

THE FUNDAMENTAL ERRORS UNDERPINNING PRESENT DAY COSMOLOGY AND THE EFFECT OF NEW THINKING UPON THE STRUCTURE OF A LARGE BODY OF MASS ARE REVEALED

AUTHOR: CHRIS COLES

I believe that there have been a number of fundamental errors made in the original thinking underpinning the perceived gravitational properties of a large mass. I also believe that one primary error in particular has been made about the effect upon such a large body of mass by the notional mathematical point described as an event horizon which surrounds the mass of a black hole at the point of formation of the black hole. That an event horizon is mistakenly seen as controlling the whole body of mass when in fact it only effects the mass outside of the event horizon, and not in any way the mass inside the event horizon.

There are several fundamental errors. The first relates to the perception that as a Black Hole forms, the Event Horizon expands to enclose a singularity. But that is like filling a coffee cup to the rim and then saying that, as you add more coffee, the cup gets bigger. What was missed is that the original Event Horizon stays exactly where it started. (The coffee cup is now full). Yes, as even more mass is added the gravity effects that created the Event Horizon increase and those gravity effects do go on to enclose the entire mass, but that is where the confusion began and where the fundamental error occurs. The moment you add mass to an object that has reached the Event Horizon mass, (an Event Horizon is the mathematical point where light, photons, cannot escape due to the strong gravity), that new mass is not inside the Event Horizon but outside, (has spilled over the edge), and that means that as that mass is added, it must immediately become inert as all the photons, the energy, must be drawn by gravity into the Black Hole. The Event Horizon stays at exactly the mathematical point where it started. As the mass rises further, on the inside is mass which includes photons, on the outside is mass without any photons as those

photons have been drawn into the original mass inside the Event Horizon. Thus outside of the Event Horizon is super dense inert mass, (SDI) mass and NO photons. Light not escaping is in fact due to gravity being so high that, as mass is added; all the light is sucked into and adsorbed by the Black Hole. The surface thus becomes inert.

The second mistake has been about the physical effect of gravity within a large mass such as the planet Earth. Imagine yourself at the centre of Earth. Go on, imagine you are standing there! Where is all the mass? It surrounds you! The full depth of the planet is in front of you whichever way you look. So, where is the gravity of all that mass? It is pulling away from you in all directions equally. You are standing at a mathematical zero point where all the gravitational forces are balanced. Move in any direction slightly and you will now be in the full force of the gravity pulling towards the surface from that side only, as the zero balanced gravity point must stay exactly where it is behind you. Just as with the event horizon, you cannot move a mathematical point, it does not move about to follow you. Tie two elastic bands together and pull them apart. You are standing on the knot at the centre; cut the knot and the ends fly away from you, not towards you. The mistake was to imagine that there is no gravity at the centre of the planet. In fact there is very strong gravity, but towards the surface.

Now, imagine taking a lift ride up from the centre of the planet; as you move up through the Earth's core you will now reach a point where the mass above you is the same as the mass below you and you will encounter a balance between the gravity coming from above you and also from below you and you will experience what will be a shell of zero (balanced) gravity surrounding the inner mass, the inner core. Gravity emanates from mass in all directions at once, wherever that mass is located. That is what is causing the interface between the inner and outer core of the planet Earth

The structure of every object in the sky will now be seen to be entirely different.

Now, with the same gravitational effects only more so, it is immediately impossible to create a singularity. Nothing can collapse to a singularity where those same balanced gravity effects cause zero gravity at the centre of the object and further balanced gravity effects inside the mass of the object, no matter how massive it becomes. Instead of collapsing to a dot, a singularity; the object grows in diameter to become absolutely huge.

From now onwards, the universe will be seen to be in a constant cycle. Dispersed mass and energy is adsorbed into an object called a Black Hole and re-dispersed out by the same object called; at one end of the scale, a Planetary Nebula and at the other end, a Quasar, both of which re-disperse mass and energy from each end of the object back into the universe. This cycle is going on all over the universe all at the same time. Depending on where you look in the sky, you will see the same cycle but at different stages of evolution. That makes the universe almost certainly older and larger than we can imagine. Immensely ancient! Trillions upon trillions of years old.

I here reproduce Chapter 11 from the book;
The Universe is a Cloud, Some Raw Food for Thought.

