19 Gravity?

19.1 Gravity's visible effects

One of the most important influences in nature has to be gravity. Without it, every thing would literally fall apart and the evolution of the universe as we know it would not have occurred in the first place. While arguably the most visibly important of the four fundamental forces, it is also believed to be the weakest at the atomic level. The big question is of course, why are there *four* supposedly different forces of nature to begin with? Or are they as some would hope, just four manifestations of what is perhaps the same phenomenon. We can explore this possibility by examining the interactions that occur within this model and see if we can get any closer to combining all four of these forces into one. This is all hypothetical of course, but *the dimensional boundary chord model* has provided a mechanism that has allowed hydrogen to form; protons and neutrons to combine in the nucleus and electron shells to balance its positive charge. In so doing, it has also provided the means by which the universe can communicate with itself and this may very possibility. also give us a clue the that last great mystery that is still eluding discovery; namely the mechanism that can describe the force of gravity itself.

The behaviour and the effects of this force are pretty well understood these days and in its basic form, can still seem to be adequately explained and predicted by Kepler and Newton's laws. Not only does Newton's original description show how one body attracts another and how the planets move around the sun, but his laws also work further a field and can be applied to relationships between stars and even galaxies; although there are *still* problems when one tries to include the interaction of multiple systems within the equation. Their conception by Newton however was still no less than staggering, especially when one considers that even now with all our quantum theory, relativity and early twenty-first century physics, his laws can still ring true. As great as his explanation was, it still doesn't tell us exactly what gravity is. There were one or two shortcomings however and as observational astronomy became more sophisticated over the years, it was discovered that there appeared to be something slightly odd about the orbit of Mercury.

Einstein dealt with gravity in his *'General Theory of Relativity'* which he published in 1915 and gave the scientific community a completely new way of looking at the subject. He concluded that gravity had more to do with the 'fabric' of space than with an attractive force between two bodies as Newton had envisaged. Einstein pictured space becoming curved when large amounts of matter were in its vicinity and this curvature would influence the paths that such bodies followed through space. It was this revolutionary new way of looking at orbital motion that at last helped solve the old puzzle of Mercury's eccentric orbit. Newton's laws could not seem to explain what appeared to be a rather worrying 'shift' in Mercury's orbit over time at each perihelion (an orbit's closest approach to the sun) and many a researcher expressed worries about the upsetting consequences that such a phenomenon might have on the overall stability of the solar system. Einstein's theory however, was able to mathematically predict these observations and it was eventually realised that this 'wobble' was cyclic in nature. The accuracy of his work was further endorsed when predictions of a similar shift in the orbit of Venus were confirmed by observation in the nineteen-sixties[1].

There were also two other phenomena that could only be explained by Einstein's theory. The first is known as *'Einstein's shift'*; where atoms can slow down their vibration when in an intense gravitational field. This causes an observed 'red-shift' in their spectra and was difficult to explain prior to Einstein's insight2. Secondly, there is a phenomenon that is these days referred to as *'gravitational lensing'*, where light may be bent around massive gravitational objects on its journey towards us. This was first observed during a total eclipse of the sun in 1919 where the apparent position of stars just visible behind the

sun's eclipsed disc seemed to have shifted their known position very slightly. This has more recently, been seen to occur in the vicinity of distant galaxies; photographs of which, often include double images of a light source that may in turn, lie some distance behind the galaxy in question. His theory seemed to much better describe the effects of gravity on objects and on the very fabric of space in which they are suspended and since its publication in 1915, Einstein's *'Theory of General Relativity'* has provided predictions that agree time and time again with a mass of observational data. Whilst there is no doubt that this has provided a very comprehensive description of the overall effects of gravity, the method by which this force is communicated is still eluding researchers. Observation now suggests that the effects of gravity travel at the speed of light and the search is on for the elusive *graviton* or gravity wave that is believed to provide the means of communication or connection between bodies. Gravity's complete definition still appears to be just beyond our grasp however.

19.2 Fifth-dimensional gravity?

What is the hidden mechanism that allows one body in space to influence another, although their separation may run to distances that defy the imagination; the same mechanism that also dictates what happens during the simple act of a ripe apple falling from its tree. There is something very profound about the way it works; an underlying reason why its effects are what they are. The clue to its description must lie within Einstein's idea of a curving or warping space, as 'General Relativity' has been shown time and time again to almost perfectly describe the observed effects of this phenomenon. With a dimensionally differentiated universe as well, this may help us to gain a further insight into just what this subtle mechanism might be.

