 \text{ SN/year} = 6,000,000,000,000 \text{ years.}$$

Six trillion years is radically different from a mere 13.8 billion years that was determined and is being supported by the big bang theory.

COMMENTARY

An age of six trillion years or more allows stars to finish the bright nuclear phase and begin to cool to levels where they do not emit visible light, eventually only emitting IR energies at low rates. Given this amount of time, cool stars would far exceed the number of bright stars, and they retain their gravity. These cool stars certainly could be the mysterious dark matter that provides the gravity to hold rapidly rotating galaxies together.

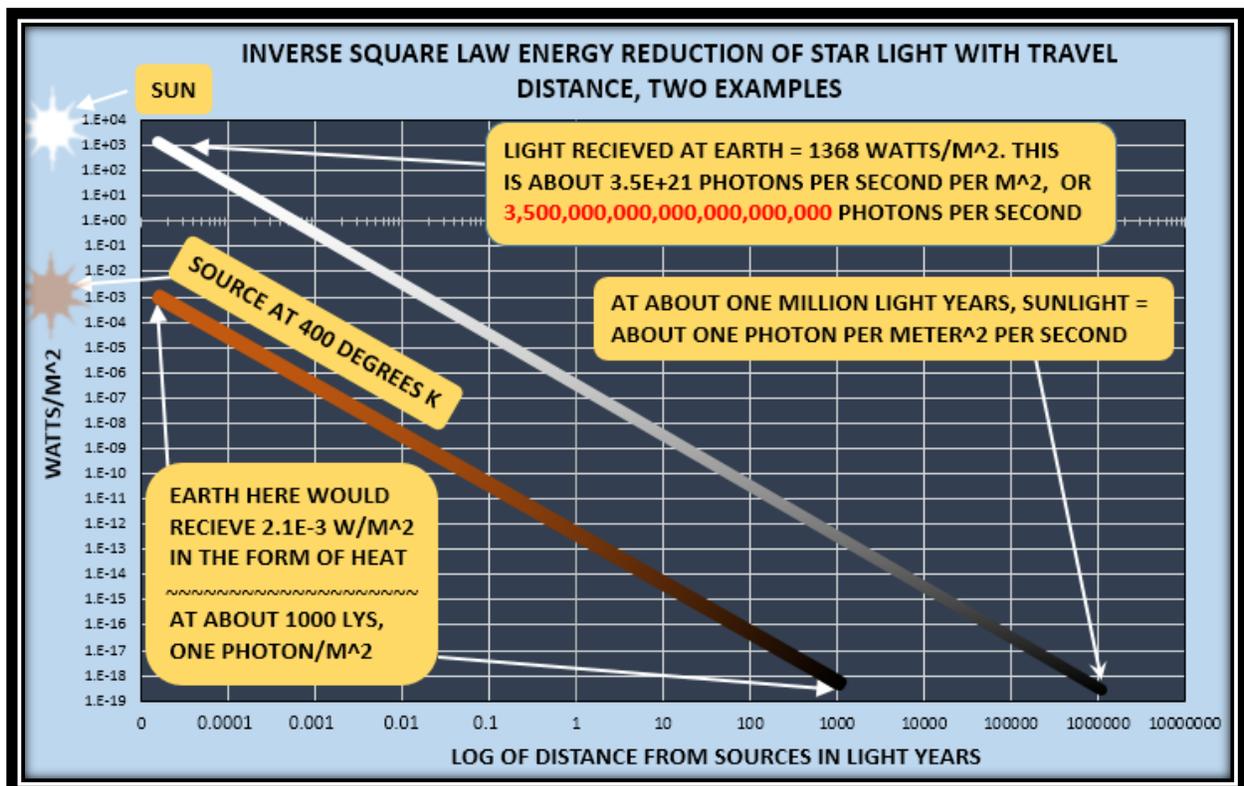


Figure 1 --- The ratio of black body peaks of the two sources was used to determine the cool stars energy at earth. A cool star's peak emission at about 400 degrees K will have become about one photon per square meter at a distance of about one thousand light years.

As figure 1 indicates, there is little energy from cool stars, therefore a few tens or perhaps at best hundreds of light years from them they are virtually undetectable with current telescopes. The James Webb Space Telescope JWST might change that scenario some, and if they can be found nearby in sufficient numbers, this will be a significant finding for what dark matter is. Great age easily justifies the existence of cool stars.