The Birth of a Quasar.

Now the pieces of the puzzle come together and they in turn create a completely new view of the process of creating a black hole. We have no singularity and instead I can now describe a quite different structure. As the mass of an object increases it reaches the point where gravity is at such a level, photons are unable to rise from the surface. At this moment, light is constrained, unable to rise from the surface more than the wavelength of light from the surface. The instant that the mass increases further, the event horizon, (remember, the event horizon is a notional point), remains fixed at the level of mass required to form it in the first place. Any further increase of the mass must be outside the original event horizon; as there is no way that the mass limit for the

original event horizon can be increased. At all times, the mass that creates the original event horizon remains the same. From that point forward all of the extra mass has to reside outside of the original event horizon as to do otherwise will defy the laws of physics. If you try to consider the mass remaining inside the event horizon, you are trying to say that once the limit to the movement of photons has been reached, the event horizon increases in diameter to take account of the increase in mass. How? That is not possible. As the mass increases, the volume that is affected by the gravitational forces increases, yes, but that additional volume has the effect of creating a mass that exceeds the mass required to contain the original photons; thus the new mass added creates a total mass that must attract photons from any further new mass added as the object grows. Thus as the mass increases, the photons are drawn into the outer region of the original black hole mass. Thus there is not energy outside that volume. Thus there are no photons in the growing event horizon band. Thus there must be mass inside that space that has been stripped of photons. If photons are unable to remain part of the new mass being added, then the new mass itself must be in another state. What the conventional view is is that as the event horizon is formed, the mass changes instantly into a super soup of pure matter. How? We do not have any reason to believe that at the initial levels of mass beyond the formation of an event horizon the mass makes such a change at that instant. I believe that what has happened is that we have not properly considered that instant of the transition from the formation of the original event horizon.

But the next thing to consider is the effect upon a mass as gravity rises. At the planet sized mass, we see the effects of gravity on the structure from the cut away views provided by the United States Geological Service, (USGS). Have a look at a diagram of a cross section of the planet which I have reproduced here. You will see that there is a distinct boundary within the main core that delineates what is called the inner core. I believe that the exact centre of the inner core will be found to be an area of very low density, (if not empty), when the calculations are revisited. As you can see, there are defined phase changes in the structure which I believe are entirely caused by gravity. I also suggest that simple calculations will provide proof.