The key to this current puzzle may just lie within the description of what have called the dimensional boundary surface waves, or now *dim-waves* for short - and we must also remember how this model has been presumed to have differentiated dimensionally from very simple beginnings. The reader may recollect from Chapter Five that during what has been called the big-snap, a bye-product of the drop of condensed-out three-dimensional material at the 8D tri-planar coordinates, produced a residual momentum that would ultimately need to become the *contractive* fifth-dimension because of its own remaining dimensional energy levels. This would occur at the same time as the big-ping that would in turn, herald the appearance of what was to become our own material into the expansive volume of 4D space. Let's look first at how gravity seems to make its presence felt in our neck of the woods.

When we think of gravity, we probably picture Newton being hit on the head by an apple as he sits beneath a tree. It's unlikely that this incident really happened, but Newton did show us that it is the *same* 'force' that effects the apple, the moon, the planets, the sun and indeed all the matter in the universe. As the apple falls to earth, it would seem to be influenced by a downward force and this would also seem to be the same force that pulls the moon towards the earth and visa-versa. This force is universal and attracts every single object towards every other. Although we cannot overlook what is commonly referred to as the effects of *'gravitational clumping'*; without exception, gravity would seem to exhibit a characteristic that is completely and utterly opposite to the observed effects of expansion.

This was illustrated simply in Chapter Five (see *Figure 5.5.01* on page 35) as the 'piston effect', where the material in a sealed cylinder ahead of a moving piston will undergo compression; while at the same time, the material behind the piston expands. This was also a simple illustration of the characteristics of the fourth and fifth dimensional levels within this model. This can be further illustrated by again looking at this model's description of the electron-shell, where the energy of vibration within the rotational groups of the proton is converted to a predictable series of dimensional boundary surface waves. These become trapped around the body of the proton

because of the 'field' characteristics of the bi-polar 'H' face dim-waves and as such, add four-dimensional energy to the surrounding and supporting expansive fourth-dimension in which all 3D material is buoyed. This creates tiny pockets of trapped 4D+ energy that creates what have been called the 4D 'energy-spike' and corresponding 3D 'energy-well' (see again *Figure 12.5.02* on page 102 and *Figure 12.5.03* on page 103). As these new 'pockets' of energy become slightly more four-dimensional than their surroundings, they will tend to push further into the 4D boundary, producing the 'energy-spike' of *Figure 12.5.03*. The 'energy-well' on the three-dimensional side of the boundary was given short-range attractive characteristics as it produced what was called a *mass equivalence* and a related *mass deficit*.

Although gravity affects all material from the very smallest (perhaps the *passive photons* in this model) to the largest, it is at its most obvious when influencing objects we can see. If a single proton with a mass of *circa* 10^{-27} kilograms can produce an energy-spike and energy-well; visible objects might be expected to produce their own versions of these entities at a correspondingly larger scale. With a combined 4D+ energy level, a visible object may produce an energy-spike that pushes so far into the 3D/4D boundary that it begins to intrude upon the fifth-dimensional level as well (see *Figure 19.2.01* in the following column).

The further such an energy-spike pushes into the 5D energy level, the *greater* will be the attractive effect on adjacent phenomena and this could be termed ***proportional compressive attraction***. From the illustration opposite, it is quite self evident that the small object only just protrudes into the 5D level and therefore its attractive capabilities are somewhat less than those of the much larger energy-spike also shown in the figure. This is not to say that it doesn't have an attractive influence on the larger one, as it surely does. The fifth-dimensional level is purely and uniformly compressive or attractive in nature, but the proportionality illustrated in the figure depends on just how far each individual energy-spike intrudes into this dimensional energy level. One could represent the entire universe as an enormous 'bed of nails', where the length and gauge of each nail is dependent on the collective number of proton energy-spikes contained within that particular three-dimensional object - or put simply - its mass. Each and every nail would be drawn (or bent) towards its neighbours, but the amount of bending would depend on both the nails length and its gauge (or thickness) in the first place. Common sense tells us that it is much easier to bend a thin nail or panel pin than a much larger four or six-inch version.

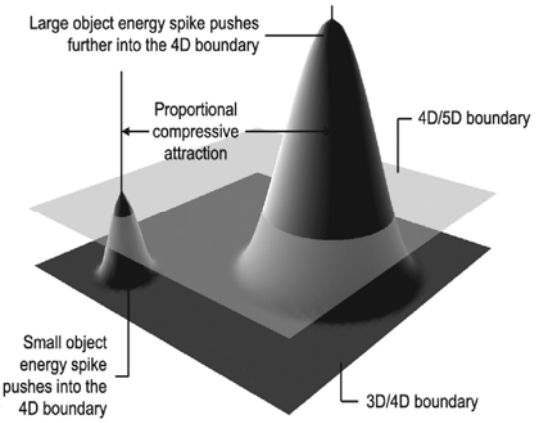

Figure 19.2.01 *Large object energy-spikes may penetrate further into the 4D boundary than smaller ones and as a consequence, the effects of the compressive 5D level may be felt that much more.*