If these dark stars exist in large numbers together in globular clusters, their gravity effects would be comparable to the supermassive black holes currently in vogue to explain concentrated gravity areas. If they existed in galaxies that depleted their fuel hundreds of billions of years ago, these galaxies would have few bright stars.

It is currently not possible to know the birth rate of MW stars in the distant past. There are about two stars occurring per year currently. Over a time of 6 trillion years, this is 12 trillion stars. If it is assumed there are 0.5 trillion bright shining stars in the Milky Way, there are 24 dark stars for each bright one, but this number is likely not very accurate.

What these results offer

What these results from direct evidence offer is a far different picture from current theories and models. These results and other direct evidence indicate that modeling the universe on the theories of big bang has failed, and if so, replacements for interpretation of various phenomena must be considered, such as cause of redshift, expansion, inflation, and the source of the cosmic microwave background (CMB).

The notion of expansion grew from the assumption the redshift was caused by Doppler, and one benefit from this is a simple distance relation, so a redshift caused by other means perhaps will be unwelcomed. It has long been known that light shifts to longer wavelengths when passing through gas. Gas is now more easily detected in galactic halos, and is evidenced by polarization, extinction, and possibly other means such as refraction throughout the intergalactic medium (IGM). The amount of redshift must correspond to distance light travels through an IGM of various densities and types of matter, a signature of cosmological redshift as we see it in most cases. Galaxies at the greatest distance will have the most redshift, however, if gas is very dense around certain objects, redshift will be far greater, and thus those objects such as quasars will be much closer to us than currently thought, and less mysterious.

If expansion of the universe were causing the redshift, large redshift values would indicate a very rapid recession relative to light speed. The relativistic

math used to account for expansion speeds close to that of light reduces the distances to galaxies in the faraway universe considerably, and consequently its size. If indeed the universe is not expanding or the edges not speeding away from us, relativity math is not needed and the overall size we are looking at is many times greater than currently thought. Seeing out to the edges of the universe is limited by the effects of distance on source brightness and the thinning of photons due to the inverse square law and gas extinction. Distance scales now in use are likely to be very wrong such as the distance to Andromeda, found to have a large halo surrounding it that needs to be accounted for, as well as scales for distant regions at high z values.

Fourteen billion years derived from expansion theory does not allow time for galaxies of all sizes and ages to be everywhere, so inflation was brought into the scene as a possible solution. However, inflation is unnecessary if there is indeed a sufficient age that would produce galaxies everywhere with variable rates of star growth, and with a large variety of sizes and amounts of dust. This growth is continuing to produce increasing numbers of stars both bright and those going cold in all galaxies from the universe's beginning, at least six trillion years ago.

Star fuel exists in the vast voids, huge regions of intergalactic space, sufficient gas to grow or create trillions of galaxy stars, an ongoing process. This means the IGM is not a perfect vacuum as has been promoted. IGM gases will absorb photons that maintain it at some heat or energy level just above absolute zero due to the photon's energy contribution to the gas. The uniformity of the temperature indicates a very diffuse gas presence almost everywhere. The IGM would emit blackbody radiation at the temperature of the IGM, and this has been measured to be at about 2.7 degrees K. The cosmic microwave background does not come from a big bang.

Dusty galaxies have been found at great distances, and absorption of light means their cores would be seen, but the dim light from their outer parts is likely to be completely extinguished by the presence of the IGM gas. This would mean distant galaxies are much larger than they appear.