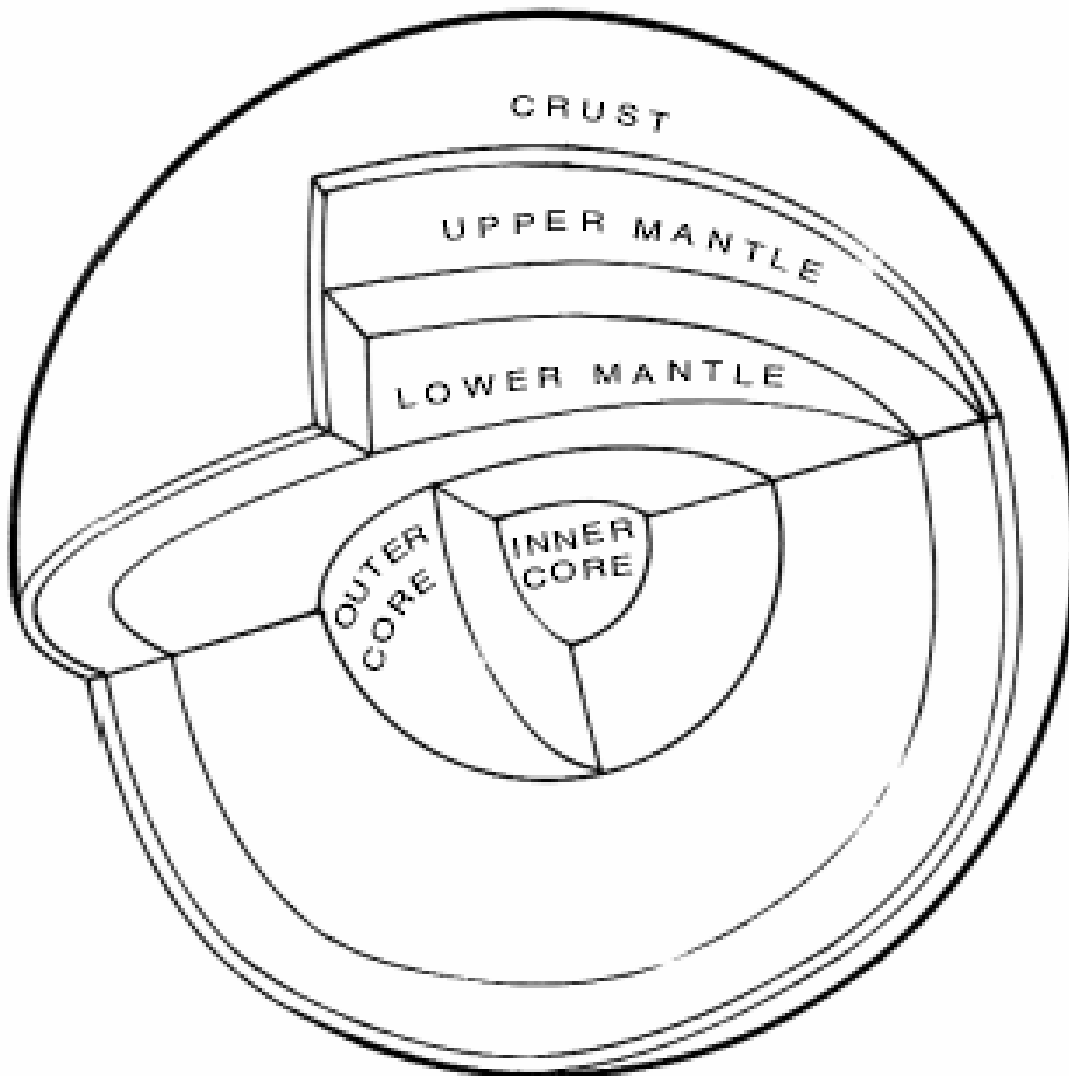


Illustration 1.
A cross section of Earth taken from the USGS web site.
See Annex A. <http://pubs.usgs.gov/gip/interior/>

At the outset of the creation of a planet, heavy elements fall into the gravity well made by the mass and as we can see iron falls to the centre of the mass. But this has implications for the formation of the structure. As the mass at the centre rises the central core becomes denser, yet the diameter rises and as it does, a defined phase will be created by the effect of the mass upon itself. As we can see from a cross section of this planet, the inner mass is densest. But that density is balanced by the mass outside of the core. That mass must also have a gravitational pull from what I have described as gravitational reverse glow. All the mass pulls toward itself from all directions at the same time. Thus as you move out from the centre of the planet, the gravitational masses again start to create balanced gravitational forces. We can see that there is a clear phase change from the balance of the masses.

At the very centre there is zero gravity as all the mass is normal to the point of observation. Immediately we move away from the centre, the gravitational forces climb exponentially to a level higher than at the surface. Rising further through the mass and we reach a balance point that balances out the inner mass at a higher density with the outer core at a lower density and as we rise even further we will see the same effect again before we reach the surface. I believe that it is this effect that drives the engine of the central core as it will be easy to believe that the inner and outer core will rotate about each other using the lower gravity phase change edges as sliding surfaces.

Now, having seen the clear effect of gravity upon the structure of this planet we can more easily see how this effect rises as the mass increases. For as the mass increases we reach the point of an event horizon being created which I have already named as the mass/photon event horizon and from that point the mass increases must be outside the mass/photon event horizon. Also, remember, the gravitational banding we see in this planet, (which will now be seen as a part of the structure of any large mass object), will also be seen as a part of this growing black hole. The inner mass is always that needed to create the original black hole but the mass that is now outside of the mass/photon event horizon and inside the event horizon band is increasing and adding to the gravitational pull of the structure of the growing object in all directions. As that occurs, there is an equivalent increase in the photon energy that is directed into the centre of the mass. But that photon energy also has mass and has to be considered.

