ESSAY 111: ADVANCES MADE BY ECE2 THEORY.

Written by Myron Evans and Narrated by Robert Cheshire

The ECE2 papers produced in the year 2015 to date are UFT313 - 320, and UFT322-327. They make numerous advances and are already heavily studied around the world. Currently they are being studied at the rate of 9,942 times a year from www.aias.us and 15,907 times a year from the combined sites: www.aias.us, www.upitec.org, and www.atomicprecision.com. It is known from thirteen and a half years of meticulous and accurate scientometrics that the readership includes the best two hundred or so universities in the world and, each month, many of the top twenty universities in the world measured by webometrics and Times Higher Education rankings. The series to date starts with the inference of the Jacobi Cartan Evans identity in UFT313 and its vector format in UFT314. The series thereafter develops curvature based ECE field equations (UFT315); The Gauss law and Faraday law in ECE2 (UFT316); the ECE2 field and potential equations in electromagnetism (UFT317); the ECE2 gravitational field equations, antisymmetry, equivalence principles, counter gravitation and Aharonov Bohm effects (UFT318); Newtonian and non Newtonian gravitation (UFT319); the gravitomagnetic Lorentz transformation (UFT320); perihelion precession and light deflection due to gravitation (UFT322); orbital theory in terms of the Lorentz transformation (UFT323); the special relativistic Binet equation applied to the velocity curve of a whirlpool galaxy and light deflection by gravitation (UFT324); orbital precession from the lagrangian of special relativiy (UFT325); quantization of ECE2 theory (UFT326) and UFT327, the latest paper to be posted on the description of orbits from special relativity. UFT327 also contains three more definitive refutations of Einsteinian general relativity.

These papers make acknowledged major advances, producing a generally covariant unified field theory based an all the geometry available: both torsion and curvature. They define the field equations of electromagnetism and gravitation as being generally covariant but at the same time as possessing a mathematical structure identical to the Maxwell Heaviside field equations. This structure applies both in electromagnetism and gravitation, so a vast amount of development is possible. All that is known about electromagnetism can be transferred to gravitation. This work has been initiated by considering the relativistic Lorentz transformation to give the Lorentz force equation of ECE2. This was developed into the Binet equation of special relativity, an equation which gives the relativistic force for any orbit. The series proceeds to what is perhaps its most important inference to date, that special relativity produces perihelion precession, light deflection by gravitation and the velocit curve of a whirlpool galaxy. This inference was made in UFT324 and UFT325. It has also been shown that electromagnetic deflection due to gravitation can be explained precisely with special relativity, given a new axiom that puts an upper bound on the velocity of of the Lorentz factor. This is also the velocity in the observer frame of the infinitesimal line element of special relativity. The relativistic velocity v is allowed to reach c, and the relativistic velocity is always the observable velocity in special relativity. The observer frame velocity can be measured only in the classical limit, it cannot be measured otherwise, so the new axiom does not violate any experiment.

The ECE2 series adds to numerous refutations of the Einsteinian general relativity in UFT327, where computer algebra is used to show that the approximations used in the original perihelion precession paper by Einstein, published in November 1915 lead to nonsensical results. Judging by the very intense interest in the ECE2 papers, the Einsteinian era is over. It has been improved and developed in to a unified field theory by ECE and ECE2 in van der Merwe's "post Einsteinian paradigm shift", the avant garde physics of the early twenty first

century. Since ECE2 has a Lorentz covariant structure bith in electromagnetism and gravitation (that of the Maxwell Heaviside field equations), special relativity can be used to develop ECE2 in many new directions. In Notes for UFT328, being developed at the time of writing (23rd September 2015), it has been shown that a simple theory of perihelion precession based on special relativity produces the right order of magnitude of a few arc seconds per orbit for planets in the solar system .

This series is typical of the intense way in which the ECE papers are being studied worldwide. There are currently over five hundred papers and books on ECE theory, three hundred and twenty seven in English and over two hundred in Spanish translation. Paper surveys carried out at regular intervals indicate that every single item is read intensively worldwide. It is also known that this intense interest will last indefinitely in to the future.