

Essay 56 : A Simple Explanation of the Whirlpool Galaxy



The whirlpool galaxy is one of the most impressive sights in astronomy, and has become famous because of the Hubble space telescope. It consists of a whirlpool of stars, and is strongly reminiscent of the sketches of Leonardo or of the writings of Descartes. About half a century ago it was discovered that the orbital velocity (v) of the stars becomes constant no matter how far they are from its centre, measured by the radial distance (r). The velocity curve of v against r rises to a plateau and stays there. The astronomer who discovered this was vilified and dismissed contemptuously because the velocity curve defied the dogma of the time. It showed that the Einsteinian general relativity is completely incorrect. It also showed that the Newtonian theory is incorrect completely because the latter theory produces a curve that rises to the plateau and then falls off again to zero. Newton is not so universal after all.

This could not be accepted scientifically because it would mean loss of funding and tenure, so it was easier to shoot the messenger. The beauty of the whirlpool galaxy was shrouded in dark matter. The latter does not exist but is convenient for funding and tenure. The whirlpool of stars also shows that all those precision tests of general relativity are rubbish, they do not work outside a solar system in which relativistic corrections are very tiny. Now we know that Einstein's ideas are totally wrong everywhere. This is like Titanic all over again. It takes only one piece of data to refute a theory. Who wrote that? It was Albert Einstein. Conveniently, he was no longer around when the velocity curve was

discovered, otherwise he would have abandoned general relativity and others would have lost funding. He abandoned the idea of big bang in 1939, but that was inconvenient for Hawking and Penrose. Hoyle coined the term “big bang” as a form of terminal sarcasm, but no one noticed. After an immense waste of time, it was discovered that there has been no big bang.

In the detritus of fiasco we should return to common sense. So I devised a simple explanation for the velocity curve of a spiral galaxy. Most untenured intellectuals would do the same. After UFT 194 line element general relativity is no longer of any use, so in UFT 196 and following a completely new approach is tried out using the simplest possible version of the spin connection of Cartan, following the advice of William of Ockham to keep it simple. For this he was declared a heretic by horrified colleagues at Oxford and Paris and was about to be used as a spare candle when the Bavarian king gave him protection. This new approach does not use the ideas of Einstein at all, neither does it rely very much on Newton. It uses the definition of linear velocity in cylindrical polar coordinates in a plane. The kinetic energy is made properly relativistic, and from that the total angular momentum (L) is found using the Euler Lagrange equation.

The orbital velocity of the spiral galaxy (or anything else) is expressed in terms of L and an observable orbital function $dr / d\theta$. In the beautiful spiral galaxy the observed orbit is a spiral, there is a wondrous spiral of stars. To be precise this is the hyperbolic spiral $\theta = r_0 / r$, where θ is angle of the cylindrical polar coordinate system in a plane, and where r_0 is a constant of dimensionality. So the velocity is found very simply and is a constant as r becomes infinite. This is a simple explanation of things that the friar William would have approved of.

There is no need of funding. This drives the dogmatists crazy. Things can be explained during school level mathematics without even asking for billions. Even worse, this idiotic simplicity reduces to Newtonian dynamics when we come back to earth, where Newton happens to work almost by accident. This enlightenment gets rid of dark matter like Dracula at dawn and leaves tens of thousands of papers stranded. It is no longer possible even to shoot the messenger, because the messenger does not have tenure and never misses it. Grant applications can be made, but they get harder and harder to believe. Recent experiments have shown that there is no dark matter at all, so how can 98% of the universe be filled with it? Grant giving agencies say so after all.

The answer is given by the idiotically obvious, a whirlpool galaxy is torsion, and is formed by a kind of torque generated by spacetime itself. The kind of torque needed is proportional to the square of θ .

Who said that science is not simple?