

LONG ESSAY 1

THE COLLAPSE OF EINSTEINIAN GENERAL RELATIVITY (EGR)

There are almost a hundred refutations of EGR in the unified field theory papers and books on www.aias.us and www.upitec.org (combined sites). There are many more refutations by the eminent scholar Stephen Crothers and also by many other scholars over a hundred years. Recently, EGR has been abandoned completely by astronomers studying S star systems. Eighty three of the refutations are summarized in the document "Eighty Three Refutations of EGR". These refutations would have been eagerly accepted by Albert Einstein. They would have removed his own doubts about the theory. In its time, there is no doubt that EGR was very influential. A combination of light deflection by gravitation and planetary precession catalyzed Einstein into fame. The adoration and adulation of the crowd is never a thing to be welcomed, it is merely a reflex caused by media pressure, the pied piper of Hammelin.

In the cold light of fact, only a very few people ever understood EGR, because this requires advanced mathematics that very few are prepared to study. Study means hard work, most prefer to sit in front of the TV looking at animations. This is true even of physicists themselves. Otherwise how could a theory riddled with errors be accepted for a hundred years? The answer is - very easily, almost all theories turn out in the end analysis to be flawed. EGR has been developed into an elaborate myth. Experiments costing hundreds of millions repeat the same old mythology. The idea is to prove that a theory which is totally wrong is very precise and getting even more precise. The general public accepts this because they do not understand the mathematics. It is essential that this wreckage of a theory be kept afloat in order to attract money from the tax payer and to attract huge fees from students, fees that are used to keep bureaucrats in lavish luxury. The bureaucrats wash their hands of understanding and keep technical matters well covered up. They are superior to Baconian science, and as such live in a flat, mediaeval world.

After a lot of false turns, Einstein finally arrived at his field equation in late 1915. It was based directly on the second Bianchi identity derived either by Bianchi in 1902 or earlier by his friend Ricci at the elite Normale in Pisa. Apparently Ricci derived it in the late nineteenth century but lost his notes. What is important now, more than a century later, is the meteoric rise to fame of UFT88 on combined sites. This paper 88 of the UFT series completely changes the second Bianchi identity by using the correct geometry, a geometry due to Cartan. UFT88 has been read regularly at several hundred of the world's leading universities without any criticism. It has been read ten thousand times or so in a decade, and has never been criticised in any way. It changes the second Bianchi identity of 1902 through the use of Cartan's torsion, devised by Maurer and Cartan in about nineteen twenty. The second Bianchi identity of 1902 used only the Riemann curvature because Bianchi was obviously unaware of the torsion. It can be Cartan torsion or Riemann torsion, it does not matter.

Einstein learned of the second Bianchi identity while searching for a suitable geometry on which to base general relativity. The Einstein field equation of 1915 essentially made physics out of Riemann geometry through a proportionality constant k , the Einstein constant. Einstein thought that his new equation was so complicated that it would never be solved, but within weeks, Schwarzschild had come up with a solution. This was later named the Schwarzschild metric by dogmatic followers of Einstein. However, the original 1916 letter from Schwarzschild to Einstein has been translated by Vankov and is online. It is severely critical of Einstein, who was not a mathematician. Levi Civita and others were also critical of Einstein's work. These criticisms were swept aside by inaccurate experimental

claims about light deflection and planetary precession.

Cartan wrote to Einstein to point out the existence of torsion, but despite a long correspondence, Einstein did not incorporate torsion into his field equation. This would have reduced his fame to ashes. Torsion was incorporated correctly in UFT88, whose final form is UFT313, the Jacobi Cartan Evans (JCE) identity. The latter is completely different from the 1902 second Bianchi identity, meaning that the 1902 identity could not have produced any meaningful physics at all. For this reason alone the field equation of 1915 is a mathematical nonsense. UFT99 for example shows that if torsion is omitted, curvature vanishes, so one is left without any meaningful geometry. Several well known proofs have been developed from UFT99, which along with UFT88, has become a classic paper. In fact the entire UFT output has become a classic of physics, having been consulted millions of times continuously since 2003. The proofs have been intensively studied for a decade, again without any criticism. The standard modellers or dogmatists arbitrarily forced torsion to vanish through the use of a symmetric connection. This is the procedure unknowingly used by Bianchi in 1902, and by Einstein in 1915. The so called Schwarzschild metric of 1916 is the first example of a solution of the Einstein field equation, but it is a solution of an equation which is mathematical nonsense. There followed a plethora of such solutions, or metrics, all of which are based on mathematical nonsense, a geometry without torsion. These metrics became more and more elaborate and abstract and are summarized in "Criticisms of the Einstein Field Equation" on combined sites. They lost all touch with Baconian physics and produced wild ideas such as Big Bang and the existence of black holes. This is typical of standard model physics in the twentieth century, much of it is elaborate nonsense which is now being swept aside by a tidal wave of common sense: interest in ECE and ECE2.

