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Distribution of the Radiating Energy
Part 3

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Just as with mechanical energy, we will postulate that radiating energy released per unit quantity of virgin material is finite and denote it as ΔE_R .Since the mass density of the virgin materials is the same in all layers of our Onion Model, we can say that the radiating energy released per unit surface area from any layer is the same. Let this energy density denoted as ρ_R . When the same radiating energy intensity from the *n-th* mean shell reaches the center of the mean shell, it reduces to $\frac{\rho_R}{4\pi(n\Delta R)^2}$. The total surface area of that mean shell is, $4\pi(n\Delta R)^2$.

Therefore the total radiating energy received by an observer at the mean shell center is

$\frac{\rho_R}{4\pi(n\Delta R)^2}\cdot 4\pi(n\Delta R)^2 = \rho_R$, a constant. This formula tells us that the total radiating energy from any mean shell is the same as the from the center. The radius is therefore irrelevant.

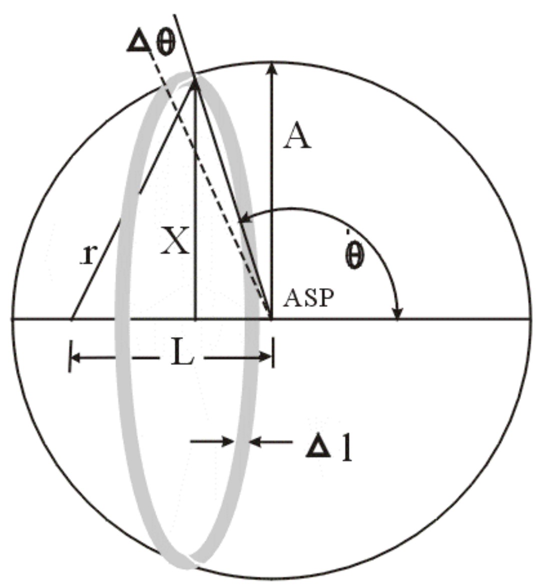

Fig. 13

If the observer is placed a distance *L* away from the center, the situation may be a little more complicated. Refer to **Fig. 13** where we have a spherical surface of radius A. The observer at location Y, a distance L from the center, will receive a total radiating energy from the mean shell according to Eq.VII-3a-3 in Appendix VII-3a and have:

$$E_{total} = \frac{\rho_R}{2} \cdot \frac{A}{I} \cdot \ln\frac{A+I}{A-I}$$.

Further analysis of this equation will lead us to the conclusion that if a mean shell expands while maintaining the same radiating intensity per unit area, the total energy the same observer receives from it will gradually approach a finite value of; ρ_R , regardless of where he is located within.

The above deduction is for one mean shell. Now we will analyze the resulting intensity of radiating energy from multiple mean shells accumulated at a single location. Again, let's begin at the center of all concentric mean shells.

In **Fig. 14**, an observer will receive radiant energy through a window of finite angular size. This window keeps the observed concentric area constant. If the energy he receives from one whole mean shell is constant regardless of the radius of the mean shell, a finite concentric area will enable him to receive a finite portion (not a fixed surface area !) of energy from any mean shell, in spite of its order number. In other words, it does not matter whether the mean shell is of the *n-th,* or the *(n+1)-th*, or the *(n+k)-th* order, as long as they all have the same radiating intensity per unit surface area, i.e., ρ_R , this observer will receive the same finite portion of energy out of each mean shell.

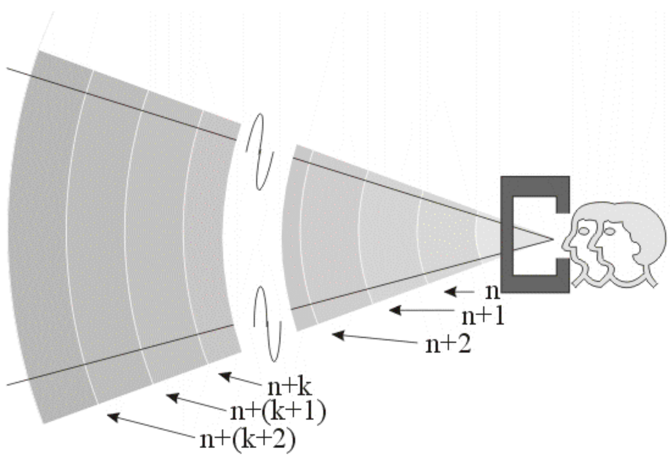

Fig. 14

The next reasonable assumption is that the intensity of the radiated energy released by each mean shell is proportional to the time rate that virgin material is consumed, and such a time rate is proportional to the quantity of virgin materials remaining. Mathematically, we can have $\rho_R = f\frac{dQ}{dt}$ and $\frac{dQ}{dt} = -gQ$.

where *Q&* is the quantity of virgin materials remaining, *t* is the time elapsed for the conversion of a certain amount of them and therefore, $\frac{dQ}{dt}$ stands for the time rate that they are being converted, *f* and *g* are some proportional constants.