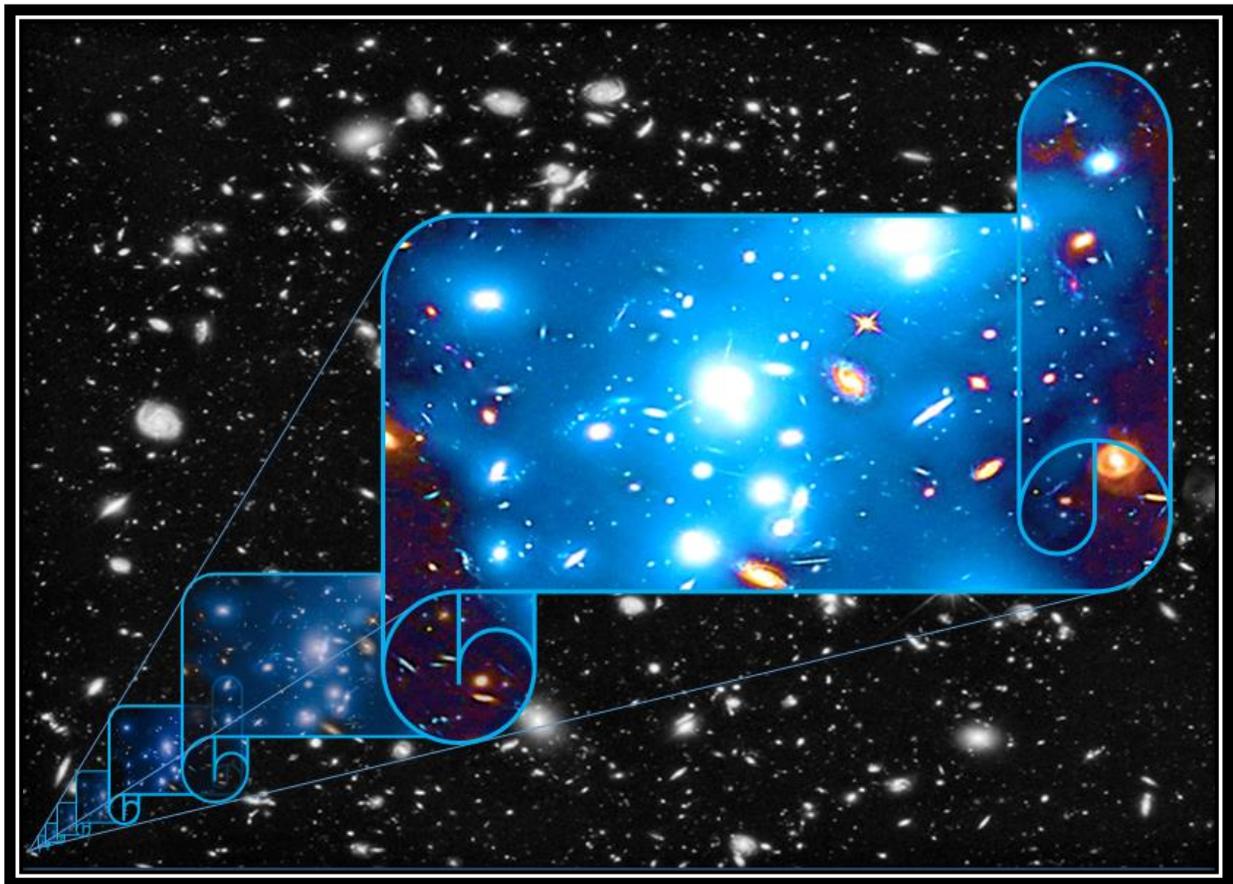
Large galaxies with few bright stars indicate the possibility that hydrogen once available to them was consumed many hundreds of billions of years ago and so very few new stars formed since. Most of the stars simply stopped shining when they finished converting their fuel supply. Found in those galaxies is a very high percentage of dark matter, aka cool stars.

The current popular model gives insufficient time for stars to become cool, thus the only possible explanation for dark matter is the likelihood of certain particles filling the universe. These elusive particles will never be found if they

do not exist. However, there is the possibility that some kind of primordial particle could be found eventually, but it will likely not have gravity influence anywhere.

Several stars at a very low level of emission perhaps might have been seen within a few light years from us with current IR technology. New telescopes such as the JWST are designed for better seeing of IR sources at low emission levels and when launched into orbit, likely will continue to find more detail of a more complex IGM, and find more IR sources within galaxies, and perhaps help to usher in greater changes to current theories.

Great age brings with it a far greater possibility there are countless life planets in existence. Life existence on this planet compared to universe age is indeed a very short amount of time.



Growth in universe concepts from an explosion of new findings

Currently pursued theory in support of big bang

Powerful biases have been at work and still are. They are supported from institutional views of how all things in the universe should resemble some kind of mathematical basis when in fact very little is actually known yet about how it all functions, an interaction of many facets of physics, much of it known.