In 1916 de Sitter and others used the idea of a rotated Schwarzschild metric to produce geodesic or de Sitter precession, and Lense and Thirring (LT) used the Kerr metric to produce their effect (Lense Thirring precession). The de Sitter and LT precessions always accompany the familiar Einstein precession which is based on the force law of EGR, using a static Schwarzschild metric. This has been known since 1916, but the dogmatists have considered only the Einstein precession for more than a hundred years, monotonously repeating a super howler in the dogmatic, wolf infested wilderness by completely ignoring the accompanying de Sitter and LT precessions. This is a staggering error that no one pointed out until UFT406 (posted in 2018). UFT406 is a very simple demonstration of the collapse of EGR. To understand UFT406 requires no mathematics at all. The collapse occurs when all three precessions are properly considered for any orbiting object such as a planet. When all three precessions are considered, the sum of all three is inevitably much larger than the Einstein precession and much larger than the claimed experimental precession. The dogmatists always claim that the Einstein precession is incredibly close to the experimental result. It is just that - lacking in all credibility. The experimental result is very difficult to find. A well known textbook such as that by Marion and Thornton gives it for Mars, Venus and Earth, but not for any other planet. For Mars, Venus and Earth there is vague agreement between EGR and the claimed experimental result, but that is all. In this table by Marion and Thornton, regurgitated by unfortunate students, the de Sitter and LT precessions are of course missing completely and all three precessions of the standard model emanate from complete nonsense, a geometry without torsion. Marion and Thornton never mention torsion. So the howling wolf echoes mournfully in the dogmatic wilderness

The claimed experimental result with which EGR is always compared is a tiny remnant fished out of precessions caused by other planets and objects. For the outer planets such as Saturn, Neptune and Uranus it is only a millionth of the observed result. So the experimental precision must be one part in a million in order to extract the result accurately. The uncertainties given in the table by Marion and Thornton are orders of magnitude greater

than one part in a million. A protracted Google search gave no further data, The data for Mars, Venus and Earth continue to appear in the fourth edition of Marion and Thornton. There have been no changes from the third edition, as if all those satellites and all those hundreds of millions have been a complete waste of time and money. If students are taught like this, they cannot come away knowing anything. In extracting the result, the contributions to precession by other objects are treated with Newtonian physics, as if EGR did not exist, and the de Sitter and LT precessions are never considered at all. With physics like this, who needs comedy? Even worse trouble follows for the dogmatists when it is considered that the effect of gravitation in their theory is to change the Thomas precession into a de Sitter precession. As shown in UFT407 this procedure produces huge and unobserved shifts when an H atom is paced in the earth's gravitational field. The H atom is shown to be essentially a Thomas precession, a major advance in understanding. This is real trouble for the standard model. In S star systems currently being studied by astronomers, EGR has thrown in the towel, and fallen back on empiricism. ECE2 does well in explaining S star systems.

During the course of development of the UFT papers EGR was at first accepted uncritically, but it rapidly became clear that there were major flaws in it, all springing from the missing torsion. Many of the UFT papers are now classics, and are well known and studied in all universities of significance which have an interest in physics. These include essentially all the top twenty universities in the world. There are well established ECE schools of thought inside every university of any significance with an interest in physics. The first signs of trouble for EGR began to appear from the first Bianchi identity. It was clear from the beginning that this should be the Cartan identity. It was shown during the course of UFT development that the Cartan identity is a precisely exact identity of advanced tensor algebra. This is one of the many proofs left out of the standard model textbooks. It is not even given by Sean Carroll's "Spacetime and Geometry". The second Bianchi identity of 1902 was derived from his first identity using the Ricci identity, so omission of torsion means deep trouble for both identities. It was gradually realized that all the metrics of the standard model are torsionless constructs, so this means the collapse of EGR. Attention then focussed on showing that the much vaunted precision of tests of EGR are hollow claims. In a whirlpool galaxy for example, EGR fails completely, it is not precise at all.

