

ZOLLNER, BLACKETT, AND WESSON

Here is some of the historical background to the electrostatic dipole theory of Gravity:

“Gravitation is an electromagnetic phenomenon, there is no primary motion inherent in planets and satellites. Electric attraction, repulsion, and electromagnetic circumduction govern their movements. Each atom is made up of positive and negative electricity and though neutral as a whole may form an electric dipole when subject to an electric force.

Thus in the theory presented here, this attraction is not due to “inherent Gravitational” properties of mass but instead to the well known electrical properties of attraction. Two dipoles arrange themselves so that the attraction is stronger than their mutual repulsion.”

We are to conclude that a pair of electrical particles of opposite signs, ie two Weberian molecular pairs attract each other. This attraction is Gravity; it is proportional to the total number of molecular pairs” said Fredrich Zollner in 1882. ref 3.

P.M.S. Blackett in 1947 writes that: “It has been known for a long time, particularly from the work of Schuster, Sutherland and H.A. Wilson, though lately little regarded, that the magnetic moment P and the angular momentum U of the Earth and Sun [and then recently the star 78 Virginis] are nearly proportional, and that the constant of proportionality is nearly the square root of the Gravitational constant, G , divided by the speed of light c .”(ref4)

Blackett first noticed this while considering the influence of the magnetic field of stars on cosmic ray activity. The importance of cosmic rays and magnetic field disturbances on communications and radar surveillance during World War Two stimulated interest in these matters. But prior to this time and even now the regard of geologists and astronomers for this relationship was and is surprisingly indifferent and it does not appear even in their texts or recent general physics texts that I have seen. Blackett suggested a laboratory test using a bronze sphere of 1 meter diameter rotating at 100 r.p.s. which should give a field of about 10^{-8} Gauss, which modern devices like the SQUID for measuring weak magnetic fields could reveal and perhaps already has.

Thomas Gold in a later issue (April 2, 1949) of Nature represents the opinions of Runcorn and Hoyle that the difficulty in entertaining the hypothesis was that there was “no physical quantity which might be related, by way of a new law, to the magnetism of large rotating bodies.” [But now there is: radially and longitudinally oriented electrostatic dipoles in their atomic nuclei is the unknown missing quantity.]

The greater the mass, ie the greater the number of protons, neutrons and electrons, all of which contain electrostatic dipoles and the greater the tangential velocity, the greater the length of each dipole. The counter clockwise orbit produces a tangential force on an orbiting $-2e$ charge in electrons and on a $-e$ orbiting charge in protons that produces an expansion of the dipoles in the same radial direction with the negative charge pointing to the center.(if clockwise with positive charge pointing to the center]

Blackett references Hale, Theissen, and Babcock measurements of the Zeeman splitting indicative of a magnetic field acting on the spectra of light from different parts

of the Sun. Later such measurements give values due to the 450km/sec emissions of positive ions and electrons from Sunspots etc and other such flows as well as the field due to the 2km/sec rotation of the Sun so there is some confusion. That is the local fields associated with Sunspots spread out over the Sun's surface that reverse every 11 years may also influence the measurement Babcock made later of the reversal at the poles which otherwise would imply under Blackett's theory, an unobserved rotation reversal.

Because of the problems with Zeeman splitting measurements of the magnetic fields of stars and the Sun, the main support for Blackett's theory is the evidence of electrostatic dipoles inside current carrying wires and inside their free electrons and atomic nuclei as the cause of their magnetic fields and the implication of such dipoles in spinning orbiting masses.

Also there are ambiguities with space probe measurements of planetary magnetic fields that NASA hopes to resolve with the Russian and Austrian proposal to use a hot air balloon a few km above the surface of Mars. A possible explanation of the lack of correspondence between space probe measured planetary magnetic fields and planetary angular momenta is that the probes are magnetometers being influenced by the space probe velocity relative to the planet velocity.

A related phenomenon might be the following (from the New Scientist (p485): "In one [of Henry Wallace's-US patent 3 626 605] kinemassic machines a pair of wheels of brass alloy, like gyroscopes are rotated at a speed of 20,000/60 r.p.s. [and then at the same time] rotated about another axis [at some unspecified speed]... [the wheels appear to be propelled upward or become lighter]" I am told but I do not have the references that other evidence of Gravitational anomalies of spinning objects has been obtained by DePalma, Kidd, Strachan, and Laithewaite. The Hyzer angle of frisbees and sinker pitches in baseball also may be related phenomena.

Thus any accelerated object, eg a bullet, a rocket, a plane, a car, a frisbee, a skidding or spinning billiard ball etc has electrostatic dipoles produced in its atomic nuclei transverse to and proportional to the accelerating force which even if mechanical is still ultimately electrostatic; The tendency of linearly propelled atomic nuclei to then rotate may add to the aerodynamic efficiency of spinning projectiles. The resulting dipole field may or may not be self sustaining against thermal disturbances as in the dipole chain model of ferroelectrics (ref 6 Feynman vol2, p5-5, 11-10).

In the above mentioned ferroelectric model the dipoles are assumed to be composed of poles, concentrations of charge, that are fairly constant over time unlike our model of charge polarization inside atomic nuclei which changes rapidly with the position of the orbiting charged particle(s) inside the nuclei but which averaged over the orbital time period represents a displacement of centers of negative and positive charge in a specific direction. In both models the dipole-dipole interaction is the same but the interaction of one dipole with a single pole of the other is different in the two models.

In our model the action of one dipole on the single pole of another is to produce a transverse elliptical motion of the single pole, rather than as in the ferroelectric model to produce a motion of the pole only in the direction of the dipole field and thereby to sustain a dipole field.

P.S. Wesson in 1981 (ref5) derives a relation similar to the one of Wilson that Blackett describes, namely that the angular momentum of planets stars and galaxies divided by the square of their masses is approximately constant and equal to 10^{-17} meters per sec per kilogram. This suggests a common centrifugal or tangential acceleration from zero, a common force, associated perhaps, in analogy to other forces, with an agent, with a Prime Mover.

Returning to the Blackett and Wilson conjecture, the reason for the relation between Gravity, magnetism and angular momentum may be due to the component of the ever present force that is manifest in the linear and angular velocity components of the motion of the astronomical body. The more atomic nuclei there are in the body and the greater its velocity components, the greater the Gravitational and Magnetic fields of the body. Hence a spinning motion given to a ball by a momentary force may produce initially additional charge polarization in its atomic nuclei in radial oriented directions but without repetition of this force perhaps through the self sustaining interaction of radial and longitudinal dipole fields the added charge polarization in the atomic nuclei quickly becomes zero due to thermal collisions.

In the case of the planets, measurements of their magnetic fields is complicated by the fact that different parts and layers of the Sun and gaseous planets rotate at different velocities and for the planets near the Sun, the Sun's magnetic field has an influence on the measurements. The fact that the gaseous planet Jupiter has a magnetic field ten times stronger many miles above its equator suggesting a field at the surface, 20,000 times that of the Earth even though it is only several hundred times larger in mass and spinning only 30 times faster and the fact that the direction of the field is opposite to its surface rotation is perhaps understandable in terms of different directions of rotation in different regions and the added magnetic fields of electric currents.

Also the similarity of Uranus to Jupiter except that is about one twentieth of the mass of Jupiter and the similar ratio of their magnetic fields to the ratio of their masses can be so understood.