This can explain the concept of gravitational attraction and why it seems that every single object in the universe is attracted to every other. It doesn't however; give us any indication as to why gravity also manifests itself as the phenomenon we witness as *orbital motion* - something that has been so central to the concept of gravity since before Kepler's time. The very nature of the dimensional boundary surface waves and thus the electro-magnetic spectrum imply 'duality' and this is of course, best illustrated with the *expansive* electro and *attractive* magnetic components of such waveforms. Light too shows a duality, but as pondered in the last chapter, this duality is more three and fourth dimensional in nature with a secondary effect on our side of the 3D/4D

boundary. Gravity too, would also seem to be able to exhibit this characteristic because of the nature of the proton's energy-well, located as it is on the three-dimensional side of the 3D/4D boundary. Although tiny when looked at from the proton's point of view, the 'collective' energy-well of an object the size of our sun may in fact, take on an appearance that may well be very reminiscent of Einstein's own ideas of a curvature in the fabric of space-time. After all, momentum, velocity, acceleration and the true definition of 'weight' all appear to be concepts that directly affect only three-dimensional objects in real time. They are phenomena that occur on our side of the 3D/4D boundary.

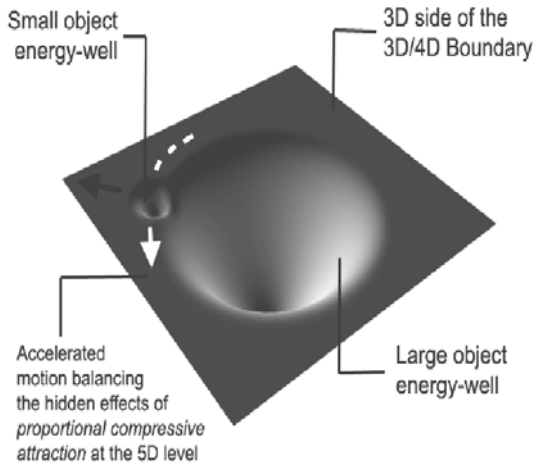

Figure 19.2.02 *Orbital motion may be the result of interactions between the energy-wells of specific three-dimensional objects, where a centrifugal type of effect can balance the fifth-dimensional 'proportional compressive attraction' of their hidden energy-spikes.*

In a similar way to the treatment we gave to the proton's energy-spike in Chapter 12, we can turn the collective spikes over in *Figure 19.2.01* and examine what they would look like from *our side* of the 3D/4D boundary (see *Figure 19.2.02* above). The smaller energy-spike from *Figure 19.2.01* has been pushed a little closer to the spike of the larger, in order to illustrate how real orbital motion might operate in this type of scenario. Without momentum, the smaller object would fall into the larger well and presumably impact the larger body just as a meteorite would impact the Earth. With the correct momentum and trajectory, the smaller object may be captured by the larger as eventually a *centrifugal* type of effect balances this inward *proportional compressive attraction* by trying to throw the captured object away from its path around the rim of the larger object's energy-well. Under the right circumstances, this outward push may come to perfectly balance the attractive pull experienced by the energy-spike equivalents that protrude into the fifth dimensional energy level. A similar effect can still be witnessed at one or two fairgrounds around the world, where riders defy the 'wall of death' on their motorcycles, driving round and round inside a cylindrical track. The centrifugal effect of their circular path around the inside of the cylinder seems to defy the pull of gravity, although there occurs a fine balancing act between the two.

Gravity then, can be said to be a consequence of the rotation of the proton's seven rotation groups that in this model, replace the old (and still unproven) quarks that some still believe to be the major constituent parts of the nucleus. It is these groups' natural production of dimensional boundary surface waves of two distinct types that allows both energy-well and energy-spike to evolve which in turn, produces what can only be described as a 'dual' nature to the effects of gravity. Without the early evolution of the proton from the whole surviving teddy and the face-spin bias that it carried over from the big-snap way up in the now vacant eighth-dimension, the universe could not have evolved the way it has - and we would certainly not be here to ponder such questions any way. Gravity is still the *weakest* of the four forces of nature, but it is arguably the most important in what may be an *inevitable* consequence of this cosmic evolution; the appearance of life. This phenomenon we call gravity can therefore (in this model at least), trace its origins way back to the very beginning of our universe; that early dimensional differentiation of specific dimensional energy levels, occurring long before the start of our own cosmic journey - at the moment of the *big-ping*.