All of this work is being followed continuously by the best minds in the world, without any logical objection. This means that the era of EGR is obsolete, its teachings are continuously rejected by its students, by those who are forced to pay huge and needless fees. UFT88 sprang out of the need to give a proof of the second Bianchi identity with torsion. This identity was mentioned by Carroll, in one of the rare mentions of torsion in the dogmatic literature, but as so often with Carroll, no proof was given. It quickly became clear in UFT88 that torsion completely changes the second Bianchi identity, and that the Einstein field equation of 1915 collapses in consequence. This is why UFT88 has become a classic. Its consultations are currently at a record high level. It was realized in UFT99 that torsion cannot be forced to vanish because in so doing, curvature vanishes. In UFT109 the Evans torsion identity was inferred. This became a key ingredient in the inference of the JCE identity of UFT313. The JCE identity shows that the 1915 Einstein field equation is complete nonsense because geometry with torsion is elaborately different from geometry without torsion. The Einstein field equation of 1915 bears no resemblance whatsoever to correct geometry. In UFT papers contemporary with UFT88 it was shown that the various well known metrics of the dogmatists all fail due to neglect of torsion, and all this was summarized in extensive tabular material in "Criticisms of the Einstein Field Equation" a book which has become a classic.

It was gradually realized in papers such as UFT150 to UFT155 that all the methods of EGR contain errors. In particular, the EGR theory of light deflection is riddled with errors and deep obscurities. The EGR theory of precession was refuted completely in UFT406, so

the early catalysis of Einstein into a famous figure was made in error. Einstein was reluctant to incorporate torsion, or did not know how to do so. The data of the Eddington experiment were in internal conflict, and almost incredibly, a data set was chosen by a sub committee headed by Thomson because it happened to be near the theoretical prediction. It is now known from UFT406 that the precession theory used by Einstein is completely wrong because it omits the geodetic and LT precessions. Light bending by gravitation has been accurately measured by now as “twice Newton”, but that result is explained by ECE2 theory, not by EGR. In deriving the twice Newton result Einstein used a method of integration which is very obscure, and essentially incomprehensible. This is one of the many criticisms in UFT150 to UFT155.

The pack of cards then collapsed, blown away by a breeze because it was so fragile. In later UFT papers it was shown that the method used to deduce the Einstein precession of planets produces an unphysical orbit under certain well defined conditions, one in which the orbiting object m collides with the gravitating object M . It was shown that the factorization method used by Einstein leads to obvious singularities, and so forth. Stephen Crothers has produced many independent refutations. Many of these refutations are summarized in “Principles of ECE Theory” on combined sites (PECE and PECE2). Interest in these volumes is currently at a record high.

The ways in which the dogmatists have received this disaster is to pretend that it has not happened, and to go on publishing the same old stuff. This type of conduct threatens the existence of physics itself. It does not allow any debate, indulges in attempted censorship, all to no avail. The ECE school of thought is firmly established in every university of note, and has a huge following worldwide. It is no longer possible to stop the march of ideas by sacking or ostracizing academics or removing their funding. The purpose of academia itself is in doubt: “Is Your Uni Really Necessary?”, a variation on Dylan Thomas. It is well known that about half of academic papers are not consulted by anyone, and that only a small fraction of cited papers are actually read. The average academic turns out about a paper a year. In order to get in to academia, heavy fees are demanded, often in return for essentially worthless dogma. So intellectuals consult enlightened sites with alacrity, they cost nothing, they take nothing from the tax payer.

Refutation is only half the story, ECE is produced by imagination and hard work, and drives physics forward in an entirely new way. ECE is unchallenged and the interest in it is at a record high. It is the new physics.