The negative sign in front of the operation on the right side of the second equation is to indicate that consuming rate of the virgin materials, and therefore, the radiating intensity, increases when more virgin materials are being consumed per unit time, or that the intensity decreases when there are fewer virgin materials left.

A differential equation should lead us to the following expression regarding ρ_R and *t* :

$$\rho_R = f\frac{dQ}{dt}$$
$$= -f\,g\,Q$$
$$= f\,g\,Q_0\,e^{-g(t-t_0)}$$

where Q_0 is the initial quantity of virgin materials at the initial time t_0 upon which the explosion at the *n-th* mean shell was triggered.

For the sake of simplicity, we will set $t_0=0$ and $u=fgQ_0$. Then we have $\rho_R = \mu e^{-gt}$.

We have already shown in the last paper, that there appears to be a linear relationship between *v*, the wave front velocity of the explosion, and *s* (= *n* ΔR), the distance between the *n-th* mean shell surface and the ASP. If we assume a linear constant H for such a relationship, we can mathematically express it as $v=Hs=H(n\Delta R)$. Now, we can say that, beginning from a certain mean shell, whose order number is *n*, the amount of time for the flow of the explosion to progress out to the *(n+1)-th* mean shell is $t = \frac{\Delta R}{v} = \frac{\Delta R}{H(n\Delta R)} = \frac{1}{nH}$.

By the time some explosion is triggered at the *(n+1)-th* mean shell, the intensity of the radiating energy at that particular time per unit surface area is to be observed as ρ_R by the observer at the ASP through the same window at a later time. When this intensity reaches the *n-th* mean shell, the radiating intensity yielded by the *n-th* mean shell would have become $\mu e^{-g\left(\frac{1}{nH}+\frac{\Delta R}{c}\right)}$, where *c* stands for the speed of light.

Reinforced by the new radiation from the *(n+1)-th* mean shell, ρ_R , the radiation intensity on the *n-th* shell should be observed as the sum of [ρ_R + $\mu e^{-g\left(\frac{1}{nH}+\frac{\Delta R}{c}\right)}$]. Using the same reasoning, by the time the radiating energy from the *(n+2)-th* mean shell reaches the *n-th* mean shell, the total radiation intensity to be observed from the *n-th* mean shell should be the sum of all these intensities:

$$\rho_R + \mu e^{-g(\frac{1}{nH}+\frac{\Delta R}{C})} + \mu e^{-g(\frac{1}{(n+1)H}+\frac{1}{nH}+\frac{2\Delta R}{C})}$$

where the first term is the radiation from the *(n+2)-th* mean shell, the second term is the radiation from the *(n+1)-th*, and the third term is the radiation from the *n-th*. By the time the radiating energy from the *(n+k)-th* mean shell reaches the *n-th* mean shell, the radiating intensity from the *n-th* shell should be observed as:

$$\Sigma\rho = \rho_R + \mu e^{-g(\frac{1}{nH}+\frac{\Delta R}{C})} + \mu e^{-g(\frac{1}{(n+1)H}+\frac{1}{nH}+\frac{2\Delta R}{C})} + \ldots$$

$$+ \mu e^{-g(\frac{1}{(n+(k-1))H}+\frac{1}{(n+(k-2))H}+\ldots+\frac{1}{nH}+\frac{k\Delta R}{C})}$$

$$= \rho_R + \mu[e^{-g(\frac{1}{nH}+\frac{\Delta R}{C})} + \ldots + e^{-g(\frac{1}{(n+(k-1))H}+\ldots+\frac{k\Delta R}{C})}] \quad (Eq.IV-A)$$

where, within the square brackets, the last term is the intensity contributed solely by the *n-th* mean shell, and the second to the last term is the intensity contributed solely by the *(n+1)-th*, and so on.

Since *k* can be infinity and the number of shells joining the explosion can increases as time passes, we must naturally wonder if $\sum\rho$ will also increase beyond any limits. Calculations shown in Appendix VII-3(b) lead us to a negative answer. This simply means that the total radiating energy received by an observer at the center of all concentric mean shells will not exceed a certain value, regardless of how quickly the explosion wave front progresses and how many and how fast the virgin mean shells unlock their energy, provided that the mass density in space is kept constant everywhere.