Let me elaborate. If the gravitational forces are such that, at the surface of a black hole, light cannot escape, then the gravity is such that light is retained within the black hole. Any new mass that has photons as part of the mass will find that the photons will be drawn towards the highest gravity, the black hole. As the total mass increases, the depth of the event horizon band must rise while at the same time all the photon energy being deposited is drained in towards the centre to be collected at the mass/photon event horizon of the original black hole. But the mass outside of the mass/photon event horizon must reach the point where it too can affect the gravitational energy balance of the central black hole region. Now the mass inside the event horizon band rises to the point where it also has an effect upon the overall structure of the object and is pulling towards its own - now growing towards dominating mass and is in balance with the original central black hole mass and at the same time the outer mass is also now able to attract photons which are being drawn into the central balance point of the new mass, (that circumferentially surrounds the original black hole), within the event horizon band.

Now, suddenly there are two areas within the mass that will attract photons out of the otherwise inert mass as there is still the original mass/photon event horizon surrounding the original black hole at the centre plus the new mass outside. What we must now understand is simply that; the fact that the photons could not rise above the outer surface of the event horizon band, did not mean that they are unable to move about. As the outer mass reaches the point of being able to overcome the gravitational mass at the centre, then all the energy at the centre will rise into the inert mass within the event horizon band. I believe that the energy will gravitate towards the highest gravity point of the structure, as it did with the original black hole. But now the highest gravity will be near the balance point band of the new added mass. At the centre of the mass is an annular balanced gravity band, something like we see on this planet, like the interface between the inner and outer core. As that energy pools I believe that it will pool into this balanced gravity band at the lowest gravity area and form an annular band at the centre point of the structure where all the gravitational forces are balanced by the mass on each side. Thus we now have a massive rotating ball of super dense inert (SDI) mass that has at its heart, a separate mass of energy in an annular band that will tend to increase proportionately as the

structure increases in size and mass.(We will also need to take into account the annealing effect of this flow of energy from the centre, through the inner SDI mass into the heart of the structure).Now, the original mass/photon event horizon is still there as it must always be, because at all times there will be less mass than that required to prevent photons from leaving the mass at the centre of the whole, but the gravitational forces are now mainly from the central mass of the object within the event horizon band which, (because again the gravitational forces start to balance within the event horizon band), now splits into two event horizon bands.

So now you have two distinct mass/photon event horizons one each side of the annular ring low gravity area containing the photons. Above and below those two mass/photon event horizons will be two separate event horizon bands; with the original mass/photon event horizon still surrounding the centre point of the object. As the mass rises still further we must have a rotating structure that is something like a gigantic, slightly squashed grapefruit with an outer face that is inert and at the point of the centreline of rotation, a dimple which is forming at the top and bottom of the centreline of rotation running down into and nearly reaching what was the core of the object, the original black hole at the centre.

Between the inert outer face and the inert tubular core face is the energy of all the photons drained from the mass into an annular ring. Between the centreline of rotation of the whole object and the inner mass/photon event horizon surface of the inner event horizon band, there will be a rapidly rising gravitational force with still, at the centre, zero gravity. As the structure grows so the SDI mass on the equator rises at the expense of the poles and as such we will see a weakening of the structure at both poles until there is no mass at the poles. We arrive at a structure that looks like a gigantic earth mover tyre inner tube, but with a very small hole beginning to form through the centreline and will look more like a squashed grapefruit on the outside with a very small hole through the middle. As there is zero gravity at the centre, but a massive rise in gravity as you move away from the centre you will observe another annular ring dimple forming around the central dimple.