Due to the notion of a fourteen billion year age, there is the notion that small galaxies could rapidly build larger galaxies via mergers. For this to happen we must see many millions of them, but instead there are a paltry few. Merging could be possible but it is likely to take trillions of years for two galaxies to complete the merger. This amount of time cannot be accepted so they are modeled to happen quickly. Galaxy collisions do occur infrequently and for the most part appear very destructive; there are very powerful tidal effects involved, another negative the theorists fail to mention.

Big bang requires very rapid star births in the early universe. This should be easily seen but generally isn't. A few starburst galaxies show rapid rates, but most all galaxies have single digit yearly rates likely due to the availability of star fuel, the Milky Way being typical.

Big bang also requires massive numbers of supernovas, they emit the light of millions of stars so should be easily spotted. However, the finding that they occur at a snail's pace cannot provide all the gas and dust seen in galaxies and halos for a time of about fourteen billion years. It has been suggested they do exist adequately but this is likely to be another attempt to save the big bang theory, to continue it with more theory that is unsupported by current data.

Excess gravity implies more matter than can be seen from bright stars, so due to big bang's universe age being too low for cool stars to form, the dark matter has to come from some particle that cannot be found.

Promoted is that the CMB came from a big bang, and that space is a 'perfect vacuum', but what does an IGM gas emit. Where does one find a perfect vacuum anymore since the advent of the latest techniques and technologies?

Black holes have become the standard to explain what appears as excess gravity in certain regions of galaxies, and a stripped down math is used to model them. Advanced math that includes more items of reality indicates black holes are not possible. Cool stars would show excess gravity in regions where they exist in vast numbers, and show effects similar to what black holes are thought to be.

It would favor big bang modeling if the Milky Way was a smaller galaxy and likely has an influence on star estimates that are sometimes found currently in the area of 100 billion, this smaller number accommodates more easily the age limit of big bang theory. In reality, the Milky Way is more likely to have many times more stars and be much larger if more stars beyond the current boundary were included.

The math of big bang theory indicates that space and time did not exist prior to the big bang, and is tied to an assumption everything going on in the universe can all be solved using the notions of advanced math without sufficient verification of that math's validity for such an application.

Big bang believer's levels of promotion of views are often inversely proportional to the amount of actual truth involved. If their arguments do not persuade, they merrily continue with their beliefs. Institutions often carry with them baggage of superiority based on partial truths. They can be counted on to promote themselves; their research costs enormous amounts of time and money. Institutions vigorously look for recognition; it would be a strong deterrent if they admitted they were wrong.

It seems likely we are looking at a beginning of a new path of universe concepts, so it would seem wise for believers of big bang to begin softening their grip on what is equivalent to faith in a flat earth.

Reading recommendations

Halo studies

- 1: <http://wwwmpa.mpa-garching.mpg.de/~swhite/talk/GalMass09.pdf>
- 2: <Http://arxiv.org/pdf/1608.02588.pdf>
- 3: <http://arxiv.org/pdf/1607.01020.pdf>
- 4: <https://arxiv.org/pdf/1610.08971.pdf>
- 5: <https://www.sciencedaily.com/releases/2016/10/161026081138.htm>
- 6: <https://www.sciencedaily.com/releases/2016/12/161201115505.htm>

Supernovae study

- 1: http://www.dailygalaxy.com/my_weblog/2016/03/kepler-space-telescope-continuously-watching-50-trillion-stars-captures-three-new-supernova.html

Sparse galaxies

- 1: <https://www.sciencedaily.com/releases/2016/08/160826084206.htm>
- 2: <https://www.sciencenews.org/article/star-starved-galaxies-fill-cosmos>

Failure of the current hunt for dark matter

1: <http://www.scientificamerican.com/article/physics-confronts-its-heart-of-darkness/>

Dark stars being found

1: <http://www.redorbit.com/news/space/1113413736/free-floating-brown-dwarf-042116/>

Dust dimming is apparent at values of $z > 3$.

1: <https://arxiv.org/pdf/1611.01753.pdf>

The Equivalence principle is invalid.

1: <https://arxiv.org/pdf/1611.02139.pdf>

Type 1a supernova data indicates a static universe.

1: <http://vixra.org/pdf/1611.0310v1.pdf>

Low surface brightness galaxy.

1: <http://newatlas.com/ugc-1382-galaxy/44280/>