If we place the observer at a location other than the concentric center, the ASP, his observations will lose the isotropic character. With the increase of the number of mean shells, i.e., with the expansion of the fire region, his observations will gradually gain back their isotropic character.

This tells us that:

(1) No matter where an observer is located within the fire region, the radiating energy will reach him within an upper and lower limit.

(2) If he is placed closer to the concentric center, i.e., the ASP, the overall radiating energy will reach him with a lower value (bound by a finite bottom limit) but also with a more isotropic character.

Radiating energy will reach an observer through vacuum space; therefore, it is closely related to two basic phenomena: the temperature distribution in space and the intensity of radio noise measurements from deep space. We will leave any further discussion of these two topics in

Conclusions

1. Definition of the Universe.

What is the universe? How big is it? How long has it existed? Our previous work should show us that the universe has at least two portions: One burning, one quiet, with the latter surrounding the former. The burning portion is composed of the collection of fire balls which we have previously analyzed. The massive expansion of the burning portion continues to trigger the release of new energy at the expense of the quiet portion. The quiet portion, which contains materials of extremely powerful internal energy, provides unlimited fuel and space for the burning portion to continue expansion. Regardless of how the burning portion expands, it is only an infinitesimal point in the boundless universe, undetected by our observational instruments.

2. An Ever -"Expanding" Universe

All commonly accepted contemporary theories speculate that the universe is expanding. They are correct in the sense that the space range occupied by the collection of glowing bodies is expanding, but this is not the universe itself that is expanding. The universe is simply having its quiet portion continuously eroded by the burning portion. Our astronomical and cosmological scientists should search for newborn glowing objects until they reach the limit of their observational instruments' capacity. It is possible that someday we will find out that we can no longer detect any further. This is because our instruments depend on radiated energy. If our onion model is close to reality, some of the moving objects at the outer expanse of the burning portion may sooner or later travel so fast and so far away from us that our instruments are no longer sensitive enough to capture their image.

3. Isotropic Receding Movement of Celestial Objects Relative to an Observer on Earth.

This author believes that the **onion model** explains this phenomenon.

4. Red Shift and Blue Shift

Conclusion 3) naturally brings us to the solution of the puzzle surrounding the red shift phenomenon of most celestial objects. When we refer back to our calculations, we can also deduce why objects occasionally have a blue shift. In order to simplify our calculations, we have ideally resolved all post-explosion materials to travel in 6 directions: 1 centrifugal, 1 centripetal and 4 tangential. In reality, they can be random, but the overall number of those celestial objects with red shift and those with blue shift are not comparable.

5. Validity of Hubble's Constant

The onion model offers too many possible velocities for objects in observable space. Hubble's Law merely tells us of the predominant trend of material flow. It would take a tremendous amount of work to establish the so-called Hubble's constant for this complex model.

6. Gas Presentation

Throughout our calculations, we have assumed elastic collisions between objects. Reality deviates far from this orderly pattern, such as: 1) some virgin bodies would not have condensed enough when colliding with other bodies; 2) some condensed materials will not collide; 3) when a condensed virgin ball does explode, part of it is pushed so far away that it is unable to participate in any further reactions. These possibilities allow for a great amount of virgin materials to remain intact and observable to us today.

7. Homogeneity of Substance Distribution in Space

Imagine that we can stand where the first large explosion occurred and observe all the reactions as they spread away from us in an isotropic manner. If all these reactions were dependent on similar substances and all underwent the same process under the same conditions, our observations should show us that the reactions and their resulting products would be the same in all directions at the same distance.

As indicated, the big explosions propagated in all directions with equal probability and equal speed. This enabled reactions at all locations of the same distance from the ASP to occur at the same pace, under roughly the same conditions and in the same amount of time. We then naturally observe the same process in all directions. In this sense we can say that there is a homogeneity in distribution on each circle centered about the ASP. As to the various locations along one single direction, large explosions occur at different times. Consequently, the results near the ASP should appear quite different from those at greater distances. No homogeneity would then be observed along a single radial line. Let us not neglect one thing, though. As mentioned earlier, explosions may have randomly mixed ingredients of different ages from different places to join in the reaction at each location. This would certainly alter the reactions at greater distances and result in different compositions of matter.

We describe the mass distributions as spherically homogeneous and radially inhomogeneous. This should be applicable to both the composition and the mass-density homogeneity. If we can shrink the existing fire region to a small ball and slide through its center, we should see that the glowing objects are arranged like ripples. Of cours this is a simplification and not an ideal mathematical arrangement.