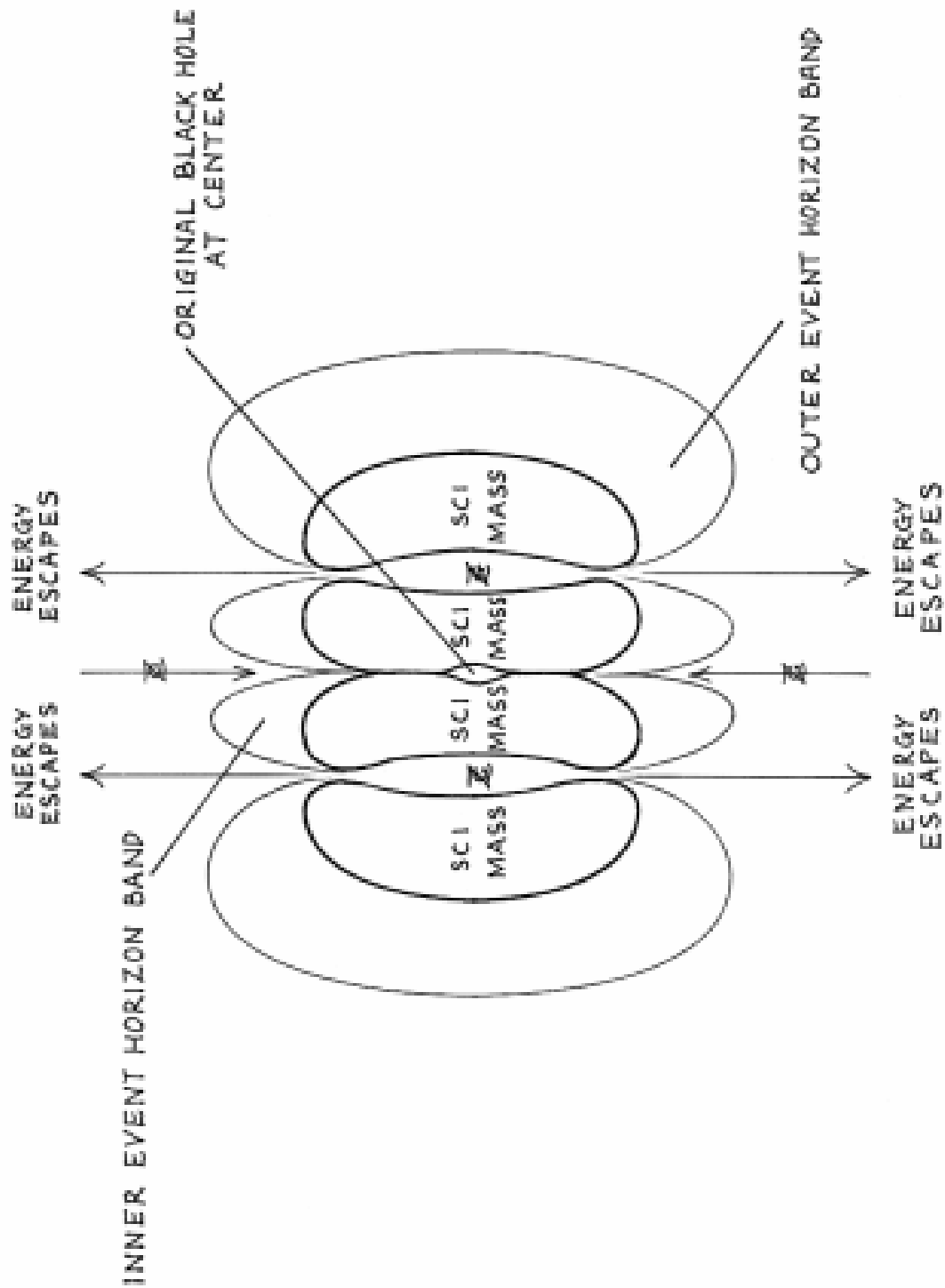


Illustration 2.
Event Horizon Bands – A Cross Section.