8. Layers

In our mathematical illustration in the chapter concerning the formation of a material crowd or cluster in space, we have already mentioned that the layered distribution of substances in space is a natural outcome of the onion model.

9. Clusters and Super Clusters

At this point, the reader should have an idea of how clusters and super clusters might have formed. The mechanism is similar to the formation of sheets, or layers, of celestial objects. Material collections are just naturally more random than sheets. Since they are random, it is inevitable that one group would contain a much greater mass than another. Huge mass gatherings, such as galaxies, clusters, super-clusters, voids, and links are all formed through conjunction.

10. Cosmic Background Noise and the Great Ice Age.

As new batches of energy are unlocked from the virgin materials, they radiate and propagate through space in surges of electromagnetic waves, or ripples. Such batches of radiating energy from many sources across a huge area become superimposed. Given that surges of radiating energy of different intensities from different sources propagated in various directions, it is easy to imagine that space is occupied by energy belts or zones of different intensitiesy. It is also expected that the dimensions of such belts and zones would be in light years.

Since heat in space is one form of electromagnetic energy, the space should then be divided into different temperature zones. With the irregular distribution of locations that radiate energy, the dimensions of these temperature zones and the intensity of each should also be irregular. These zones drifting in all directions, may have easily spanned light years. When earth, which only travels about 30 km/second, or our entire solar system at only several hundred km/second, traverses these zones, they cannot help but experience a relatively stable temperature in one zone and a different, yet stable, temperature in another. The Great Ice Age came when it traversed a colder zone. With the irregular dimensions, the distance between the zones is unpredictable. Therefore, we can not foresee when the next colder zone may be coming or how long it may last. It is certain that the our planet is on a voyage leaving the ASP, but its speed is such that it can never reach the outermost rim of the burning field. Therefore the only thing that can be predicted is that we will have more prolonged ice ages in the future and more frequently. Furthermore, the tendency is that each ice age may possibly, but not necessarily, be more frigid, although it will eventually reach a lower constant limit. This is unfortunate, but at least better than the alternative: warmer and warmer zones.

Scientists involved in cosmological and astrophysical studies have been interested in the study of background noise. Now, hasn't it become more acceptable that the background noise is just a part of the information sent from an extremely remote distance where there are titanic upheavals? Temperature in space is related to radiating energy, background noise is also radiation. So long as huge explosions continue homogeneously, background noise will reach us constantly and with equal strength from all directions. Intensity will diminish as time goes by, but it will become more isotropic.

11. About "heat death"

Ever since the concept of heat death was proposed, no sound theory has been forthcoming. With the Onion Model, it is easy to see that heat death inevitably happens locally, starting from the center of the fire region (ASP), and slowly spreading. Although it takes a long time for energy at a location to be exhausted, it is finite. The passage of time must eventually deplete the finite energy. This phenomenon will eventually spread to our neighborhood. In other words, "heat death" is locally inevitable, but it can never conquer the entire, limitless universe.

12. Solar System

Each explosion tosses out torches of various sizes and these torches can also be recombined. It should not be surprising that the members of our solar system are actually the results of the recombination of these torches. These members, "born' at different time, came from different locations in space but, by some chance were "married" to each other and formed a stable family under the influence of gravity. As we all know, the members of our solar system belong to 3 major material groups: 1) the sun by itself, 2) the inner planets, or the terrestrial group, and 3) the outer planets, or the gaseous group. If we choose to believe that the onion model presented in this article is realistic, we can easily conceive that these three major material groups originated in the distant past. After traveling a formidable distance with extraordinary speeds, they came together to form the solar system. Before they "settled", each would haveexperienced numerous collisions and material recombinations so that their motion would have been tremendously reduced. Their material nature can still distinguish from each other in its own group. With this concept of high speed, random collision, and material recombination in mind, we can easily solve the following mysteries:

1. The Sun has a mass one thousand times the mass of all planets put together, but yet possesses no more than 10% of the angular momentum of the entire solar system.
2. The direction of almost all planets' spin is identical to their direction of rotation about the Sun, while their orbital directions are all the same.
3. The Moon always faces us with the same side. Her near side has way more lava, or maria, than her far side.
4. Why is Venus spinning opposite to the other planets?

and many more.

All these mysteries are not easily explained with a model of a local gas disk that evolves while revolving.

For an article on "Different Views on the Formation of the Solar System", please email Cameron Rebigsol at the above address