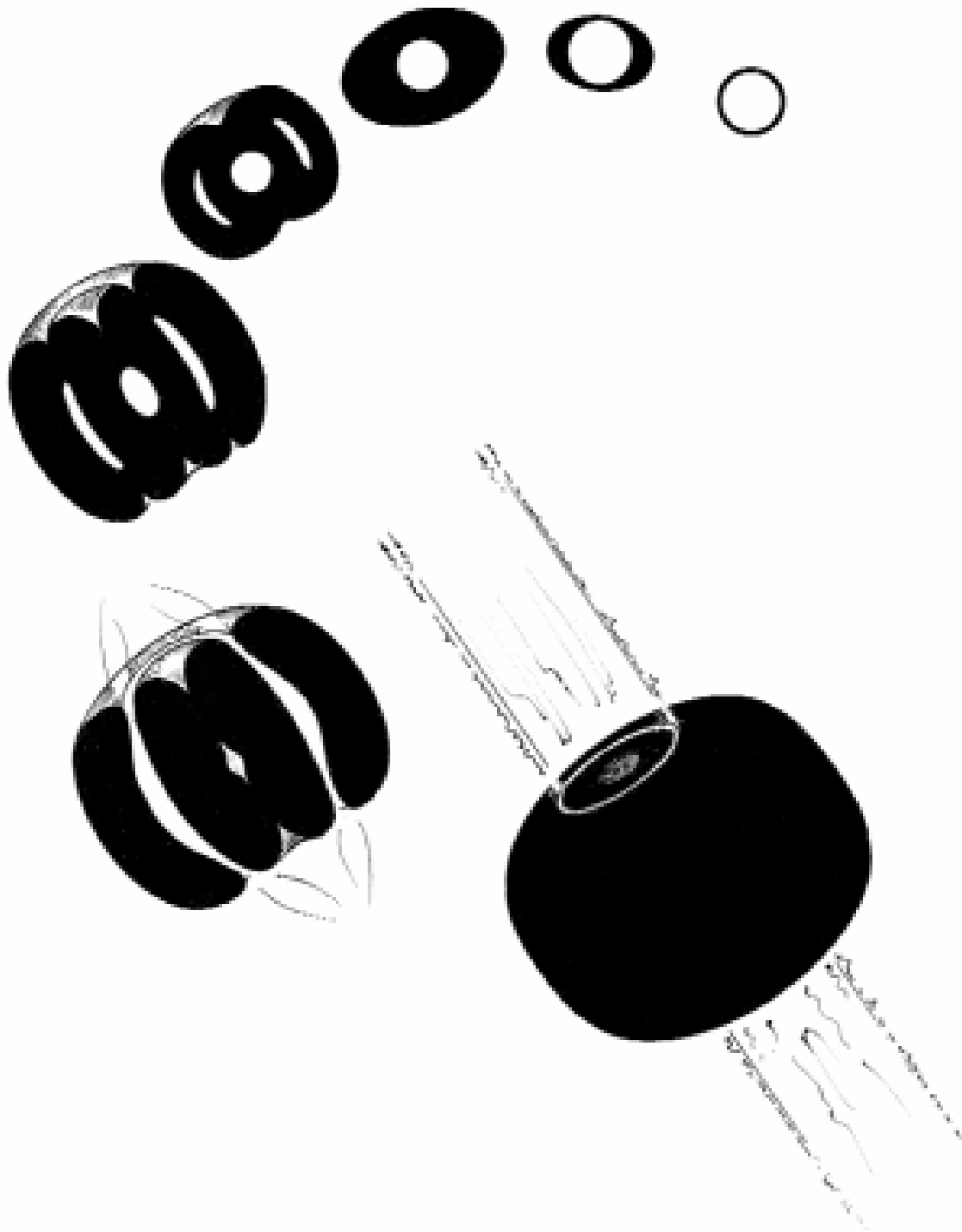


Illustration 3.
The growth sequence from black hole to quasar

Now we have the two distinct event horizon bands within the structure. A event horizon band with an outer event horizon at the outer limit of the gravitational force needed to prevent the movement of photons from the whole mass with an inner mass/photon event horizon on the outer side of the annular pure energy band Another inner event horizon band with this time the mass/photon event horizon on the inner side of the annular pure energy band and with the inner event horizon which is still the original mass/photon event horizon now at the edge of the central zero gravity point. As the gravitational forces rise, just as with the structure of the planet Earth, we may see several of these bands develop. Between the inner and outer shells of each such band is a squeezed volume of pure energy. This has only one way out, as though it is a sandwich bitten between our teeth, it has a weak point at the edges. The pressures, balancing between the rotation of the object, the gravitational forces and the pressure of the injected photons into these bands of pure energy must reach a point where the photons eject from the edges as a massive flow of energy.

That is a quasar; a truly gigantic object with an absolutely enormous blast of energy from each end carrying with it, during the later stages of depletion, a substantial volume of the inert super compressed super dense mass as debris from the sides of the structure. This blast of energy and mass fires out into the open universe and, as it does so; it inflates the local universe and sets in motion the formation of new galaxies.

The upper and lower limits of such a structure I leave for others with better mathematical skills to define, but I suggest here that these limits may well cover a very wide range of objects which will be entirely dependant upon the evolutionary path of the structure. A very small mass object, left untouched for a long period may well start to deplete very early in its evolution; where at the other extreme, the mass of many galaxies may be needed to trigger the depletion phase.

Entropy is surely dead ended after all?